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INDEX OF CONTENTS.

JULY TO DECEMBER, 1905.

(FOR SPECIAL HEADINGS SEE UNDER BOOKS; CERTIFICATES; LAW NOTES; NURSERY NOTES; OBITUARY; PLANT PORTRAITS; PLANTS NEW; SCIENTIFIC COMMITTEE; SOCIETIES; AND ILLUSTRATIONS.)

A

ACETYLENE light, use of, in forcing plants, 31
Adiantum cuneatum, culture of, 374
 Afforestation and the labour question 313
Agapanthus caulescens, 459; *A. umbellatus globosus*, 237, 459
 Agave, the genus, 161
 Agaves, some garden varieties of, 346
 Agricultural College, Wye, 70, 313
 Agricultural returns, 216
 Agricultural (Royal) Society's exhibition, 63
 Agriculture at Cambridge, 392
 Agriculture, the Board of, 415, 441
Ailanthus Vilmoriana, 276
 Aldenham House gardens, 64
Aleyrodes vaporariorum, a pest of Ferns, 48
 Allamandas at Kew, 107
 Alpine garden, the, 125, 223
 Alpines at Nithbank House, Dumfries, 125
Ananias phalloides, poisoning by, 175
Amelanchier canadensis in autumn, 352
 American florists, a society of, 201
 American Universities, grants to, 361
 America, nursery imports of, 415
 Ampelopsis, a new, 265, 309
Ancistrocheilus Thomsonianus var. *Gentili*, 324
Anemone blanda and its allies, 339
 Annuals, what are? 186, 204, 251, 268
 Ants in glasshouses, 20
 Apiary, the, 9, 69, 109, 149, 183, 250
 Apple, a large, 345; Lord Suffield, hardness of, when in flower, 457
 Apples: Coronation, 200; Five Crown Pippin, 154; Warner's King, 429, 444; Yellow Ingestre, 260
 Apple-trees, chemical manure for, 416; espalier trained, 97
 Apples, bruised, 281; from British Columbia, 125; marketed in shallow boxes, 331
 Apricots St. Ambroise and Powell's Late, 203
 Arbor Day at Eynsford, 361, 378
Argemone grandiflora, 127
Arundinaria Simoni, the flowering of, 380
Aspidia buphthalmiflora, 404
Asplenium septentrionale in North Wales, 371, 396
Aster sub-ceruleus, 23, 52
 Asters, some neglected, 6
Astilbe grandis, 426
 Aucuba, grafting the, 229, 268
 Awebury, Lord (*The Life History of British Flowering Plants*), 409, 436
 Azalea beds, suitable plants for, 432, 443, 456
 Azaleas, "Carmichael," 268
 Azara microphylla, fruit of, 71

B

BAMBOOS, the flowering of, 200, 229, 362; in California, 338

Bananas and mealy bug, 297, 362
 Bananas from Jamaica, Barbados, and Canary Islands, compared, 178
 Battersea Park, 152; Chrysanthemums in, 330
 Beans, preserving runner, 204; low prices for, 204
 Bee Exhibition at the Crystal Palace, 200
 Belgian Forestry, 181, 182, 307, 426
 Belsize Court, Hampstead, 389
 Belvedere, Isle of Wight, the gardens at, 41
 Benevolent Institution, Gardeners' Royal, 200, 280, 393
 Bequest to horticulture, 170
Berberidopsis corallina flowering in Lydhuist gardens, 166
 Berger, Alwin (*Florula mortolensis*), 59
 Bermuda Lily culture, the, 44
 Btreshanger House, Kent, 171
 Birmingham, a suburban garden in, 233
 Betting, evil resulting from, 426
 Blackberry Lucretia, 71
Blakea gracilis flowering at Kew, 229
 Board of Agriculture, the, 415, 441
 Books, gardening, a classified catalogue of, 377; sale of, 345, 393, 405

BOOKS, NOTICES OF:—A Book about Salads (*Alfred Broadbent*), 131; Alpine Flora (*Drs. Hegi and Dunzinger*), 70; Amateur Gardening, 409; Beautiful Bulbous plants (*John Weathers*), 294; British Moss-flora (*Dr. Braithwaite*), 111; British Trees (*R. V. Cole*), 150; Botanical Magazine, 50, 92, 151, 200, 264, 344, 409; Bulletin de la Société Française d'Horticulture de Londres, 310; Carnations, Picotees, and the Wild Garden Pinks (*E. T. Cook*), 212; Carnations, Picotees, and Pinks (*H. W. Weguelin*), 70; Choice Ferns for Amateurs (*George Schneider*), 7; Critical Revision of the Genus *Eucalyptus* (*J. H. Maiden*), 425; Dictionnaire Iconographique des Orchidées, 324; Economie forestière (*Huffel*), 337; English Idioms and Colloquialisms (*Arthur Burvenich*), 437; Experiments with Plants (*W. J. Osterhout*), 26; Faraday House Journal, 92; Far Eastern Maples (*James H. Veitch*), 161; Flora and Sylva, 151; Flora Brasiliensis, 124; Flora Capensis, 6, 170; of Tropical Africa, 425; Flore de France (*Abbé Coste*), 151; Florula Mortolensis (*Alwin Berger*), 59; Fruit Preserving (*J. H. Cook*), 12; Fungus Flora of Yorkshire (*Marsce and Crossland*), 309; Future Forest Trees (*A. Harold Unwin*), 404; Garden Album and Review, 441; Gerarde's Herbal, 130; Glossary of Botanic Terms (*B. D. Jackson*), 403; Greenhouses, how to make and manage them (*W. F. Rowles*), 26; Guide-Books received, 13; Handbook of Forest Botany (*H. Marshall Ward*), 198; Handbuch der Pflanzenkrankheiten (*Prof. Dr. Paul*

Sorauer), 46; Horticultural Directory, 111; How to know Wild Fruits (*Maud Gridley Peterson*), 26; How to make and manage a Garden (*W. F. Rowles*), 26; Index Filicum, 441; Insect Life (*F. V. Theobald*), 26; Insects and Fungi injurious to Plants (*G. F. Strawberry*), 226; Journal of Economic Biology, 31; Journal of Economic Botany, 12; La Vie à la campagne, 151; L'Hybridation des Plantes (*M. Raphael de Noter*), 26; Life History of British Flowering Plants (*Lord Avebury*), 409, 436; Poultry Farming, 326; Publications received, 13, 32, 48, 92, 112, 129, 160, 186, 201, 260, 281, 313, 437; Monographie Horticole des Plantes Bulbeuses (*M. Raphael de Noter*), 27; Monograph of the Genus Primulaceæ (*Pax and Knuth*), 393; My Garden in the City of Gardens, 27; Rules for Judging, 361, 426; Sowerby's English Botany, 361; Stone Gardens (*Rose Haig Thomas*), 310; Summer Holidays (*Percy Lindley*), 12; The Amateur Gardener's Rose-Book (*Dr. Julius Hoffman*), 26; The Art of Conserving (*Vere Galway*), 92; The Book of Garden Design (*Charles Thonger*), 275; The Book of the Scented Garden (*F. W. Burbidge*), 51; The Chrysanthemum (*Arthur Herrington*), 394; The Estate Nursery (*J. Simpson*), 151; The Four Gardens (*Ilindasyde*), 326; The Garden that I Love (*Alfred Austin*), 403; The Uses of British Plants (*Prof. Henslow*), 280; The Vegetable Garden (*Henry de Vilmorin and W. Robinson*), 70; Varieties of Fruits, 426; Who's Who, 441; Who's Who Year Book, 441; The Italian Lakes, *Richard Bagot*, 451
 Books, sale of gardening, 345, 393, 405
 Botanical Congress at Vienna, a, 10
 Botanists, old-time Flemish, 249
 Botany, experimental, 170
Brachystelma Barberæ flowering at Kew, 132
 Bracken Fern, a crested form of the, 188
 Braithwaite, Dr. (*The British Moss-flora*), 111
 Bramble Lucretia, 32
 British Columbia, apples from, 425; fruit growing in, 151
 British Science Guild, the, 313, 328
 Bruges, horticultural exhibition at, 117
 Brussels Botanic Garden, 50, 232
 Brussels International Horticultural Congress for 1910, 361.
 Brussels, horticultural meetings at, 110, 333
 Budding fruit trees, 144
Bulbophyllum Lobbii colosseum, 184
 Burbank, Luther, banquet in honour of, 293
 Burbidge, F. W. (*The Book of the Scented Garden*), 51
 Burnham Beeches, 141; the pollarding of, 186
 Burnham, remains of monastic buildings at, 175

Burvenich, Arthur (*English Idioms and Colloquialisms*), 437

C

CABBAGES, transplanting, 252
 Cactus, "scab" disease in, 125
Callipsyche kewensis ×, 372
Calodendron capense, 52
Calycopteris floribunda, a water-yielding plant, 170
 Cambridge, Agriculture at, 392
 Cambridge, Forestry at, 312; Botanic Gardens, 46, 434
Campanula Michauxioides, 130; *C. punctata*, 169; *C. turbinata* Isabel, 72, 96; *C. Zoysii*, 228; Campanulas of the carpatica group, 145
 Canning fruits, 126
 Caoutchouc, a new source of, 441
 Cape of Good Hope, note from the, 170
 Cape Town, abnormal rainfall at, 105
 Carberry Tower, Midlothian, 194
 Carbonate of baryta, a poison for rats, 32
 Cardiff, the Roath Park at, 31
 "Carmichael" Azaleas, 268
 Carnations: Bob Acres, 72; Miss Willmott, 72
 Carnations, 61; staging, at flower shows, 71, 96, 154; a winter exhibition of, 380, 410, 443, 457; at Tring Park, 33; some desirable varieties of, 71; winter-flowering varieties of, 331, 362, 429, 443; origin of the name of, 449
 Carpet-bedding at Maidenhead, 12
 Carrots, storing, 272
Carya tomentosa, 276
Castanospermum australe, 244; in California, 338; seeds of, 441
 Cattle Show, the Smithfield, 408
Cattleya amethystoglossa, 105; *C. Harrisoniæ*, culture of, 267; *C. Mossiæ* "Gloire de la France," 123; *C. Skinneri*, 325
Cereus, a revision of the genus, 232

CERTIFICATED FRUITS AND VEGETABLES.—Apples: James Kirk, 412, 447; Star of Devon, 382; Cauliflower Walcheren, 284; Kale Drumhead, 382; Melon Conference, 284; Peas: Essex Wonder, 34; The Bell, 158; The Scotsman, 158; Peach Violette Hâtive, 158; Plum September Prolific, 218; Potatoes: British Hero, 382; British Queen, 158; Cigarette, 382; Dalhousie Seedling, 317; Denbigh Giant, 382; Duchess of Cornwall, 317; Epiare, 158; Forbe's Sensation, 317; Harbinger, 158; Hurst's Favourite, 382; Ideal, 158; May Queen, 158; Peacemaker, 412; Rouge Royal, 158; Southern Star, 382; The Gardener, 317; Strawberry Bedford Champion, 34; Tomatos: Carter's Sunrise, 34; Fillbasket, 158; Holme's Supreme, 158; New Dwarf Red, 158; Norfolk Hero, 158; Satisfaction, 158; Princess of Wales, 158; Yellow Cherry, 108

- CERTIFICATED PLANTS.**—*Adiantum Mayii*, 74; *Antigonon leptopus*, 316; *Astilbe grandis*, 74; *Begonia Mrs. Arthur Paget*, 55; *Begonia Water-Lily*, 55; *Berberis vulgaris macrophylla foliis purpureis*, 115; *Betonica spicata robusta*, 55; *Brassavola cucullata*, 218; *Buddleia variabilis magnifica*, 115, 157; *Bulbophyllum Lobbi colosseum*, 53; *Caladium Colonel John Hay*, 55; *Calanthe japonica*, 218; *Campanula White Star*, 115; *Canna nigra*, 190; *Carnations: Aurora*, 446; *Bob Acres*, 34; *Countess of Radnor*, 34; *Fair Maid*, 446; *Liberty*, 74; *Miss Willmott*, 55; *Pride of Westbury*, 34; *Roy Morris*, 115; *The Cardinal*, 316; *Viscountess Ebrington*, 74; *Victory*, 316; *Xmas Eve*, 381; *Cattleya* × *Germania magnifica*, 115; *C. × Iris "His Majesty"*, 254; *C. × Iris inversa*, 218; *C. × Iris magnifica*, 218; *C. × Kienastiana*, *Oakwood variety*, 218; *C. labiata Hercules*, 348; *C. × Lord Rothschild*, var. *Fairy Queen*, 316; *C. × Marie Henriette de Wavrin*, 316; *C. × Maroni Westfield variety*, 254; *C. Mossæ alba*, *Tracy's variety*, 53; *C. M. Reineckiana excelsa*, 53; *C. × Mr. Pitt var. magnifica*, 382; *C. × Petersii var. Mrs. Francis Wellesley*, 348; *C. Warscewiczii "Our Queen"*, 53; *Centaurea (strain)*, 115; *Chrysanthemums: Algeon Davis*, 334; *Beatrice May*, 335; *British Empire*, 398; *Dora Godfrey*, 335; *Dr. Enguehard*, 446; *E. J. Brookes*, 335; *F. G. Oliver*, 335; *Frank Greenfield*, 335; *Geo. Bowness*, 217; *Goacher's Pink*, 271; *Godfrey's Eclipse*, 334; *Harrie*, 217, 271; *J. G. Shrimpton*, 334; *John Peed*, 398; *Kate Palgrave*, 398; *La Vestale*, 233; *Mad. Marguerite de Mons*, 335; *Mad. R. Oberthur*, 398; *Mary Richardson*, 347; *Maud Matthews*, 398; *Maxim*, 271; *Miss Codrington*, 335; *Miss Irene Cragg*, 347, 398; *Miss Miriam Hankey*, 415; *Money-maker*, 271; *Mrs. A. T. Miller*, 316; *Mrs. D. Willis James*, 335; *Mrs. Frank Penn*, 316, 335; *Mrs. George Beech*, 415; *Mrs. R. Hooper Pearson*, 316, 335; *Mrs. Swinburne*, 415; *Mrs. Walter Jinks*, 334; *Mrs. W. Knot*, 335; *Norman Davis*, 316, 335; *Perle Chatillonnaise*, 271; *Phyllis*, 398; *Prickett's Octobre*, 334; *Reginald Vallis*, 334; *Reine des Roses*, 347; *Rimmel*, 316; *Souvenir de Lombraz*, 398; *Terra-cotta Soleil d'Octobre*, 316, 335; *Triomphe de Montburn*, 411; *Warrior*, 335; *Well's Masseur*, 217; *Codiaeum Edmontonense*, 55; *Cynochetes peruvianum*, 218; *Cymbidium Huttoni*, 34; *Cymbidium × Maggie Fowler*, 316; *Cypripedium × Actæus Chardwarensis*, 382; *C. A. F. H. Cann*, 411; *C. Daisy Barclay*, 34; *C. × G. C. Whitelegge*, 316; *C. Godefroyæ citrinum*, 34; *C. Godefroyæ leucocheilum*, "Goodson's variety," 190; *C. insigne Aberdeen*, 447; *C. Lawrenceanum Hyeatum*, "Bank House variety," 34; *C. × Lord Ossulston*, 317; *C. purpuratum*, "Tracy's variety," 254; *C. × Sanderæ*, 348; *C. tessellatum rubens*, 447; *C. × Thalia giganteum*, 382; *C. × Thalia Mrs. Francis Wellesley*, 446; *C. × The Baron*, 382; *C. × triumphans*, 348; *C. × villosa-Rothschildianum*, 218; *C. × Mary Lee Drewett's variety*, 447; *Cyrtanthus sanguineus glaucophyllus*, 253; *Dahlias: Alight*, 253; *Blush Gem*, 190; *Cynthia*, 253; *Daisy*, 217; *Daisy Easton*, 190; *Delicacy*, 253; *Edward Drury*, 220; *Faunus*, 253; *Favourite*, 253; *H. Shoemith*, 217, 220; *D. Iris*, 220; *Ivanhoe*, 253; *Kitty Barrett*, 220, 253; *Little Fred*, 253; *Mariner*, 220; *Matador*, 220; *Mrs. G. Stevenson*, 253; *Mrs. H. Shoemith*, 217; *Lady Fair*, 220; *Midget*, 220; *Mrs. F. Grinstead*, 220; *Mrs. F. H. Cook*, 217; *Mrs. MacMillan*, 217, 253; *Nelson*, 190, 220; *Peacemaker*, 253; *Peach*, 217; *Pink Perfection*, 220; *Primrose*, 217, 253; *Starlight*, 217; *Stromboli*, 190, 253; *T. A. Havemeyer*, 157; *The Pilot*, 217, 220; *Thora*, 217, 220; *Titus*, 253; *Tom-tit*, 217, 253; *Veronique*, 253; *Victorian*, 253; *White Lady*, 220; *William Marshall*, 157, 220; *Delphinium Snowflake*, 34; *Dendrobium ciliatum annamense*, 115; *D. Phalanopsis*, Miss *Louisa Deane*, 317; *D. Thundersleyense*, 348; *D. striatum*, 382; *Diervilla (Weigela) rosea var. Saturne*, 217; *Disa pulchra*, 382; *D. p.*, *Tring Park variety*, 382; *Epidendrum tricolor*, 317; *Erica cinerea "Skelwith Fold variety"*, 34; *Eschscholtzia Carmine King*, 34; *Gladolus: French Fleet*, 157; *Peace Envoy*, 157; *Lady Inchiquin*, 115; *Godetia Schamini fl. pl.*, 190; *Grohya galeata*, 115; *Heimerocallis Dr. Regel*, 115; *H. × luteola*, 34; *Ixora Mars*, 190; *Lælia-Cattleya × Berthe Fournier Westonbirt variety*, 157; *L.-C. × Chardwarensis*, 74; *L.-C. × Clive Appleton's variety*, 317; *L.-C. × Clive Westonbirt variety*, 446; *L.-C. × crispohardyana*, 251; *L.-C. × Epicasta*, *Gatton Park variety*, 411; *L.-C. Issy var. cuprea*, 190; *L.-C. × luminosa Rosita*, 254; *L.-C. × Massangeana Harry Goodson*, 34; *Lilium leucanthum*, 190; *L. sutchuenense*, 74; *Lobelia Kathleen Mallard*, 190; *Masdevallia cucullata*, 317; *Maxillaria picta Warley variety*, 74; *Miltonia Cogniauxia*, 190; *M. Regnelli Gatton Park variety*, 254; *M. vexillaria radiata magnifica*, 74; *M. vex. "The Dell variety"*, 190; *Montbretia Prometheus*, 115; *Mormodes badium*, 382; *Nephrolepis exaltata superba*, 446; *Notylia multiflora*, 74; *Nymphaea zanzibarensis rosea*, 190; *Odontoglossum × Halliocrispum Theodora*, 382; *O. × Phœbe*, 382; *O. × Smithii*, 411; *O. × Vuylstekeæ*, 348; *O. × Wilckeanum Schroderianum*, 446; *Oncidium corynephorum (Leonoldianum)*, 316; *O. crispum "Shrubbery variety"*, 34; *O. Harrisonianum*, 218; *Orange*, *Long-fruited Japanese*, 446; *Penstemons (strain)*, 190; *Phlox Doreen*, 74; *Promenœa (Zygopetalum) Rollissoni*, 115; *Rosa sericea "à grandes épinés"*, 253; *Roses: Betty*, 38; *Mrs. F. W. Flight*, 38; *Mrs. Miles Kennedy*, 38; *The Dandy*, 31; *Sagittaria macrophylla*, 217; *Sambucus canadensis*, 115; *Schomburgkia rhionodora*, 446; *Sedum spectabile atropurpureum*, 217; *Senecio Ligularia var. speciosa*, 74; *Seraphyta multiflora*, 317; *Spiræa Aitchisoni*, 115; *Stanhopea cœnata*, 218; *Stenanthium robustum*, 190; *Stenoglotis fimbriata*, 254; *Sweet Peas: Evelyn Byatt*, 36; *Helen Pierce*, 36; *Helen Lewis*, 36; *Mrs. Hardcastle-Sykes*, 36; *Tom Bolton*, 36; *Thalictrum Delavayi*, 55; *Vanda Sanderiana*, 411; *Violas: Councillor Watters*, 74; *Isolde*, 74; *Mr. McFarlane*, 74; *Stark's Royal Sovereign*, 74; *Chamædorea species with pinnate leaves*, 42; *Charities, gardening, concert in aid of*, 265; *Chelsea Hospital, the flower show at*, 50, 53, 72; *Chemistry, a lecture on garden*, 348; *Chillingham Castle, Orchids at*, 456; *China, plant collecting in*, 4, 24, 65, 94, 124, 146, 174, 202, 244, 266, 277, 323, 355, 388, 420, 459; *Chinese plants, dried, distribution of*, 330; *Choisya ternata*, 276; *Christmas Chrysanthemums*, 441; *Pears*, 443; *Roses*, 444; *Chrysanthemums: Dazzler*, 356; *Glitter*, 402; *Maximum*, 135; *Mrs. R. Hooper Pearson*, 392; *Mrs. W. Knox*, 356; *Chrysanthemum League, a newspaper*, 297; *literature, some recent*, 264; *show in Paris*, 151; *Chrysanthemums*, 356, 418; *American varieties of*, 402; *at Mr. Billinghurst's nursery, Selhurst*, 419; *at Mr. Larsen's nursery, Enfield*, 418; *at Leigh Park, Havant*, 356; *at Messrs. Prickett and Sons' nursery*, 418; *at Mr. J. Weir's nursery, Enfield*, 418; *at the Edinburgh show*, 419; *Christmas*, 443; *decorative varieties of*, 402; *early-flowering, a conference on*, 249, 271; *in Battersea Park*, 330; *in France*, 393; *in market nurseries*, 418; *in the open*, 330; *single-flowered*, 330, 419; *staging*, 357; *what is a spray of?* 394, 410, 428, 444; *Colchicum autumnale, poisonous properties of*, 204; *Cole, R. V. (British Trees)*, 150; *Colonisation for gardeners*, 410; *Colonial Fruit, exhibitions of*, 116, 393; *Colonial notes*, 5, 23, 44, 66, 105, 127, 170, 236, 267; *Colour in seeds*, 231; *Columnar Trees, Pyramidal and*, 457; *Conference on fruit growing, a*, 284, 296, 298, 312; *Conifer disease, a*, 11; *Conifers, blue*, 147, 204; *of Formosa*, 13; *the growth of*, 48; *variegated*, 104, 179; *Cook, Mr. T. H.*, 329; *Cook, Mr. W. A.*, 92; *Coombe House, Croydon*, 66; *Co-operative flower show at the Crystal Palace*, 130; *Coreopsis with outer tubular florets*, 91; *Cordylone Bruanti, a variegated form of*, 280; *Cornwall, North, the weather in*, 204, 280; *Cotoneaster bacillaris*, 276, 297; *Country-in-town movement, the*, 111; *Covent Garden Market*, 12, 151; *Cowan, Mr. Bernard*, 112; *Clematis Armandi*, 50; *C. flammula with scented and scentless flowers*, 282, 297; *C. indivisa in the Temperate-house, Kew*, 135; *Clerodendron trichotomum*, 166; *Clusia grandiflora*, 389; *Crassula coccinea in the open*, 127; *Cricket match, a gardeners'*, 13; *Crinodendron hookerianum*, 204, 346; *Crinum natans*, 293; *C. Rattrayii*, 10; *Crossland, C. (Fungus Flora of Yorkshire)*, 309; *Crystallisation of fruits and flowers*, 412; *Cucumber "spot" disease cured by sulphur vapour*, 96; *Currants, red, varieties of*, 72, 96, 134; *Cuthbert, Mr. George, accident to*, 92; *Cultural memoranda*, 262, 292; *Cyclamen, hardy*, 282; *at Gunnersbury House*, 262; *Cyclobothra flava*, 236; *in Mexico*, 374; *Cymbidium erythrostylum*, 427; *C. × Gammieanum and C. × Maggie Fowler*, 370, 388, 427; *C. Huttoni*, 63; *Cypripedium, an erratic*, 450; *glaucophyllum*, 95; *C. debile*, 442; *C. Fairrieana*, 168, 233, 244; *C. × Mrs. Fred Hardy*, 325; *C. The Baron*, 495; *C. × Enid*, 324; *Cyperus esculentus, edible tubers of*, 457
- D**
- DAHLIA trials at Wisley*, 237, 269; *Dahlia Zoe*, 248; *Daphne, the species of*, 152, 170; *Darlington Public Park, flower beds in*, 292; *Darwinism, the true*, 401; *Dasylyrion quadrangulatum flowering*, 308; *Dean, Richard, the late*, 70, 169, 185; *Dendrological Society, a German*, 111; *Devonshire, frost in*, 377; *Dickson, Geo., presentation to*, 455; *Dimorphotheca aurantiaca*, 127; *Diplodia opuntia, a disease of Cactus*, 125; *Disas at Kew*, 5; *Diseases, plant*, 312; *and need for legislation*, 433, 458; *Dracænas, ornamental*, 330; *Drip in plant-houses*, 314, 331; *Druery, Mr. C. T.*, 455; *Douglas Fir at Scone, the*, 154, 225; *Dover House, Roehampton*, 345; *Downie, John, memorial window to the late*, 356; *Downie, John, presentation to*, 361; *Dust nuisance, combating the*, 71; *Dyer, Sir William T. Thiselton-, retirement of*, 408
- E**
- ECHEUM Wildpretii*, 5; *Eckford, Mr. Henry, testimonial to*, 185, 201, 216; *Eclipse, sensitiveness of plants during the*, 280; *Edinburgh International Exhibition, 70, 200, 216, 220, 265; nurseries*, 195; *Royal Botanic Gardens*, 193; *Eichhornia speciosa, the Water Hyacinth*, 127; *Eleutherococcus Henryi*, 403; *E. leucorhizus*, 404; *Elm limbs falling from trees*, 134, 252, 268, 282, 331; *Elvaston Castle, the gardens at*, 177; *Endowment of horticulture*, 144; *Eremurus, hybrid*, 151; *Erica multiflora*, 276; *Errera, Leo, the late*, 184; *Escallonia pulverulenta*, 118; *Eschscholtzia, the species of*, 345; *Espalier-trained Apple trees*, 97; *and spring frosts*, 134; *Eucalyptus, hardy*, 31; *the Beauchamp*, 3; *Eucharis at Danesbury Park*, 396; *Eucryphia pinnatifolia*, 134; *Eupatorium micranthum*, 229; *Ecology, plant, a paper on*, 329; *Evesham, Irish gardeners' visit to*, 185; *market gardening at*, 701; *Ewart, Dr., appointment of*, 441; *Exacum macranthum, culture of*, 5; *E. zeylanicum at Tring Park*, 38; *Examinations in horticulture*, 11, 169, 361, 426; *Exhibiting fruit*, 444; *Sweet Peas*, 51, 72, 135, 154; *Experimental botany*, 170

- F**
- FAIRLAWN, Putney, Orchids at, 417
Faraday House Journal, 92
Farm and Garden produce by rail, 233
Fern, a rare British, 374, 396; hunting in Scotland, 188; pest, a new, 154
Fernery, the, 48, 188, 374
Ferns, a method of preserving, 414; wild sports of British, 116; Grenada, 185; the white-fly pest of, 48; varietal names of, 1
Figs, the culture of, in pots, 257
Fig-trees, assisting aged, 277; protecting, out-of-doors, 428, 457
Fitzroya patagonica, monœcious form of, 361
Flora of North-east Kwantung, 6
Florida, notes from, 235; gardening in, 298, 314
Florists' flowers, 6
Flower garden, the, 9, 28, 48, 69, 89, 109, 128, 148, 166, 183, 199, 215, 231, 246, 262, 279, 294, 311, 326, 342, 359, 375, 391, 407, 423, 439, 453
Flower-panicle without flowers, a, 329
Flower-shows, old-time provincial, 13; some important, 30
Flowers and insects, 31; arranging cut, 442; in season, 31, 50, 200, 265, 281, 344, 409; pin and thrum-eyed, 426; sweet-smelling, 130; summer, in the south-west of England, 369, 429, 444; what is a spray of? 394, 410, 428
Foreign correspondence, 7, 128, 241, 282, 338, 374, 459
Forester, duties of an English, 100
Forest management, 337
Forestry, 24, 63, 105, 126, 155, 181, 225, 307, 390, 426; at Cambridge, 312; at Oxford, 344; in Belgium, 181, 182, 307, 380, 426, 442; on small areas, 443
Formosa, the conifers of, 13
Forrest, Mr. J., presentation to, 12
French visitor's impression of London, a, 9
Frosts, early, in Devon, 297, 377; spring, and espalier-trained trees, 134
Fruit and Potato Federation, the National, 170
Fruit, an improved box for the transit of, 224; at Wrotham Park, 268; buds formed as the result of injury, 331, 395; committee, departmental, report of, 12, 90; crops in Kent, 11; crops, report on the condition of the, 81, 82, 106, 134, 136, 155, 164, 188, 204; cultivation in South Devon, 122; culture, area devoted to, 91; for profit, 314, 346; effects of manure on, 111; farm, Woburn experimental, 91; growing, a conference on, 217, 284, 296, 298, 312; in British Columbia, 151; the Departmental report on, 12, 90; imports of, 91; register, 64, 67, 203, 243, 260, 277, 422, 443
Fruit show, the great autumn, 280; *supp.* Oct. 14, 283; classes for market gardeners at, 444
Fruit trees, plant-food for, 131; budding, 144; planting, 441
Fruit trees in pots, 140; transplanting, 386
Fruit walls, flued, 3
Fruits under glass, 8, 28, 49, 68, 89, 108, 128, 149, 166, 182, 198, 214, 230, 247, 263, 278, 295, 310, 326, 343, 359, 375, 391, 406, 422, 438, 452; parthenocarpic, 441
Fumigating with hydrocyanic acid vapour, 416
Fungi, nutritive value of, 344
Fungous pests, 184
Funkias, 94
Fusicladium dendriticum attacking Apples and Pears, 240
- G**
- GALANTHUS octobrensis, 325
Gales, autumn, 175
Galingale, the edible, 457
Garden, an undercliff, 41; cities, 92, 111; walks, 32
Gardeners and Colonisation, 410
Gardeners' outing, a, 112
Gardening in the 17th century, 436
Geaster fonicatus, abnormal growth in, 326
Gerbera Elsaë flowering at Kew, 5
German Dendrological Society, a, 111
Gesnera Reginaë flowering at Kew, 132
Ghent railway station, changes at, 47; water-carnival at, 51
Ginkgo biloba in China, 5
Gladiolus Mackinderi, 203; *G. tristis* var. *concolor*, 187
Glasgow public parks and gardens in winter, 385, 419
Glebelands, Orchids at, 243
Gloeosporium Beyrodtii, a disease of Orchids, 259
Gloriosa Carsoni flowering at Kew, 28; *G. Rothschildiana citrina*, 67, 211
Gooseberry disease, a new, 305
Grafting and its results, 248; the Carnation upon Saponaria, 150
Grammangis Ellisii, 5
Grammatophyllum speciosum, 324
Grapes: Diamant traube, 175; Prince of Wales, 277, 282, 297
Grapes at Longleat, 228; seedling at Edinburgh, 243
Green, Mr. W. H., presentation to, 281
Grenada Ferns, 185
Gunnersbury House, the gardens at, 388
Gunton Park, 296
- H**
- HARDY flower border, the, 118, 282, 323, 339, 404
Hardy fruit garden, the, 9, 29, 49, 69, 89, 109, 129, 149, 167, 183, 199, 215, 231, 247, 263, 279, 295, 311, 327, 343, 359, 375, 391, 407, 423, 438, 453
Hartwell Park, Bucks, 233
Heathfield, Shirley, 96
Heating glass-houses by means of gas, 66
Hedges, *Pyrus japonica* used for, 28
Heliopsis scabra superba, 118
Helleborus niger, the culture of, 444
Hemerocallis, three good varieties of, 204
Hemileia americana, a disease of Orchids, 153
Hemp, the flowers of the, 408
Henslow, Rev. Prof., on plant ecology, 329; (*The Uses of British Plants*), 280
Herbaria, two ancient, 12
Herbarium, the Cape Government, 6
Herbarium specimens, Mr. E. H. Wilson's, distributed, 330
Herrington, Arthur (*The Chrysanthemum*), 394
Hewell Grange, Redditch, 429
Hibiscus hybrids, 425, 443
Hill Lodge, Enfield, 380
Hoffmann, Dr. Julius (*The Amateur Gardener's Rose Book*), 26
Hogg, Thos., presentation to, 455
Hole, the late Dean, memorial window to, 251
Hollies, a lecture on, 382
Hong Kong Botanical and Afforestation Department, 5
Hopetoun House, Edinburgh, 196
Hops, the cultivation of, 217
Horticulture, bequest to, 170; in
- Manitoba, 233; examinations in, 169, 361; teaching, to the masses, 440
Horticultural instruction in Kent, 426; in Staffordshire, 265
Horticultural meetings at Brussels, 110
Houletia Brocklehurstiana, 275
Hydrangea Hortensia for cultivation in tubs, 252
Hypericum patulum var. *Henryi*, 179
- I**
- IMPATIENS, *Holstii*, 14, 185
Im Thurn, Sir Everard, honour to, 31
Inscription, a curious, 52
Insects and flowers, 31
Inula Royleana, 265
Inventions, new, 224
Ionopsis testiculata, 259
Ipomœa rubro-cœrulea, 338
Irish gardeners visit Evesham, 185
Iris of Russo-Turkestan, 455
Ixolirion montanum, 276
Ixora coccinea var. *lutea*, 132; *I. stricta alba*, 372
- J**
- JACKSON, B. D. (*A Glossary of Botanic Terms*), 403
Japan, nature-study in, 31
Jedburgh, Pentstemons at, 174
Jet, Whitby, composition of, 25
Jimson weed, the, 282
Jordan, Mr. F., 327
Judges at flower shows, boycotting, 204, 234, 268, 297, 396, 444
Judging by half-points, 356
- K**
- KENT, horticultural instruction in, 426; the fruit crops in, 11
Kerria japonica, the double-flowered, 28
Kew Bridge market, extension of, 216
Kew Gardens, appointments from, 409; plants in flower at, 146; changes in the directorate at, 424, 425, 429, 440; literary output of, 456; notes from, 5, 28, 52, 95, 107, 132, 146, 203, 229, 308, 325, 370
Kitchener, Lord, as a gardener, 329
Kitchen garden, the, 9, 29, 49, 68, 89, 108, 128, 148, 167, 183, 199, 214, 231, 247, 263, 279, 295, 310, 327, 343, 358, 375, 391, 407, 423, 439, 453
Kwantung, flora of north-east, 6
- L**
- LACHENALIA liliiflora, 259
Lælio-Cattleya × *Hermione*, Westfield variety, 275
Land, the fertility of, 47
Lapageria alba and *L. a. rubra superba*, 166, 186
Larch-trees, giant, 70
Laurel-cherry, the *Schipka*, 326
Laurent Prize, the, 296
Laurent, M. (*Congo flora*), 377
- LAW NOTES**:—Insecticides, sale of poisonous, 107; Kemsley Rochford Assessment Committee (Rating appeal), 314; Mallard v. Clarke (sale of Lobelia), 410; Plants, the rights of property in, 377; Turnip-seed sporting, 92
- Leaves from my Chinese Note-Book (E. H. Wilson), 4, 24, 65, 94, 124, 146, 174, 202, 244, 266, 277, 323, 355, 388, 420, 459
Leaves, the work of deciduous and of evergreen, 32
Leeks, a bulbous race of, 394
Legacy for horticulture, a, 144
Legislation and the spread of plant diseases, 433, 458
Leigh Park, Chrysanthemums at, 356
Liège Horticultural School, 377
Lilium Alexandræ, the sporting of, 33
Lilium giganteum, 296; *L. myriophyllum*, 323; *L. sutchuenense*, 91
Lily culture in Bermuda, 44; season of 1905, 225
Lindenia rivalis flowering at Kew, 28
Lissochilus Krebsii, 2; *L. Milanjanus*, 370
Literature, some recent Chrysanthemum, 264
Livistona Marîæ, a coloured Palm, 251, 297, 374
Lockinge Park, Wantage, 312; vase of ornamental grasses at, 361
Locust tree, the, as a timber producing tree, 24, 105, 126, 155, 390, 442
Londesborough Park, Market Weighton, 21
London markets, supplies for the, 451
Longleat, grapes at, 228
Loubet, President, gold medal presented to, 329
Lynch, R. J., degree conferred on, 441
- M**
- MACLUDRANIA, a bi-generic hybrid, 146
Macowan, Dr., resignation of, 313
Macrosporium Cookei (Potato curl fungus), 230
Magnolia glauca, the Swamp Lily, 325
Mandevilla suavcolens, the fruiting of, 344, 395
Mango, the, in Burma, 409
Manure, for Apple-trees, 416; for Roses, 232
Manuscript, a valuable garden, 377
Maples, Sir Chas. Wager's, 233; Japanese, 457
Market gardening, 171, 252; at Evesham, 101
Markets, London, and supplies, 451
Marvel of Peru as a bedding plant, 235
Masse, George (*Fungus Flora of Yorkshire*), 309
McHardy, Mr. Peter, presentation to, 296
Mealy bug imported with Bananas, 297
Mecanopsis integrifolia, seeding and germination of, 32
Megacalinum platyrhachis, 28
Melons, the culture of, 163
Mentone garden, scents in a, 96
Merton Hall, Norfolk, 294
Midland Reafforestation Association, the, 345
Milfi, Mr. T. E., accident to, 345
Mirabilis Jalapa, 235
Mistletoe in New Zealand, 105
Monifeth nurseries, visit to, 92
Monstera deliciosa, 249
Motors and market gardening, 249
Mount Edgcombe, rare shrubs and trees at, 121
Musa Perrieri, 5
Mushrooms, the culture of, 120
Mussel-scale, the, 400
Mutants and hybrids, 110
Mytilaspis pomorum (Apple-scale), 400

N

NARCISSUS inflorescence with four flowers, 12; *N. poeticus ornatus*, the forcing of, 384
 Natal, great storm in, 23
 Nature-study in Japan, 31
 Nectarine, the Victoria, 51
 Nelson Centenary flower beds, 292
 Nelson's Monument decorated, 313
 Nepenthes, new hybrid, 379; *N. Sir W. T. Thistelton-Dyer*, 325
 Nerines at Blenheim Palace gardens, 357
 Newstead, Robert, presentation to, 297
 New Zealand International Exhibition, 131
 New Zealand, *Mistletoe* in, 105; the flora of the southern islands of, 6
Nicotiana glauca, 112, 213, 262, 282, 313, 331, 338, 345
Nicotianas, hybrid, 151
 Nile, the flooding of the river, 455
 Nithbank House, Alpines at, 125
 Norwich public gardens, 93
 Nursery imports of America, the, 415

NURSERY NOTES:—Billingham, H., Enfield, 418; Carter & Co., Mortlake, 22; Cunningham, Fraser & Co., Edinburgh, 195; Dobbie & Co., Marks Tey, 95; Downie, John, Murrayfield, 196; King's Acre Nurseries, Hereford, 341; Larsen, M., Enfield, 418; Methven, T., & Sons, Edinburgh, 196; Pearsons & Sons, Lowdham, 67; Perry, Amos, Winchmore Hill, 14; Prickett & Sons, Enfield, 418; Reuthe, G., Keston, 78; Rivers, T., & Sons, Sawbridgeworth, 404; Sander & Sons, St. Albans, 62; Stormonth, J., & Sons, Kirkbride, 261; Sutton & Sons, Reading, 81; Truffaut, M., Versailles, 7; Vilmorin, Andrieux & Co., Paris, 7; Weir, J., Enfield, 418; Williams, B. S., & Sons, 163
 Nymphæa-house at Kew, the, 52; *N. zanzibarensis* var. *rosea*, 377
 Nymphæas, 377, 396

O

OAK and Yew forming one trunk, 179
 Oak, the King's, at Tilford, 249
 Oak trees at Stuttgart, 154
OBITUARY:—Armiston, George, 332; Bidgood, John, 287; Billingham, H., 400; Boston, Richard, 175; Burbidge, F. W., 460; Burbidge, Mrs., 15; Croucher, George, 38; Dean, Richard, 168, 185; Dewar, Mrs., 118; Dobbie, James, 297; D'Ombraïn, Rev. H. H., 319; Duval, Henri, 38; Eckford, Henry, 431; Errera, Professor, 118, 184; Fearnley-Sander, Mrs., 415; Ford, George F., 384; Gillekens, M., 298; Gollam, William, 298; Hislop, Mrs., 448; Ilchester, Lord, 408; Jaques, Mrs., 415; Keith, Rev. W., 158; Laird, David, 217; Leach, William Charles, 298; Marslen, H., 400; Meulenaere, M. de, 431; Milne, William Lindsay, 15; Mitchell, James, 335; Moon, Henry George, 287; Mules, Dr. P. H., 207; Orchard, H. H., 38; Perkins, Arthur, 15; Pettigrew, Mrs., 448; Reydellet, M. de, 367; Scalarandis, Alessandro, 367; Steele, Alexander, 201; Tooley, A., 133; Tremayne, Col. Arthur, 400; Phillips, William, 331; Pierre, M., 384
Odontoglossum crispum, a prolific flower of, 67; treatment

of, 80; *O. grande*, Lynwood variety, 325; *O. x Lambearianum*, 324; *O. L. exquisitum*, 434; *O. Smithii*, 427; *O. x venustum*, 2; *O. x Vuylstekeae*
Odontonia x Laireseae, 2
Oncidium Limminghei, 123
 Onions, Albanian, 233; Ailsa Craig and Excelsior, 329; preparing grassland for, 140
Ootheca Wolleyana, 377
Opuntia, a spineless, 425
 Orchid disease, a new, 153, 259
 Orchid houses, the, 8, 28, 48, 68, 88, 109, 128, 148, 167, 182, 198, 215, 230, 246, 262, 278, 295, 310, 327, 342, 358, 374, 390, 406, 422, 439
 Orchid notes and gleanings, 2, 22, 45, 62, 104, 123, 243, 259, 275, 324, 388, 417, 434, 456
 Orchid seedlings, roots of, associated with fungi, 22, 104
 Orchids at Chillingham Castle, 457; at Fairlawn, Putney, 417; at Glebelands, 243; at Messrs. Sanders' nursery, 62; at Mr. H. A. Tracy's nursery, 2; resting period of, 393
 Ornaments, garden sale of, 12
 Orphan Fund, Royal Gardeners', 362, 409
 Osterhout, W. J. [experiments with plants], 26
 Ote Hall, Sussex, 249, 265
 Oversea supplies, 51, 151, 233, 231
 Oxenford Castle, Midlothian, 195
 Oxford Botanic Gardens, trees at, 321
 Oxford, forestry at, 344
 Oxford University, 51

P

PALM, the purple-leaved, 251, 297, 374
 Para rubber, a treatise on, 409
 Paris, 151, 169
 Pasture land, the vegetation of, 180, 201
 Paths, grass garden, 32
 Paul, Mr. George Laing, marriage of, 248
 Paul's, the late William, library, sale of, 405
 Peach as a stock for the Plum, the, 112, 134, 236
 Peach trees attacked by the shot-hole fungus, 282
 Peaches and Nectarines, some late varieties of, 260
 Peaches: Duke of York, 278; Golden Eagle, 243; Late Devonian, 278; Walburton Admirable, 282
 Pear, a seedless and coreless, 218
 Pear midge, the, 113
 Pears, a selection of varieties of, 380; Christmas, 443; large, for Christmas, 368; variation in, 410
 Pears: Catherine, 240, 252; Countess of Paris, 422; Durondeau in France, 112; Roosevelt, 243
 Pear, the best variety of, in France, 112
 Pear tree with three hundred and twenty-seven fruits, 372
 Pea: Sutton's selected Gladstone, 283; culinary, in November, 395, 410; how to preserve, 100
Pelargonium Rosamund Wright, 395
 Penang, a flower show at, 425
 Pentstemons at Jedburgh, 174
 Pergola at Swanmore, 27
 Pests, fungous, 184
 Peterson, Maude Gridley (*How to Know Wild Fruits*), 26
 Petworth Park, Sussex, 137
Phalænopsis Schilleriana, a large leaf of, 409
 Phenological observations for 1904, 111
 Phlox, autumn or late-flowering, 323
 Phloxes at Cardiff Flower Show, 154

Physalis, a hybrid, 315
Physalis peruviana as a dessert fruit, 214
Picea morinda, a bush-like form of, 395
 Picture, a, of old-time gardening, 436
 Pineapples, the culture of, 240
 Pine Sawfly, the, in North Wales, 72
 Pine trees in China, pollard, 6
Pinus radiata, a large specimen of, 435; *P. yunnanensis*, 226, 248
 Plane trees in towns, 276
 Plant diseases, 312; and the need for legislation, 433, 458
 Plant ecology, 329
 Plant-food, the formation of, in soils, 241, 321
 Plant notes, 5, 38, 67, 127, 166, 338
 Plant pests and their parasites, 44

PLANT PORTRAITS:—*Acacia podalyriifolia*, 151; *Ampelopsis serjanæfolia*, 441; *Andromeda speciosa*, 151; *Argyrolobium Andreweianum*, 441; *Asparagus madagascariensis*, 344; *Brachyglottis repanda*, 265; *Cacalia tuberosa*, 50; *Cassia corymbosa*, 441; *Cirrhopetalum breviscapum*, 200; *Clematis Buchaniana*, 283; *Colchicum hydrophilum*, 205; *C. Steveni*, 50; *Coleus shirensis*, 50; *Cotyledon insigne*, 200; *Cytisus Hillebrandtii*, 441; *Daffodil*, Lord Kitchener, 151; *Debregeasia velutina*, 63; *Dianthus Warley*, 151; *Erica australis*, 344; *Eucalyptus occidentalis*, 441; *Euphorbia fulgens*, 283; *Felicia echinata*, 409; *Flueckigeria roseoænea*, 441; *Forsythia europæa*, 265; *Gerbera Jamesoni*, 441; *Hæmanthus Fascinator*, 47; *Helianthus salicifolius*, 265; *Heliphila pilosa* var. *integrifolia*, 441; *Hydrangea vestita* var. *pubescens*, 265; *Impatiens Holstii*, 151; *Kalanchoe kewensis*, 441; *Ladenbergia*, Lemaire, 441; *Lambertia formosa*, 441; *Lissochilus Mahoni*, 409; *L. Ugandæ*, 344; *Listrostachys Monteiræ*, 50; *Meconopsis integrifolia*, 151; *Mormodes buccinator*, 265; *Odontoglossum ramulosum*, 151; *Pernettya mucronata*, 50; *Perowskya atriplicifolia*, 105; *Petasites japonicus*, 200; *Plagiopermum sinense*, 441; *Plectranthus crassus*, 151; *Primula tangutica*, 44; *P. Veitchii*, 409; *Prunus pendula*, 200; *Pyrus Nalus Niedzwetzkyana*, 105; *Renanthera matutina*, 441; *Rhododendron Nuttallii*, 47; *Rose Lilla Rautenstrauch*, 47; *R. Mme. Jules Grolez*, 265; *R. Soleil d'Or*, 151; *Salix Cottetii*, 265; *Saxifraga apiculata*, 409; *Schizanthus Wisetonensis*, 441; *Sciadopitys verticillata*, 409; *Scilla messeniaca*, 200; *Skimmia japonica*, 265; *Solanum Commersoni*, 441; *Tetratheca thymifolia*, 151; *Tilandsia dianthoides*, 441; *Townsendia Wilcoxiana*, 441; *Vriesea x Leopoldiana*, 47; *Zygonisia Rolfeana*, 151
 Plant used as a loyal emblem, 71
 Plants, adaptation of to environment, 401; forcing of, by acetylene light, 31; for tubs and vases, 380; grown without carbon-dioxide, 186
 Planting fruit-trees, 441
PLANTS, NEW OR NOTEWORTHY:—*Aloe Chabaudii*, 102; *A. decora*, 386; *A. Orpenæ*, 385; *Astilbe grandis*, 426; *Buddleia nivea*, 275; *Crassula columaris*, 162; *Cyananthus*, new species of, 434; *Cycas Micholitzii*, 142; *Cymbidi-*

um erythrostylum, 142; *Diervilla rivularis*, 339; *Eulophia paniculata*, 198; *E. undulata*, 198; *Gentiana Lawrencei*, 307; *Iris Junonia*, 3; *Ismeme festalis* x, 322; *Oncidium corynephorum*, 340; *Pinus Pinceana*, 122; *Primula pulverulenta*, 258; *Primula tangutica*, 42; *Schizandra Henryi*, 162; *Senecio Veitchianus*, 212; *S. Wilsonianus*, 212; *Spiræa pachystachys*, 322; *Stanhopea Devoniensis*, 92; *S. Wolteriana*, 102; *Tricuspidaria dependens*, 306; *T. lanceolata*, 306; *Wistaria involuta*, 3; *Zygopetalum Binoti*, 258; *Eria globifera*, 449
 Plants, the rights of property in, 377
 Plants under glass, 8, 29, 49, 68, 88, 108, 128, 149, 166, 182, 198, 214, 231, 246, 263, 278, 294, 311, 327, 342, 359, 374, 390, 406, 422, 439
 Plum, the, grafted on Peach, 236
 Poisoning by *Amanita phalloides*, 175
 Poisonous insecticides, sale of, 71, 107
 Polyanthus, gold-laced varieties of, 6
 Polygonum Baldschuanicum at Kirkconnel, 13
 Polystachya mystacoides, 324
 Port Elizabeth, some plants at, 267
 Portulacas as bedding plants, 234
 Potatoes, crop, the, 249; disease, the, 72; Duchess of Cornwall, 346; flowers, orange-coloured, 214; leaf-curl disease, 230; Peckoveri, 395; show, the National Society's, 392; some historical notes on the, 376; trials, 150
 Potatoes, a census of varieties of, 370, 377, 387, 392, 410; lecture on, 318; at Dunbar, 378; experiments with, 235; in Mid-Lothian, 268; in 1904, 111; old varieties of, 417; some historical notes on the, 376; warty disease of, 308, 346
 Primulaceæ, a monograph of the genus, 393
 Primulas, pin and thruni-eyed, 426
 Pruning, experiments on, 252; root, 429; *Prunus Bureiana*, 265; *P. Lauro-Cerasus* var. *Schipkaensis*, 326
 Puff-ball, an abnormal, 326
 Purdie, Mr. D. G., presentation to, 31
Pyrus japonica as a hedge plant, 28

Q

QUEENSLAND Botanic Gardens, 150

R

RAIN-WATER in Yorkshire, the quality of, 396, 409, 457
 Reading University College, horticulture at, 280
 Reafforesting Association, the Midland, 345
 Red-currants, 96, 134, 154
 Redditch, allotment gardening at, 345
 Refreshments at flower shows, 52
 Reserve materials of leaves, 32
 Rhododendron in flower in October, 268
 Rhubarb, forcing, with the use of ether, 393
Richardia Elliotiana with double spathe, 13
 Ringing plants, effect of, 12
 Roath Park, Cardiff, 31
 Rockery, plants for a, 352
 Rock garden, the, 276, 325
 Romneya Coulteri an herbaceous plant? 135

Root-pruning, 429
Rosa lævigata, 260; *R. sericea* var. *pteracantha*, 260
 Rosary, the, 67, 128, 145, 175, 236, 260, 338, 361; at P'lay, France, 70
 Rose Augusta Victoria, 146; *R. Frau Karl Druschki*, nomenclature of, 145; *R. Mrs. W. J. Grant*, 146; shows 31, 58, 249; species, a classification of, 128
 Rose beds, the formation of, 361; garden at Luscombe, the, 107
 Rosehill, Falmouth, 103
 Roses at Lowdham, 67; experiments with, at P'lay, France, 70; hybrid-tea, the origin of, 175; during 1905, 67; manures for, 232; notable, of the last decade, 338; *Wichuraiana* hybrid, 236
 Rothamsted, experiments on grass land at, 180, 201
 Rowles, W. F. (*How to Make and Manage a Garden*), 26
 Royal Botanic Gardens, Regent's Park, 340
 Royal Botanic Society, proposed alteration of the bye-laws, 361; gift of plants to, 296
 Royal Caledonian Horticultural Society, history of the, 209
Rubus innominatus, 290
 Rubber producing plants, new, 440

S

SAGITTARIAS, 214
 Salad, winter, 236
 Salads and salad-making, 104
Salicornia herbacea as a vegetable food, 231
Salvia dichroa, 92
 Sandringham, the flower gardens at, 440
Saxifraga Guthrieana variegata, 229
 Scents in a Mentone garden, 96
 Schipka Laurel Cherry, the, 326
Schizanthus, the cultivation of, 155
 Schneider, George (*Choice Ferns for Amateurs*), 7
 Science Guild, the British, 313, 328

SCIENTIFIC COMMITTEE:—*Abies amabilis*, diseased, 237; *A. Mariesii*, cone of, 363; *Antirrhinum*, phyllody in, 363; Ants imported with fruit, 298, 332; Apple-trees, insects on, 138; Apple spur, curious growth of an, 362; Ash, scale on, 57; *Asparagus plumosus fasciatus*, 298; Bananas and mealy-bug, 396; Bean runner, poisonous roots of, 396, 430; Beech-trees attacked by scale and fungi, 430; Biota attacked by insects, 56, 97; Birch, burrs on, 396; *Botrytis cinerea*, 237; *Brachystelma Barberæ*, 269; Cherry sawfly, the, 269; *Chrysanthemum indicum* awarded a botanical certificate, 430; *Clavaria fragilis* attacking *Cycas*, 459
 Cockscomb, a variegated, 332; *Cucurbita ficifolia*, fruits of, 332, 362; Currant-bud mite, 17, 459; *Cyperus rotundus*, a tropical pest, 450; *Cyrtanthus* and other bulbous plants, 298; Dahlia, a green-coloured, 298, 332; Daisy, a variegated, 269; Dye-producing plants, British, 57; Electricity, experiments with, in horticulture, 430; *Eriocampa limacina* (Cherry-sawfly), 269; Eucalypti, hardy, 396; Field chafers, injury by, 17; Fungus on roots of Peach trees, 138; Furze, mites on, 138; *Gloeosporium sanguinolentum*, a disease of Gourds, 298; Gourd diseased, 298; Grapes diseased, 430; Harvest bugs, 138; Hazel leaves, variegated, 430; *Hemileia americana*, a fungus disease of Orchids, 332; *Hymenocallis senegambica*, 269; *Juncus bufonius*, a prolific specimen of, 138; Larch cone with elongated axis,

460; Lenticels, remarkable, number of, 269; Lenticels, large, in Potato Evergood, 362; *Lilium giganteum*, rotting, 138; *Magnolia* shoot with fungus, 460; *Macrosporium Solani*, a disease of Potatoes, 97; *Matricaria discoidea*, 138; Mealy bug in Bananas, 396; *Megaclonium*, two interesting species of, 138; Melons attacked by eel-worms, 17; *Merulius lacrymans* in floor-boards, 97; Moths, eggs of, on flowers, 138; Mulberry leaves, diseased, 97, 138; Oranges, West Indian, 430, 459; Orchid disease, *Hemileia americana*, 332; Orchids from South Africa, 237; some interesting, 56; *Ornithogalum Ecklonis* with striped leaves, 138; Pear midge, the, 56; Pears attacked with *Fusicladium pirinum*, 138; Pears, variation in, 396; *Pelargoniums*, diseased, 459; *Phyllocactus*, origin of garden forms of, 17; Poplar, white, with two forms of leaves, 97; Peach, a double fruit of, 269; *Pelargonium* with streaked petals, 332; *Pellionia Daveana*, 269; *Phylloxera* on vines, 362; *Pinus Coulteri*, a splendid specimen of, 298; Poisoning by Bean roots, 396, 430; Polarity of growth in *Seakale*, 363; *Polyporus fomentarius*, large specimens of, 363; Potato flowers, yellow, 138; leaf attacked by *Macrosporium Solani*, 97; tubers covered with a fungus, 332, 362; diseased, 237, 298; Primulas, crossing, 362; *P. pycnoloba*, 17; *Pteris aquilina*, sports of, 138; *Pyrus Niedwetzkyana*, 237, 269; Quince leaves, diseased, 332; *Rhododendron* leaves, diseased, 269; Rose mildew, *Sphærotheca pannosa*, 396; *Seakale*, polarity of growth in, 363; Scarlet-Runner roots poisonous, 396; *Scilla hæmorrhoidalis*, 269; Seeds, colour in, 430; longevity of, 138; Silver-leaf disease affecting Apples, 332; *Solanum tuberosum* and *S. Comersoni*, 396; Teasels, fasciated and contorted, 57, 97; Timber-trees diseased, 269; Tomatos in winter, 460; Tree trunks, excrescences on, 57; *Tritonia*, new species of, 269; *Tropæolum pentaphyllum*, 138; Stocks dying, 269; Strawberries attacked by *Millipedes*, 57; *Streptocarpus lagoensis*, 362; *Umbellaria californica* causing irritation, 430; Vine leaves, diseased, 17, 332; Vine roots, fungus on, 430; Violet, cluster cup disease, 57; Violets, cleistogamy in, 237; Weed, a troublesome tropical, 430; Willow leaves, galls on, 269
 Scone, the Douglas Fir at, 154, 225
Scutellaria hirta, 338
 Seeds, buried, the vitality of, 329; colour in, 331; harvest, the, 141; trade, prospects of the, 22; the germination of, 71, 174, 186, 213, 234; from shy-bearing plants, how to increase the quantity of, 377
Senecio Veitchianus (*S. Ligularia speciosa*), 455
 Shot-hole fungus, the, 282
 Shrubberies, 457
 Shrubs and trees, rare, at Mount Edgcombe, 121; half-hardy, 187
 Silver-leaf disease, experiments with, 111
 Simpson (*The Estate Nursery*), 151
Sobralia violacea alba, 123
SOCIETIES:—Aberdeen Chrys., 413; Aberdeen Roy. Hort., 206, 447; Barnsley Chrys., 413; Bath Gardeners' Self-Help and Debating, 335, 415; Bath Gardeners', 19, 112, 239, 303, 448; Battersea

Amateur Chrys., 414; Beckenham Hort., 335, 367, 448; Birkenhead and Dist. Gardeners', 448; Birmingham and Midland Counties' Chrys., 351, 365; Birmingham Gardeners', 270; Bishops Stortford Hort., 176; Bolton Hort. and Chrys., 413; Bournemouth and District Gardeners', 319; Bradford Chrys., 382; Brighton Hort., 191; Bristol and Dist. Gardeners', 415; Bristol Chrys., 399; British Gardeners' Assoc., 98, 206, 269, 286, 329, 344, 363, 392, 414; Brixton, Streatham, and Clapham Hort., 59, 239, 319, 335; Bruges Hort. Exhib., 117; Cambridge Hort., 77; Cardiff and County Hort., 115; Cardiff and District Chrys., 366; Cardiff Gardeners', 111; p. iv. Supp., Aug. 26, 287; Chelmsford and District Gardeners', 213, 319, 367, 448; Cheltenham Chrys., 349; Chesterfield Chrys., 366; Chester Paxton, 413; Chudleigh Chrys., 365; Coventry Chrys., 413; Crawley and Dist. Gardeners', 239; Croydon and Dist. Hort., 19, 57; p. iv. Supp., Aug. 26, 287, 319; Crystal Palace Rose Show, 58; Dartmouth Chrys., 364; Devises Chrys., 382; Devon and Exeter Hort., 58, 78, 367; Dublin Seed and Nursery Employees' Assoc., 447; Dumfriesshire and Gallo-way Hort., 366; Durham, Northumberland, and Newcastle Bot. and Hort., 98; Edinburgh Market Gardeners, 448; Edinburgh Seed Trades Assistants, 409; Egham and Dist. Gardeners', 158, 239, 448; Gardeners' Debating, 19, 59, 78, 158; p. iv. Supp., Aug. 26, 239, 287, 303, 319, 335, 367, 415, 448; German Dendrological, 111; Glasgow Seed and Nursery Assistants, 287; Gloucestershire Chrys., 367; Guildford and Dist. Chrys., 366; Hanley Chrys., 363; Hanley Floral Fete, 58; Headley Gardeners', 303; Hereford Fruit and Chrys., 363; Horticultural Club, 11, 17, 91, 265, 303, 329, 431; Horticultural Trades' Association, 206; Ipswich Gardeners', 78; Leeds Paxton Chrys., 414; Linnean, 17, 312, 345, 364, 393, 425, 447; Liverpool Horticultural, 413; London Dahlia Union, 201, 239; Loughborough and Dist. Gardeners', 319; Manchester and North of England Orchid, 36, 287, 319, 363, 383, 412, 447; Manchester Bot. and Hort., 384; Midland Carnation and Picotee, 118, 441; National Chrysanthemum, 185, 332, 414, 430; [Conference], 270, 319; [annual dinner], 398; Nat. Carnation and Picotee, 74, 425; Nat. Dahlia, 184, 207, 219, 425, 460; Nat. Fruit Growers' Fed., 364, 415; Nat. Potato, 91, 150, 296, 329; [annual exhibition], 397; [annual meeting], 430; Nat. Rose, 11, 37, 77, 254, 329, 393; [annual meeting], 424; Nat. Sweet, Pea, 34, 51; [annual meeting], 431; Newbury Hort., 158; Newport Chrys., 413; North Lonsdale Rose, 97; Paris Chrys. Congress, 350, 364; Putney and Wandsworth Chrys., 415; Ramsey Hort., 153; Reading and Dist. Gardeners', 158, 206, 319; Redhill, Reigate and Dist. Hort., 77, 319, 448; Richmond Hort., 18; Royal Agricultural, 18; Royal Botanic, 112, 117, 131, 319, 361, 383, 384, 425; Royal Caledonian Hort., 200, 209, 238; Royal Horticultural, 11, 15, 30, 34, 50, 73, 97, 113, 130, 156, 189, 201, 217, 232, 252, 269, 298, 315, 347, 361, 362, 381, 426,

430, 459; [Fruit show], Supp., Oct. 14; [Chelsea Show], 53; Fruit Conference, 284; Vegetable Show, 317; Royal Hort. of Ireland, 158; Royal Meteorological, 111; Ruthin Hort., 220; Scottish Hort., 110, 383, 400; Sheffield Chrys., 367; Shropshire Hort. (Shrewsbury Show), 191; Supp. Aug. 26; Société Royale Linneenne de Bruxelles, 191, 269, 414; Southampton Royal Hort., 36, 78, 349; Southend-on-Sea Chrys., 365; Surveyors' Institution, 441; Torquay Chrys., 350; United Hort. Ben. and Prov., 77, 158, 232, 265; Annual dinner, 287, 367; West of England Chrys., 365; Weybridge and Dist. Hort., 350; Wimbledon and Dist. Hort., 97; Winchester Chrys., 383; Wolverhampton Floral Fête, 76; York Chrys., 399; Society, a Carnation, 457
 Soil, effect of plant growth and manures on the, 455
 Soil, sterilising, 361
 Soils, the formation of plant-food in, 241, 321
 Sorauer, Prof. Dr. Paul (*Handbuch der Pflanzenkrankheiten*), 46
 South Africa, the weather in, 345
 South-west of England, summer flowers in the, 369, 429
Sparaxis in the open, 203
Spartina cynosuroides var. *aureo-marginata*, 372
Sphærotheca mors-uvæ (fungus disease of Gooseberries), 305, 320
Spiraea digitata var. *nana*, 325; *S. Thunbergii*, 2; some herbaceous species of, 325
 Spraying of crops, 13, 33
 Spray of flowers, what is a? 304, 410, 428, 444
 Staffordshire, technical horticulture in, 265
Stangeria paradoxa, 346
 Sterbeck, François van, 237
 Sterilising soil, 361
 Stock, Beauty of Nice, 134
 Stock for Plums, the Peach as a, 112, 134, 236
 Strawberries, autumn fruiting varieties of, 232; *Gloire du Marie* and *Avant-Garde*, 52; two new, 67
 Strawberry Bedford Champion, 11, 67; Laxton's Latest, 1904, 67
 Strawson, G. F. (*Insects and Fungi injurious to Plants*), 226
 Stuttgart, Oak-trees at, 154
 Sunburn affecting hardy trees and shrubs, 2
 Swanley Horticultural College, 201
 Swanmore, a pergola at, 27
 Sweet Pea, Henry Eckford, 444
 Sweet Peas, a note on, 32; exhibiting, 72, 112, 135, 154
Synandropadix × *vermitoxicus* flowering at Kew, 95
Syringa villosa var. *pubescens*, 123

T

TAGETES patula and *T. erecta*, 204
Tamarix Pallasii var. *rosea*, 229
 Tents, flower-show, need for ventilating, 13
Thalictrum Delavayi, 450
 The Ballards, Shirley, 96
 Theobald, F. V. (*Insect Life*), 26
 Thomas, Rose Haig (*Stone Gardens*), 310
 Thonger, Charles (*The Book of Garden Design*), 275
 Thunderstorm, damage by, 51
 Timber trees, neglected, 45
 Tobacco, Turkish, 330
 Tobago, horticulture in, 23
 Tomatos, bacterial disease of, 423; the culture of field, 171
 Townsend, Mr. A., elected as mayor, 361
 Tracy's, Mr. H. A., Orchids, 2
 Transplanting fruit-trees, 386, 428
 Transplanting trees, 353, 373, 396, 428

- Trees and shrubs, 2, 28, 118, 179, 229, 276, 325, 437, 458
 Trees for towns, 190; in Kingsway, London, 313; neglected timber, 45; the timber value of exotic, 64, 134
 Trees, transplanting, 353, 373, 396, 428
 Trentham Hall a gift to Staffordshire, 425
 Trent Park, New Barnet, 132
 Trevince, a large specimen of *Pinus radiata* at, 435
 Trillium seeds, the germination of, 96, 112, 242
 Trivandrum Museum, 182
 Tubs and vases in gardens, 225, 252, 380
 Tulips, florists', classification of, 304
 Turkish tobacco, 330
 Turnip seed sporting, law note concerning, 92
 Tynninghame, East Lothian, 211
- U**
- UNDERLEY HALL, Kirkby Lonsdale, 203
 Unemployed, Lord Carrington's scheme for the relief of the, 425, 443
 Unwin, A. H. (*Future Forest Trees*), 403
- V**
- VANDA cœrulea, 388; *V. Sanderiana*, 438; *V. Sanderiana* "Chillingham variety," 455
 Varieties of plants, multiplication of, 361
 Vegetable Show at Westminster, a, 317, 344
 Vegetables, 268
 Vegetation of pasture land, the, 180
 Vetch, James H. (*Far Eastern Maples*), 161
 Veronica Hulkeana, 242
 Vienna Botanical Congress, 10
 Victoria Park, Stafford, 409
 Vines, renovating, 292; the cleaning of, 282
 Violets in America, 377; the culture of, 236
 Vine moth, the, 40
 Vitis (*Ampelopsis*) *Henryana*, 309; *V. Henryana*, 265
- W**
- Walls, fued, for fruit trees, 3
 Warty disease of potatoes, 308
 Wasps attacking fruits, 175, 204, 214, 281
 Water-Hyacinth in Queensland, the, 127
 Water-lilies, a monograph of, 345
 Water, waste of, 33
 Water-yielding plant, a, 170
 Weather, severe, in October, 314
 Weather, the, in Cornwall, 204
 Weathers, John (*Beautiful Bulbous Plants*), 294
 Webb, P. B., memorial to the late, 13
 Weed-killer administered as a poison, 170
 Weeds, spraying, 13
 Weguelin, Mr. H. W. (*Carnations, Picotees, and Pinks*), 70
 West Dean Park, 273
 Wilke, Mr. J. F., 71
 Williamson, Rev. David R., 361
 Winchfield Lodge, Winchfield, 25
 Window, memorial, to the late John Downie, 356
 Wisley Gardens, 74, 248
- X**
- XANTHORRHEA QUADRANGULATA flowering, 308
- Y**
- YEAR, events of the, 454
 Yew and Oak forming one trunk, 179
 Yokohama, a note from, 128
 Yorkshire, rain-water in, 396, 409, 457
 Yucca filamentosa, 325
- Z**
- ZEPHYRANTHES, on certain forms of, 235

SUPPLEMENTARY ILLUSTRATIONS.

- ASTILBE GRANDIS (December 16)
 BULBOPHYLLUM LOBBII COLOSSEUM (September 2)
 CAMPANULA MICHAUXIOIDES (August 12)
 CAMPANULA PUNCTATA (August 26)
 CLEMATIS ARMANDI (July 8)
 CHRYSANTHEMUM MRS. R. HOOPER PEARSON (December 2)
 CRINUM RATTRAYI (July 1)
 EDINBURGH TOWN GARDENS, A VIEW IN (September 16)
 EDINBURGH ROYAL BOTANIC GARDENS, VIEWS IN THE (September 9)
 INULA ROYLEANA (October 7)
 LILIUM GIGANTEUM GROWING IN THE OPEN AT THE CLARKSON NURSERIES, WISBECH (October 21)
 LILIUM MYRIOPHYLLUM (November 4)
 LILIUM SUTCHUENENSE (July 29)
 LOCKINGE PARK, BERKS, VIEW IN (October 28)
 MAP SHOWING THE ROUTE FOLLOWED BY MR. E. H. WILSON IN CHINA (August 26)
 NYMPHŒA ZANZIBARENSIS VAR. ROSEA (November 25)
 OTE HALL, SUSSEX, VIEWS IN THE GARDENS AT (September 30)
 POND IN THE GARDEN AT SOUTHWOOD, BICKLEY (August 5)
 PORTRAITS OF MEMBERS OF THE COUNCIL OF THE ROYAL CALEDONIAN HORTICULTURAL SOCIETY (September 16)
 PRIMULA OVALIFOLIA (July 22)
 SENECIO VEITCHIANUS (LIGULARIA SPECIOSA) (December 30)
 VASE, CONTAINING AUTUMN BERRIES, DRIED FOLIAGE AND GRASSES (November 18)
 VICTORIA REGIA, GROWING IN THE STATE BOTANIC GARDENS, BRUSSELS (July 15)
 VIEW OF IRISES GROWING BY A RIVER'S BANK NEAR GUILDFORD (December 9)
 VIEW IN THE STATE NURSERY AT CAIRNS, QUEENSLAND (August 19)
 VIEWS IN THE PALM-HOUSE AT DOVER HOUSE, ROEHAMPTON (November 11)
 VIEW OF THE FRONT FLOWER GARDEN AT SANDRINGHAM (December 23)
 VINERY IN THE GARDENS AT HARTWELL PARK, BUCKS (September 23)
 WEST DEAN, SUSSEX, VIEW AT (October 14)

(For List of General Illustrations see next page.)

LIST OF ILLUSTRATIONS.

- A**
 AGAPANTHUS umbellatus globosus, 237
 Aloe Chabaudii, 101; A. decora, 386; A. Orpenæ, 386
 American blight or Woolly aphid, 299
 Apple-blossom weevil, the, 298
 Apple Coronation, 281; A. King's Acre Bountiful, 341
 Aster sub-cœruleus, 23
- B**
 BALFOUR of Burleigh, Lord, portrait of, p. i., Supp., Sep. 16.
 Bees, a simple method of transferring, 183
 Betteshanger House, Kent, 172, 173
 Black-currant buds affected with the mite, 298
 Buddleia nivea, 275
 Bulbophyllum Lobbiai colosseum, a flower of, 184
 Bullock, Mr. A., portrait of, 453
 Burbidge, Mr. F. W., portrait of the late, 460
- C**
 CACTUS scab, the, 125
 Campanula carpatica "White Star," 145; C. Zoysii, 288
 Carberry Tower, views in the gardens at, 194
 Carnation Bob Acres, 65; C. Helen Countess of Radnor, 113; C. Pride of Westbury, 88; C. Miss Willmott, 73
 Carpocapsa pomonella (Codlin-moth), 279
 Castanospermum australe, 245
 Cattleya amethystoglossa, 105; C. Harrisoniæ, 267; C. Mossiæ "White Lady," 7
 Cells, diseased, from a Potato affected with the warty disease, 508
 Cheimantobia brumata (Winter-moth), 279
 Chrysanthemum Miss Irene Cragg, 363; C. Souvenir de petite arie, 419
 Chrysanthemums, a house of, grown for market, 418; a prize collection of, 349
 Chrysophlyctis endobiotica (fungus disease of Potatos), 308
 Citrus japonica, 445
 Clarke, Mr. W. H., portrait of, 453
 Clematis indivisa in the Temperate-house, Kew, 135
 Clock, a floral, 213
 Clusia grandiflora, 389
 Codlin-moth, the, 279
 Cowan, C. W., portrait of, p. 11, Supp., Sep. 16
 Crassula columnaris, 162
 Crate for the transit of honey, a, 119
 Crinum Rattrayi, showing habit of plant, 11
 Cycas Micholitzii, 142, 143
 Cymbidium Gammieanum, 427; C. Huttoni, 63
 Cyripedium, an abnormal, 451
 Cyripedium debile, 442; C. Fairrieanum, 168; C. The Baron, 405
- D**
 DAPHNE Blagayana, 171; D. Mezereum album, 153
 Dean, Richard, portrait of the late, 169
 Diagrams illustrating experiments with pasture land, 180, 181
 Diervilla rivularis, 339
 Dimorphotheca aurantiaca, 127
 Diplodia opuntia, the Cactus-scab, 125
- E**
 D'Ombraïn, Rev. H. H., portrait of the late, 319
 Dyer, Sir William T. Thiselton, portrait of, 401
- F**
 FIG Bourjassotte Grise, 258
 Flower beds in Darlington Public Park, 292
 Flower-sprays, forms of, 428
 Flowers, cut, a pleasing arrangement of, 442
 Fraser, J. C., portrait of, p. ii., Supp., Sep. 16
 Fruit, an exhibit of, at Shrewsbury Show, 178; an exhibit of, at Hereford Show, 364
 Funkia Sieboldi in a Donegal garden, 94
 Fyfe, Mr. W., portrait of, 453
- G**
 GARDENING in spring in the 17th century, 436
 Geaster fornicatus with confluent growth, 323
 Gentiana Lawrencei, 307
 Gladiolus tristis var. concolor, 187
 Gloriosa Rothschildiana citrina, 211
 Gooseberries, cordon-trained, 116
 Grape Prince of Wales, 277
 Grieve, James, portrait of, p. iii., Supp., Sep. 16
- H**
 HARVEY, Jas., portrait of, p. iii., Supp., Sep. 16
 Hemileia americana, a fungus disease of Orchids, 153
 Honey, crate for the transit of, 149
 Honey, uncapping a comb of sealed, 69
 Hopetoun House, 196, 197
- I**
 ILCHESTER, Lord, portrait of the late, 408
 Impatiens Holstii, 14
 Isosoma orchidearum, the Orchid-grub, 176
- J**
 JAPANESE Orange, the, 445
 Jordan, Mr. F., portrait of, 451
- K**
 KIDD, Daniel, portrait of, p. iii., Supp., Sep. 16
- L**
 LACHENALIA liliiflora, 259
 Laird, D. P., the late, portrait of, p. iv., Supp., Sep. 16
 Leek, with bulbs developed at the base of the stem, 394
- M**
 Lemon, the Metford, in the temperate-house, Kew, 95
 Lilium Bakerianum (Lowii), 75
 Luscombe, Devonshire, a Rose-garden at, 107
- M**
 MACHINE, transplanting, 373; home-made, 428
 Mackenzie, A. D., portrait of, p. iii., Supp., Sep. 16
 Masee, W. H., portrait of, p. i., Supp., Sep. 16
 Methven, John, portrait of, p. ii., Supp., Sep. 16
 McHattie, John W., portrait of, p. ii., Supp., Sep. 16
 Miller, Mr. W. A., portrait of, 453
 Moon, H. G., portrait of the late, 287
 Murray, R. W. E., portrait of, p. ii., Supp., Sep. 16
 Mussel-scale, the, 400
 Mytilaspis pomorum, the mussel-scale, 400
- N**
 NELSON Centenary flower beds in Darlington Public Park, 292
 Nerines, a group of, in Blenheim Palace, 357
 Norwich Public Gardens, view in, 93
- O**
 ODONTOGLOSSUM, a floriferous flower of, 67; O. x Lambeauianum, 324; O. x Lambeauianum exquisitum, 434; O. Smithii, 427; O. venustulum, 2; O. x Vuylstekeæ, 379
 Odontonia x Lairesseæ
 Oncidium corynephorum, 340; O. robustissimum, 45
 Orange, the Japanese, 445
 Orchid disease (Hemileia americana), 153; grub, the, 176; seedlings, 22
 Ote Hall, 249
 Oxenfoord Castle, 195
- P**
 PEAR attacked with Fusicladium dendriticum, 240
 Pear Louise Bonne of Jersey, 283
 Pears Madame Treyve, p. ii., Supp., Oct. 14; Marie Louise, 285; Marie Louise d'Uccle, p. iii., Supp., Oct. 14; Roosevelt, 243
 Pear-Midge, the, 290
 Pear slug-worm, the, 208
 Pear tree with three hundred and twenty-seven fruits, 372
 Pergola of Ivy, a, 27
 Perkins, Arthur, portrait of the late, 15
 Phillips, William, portrait of the late, 331
 Physalis, a hybrid, 315
 Picea morinda with bush-like habit at Pencarrow, 395
 Picture, an old Dutch, showing spring gardening in the 17th century, 436
 Pine Sawfly, the, 71
 Pinus Pincaena, foliage, cones, leaf-section and seed of, 122; P. yunnanensis, cones, leaves, and cone-scales, 227; leaf sections of, 226; P. radiata, a large specimen of, at Trevice Gardens, 435
 Potato, a bi-coloured, 376
 Potato tubers affected with the warty disease, 398
- R**
 RICHARDSON, A. D., portrait of, p. iii., Supp., Sep. 16
 Rosa sericea var. pteracantha, 200, 231
 Rose, a polyantha, in the gardens at Trelissick, Truro, 33; Waltham Bride, 32
 Rose-garden at Luscombe, Devon, 107
 Rosehill, Falmouth, view in the gardens at, 103
 Rubus innominatus, 291
- S**
 SAWFLY, the Pine, 71
 Schizandra Henryi, 162
 Schizanthus in Endcliffe Grange Gardens, Sheffield, 155
 Selandria atra, the Pear slug worm, 208
 Sirex gigas, the wood wasp, 208
 Smith, William, portrait of, p. iv., Supp., Sep. 16
 Sophro-Cattleya Doris, 412
 Southampton Chrysanthemum Exhibition, views in the, 349
 Sparaxis, a bed of, 203
 Spiræa Aitchisoni, 114
 Spiræa pachystachys, 322
 Sprays of flowers, forms of, 428
 Stanhopea Wolteriana x, 102
 Strawberry "Bedford Champion," 43
 Suburban garden at Edgbaston, view in a, 293
 Summer house exhibited at Chelsea Flower Show, 72
 Swanmore Park, a pergola at, 27
 Sweet Peas Helen Lewis, 35; and Henry Eckford, 47
 Syringa villosa var. pubescens, 123
- T**
 THALICTRUM Delavayi, 450
 Thistle, the Cotton, 219
 Thomson, P. Murray, portrait of, p. iv., Supp., Sep. 16
 Tortrix angustiorana, the Vine moth, 40
 Transplanting machine, a home-made, 428
 Transplanting of trees, diagrams illustrating, 354
 Tree, transplanting a large, in Kew Gardens, 373
 Trentham Hall, the front flower garden at, 421
 Trent Park, Barnet, 133
- V**
 VANDA Sanderiana, "Chillingham variety," 438
 Veronica Hulkeana, 242
 Vine-moth, the, 40
 Vitis Henryana, leaves of, 309
- W**
 WEST DEAN, view of flower borders at, 273
 White, J. Martin, portrait of, p. i., Supp., Sep. 16
 Winchfield Lodge, view on the terrace at, 25
 Window erected to the memory of Dean Hole, 251; to the late John Downie, 356
 Winter-moth, the, 279
- Y**
 Young, Mr. W. H., portrait of, 452



THE

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No. 966.—SATURDAY, July 1, 1905.

CONTENTS.

Asters, some neglected	6	New notes	5
Books, notices of—		Narcissus, a prolificus	12
Choice Ferns for		Nursery notes—	
Amateurs	7	Amos Perry, Winch-	
Fruit Preserving	12	more Hill	14
Guide books received	13	Obituary—	
Journal of Economic		Burbidge, Mrs.	15
Biology	12	Millie, W. Lindsay	15
Publications received	13	Perkins, Arthur	15
Summer Holidays	12	Orchid notes and glean-	
Botany, old-tune	12	ings	2
China, plant-collecting		Plants, new or note-	
in	4	worthy—	
Colonial notes	5	Iris Junonia	3
Conifer disease, a	11	Ilex inivoluta	3
Conifers of Formosa,		Polygonanthus, gold-laced	6
the	13	Polygonum Baldschu-	
Crinum Rattrayii	11	aucum	13
Echium Wildpretii	5	Presentation to a gar-	
Eucalyptus, a hardy	3	dener	12
Exacum macranthum	5	Richardia Elliottiana	13
Examinations in horti-		Kinging plants, effects	
culture	11	of	12
Ferns, varietal names		Societies—	
of	1	Gardeners' Debating	19
Flower show tents	13	Horticultural Club	11, 17
Flower shows sixty years		Linnæan	17
ago	13	Richmond Horticul-	
Foreign correspond-		tural	18
ence—		Royal Agricultural	15
M. Truffaut's nursery		Royal Horticultural	15
at Versailles	7	Spraying to eradicate	
Vilmorin, Andrieux		weeds	13
et Cie, Verrières	7	Strawberries, large	11
French gardeners, a		Trees and shrubs	2
impression of London	9	Vienna Botanical Con-	
Fruit committee, the		gress	10
departmental	12	Week's work, the—	
Fruit Crops in Kent	11	Apiary, the	9
Fruit-tree walls, with		Flower garden, the	8
flues	3	Fruits under glass	5
Garden ornaments, a		Hardy fruit garden	9
sale of old	12	Kitchen garden, the	9
Gardeners at cricket	13	Orchid houses, the	8
Impatiens Holstii	14	Plants under glass	8

ILLUSTRATIONS.

Cattleya Mossie "White Lady"	7
Crinum Rattrayii, a new species from Uganda (Supplementary Illustration)	11
Crinum Rattrayii, showing habit of plant	11
Echium Wildpretii	5
Eucalyptus, a hardy	3
Impatiens Holstii	14
Odontoglossum venustum	2
Odontonia x Laireseea	2
Portrait of the late Arthur Perkins	15

FERN - NAMES.

THE question of the proper naming of new varieties of Ferns is one of such importance that some consideration should be given to the principles which should underlie it. Unfortunately, in this particular direction, as with the naming of plants generally, we are handicapped in our endeavour to secure a consistent and correct system of naming by the fact that we have inherited an immense number of names which, to say the least of it, were never given on enlightened lines. A large number of godfathers were engaged in the innumerable christenings, and named the plants on independent lines. As knowledge grew and the discoveries of genera, species, and varieties became more numerous, these names were found to be very confusing whenever that linking up occurred, which is bound sooner or later to come about owing to the common origin of all plant life.

A large number of botanists have devoted themselves to remedy this evil, but since they usually try to do so on systems of their own, the result has been in too many cases confusion worse confounded. In practice, therefore, we

accept many names simply because the plants have become so thoroughly well known by them that a correction, i.e. any alteration, would constitute a worse evil than the error involved. In British Ferns we have many instances of this kind due to similar reasons. When the varieties first began to attract notice, the finders sometimes named them themselves, and sometimes referred them for that purpose to one of the Fern authorities then existing. Those authorities at first were mostly general botanists, and only later did the experienced Fern specialist step in as godfather, on the strength of his particular acquaintance with the extant varieties. Hence, no recognised system existed, and it was not until a very large number of names had been given on varied lines that it was recognised how many of the plants concerned fell into distinct classes, and how many of one and the same class were named differently, whilst many distinct classes were named similarly. Thus in the now recognised plumose section we have *Polypodium cambriacum*, *Scolopendrium vulgare crispum* and *Asplenium Trichomanes incisum*, as examples of varied names for one and the same condition, while we have on the other hand the one term "pulcherrimum" (itself a defective name, since it does not definitely describe at all), applied to distinct forms of *Polypodium vulgare*, *Athyrium f. femina*, *Polystichum aculeatum*, and *P. angulare*. In Mr. E. J. Lowe's book, *British Ferns*, we have the most comprehensive attempt to classify the varieties throughout, but it may be seen by a glance at the names under the several heads that a very large number might have been named far more appropriately in the light of the greater knowledge subsequently acquired of the general characters of variation.

Every Fern lover who studies the cult carefully knows the best forms by their baptismal names, and would be simply puzzled by a rechristening on up-to-date lines, which we therefore do not advocate. What, however, we do suggest is that all new finds should be submitted to a competent naming centre, especially as such a one now exists in the British Pteridological Society. In this way, at any rate, the evil of higgledy-piggledy naming would be reduced to a minimum, and appropriate names would be given. In my own opinion little good is done by giving an outlandish name to a variety for the sake of distinguishing it from others which it probably so closely resembles as to be only distinguishable by side-by-side comparison.

Thus, to take the cristate forms of the Hart's-tongue as an example. I should classify the bulk of them under the heads of furcans (lobatum), when there are three or four terminal divisions; digitatum, with five to ten pointed divisions; multifurcatum, with a larger number; cristatum, with terminal divisions divided twice or more on flat lines [planes]; corymbiferum, ditto, on bunch lines; and grandiceps, when very heavy tassels are formed.

If branching of the rachis below such terminal division takes place, let the prefix "ramo" be given, and if the whole frond be divided and redivided so that the frond proper disappears, let it be called ramosum, ramulosum, or ramosissimum, according to the extent and character of the branching. These terms as applied to the character of the

tasselling or branching apply to other species as well, and could be preceded by whatever other dominant character the frond presented. They would thus constitute a descriptive name, to which we could attach the finder's or raiser's name if accentuated by some other peculiarity rendering it distinct.

One of the old rules prohibited the re-use of any name previously given, and the consequence was that very often an absolutely fitting name was rejected, and a far less suitable one adopted. In our opinion it would have been far better to use the best name, despite its previous attachment to another plant, and to distinguish by adding the finder's or raiser's name thereto. Opinions differ as to the propriety of attaching Latin or Greek descriptive names to Fern varieties; but we should be very sorry to see this system abandoned in favour of nondescriptive and nondescript names of popular personages, &c., such as prevails with floral forms. There is a distinct difference between the two classes of plants. With flowers such as *Chrysanthemums*, *Begonias*, and the like, such naming is practically unavoidable, owing to the multiplicity of differences in form and tints which often defy clear description. With Ferns, on the other hand, we have only to deal with difference of frond form [and degree of branching], and these lend themselves in the vast majority of cases to a fairly descriptive naming, which is a great assistance to the cultivator. A. f.-f. "Lady Waggles" would convey nothing to the mind at all; but A. f.-f. *curtum cristatum*, or *congestum minus*, instantly calls up an approximate picture in the fernist's mental eye which it would be folly to sacrifice. In the nomenclature of exotic Ferns there has arisen a sort of compromise in this direction, which, however, is very confusing, and promises to become more so, since a number of new varieties are being named as if they were species, e.g., *Polypodium Knightii* and *Phlebodium Mayii*, which are simply plumose varieties of known species. *Polypodium Schneideri* x, that wonderful hybrid between *P. glaucum* and *P. vulgare elegantissimum*, is another misnomer, and should, to be consistent, have been called *P. glaucum elegantissimum Schneideri*. *Polypodium v. elegantissimum*, by the way, affords an example of old-fashioned naming, since it originally bore (and still occasionally bears) three distinct names—viz., *P. v. elegantissimum*, *P. v. cornubiense*, and *P. v. Whytei* (the last, however, but rarely); while we should certainly christen it today "decompositum," which is a description proper. Of the other three names, on the other hand, one is merely laudatory, one indicated locality only, and the third merely one of the finders' names, the main points being thus missed.

My contention is, therefore—1, that the name given should be as closely descriptive as possible; 2, that it should be given without reference to priority as implying monopoly of a good name, adding the finder or raiser's name if distinction justifies it; and, 3, that the name should be submitted to the recognised expert opinion represented by the Committee of the British Pteridological Society, either through the writer or the Secretary, Mr. G. Whitwell, Serpentine Cottage, Kendal; and 4, and finally, that no name should be given except to distinct and good varieties. In this way, at any rate, we may prevent confusion increasing, and confine it as far as possible to the inherited mistakes of the past. *Chas. T. Drury, V.M.H., F.L.S., 11, Shaa Road, Acton, W.*

TREES AND SHRUBS.

SUNBURN.

THE following notes are confined to sunburn as it affects hardy deciduous trees and shrubs. There are many highly ornamental subjects, more particularly those possessing golden and variegated foliage, that lose much of their beauty and effect owing to their leaves being scorched by the sun's rays. The result is an ugly browning of the affected foliage, and in the most serious cases this is followed by premature fall of the leaf, as in the Golden Sycamore (*Acer pseudo-platanus* Worlei) and in one of the golden-leaved Elms (*Ulmus campestris* variety Louis Van Houtte).

Planters are sometimes at a loss to know where to place a subject so as to obtain for it a position in which the plant will show to its greatest advantage, and there are amongst those affected by light of too great intensity many that we can ill afford to do without in the garden, either for massing or as specimen plants. Positions should therefore be selected for them where they will be shielded from the midday sun. Hence the enumeration of those trees and shrubs that most commonly suffer from sunburn may serve as a guide to intending planters. In some few instances—i.e., in the golden and variegated Oaks—the second growth in July and early August obliterates to a large extent the burnt and unsightly foliage on their first or spring growth.

Varieties of the same species exhibit widely different degrees of resistance to the sun's rays, and this is well illustrated in varieties of the common Sycamore. The old variegated form does not burn, or but slightly, whereas the varieties *A. pseudo-platanus* Leopoldi and *A. p.-p.* Worlei are often disfigured, especially is this the case with the last-named variety.

The following is a list of deciduous trees and shrubs most subject to sunburn, those previously mentioned being omitted:—*Platanus acerifolia* Süttneri, *Sambucus canadensis aurea*, *S. racemosa plumosa aurea*, *Corylus avellana aurea*, *C. maxima atropurpurea*, *Fagus sylvatica albo-marginata*, *Fraxinus americana foliis variegatis*, *Castanea sativa aureo-marginata*, *Acer pseudo-platanus Nizeti*, *Diervilla japonica Looymansi aurea*, *Spiraea opulifolia aurea*, *Ulmus Dampieri aurea*, *Æsculus hippocastanum foliis variegatis*. The above list is not intended as a complete one, as many plants are purposely omitted because their liability to sunburn is but slight. *F. H. Matthews, Knap Hill, Woking.*

SPIRÆA THUNBERGII.

Though *Spiræa arguta* is perhaps the more showy plant of the two, *S. Thunbergii* is earlier in flowering and also much hardier, the former being liable to be cut by frost in the bud state, while the latter is generally uninjured, except in the fully open flowers. When fully grown this plant makes a shrub about 3 ft. or so in height and about the same in diameter, with thin, gracefully-arching shoots clothed from end to end with the tiny, star-like, pure white flowers in spring. The leaves are narrow, linear in shape, of a light green hue, and glabrous on both surfaces.

The plant will grow almost anywhere, and provided it has an open, sunny situation, it is practically indifferent as to soil. Young plants of this potted-up in autumn and plunged outdoors until they begin to move in spring, make excellent subjects for indoor decoration if brought on in gentle heat, but they will not stand hard forcing. Cuttings of this variety root readily at almost any time of the year, or old plants can be pulled to pieces, each with a portion of root attached, which soon form good plants. Shoots cut and placed in water in gentle heat just as they show bud will open their flowers and last good for a fortnight or so. *J. C., Bagshot.*

ORCHID NOTES AND GLEANINGS.

ODONTONIA × LAIRESSEÆ.

THIS plant (fig. 1) is, as indicated by its name, a bigeneric hybrid, the resultant of crossing *Miltonia Warscewiczii* with *Odontoglossum crispum*. Of the two parents the hybrid more nearly

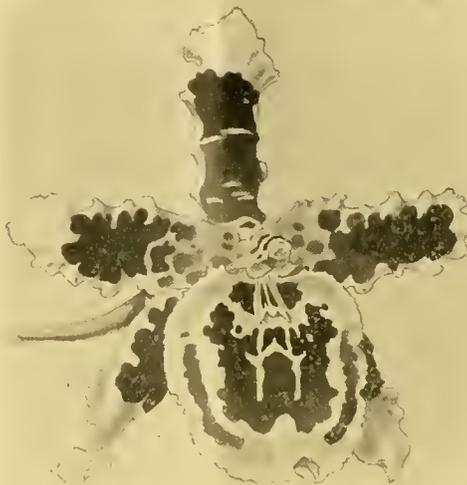


FIG. 1.—ODONTONIA × LAIRESSEÆ: FLOWERS WHITE, TINTED AND BLOTCHED WITH ROSE COLOUR.

approaches *Miltonia Warscewiczii*, but is larger in all its parts. The flowers are white, with the lower portions of the segments tinted and blotched with rose colour, the same colour being also present in the labellum; the crest is yellow. The hybrid was raised by M. A. de Laiesse, Liège, Belgium, who showed the plant at a meeting of the Royal Horticultural Society on June 20, when it was given an Award of Merit.

ODONTOGLOSSUM × VENUSTULUM.

The original hybrids of *Odontoglossum Harryanum*, *O. × crispo-Harryanum*, and *O. ×*

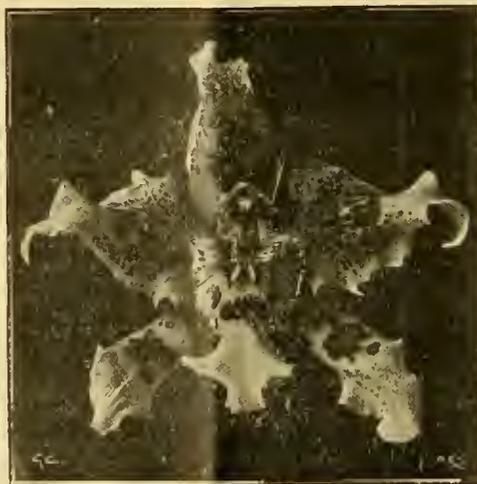


FIG. 2.—ODONTOGLOSSUM VENUSTULUM: FLOWERS LILAC COLOURED BLOTCHED WITH DARK PURPLE.

Rolfæ, are themselves now being used as parents, and some of the offspring have been exhibited at the two last Temple shows by M. Ch. Vuylsteke, of Lochristi, Ghent. One of these was called *O. × venustulum*, and received an Award of Merit in 1904. Its parents were

recorded as *O. × crispo-Harryanum × ardentissimum*, and it was a very handsome flower, heavily blotched with clear purple on a white ground somewhat tinged with lilac (see *Orch. Rev.*, 1904, pp. 201, 202, fig. 31). This year another form of it has appeared, which is represented in the annexed illustration (fig. 2), reproduced from a photograph taken by Mr. E. C. Hart. It is an exceedingly handsome flower, of very graceful shape, and the copious blotches are of very dark purple on a lilac ground. The flower has retained a large amount of the original *O. Harryanum* influence, and the use of this species by the hybridist is introducing quite a new type of *Odontoglossum*, which promises to play a very important part in Orchid collections in the near future. *R. A. R.*

LISSOCHILUS KREBSII.

This pretty and free-growing South African Orchid has flowered in several collections this season. At the meeting of the Royal Horticultural Society on May 23, the Rt. Hon. Lord Auckland showed a fine inflorescence of the typical species. The flowers, which were 2 inches across, had greenish sepals freckled with purple. The petals, nearly an inch across, form the showy part of the flower, the lower side or face being cream-white and the upper surface buttercup-yellow; lip orange with greenish side lobes.

Sir Chas. W. Strickland, Bt., Hildenley, Malton, Yorks, also sends flowers of the variety *purpuratus*, collected near Buluwayo. In this variety the side lobes of the lips are purple. Now that these handsome South African *Lissochilus* are grown as greenhouse plants they are giving good results.

Lissochilus Graefei of Kranzlin, in *Reichenbach Xenia Orchidaceæ*, iii., t. 272, and in *Gardeners' Chronicle*, June 11, 1892, p. 719, and June 10, 1893, p. 684, is a very close ally of *L. Krebsii*.

ORCHIDS AT MR. H. A. TRACY'S.

Odontoglossums, *Cypripediums*, *Cattleyas* and *Lælias*, and other showy Orchids are always well represented in Mr. Tracy's Orchid and Bulb Nurseries in the Amyand Park Road, Twickenham. This year the show of varieties of *Odontoglossum crispum* has been unusually good and prolonged, and even on June 20 there was a nice display of them, together with forms of *O. × Andersonianum*, *O. luteo-purpureum*, and other species. *Cattleya Mendeli* and *C. Mossiæ* are especially good, among the former being the true *C. Mendeli formosa* with white sepals and petals, and fine labellum richly marked with orange colour in the throat, and a light marking of rose colour in front. The blush-white forms of *C. Mossiæ* also are fine in shape and delicate in tint, and *C. Aclandiae*, *C. luteola*, and others are in bloom. Also good *Lælia purpurata* and *L. tenebrosa*.

The collection now includes a fine set of hybrid *Cattleyas* and *Lælio-Cattleyas*. The showiest at present are *L.-C. × Canhamiana* and *L.-C. × Aphrodite*, one plant of the latter flowering for the first time being very fine, the rich violet-purple-coloured lip contrasting well with the clear white sepals and petals.

The newly-arranged front house has a good show of *Cypripediums*, among which the great variation in the forms of *C. Curtisii* is noticeable. Among the *C. callosum* also is a very distinct and peculiar form, with flowers of a thicker texture than usual, and with a yellowish ground colour, the markings being much darker than in ordinary varieties.

Also in flower were *Renanthera lutescens*, *Dendrobium MacCarthiae*, *Cochlidia Noezliana*, and a bright lot of Brazilian *Oncidium*s and Colombian *Masdevallias*. A basket of *Utricularia montana*, which seems to thrive best in the Orchid-house, has a profusion of large white flowers with yellow centres.

THE BEAUCHAMP EUCALYPTUS
(?=*E. CINEREA*, *f. v. M.*)

SOME time since, Messrs. Treseder & Co., of Truro, obligingly sent us specimens of a Eucalyptus called by them *E. Beauchampiana*. Being unable to verify this name after prolonged search, we applied to Messrs. Treseder, who told us that the name was of their own coinage. We then set to work to try to ascertain what the species really was; but as we had only foliage, and that of one kind, before us, it will be easily guessed by those who have to deal with the identification of the species of this genus that the task was not an easy one, and it is with some hesitation that we refer it to *E. cinerea*. This species is not included in Müller's *Eucalyptographia*, but finds a place in

the species is included in the rich collection of the late Mr. Rashleigh at Menabilly, but as he was in frequent correspondence with us on the various species of this genus that he had in cultivation, and did not mention it to us, we are inclined to think that he did not possess this particular variety, or that he had it under some other name.

NEW OR NOTEWORTHY PLANTS.

IRIS JUNONIA, SCHOTT AND KOTSCHY.

I AM indebted to Mr. Siehe, of Mersina, for the large, handsome bearded Iris which he has introduced into cultivation as *I. Junonia* (Schott and Kotschy), Mr. Siehe having found it, if I remember rightly, in the original habitat.

I ought, of course, when I ventured to burden the world with a new name, to have realized that a Cilician plant might possibly be found in Cyprus, and to have carefully compared my plant from Cyprus with the description of *I. Junonia*; but I did not, and the mischief is done. I can now only offer an apology, and suggest that my *I. cypriana* ought to be called *I. Junonia* var. *cypriana*. The two plants are unlike enough, through the difference in colour, to deserve, for garden purposes, distinctive though not specific names.

By the way, Siehe's plant should be called *I. Junonia*, and not, as is sometimes done, *I. Juno*. The latter name has long been used for a division of the genus *Iris*. *M. Foster, Shelford, June 5, 1905.*

WISTARIA INVOLUTA = DERRIS INVOLUTA.

In the note accompanying my description of *Wistaria involuta* in these columns (August 27, 1904), the artificial nature of the limits between certain tribes of Leguminosæ was briefly commented on, and it was remarked how closely some genera of Dalbergiæ, e.g., *Lonchocarpus*, approached *Millettia* and *Wistaria*. This relationship has been strikingly borne out. Since the description appeared, the plant of *Wistaria involuta* has fruited; the pods are seen to be flat, indehiscent, and one-seeded, with a narrow wing along the upper suture. From their structure it is now evident, as was kindly pointed out to me by Lt.-Col. Prain, the authority on Indian Leguminosæ, that *W. involuta* is a *Derris* of the section *Brachypterum*, and must therefore be known for the future as *Derris involuta*. It appears that in the absence of fruit it is almost impossible to distinguish *Millettia* and *Wistaria* from *Derris*.

The species most nearly allied to *D. involuta* seems to be the Indian *Derris scandens* (*Dalbergia scandens*, Roxburgh), which differs principally in the wings of the corolla, which are auricled and densely ciliate at the base, as is well shown by Wight (*Icones Plantarum India Orientalis*, t. 275).

An interesting fact, hitherto unremarked, is that the Australian specimens quoted by Bentham (*Flora Australiensis*, ii., p. 272) under *D. scandens* are certainly distinct from that species. They resemble *D. involuta* in having the wings of the corolla subtruncate and glabrous at the base, and though they differ from the latter in their rather smaller flowers and shorter and more appressed hairs, their flower-structure is so similar that I have little hesitation in referring them to *D. involuta*. *T. A. Sprague.*

FLUED FRUIT WALLS.

EVERY gardener who has proved the utility of fruit-tree walls that can be rendered warm by artificial means, so as to ward off frost when the trees are in flower and for a few weeks later, and in wet, cool seasons to hasten and complete the maturation of the summer's shoots in September and October, would desire to possess them. Usually it is the so-called south wall—really the south side of the north wall of a garden so surrounded—which is flued; and this, in an entirely walled-in garden, would also mean the south side of the opposite wall if there is cultivable land on the outside of the walled-in space, as is usually the case in country gardens.

Owing to the cheapness of fuel, walls of this description are more common in north-country gardens than in the southern or midland shires; moreover, the necessity for their construction is greater in the former owing to the severity of the frosts in the spring months and the coolness of the summers, although the extra length of the days during the summer and early autumn, and the consequent larger amount of sun-heat imparted, if it be less ardent than in the south in the generality of years, is a sufficient compensation.



FIG. 3.—THE BEAUCHAMP EUCALYPTUS (*E. CINEREA*?).

Bentham's *Flora Australiensis*, iii., 239. Mr. Worthington Smith's drawing sufficiently indicates the appearance of the specimen, so that we need only add that the wiry branchlets are purplish in colour; the leaves, some alternate, others opposite, are glaucous and studded with glands on both surfaces, and that the veins are purplish in colour. *E. cinerea* is a native of New South Wales.

The tree may be called in gardens the Beauchamp Eucalyptus, but care should be taken not to create confusion by using a Latin name until the identity of the species is rendered certain. Messrs. Treseder tell us that it is one out of many raised by them. It is a stately tree with red bark. It alone has proved itself hardy, "having withstood 20' of frost. Even the young growths do not get touched in the severest weather." We need hardly say that this is an excellent character to give to an Eucalyptus. We do not know whether

I have not had an opportunity of seeing the plant in flower until this year; but having now done so I can say that while it answers so completely to the original description that there can, I think, be no doubt as to its being *I. Junonia*, it is at the same time identical in every way, except in colour, with an Iris which I obtained from Cyprus some years ago, and which I described (*Gardeners' Chronicle*, August 18, 1888, p. 182) as *I. cypriana*. In *I. Junonia* the blade of the fall is of a rich red-purple, in *I. cypriana* of a blue-purple colour. In *I. Junonia* the standard is of a light red-purple, in *I. cypriana* of a light blue purple. In *I. Junonia* the beard is orange, in *I. cypriana* yellow. And the brownish veins on the creamy-white ground of the claw of the fall are bolder and coarser in *I. Junonia* than in *I. cypriana*. Otherwise in every respect (though I have not yet seen the ripe capsule and seeds of *I. Junonia*) the two plants are quite the same.

It may be said that the gardener who has not the advantage of a warmed Peach wall may in one year in five obtain a fair crop of fruit on his trees, whilst another who has a warmed wall is sure to get a good crop every year.

The writer knew a north-country gardener who for thirty years never once failed to secure a good crop of Peaches, Nectarines, Apricots, and Brown Turkey Figs from such a wall.

The usual practice is to light the fires as soon as the flower-buds begin to show colour, and so to manage the stoking as to produce a mild warmth in the bricks forming the southern face of the wall. In order to do this on nights likely to be frosty, the various furnaces should be started at dusk and the fuel kept gently burning till 11 P.M., the brickwork once well warmed retaining its warmth till sunrise in sufficient degree to ward off all danger from frost. Under this sort of treatment the blossoms open kindly, and the growth of the shoots proceeds without check from cold weather. During cold days it is even sometimes desirable to keep the fires going the entire day in order that cold may not check growth.

Peach and Nectarine trees on warmed walls suffer much less from leaf-curl and blister than those on unheated walls. Of course there are a few disadvantages and evils attendant on the use of flued walls, as is only to be expected; but the careful gardener can easily surmount these. There is a notable and early increase of red-spider on the foliage of the Peach and Nectarine-trees, and the soil becomes drier at the foot of the wall, both of which difficulties can be overcome by the use of clean water applied with the garden-engine as soon as the fruits have reached the size of Haricot Beans; and if the water finding its way from the surface of the wall be not enough to moisten the border, the watering-pot must be called into use. This syringing of the foliage of the trees should be carried out till the fruit approaches the ripening period, which will vary in the different varieties, and cannot therefore be indicated here with accuracy.

As compared with blinds of canvas, "frigidomo," Spruce Fir coverings, or glass copings, portable or otherwise, the advantages remain with the flued wall, inasmuch as spring frosts of any probable severity can be warded off, the bad effects of showers of sleet and hail nullified, and the growths matured in cool summers. The flued-wall also affords a capital means of protecting and forwarding Tomato plants. Where vacant spaces occur between the trees, early Cauliflowers and Lettuces may be planted within a foot of the wall wherever the depth of soil allows of this being carried out without injury to the roots of the trees.

The period during which fires may be needed will vary with the latitude, and in a general way it may be said to continue from the last week in March to May 20, therefore eight weeks. The number of furnaces required for a wall 120 yards in length would be six, each sending its smoke 10 yards to the right and left in a flue 3 to 4 feet high, returning on itself twice before it emitted the same to the open-air, by means of a low chimney-pot made directly over the furnace.

As a readily accessible means of clearing the flues of soot there should be openings closed with iron doors, made about the middle of each limb of the flue. A flue may go safely without clearing the soot out of it for from four to six years, according to the kind of fuel burned; but a longer period than six years is not advisable, for should a large quantity of soot become ignited much damage might accrue to the trees, more especially if these were secured close to the surface of the wall with wires, nails, or studs.

The quantity of coal required per furnace is about half a ton per week, and if slack coal be burned the cost per furnace would be about

2s. 6d. per week. The total cost of fuel for the period named would therefore come to £6 for ensuring a full crop of the various fruits named.

The flue as compared with hot-water heating is the more economical, the serpentine course and length of a flue extracting the whole caloric from the fuel consumed, whereas in a boiler much of the heat escapes up the chimney. Moreover, the hot-water apparatus involves a great initial outlay, and repairs are difficult to effect owing to the confined space in which the pipes must be laid.

In conclusion it may be stated that the north side of a flued Peach-wall should be constructed of stone, cyclopean or dressed, or of 9-inch brickwork; and the front or south side of $4\frac{1}{2}$ -inch brickwork, and the bottoms of the flues of 9-inch work; and the wall should be furnished with a stone coping overhanging on the south side about 4 inches. The brickwork at the back of the fireplace and for 4 feet on each side should be made three bricks thick. The furnaces should be provided with furnace and ashpit doors, so as to have the draught under control. *F. Moore.*

LEAVES FROM MY CHINESE NOTE-BOOK.

ICHANG TO KAITING.

(Continued from p. 384.)

April 29.—We started at 5 A.M. and reached the foot of the Yeh-Tan at 8.30 A.M.; here we moored below ten junks. Some distance below the rapid I counted thirty-six junks tied up waiting their turn to move up to the foot of the rapid. As a foreigner I was entitled to precedence. The Yeh-Tan—Wild Rapid—well deserves its name. I have never seen it so bad, yet next month, they say, it will be much worse. A night I once spent tied up at the foot of this rapid will long be remembered. Although I saw the boat securely lashed, its creakings and bumpings and the roar of the rapid prevented sleep. Many were the times I sprang up from a fitful doze with a start, thinking the boat had broken her lashings and was being hurried to destruction. I vowed I would never again sleep at the foot of a rapid, but I have had to do so on many occasions since.

I watched the junks being hauled over until I grew tired and dizzy. The roar of the rapid was deafening, and was heightened by the yellings of hundreds of trackers as they strained and tugged in their endeavour to haul the boats over. Of the ten junks in front of me three were wrecked.

Having seen these boats wrecked I had some misgivings about my own, when at 3.30 P.M. our turn came. My captain chin-chinned, joss crackers were exploded, a little wine and rice were thrown over the bow, joss-sticks were burnt, together with candles and some paper cash—in short, every rite necessary to appease the terrible water-dragon was strictly observed. All went well. With three lines out and a hundred men tugging away, she was over safely in twenty minutes. I watched from the shore, and breathed freely when she was safely moored in still water once more.

Immediately my boat was over a small boat with five men in it attempted to cross. Something went wrong, and she capsized; two men disappeared immediately; the three remaining clung to her as she was washed down-stream. Several lifeboats put off immediately, and succeeded in saving these three men.

The capsizing of this boat was taken little notice of, and the people were busy hauling over the next boat immediately afterwards. One can but admire the skill and daring of the men who navigate boats over such places as this. The slightest mistake in any direction is fatal. Undeterred by wrecks in front they ply their calling, laughing and jesting as if it were the simplest

of matters. They know that daily the dragon demands his toll of human life, and fully expect that the time will come when they themselves will be called upon to pay it. Thus their fatalism makes them indifferent to the dangers. After getting safely over I was quite willing to accede to the custom of giving the crew a feed of pork. As I sat writing they were gorging on the front of the boat, and were mightily pleased with themselves. Their merry laugh is much pleasanter to my ear, though it disturbs one's thoughts, than the sullen roar of the rapid a mile below. In a short stroll after the boat was over the rapid, I noted a few plants of passing interest, chief of which were *Pteris palmata*, *Berchemia hamosa*, *Trachelospermum jasminoides*, and *Ehretia macrophylla*. The latter is rather a striking plant. It is a small tree, 15 to 30 feet in height, with large, broadly ovate, hispid leaves. The flowers are white, with a powerful odour, and are borne in corymbs. The fragrance somewhat suggests that of the Orange. The wood is light and tough, and used for making carrying-poles. It is a warm temperate plant, and I have not met with it above 2,000 feet alt.

April 30.—We started at 5 A.M., and, favoured with a strong, fair wind, made rapid progress. We crossed the Niu-kou rapid (ten miles on) at 10.35 A.M. A rock in the middle of the stream is the principal danger at this rapid. H.M.S. *Woodlark* got caught by the current and had her bows stove in by this rock in the first ascent of the British gunboats to Chung-king. About half-way between the Yuh-Tan and this rapid a patch of cliff on the left bank is covered with *Opuntia Dillenii*; *Pinus*, *Plum*, *Peach*, and *Aleurites cordata* are abundant. Around the Niu-kou rapid much coal is worked; outcroppings of coal occur right on the foreshore, but the quality is poor.

At 1.30 P.M. Patung city was passed, and soon afterwards we ascend with difficulty a nasty rapid. At 4 o'clock we entered the "Wushan," the longest of all the gorges. We moored at 7 P.M. some six miles from the Hupeh-Szechuan boundary, having covered thirty-five miles in the day.

The Wushan gorge is some twenty-five miles long. The entrance is narrow, and wears a gloomy and forbidding aspect. The cliffs equal and even surpass those of the other gorges in height, and are for the most part vertical and inaccessible, with scarcely a tracking path anywhere. The river is narrowed to about three hundred yards. Sailing through this silent gorge, walled in on all sides by such stupendous cliffs, one feels oppressively small.

The flora continued most interesting. Near our moorings, high up on the tops of the cliff, was a nice patch of woodland, the most noticeable tree being the *Nanmu*, *Machilus nanmu*. When covered with forest, how much more magnificent the scenery must have been! Amongst the rock on the foreshore I gathered *Cynanchum verticillatum*. Its pretty white flowers are highly charged with a viscous nectar. Captured in this I noted many small flies and ants—unwelcome guests and punished accordingly. The leaves on this plant are not always verticillate. I gathered one specimen with alternate, opposite, and verticillate arrangements on the same shoot. Associated with this species, but not in flower, was another species with opposite leaves.

A very attractive shrub was a species of *Pyrus* with linear-lanceolate leaves and corymbose inflorescence. Bushes of our lovely friend, *Chionanthus*, were dotted all over the cliffs. *Ficus infectoria*, too, was abundant on the cliffs; its leaves, just falling, were of a lovely golden-yellow colour. Amongst the rocks on the foreshore the pretty *Rehmannia Piaseckii* was common. But the showiest plant of the day was *Reinwardtia (Linum) trigyna*, familiar as a pot plant in our greenhouses. It is a pity

PLANT NOTES.

ECHIAM WILDPRETHII.

THIS striking Canary Island Echium has recently made a fine show at Kew (see fig. 4), and was also exhibited at the Temple Show. It is a rather recent introduction to gardens, having been sent to Kew by Mr. Wildpret, Curator of the Botanic Gardens of Oratava, Teneriffe, under the name of *Echium candicans*, but on its flowering in 1897 it was seen to be quite different, and it was afterwards illustrated in the *Botanical*

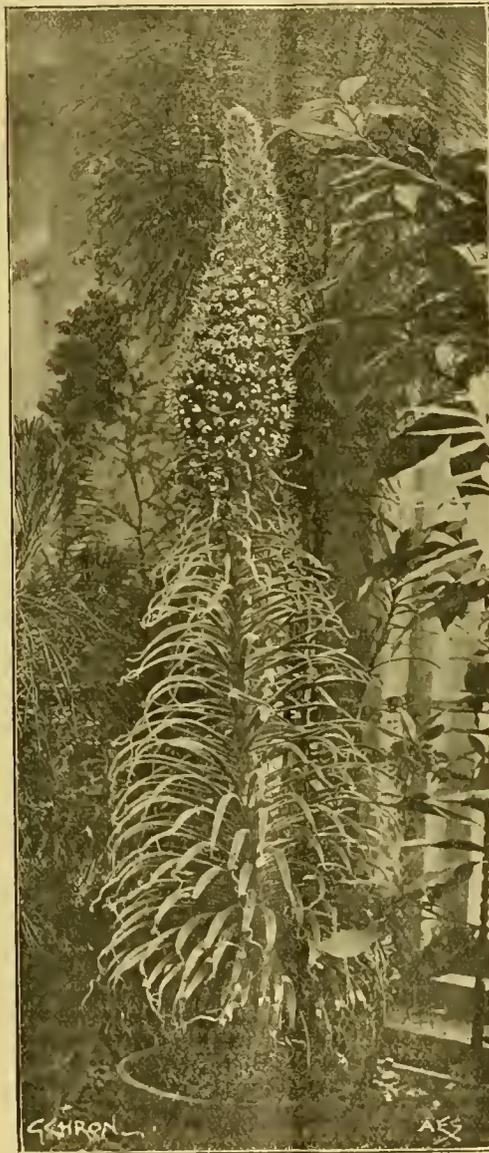


FIG. 4.—ECHIAM WILDPRETHII: FLOWERS ROSE-PINK. (Much reduced.)

Magazine (t. 7847) under the name of *Echium Wildpretii*, after its discoverer. It is a striking plant, as the photograph by Mr. E. C. Hart shows, and its numerous flowers are of a pleasing rose-pink, which contrasts effectively with the silvery-green foliage. It is a biennial, forming the first year a dense rosette of long, narrow, silky leaves, after which the stem rapidly lengthens, ultimately forming a dense thyrseid panicle of flowers as shown. In most respects the species is allied to *E. callithyrsus*, Webb, which however forms a sturdy bush, and has bright blue flowers. It is said to be of fairly easy culture, requiring plenty of water during its growing season, from February to August, but a very sparing supply during the rest of the year.

Some twenty species of *Echium* are found in the Canary Islands and Madeira, and are among

the handsomest elements of the indigenous flora. *E. candicans* is a magnificent plant growing in grand masses on moist banks at some 2,000 feet altitude and producing dense panicles some 20 to 30 inches long of bright-blue flowers (*Botanical Magazine*, t. 6868). *E. fastuosum* is one of the most striking objects of the rock *Echiums* of the Madeira littoral. It is a perennial, rising to some 5 or 6 feet high, and has numerous inflorescences 6 to 12 inches long of pale-blue flowers, which are highly attractive to bees and butterflies. *E. simplex* is a remarkable Teneriffe species, producing a simple unbranched stem from 8 to 12 feet long tipped by a great inflorescence of white flowers. It is a striking object on the sea-cliffs and is also cultivated in gardens. Here they require protection, except during the summer, but are well adapted for pot-culture, and form very striking objects under suitable treatment, as the illustration shows. R. A. R.

EXACUM MACRANTHUM.

This plant is one of the most beautiful blue-flowering subjects in cultivation. It is a native of Ceylon, and will succeed in a warm greenhouse or stove. It is compact in habit, grows to about 18 inches in height, and has neat and pleasing foliage. It flowers freely and when in bloom presents a lovely appearance. The flowers are about 2 inches in diameter and of a rich indigo-blue, with striking yellow-coloured anthers. Cuttings of the young growths inserted around the edge of small well-drained pots filled with light sandy soil placed in heat, either in a forcing house, propagating pit or frame, and watered through a fine spray distributor to settle the soil, will quickly form roots and soon be ready for potting singly into small 60-sized pots. For this shift the compost should be composed of two parts fine peat and leaf-mould free from worms, and one of fine sandy loam, with a liberal addition of sharp sand, the whole being well mixed together before being used. The soil should be made moderately firm about the roots of the young plants. Afford water carefully as recommended above, and maintain the soil about the roots in a uniformly moist state during the whole period of active growth, damping over the foliage with tepid water morning and afternoon on bright days in order to promote a free healthy growth. When the flowers are about to open the application of overhead moisture should be discontinued. H. W. Ward.

COLONIAL NOTES.

HONGKONG BOTANICAL DEPARTMENT.

OUR Hongkong correspondent, Mr. S. T. Dunn, has forwarded a copy of his very interesting Report on the Hongkong Botanical and Afforestation Department for 1904, from which we have taken the following extracts:—

Square Bamboos (*Phyllostachys quadrangularis*, Rendle).—In March a box of this Bamboo was received from Mr. Mortimore in good condition. The clumps were at once planted in various situations, and all are doing well. The Bamboo grows on the island of Wenchow. This is a new record of the species for the Province of Chekiang, and connects the two previously-known habitats in Kiangsu and Fokien.

Gingko biloba, L.—In the *Index Floræ Sinensis*, ii., 547, Dr. Masters quotes Mrs. Bishop as saying that she had met with several fine specimens of *Gingko* in the magnificent forests which surround the sources of the Great Gold River and the smaller Min in Szechuen. It is probably safer at present to omit the *Gingko* from the Chinese indigenous flora. The fact probably is, as Solms-Laubach has pointed out, that the *Gingko* has long outlived its natural age in the flora of the earth, and has only been preserved from

it cannot be seen as it occurs here and in the gorges generally. Amongst loose, rocky debris it is peculiarly at home, the drier and more stony the ground the happier it is. It seldom exceeds a couple of feet in height. It is a common sight to see hundreds of yards of the river-bank one mass of its lovely yellow flowers. March is the best month to see it in, however. This plant is strictly speaking a xerophyte, and ought under cultivation to be treated as such. The day's journey was full of interest, and the variety of scenery charming. I had a long spell in my lifeboat, and enjoyed it immensely, the comparative absence of noise being very refreshing. The wild chant of the coolies, keeping time as they work the sculls, is not unmusical when mellowed by distance, but after a short period it becomes wearisome by close contact. E. H. W.

(To be continued.)

KEW NOTES.

GRAMMANGIS ELLISII, Lindl., *Botanical Magazine*, t. 5179.—This magnificent Orchid is flowering in the Orchid-house. Although introduced nearly fifty years ago, it is but rarely met with at the present time. It is a plant with large, square, glaucous pseudo-bulbs, often measuring from 9 inches to a foot in length; the leaves, which are generally about five in number, arise from near the top of the pseudo-bulbs; they are about 18 inches in length by 2½ inches in breadth. The inflorescences are developed with the young growths, sometimes only a single spike, but generally there are two from the one growth, as in the present instance. The largest spike is 2 feet in length, arching as in *Odontoglossum crispum*, and has twenty-four flowers, each of which measures 2½ inches in diameter. The sepals are broad and fleshy, having a yellow ground, which is barred and blotched with brown. The petals are much smaller than the sepals, white at the base and rose-coloured and brown towards the tips. The lip is rather smaller than the petals, light red in colour, with many white crests. It is a native of Madagascar, and is one of the most beautiful Orchids in cultivation.

GERBERA ELSÆ.

Three years ago a small plant under this name was received from Max Leichtlin, of Baden-Baden. Since that time it has been planted in a border in a cool-house, where it has grown into a nice compact plant, and is now flowering for the first time at Kew. It has simple leaves 9 inches in length and 3 inches in the broadest part, having coarsely crenate margins. They are subcoriaceous in texture, with a silvery tomentum on the reverse, and also on the margin. The flower-scape is about 18 inches in height in the present instance. The ligulate flowers are of a very bright blood-red colour, very broad, acute at the apex, and closely arranged. The disc flowers are light red with bright yellow anthers. The composite inflorescence has a diameter of 2½ inches. It is by far the most handsome of all the *Gerberas* grown at Kew.

DISAS.

A good show of these terrestrial Orchids is now to be seen in the *Odontoglossum*-house composed of the following species and hybrids:—*D. racemosa*, *D. tripetaloides*, *D. kewensis*, *D. langleyensis*, and *D. Premier*. *D. grandiflora* is promising well for a good display later on. W. H.

MUSA PERRIERI.—This is a newly-discovered species of *Musa* from Madagascar, described by M. CLAVERIL in the *Comptes Rendus*, June 13. The base of the stem is dilated into a thick bulb, from which no suckers are given off. The leaves are deciduous during the dry season. The natives make use of the seeds as beads, and utilise the borders of the leaves as tying material.

extinction by the care of the Chinese priests. The tree is without near relations in our extant flora, and when Mr. Archibald Little described to me in 1903 a most remarkable tree, like Ginkgo, which he had seen near Chengtu, I begged him, if again in that neighbourhood, to revisit the spot and secure details for investigation. Accordingly when Mr. and Mrs. Little were near Chengtu in April of last year they most kindly made a détour of 140 li, took several photographs of the tree, and sent them to Hongkong with an interesting description. The tree proved to be not a variety, but a very old specimen of the true Ginkgo covered with the peculiar outgrowths to which the species is subject in old age. The outgrowths take the form of cylinders, varying from a few inches to several feet in length, and about 4 inches thick, pendent from the trunk and lower branches. Enquiry was made from Professor Matsumura, of Tokyo, as to the occurrence of similar trees in Japan, and he most courteously sent me a copy of Fugu's paper on the subject, in which the occurrence and origin of the outgrowths are described in detail. They are considered to be merely malformations, and are commonly met with on old trees in Japan.

Flora of North-east Kwantung.—In September and October three Chinese collectors were despatched to Hoi Fung, about 100 miles up the coast, with instructions to proceed inland to the Lien Fa Mountains to explore these, and then, crossing them, to make collections on the further side round the sources of the Han. They succeeded in carrying out this programme, and brought back an interesting collection. Among the most important discoveries was that of *Manglietia Fordiana*, Hemsl., only previously known as a single tree in Hongkong, and that in a precarious state owing to its failure to propagate itself or to admit of artificial propagation. The tree was found in fruit, and seeds were brought back, some of which were sent to Kew. The collection is not yet completely worked out, but enough has been done to show that the flora of these mountains is an extension of that of the Lo Fou Mountains, well known from the labours of Sampson, Faber, and Ford. A large number of the interesting species discovered there by these collectors are repeated in Lien Fa Shan. The numbers for this collection in the Colonial Herbarium are from 1535—1684, and 1825—1894.

China New Year Shrub (*Enkianthus quinqueflorus*).—This shrub, which is one of the most beautiful of all our rich shrub-flora, has yearly been becoming more and more scarce on the hills in consequence of the amount that has been cut by the Chinese at each new year to sell for decorations. Attempts have been made to check the destruction of the tree.

Pollard Pine-trees.—During the Forestry Licence rounds a system of cultivating the local Pine (*Pinus Massoniana*) was met with at Lung Ko Tan, which is, so far as can be ascertained, unique. In this method the same advantages are aimed at as by the well-known European system of pollarding. But the pollarding of coniferous trees seems to be unknown in Europe. The exact method employed with the Pines here is as follows: At 10 years old, when the tree is about 12 feet high, the top half is cut off. After 5 years more the lower branches are cut off. Shoots soon appear from the cut parts, and these are cut every 5 years, together with the upper remaining internode. This tree produces annual whorls of branches, until after 20 to 25 years, the whole is used up.

THE SOUTHERN ISLANDS OF NEW ZEALAND.

Dr. Cockayne has published in the *Transactions of the New Zealand Institute* an account of his trip in midwinter (July) to the Auckland, Campbell, Antipodes, and Bounty Islands, with details relating to the geology, climate, and flora

of those islands. In the Auckland Isles there are forests of *Metrosideros lucida*, and elsewhere of *Olearia Lyalli*. The details of the flora of the several islands are of great interest, and bear out Sir Joseph Hooker's theory of the previous existence of a much greater extent of land in the Southern Hemisphere, whilst the occurrence of a milder climate than now prevails has been attested by the recent discoveries of fossil plants in the antarctic regions. The identity of the flora of all the antarctic islands, from Cape Horn to Kerguelen's Land, is explained under this supposition. One curious feature in many of these Southern plants is the great diversity of foliage in the same plant, which leads to the inference that the plants are not in full harmony with their surroundings. *Discaria Toumatou*, cultivated in moist air, no longer produces spines. Many species of *Raoulia*, *Veronica*, and *Carmichaelia* will revert to the seedling form by cultivation in moist air or feeble light, or, under the same conditions, the seedlings in some cases will never assume the adult form. The paper is accompanied by a complete list of the plants inhabiting the Southern islands, by an extended bibliography, and a series of illustrative plates.

"THE WEST INDIAN BULLETIN,"

vol. vi., No. 1, is occupied with further details of the Proceedings of the Agricultural Conference, 1905. These relate especially to the growth of Sugar-cane and of Cacao, together with valuable notes on the fungoid diseases and insect pests which attack those crops.

ONTARIO AGRICULTURAL COLLEGE.

The thirtieth Annual Report, among many details of local importance, contains valuable reports from the several Professors. The section on the fungi and insects attacking fruit-trees is particularly serviceable, hence we trust we may before long see it in a form more generally accessible.

CAPE GOVERNMENT HERBARIUM, CAPE TOWN.

"Professor MacOwan announces to the circle of friends in correspondence with this Herbarium that he retires from his office of (Government) Botanist at the end of June. The Government does not at present intend to appoint a successor, but the collection will remain under the competent charge of Miss S. Treleaven, who has had ten years' experience therein, and to whom correspondence respecting its contents may be addressed. For administrative purposes the Herbarium will not, as heretofore, be under the Agricultural Department, but will be affiliated to the South African Museum. Professor MacOwan removes to Grahamstown, and will unofficially assist in the Herbarium of the Albany Museum in that city, under the charge of Dr. Selmar Schönland, M.A." Botanists will be grieved to hear of the resignation of Professor MacOwan, and still more at the intimation that the office of Colonial Botanist will not be filled up. The circumstances of the time would, we should have supposed, have rendered the services of such an officer specially important.

"FLORA CAPENSIS."

We note the appearance of another instalment of this publication, Vol. IV., Sect. 1, Part 1. It includes a portion of the order Ericaceae, contributed by Messrs. H. Bolus, E. Guthrie, and N. E. Brown. Though Heathbs are not so popular in cultivation as formerly, they are still important numerically and otherwise. The authors had a long and most difficult task in the preparation of this volume, as, though diffused over a comparatively small area, the number of Cape Heathbs of the genus *Erica* alone amounts to 268 species. Their determination presents great difficulties, and the preparation

of satisfactory analytical keys must have been a cause of much perplexity. It is not unlikely that some of the species hybridise freely, and thus would increase the difficulty. It is regretted that the death of Professor Guthrie occurred before his share of the work on this publication was completed.

FLORISTS' FLOWERS.

SOME NEGLECTED ASTERS.

THE most popular of the annual Asters are undoubtedly those of the Victoria and the Comet types. They dominate in gardens and on the exhibition table. Both types are of easy development. If good strains are obtained, and they are cultivated in a soil of sufficient heart, with good attention, fine flowers will result. In the West of England exhibitions, as at Taunton, Trowbridge, Bath, &c., stands of the before-mentioned varieties, and the highly-refined quilled forms, cover large spaces of tabling, though there is reason to fear the quilled section is ceasing to be as much grown as it formerly was. The explanation is that in order to have the quilled Aster in the finest character it needs high and careful cultivation, and a sacrifice of time that many gardeners are unable to give. Another fine and distinct Aster appears to be going out of cultivation, in this country at least, namely, Truffaut's Peony-flowered Perfection, the French Aster of seed catalogues. This is a true incurved Aster, and holds about the same relation to the flat-petalled Comets and Victorias as the incurved *Chrysanthemum* does to the Japanese.

There was a time when schedules of prizes contained a class for French Asters, meaning Truffaut's type; but, as it is an Aster that must be given good cultivation before it will produce flowers in perfection, it has unfortunately gone down before the flat-petalled varieties, which are grown more easily. Yet there are in Truffaut's Asters colours scarcely to be met with in the other types. It is a stiff-growing plant, producing its flowers on rigid stems, and well suited for cutting. The once popular crown-flowered variety, with its central disc of white and broad, showy margin of some dark shade, has also fallen out of cultivation to some extent, charming as the blooms are. Good cultivation is required also in the case of the Crown variety to secure full-centred flowers. The Ostrich Plume Aster makes an excellent decorative plant for the garden and for cutting.

GOLD-LACED POLYANTHUS.

Several weeks ago I received a box containing bright and effective gold-laced Polyanthus flowers from Rothesay. For border decoration they were excellent subjects. The strain was of vigorous growth, the flower-stems being stout, and the frusses large and bold. Judged by the standard of a variety like *Cheshire Favourite*, it is at once seen that they are deficient in the necessary florist's properties. Varieties with clouded centres were prominent, the golden zone round the eye being stained with deep orange, and having the colour of the "lacing" quite distinct from the tint of the centre, while in not a few cases the lacing did not extend through the segments to the centre of the flower. Silver lacings shading to stained gold centres were among them, imparting a confused appearance to the flowers. There is so much misconception as to what really constitutes quality in a gold-laced Polyanthus that I have set down the foregoing defects as showing what should be avoided by those seeking to select a really fine strain. At the same time I am well aware that seeds from a good strain of gold-laced Polyanthus may be sown, and not one in five hundred realise expectations. R. D.

BOOK NOTICE.

CHOICE FERNS FOR AMATEURS. By George Schneider (Upcott Gill).

We had imagined that the public taste for Ferns had materially abated of late years. Nevertheless the exhibits at the Royal Horticultural Society give frequent evidence that for certain kinds of Ferns the feeling of the public is as keen as ever, and we have only to glance at the shop-windows of the florists to obtain further testimony to the like effect. Mr. Schneider's new book, an abridgement of his former one, indicates that these beautiful plants are attracting an increased share of attention. If they lack the brilliant colouration of the flowers of some plants and of the foliage of others, they have yet a

FOREIGN CORRESPONDENCE.

M. TRUFFAUT'S NURSERY AT VERSAILLES.

M. TRUFFAUT is a well-known cultivator of stove and greenhouse flowering and decorative foliage plants. The climate so near Paris is sufficiently good to enable M. Truffaut and other nurserymen to plant out some of the less tender of these species towards the end of May, in order that the plants may make the whole of the summer growth out-of-doors. At that time many thousands of young plants of *Rhododendron* (*Azalea*) *indicum* were removed from the frames and planted into beds composed entirely of peat obtained some little distance away. The plants were about 1 foot high, with "heads"

Ficus plants are put out after the *Azaleas* have been planted, or at about the beginning of June. Whilst this work was going on outside, we saw in the glass-houses a collection of plants of varying degrees of interest to Englishmen. Take, for instance, the batch of *Bilbergia rhodocyanea*, of which there were hundreds in 5-inch pots. Every plant was an illustration of good culture, and, as the gardener in charge remarked, "très bonne." They will come into flower during the present month. Where in England could a similar feature be found in a nursery? We are more accustomed to see them in botanic gardens than as nursery plants in such numbers as these.

Marantas, such as *M. Kerchoveana* and *M. Sanderiana*, the latter having handsome green leaves with rose-coloured stripes; *Hæmanthus* species and hybrids, *Clivias* in thousands, *Aralias*, *Rubus reflexus*, *Musa rubra* (exhibited at the Temple Show by M. Truffaut in 1901, and figured in *Gardeners' Chronicle* May 25, 1901, p. 335), an excellent specimen of *Anthurium acaule*, *Heliconia illustris*, fine plants of *Adiantum tenerum* Farleyense, *Ficus Parcelli*, large quantities of Palms, *Codiaeums* (*Crotons*), *Cordylines* (*Dracænas*), and *Caladiums*, were other interesting plants in the houses. The newest varieties of *Caladiums* included *President Schneider*, a variety with silvery-coloured leaves veined with rose colour and having a rose-coloured centre. This was named in compliment to Mr. George Schneider, who is President of the Society of French Horticulturists in London. Another new *Caladium* is named *Rotomagno*, the leaves being coloured with rose, green and white. We have mentioned the *Codiaeums* and *Cordylines*, and it would be next to impossible to describe the excellent specimens of these ornamental plants that were seen in M. Truffaut's collection. Skilful cultivation, assisted greatly by the clear sunshine and pure air of Versailles, produce such satisfactory results as are seldom attained. M. Truffaut's nursery, as we have said, is not a large one, but it is a common remark among Paris nurserymen that it is made to produce a very large quantity of first-rate plants. M. Georges Truffaut, a son of the proprietor, has studied the subject of chemical manures, and the results of his experiments have been put to practical use. On the occasion of the recent international show at Paris he was given the distinction of *Commandeur du Mérite Agricole* by the President of the Republic.

MESSRS. VILMORIN, ANDRIEUX ET CIE.

Visitors to the Paris International Show, and especially those who went from England, were greatly impressed by the magnificent collection of flowering annuals and of vegetables and salads contributed by the firm of Messrs. Vilmorin, Andrieux et Cie. In a report published in these pages at the time, an attempt was made to give the reader some idea of the comprehensiveness and quality of those exhibits, and of the pleasing and artistic manner in which the annuals were displayed, as it were, in ordinary flower-beds.

Subsequent to the show we took an opportunity that presented itself, and visited the well-appointed seed shop and offices of the firm in the *Quai de la Mégisserie*, and from there we were conducted by train to the trial grounds at *Verrières*, some miles out of the city. At such a season there is not so much to see in a seed nursery as there would be at the end of the summer, but we could not help admiring the efficient and painstaking methods adopted in every branch of the establishment, whilst the enormous area of land employed for the testing of seeds astonished us. We tramped over field after field, every one of which was clean from weeds and in excellent condition. Some crops were already planted, but the bulk had only recently commenced to grow. Amongst many flowering annuals there, we noticed *Silene pendula* variety *ruberrima*

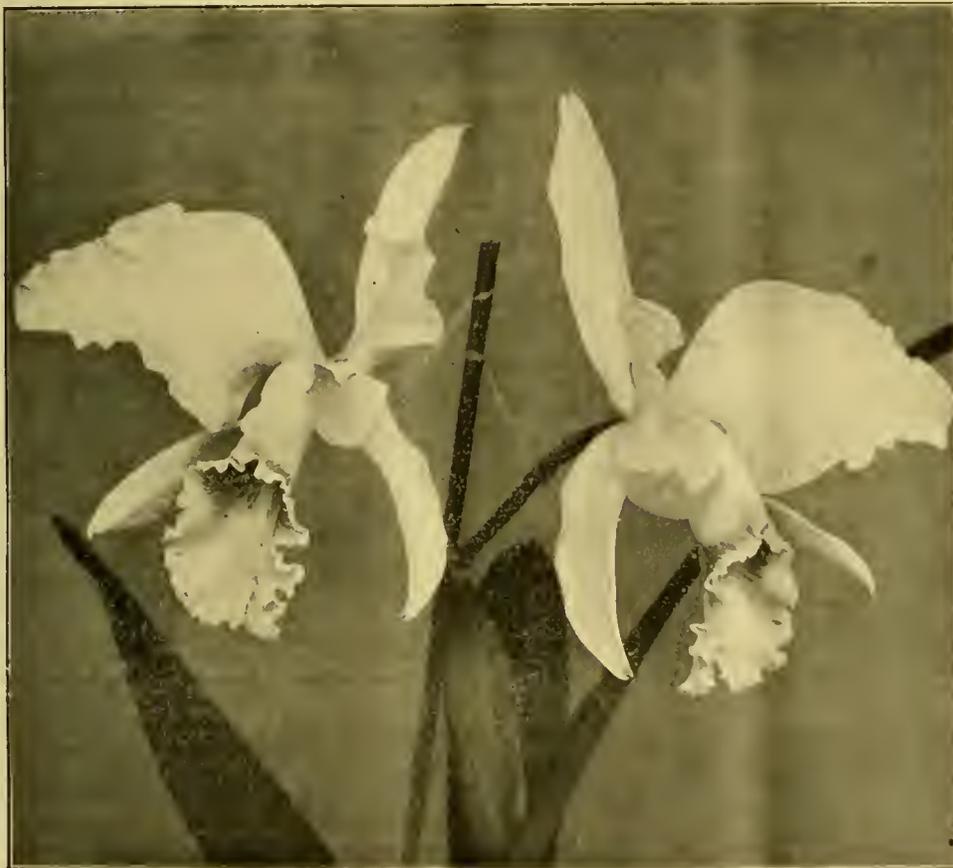


FIG. 5.—CATTLEYA MOSSIE "WHITE LADY."

A variety exhibited at the Temple Show by Messrs. Sander & Sons, St. Albans. Flowers white except the throat, which is pale lemon-yellow. The flower-segments, owing to the perspective, appear narrower than they are in reality. Photo by J. Gregory.

grace and elegance peculiarly their own and a beauty of form not surpassed if equalled by that of any other class of plants.

The present work then is sure of a welcome, for it is written by a specialist whose opportunities of studying Ferns and their ways have been unrivalled, and whose experience in their culture is second to that of no one else. After some preliminary notes the author deals with the methods of propagation, and then passes on to the cultivation of Ferns, either in the open or under glass. The directions are given in a clear, lucid, and concise manner, betokening the expert practitioner. The greater part of the book is occupied with an alphabetical list of genera and species, together with details as to their appearance and the best method of cultivating them. This list is very valuable, the more so that it is freely illustrated with characteristic wood cuts. We heartily commend it to the attention of all Fern-lovers.

six inches or so across. By the end of the season these will have made good plants, having flower-buds on every shoot, just as they are cultivated at Ghent and other places in Belgium. When the plants were removed from the frames these latter were planted again with rooted cuttings from the propagating-houses, and another batch of cuttings was put in to make roots. M. Truffaut's nursery is not an extensive one, but every yard of ground, indoors and out-of-doors, is pressed into use. Excluding the *Azaleas*, the remaining beds out-of-doors are utilised during summer for the cultivation of *Ficus elastica*. The beds are long and narrow, with a path on either side, and, like those containing the *Azaleas*, are composed of peat, the edging to the beds being of neatly-kept Box. To the English visitor these Box-edged beds have an unfamiliar appearance as part of a nursery garden, and remind him rather of an old English flower-garden. The

with double red flowers, and other varieties of *Silene* which had previously attracted our attention in the Parc Monceau and other gardens in Paris. This little annual might with advantage be grown in England for massing in beds more frequently than it is. It is significant that in Paris none of the English visitors appeared to recognise the plant until attracted close to the beds by the fine display of colour. In the glass-houses the principal displays were of herbaceous *Calceolarias*, *Gloxinias*, and *Primula obconica*. Of *P. obconica* there was a large quantity, and it was evident that every care is taken to cultivate as much variation in the colour of the flowers as it is possible to obtain. Some were nearly pure white, and others rich if not brilliant red, whilst in most cases the principal colours were grouped together and separated in batches.

A peep into the laboratory was sufficient to show us that the scientific principles underlying horticultural practice are studied, and that science is brought to bear upon the processes employed in the development of the strains of plants and in their propagation by seeds.

One of the most pleasant incidents of the visit was an inspection of the splendid rock-garden in M. de Vilmorin's private grounds adjoining the nursery, wherein also may be seen the famous hybrid *Abies* raised by the late Henry de Vilmorin between *A. Pinsapo* and *A. cephalonica* (see *Gardeners' Chronicle*, Feb. 9, 1901, p. 89, fig. 33).

The Week's Work.

FRUITS UNDER GLASS.

By F. JORDAN, Gardener to Dr. CORBET, Impney Hall Gardens, Droitwich.

Early Vines.—When the earliest crops of Grapes have been entirely removed, the Vines should be syringed daily, preferably late in the evening. Should red-spider be present, syringe the foliage with water containing soft-soap and sulphur, or some other suitable insecticide. Examine the borders, which have probably been allowed to become dry while the fruit has been finishing, and restore them to a moist condition. Should it be necessary, apply a light mulching to the border; this will prevent excessive evaporation. Waterings of clear water will generally be sufficient for young and vigorous Vines that are still freely making lateral growth, but older and weaker plants should be supplied with diluted liquid manure. Unless rain falls in sufficient quantity, outside borders should be watered copiously. Ventilate the house to the fullest extent. Houses which contain ripe Grapes should be kept in a cool and well ventilated condition, allowing a little artificial heat in the pipes during dull or wet weather in order to carry off excessive moisture. Black varieties such as Black Hamburg rapidly lose their colour after hanging for an appreciable time, and to prevent this a light shading should be applied. On the other hand, white varieties of Grapes not intended for present use are improved by being freely exposed to the sunlight, providing they are properly ripened.

Succession Vines.—Allow plenty of ventilation to houses in which the Grapes are approaching ripeness, only permitting artificial heat during the night time, or in damp or unsettled weather. Houses which contain the varieties *Madresfield Court* and *Foster's Seedling* should be carefully watered, and as soon as the berries begin to change colour, have the amount of atmospheric moisture gradually reduced, and the border covered with light litter. I do not advise withholding water altogether from the borders to obviate splitting in the fruits. The cracking frequently seen in the berries of these varieties is more often caused by too much atmospheric moisture, and by careless ventilation during unsettled weather, than by applying water to the borders. A little heat should always be allowed to radiate from the pipes; this, with careful attention to ventilation day and night, will allow a constant circulation of warm air to pass continually through the houses, when very little if any splitting of the berries will take place. Muscats which are now ripe or approaching to that stage should have some of the leaves drawn

aside from the bunches so that they may derive benefit from the light, but the berries must not be exposed to the full force of the sun.

Later Houses.—Continue to pinch the laterals and supply the necessary moisture by damping and syringing, taking care to close the houses early in the afternoon with the presence of sun-heat; but ventilation should be again applied about 7 P.M., and allowed to continue during the night. With liberal feeding and a more favourable period for growth these later Vines will mature a heavier crop than those which are forced earlier. Keep a sharp look-out for signs of scalding, especially on those varieties which are subject to this disfigurement. The house should be kept fairly warm at night-time and be freely ventilated throughout the day until the stoning period is passed. By allowing a little warmth in the pipes and a small amount of ventilation at night-time the berries of such varieties as *Lady Downes Seedling*, which are very liable to scalding, are kept dry and warm towards morning, especially in dull and wet weather, and thus the chances of injury from scalding are greatly lessened. Sudden rises and falls in the temperature of the house should be avoided by ventilating early and allowing the temperature to rise gradually. Thin freely those varieties intended for cutting and bottling during November and December.

PLANTS UNDER GLASS.

By A. BULLOCK, Gardener to E. J. WYTHES, Esq., Copped Hall, Epping, Essex.

Hippeastrums (Amaryllis).—Flowering bulbs that were started early in the year will by now have completed their growth, and should be gradually ripened off. Diminish the supply of water to the roots, but do not withhold water altogether until the foliage has withered. Full exposure of the plants to the sun is necessary for thorough ripening. Fumigate the plants on several occasions to destroy thrips, a pest to which they are very liable. Seedlings that have not bloomed would derive great benefit from an occasional watering with diluted sheep manure, but should be kept growing until they have flowered.

Nerine Fothergillii.—These should be examined occasionally, and any that show flower-spikes will require to have water afforded them.

Fine Foliage Plants.—Spring-propagated plants are making much headway. If it is intended to make specimen plants of any of them, they should at no time be allowed to become pot-bound. Maintain the atmosphere in a very humid condition, and keep a sharp look-out for insect pests, which must be checked at once. Use soft water only for syringing the plants and for applying to the roots. Hard water would soon disfigure the foliage with a deposit of lime that could only be removed by the use of a sponge. Afford those plants that are to be kept in small pots for table decoration, &c., frequent waterings at the root with weak sheep manure-water and about once a week apply a pinch of Clay's Fertiliser on the surface of the soil. *Allamandas*, *Clerodendron Balfourii*, *Dipladenia boliviensis* being very gross feeders should receive frequent waterings with diluted farmyard manure-water that the plants may make good strong growth. Examine *Ixoras*, *Dipladenia Brearleyana*, *D. amabilis*, and such-like tender plants, so very subject to attacks of mealy-bug, and remove this pest by the aid of methylated spirit applied by means of a camel's-hair brush. If this operation is performed with care no damage will be done to the tender growth by the use of pure spirit, but a soft camel's-hair brush only should be employed for the purpose.

Flowering Plants.—Continue to insert cuttings of *Poinsettias*, *Euphorbia Jacquiniflora*, *Moschosma riparium*, *Begonia Gloire de Lorraine*, *B. Haageana*, *B. Gloire de Sceaux*, &c., until a sufficient stock of each has been acquired. *Rhododendron (Azalea) indicum* may now with safety be placed out-of-doors in a good position to ripen their growth. The plants must not be allowed to become dry at the roots at any time. Those that have not been potted recently should be afforded an occasional dusting on the surface with Clay's Fertiliser. Syringe the foliage every morning and evening.

THE ORCHID HOUSES.

By W. H. YOUNG, Orchid Grower to Sir FREDERICK WIGAN, Bart., Clare Lawn, East Sheen, S.W.

Epidendrums.—The genus contains very few plants having much horticultural value. Hybridisation, however, has been the means of producing a few forms of exceptional decorative merit, notably *E. × Boundii*. As a reliable show plant, *E. prismatocarpum* stands well in the front rank, being very floriferous, durable, and attractive. Were the flower-spikes allowed to remain uncut they would keep good for a couple of months; but for the sake of the plants they should be cut before the end of that period. When this has been done fresh surface material may be applied, or the plants may be repotted, as the case demands. When the latter is done, retain only three or four pseudo-bulbs to each piece, and make them up into suitably-sized specimens, filling the receptacles to half their depth with drainage material, and fixing the pieces in position with good lumpy peat and a small quantity of sphagnum-moss. A few leaves may be introduced, but as the plants have to be kept fairly dry during the winter months, it becomes less safe to moisten the compost again when required. Stage the plants with the *Cattleyas*, and treat them similarly, that is, afford a good supply of water when rooting, but at other times small and infrequent doses. *E. macrocheilum*, when it can be induced to thrive, is a showy kind; also *E. Watsonianum*, an allied species. These need rather small, well-drained pans, with peat and a little sphagnum-moss as a rooting medium. Suspend them in a light part of a *Cattleya*-house, and afford them very dry treatment, except just when rooting freely. *E. bicornutum* is a grand Orchid when seen at its best, but is generally very short-lived. Just now it is producing new growths, and ere these emit roots, fresh materials should be given. Plants of this grow best in baskets, with a few pieces of crock laid at the bottom, and the remainder filled with a mixture of equal parts of peat and sphagnum-moss. They may be suspended in an ordinary plant stove where there is an abundance of heat, light, and moisture, and where during the rooting period the plants may be frequently syringed. A close, stagnant, atmosphere will cause the young growths to damp off, and if during the resting season—which is a long one—they are not kept very dry, the pseudo-bulbs and roots become diseased. *E. vitellinum*, especially the autumn-flowering type, is a very showy, bright-flowering species with the additional merit of being a decidedly "cool" Orchid. Planted in small pots or pans, with ample drainage, and supplied with a small portion of peat and sphagnum-moss, this species should not fail to thrive grown along with the *Odontoglossums*. The lightest position in the house should be selected, and with care in watering, supplying much only when the plants are rooting freely, success should follow. Most *Epidendrums* having pseudo-bulbs need a long dry rest after growth has ceased, and even those with thin stems suffer less harm under moderately dry treatment than if kept saturated.

Miscellaneous.—At this season most Orchids, being in a more or less active state, need generous treatment. Let there be a buoyant atmosphere maintained by admitting abundance of air through the bottom ventilators whenever genial conditions prevail outside. Ventilation through the roof openings is seldom needed in the warmest houses, and in no case should it be employed when violent draughts would result. During exceedingly dry weather damp the ground immediately outside the houses, so that the air admitted will not be of a parched nature. Damping inside should be done sufficiently often to keep the air near to the saturation point, allowing drier conditions during mid-day. Fire-heat may not be required to maintain the temperatures sufficiently high, but a little warmth in the pipes is desirable at night in the warmest houses to promote a circulation of air and dispel superfluous moisture. The cool-houses should not need any fire-heat during this and the following month. Potting operations during this month should be confined to such plants as really need attention, especially in the cool-houses. Do not, however, omit attending to a plant when in a fit state for potting because it is not seasonable work.

THE HARDY FRUIT GARDEN.

By W. H. CLARKE, Gardener to Sir WILLIAM PLOWDEN
Aston Rowant House, Oxon.

Raspberries.—The Canes for fruiting next season are now growing rapidly, but no more must be left than will be necessary or they will all fail to become as strong and well-matured as it is desirable they should be. Ply the Dutch-hoe frequently between the rows of plants, severing by such means any suckers that are not wanted. In order to conserve moisture in the soil a mulch of half-rotted manure or litter is better even than frequently hoeing the surface. Where the crop is likely to be heavy, apply frequent waterings of liquid-manure. In the case of Autumn-fruiting varieties it may be necessary to remove a few of the side growths at the thickest parts, so that plenty of light and air may freely circulate about the ripening fruits during the autumn months.

Gooseberries and Currants.—These have made considerable growth and in the case of cordons the lateral growths may be shortened and the points of the leading shoots stopped. Bushes may be treated likewise, shortening the side growths and pinching out the points of the main branches. This will have the result of increasing the size and colour of the berries. Aphis frequently congregate at this season on the points of the shoots, therefore all "stoppings" should be burned and the trees thoroughly cleansed afterwards by soapy water applied with the garden-engine. If this work is not done before the berries commence to colour, the Gooseberry fruits may be valueless for dessert purposes.

Strauberreries.—Where early runners are required for forming a new plantation to afford early supplies of fruit, these should be secured immediately they are ready, using large 60-sized pots for layering the runners in. Fill the pots with a rich compost, and secure the runners in position by placing a stone on them rather than by using a peg. Keep the soil in the pots in a uniformly moist condition by watering them twice daily through a rosed can. Pinch out the point of the runner just beyond the layered plant. As soon as the layers have become well rooted let them be immediately planted on a well-prepared border facing to the south, from which fruits may be gathered next season a week in advance of the usual crop. Forced plants that were planted-out some time ago should be kept free from runners. If the weather continues hot, mulching will be necessary, with waterings of liquid-manure. These plants will then provide a crop of medium-sized fruits later in the season.

THE FLOWER GARDEN.

By W. A. MILLER, Gardener to Lord HENRY C.
BENTINCK, M.P., Underley Hall, Westmoreland.

Tender Plants, such as Abutilons, Celosias, Humeas, Ricinus, may be placed in position.

Annuals.—Take advantage of dull, showery weather to thin these. By thinning early they escape the "weedy" and "short-lived" character sometimes given them.

Rockery.—Half-hardy plants of distinct habit may now be put on the rockery to add variety. Such are *Convolvulus mauritanicus*, *C. Cneorum*, *Crinum Powellii*, *Eucomis punctata*, *Opuntia Rafinesqui*, *Pratia begoniifolia*, and *Parachetis communis*.

Grey-foliaged Plants make a welcome contrast amongst the various colours in the mixed border. The following are a few of those most useful:—*Agave*, *Artemisia*, *Centaurea babylonica*, *Onopordon* "Robert Bruce," *Salvia argentea*, *Santolina incana*, *Senecio argentea*, *Teucrium fruticans*.

Violas.—Dry weather is adverse to Violas, but if generous treatment has previously been given the soil and ample waterings are afforded the plants, they will remain healthy until there is rain. Do not allow seed-pods to form. Stir the surface of the soil repeatedly.

Verbenas may be pegged down to cover the ground evenly. Destroy thrips and any other insect pest there may be present.

Roses.—Keep the plants free from pests. Afford thorough soakings with water, and hoe the surface of the soil frequently. Now that flower-buds are appearing liquid-manure may be applied, or a slight dressing of artificial manure. If

specimen blooms are required, disbudding must be given timely attention. Rub off all suckers as they appear. Frequently tie-in the growths of climbing Roses, especially growths near to the ground, as established plants of such varieties as *Gloire de Dijon* are apt to get "leggy." See that standard Rose-trees are made secure to the sticks.

Violets.—Afford copious waterings, and syringe the plants in the evening in dry weather. If red-spider is seen, apply a dressing of sulphur or Spidacide. Cut off runners as they appear, and keep a fine and loose surface to the soil of the beds.

Gladioli.—Apply stakes to these as soon as the flower-stems are seen. The plants may be staked singly, or if they are grown in rows put in a few sticks and stretch two or three strands of twine tightly across. Tie each flower to these strings with soft, broad material to avoid cutting the stems. A mulch of partly decayed manure would keep the soil moist, should the season be a dry one. Apply liquid-manure occasionally.

Primroses, Polyanthus, &c., may be sown, and seedlings of earlier sowings will be ready for thinning and pricking out into heavy soil in a shady position.

THE KITCHEN GARDEN.

By W. FYFE, Gardener to Lady WANTAGE, Lockinge Park, Wantage.

Carrots.—Sow seeds of some of the stump-rooted varieties of Carrots on ground that has been cleared of early Potatos. Work the ground well, and break it up as finely as possible before drawing the drills. They should be made 8 or 9 inches apart, choosing an hour in the morning for sowing such light seeds as those of Carrots. Every year we prove the usefulness of Carrots raised from seeds sown at about this time. If another sowing be made a fortnight or so later, in soil that is favourable to Carrots, the plants may be allowed to remain in the ground through the winter, and will then be very useful in spring. The variety Model I have found most suitable for this purpose.

Turnips.—In order to have Turnips in the best condition they should be pulled from the ground as they are required for use. It is therefore necessary that frequent sowings be made. The soil should be rich and moderately firm, as quality is best secured by rapid growth. Sow about the middle of July, and again in August and September. In the case of late sowings greater distance should be allowed between the lines, so that in the event of severe frosts the roots may be covered with soil, which is better than having to store the full supply. I have tried to bring the yellow-rooted varieties into favour, but up to the present have failed. Snowball is a variety of excellent quality and form, and from this we obtain our general supply.

Leeks.—Make a good plantation in drills drawn 18 inches apart, and afterwards afford water to the plants freely. Earlier-planted Leeks if intended for exhibition will now be making rapid progress, and should be freely supplied with liquid manure and soot. When brown-paper collars are used for the purpose of blanching, keep these collars gradually moved up until the desired length is secured, which may range from 15 to 18 inches, adding finely-sifted soil round the stem as growth advances. When the proper length is secured remove the collars. Fine soil is the most perfect blanching material for this purpose.

French Beans.—Seeds for producing a supply of this vegetable in autumn should be sown in sheltered positions, and where protection can be given. Veitch's Perfection and Canadian Wonder can be relied upon as suitable varieties. Earth-up and mulch advancing crops, and keep them well supplied with water.

THE APIARY.

By CHLORIS.

Bees and Clover.—People are accustomed to taking bees to the Heather, but few think of taking them to the Clover. The young bee-keeper hesitates to do either. He is afraid of the trouble of moving the stocks, to say nothing of the danger of a few stings. Most beemen who

have had no experience in the ways of these insects do not exercise enough care in the preparation, the consequence is that during the removal a few bees escape, fly about the amateur, settle on him, creep over his face, and by the time his destination is reached he has completely lost nerve. Nor do his troubles cease at this point, for when he reaches home his family discover that there are other bees on his hat, in his coat—in fact everywhere.

How to remove Bees.—All the combs in hives intended for removal should have the foundation wired in. The frames should be tightly wedged together, a piece of perforated zinc should take the place of the quilts, then two laths should be laid across the frames and screwed down, each with three or four screws. The entrances should be stopped with a piece of perforated zinc and the whole hive made thoroughly secure with a piece of rope. A great deal of preparation seems to be necessary, but the results will amply repay one. Place some straw in the bed of the cart or wagon, so that there shall be no unnecessary jar, and perform the task in the evening. Remember, no new combs, unless wired, should be in use. Neglect the warning and disaster is certain, and the colony thus situated meets with certain death.

Some Results obtained by removing Bees to Clover.

—A gentleman some years ago lived near a town, and was determined to get a good honey crop. During the second or third week in June he set off for a field of white Clover which was just coming into bloom (the season was wet, and he lived in the far north). He fed the bees well until the Clover came out in all its glory, and to his delight the weather became beautifully fine. He put on a crate of shallow frames containing drawn-out comb, and in six days it was almost full; underneath these he placed another crate of similar frames, and in a few days more these were full. The weather broke during the third week in July, but he had secured nearly 100 lb. of first-class honey, which fetched a good price, and won many first prizes at shows far and near. If I remember rightly, what with a good sale and the prizes, that hive's profit was equal to a ten pound note.

A HURRIED VISIT.—A French amateur, not unknown in the columns of the *Gardeners' Chronicle*, makes known in the columns of *Le Jardin* his impressions of London, as gathered in a stay of twenty-four hours. On landing at Dover he was not fortunate enough to secure a corridor carriage, and inveighs against our "sordides wagons," our "maussade," rain-dripping sky, the wretched workmen's dwellings, the hurly-burly at Victoria, and the narrow bed at the hotel. At 8 the next morning he paid a visit to Veitch's nursery, about which the writer indulges in compliment; then to the Temple Show at 10, where he found the tents old, narrow, and dark, but wherein the cultivation of the plants exhibited excited the admiration of our visitor. At 2 o'clock, a ride to Kew in a landau—entry by one gate, exit by another. House after house was inspected, and generally with satisfaction; but the Nepenthes-house was too hot. What the "*Aristolochia dioica macronia*" may be we can only guess, and our visitor cannot have had time to ascertain, for at half-past 6 he says he was in Richmond Park, noting the deer; then, passing again through the unlovely suburbs, he reached his hotel, snatched a hasty meal, left Charing Cross at 9 p.m. in the "horribles wagons" (again unfortunate) for Dover, passing the Crystal Palace and its fireworks as he proceeded. At Calais the bed in the sleeping-car was as wide as that of the London hotel. At 6 in the morning Paris was reached—Paris with its cheerful and bright appearance, its brilliant skies. "Oh, how beautiful Paris is!" he exclaims. "There is nothing like it in England"—and this after an experience of twenty-four hours. Well, perhaps he is right; still the next time he visits us we trust he will stay a little longer. There is really as much worth seeing in London as in Paris—only let him take a corridor train, and not come in November!

APPOINTMENTS FOR JULY.

SATURDAY, JULY 1	1	Windsor, Eton and District Horticultural Exhibition.
		Société Française d'Horticulture de Londres Meet.
MONDAY, JULY 3	3	Maidstone Rose Show.
		Royal Horticultural Society's Committees Meet.
TUESDAY, JULY 4	4	National Sweet Pea Society's Show at Royal Horticultural Hall, Vincent Square.
		Royal Scottish Arboricultural Society's Exhibition of Forestry and General Meeting at Glasgow (4 days).
WEDNESDAY, JULY 5	5	Croydon Horticultural Society's Show.
		Hanley Horticultural Fête (2 days).
THURSDAY, JULY 6	6	Tunbridge Wells Flower Show, Hereford and West of England Rose Show (2 days).
		Bristol and Bath Rose Show in aid of Royal Benevolent Institution.
TUESDAY, JULY 11	11	National Rose Society's Exhibition at Regent's Park.
		Flower Show at Belfast (2 days).
WEDNESDAY, JULY 12	12	Royal Horticultural Society's Summer Exhibition in the Grounds of the Royal Hospital, Chelsea (3 days).
		Harrow Flower Show.
THURSDAY, JULY 13	13	Wolverhampton Floral Fête (3 days).
		Cambridge Horticultural Show.
WEDNESDAY, JULY 14	14	Reigate Flower Show.
		Bath Rose and Begonia Show.
THURSDAY, JULY 15	15	Nottingham Horticultural and Botanical Society's Exhibition (2 days).
		Lee and District Flower Show (2 days).
SATURDAY, JULY 16	16	Beckenham Rose and Horticultural Show.
		Potters Bar and District Amateur Rose Society's Show.
TUESDAY, JULY 18	18	Clipping Norton and North Oxon Rose Show.
		Kidderminster and District Summer Flower Show.
WEDNESDAY, JULY 19	19	Royal Horticultural Society's Committees Meet, with National Carnation and Picotee Society's Show.
		National Rose Society's Show at Gloucester.
THURSDAY, JULY 20	20	Northumberland and District Flower Show at Newcastle (3 days).
		Horticultural Club (annual outing at Wisley).
WEDNESDAY, JULY 21	21	Cardiff and County Horticultural Society's Exhibition (2 days).
		Southern Counties Carnation Show at Southampton.
FRIDAY, JULY 22	22	Royal Botanic Society Meet.
		Handsworth Horticultural Show (2 days).

SALE FOR THE WEEK.

FRIDAY NEXT—
Odontoglossum Schröderianum, &c. by order of Messrs. Sauder & Sons. Imported Orchids in variety by order of Messrs. Stanley & Co. 80 Lots choice Hybrids. Odontoglossum crispum, &c., by Protheroe & Morris, at 12.30.
(For further particulars see our Advertisement columns.)

AVERAGE TEMPERATURE for the ensuing week, deduced from observations of Forty-three Years at Chiswick— 43.1° .

ACTUAL TEMPERATURES:—

LONDON.—Wednesday, June 28 (6 P.M.): Max. 75° ; Min. 58° .

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—Thursday, June 29 (10 A.M.): Bar., 29.8; Temp., 66° . Weather—Dull.

PROVINCES.—Wednesday, June 28 (6 P.M.): Max. 70° , Guildford; Min. 45° , Barmouth.

The Vienna Congress.

THE main objects of the Congress held at Vienna from June 11 to 18, were two in number. In common with congresses in general it was a *réunion*: botanists from all parts of the world met together to renew old friendships or make new ones. On the first evening, when Professor JULIUS WIESNER, the well-known plant physiologist and head of the Vienna Plant Physiological Institute, welcomed the members at a very informal reception, 500 had already arrived, and the final list contained more than 600 names. Naturally, the Austro-German

element predominated, but practically all countries with a botanical interest were represented, from China in the East to California in the West, and quite a large number of Americans took part in the proceedings. We regretted to see so few Englishmen, but the middle of June is a busy time with our professional botanists, but, at any rate, those who were able to go were much in evidence. Among those present were Lt.-Col. PRAIRIE, Dr. REMBLE, Dr. and Mrs. SCOTT, Prof. MARSHALL WARD, S. WOODHEAD, and Dr. STAFF.

For many of the members the special object of the Congress was the conference on nomenclature which met to revise the Code of Laws promulgated at the Paris meeting by ALPHONSE DE CANDOLLE in 1867. It is to be hoped that the results of the conference will tend to solve the questions on which systematic botanists have been divided, and on which there has been so much discussion during the last ten years. For four or five hours on every afternoon during the week about 150 representatives, with Professor FLAHAULT, of Montpellier, as president, and the indefatigable Dr. BRIQUET as general secretary, met and worked steadily through the numerous amendments and modifications of the original laws. Dr. OTTO KUNTZE came for a few minutes only on one afternoon to protest against the Conference. He met with a hearty reception, but the proceedings showed that only a very small minority were in sympathy with his extreme views. The points at issue were freely discussed, but there was a marked absence of feeling and an evident desire to find a working solution of the difficulties.

From a horticultural point of view the chief result was the acceptance by a very large majority of votes of what Dr. KUNTZE has called the "*Codex inhonestans*." This is a long list of genera, the names of which are to be retained under any circumstances, though under the rule of priority they would be replaced by others less well known. These are names which have become established by long usage. Thus it will not be incumbent upon botanists or gardeners to replace *Cunninghamia* of ROBERT BROWN by *Belis* of SALISBURY, or *Sequoia* of ENDLICHER by *Steinhauera* of PRESL, though the second names are in both cases the earlier; and well-known names, such as *Leersia*, *Zoysia* and *Glyceria* need not give place to *Homalocenchrus*, *Osterdamia* and *Panicularia*, though the last three have the sanction of antiquity. In this respect a convenient, if arbitrary, result is reached.

The Conference also placed a ban upon the use of the too familiar "hort"—the flouting of new species without any, or with inadequate descriptions in horticultural publications. The members of the Conference perhaps did not recognise the fact that these names are given by nurserymen and dealers, and that as the plants are exhibited and pre-empted under these names, the "publications" are bound to adopt them, at least provisionally. If the abbreviation "hort." is affixed, the botanist knows that from his point of view the name has no significance. It is only a short time since we wasted a whole morning in the endeavour to verify a Latin name which had no other authority than that of the nurseryman who sent us the specimen. If the abbreviation "hort." or an English name had been given, or at least one not constructed according to botanical usage, we should not have been misled. The suggestion

that a new species must be accompanied by a description in Latin, English, French, German or Italian, called forth considerable discussion, especially on the part of the Scandinavian and Russian members, and the only possible solution seemed to be the insistence on a Latin diagnosis, which we may add it has been the practice of this Journal from the first to give. The law, however, is not to take effect before 1910, and will not necessarily apply to works part of which has already appeared. The members were also, though very unequally, divided on the question of the name to be used when a transference is made from one genus to another, or from varietal to specific rank. Ultimately a compromise was effected. In the former case the earliest "trivial" epithet persists, but not necessarily in the latter. Thus we shall say *Ipomoea Fes-caprae* (originally *Convolvulus Pes-caprae* Linn.), not *Ipomoea biloba*, though the latter binominal is the earliest under *Ipomoea*. On the other hand, if a var. major is considered, as a result of more careful examination or fuller knowledge, to be really of specific rank, the species need not bear the name major, which obviously might be quite inappropriate. With one dissentient, the Conference was unanimous against changing a name once given, however inappropriate; *Asclepias syriaca*, for instance, is quite unknown from Syria, but a name is a name and must stand.

The general programme of the Congress included a number of papers on various topics, such as the "Development of the Flora of Europe since Tertiary Times," a group of papers in one of which Professor WEBER referred to the Vine as occurring in the earliest known flora, an interesting fact from its general existence in Central Europe presumably only as an escape from cultivation at the present day. This topic also called forth the suggestion of the preservation of such plant formations as throw a light on the history of the flora. It was mentioned, for instance, that the characteristic primitive forests of Bosnia are in imminent danger of destruction, and the Congress was asked to help towards the conservation of a portion. An interesting account was given by Dr. SCOTT, of Kew, on the present position of our knowledge of the seed-bearing Fern-like fossils—the so-called Pteridosperms.

The first day of the Congress was the occasion of the opening of a botanical exhibition in the orangery of the ancient palace of Schönbrunn. The Schönbrunn gardens bring to our mind JACQUIN and the magnificent folios associated with his name, and one of the features of the exhibition was a display of some of his original drawings and MSS.; and an item of the general programme was the unveiling of a bust of NICOLAS JOSEPH JACQUIN in the Festal Hall of the University. In his appreciative oration Professor WIESNER referred to the important position which JACQUIN held in the general scientific, and especially the natural scientific world in the second half of the eighteenth century. At the same time a similar honour was paid to a contemporary of JACQUIN'S, JAN INGEN-HOUSZ, a court physician, but known to botanists as one of the earliest workers on plant physiology, especially nutrition—" *qua ratione plantæ aluntur primus conspexit*."

An interesting feature of the botanical exhibition was the unique specimen of a



CRINUM RATTRAYI, A SPECIES FROM THE LAKE ALBERT DISTRICT IN UGANDA; FLOWERS WHITE; OF REAL SIZE; OUTLINE SHOWING HABIT.

curious Asclepiadaceous plant, *Fockea capensis*, brought originally from the Cape, but not found since. It develops annual shoots from a hard persistent woody rhizome as large as a child's head.

At the final meeting of the Congress, in response to an invitation from the Belgian members, voiced by Professor ERRERA and supported by the Belgian Government, Brussels was selected as the meeting place for the third International Congress, which will meet in 1910.

CRINUM RATTRAYII.—Our Supplementary Illustration shows a beautiful, pure white, fragrant *Crinum*, for which Sir TREVOR LAWRENCE, Bart., received a First-class Certificate at the Royal Horticultural Society, March 28 last. The plant was introduced by Major RATTRAY, then of the King's African Rifles, at Entebbe, and now of Rattray's Sikhs, in the Punjab, India. Major RATTRAY sent the first bulbs from his garden at Entebbe, and has kindly forwarded a photograph of one of the plants growing there. The plant is not indigenous in the Victoria Nyanza district, the specimens at Entebbe being cultivated ones. Later, Major RATTRAY sent to the neighbourhood of Lake Albert, where it is said to be indigenous, and secured the bulbs which are now in cultivation. Horticulturally this is one of the finest and most distinct of *Crinums*, the large pure white flowers and ascending dark green leaves rendering it easily distinguishable. Botanically it appears to be the most ornate of the *C. giganteum* section. We may remark that even in its own country it commanded admiration, for Major RATTRAY reports that the natives assert that when MUSA was King of Uganda, this *Crinum* was dedicated to his use and that of the highest chiefs, and heavy penalties were inflicted on others found in possession of the plant.

ROYAL HORTICULTURAL SOCIETY.—EXAMINATION IN COTTAGE AND ALLOTMENT GARDENING. —After a careful perusal of the 139 papers returned from the various centres, the examiners report a distinct advance in the answers pertaining to the practical treatment of cottage and allotment gardens in general as compared with those of the previous examination in 1904. A goodly number of those in the first-class, notably such as form the upper half of it, have evidently gained considerable experience in the working of such gardens themselves, whilst some of the answers given afforded peculiar pleasure to the examiners. The answers given to question 1 showed in several instances that the method of trenching was clearly understood. Several candidates greatly confused the terms "pyramids," "bushes," "cordons," and "espaliers," as applied to fruit-trees. The term "herbaceous" as applied to flowering plants also showed a deficient knowledge, whilst, singular to say, only a very small number included *Roses* amongst woody plants suitable for cutting and bunching for sale or otherwise. "Annuals," "biennials," and "perennials" were also much confused with each other. In the making up of hot-beds the replies were frequently vague and lacking in detail. Guesswork characterised some replies—notably in advising that "early Peas should be raised from roots saved over from the previous year," that "Raspberries should be propagated from cuttings," and that "Apples in some cases should be raised from seed." The results of these examinations show on the whole that it is quite possible for the children in elementary schools to be well instructed in cottage and allotment gardening, and the knowledge thereby imparted will, without doubt, bear good fruit in years to come. The examiners were ALEXANDER DEAN, V.M.H., and JAMES HUDSON, V.M.H.

— EXAMINATION IN HORTICULTURE. — The annual examination in the principles and practice of horticulture was held on April 12, 1905, when 160 papers were sent in; 300 marks were allotted as a maximum, all candidates who obtained 250 marks and upwards being placed in the First Class. The total number of these was 20, or 12.5 per cent. of the whole. Those who secured 200 marks and fewer than 250 were placed in the Second Class. The number was 67, or nearly 42 per cent. Those who obtained 100 marks and upwards were placed in the Third Class, the number being 71, or nearly 44.4 per cent. Three only were not placed. There has been a continuous decrease in the number of candidates since the Council adopted a more advanced syllabus, as there were 229 in 1902; 198 in 1903; 190 in 1904; and 160 in 1905. Comparing the percentages of the number in each class with those of 1904, they were: last year, First Class, about 18.3; Second Class, about 49.2; Third Class, about 32.4; so that the greatest reduction is in the First Class, or about one-third. With regard to the Elementary Principles, the syllabus now requires a higher standard of knowledge; but many of the papers of the First Class were



FIG. 6.—CRINUM RATTRAYII FLOWERING IN MAJOR RATTRAY'S LATE GARDEN AT ENTEBBE.

quite equal to it, especially perhaps in matters which are presumably learnt from books. Comparatively few of the 160 attempted to give the morphological characters of the two natural orders required. We infer that this elementary branch of botany does not meet with the encouragement it deserves. In Practical Horticulture, the candidates confined their answers more strictly to the letter of the questions than they have done on previous occasions, and the knowledge imparted by the various lecturers throughout the country has evidently not been in vain. The examiners were Prof. GEORGE HENSLAW, M.A., V.M.H., and JAMES DOUGLAS, V.M.H.

THE NATIONAL ROSE SHOW.—We would remind our readers that the twenty-ninth Metropolitan Show of the National Rose Society will be held in the Royal Botanic Gardens, Regent's Park, on Thursday next, July 6. It will be remembered that the Society's shows were held for many years at the Crystal Palace, and subsequently for several seasons in the grounds of the Inner Temple, Thames Embankment. This year a fresh place has been chosen, owing to the Temple Gardens being no longer available, and it will be interesting to watch the result of the innovation. The value of the money prizes, pieces of plate, medals, &c., to be awarded is £270. The three Champion Challenge Trophies will also be again competed for.

THE FRUIT CROPS IN KENT.—The sales of Cherries on the trees that have been recently held in the Maidstone district show how variable is the amount of the crop; thus, on one farm 4 acres of Cherries yielded £48, whilst the crop from 3 acres not many miles away, brought only £2. The highest price, according to a Kentish paper, was yielded by a crop from 13 acres. The bidding began at £200 and ran up to £460! From exactly the same area elsewhere only £72 was realised. Near Sittingbourne, 11 acres of Cherries fetched £250. "Both from a grower's as well as from a buyer's point of view, the sales as a whole are stated to have been the most depressing experienced for some years."

HORTICULTURAL CLUB.—The summer excursion is fixed for Thursday, July 20, and it has been decided to carry out the following programme:—Saloon carriages will be attached to the train leaving Waterloo Station at 10.5 for Weybridge, where brakes will be in readiness to convey the party to the new Garden of the Royal Horticultural Society, Wisley. After luncheon at the Hut Hotel, brakes will convey the party to Chertsey, where a launch will be waiting to convey the members and their friends to Kingston-on-Thames, tea being served on board. Kingston will be reached about 5.30, and Mr. JAMES WALKER has kindly invited the party to visit his garden on Ham Common. Brakes will be in readiness at Kingston to convey the party to Mr. WALKER'S, and later either to Richmond or to Kingston railway stations.

PRODIGIOUS STRAWBERRIES!—Messrs. LAXTON BROTHERS, of Bedford, called at this office on Tuesday last to show us some of the earliest fruits of the new variety Bedford Champion, which we remember to have seen last season in the Bedford nurseries. The large size of these early fruits may be imagined when we state that six of them weighed 1 lb., and twenty-five fruits weighed 4½ lb. The variety is one obtained from crossing a seedling from Noble and Sir Joseph Paxton with another seedling from Scarlet Queen and John Ruskin. Besides being of such large size, the fruits develop very high colour, and a flavour similar to those of Royal Sovereign; and the seeds being nearly buried in the flesh, the fruits are smooth to the palate. It should be added that the fruits mentioned were "king" fruits—a technical term for fruits produced by the central flower in a truss, which, as gardeners and botanists know well, are always bigger than the rest.

A CONIFER DISEASE.—The June number of the *Journal of the Board of Agriculture* mentions that a batch of diseased Spruce seedlings was recently sent to the Royal Botanic Gardens, Kew, from upland Yorkshire, accompanied by a statement that the disease was most prevalent at the crowded end of the seed-bed; the portion where the plants were not so crowded appeared to be fairly free from it. Examination showed the disease to be caused by a fungus called *Herpotrichia nigra* by Hartig, who recorded it as an injurious parasite in the Spruce woods of the Bavarian forests. The leaves are attacked and killed by the fungus, but instead of falling when dead they are bound together by mycelium or spawn, and remain as a compact brown mass clustered round the branch from which they sprang. These dense clusters of dead leaves, fixed to the branches by dark-coloured, cobweb-like mycelium, are very characteristic. The fruit of the fungus and also minute lumps or "sclerotia" are produced on the leaves. The parasite is most prevalent in nurseries at high elevations, and has been recorded as attacking Spruce (*Picea excelsa*), Mountain Pine (*Pinus montana*), and Juniper (*Juniperus communis*). It occurs in Germany and Norway; it does not appear to have been previously recorded

in Great Britain. The following observations with a view to its prevention are made in HARTIG & SOMERVILLE'S *Text-Book of Diseases of Trees*:—"It is an interesting biological point that the fungus grows especially when the temperature is low, under the snow or during the time it is melting, because in such circumstances the air is completely saturated with moisture. The frequency of the disease at high elevations has led to the general adoption of the practice of forming Spruce nurseries at low altitudes. It has also been found a good plan to look over the nurseries immediately after the melting of the snow, and to raise up all prostrated plants in order that they may be exposed to the wind. It would also be a step in the right direction in planting out trees to set them on hillocks and similar elevations, and to avoid placing them in hollows and other depressions." It is important that diseased seedlings should be collected and destroyed by burning, otherwise the numerous fruits and sclerotia present on the leaves would prove a source of danger in the future.

EFFECTS OF RINGING.—In the *Comptes Rendus* for June 5, we note a paper by M. LECLERC DU SABLON, on the effects of "ringing" or annular decortication on the distribution of hydro-carbonaceous reserves (starch, &c.), in the stems, roots, and leaves of trees. The experimenter concludes that the leaves contained more reserve substances in the decorticated than in the uninjured trees. The products of assimilation, unable to reach the roots, accumulate in the leaves and stems. Thus is explained the considerable increase in the crop obtained by ringing fruit-trees. Chlorophyll is less abundant in the leaves of decorticated trees, the leaves being usually noticeable for their yellowish colour. There seems to be a sort of regulation of the assimilating function; the chlorophyll products of assimilation have no longer their normal outlet, and encumber the leaves, causing a diminution in the production of chlorophyll. The experiments, in fact, clearly demonstrate the interchange of reserve substances that takes place between the stem and the root—an interchange discovered previously by direct study of the distribution of the same substances in a tree not decorticated. At the end of winter and at the beginning of spring the reserves move upwards from the root towards the stem, thus causing in the liber an ascending current of elaborated sap. From May to October the movement is in the reverse direction from the stem to the root. Comparative analyses show further the quantitative importance of these interchanges.

NARCISSUS WITH FOUR BLOOMS ON A SPIKE.

—A correspondent sends us an illustration in the *People's Journal* of a double form of Narcissus, which, growing in a market garden near Dundee, has developed four perfect flowers on a single spike. Many instances of two flowers on a single spike have come under our notice, but cases in which there are four are less common.

SALE OF GARDEN ORNAMENTS.—Messrs. ROBINSON & FISHER'S sales during last week included some valuable garden ornaments, of which the more important were as follows:—A pair of large, old, carved stone vases in subjects "Fire" and "Water," and covers, surmounted by figures holding globes, with the pedestals—£51 (VAN STRAATEN); a pair of old lead statues of a youth and girl dancing, 5½ feet high, with the carved stone pedestals—54 guineas (FEETNAM); a pair of lead figures of a shepherd and shepherdess—£160 (VAN STRAATEN); six fine old Vincenza figures, 56 inches high—75 guineas; a square sundial, standing 7½ feet high on finely-carved stone-shaped pillar with sunk panels of Acanthus leaf, &c., and surmounted by an old lead figure of "The Eird Catcher"—41 guineas (BROWN); a

pair of wrought-iron gates of Renaissance design, Italian, sixteenth century, 10 feet by 6 feet 6 inches—63 guineas; a set of four statuary marble figures representing Europe, Asia, Africa, and America, each 63 inches high—91 guineas (FERGUSON); and a fine old English wrought-iron park gate in three sections, the centre one opening 4 feet 3 inches, the panels at either side 4 feet each, the whole decorated in fine scrolls, pateræ, &c., height 10½ feet, removed in 1745 from Sir ROBERT DASHWOOD'S house, Northbrook, Oxon—94 guineas.

THE REPORT OF THE DEPARTMENTAL COMMITTEE ON FRUIT CULTURE just presented to Parliament records the opinion that this industry is the only form of agriculture which shows any progress. The following, says the *Daily Chronicle*, are among the most important recommendations of the Committee:—

A special sub-department of the Board of Agriculture and Fisheries should be established to deal with matters connected with the fruit industry. The suggestion is that there should be two branches of such a sub-department: (a) a bureau of information; (b) an experimental fruit farm.

Horticulture should be taught in elementary schools in country districts, and such schools should have school gardens attached wherever possible.

A large fruit farm should be established in proximity to the experimental farm, where fruit-growers and lecturers could receive a practical training.

Compensation should be paid on rules laid down by experts to an outgoing tenant of a holding under the Agricultural Holdings Acts on the basis of the value to the incoming tenant.

A Bill should be passed in Parliament for facilitating the purchase of small holdings by tenants with assistance from public funds.

The State should be empowered to lend money to landowners who have fruit on their estates, for the purpose of supplying the ready-money required for the payment of compensation at the determination of a tenancy.

A more simple and uniform system of rates for fruit should be introduced by the railway companies.

Building bye-laws in country districts should be modified so as to allow of the cheaper construction of cottages.

"FRUIT PRESERVING."—A pamphlet with this title, written by Mr. J. H. COOK, and published by the "Pitman" Health Food Co., Birmingham, appears appropriately at this season of the year. It includes not merely directions for preserving fruit, but a strong plea for a diet consisting of cooked fruits eaten with nut-meal and brown bread and butter. Not stopping to analyse the statement that "what sunlight applied outwardly is to the pores of the skin in its purifying effects, so are fruit-juices to the inside coatings of the body, having in this respects effects exactly opposite to those of meat-juices," we may say that the recipes for storing a wealth of fruits until a season of dearth will be found useful.

ARCHAIC BOTANY.—Dr. PENZIG, of Genoa, has recently published an account of two herbaria formed in the sixteenth century (1529—1532) by GHERARDO CIBO, and preserved at Rome. These herbaria date from some thirty years before that of CÆSALPINUS, nineteen years before that of ALDROVANDUS, and eight years before those of the two English botanists, TURNER and FALCONER. Dr. PENZIG gives an enumeration of the plants in these herbaria. Among them are specimens of Cotton, of Maize, of *Opuntia vulgaris*, and Sugar-cane, which are interesting in view of the then recent discovery of the American continent. In all some 1440 different species are preserved in these herbaria, among them being many cultivated in ornamental gardens or for utilitarian purposes. An index of vernacular and scientific names adds greatly to the value of this interesting publication.* In the same work Professor PENZIG has a note on a codex of *Materia Medica* of Dioscorides preserved in Rome. The writer alludes to the famous copies in Vienna and Oxford, but, so far

* *Contribuzioni della Storia della Botanica*, Milan, Ulrico Hoepli, 1905.

as we have seen, does not allude to the Rinuccini manuscript, which was sold in London for £590 in 1857. Some reference was made of this in the *Phytologist* for December, 1857, where also copies of the figures of Papyrus, Nelumbium, and *Nymphaea Lotus* were given.

CARPET-BEDDING AT MAIDENHEAD.—There is always a great deal of summer bedding to be seen along the Thames banks in the boating season. In one garden between Maidenhead and Bray, the Japanese flag may be seen carried out in dwarf plants of suitable colours, and on the same lawn is the name "Togo" in large letters-worked out with little plants as a tribute to the popular Japanese Admiral. Among the less formal arrangements the arches and pillars covered with Rambler and other Roses, and the white Pinks, are very effective in the river-side gardens just now. The decoration of the house-boats is, as usual, satisfactory in proportion to the simplicity of the schemes adopted; flowers of one or at most two colours, and of course plenty of foliage, being more admirable than the confusions of red, pink, blue, and yellow occasionally displayed.

"SUMMER HOLIDAYS."—From the publishers, at 30, Fleet Street, E.C., we have received a pamphlet entitled *Summer Holidays*, by PERCY LINDLEY. The publication is issued under the auspices of the Great Eastern Railway Company, and includes tempting accounts of spots in East Anglia and other districts traversed by the line. There are some capital pen-and-ink illustrations, and the coloured facsimiles of water-colour paintings are charming. The booklet is brought up to date, and should prove useful to many intending travellers.

COVENT GARDEN FLOWER MARKET.—We hear so much of the necessity for "waking up," that it comes as an agreeable variation to be told that in some matters we excel. That "mud-salad" market should be picked out as an example of our superiority is still more surprising. Nevertheless, the *Florists' Exchange* contrasts the arrangements of our flower market with that in New York, and shows that the advantage is this time on our side of the Atlantic.

"JOURNAL OF ECONOMIC BIOLOGY."—We hear that it is proposed to issue in September the first part of the *Journal of Economic Biology*. This periodical is to be edited by Mr. WALTER E. COLLINGE, with the co-operation of Professors A. H. R. BULLER, of Manitoba; GEO. H. CARPENTER, of Dublin, and Messrs. ROBERT NEWSTEAD and A. E. SHIPLEY, F.R.S. The Journal is planned to meet the need for a recognised medium for the publication of original investigations in economic biology. The result of researches will, it is hoped, be reported promptly, and a special feature will be made of the necessary illustrations. A number of British and foreign biologists have promised their support, and it is hoped that the Journal will be found in all university, scientific and public libraries, as well as in the private libraries of scientists. Communications should be addressed to the Editor. The publishers are Messrs. DULAU & Co., 37, Soho Square, W.

PRESENTATION TO MR. FORREST, HADDO HOUSE GARDENS.—On Thursday, June 22, a large number of the leading inhabitants in the district, and the *employés*, with their wives and families, on his Aberdeen estate, were invited by the Earl and Countess of ABERDEEN to join with them in honouring their head gardener at Haddo House, Mr. J. FORREST, who is retiring from active duties after a service of forty years. A very large number accepted the invitation. The chief feature of the meeting was the presentation to Mr. FORREST of many handsome and valuable

presents from the Aberdeen family. Lord ABERDEEN spoke in terms of cordial appreciation regarding the manner in which Mr. FORREST had devoted himself to the duties of his position, and referred to his desirable personality and influence in the district. The feelings of esteem with which he was regarded had already been betokened in a practical manner, one of these expressions being in the shape of a handsome gold watch, offered by the staff at Haddo House and on the estate, and by some other friends and acquaintances. The gifts from Lord and Lady ABERDEEN consisted of a gold watch-chain, gold pencil-case, and gold locket. Lady ABERDEEN presented Miss FORREST with a magnificent brooch in the form of a cairngorm and amethyst beetle.

A CRICKET MATCH.—On Thursday, June 22, the annual match arranged between the firms of Messrs. PROTHEROE & MORRIS, Cheapside London, and Messrs. SANDER & SONS, St. Albans, took place amidst the pleasant surroundings of the Clarence Park enclosure at St. Albans. A well-contested game, the result of which was in doubt until the last few minutes of play, ended in a long-hoped-for victory for the St. Albans players by the narrow margin of twenty runs. Previous to and after the match, the players and other employes, with several of the members of the two firms, were entertained to lunch and tea in the large hall at the residence of Mr. SANDER, when opportunity was taken to express the pleasure occasioned by these annual gatherings.

SPRAYING WEEDS.—The beneficial effect of spraying with copper sulphate in solution in the case of Charlock has led to enquiries being made as to its use in the case of other weeds. In the Report of the Ontario Agricultural College, 1905, we find that experiments were made by Mr. JARVIS, the lecturer in biology, on the effect of the spray on nearly thirty different kinds of weeds, but that practically spraying was effectual only in the case of Charlock. The strength of the spray was 9 lb. of copper sulphate to 45 gallons of water.

EUCALYPTUS.—The following are the species recorded as cultivated in the open-air in British gardens:—

coccifera	alpina
cordata	amygdalina
Globulus	resinifera
Gunnii	coriacea
leucocylon	polyanthema
urnigera	Staigeriana
viminalis	submultiplineris =
vernica	pauciflora
calophylla	stellulata

For the hybrids see *Revue Horticole*, 1903, p. 325. See also *Gardeners' Chronicle*, May 7, 1881; February 2, 1884; November 26, 1886; June 30, 1888.

MEMORIAL OF THE LATE P. B. WEBB.—Under the title "Webbia," we note the publication, in Florence, of *Raccolta di Scritti Botanici pubblicati in occasione del 50th Anniversario della Morte di Filippo Barker Webb*. The souvenir includes a brief account of the life and travels of the botanist, with some of his last letters to Dr. MONTAGNE, which are of great interest, though the proofs of those which were written in English should have been revised by an English botanist. Mr. WEBB's benefactions to Florence are handsomely acknowledged, and some 300 pages of the memoir are devoted to various botanical subjects, including one by Signor BECCARI on the Palms of the genus *Trachycarpus*. The editor of "Webbia" is Professor MARTELLI, of Pisa.

THE CONIFERS OF FORMOSA.—In the number of the *Tokyo Botanical Magazine*, dated April 20, 1905, is an article by Mr. B. Hayata on the "Conifers of the Island of Formosa and their Distribution." Seventeen species are enumerated, all Japanese or Chinese or both, except one that is peculiar to the island and which is not

known to us, viz., *Chamaecyparis formosensis* of Matsumura. The greatest affinity seems to be with the Japanese flora, which indicates a former land connection between Japan and Formosa—a connection traces of which are met with in the Liukiu islands.

GUIDE BOOKS RECEIVED.—The approach of the travelling season is marked by the issue of various books useful to the intending tourist. We note *Horsham and St. Leonards Forest*, in the well-known series of "Homeland Handbooks," published from 22, Bride Lane, Fleet Street. The volume is written by the Rev. W. A. Goodlife, and contains a chapter upon Christ's Hospital, an Ordnance map, and plenty of pictures illustrative of a beautiful neighbourhood. *Rhineland* is an illustrated booklet by Mr. Percy Lindley, and mentions some of the less familiar side-valleys of the Rhine to be reached by the Great Eastern Railway Company's routes *via* Harwich and the Hook of Holland. It is published at 30, Fleet Street. *Tours in Galloway* is issued under the auspices of the Portpatrick and Wigtonshire Joint Railways, and is a pleasantly written and abundantly illustrated guide to a beautiful neighbourhood. It includes a list of hotels and lodging-houses in the district.

PUBLICATIONS RECEIVED.—The *Journal of the Board of Agriculture*, June. Principal contents: Hedgerow Timber, A. C. Forbes; Experiments in the Improvement of Wheat; Manuring of Forest Trees.—*The Agricultural Gazette of New South Wales*, May. Among the contents are: Phytophthora infestans (Potato disease) in New Zealand, C. T. Musson; Potatoes prohibited from New Zealand; Useful Australian Plants and Notes on Amsinckias, J. H. Maiden; Wheat-growing in New South Wales, and Paspalum dilatatum, W. S. Campbell; Royal Botanic Gardens, Ceylon.—*Administration Reports, 1904*, part iv. Education, Science, and Art, by Dr. J. C. Willis, Director. Much extra work was done in the opening of an Experimental Station and the formation of an Agricultural Society, and this and other progress is of much service to planters and others. Much more space is required for the Museum and Library, and it is hoped that this will soon be gained.—University of California: College of Agricultural Experiment Station: *Asparagus and Asparagus Rust in California*, by R. E. Smith.—From the United States Department of Agriculture we have received the following: Bureau of Plant Industry, Bulletin No. 68—*North American Species of Agrostis* by A. S. Hitchcock; Bulletin No. 72, Part iii.—*Extermination of Johnson Grass* (with no indication of the name of the species), by W. J. Spillman; Bulletin No. 72, Part iv.—*Inoculation of Soil with Nitrogen-Fixing Bacteria*, by A. F. Woods.—*Farmer's Bulletin No. 248—The School Garden*, by L. C. Corbett; No. 249.—*Tomatoes*, by L. C. Corbett.—University of Illinois, Agricultural Experiment Station, Bulletin No. 98—*The Carrot and the Apple*, by C. S. Crandall, and No. 100—*Directions for the Breeding of Corn, including Methods for the Prevention of In-Breeding*, by C. G. Hopkins, L. H. Smith, and E. M. East.—*Trees*, vol. iii., by H. Marshall Ward (Cambridge University Press).

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his Correspondents.)

FLOWER-SHOW TENTS.—The complaint made as to the great heat generated in the long tents at the Temple Flower Show is no new one. There the heat is intensified by the great length of certain of the tents, their lowness and the crowds of people who throng them making the heat and close, stifling atmosphere almost unbearable. But excepting the crowds, the complaint is equally made at all shows under canvas in hot weather, and because of the structure of the canvas little seems possible on the part of the respective executives to remedy the evil other than by having the side canvases well unlooped. When that is done it is too often only after the heat in the tents has become excessive, and cut flowers especially have greatly suffered. There can be no doubt, because tent-roofs are so stupidly constructed, that top ventilation of an efficient kind is practically impossible, that the next best remedy is found in unlooping the sides of the tents. But that cannot be always done, as whilst the internal temperature in a close tent may be high, there may be outside a strong wind blowing, which may be objectionable to plants or other exhibits. Until tent roofs are made to have in them large gores or sutures that can be uncovered by drawing back canvas flaps, or be re-covered if rain comes, there seems no hope of getting top ventilation in tents. Show managers would do well to have thermometers in tents, and as soon as the temperature rose to 70° have the sides unlooped down on the leeward side, and all round if the atmosphere was quiescent. Owing to the staging arrangements in the long tents at the Temple, the sides being banks of flowers, even with looping down not much air would be admitted. That difficulty would be best overcome by having broader centre stages and abolishing the side ones. A. D.

RICHARDIA ELLIOTTIANA.—Although the production of double spathes in *Richardia africana* is quite a common event, I am unaware of any record of the occurrence of this phenomenon in *R. Elliottiana*, unless the specimen shown by Mr. Charrington before the Royal Horticultural Society's Scientific Committee on April 25 (see *Gardeners' Chronicle*, p. 286) may be taken as an example. The enclosed photograph shows two plants of this species which flowered in April last, one plant bearing two leaves and a normal spathe, while the other plant possesses but one leaf, the other having evidently become specially modified or developed into a large outer spathe enclosing a smaller or normal spathe surrounding the spadix. The outer spathe measured 9½ inches in length and 6½ inches in diameter, and is entirely coloured yellow. The inner spathe is 5 inches in length and 4½ inches in width. *Ernest G. Creek, Westerfield House Gardens, Ipswich.* [We have seen several similar specimens. ED.]

POLYGONUM BALDSCHUANICUM.—There is a very fine plant of this ornamental climbing Polygonum in the garden of Colonel Maxwell Withan, at Kirkconnel, Newabbey, Scotland. It has been there for four years, and it is quite apparent that the soil and situation suit it admirably. Planted in a border, it has completely covered two old Apple-trees, retained for covering with climbers, and it rambles freely over these, veiling the gnarled branches with its fresh green leaves, and in summer decorated with a wealth of the small white and blush flowers it yields in such profusion. The soil at Kirkconnel is of a peaty nature, and here the Polygonum is quite at home. The climate is mild, though as the situation is low and near the river Nith, spring frosts are sometimes troublesome. P. Baldschuanicum receives no special treatment here, however, and proves a success year by year. *S. Arnoll, Sunny-mead, Dumfries.*

PROVINCIAL FLOWER SHOWS SIXTY YEARS AGO.—I have been considerably interested in perusing the "Fourteenth Annual Report of the Royal Devon and Cornwall Horticultural Society" for the year 1844, kindly lent me by a friend resident in the neighbourhood of Plymouth. From this it appears that the Society was formed in 1830, and that it held three shows annually at Plymouth. From inquiries that I have made I understand that this Society continued its work for a period of about twenty-five years, when it passed out of existence. Between that date and the establishment of the present highly-successful Chrysanthemum Society a few years ago, several attempts were made to inaugurate a series of similar shows; but these attempts were always attended by failure. The only flower-shows now held at Plymouth are those of the Chrysanthemum Society alluded to, early in November, and of the newly-formed Devon Daffodil Society, which held its first exhibition in April, 1904. On referring to the Report I find that, in the year 1844, the Society was possessed of invested capital to the amount of rather over £400, and that its yearly revenue from all sources was about £250. The name of His Majesty the King, then Prince of Wales, appears as Grand Patron of the Society, and in the lists of patrons, presidents, vice-presidents, and subscribers are to be found the names of most of the notabilities in Devon and Cornwall. That the giving of prizes to exhibits of poor quality was strictly discountenanced sixty years ago is proved by Regulation 2, which directs that "no prize shall be awarded where the article exhibited has not been considered by the judges to possess a large share of positive merit," and that there shall be no lack of critical judgment in deciding on the merits of exhibits is provided for by Regulation 16: "The judges shall be at least twelve in number—viz., three for fruits, three for flowers, three for vegetables, and three for cottagers' prizes." With regard to cottagers, it is universally held that, in comparison with bygone years, the labourers' lot to-day is vastly improved. That this contention holds good in the case of wages is borne out by Regulation 1 for Cottagers' Classes, which reads, "Cottagers shall consist solely and exclusively of agricultural labourers whose wages do not exceed 12s. a week." In the matter of flower-shows, however, although I do not profess to have a

knowledge of their conditions in various parts of the country, I imagine that few in the present day would be found where cottagers were more liberally provided for than in the exhibitions held under the auspices of the Devon and Cornwall Horticultural Society sixty years ago, in which, during the year, 140 prizes were given in the cottagers' classes. These prizes were mostly of small amount, but ten labourers won over £1 apiece, taking between them £20 11s. in prizes, the most successful cottager winning £4 9s. 6d. One of the first things to strike the examiner of the report referred to, indicating the changes that occur in horticulture and fashion through the introduction of new varieties which attract popular favour, is that the prize-lists contains no mention of either of the two families of plants that are the only ones for which flower-shows are now held at Plymouth, namely, Narcissi and Chrysanthemums; while the class provided in 1843 for the best collection of *Ericas* would nowadays be a difficult one to fill from private establishments. *S. W. Fitzherbert*. [Our correspondent also furnishes a long list, for which we have no space, of subjects for which prizes were offered in the various classes for stove plants, fruits, vegetables, &c. Ed.]

IMPATIENS HOLSTII.*

This species, which much resembles *I. Sultani*, was shown by Messrs. H. Cannell & Sons, Swanley, at the last meeting of the Royal Horticultural Society, when the species was recommended an Award of Merit. The seeds were originally introduced by Holst from German East Africa to the establishment of Messrs. Haage & Schmidt, of Erfurt. The botanical details are given in the works cited; for the rest our illustration, taken from the living plant, tells its own tale, except in the matter of colour, the flowers being scarlet. It is a native of Usambara and of Kilimanjaro, where it grows on the banks of streams at altitudes between 2,500 and 5,000 feet. It requires the same cultural treatment as the nearly-allied *I. Sultani*.

NURSERY NOTES.

HARDY PLANTS AT WINCHMORE HILL.

A visit at any season of the year to a hardy plant nursery is interesting, for almost always may some members of this popular class of plants be found in bloom, but the present may be regarded as one of the best times at which to see the bulk of these flowers at their best. Mr. Amos Perry's nursery at Winchmore Hill is about eight acres in extent, and it contains a choice selection of these floral beauties; the wonderful varieties of colour, form, and habit that these plants offer can be well appreciated in such circumstances. Here are to be found plants suitable for the border or the rockery, the water or the bog garden, as well as climbers for almost any phase of out-door gardening. The ease with which the generality of the plants may be cultivated renders them of additional value, while for furnishing cut flowers they stand unrivalled.

Mr. Perry has found the limited area at Winchmore Hill quite inadequate to grow his ever-increasing stock of plants, and he has, therefore, recently taken a larger piece of ground at Enfield, where sufficient space is available for the accommodation of a large nursery. About 32 acres of land on Enfield Chase have been acquired, on a good loamy soil, and this is now in course of preparation for the reception of the plants from the older nursery. This has occasioned much dislocation of labour and some disorder in the older nursery, but there was nevertheless plenty of good things to be seen that well repaid a visit that we made recently.

* *Impatiens Holstii*, Engler ex Warburg, in *Engler Abhandl. Preuss. Akad. Wiss.* (1894), pp. 48, 53, et in *Engler Pflanzen. Ost. Afric.* (1895), p. 254; *Bull. Soc. Toscane d'Ortic.* (1904), pp. 339, 24, fig. 23; *Rev. Hort. Belg.* (1905), p. 2, f. 4; *Ed. Mag.*, t. 8 29 in ed.

Some years since Mr. Perry commenced hybridising species of *Eremurus*, and the results are now to be seen in some grand varieties of these lordly plants. The seedlings are at present unnamed. *Eremurus robustus* crossed with *E. Bungei* has given some worthy novelties, quite an advance on anything we have previously seen

Others we were shown were of a pale pink shade, another was almost terra-cotta, while one was of a beautiful bright yellow colour, and still another of a bronzy-yellow. The pale yellow flowers of one of the seedlings was admirably set off by a distinct rose-coloured rib, and the ovaries of a glistening buttercup-yellow. The true *E. Bungei*



FIG. 7.—*IMPATIENS HOLSTII*: A TROPICAL AFRICAN SPECIES WITH SCARLET FLOWERS. Exhibited by Messrs. H. Cannell & Sons.

in this handsome Liliaceous genus. Some of the hybrids possess as tall an inflorescence as the first-named parent, others are intermediate between the two. One of the inflorescences approximated to 6 feet in height, with blooms of a creamy-yellow colour slightly suffused with rose-colour, especially in the younger flowers. There were several of this form, differing principally in the shade of colour, and the parent *E. robustus* may be said to have predominated in these types.

was shown us, and compared with a seedling that was much stronger in habit with flower-spike considerably larger and of an intense shade of yellow, a most beautiful plant.

We have no space to name all the other choice plants we observed in flower, but we may mention a few. *Crambe orientalis* is an excellent subject for a large bed, and develops a huge inflorescence of many hundreds of white star-shaped flowers, the whole forming a lax panicle

as much as 4 feet in diameter. A grand plant of *Tritoma caulescens*, that may not inaptly be likened to a *Yucca*, possessed eight strong growths and several spikes of flowers that are scarcely equal to those of *T. uvaria*. *Campanula collina* makes a very effective border plant, the habit is less than a foot in height, but the rich violet-purple blooms are produced in abundance. *Mimula Tilingi*, grown in a batch makes a pleasing show. *Dianthus Rose de Mai* was prominent in several quarters, and fully deserves a place in any collection of hardy flowers.

Helenium cupreum is a dwarf-growing species, and makes a good border plant, its flowers are orange-red in colour, the height being about 1 foot. *Phlox canadensis* was noticed in several improved forms; there was the lately certificated variety *P. c. Perry's Blue*, and another of rose colour, most floriferous—in fact, the plant resembled a bunch of flowers. *Tropæolum polyphyllum* has long decumbent growths studded with yellow flowers, and foliage as beautiful as the flowers, an excellent subject for trailing down a bank or over a rockery. *Asphodeline liburnica* is a tall-growing species with large yellow-coloured flowers. *Helianthella quinquerervis* is still uncommon in gardens, it resembles a dwarf-growing *Helianthus*.

Rudbeckia flava is another dwarf-growing composite; its flowers are superior to those of *R. Neumani*, and in addition it blooms earlier than that species. Perhaps the most notable of all the improved forms of the many beautiful plants seen was *Anchusa italica Perry's variety*. This striking *Boraginea* was of the loveliest shade of blue, such as is rare among plants and seen best in the species of *Gentian*. The flowers measure over $\frac{1}{2}$ -inch across, and are produced in profusion. *Heucheras* were represented by many improved varieties, ranging from almost white in colour to rich scarlet; one variety possessed a white throat that was edged with rose colour, a desirable combination.

We hesitate to touch upon the many bog and water plants that were brought to our notice, owing to considerations of space, but we will do so briefly. And here we may mention that our own flora furnishes as rich and varied an assortment of these plants as can be found anywhere. The yellow *Water-Iris*, *I. pseudo-acorus*, has scarcely a peer, and what is more fragrant than the Sweet-flag, *Calamus acorus*, or more graceful than the flowering Rush, *Butomus umbellatus*? No Orchid is more beautiful than the *Utricularia*, the Bladderwort; and what exotic can rival the leaves and flowers of *Ranunculus aquatilis*? The translucent leaves of *Potamogeton lucens* are every whit as beautiful as those of the rare *Ouvirandra fenestralis* that requires a stove temperature, while the Arrow-heads, the yellow Nuphar, Frogbit, *Lysimachias*, Mare's-tail (*Hippuris vulgaris*), together with the bog Orchids and a hundred-and-one other plants offer material in plenty to those who find delight in bog and water gardens. Of rarer forms we may allude to *Houttuynia cordata*, *Calla palustris*, *Ranunculus lingua grandiflora*, *Zizania latifolius*, and *Iris prismatica*.

We may mention a supposed natural hybrid between *Meconopsis cambrica* and *Papaver nudicaule*, that was found by Mr. Perry growing in one of the beds. The plant develops numerous Tulip-like flowers of a beautiful yellow colour, somewhat resembling the smaller flowers of *Meconopsis integrifolia*, and is a rich prize.

ENQUIRY.

PLANTS IN FRUIT-HOUSES.—What plants will grow and flower under Peach-trees or Vines in a glasshouse? I have a lot of fruit-houses, and would like to try to grow something under the trees. *Constant Reader*. [As a general practice this is not satisfactory. Ed.]

Obituary.

MRS. BURBIDGE.—Many of our readers will sympathise with Mr. F. W. Burbidge, of the Trinity College Botanic Gardens, Dublin, on the loss of his wife on the 23rd ult. An abdominal tumour necessitated an operation, but unfortunately the patient succumbed in a few hours. Mrs. Burbidge was in her fifty-seventh year, and was an ideal wife for a gardener, well versed in the literature of gardening, and taking so much interest in her husband's pursuits as to be a real and true helpmeet to him.

ARTHUR PERKINS.—The painfully sudden death of Mr. Arthur Perkins, senior member of the firm of Messrs. Perkins & Sons, Nurserymen and Florists, Coventry, occurred on Sunday, June 18, in Holy Trinity Church, Coventry, during divine service. Mr. Perkins was a native of Packington. He settled in Coventry many years ago, and founded the firm of Perkins &



THE LATE ARTHUR PERKINS.

Sons, which has gained many notable successes in floriculture, and has established a high reputation all over the country for floral decorations. Deceased was of a retiring disposition, and took no part in public matters.

The funeral took place at the cemetery at noon on the 21st ult., the remains of the deceased gentleman being laid to rest in the presence of a large number of his *employés* and friends and acquaintances. The coffin bore the following inscription:—"Arthur Perkins. Died June 18, 1905, aged 72 years."

WILLIAM LINDSAY MILNE.—The death of this excellent gardener and market florist grower in his fifty-ninth year has occurred at his residence, Lindsay Lodge, Hampton Hill. Rather less than a year ago Mr. Milne had the misfortune to lose his eldest son, who had gone to Australia for the benefit of his health.

Mr. Milne commenced his gardening career in Scotland, where he served in the gardens of the Duchess of Atholl, the Marquis of Tweeddale, and others. From Scotland he came to England, subsequently becoming head gardener at Beau Manor, Leicestershire. The early decease of his employer brought Mr. Milne to the nurseries of Messrs. Lee, of Hammersmith, and Messrs. Laing, then Downie, Laing & Laing, of Forest Hill. It

was during his stay at the last-named place that he decided to engage in the market florist's business.

Mr. Milne was one of the earliest market florists to grow the now well-known Rose General Jacqueminet for producing flowers for the button-hole, the buds realising 30s. per dozen in the wholesale market at that time. Mr. Milne also commenced cultivating the tree Carnation, the Gardenia, and other flowers. An excellent and painstaking gardener, his productions were ever of the highest excellence. It has often been stated that it is impossible to maintain a market nursery in good order, but Mr. Milne's nursery at Hampton Hill was a pattern of neatness. In local matters Mr. Milne took a keen interest.

The funeral took place on Monday last, at St. James's Church, Hampton Hill, when a large gathering of horticultural friends and others assembled at the graveside. Much sympathy is felt in the district for Mrs. Milne and her family in this the second bereavement within a year.

SOCIETIES.

THE ROYAL HORTICULTURAL.

(Concluded from p. 398.)

Floral Committee.

JUNE 20.—Some excellent varieties of *Anchusa italica* were shown by J. B. FORTESCUE, Esq., Dropmore, Maidenhead (gr., Mr. Page). They have large flowers, and are freer in habit than the type, but as an award has already been made to a similar variety, *A. i. grandiflora*, no further recognition was recommended.

Psoralea pinnata was shown in flower by the Hon. JNO. BOSCAWEN, Tregye, Cornwall. It is a Leguminous shrub, with blue-coloured, Pea-like flowers (illustrated in our columns on May 9, 1903, p. 301).

The distinct *Rhododendron*, *R. cinnabarinum*, was shown in the form of cut specimens by Mr. GILL, Tremough, Cornwall.

Mr. HENRY ECKFORD, Wem, Shropshire, brought a collection of Sweet Peas, with which his name is so intimately associated. Many of his newer novelties were included. We noticed the varieties King Edward VII., Countess Spencer (one of the very finest "pinks"), Romolo Piazzani (a new variety of exquisite light-blue colour), Scarlet Gem, Lady Hatherton, Gladys Unwin, &c. (Silver-gilt Banksian Medal).

Some well-grown *Gloxinias* and herbaceous *Calceolarias* were shown by Mr. G. H. Street, gr. to J. A. YOUNG, Esq., Stone House, Putney. The *Gloxinias* represented a good strain of these showy flowers (Bronze Banksian Medal).

A batch of *Streptocarpus* staged by Mr. E. Beckett, gr. to Lord ALDENHAM, Elstree, was as meritorious as any group in the Hall. This extensive collection contained plants of almost every shade of colour, and the quality of the plants was remarkable. Some of the specimens carried dozens of spikes of flowers (Silver-gilt Banksian Medal).

Messrs. KELWAY & SONS, Langport, Somerset, furnished the concert platform with a large collection of *Pæonies*, *Delphiniums*, and *Pyrethrums*. The *Delphiniums* were arranged in the centre of the group and at the back. Among the last-named were the varieties Norman Hurst (an exquisite shade of electric-blue) and *Primrose* (of pale cream-yellow colour), both worthy a place in any collection of these plants (Silver Banksian Medal).

Mr. R. H. BATH, Wisbech, made a bold display of *Pæonies* and Spanish *Irises*. The *Pæonies* were a remarkably fine lot, and included some new varieties, to two of which were granted awards. We may select the varieties *Lady Anna*, *Jules Calot*, *Victor Hugo*, *Her Grace* and *La Fiancée* as being some of the best examples shown (Silver-gilt Banksian Medal).

Mr. BEN. R. CANT & SONS, Old Rose Nurseries, Colchester, staged a group of cut *Roses*. Pillar and climbing varieties were numerous, and many single kinds were included. The variety *Mrs. W. J. Grant* was shown in good form. Several vases contained the new seedling pillar *Rose*, *Maharajah*, a single variety with deep purplish-red flowers (Silver Flora Medal).

Messrs. GEO. COOLING & SONS, Bath, displayed a large group of cut *Roses*, the whole of one of the central tables being entirely filled with the flowers (Silver-gilt Banksian Medal).

Roses of all types from the open garden were shown by Messrs. PAUL & SON, The Old Nurseries, Cheshunt. The flowers were arranged in vases, with a few specimen blooms shown in boxes. The varieties Carmine Pillar and Bardon Job were both presented in good form. The Dandy, H.T., is of the richest purple, comparable to velvet. *R. polyantha grandiflora* makes a good plant for covering pillars, pergolas, &c. Messrs. PAUL also displayed a flowering branch of *Fremontia californica*, and sprays of *Abutilon vitifolium* the latter with pale lavender-coloured flowers (Silver Banksian Medal).

Messrs. FRANK CANT & Co., Colchester, contributed a collection of Roses, having examples of many of the types of these popular flowers in first-class condition. The H.T. Papa Gontier was shown well; Lady Battersea is a pleasing variety; *R. macrantha* is quite one of the best varieties of the single type (Silver Banksian Medal).

A nice display of Roses was set up by Mr. GEORGE PRINCE, Longworth, Berks; the flowers were staged with good taste. Paul's Single White was shown in fine condition. Other good varieties were Lady Battersea, the favourite Carmine Pillar, Papillon, and Austrian Copper, the colour of the last-named being unique—a bronzy-orange or copper colour.

Messrs. CANNELL & SONS, Swanley, Kent, staged several good things. There were *Aquilegia* in number, and in many shades of colour; a batch of *Kalanchoe flammea* and *K. fulgens*, also some well-grown plants of *Gloxinias*, and specimens of *Lonicera Hildebrandiana* (Bronze Flora Medal).

Mr. CHAS. TURNER, Royal Nurseries, Slough, showed a fine lot of Carnation flowers, also flowers of varieties of *Pæonies*, &c.

Messrs. HUGH LOW & Co., Bush Hill Park Nurseries, Enfield, had the well-known greenhouse plant, *Diplacus glutinosus*, in very good condition; also plants and flowers of *Souvenir de la Malmaison* and other Carnations and *Ericas*.

Messrs. T. S. WARE, Ltd., Feltham, arranged capital flowers of Tree Carnations in elegant glasses.

Messrs. JAS. VEITCH & SONS, King's Road, Chelsea, showed excellent *Souvenir de la Malmaison* Carnations in many varieties. They also had two new *Primulas*, *P. sikkimensis* and *P. pycnoloba*. The first-named has drooping flowers of a yellow colour, the other is very curious, but of little value as a "garden plant."

Messrs. JAS. VEITCH & SONS had also a group arranged on the ground-floor, in which some of the choicer and rare-flowering trees and shrubs were shown, such as *Cistus florentinus*, *C. ladaniferus*, *Escallonia × exoniensis*, *E. × langleyensis*, *Carpenteria californica*, *Senecio Greyii*, *Magnolia Watsoni*, &c. One of the features of the group comprised branches of *Cornus Kousa* cut from trees 16 feet high at the Coombe Wood Nursery. These were thickly studded with flowers, their white bracts showing what an effective tree this species is (Silver-gilt Flora Medal).

Mr. H. B. MAY, Dysons Lane Nurseries, Upper Edmonton, made a feature of *Ixoras*, using small Ferns and *Selaginellas* freely as a groundwork to these flowers. *Ixora Fraseri* is a very effective plant for decorative purposes. We noticed a good specimen of *Allamanda grandiflora* freely flowering (Silver Flora Medal).

Messrs. T. CRIPPS & SON, Tunbridge Wells, Kent, contributed a group of Japanese *Acers*, and a few species of *Vitis*.

The best exhibit of stove foliage plants was that from Mr. L. R. RUSSELL, Richmond Nurseries, Surrey. The collection was a very representative one, and the species and varieties were all shown as thoroughly well-cultivated plants. They were arranged in an effective group upon the ground-floor, and presented quite a study in variety of colour, tint, and form of leaf. Such choice plants as *Anthurium crystallinum*, *Bertolonias*, *Marantas*, *Alocasias*, *Aralias*, *Codiaeums*, *Cordylines*, *Amasonia*, &c., were included; also good specimens of *Nepenthes sanguinea* and other species of the genus (Silver Flora Medal).

Messrs. W. M. BULL & SONS, King's Road, Chelsea, put up a collection of stove and greenhouse foliage plants. *Dracena Victoria* occupied the centre of the display. There were in addition good specimens of *D. John Luther*, *D. Prince Manouk Boy*, *Aralia Veitchii*, small *Cladadiums*, *Crotons*, &c. Adjoining the foliage plants were a number of Spanish *Irises* in many shades of colour.

Mr. RICHARD ANKER, Napier Road, Kensington, brought *Notera depressa* in small terra-cotta pots, the plants being covered with their pleasing red berries.

Messrs. W. CUTBUSH & SONS, Highgate, Middlesex, were represented by batches of the popular varieties of *Verbena hybrida*, *Richardia Elliottiana*, *Marguerite Queen Alexandra*, and *Erica Cavendishii*.

Messrs. GEO. BUNYARD & Co., Maidstone, Kent, staged a good exhibit of herbaceous flowers—*Campanulas*, *Heucheras*, *Irises*, *Pæonies*, *Delphiniums*, *Gladioli*, *Veronicas*, &c. A collection of well-grown Spanish *Irises* occupied one end of the display, the yellow *I. Cajanus* being remarkably fine. Sprays of *Andromeda pulverulenta* and *Gillenia trifoliata* were noticed.

From Mr. AMOS PERRY, Winchmore Hill Nurseries, London, N., there was shown a fine bank of hardy flowers, including most of the best of those now in season, some of which are referred to in our note on p. 14 (Silver Flora Medal).

Mr. M. PRICHARD, Christchurch, Hants, had a meritorious lot of hardy flowers. A good display of *Delphiniums* was prominent in the centre of the group; we admired the beautiful Cambridge-blue of *D. Belladonna*. These plants were backed by an inflorescence of *Crambe cordifolia* that spread for a considerable distance. A nice array of *Pæonies* was included, also flowering sprays of *Pentstemon heterophyllus* with flowers of a Borage-blue colour (Silver Banksian Medal).

Mr. R. C. NOTCUTT, Wood's Nursery, Woodbridge, showed a good assortment of herbaceous flowers of the usual kinds—*Irises*, *Pæonies*, *Poppies*, *Foxgloves*, *Delphiniums*, &c. *Polygonum Baldschuanicum* is quite one of the best species.

Messrs. THOS. S. WARE, Ltd., Feltham, Middlesex, staged a group of hardy flowers, *Pæonies*, *Delphiniums*, *Eremurus*, *Irises*, &c. *Spikes of Eremurus Bungei major* were shown in good condition; *E. robustus* was represented by several good inflorescences. An edging of dwarf-flowering subjects, such as *Campanula pulla*, *Dianthus neglectus*, &c., imparted a "finish" to the group. A tall-growing *Iris* of the ochroleuca type was shown named *I. Warei*.

Messrs. BARR & SONS, King Street, Covent Garden, London, brought a large collection of miscellaneous herbaceous flowers, *Lupins*, *Irises*, *Campanulas*, *Pæonies*, *Ixias*, *Poppies*, &c. *Arum Dracunculus* was included in the group, its powerful and very objectionable odour being very noticeable.

Messrs. J. CHEAL & SONS, Crawley, staged cut flowers from the herbaceous border; *Olearia macrodonta* was observed, also the trailing growths of *Tropaeolum polyphyllum*. A rose-coloured *Lupin* named *Lupinus polyphyllus roseus* was noticed.

Messrs. JOHN PEED & SON, West Norwood, London, S.E., staged a group of hardy and alpine plants. Hardy succulent plants were plentifully represented in the collection.

Messrs. R. WALLACE & Co., Kilnfield Gardens, Colchester, showed some excellent herbaceous flowers. The arrangement was good, the plants being placed on tiers of staging. *Liliums* were plentifully represented, *L. excelsum*, *L. Szovitzianum*, *L. monadelphum*, *L. Hansonii*, &c. The beautiful *Calochortus* was shown in many choice varieties. *Brodiaeas*, *Ixias*, *Heucheras*, *Campanulas*, *Irises*, and a host of similar plants contributed to the collection (Silver Banksian Medal).

Mr. JAS. DOUGLAS, Edenside, Great Bookham, brought a number of border *Pinks* and a choice collection of *Iris* flowers. Among the *Pinks* we admired *Snowdrift*, whose flowers are as large and handsome as those of a *Carnation*. They are pure white, with the exception of a suspicion of purple in the base of the petals. *Morna* is another good variety; the flowers are heavily blotched with pink on a white ground. The "Tree" *Carnation Fairy* has a well-formed flower of deep salmon-pink colour. Among the *Irises* the best varieties were *Maori King*, *Butterfly*, and *Black Prince*.

Messrs. BAKER, Lichfield Street, Wolverhampton, showed a very good strain of *Aquilegias*. The colours were exceptionally good, and the form of the best. At either end of the *Aquilegias* were groups of *Zonal Pelargoniums* in most of the improved varieties (Silver Banksian Medal).

Mr. B. LADHAMS, 60, High Street, Shirley, Southampton, staged a collection of border *Pinks* and a few other herbaceous flowers. *Dracoccephalum japonicum* "Blue Gem" is a nice form of this plant.

A collection of hybrid *Irises* and *Hemerocallis* was shown by G. YELD, Esq., Clifton Cottage, York. *Hemerocallis Tangierine* is of a desirable shade of colour, being of a richer yellow than the ordinary type.

Orchid Committee.

There was a very fine show of Orchids, the varied collection shown by the President of the Society, Sir TREVOR LAWRENCE, Bart. (gr., Mr. W. H. White), embracing the widest range, floral and botanical. The group, which secured a Silver-gilt Flora Medal, had at the back some fine specimens of *Thunia Marshalliana*. *T. × Brymeriana*, and *T. × Veitchiana superba*, each with several heads of bloom, and strong sprays of good forms of *Odontoglossum crispum*. The pretty *Masdevallias* included good examples of *M. × Rushtonii*, *M. × Bocking hybrid*, *M. × Ferrierensis*, *M. × Acis*, and others. Among the rare species, some of which will be found mentioned in the list of Awards, were *Acranthus carophorus* and *A. denti*, with singular greenish flowers; the singular little *Angraecum Smceannum*, a very light form of *Aerides Houlletianum*, *A. multiflorum Lobbii*, *Epidendrum Linkianum*, *E. pterocarpum*, *E. umbellatum*, *E. ochraceum*, *E. Watsonianum*, and other *Epidendrums*; a finely-flowered bright crimson *Renanthera Imshoottiana*, &c.

Messrs. CHARLES WORTH & Co., Heaton, Bradford, were awarded a Silver-gilt Flora Medal for a fine group, consisting principally of hybrids, among which was a selection of *Laelio-Cattleya × Fascinator*, *L.-C. × Canhamiana*, *L.-C. × Hippolyta* varieties, *L.-C. × G. S. Ball*, *L.-C. × Lady Miller*, *L.-C. × Aphrodite*, *Laelia × Diglyano-purpurata*, *L.-C. × Diglyano-Warscewiczii*. Other showy kinds were also displayed, with good *Odontoglossum crispum*, two very pretty *O. × excellens* (home raised), *O. × Harryanocrispum*, and other *Odontoglossums*: *Oncidium macranthum*, &c. An effective feature in the group was made by massing orange-coloured hybrids of *Laelia cinnabarina*.

Messrs. SANDER & SONS, St. Albans, secured a Silver-gilt Flora Medal for an effective arrangement of rare and showy Orchids, including good forms of *Laelio-Cattleya × Canhamiana*, *L.-C. × Martinetii*, *L.-C. × hutchleyensis*, &c. The forms of *Cattleya Mossie* included *C. M. kermesina*, a large pure white flower with fine yellow markings on the labellum; and some well-coloured varieties. A good selection of *Odontoglossum crispum*, *Miltonia vexillaria*, and other showy species were noticed; and among interesting and rare species a form of *Bifrenaria inodora* with cream-coloured flowers, *Anguloa uniflora aurea* with lemon-yellow flowers, &c.

H. T. PITT, Esq., Rosslyn, Stamford Hill (gr., Mr. Thurgood), staged a good group that was rich in forms of *Cattleya Mossie* and *C. Mendeli*. Among the former were the white *C. Mossie* "Elijah Ashworth," with a light shading of lilac on the lip, and *C. M. Thurgoodiana*, a good flower with delicate pink sepals and petals, and showy lip; while among the latter the best were *C. Mendeli Pittie*, *C. M. Alfred Smece*, and *C. M. "Our Monarch"*. *Platyclinis filiformis* bore a profusion of its elegant sprays of yellow flowers; *Laelio-Cattleya × Martinetii ochracea* and *L.-C. Cornelia* were good; so also the selection of *Odontoglossum crispum*. Other plants noted were *Trigonidium spatulatum*, *Oncidium trinetrum*, *O. leucocheilum*, *Cypripedium callosum Sanderi*, &c. (Silver Flora Medal).

Messrs. HUGH LOW & Co., Enfield, staged a good group, in which were *Cattleya Mossie Bronze Queen* with a bronzy hue over the yellow of the disc of the lip; and a fine dark form of *C. Mossie*. Tall plants of *Vanda teres* were arranged at the back, with a very dark-lipped *Laelia purpurata*. Also noted were a fine specimen of *Coelogyne pandurata*, two clear white *Cattleya intermedia alba*, *Cypripedium callosum Sanderi*, *C. × selligerum majus*, *C. × gigas Cordeani*, &c. (Silver Flora Medal).

Messrs. STANLEY & Co., Southgate, staged an effective group of *Cattleya Mossie*, *C. Mendeli*, and *Odontoglossum crispum*, with plants of *Lycaste Deppei*, *Oncidium Gardneri*, *O. leucocheilum*, *Odontoglossum citrosimum*, *Miltonia vexillaria*, &c. (Silver Flora Medal).

Mrs. ERNEST HILLS, Redleaf, Penshurst (gr., Mr. Ringham), was awarded a Silver Banksian Medal for a well-grown and profusely-flowered group of *Miltonia vexillaria*.

FRANCIS WELLESLEY, Esq., Westfield (gr., Mr. Hopkins), showed *Laelio-Cattleya × Mrs. Reginald Brade* (*C. Schroderae × L.-C. × Aphrodite*), a pretty flower with white sepals and petals and violet-purple front to the lip; *Cattleya Mossie Miss Ethel Harting*, a good white flower with pale lilac marking on the lip in front of the yellow disc, and *Cypripedium Sanderi*, yellow spotted with purple, and resembling the tint of a large *C. concolor*, but with a broader labellum.

R. BRIGGS-BURY, Esq., Bank House, Acreington (gr. Mr. Wilkinson), showed a fine specimen with three flowers of *Cypripedium Lawrenceanum* Pleanum, Bank House variety, a very large-flowered form, with fine white dorsal sepal striped with emerald-green, the rest of the flower being soft light-green colour tinged with yellow. Also cut *Odontoglossum*.

R. BROOMAN-WHITE, Esq., Ardlarroch, Garelock-head, showed a good selection of cut spikes of *Odontoglossum crispum*.

W. A. BILNEY, Esq., Fir Grange, Weybridge, sent *Dendrobium Dalhouseianum* "Fir Grange variety," a distinct form, of a pale sulphur-yellow colour, with a large maroon blotch on each side of the lip.

F. W. MOORE, Esq., Royal Botanic Gardens, Glasnevin, Dublin, sent cut examples of two *Bulbophyllum*s and of *Tricheglottis fasciata*, which were referred to the Scientific Committee. [The specimens in question were submitted to the Scientific Committee without any information whatever. ED.]

Mrs. S. F. WHITFLAW, Amerden, Taplow, sent *Cattleya Mendeli* "Amerden," a showy variety with a fine mauve-crimson-coloured lip.

Scientific Committee.

JUNE 20.—Present: Dr. M. T. Masters, F.R.S. (in the chair); Revs. Professor Henslow and W. Wilks; Dr. M. C. Cooke; Messrs. Bowles, Shea, Gordon, Massee, Worsley, Worsdell, Douglas, Veitch and Chittenden (hon. sec.).

Pear Midge.—MR. BOWLES showed specimens of Pears attacked by the grubs of this fly, which also contained the larvæ of a small moth. These were referred to Mr. Saunders.

Fiddlers.—MR. GORDON showed specimens of these beetles (*Phyllopertha horticola*, L.), which are something like small cockchafers, and are reported to be very destructive to leaves and flowers. The larvæ feed on the roots of grasses, living for three years. They are very similar to the larvæ of the cockchafer, but much smaller.

Black Currant Mite.—MR. SHEA called attention to the fact that he had grown the variety of Black Currant, Boskoop Giant, for the past four years, and had not found any sign of mite upon it, although other varieties growing in close proximity were suffering from the attacks of the mite severely. Several other members of the Committee had had a like experience. Mr. Shea attributed the immunity of this variety to the fact that the buds were protected by relatively hard and impenetrable scale leaves, through which, in all probability, the mite could not pierce.

Disease of Cactacea.—MR. WORSLEY showed specimens of a scabby growth on the stems of *Phyllocactus*, which Mr. MASSEE undertook to examine.

Melons dying.—Specimens of Melon suffering from the attacks of eelworm at the roots came from Hatfield, Herts. The method of dealing with this troublesome pest was detailed in the *Journal of the Royal Horticultural Society*, 28, p. xxiv. (1904).

Vines diseased.—Vine leaves showing large yellow patches and somewhat papery in texture, from Vines bearing fruit much smaller than the normal were sent from Stafford. No fungi or insects were to be seen, but it was considered that the Vines (four out of nine in one house of Black Hamburgh) were suffering from some condition in the border that affected the roots, possibly choked drainage.

Primula pycnotoba (Bur. and Franch).—This newly-introduced species from W. China was shown by Messrs. Veitch. The plant bears an umbel of flowers with large, inflated calyces and small, deep orange-coloured corolla, scarcely exerted beyond the calyx-tube. The Committee desired to see this at a future meeting.

Origin of Garden Forms of Phyllocactus.—Letters on this subject were received from Messrs. Veitch, of Chelsea, and from M. de Laet, of Contich. The former stated that in the raising of their hybrids *Phyllocactus Ackermanni*, *P. crenatus*, *phyllanthoides*, and *P. "albus superbus"* had been used, as well as the best English and continental forms known when the raising of the "Veitch's hybrids" was commenced. M. de Laet, of Contich, wrote that the following come true from seed: *P. anguliger*, *P. Ackermanni*, *P. grandis*, *P. latifrons*, *P. phyllanthoides*, *P. strictus*, *P. crenatus*, and *P. Hookeri*, and may be regarded as true species. Hybrids are: i., *P. crenatus* × *Cereus grandiflorus* produced the Cooperi class; ii., *P. crenatus* × *P. phyllanthoides* (small flowers)

produced the rosa hybrids, such as *Vogeli*; iii., *P. Ackermanni* × *Cereus speciosus* have given the most beautifully coloured hybrids, such as × *Feastii*, × *Conway Giant*, &c.; and iv., all have been re-crossed and have given most interesting forms and colours. I myself obtained unexpected results. For instance, I obtained the Cooperi form, true in form, but of the finest pure red colour, and just last week (acellings from 1900 and 1899) two forms of the red Cooperi, but shaded with purple (cross Cooperi × *Conway Giant*). Another interesting cross is *Joseph de Laet* of two shades of blue. Usually all the *Phyllocacti* have sepals and petals going into one another softly, but in this the contrast is forced, the sepals being very dark and the petals of the softest shades. The value of this plant lies in the colour, not in the form; there are better forms (*Niobe* × *Docteur Hernu*).

Mr. WORSLEY made some remarks upon the foregoing, but reserved a fuller account of these plants for a future occasion.

Fruit and Vegetable Committee.

JUNE 27.—A meeting of a selected deputation from the Fruit and Vegetable Committee was held in the Wisley Gardens on the above date, Mr. G. Bunyard, V.M.H., presiding; also present were Messrs. E. Beckett, J. Cheal, S. Mortimer, G. Norman, V.M.H., and A. Dean, V.M.H.

The object of the meeting was to enable the deputation to see Peas and Tomatos, and to select such varieties as might be thought worthy of presentation to the Committee. The Peas selected were Sutton's Green Gem, 15 inches in height, early, and a first-rate podding Pea; Little Marvel, the earliest podding dwarf Pea in cultivation, sent by Messrs. SUTTON & SONS, JAS. CARTER & CO., and BARR & SONS; Laxton's Dwarf Gradus, Essex Wonder (a taller Pea), and Excelsior. Amerc, Duke of York, Edwin Beckett, all early, and some yet to pod, were doing well. Many varieties, however, had been severely injured by frost, and had not recovered. The ground is yet scarcely good enough to do Peas justice, and it is evident that a considerable amount of manure will be needed and labour expended to bring the upland soil into a good crop-bearing condition. Potatos are more promising. So far an effort to secure a large trial of white Broccoli is greatly handicapped by the quantity of black wire-worm in the soil. Probably a liberal application of gas-lime and soot will be helpful to get rid of a legacy of bad previous cultivation.

In the houses Tomatos are doing well. The earliest plants, put out in rows in the house borders, are fruiting finely, but the best at present undoubtedly is Sunrise, sent by Messrs. JAMES CARTER & CO. This may well be described as one of the heaviest cropping Tomatos yet seen. Large clusters of some ten to twelve good-sized, handsome dark red-coloured fruits are abundant, and the sample is excellent in form, size and colour. Also heavy cropping are Messrs. SUTTON & SONS' Earliest-of-All and Best-of-All, and Messrs. JAMES VEITCH & SONS' Ham Green.

THE HORTICULTURAL CLUB.

After the usual monthly dinner of this Club at the Hotel Windsor on Tuesday the 20th ult., at which Sir John Llewellyn presided, Mr. D. B. Crane read a paper on the "Beauty of the latter developments of the Pansy," illustrated by an exhibition of up-to-date examples. The most interesting feature of the paper and of the exhibits consisted of representatives of the *Violetta* or miniature section in the shape of extremely compact tufted plants suitable for rockeries and covered profusely with smaller flowers of the *Viola* type in many delicate colours. These are hybrids between *Pansies* and *Viola cornuta*, the result being the elimination of the lax spreading habit of the former, and the introduction into the latter of the varied Pansy tints. A further and very important result is additional hardiness, the *Violettas* being true perennials, while the Pansy often dies after flowering and is a difficult plant to maintain in form, especially under the drier conditions of southern Britain.

In the subsequent discussion considerable stress was laid upon the fact that the improvement was largely due to recourse having been had to the normal species *Viola cornuta* as the seed-bearer, instead of adhering to the practice common among both British and foreign hybridisers of continually crossing variety with variety.

The result of this last-named practice is a greater and greater lack of vigour and less of the natural habit of the species, so that although

splendid individual flowers are often obtained, this is at the expense of the floriferous nature of the plants, and, as a rule, when the amateur acquires them, their quality speedily depreciates under ordinary conditions and the promise of the first flowers is rarely subsequently fulfilled. In the *Violetta* section the caespitose habit of growth protects their roots from drought, and also facilitates propagation by the encouragement of rooting offsets. Mr. Crane justly gave the credit of these new productions to the late Dr. Chas. Stuart, M.D., of Chirnside, Berwickshire. This experimenter started by fertilising the wild Pyrenean form with the pollen of a garden Pansy named Blue King, obtaining twelve seeds therefrom in 1874. These yielded seedlings which were a complete revelation, though each retained the long dorsal spur or horn which gives the wild species its name. These seedlings were subsequently crossed with various coloured *Pansies*, flowers of every tint but yellow resulting, while the typical compact wild habit was retained and perpetuated. To prevent too close an approach to the known Pansy type, Dr. Stuart crossed some of the seedlings with the original *cornuta* hybrids, and the offspring produced flowers thrice the size of those of *V. cornuta*, much varied in colour and both prolific and floriferous. As the result of a trial of these plants at Chiswick in competition with *Violas*, no fewer than six First-class Certificates were awarded. These flowers however all retained the central rays which are regarded by floriculturists as a disfigurement, and it was not until 1887 that a perfectly rayless form appeared, accompanied by a pronounced Almond-like perfume. The pedigree of this plant is uncertain, as Dr. Stuart referred to it as a "chance seedling." This was named "*Violetta*," and from it originated the dwarf strain since so much elaborated. All through the paper the importance of making *V. cornuta* the seed-bearer was emphasised, as the opposite cross was apt to produce seedlings of the ordinary Pansy type. The general advance was graphically described, and the fresh varieties named, which have led up step by step to the present acquisitions; the paper was therefore of great utility not only to the Pansy-fancier, but to floriculturists generally on account of the principles of hybridising involved.

LINNEAN.

JUNE 15.—Professor W. A. HERDMAN, F.R.S., President, in the chair.

The Rev. JOHN GERARD, S.J., F.L.S., exhibited a series of lantern-slides of *Arum maculatum*, in disproof of the statements of Hermann Mueller and others as to the fertilisation of this plant by small flies, pointing out that these flies were not imprisoned by the abortive hair-like organs above the stamens, but that these visitants became stupefied by the nectar afforded by the ovaries, and were digested by the plant.

Dr. R. N. WOLFENDEN, F.L.S., laid before the Society a report on the *Collid Radiolaria*, being Part VI. of the series on Biscayan Plankton collected by Dr. G. Herbert Fowler during a cruise of H.M.S. *Research* in 1900.

On behalf of Professor Paul Pelseneer, of Ghent, Dr. G. H. FOWLER presented a report on the Mollusca (excepting Cephalopoda), forming Part VII. of the same series on Biscayan Plankton.

Sir DIETRICH BRANDIS, K.C.I.E., F.R.S., F.L.S., illustrated his paper, "Remarks on the Longitudinal Nerves and Transverse Veins in the Leaves of Bamboos," by a series of lantern-slides, displaying the longitudinal nerves of Bamboos, with the transverse veins, the latter easily observed in some species, but in the majority only to be detected by the microscope or after special treatment. These were shown to afford useful diagnostic characters in the case of genera which flowered irregularly and at long intervals. He also exhibited slides from transverse sections of Palm-leaves to show the absence of the mid-rib in such Palms as *Phoenix*.

A second paper by the same author dealt with "Some Remarkable Indian Under-shrubs," whose habit of life had apparently been modified by the effect of annual jungle fires, *Careya herbaea*, *Erythrina resupinata*, and *Grewia sapida* being specially mentioned. Experiments were now in progress at Dehra Dun, in the area protected from forest fires, and appearances now seemed to show that *Careya* and *Grewia* were changing their undershrubby habit and retaining the above-ground stems from year to year, possibly a reversion to original conditions of life.

The next paper, by Mr. W. P. PYCRAFT, A.L.S., "Notes on a Skeleton of the Musk-duck, *Biziura lobata*, with special Reference to Skeletal Characters acquired by Adaptation," was briefly explained by the author.

The last paper was one by Dr. M. T. MASTERS, F.R.S., F.L.S., "Notes on the genus *Widdringtonia*," treated as distinct from *Tetraclinis*, *Callitris*, *Actinostrobus*, with a revision of the genus, and the description of two new species.

ROYAL AGRICULTURAL.

JUNE 27.—If the show at Park Royal is not a success this year the weather cannot be blamed. At any rate on the opening day (Tuesday, and up to Thursday) the conditions were all that could be desired. Up to 1 P. M. on the first day the number of those who had paid for admission amounted to 1,673, as compared with 1,288 up to the same hour last year. We trust these figures may be taken as prophetic of a successful meeting (though subsequent reports are not encouraging). The place is so vast that a thousand or two of people do not make much show in it. The exhibits for the most part interest agriculturists only, but there are a few which concern horticulturists also. First and foremost in this relation are the departments for Forestry and Education. These two are side by side, not far from the pigs! The collection of Osiers and Willows for basket-making and similar purposes made by Lord EGERTON of TATTON deserves notice, and the specimens and photographs shown by the Earl of YARBOROUGH from Brocklesby Park appeal to the planter. The exhibit of Larch and other timber subject to the creosoting process is very striking. The photographs of woods and of single trees illustrative of continental and British systems of sylviculture attract attention, but on the whole this department is not so good and so representative as that of last year.

A similar remark may be made as to the Agricultural Education section. Here we have from ROTHAMSTED, from READING, and various agricultural colleges and stations experiments showing in concrete form the results of omitting or of applying certain manures. It would be difficult to overrate the importance of these experimental results. We are sorry our limitations only permit us to mention them, but as these lines will reach but few before the show closes, it would not be of much value to dilate upon details. We may however, suggest that on another occasion it would be well for the exhibitors to prepare a short statement of the nature of the exhibit, its aims, and the results obtained, which could be given to those interested. In so large a show, and amid such a multiplicity of detail, it is impossible for any reporter in his necessarily hurried survey to grasp the meaning of all that he sees. The Rothamsted exhibit shows very clearly the effect of lime and of its absence on the constitution and nature of the herbage. The Cambridge University agricultural department shows hybrid Wheats and the results of investigation into the chemical composition of Mangels. The MIDLAND AGRICULTURAL INSTITUTE had a particularly interesting exhibit showing the results of experiments with Beans, Peas and other leguminous crops with and without nitrogen, and with or without the German and American bacterial inoculating material. The HARPER-ADAMS COLLEGE, among other things, has a series of model hedges live and dead.

THE METEOROLOGICAL SOCIETY and the METEOROLOGICAL OFFICE have an interesting set of instruments, and some most instructive diagrams.

Placed, some near the forestry pavilion, others scattered throughout the grounds, are collections of living trees and shrubs. Thus Messrs. FISHER, SON & SIBRAY have a beautiful group of ornamental trees and shrubs; *Picea Omorika*, one of the more newly introduced Spruces, and one of great interest, is recommended for planting in exposed places, as it bears exposure to the wind better than many others. The golden form of *Taxus adpressa* is very attractive, and *T. coccinea* "The Lady" is so called from the grace of its appearance. *Ilex crenata*, a Holly with tiny leaves, is recommended for smoky localities; *Rubus nana aurea* is a prettily variegated Bramble, and *Sorbus himalaica* is a fine *Pyrus* of the Aria section.

Messrs. KENT & BRYDON, of Darlington, have a similar group of ornamental deciduous trees and Conifers.

Mr. L. R. RUSSELL, of Richmond, has a group of ornamental shrubs near the main entrance; *Aralia manchurica* is very beautiful in this group.

Hard by Messrs. CUTBUSH show their cocks and hens and other whimsicalities cut out of Box. In spite of their artificial appearance the foliage is clean and healthy.

Messrs. LITTLE & BALLANTYNE have an exhibit of shrubs, together with *Verbenas* and other flowers.

In the exhibit of Messrs. DICKSON & ROBINSON, in addition to Mangels and Potatoes, are Irises and a grand display of *Verbena Miss Willmott*, a variety which has become so popular that it is to be seen in almost all the stands.

The ONE-AND-ALL SOCIETY, in addition to seeds of various kinds, show *Begonias*, Tomatoes, and other things likely to attract the eye of the visitor.

Messrs. DICKSON, BROWN, & TAIT show seeds; and Messrs. DICKSON, of Chester, have, in addition to agricultural seeds, grasses, &c., a small group of hardy ornamental shrubs.

Messrs. WEBB, besides the exhibits that we expect to find, have a fine display of cut flowers of Sweet Peas.

Messrs. CARTER & CO. have Mangels (*Mangels* in June!), and a fine variety of Clovers and Grasses in growth, with *Begonias*, *Gloxinias*, *Lilium lancifolium*, &c.

Messrs. SUTTON have the usual exhibition of finely-selected roots and seeds, together with a glass case of

their fine strain of *Gloxinias*. A brilliant scarlet Sweet William, called Grenadin Scarlet, is noticeable in this collection, as well as a double blue *Nigella*, to which the name of Miss Jekyll is attached. In their collection of living Clovers is one *Trifolium pannonicum*, which is very bold in appearance, but what its value as a forage plant may be we do not know. Garden seats, summer-houses, and garden appliances are shown by Messrs. Inman & Co., of Manchester; J. P. White, of Bedford; Messrs. Merryweather, Strawson, and others. The two last-named firms exhibit various forms of spraying apparatus worthy the notice of fruit growers, whilst, if the visitor should be in want of a figure-head for his back-garden, Messrs. Castle will supply colossal figure-heads of Wellington and other heroes.

RICHMOND HORTICULTURAL.

JUNE 28.—The thirty-first annual show of the above Society was held on the foregoing date in the Old Deer Park. The weather was warm and summer-like. The exhibition was an excellent one taken as a whole, although some of the classes were perhaps not so fully represented as in some former years. Roses and floral decorations were exceptionally well shown, some of the specimens in the classes for the former being of excellent quality. Exhibits of plants and flowers in the group classes were also excellent, and some good vegetables were shown, the Cottage and Allotment Classes being well contested with examples of good produce.

In addition to the competitive classes some notable exhibits were staged by members of the trade, that of Messrs. T. S. WARE & Co. being not only extensive, filling as it did a considerable area in one of the large tents, but of a most meritorious quality, and indeed the finest exhibit in the exhibition.

Mr. H. L. RUSSELL, Richmond, also staged a good non-competitive group, having stove and greenhouse foliage plants in excellent condition. The exhibition was accommodated in four large marquees.

PLANTS.

The groups of plants in one of the large central tents made a very pleasing feature. The 1st prize for a group of plants not to exceed 100 square feet in area was won by the Hon. Mr. Justice SWINFEN EADY, Otlands Lodge, Weybridge (gr. Mr. J. Lock). The group was arranged in a semicircular manner, and was set up with exceptional taste. Handsome stove and greenhouse foliage plants were interspersed with such subjects as *Liliums*, *Ixoras*, *Gloxinias*, *Campanulas*, *Trachelium cœruleum*, *Carnations*, &c. The 2nd prize group was also a good exhibit; this was shown by Mr. H. E. FORDHAM, Nurseryman, Twickenham. 3rd. Mr. W. VAUSE, Leamington.

Mr. VAUSE was 1st in the class for six Palms in not fewer than three varieties, and also was 1st for six foliage plants, distinct varieties.

In the class for a smaller group of plants measuring 60 square feet, Sir FREDERICK WIGAN, Bart., was 1st with a nicely arranged group comprising *Codiaeums*, *Dracenas*, *Anthuriums*, *Carnations*, *Cattleyas*, *Odontoglossums*, *Liliums*, *Gladioli*, &c. The 2nd prize group in this collection was almost solely composed of foliage plants; it was set up by Mr. Hicks, gr. to C. BARTLETT, Esq., East Sheen.

The best six Orchids were shown by Sir FREDERICK WIGAN, Bart., whose exhibit was far ahead of the only other collection, staged by Mr. Wm. VAUSE, Leamington. A pair of *Lælio-Cattleya canhamiana* var. in the 1st-prize group was grand. A good dark blotched *Odontoglossum* (unnamed) was shown by Mr. VAUSE.

Mr. H. Hicks, gr. to C. BARTLETT, Esq., was successful in the class for nine *Gloxinias*, and was also 1st in the class for six plants, the prizes for which were given by Messrs. Sutton & Sons. Mr. W. Hill, gr. to G. ATKINS, Esq., Manaton, East Sheen, was 2nd for nine *Gloxinias*.

The premier prize for twelve tuberous-rooting *Begonias* fell to Mr. H. Fleet, gr. to A. ELSEE, Esq., Burlington House, Hampton Hill, 2nd going to Dr. SCOTT, The Old Palace, Richmond (gr. Mr. R. Johnson). *Begonias* on the whole were but of mediocre quality.

The prizes offered by Thomas Skewes-Cox, Esq., M.P., for the best collection of Sweet Peas in six distinct varieties were awarded to the Rev. A. WELSH OWEN, Old Palace, Richmond (gr. Mr. J. Hurrell), Sir. R. W. BULKELEY, Bart. (gr. Mr. T. H. Bolton), and Mr. R. RAPEL, York Road, Richmond, who were 1st, 2nd and 3rd in the order named.

ROSES.

These flowers as above mentioned were a feature of the exhibition. The premier prize was in Class 10, and this carried with it the Gunnersbury Park Challenge Cup, presented by Leopold de Rothschild, Esq., Gunnersbury Park, Acton, W. Mr. B. R. CANT, The Old Rose Garden, Colchester, was the successful exhibitor, and his collection was indeed good, but so closely followed by the 2nd prize collection that they were only separated by one point. If we select any flowers from the 1st prize group as being specially notable we must include *Bessie Brown*, Mrs. Ed. Mawley, Mrs. John Laing, and *Horace Vernet*. Messrs. PRIOR & SON, Colchester, were 2nd.

In the class for twenty-four distinct varieties of Roses, Messrs. G. & W. H. BURCH secured 1st place with large flowers; followed by Messrs. B. R. CANT & SONS, Colchester, 2nd.

Messrs. BURCH were 1st with twelve distinct varieties, having excellent examples of *Bessie Brown* and *Mildred Grant*. 2nd, Messrs. D. PRIOR & SON.

The best twelve Hybrid Tea Roses of one variety were Messrs. PRIOR's dozen flowers of Mrs. John Laing.

The premier twelve Teas of one variety were those staged by Messrs. PRIOR, the variety being Mrs. Ed. Mawley.

Class 18, for twenty-four bunches of hardy herbaceous flowers was represented by three good exhibits that must have required careful judging. The victors were Messrs. PAUL & SON, Cheshunt, 1st, who showed *Coreopsis grandiflora*, *Ligularia macrophylla*, *Dracocephalum japonicum*, &c. 2nd, the Earl of DYSART, with a very bright display.

Table decorations made an excellent feature, the whole of the exhibits being of a high order of merit. Miss C. B. COLE, The Vineyard, Feltham, had the best basket of cut flowers and foliage. The best bride's bouquet was also shown by Miss COLE, who also took 1st in Class 24 for the most tastefully-arranged table decoration in the modern style.

FRUIT AND VEGETABLES.

Class 19, for six dishes of fruit, distinct kinds, was represented by two exhibits only, those from Mr. Justice SWINFEN EADY and the Earl of DYSART respectively, who were awarded 1st and 2nd prizes in the order named. The 1st prize carried with it a valuable cup presented by Lady Max Waechter, in addition to a monetary prize of £3 10s. The dishes in the premier group included *Alexandre Noblesse* Peach, *Melón Royal Jubilee*, the *Dryden Nectarine* (excellent examples), and *Foster's Seedling* and *Black Hamburgh* Grapes.

The best three bunches of Black Grapes came from the Earl of ONSLOW's gardens (gr. Mr. H. W. Black). The variety shown was *Madresfield Court*. They were good, well-formed bunches, but too early in the season for perfection of finish. ALFRED BENSON, Esq., Upper Gattin Park, Merstham, Surrey, was 2nd with *Black Hamburgh*. 3rd, W. GREENWELL, Esq., Marden Park, Surrey (gr. Mr. W. Lintott), with the same variety.

Three good bunches of *Foster's Seedling* secured for Mr. Justice SWINFEN EADY the 1st prize for white Grapes; W. GREENWELL, Esq., coming a good 2nd with the same variety, but having slightly inferior shaped bunches, and the berries less ripened. The Earl of ONSLOW was 3rd with *Buckland Sweetwater*. Six exhibitors entered in the class for black, and five in that for white Grapes, and the competition was keen.

The best Melon was staged by Mrs. LEWIN PHILLIPS, East Sheen (gr. Mr. T. Cooper), who showed a white-fleshed variety named *Blenheim Orange*.

One dish of Nectarines only was represented in Class 33. These came from Justice SWINFEN EADY's gardens, and were awarded 1st prize, a position the quality merited.

Mr. Justice SWINFEN EADY also secured 1st for Cherries with *Black Bizarreau*, in which class he was again the only representative.

The Earl of DYSART was 1st for two dishes of Strawberries with the varieties *Leader* and *The Laxton*.

For a collection of vegetables of twelve distinct kinds there were three entries, the Earl of DYSART being an easy 1st, having *Ellam's Early Cabbage*, *Magnum Bonum Cauliflowers*, *Early Giant Pea*, *Telegraph Cucumbers*, &c. 2nd, WALTER SULLY, Esq., Eddington Hall (gr. Mr. W. H. Clarke). Potatoes and Peas were shown well in this group.

In the class for a group of vegetables of nine distinct varieties, the prizes were given by Messrs. CARTER & Co., Holborn. The collection shown by Mr. T. H. Bolton, gr. to Sir R. W. BULKELEY, Bart., Beaumaris, North Wales, was 1st, and equalled any in the show. Cauliflowers, Carrots, Peas, Onions, &c., were all in first-class condition. 2nd, Mr. W. ASKEW, 87, Manor Grove, Richmond, but the quality was much below that of the 1st prize group.

In the class for the allotment holders in the Society's district were some good vegetables, Mr. RICHARD KEENE taking the 1st place with some excellent produce, notably Onions, Peas, and Carrots.

Mr. Justice SWINFEN EADY secured 1st place for Tomatoes, having a commendable dish of the variety *Sutton's Al*. 2nd, Mrs. LEWIN PHILLIPS, with the variety *Duke of York*. These two comprised the only entries in this class.

NON-COMPETITIVE EXHIBITS.

Messrs. T. S. WARE, Ltd., Feltham, Middlesex, brought a huge display, almost filling the central staging of one of the large tents. They had Roses, herbaceous flowers, *Begonias*, *Nymphaeas*, *Carnations*, &c., set up in first-class style, quite a show in itself. Mr. RUSSELL, Richmond, staged a choice collection of foliage plants, the members being well grown and shown to advantage. It included some of the best

MARKETS.

COVENT GARDEN, June 28.

[We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Wednesday by the kindness of several of the principal salesmen, who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the way in which they are packed, the supply in the market, and the demand, and they may fluctuate, not only from day to day, but often several times in one day. Ed.]

Plants in Pots, &c.: Average Wholesale Prices

s. d. s. d.		s. d. s. d.	
Aralia Sieboldi, p. dozen	4 0-9 0	Fuchsias, p. doz.	4 0-6 0
Araucaria excelsa, per dozen	16 0-30 0	Heliotropes, per dozen	3 0-4 0
Aspidistras, green, per doz.	24 0-36 0	Hydrangea, Thos. Hogg, p. doz.	8 0-12 0
- variegated, per doz.	30 0-42 0	- Hortensia, p. dozen	8 0-12 0
Asparagus plumosus nanus, per doz.	12 0-18 0	- paniculata, per dozen	12 0-30 0
- Sprengeri, per dozen	6 0-9 0	Kalosanthes, per dozen	9 0-12 0
- tenuissimus, per doz.	6 0-8 0	Kentia Belmoreana, per doz.	12 0-18 0
Bedding plants, store boxes, each	1 0-1 6	- Fosteriana, p. doz.	12 0-21 0
Begonias, tuberous, per doz.	5 0-8 0	Lobelia, per doz.	3 0-4 0
Boronia elatior, per dozen	12 0-24 0	Latania borbonica, per doz.	12 0-18 0
Calceolarias, yellow, per dozen	4 0-6 0	Lilium longiorum, per doz.	9 0-12 0
- herbaceous, per dozen	6 0-8 0	Marguerites, white, per dozen	4 0-8 0
Cannas, per doz.	5 0-6 0	- yellow, dozen	12 0-18 0
Chrysanthemum coronarium, double yellow, per dozen	6 0-8 0	Mignonette, doz.	4 0-6 0
Coleus, per dozen	2 6-4 0	Musk, Harrison's, per dozen	3 0-4 0
Crotons, per doz.	12 0-30 0	Pelargoniums, per doz., Show	9 0-12 0
Cocos Weddelliana, per doz.	12 0-30 0	- Ivy-leaved	6 0-8 0
Cyperus alternifolius, p. doz.	3 0-5 0	- zonal	3 0-5 0
Dracenas, p. doz.	9 0-24 0	- scarlet do.	4 0-5 0
Ericas, per doz.	12 0-30 0	Petunias, double, per dozen	5 0-6 0
Eulalia japonica variegata	12 0-18 0	Rhodanthe, per dozen	4 0-5 0
Euonymus, per dozen	4 0-9 0	Roses, H.P.'s, per dozen	9 0-18 0
Ferns, in thumbs, per 100	8 0-12 0	- Crimson Rambler (large), each	2 6-7 6
- in 48's, p. doz.	4 0-10 0	Saxifragapyramidalis, per doz.	12 0-15 0
Ferns, in 32's, doz.	10 0-18 0	Scлагinella, doz.	3 0-5 0
Ficus elastica, p. doz.	9 0-12 0	Spiraea japonica, per doz.	4 0-9 0
- repens, p. doz.	5 0-8 0	Verbena, Miss Willmott, per dozen	6 0-9 0

Foliage: Average Wholesale Prices.

s. d. s. d.		s. d. s. d.	
Asparagus plumosus, long trails, each	0 6-0 9	Grasses, hardy, p. dozen bunches	2 0-4 0
- medium, each	0 4-0 6	Ivy-leaves, bronze	1 6-2 0
- short sprays per bunch	1 0-2 6	- long trails, per bundle	1 0-2 0
- Sprengeri	0 9-1 6	- short green, doz. bunches	1 0-1 6
- tenuissimus	9 0-12 0	Moss, per gross	5 0-6 0
Adiantum cuneatum, per dozen bunches	4 0-6 0	Myrtle, per dozen bunches	4 0-6 0
Cycas leaves, each	1 6-2 0	Smilax, p. dozen trails	4 0-6 0
Fern, English, p. dozen bunches	2 0-3 0	Hardy foliage (various), per dozen bunches	3 0-4 0

Vegetables: Average Wholesale Prices.

s. d. s. d.		s. d. s. d.	
Artichokes, Globe, per dozen	2 6-3 0	Mushrooms (house), per lb.	0 6-10 0
Asparagus, bunch	6 0-12 0	Onions, Egyptian, per cwt.	5 0-6 0
- English giant	4 0-12 0	- Spring, dozen bunches	2 0-4 6
- ordinary, per bunch	1 0-2 8	Parsley, per doz. bunches	1 0-1 6
Beans, dwarf, per lb	0 6-10 0	Peas, per bag	4 0-6 0
- Channel Island	0 4-0 9	- English, bus.	2 0-2 6
- English, p. lb.	0 6-10 0	Potatoes, old, cwt.	2 6-5 0
- Broad, p. pad	1 0-1 6	- Frame, lb.	0 2-0 2 1/2
Beetroot, bushel	1 6-2 6	- Teneriffe, cwt.	10 6-11 6
Cabbages, p. tatty	2 6-3 0	- Jersey, p. cwt.	9 6-11 6
Carrots, new, doz. bunches	2 0-3 0	- St. Malo, per cwt.	9 0-11 0
- Dutch, dozen bunches	1 3-2 6	- Cherbourg, p. cwt.	7 0-8 0
Cauliflowers, doz.	2 0-3 6	Radishes, p. doz. bunches	0 9-1 6
Celery, French, per dozen	3 9-4 6	Rhubarb, York, per dozen	0 9-1 3
Cress, doz. pun.	1 0-1 3	- Natural, doz.	1 6-2 6
Cucumbers, doz.	1 9-3 0	Spinach, bush.	1 0-1 6
Endive, per doz.	1 6-2 0	Tomatos, English, p. lb.	0 5
Greens, bushel	0 9-1 0	- Jersey, p. lb.	0 4 0 5 1/2
Horseradish, per dozen bundles	8 0-10 0	- Valencia, per package	5 6-20 0
Mint, per dozen	1 0-2 0	Turnips, new, doz. bun.	2 6-4 0
Leeks, per dozen bundles	2 6-3 6	Vegetable Marrows	0 3-0 4
Lettuces, Cabbage, per dozen	0 6-10 0	Watercress, per doz. bunches	0 3 0 6
- English, Cos, per dozen	0 4-0 6		

Cut Flowers, &c.; Average Wholesale Prices.

s. d. s. d.		s. d. s. d.	
Bouvardia, per doz. bunches	6 0-8 0	Mignonette, doz. bunches	3 0-5 0
Calla aethiopica, p. doz. blooms	2 0-3 0	Odontoglossum crispum, pr. dz. blooms	2 0-2 6
- Elliottiana	12 0-18 0	Paeonies, per doz. bunches	2 0-4 0
Carnations, per doz. blooms, best American vars.	2 6-5 0	Pelargoniums, p. doz. bnchs.	4 0-6 0
- smaller do.	1 0-2 0	- Show	4 0-6 0
- Malmaisons	8 0-12 0	- Zonal, double scarlet	4 0-6 0
Cattleya, per doz. blooms	10 0-12 0	- salmon & pink	4 0-6 0
Eucharis grandiflora, per dozen blooms	1 0-2 0	Poppies, Iceland, doz. bunches	1 0-2 0
Gardenias, per dz. blooms	1 0-1 6	- Oriental, doz. bunches	4 0-6 0
Gladiolus Colvillei, per dz. bunches	2 0-3 0	Pyrethrum, doz. bunches	2 0-4 0
Gypsophila, per dozen bunches	2 0-3 0	Rhodanthe, doz. bunches	2 0-3 0
Iris, Spanish, per doz. bunches	2 0-3 0	Roses, 12 blooms, Niphetos	1 0-3 0
- best English grown, per dozen	9 0-12 0	- Bridesmaid	2 0-3 0
Lilium candidum	1 0-1 6	- Kaiserin A. Victoria	2 0-4 0
- laocifolium, rubrum and album	2 0-3 0	- General Jacqueminot	0 6-1 0
- longiflorum	2 0-3 0	- C. Mermet	2 0-3 0
- tigrinum	1 6-2 0	- Caroline Testout	2 0-4 0
Lily of the Valley, per dozen bunches	12 0-18 0	- Liberty	2 0-4 0
Marguerites, white, per dozen bunches	3 0-4 0	- Mad. Chateau	2 0-4 0
- yellow, per doz. bunches	2 0-3 0	- Mrs. J. Laing	2 0-6 0
		- Sunrise	1 0-2 0
		Stephanotis, doz. trusses	1 6-2 6
		Sweet Peas, doz. bunches	2 0-5 0
		Tuberose, per dozen blooms	0 3-0 6

Fruit: Average Wholesale Prices.

s. d. s. d.		s. d. s. d.	
Apples, Victorian and Tasmanian, per case	9 0-12 0	Lemons, per case	7 0-26 0
Apricots, French, per box	1 0-1 6	Maogos, per doz.	10 0-18 0
- per case	3 6-4 0	Melons, each	1 0-2 6
Bananas, bunch	6 0-14 0	Nectarines, A., p. dozen	10 0-18 0
- loose, per doz.	1 0-1 6	- B., per dozen	2 0-4 0
- Jamaica	3 6-8 0	Oranges, per case	6 0-26 0
Cherries, per half bush.	4 0-5 0	- Murcia, case	14 0-16 0
- per box	1 0-3 0	- Valencia, per case	11 0-26 0
Figs, per dozen	2 0-6 0	Peaches, A., doz.	9 0-18 0
French Plums, p. box	1 6	- B., per doz.	1 6-6 0
Gooseberries, per half bushel	2 0-2 6	Figs, per box	1 0-2 0
Grape-fruit, per case	16 0-20 0	- Pines, each	2 6-5 0
Grapes, Alicante, per lb.	1 6-1 9	Raspberries, p. lb.	1 0-1 6
- Hambro, lb.	0 9-2 6	Strawberries, Southampton's, per basket	1 0-2 6
- Muscats, p. lb.	1 0-6 0	- Corish, per doz. punnets	1 0-1 9
		- Kentish, doz. punnets	2 6-5 6

REMARKS.—The supply of Southampton Strawberries is abundant, but a great quantity shows signs of the effects of wet weather. There are plenty arriving also from Kent, Middlesex, Surrey, and Cornwall. Peaches and Nectarines were very plentiful in the first part of this week, but have risen in price owing to a sudden short supply of best quality. Figs (green) again command a very slow trade, owing to large quantities being on the market. English Tomatos have again become cheaper owing to the hot weather. Trade generally has improved considerably.

POTATOS.

Dunbars, 80s. to 90s.; various, home-grown, 60s. to 90s. per ton; seed in variety.

COVENT GARDEN FLOWER MARKET.

THE season seems to be closing fairly well. The demand for good flowering-plants still continues, and large quantities have been disposed of during the past week. Some growers have sold all their spring plants and their stands are empty. Large supplies still come in, but much that is now seen is inferior in quality, and as many of the costers are now buying Strawberries and other fruit instead of plants, there is not such a good "clear out" trade being done. On Saturday and again on Tuesday there were few good plants left on the market, and this morning trade has been moderately good. Crimson Rambler Roses have sold well, the best and largest plants realising 7s. 6d. each. The new Rambler Roses will take a long time to displace the first favourite. I think that known as Lady Gay is the most likely to become popular. Dorothy Perkins, though very pretty, is not quite a popular colour. There is still a large trade done in Marguerites. Good plants of the white and yellow varieties have sold well at fair prices. There are not so many plants of Chrysanthemum setegum on the market now, and good prices are therefore maintained. Fuchsias are plentiful, and most of them of good quality. Hydrangea paniculata varies in quality; some plants are very good, while there are many which have not finished their flowers off well, besides being thin in growth. Some very good plants of Lilium longiflorum are seen, also L. speciosum rubrum; but it is difficult to fix prices for these as some are sold very cheaply. Show Pelargoniums are still plentiful and good. Zonal Pelargoniums are over-done, but some varieties sell well. Ivy-leaved varieties also sell

decorative species of Alocacias, Nepenthes, Dracenas, Anthuriums, Ananassa sativa, Araleas, Marantas, &c. Mr. W. THOMPSON, Sheen Nurseries, Sheen, arranged semi-circular groups of plants at either end of the tent containing the plant groups. They were chiefly foliage plants, but there were interspersed such things as Astilbe (Spirea), Hydrangeas, &c.

Sir FREDERICK WIGAN, Bart., Clare Lawn, Upper Sheen (gr., Mr. W. H. Young), set up a splendid assortment of Orchids. We noticed a pan of Cologyne Schilleriana, Phalenopsis grandiflora Rimestadtiana, Cypripedium Harrisonianum superbum, &c.

The Countess of DUDLEY (gr., Mr. H. Wright) had a small stand of Roses, Delphiniums, &c.

Mr. A. LL. GWILLIM, New Eltham, Kent, contributed some excellent tuberous-rooting Begonias, also Gloxinias and Anemones. Messrs. W. & J. BROWN, Stamford and Peterborough, showed Roses and greenhouse flowers. Messrs. GEO. JACKMAN & SON, Woking, Surrey, brought some nice vases of Sweet Peas, Spanish Irises, Delphiniums, Peonies, Roses, &c. Messrs. J. PEED & SON, West Norwood, London, showed a batch of Gloxinias, also vases containing excellent Sweet Peas. Messrs. JONES & SONS, Shrewsbury, also had a collection of Sweet Peas. Messrs. DOBBIE & CO., Rothesay, N.B., showed meritorious Violas and Pansies, and some good Sweet Peas.

GARDENERS' DEBATING SOCIETIES.

BATH AND DISTRICT GARDENERS.—The members of the above Association held their annual outing on the 22nd ult., when upwards of fifty journeyed in brakes to Clevedon. The party first visited Long Ashton Court, the beautiful residence of Lady Smyth, being conducted over the spacious and well-kept gardens and grounds by the head gardener, Mr. Noble. From Ashton Court the party drove to Tyntesfield, one of the finest gardens in Somerset. In this instance also, the head gardener, Mr. Wilkinson, undertook the task of showing the members the chief features of interest. General regret was expressed that more time was not available to examine more thoroughly the gardens and grounds. Another drive through beautiful scenery brought the party to Clevedon, where a capital dinner was partaken of at the Towers Hotel. The outing was generally regarded as the most enjoyable spent by the Association.

CROYDON AND DISTRICT HORTICULTURAL.—An interesting lecture on "The Distribution of Plants by Adaptation," was delivered on Tuesday, 27th ult., by the Rev. George Henslow, Professor of Botany to the Royal Horticultural Society. Mr. J. J. Reid (President of the Society) occupied the chair. Professor Henslow said protoplasm had the power of adapting itself to whatever the conditions were, and set to work to build up tissues, cells, organs as they called them, adapted to the new conditions. Plants changed generation after generation until they reached those forms which were best suited to their conditions of life. Wherever they went the plants were always adapted to their localities, and they found precisely the same internal structure corresponding to the external conditions. A number of excellent lantern slides showed several points relative to the adaptation of plants, which the lecturer elucidated. A vote of thanks to the lecturer was adopted with great cordiality, on the proposition of the Chairman.

SCHEDULES RECEIVED.

SOUTH SHIELDS HORTICULTURAL SOCIETY.—The Committee of this Society are doing their best to make the exhibitions meet with popular favour. This year's schedule for the exhibition to be held on August 30 and 31 shows that the value of the prizes in nearly all classes has been advanced, and the amount now offered exceeds upwards of £120. In addition to this a Challenge Cup of the value of ten guineas is included in the 1st prize for stove and greenhouse plants. It is the earnest desire of the Committee to get exhibitors from the South to compete. Mr. Geo. Olgilvie, 33, Thomas Street, South Shields, is the Secretary, from whom further particulars may be obtained.

SHEFFIELD FLORAL AND HORTICULTURAL SOCIETY'S Sixth Annual Exhibition, to be held on Saturday, August 19, 1905, in the grounds of Holly Court, Ecclesall, Sheffield.

BOLTON HORTICULTURAL AND CHRYSANTHEMUM SOCIETY'S Nineteenth Exhibition, to be held in the Albert Hall, Bolton, on Friday and Saturday, November 17 and 18, 1905.

HEREFORD AND WEST OF ENGLAND ROSE SOCIETY'S Exhibition, to be held in the Shire Hall, Hereford, on Wednesday, July 5, 1905.

CHIPPING NORTON AND NORTH OXON ROSE SOCIETY'S Exhibition at Ivydene, Chipping Norton, on Thursday, July 13, 1905.

GARDENING APPOINTMENTS.

Mr. J. W. HARPER, late Foreman at Apley Castle, Wellington, Shropshire, as Gardener to BASIL WM. VALENTIN, Esq., Cilgiff, Llanelly, Carmarthenshire. Mr. F. STANBRIDGE, for the past fifteen months with Messrs. J. Laing & Sons, Forest Hill Nurseries, previously four and a half years Foreman at Selsdon Park, Chobson, as Gardener to Lord ERNEST HAMILTON, Shantock Hall, Bovingdon, Hemel Hempstead. Mr. ARTHUR FRY, for the last six years General Foreman at Gateacre Grange Gardens, Liverpool, as Gardener to E. J. JOHNSTONE, Esq., Burrwood, Groombridge, Kent.

well when in good condition, but there are now many rough-looking, straggling plants. Mignonette is not over-plentiful. Good Cannas are still procurable. Well-flowered plants of *Tropeolum* (dwarf) in both yellow and crimson varieties are seen, but these have come too late to be of much value. The Kalosanties do not now sell so well, excepting the scarlet variety. In Ferns, Palms, and other foliage plants, trade is not very brisk.

CUT FLOWERS.

Trade is very uncertain, and supplies all round are over-abundant. The fruit trade affects the casual trade for flowers more than it does for plants. The shop trade for flowers as well as that of the hawkers falls off when Strawberries and Cherries become plentiful. Yet there is still a moderate trade for some things. The best Roses sell well, but we are now getting large quantities of out-door flowers, and most of these have the outer petals damaged, and, independently of this, the demand is not equal to the supplies. Carnations are in excess of all demands; even the best blooms do not sell well. The very best "Malmansons" make high prices, but those of second quality are not wanted. *Lilium longiflorum* are over-plentiful, and there are still Callas obtainable at moderate prices. Eucharis flowers will not sell even at 1s. per dozen, but a few days may make a considerable difference in the price. *Stephanotis* also moves slowly. All short-stemmed flowers seem to depreciate in value. At the close of the market this morning there remained large quantities of cut flowers. All round the market the dull time has set in before growers have cleared their season's stock. A. U., Wednesday, June 28.

FRUITS AND VEGETABLES.

The following are the latest wholesale prices to hand from the undernoted markets:—

LIVERPOOL.—Vegetables: Potatoes, old, 2s. 4d. to 3s. 3d. per cwt.; new, Jersey, 9s. to 9s. 6d. do.; St. Malo, 9s. 6d. to 10s. do.; Turnips, 6d. to 8d. per dozen bunches; Carrots, 9d. to 10d. per dozen bunches; Cucumbers, 1s. 9d. to 3s. per dozen; Onions, foreign, 2s. to 4s. per bag; Parsley, 4d. to 6d. per dozen bunches; Lettuces, 4d. to 5d. per dozen; Cauliflowers, 1s. 9d. to 2s. 6d. do.; Cabbages, 4d. to 5d. do.—Fruit: Oranges, Valencia, 8s. 3d. to 10s. 9d. per case; Apples, Tasmanian, 10s. 6d. to 13s. 6d. per box; Lemons, Palermo, 6s. 3d. to 1s. per case; Bananas, 4s. to 7s. per crate; Tomatos, Valencia, 8s. to 9s. 6d. per case.

EDINBURGH.—Grapes, English, 1s. 9d. to 2s. per lb.; do. Belgian, 1s. 4d. do.; Lemons, Palermo, 7s. 6d. to 10s. 6d. per box; Apples, Australian, 13s. to 15s. per box; Bananas, 5s. 6d. to 10s. per bunch; Nuts, 18s. 6d. to 40s. per cwt.; do. Barcelona, 35s. to 28s. 6d. per bag; Figs, 9d. per dozen; Walnuts, Italian, 6s. 3d. per stone; Dates, Hollowil, 15s. 6d. per cwt.; Tomatos, Guernsey, 5s. 4d. to 6d. per box; Onions, Egyptian, 4s. per cwt.; Carrots, 1s. doz.; Gooseberries, English, 2½d. to 3d. per quart; Potatos, Canary, 10s. 6d. to 12s. per cwt.

DUBLIN.—Vegetables: Cabbages, York, 3s. to 8s. 6d. per load; Cauliflowers, 9d. to 1s. 6d. per dozen; Parsley, 2s. 6d. to 3s. 6d. per bag; Parsnips, 2s. 3d. to 2s. 6d. per cwt.; Onions, 4d. to 5d. per bunch; Rhubarb, 2s. to 2s. 2d. per dozen; Turnips, 2d. to 5d. per bunch; Salad, 4d. to 5d. per dozen; Carrots, 1s. to 1s. 2d. per dozen; Potatos, New, sandy, 5s. and clay, 6s. per cwt.; Old, finishing at 2s. to 2s. 6d. do.; special lots at 3s. to 3s. 2d. do.

ANSWERS TO CORRESPONDENTS.

ANTHURIUM PROCRASKIANUM × *Berlin*. According to Dr. Engler's Monograph of the Pothoideae, in *Das Pflanzenreich*, just received (June 27), this was described by Makoy in the *Journal de la Société d'Horticulture de France* in 1886, No. 94, p. 83.

ANTS IN GLASSHOUSES: W. B. J. You appear to have tried all the simple and safe remedies, some of which in our own case have proved effectual. In adopting stronger measures you must bear in mind that the greatest care is necessary, because they are themselves or they contain virulent poison. Thus you might pour small quantities of carbolic acid about their haunts, or apply what is known as the Ballikrain Ant Destroyer, the basis of which is arsenic in large proportions, which you may be able to obtain from a wholesale chemist.

DAMPNESS IN GREENHOUSE: W. N. M., Bristol. Cover the floor with a layer of concrete. If any trees are likely to shade the house let them be cut back. Leave just a little ventilation open at night whenever the conditions of the weather outside will allow of this. Do not throw water about or syringe the plants late in the afternoon.

DELPHINIUM: J. McC. Although white forms of this flower are not common, there are such varieties to be had, of which probably the best

is Beauty of Langport. You should compare your flowers with this or some other good white variety, and see if it is superior.

GLADIOLUS FAILING: R. Mac. We find no trace of either fungus or mite. Another season they will probably develop normally.

GRAPES: Sussex Hambro. A very bad case of anthracnose, caused by *Gloeosporium ampelophagum*. The plants should be sprinkled with flowers-of-sulphur mixed with one quarter its weight of powdered quicklime.

LETTUCES: H. J. S. You must first send us specimens of the insect, which is probably an aphid.

MADRESFIELD COURT GRAPE: Zero. Read Mr. Jordan's remarks in the weekly Calendar on p. 8, column 1.

NECTARINE FRUITS: J. G. D. We believe the shrivelling to have been caused by the sun's rays reaching the fruits when their skins were in a more or less damp condition.

NAMES OF FRUITS: In forwarding Peach or other soft fruits to be named, it is imperative that two specimens of each variety be sent, also a shoot with foliage, as identification is sometimes established by the character of the glands. The fruits should be gathered just before they are quite ripe. Wrap each fruit in tissue-paper, and pack them very carefully in soft material and in a wooden box that will not be likely to get crushed in the post. Pack sufficiently tightly to prevent the fruits from shaking in the box. In the case of Peaches it should be stated whether the tree produces large or small flowers. Do not post at the week-end, when delay may be reasonably expected.—E. B.

The two Peach fruits have arrived in a crushed condition with the skins broken. This was due to packing them too loosely in the box, which allowed of their being shaken during transit. The particulars you give would otherwise have been very useful.—W. C. Upon comparing your Peach with Stirling Castle, we felt convinced you had it rightly named, as the fruits were quite similar. Since you have given us a description of the flowers, we have now no hesitation in saying it is Stirling Castle.

NAMES OF PLANTS: Paddy. *Olearia stellulata*, *Polygonum complexum*, *Ozothaunus rosmarinifolius*.—R. F. *Phytolacca decandra*.—E. S. *Polypodium Dryopteris*, *Kalmia latifolia*.—W. S., Reading. *Carex stellulata*.—A. J. A., Leeds. 1, *Achillea macrophylla*; 4, *Fuchsia gracilis* var. *variegata*.—E. R. F. *Hyoscyamus niger*, common *Heubane*.—A. *Brassica sinapis*, *Charlock* or *Wild Mustard*.—C. J. *Phacelia tanacetifolia*.—W. F. *Platystemon californicum*, sometimes called *Californian Poppy*.—L. L. *Salvia Horminum*.—E. V. B. *Erigeron philadelphicus*.—W. T. *Cornus suecica*, nowhere common in Britain.—Enquiry, Enfield. They seem to be all *Iris ochroleuca*.—W. Y. *Muscari comosum*, a variety in which the flower-stalks become deeply coloured while the flowers are abortive. A very old inhabitant.—No Name, Basingstoke. 1, *Pyrethrum Parthenium*; 2, *Dianthus caryophyllus*; 3, *Saxifraga Wallacea*; 4, *Erysimum Peroffskianum*; 5, *Armeria maritima*; 6, *Papaver Rhaas*.—F. W. C. S. 1, *Campanula Trachelium*; 2, *Sedum rupestre*; 3, S. Ewersii; 4, *Asperula cynanchica*; 5, *Sedum album*; 6, S. reflexum.—J. K. B. 7, not found; 8, *Armeria maritima*, white; 9, *Saxifraga*, one of the mossy-leaved section; 10, *Lotus corniculatus*; 11, *Achillea*, perhaps *tomentosa*; 12, *Saxifraga umbrosa*. Send better specimens next time. Our time is precious.—J. M. K. *Dendrobium Falconeri*, very good varieties.—A. B.—1, *Oncidium pretextum*; 2, *O. crispum*; 3, *O. varicosum*.—E. T. *Odontoglossum Schleiperianum*.—Clarendon. *Epidendrum cochleatum*.—W. J. W. *Stanhopea tigrina*, very dark variety.—R. H. *Dictamnus albus*.

POND WEEDS: E. W. and Gib. The following is the method adopted with success by the Michigan Agricultural College in destroying noxious weeds on a lake in which Lilies, &c., were cultivated. This lake is a ½ of an acre in extent, and the first method employed was that of removing the scum from the surface with a rake and carting it away. After careful experiments it was found that the following formula applied with a spraying-machine, had the desired

effect:—Copper sulphate, 4 lb.; unslaked lime 4 lb.; water, 60 gallons. This effectively destroyed the spores of the various organisms comprising the scum, and in two days the pond was practically clear, the decaying matter having all sunk to the bottom. The entomologist at this College reported that no harm resulted to the fish and frogs by these sprayings, but it would be prudent to confine aquatic birds during the period of treatment. Water-snails would not be of use in keeping the pond free from weeds, though ducks and most aquatic birds are valuable for this purpose.

ROBINIA AT BIARRITZ: C. B. Without seeing a specimen we cannot tell you its name. There are several varieties.

ROSE LEAVES: T. H. S. The eruptions on the Rose leaves are caused by the fungus *Phragmidium subcorticatum*, and those on the Orchid leaves by *Uredo orchidis*. The latter can be destroyed by washing the leaves with a solution of soft-soap.

THE PARKINSON SOCIETY: H. A. H. The Parkinson Society was started in 1884 by Mrs. Ewing in consequence of the interest taken in her story, *Mary's Meadow*. *Aunt Judy's Magazine*, and afterwards *Atalanta*, published occasional reports of the Society, and for a long time the secretary was Miss Alice Sargent, 56, Belsize Park Gardens, N.W. The aims of the Parkinson Society were chiefly the protection of rare British plants, and the interchange among the members of wild and garden specimens and of folk-lore and local names connected with them. Nothing having been lately heard of the Society, we cannot say if it still exists.

TOMATOS: J. D. and J. S. The fruits are attacked with the fungus causing "spot" disease, *Cladosporium lycopersici*. Remove and burn any of the fruits that show sign of the disease. The spores of the fungus are supposed to gain entrance to the fruit through minute cracks or punctures in the skin, therefore the use of green stable manure and of anything likely to induce cracking in the fruits should be avoided. Over-watering has this effect. As a preventive, ventilate freely. Exercise vigilance, and spray the plants with potassium sulphide, prepared as follows:—Dissolve 1 ounce of potassium sulphide in a quart of hot water, then make up to 2½ gallons with cold water, when it is ready for use.—H. B. N., Waltham Cross. Wait patiently; there is no disease.

WALLFLOWERS: A New Reader. Your letter is not very clear. Sow the seeds in pans or boxes at once, and plant the seedlings in their permanent quarters in September, when you say your ground will be available. As to varieties, you can obtain double and single-flowered forms; also varieties varying in colour from buff to scarlet and crimson; tall and dwarf-growing varieties are obtainable, and, if permissible, hybrid forms such as *Cheiranthus × kewensis*. We do not recommend individual firms. Scan our advertising columns. You do not make it plain whether you have to exhibit the Wallflowers as pot plants or as cut flowers. If you have to exhibit them as pot plants we should suppose that the judges will require that the plants shall have been actually grown in them.

YORK GALA: Correspondent. We are now informed that in addition to the plants described in our last issue as having received First-class Certificates at this show, a similar award was made to a variety of *Lobelia* named "Dorothy Dixon," shown by Messrs. E. P. Dixon & Sons, Hull. Mr. Jordan, Impney Hall Gardens, Droitwich, won 1st prizes for a Pine and for Strawberries.

COMMUNICATIONS RECEIVED.—J. McC.—Paddy—R. F.—W. M.—S. A.—R. P.—Prof. Bureau, Paris—E. H. W.—M. A. R.—R. B.—F. W. B.—W. T.—T. M. L.—J. Booth—H. A. H.—T. T. Taylor—F. Kranzlin, Berlin—Lord K.—F. H. Collins—F. H., Germany—J. M.—A. D.—F. M.—F. J.—E. H. W.—W. H.—W. M.—Reader—C. E. L.—H. W.—J. C. Crawley—Lord Kesteven—Mrs. F.—P. T.—A. P.—H. H.—T. R.—W. G. S.—Novice.

(For Weather see p. viii.)



THE
Gardeners' Chronicle

No. 967.—SATURDAY, July 8, 1905.

CONTENTS.

Aster subcœruleus ...	23	Orchid notes and gleanings ...	22
Bramble, a new white-flowered ...	32	Pergola of Ivy, a ...	27
Books, notices of ...	26, 27	Presentation to a seedsmen ...	31
Carnations at Tring Park ...	33	Roath Park, Cardiff ...	31
Chelsea Hospital, the forthcoming show at ...	30	Seed-trade prospects ...	22
China, plant collecting in ...	24	Societies—	
Clematis Armandi ...	39	Manchester & North of England Orchid ...	36
Colonial notes ...	23	National Rose ...	37
Flowers and insects ...	31	National Sweet Pea ...	34
Flowers in season ...	31	Royal Horticultural ...	34
Forestry—		Southampton Royal Horticultural ...	36
The Locust-tree ...	24	Sweet Peas ...	32
Im Thurn, Sir Everard ...	31	Trees and shrubs ...	28
Japan, Nature Study in ...	31	Walks, garden ...	32
Kew notes ...	28	Water, wasting ...	33
Lilium Alexandra, a sport of ...	33	Week's work, the—	
Londesborough Park, Market Weighton ...	21	Flower garden, the ...	28
Nursery notes—		Fruits under glass ...	29
Messrs. Carter & Co. ...	22	Hardy fruit garden ...	29
Obituary—		Kitchen garden, the ...	29
Croucher, George ...	38	Orchid houses, the ...	28
Duval, Henri ...	38	Plants under glass ...	29
		Winchfield Lodge, Hants ...	25
		Winchfield ...	25

ILLUSTRATIONS.

Aster subcœruleus ...	23
Clematis Armandi (Supplementary Illustration) ...	22
Orchid seedlings ...	27
Pergola of Ivy, a ...	33
Rose, a Japanese polyantha variety, in Trelick gardens ...	32
Rose Waltham Bride ...	35
Sweet Pea "Helen Lewis" ...	25
View on the terrace at Winchfield Lodge, Hants ...	40
Vine-moth, the ...	

LONDESBOROUGH PARK, MARKET WEIGHTON.

TO many of your readers the name of Londesborough will have a very decided horticultural significance. During the latter half of the nineteenth century it is questionable whether any one of our leading families was more keenly interested in horticulture and allied subjects than were the members of this well-known house. From 1850 till his death in 1860, the first Lord Londesborough planted very largely when extending the park boundaries at Grimstone, near Tadcaster. His name is even yet mentioned with much respect as that of a liberal employer of local labour in this work. The general effect of his work has been seen and admired by hundreds in recent years. He was also keenly interested in gardening under glass, and especially in the growth of hardwooded plants, such as Heaths, Epacris, &c. A special house was erected about 1855 for this purpose, and it is still standing in good condition.

Soon after coming into the title and estates, the second peer began the formation of his well-known collection of Orchids. Probably he was the first amateur who erected houses for their especial culture in Yorkshire. His widow, the present Dowager Lady Londesborough, was also much interested in the culture of plants and

flowers for indoor decoration many years before the practice was so general as it now is. With these thoughts in my mind, when in the Londesborough district recently, I took the opportunity of visiting the gardens there.

I was not in the gardens many minutes before finding out that while time had brought about various changes, there was still much interest shown by both Lord and Lady Londesborough in their gardens generally. The family only resides there during the shooting season, hence the main object is to procure as much produce as is possible in order to supply their requirements when in London or at Scarborough.

There is a large number of home-erected glasshouses, all well adapted for the varying purposes for which they are used. The back range is one of eight vineries, nearly all in full bearing. The first and second ones contain very fine crops of Grapes, mostly of Black Hamburgh, ripe and ripening. Two others are filled with Muscats, and these, too, are fine in crop and bunch, and promise to be excellent in size and colour of berry. In the later houses there is a promise of grand crops, mainly of Gros Colmar, which colours well and is of a much better flavour than is general. I think the fine loam from the calcareous soil at the foot of the Yorkshire wolds may have something to do with this. One house of the variety in question was mainly filled with Vines worked on Black Hamburgh stocks, which Mr. McPherson thought had something to do with improving the flavour.

Peaches, too, are successfully cultivated. The early houses are somewhat different in shape to the general run—viz., three-quarter span, and about 16 feet in width. The front trees are trained on a trellis a little more than quadrangular in shape, as compared with the ones generally seen in old-fashioned Peach-houses. The whole of the back wall from the base upwards is covered with healthy trees, as well as the front trellis. Personally I have a strong liking for three-quarter span-shaped houses for fruit culture, and especially where they are sheltered on the north at a reasonable distance where the shelter will not have the effect of shading the houses. The Peaches in two early houses were Stirling Castle, Royal George, Dymond, Bellegarde, Goshawk, Early Grosse Mignonne, and Violette Hative; all of them had full crops of fruit, fine in size and colour, and the trees were very healthy. Nectarines were equally good, and consisted of Early Rivers, Lord Napier (very fine), and the old Violette Hative, which for colour and quality is hard to beat when seen at its best. Under the ridges there were movable shelves for Strawberry culture, on which there were splendid crops of fruit ripe and to ripen. Royal Sovereign is the favourite variety, though some fine crops of Leader were coming on.

On the south side of the outer kitchen-garden wall there is a Peach case full of fine trees in full bearing. It is nearly a hundred yards in length, and contains twelve trees, which are worth taking some trouble to see. They are trained up a trellis which is about 18 inches from the steeply-pitched roof. There is abundant ventilation both at the top and in the back wall facing north, the air in the latter being obtained from wooden shutters built in the wall. This is a very

important point in erecting narrow Peach cases, otherwise it is difficult to get sufficient ventilation to keep the fruit from ripening prematurely in hot summers. It may be of interest to some readers to mention the varieties that are grown in this case:—Peaches Grosse Mignonne, Royal George, Alexandra Noblesse, Barrington, Nectarine Peach, and Dymond—the harder yellow-fleshed varieties are not cared for, otherwise the season might be prolonged somewhat; Nectarines are represented by Lord Napier, Elruge, Pine-apple, Milton, and Humboldt.

In a large span-roofed house built and once used for plant-culture, I noted a fine lot of healthy pot-trees of Cherries, Plums, Apples, and Pears, all carrying good crops. At the warm end of it were some nice half-standard Orange-trees in full flower. This was a very interesting house. Melons are grown very largely and well. A narrow, slightly sunken, span-roofed house with a path down the centre and a narrow bed on each side was full from end to end with Melons in different stages from those bearing ripe fruit to newly-planted seedlings. The writer considered himself for nearly forty years to be a fairly good Melon-grower, but his conceit has gone now. With the exception of the Melons grown by the late Mr. Wildsmith at Heckfield no others I have seen were equal to the Londesborough ones. Amongst the varieties grown was a seedling raised by Mr. McPherson, which I think will make a name for itself should he offer it to the public.

Like some of his *confrères* Mr. McPherson has found out that to have ripe Tomatos fit for consumption they must be grown parallel to the glass roof that covers them. Fine crops, both ripe and unripe, were in a long lean-to pit with a sunken path against the back wall.

THE PLANT HOUSES.

There are numerous houses full of plants, but, as hinted before, all have to be looked at from the point of view of general utility. Carnations of the Souvenir de la Malmaison type and others for winter flowering were there in abundance. One large span-roofed house filled with fine, healthy plants of the former type presented a grand sight. I was told that as many as one thousand flowers had been cut in one day last year, and could quite see that it could be repeated if needed. Plenty of fresh air, careful watering, and judicious avoidance of excessive feeding supply the reasons why Mr. McPherson, so far as I could discern, is not troubled with Carnation disease in any form. Nearly all the well-known varieties were grown, the old Blush variety and that of Princess of Wales being much liked.

In the large house devoted to Palm-culture were some very nice specimen plants of *Musa Cavendishii*, in 12 and 14-inch pots. I was told that Lady Londesborough made use of this and similar plants for room decoration in the early autumn months. When stood on suitable pedestals in large rooms, no doubt the effect would be very fine. On a large plot covered with ashes, and well sheltered with low hedges, I saw a very fine lot of Chrysanthemums, most of them established in their flowering pots. It was easy to see there was rivalry hatching here for some competitors on the future exhibition-tables of our Northern shows. The collection includes

all the up-to-date varieties, both for the purpose named and for home decoration. This work is mostly looked after by Mr. McPherson's son in his spare time, he having been foreman and general garden helpmeet to his father for some years. Previously he was at Frogmore, Trentham, Croxton Park, &c.

The large kitchen-garden was full of promise for a plentiful supply of vegetables from now onwards to next spring. On the south side of this garden there are some two acres of ground filled with healthy, well-shaped bush and pyramidal Apple, Plum, and Pear-trees, which are a good object-lesson to Northern horticulturists. Notes on these must follow later.

Fortunately, Londesborough is well supplied with water by gravitation, otherwise it would be next to impossible for the very excellent all-round results to be obtained with the limited means at hand. The whole place does great credit to Mr. McPherson, who has been at Londesborough for thirty years, and to his staff. *Yorkshire Gardener.*

NURSERY NOTES.

MESSRS. CARTER'S TRIAL GROUNDS.

At the present time there are no fewer than 1,437 trials of Peas being conducted under equal conditions at Mortlake, and as it were under field culture, farmyard manure being supplied at the rate of 25 tons per acre. The seed was sown on March 30. The earliest variety is one called Carter's Eight-weeks. It grows 1 foot in height, is very productive, and possesses good flavour. Carter's Early Marvel is yet another fine early Pea. This is a seedling from English Wonder and William Hurst. May Flower is only three days behind American Wonder, and has a much better constitution, larger pods, and better-flavoured Peas. This is a seedling from Early Daisy and William Hurst. Many of the individual plants were carrying twenty-two pods of Peas, and there were nine good-sized Peas in a pod. Another fine Pea is Early Stratagem, which is ten days earlier than the old variety, and has fine large pods, and produces a heavy crop. Daffodil is a second early variety, has good pods, is very hardy, and crops heavily. Springtide, a variety with pointed pods, is still prized highly; it quite supersedes William I.

Carter's Superior is a fine Pea, and as early as the variety Lightning. King Edward VII. is a variety of the Early Morn type. It is a fine Pea, of grand constitution and cropping qualities, being one of the best market or garden Peas yet sent out. Early Morn appeared really wonderful, both in size of pod and in its cropping qualities. Torpedo—a cross between Early Morn and Telegraph, was bearing a fine crop of well-finished pods. Time would not permit me to examine closely all the varieties, but these were amongst the most prominent of the seedlings which have yet been named, and of the early-fruited varieties. Later sorts were not at their best.

I was shown a fine new Turnip, a very early white variety, the result of a cross between Milan and Early Snowball, which is earlier than Jersey Lily, and is quite distinct in foliage. It will be a boon, as an early white Turnip was much wanted. I noticed a very fine batch of Canterbury Bells, and a collection of Sweet Peas in 120 varieties.

A trial is being made of forty-six varieties of Wheat. The grass trials for lawn and tennis and golf grounds are also very interesting. *W. A. Cook, Shirley Park Gardens, East Croydon.*

ORCHID NOTES AND GLEANINGS.

EXPERIMENTS WITH ORCHID SEEDLINGS.

M. NOEL BERNARD has been experimenting with certain Orchids with a view of ascertaining the part played in their germination by certain fungoid growths which are discovered in the seedlings. Hybrids of *Bletia*, *Cattleya*, *Cypripedium* and other species made little or no development when an attempt was made to grow them in the laboratory where contact with the fungus was rendered impossible, but upon starting the seedlings in soil infested with fungus a different result was obtained. *Cattleyas*, for instance, in some cases started into growth without the introduction of the fungus, but sooner or later the latter was found to be necessary to their existence. It has been ascertained that the needful "endophytic" fungus is always plentiful in the soil or other surroundings in large Orchid-houses, and this explains why certain hybrids are therein obtained.

further and still more careful trials would yield results by which all growers would benefit.

A fuller account of M. Bernard's experiments will be found in the number of *Le Jardin* for May 20, whence by permission we have extracted the above summary.

THE SEED TRADE.

VEGETABLE SEED CROPS.—The warmer and drier weather of the past six weeks has certainly operated to bring about some improvement in the crops being grown for seed production, though the high winds and tropical showers have beaten down some of the more weakly plants.

Cabbages.—There was perceived early in the year a certain weakness of development in some of the plantations, then came a forcing in time of spring, when the plants appeared to be unable to answer the demand made upon them by Nature; when called upon they made growth

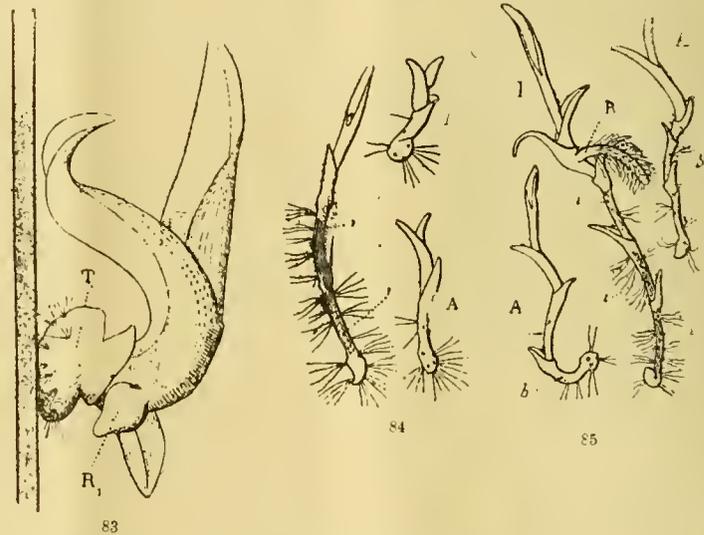


FIG. 9.—EXPERIMENTS WITH SEEDLING ORCHIDS.

- 83.—Plant of *Cattleya* after seven months' culture in a glass tube; T, embryo tuber; R, root.
84.—*Bletia*, aged 3½ months; A, A, after culture without fungus; I, I, after culture with the fungus; I, I, parts infested.
85.—Plants of *Bletia*, aged 5½ months; A, A, cultivated without fungus; I, I, cultivated with fungus; b, b, browned portions; I, I, infested portions; R, root.

Hitherto certain species of *Vanda* and of *Phalenopsis* have not yielded the desired seedlings; at present either the special fungus necessary for these subjects has not been discovered, or the conditions under which they are cultivated prevents that fungus from having access to them. The desired result may be obtained by mixing the new earth in which the seedlings are growing with pieces of the root of an older and infested plant, or even with some of the soil in which that plant is growing. In this manner several seedlings had in five months developed one or two leaves, and were ready to be transplanted, while other seeds sown in the usual way had made no growth. Much time was thus saved by introducing the fungus thus early to the Orchids. In four tubes, three contained seeds of *Cypripedium*, but in the one wherein no fungus had been introduced in three months the seeds had not germinated at all; while in the tubes where the endophyte was present growth was well advanced. The fourth tube contained *Laelio-Cattleya* seedlings growing with the fungus; the latter is not visible to the naked eye, though many growers imagine that they can detect it.

M. Bernard has found considerable difficulty in obtaining fruits of *Odontoglossum* upon which to experiment, and he regrets this, believing that

for a time, then wilted away. There was on the whole less premature bolting to seed in spring-sown Cabbages than is sometimes the case. This tendency is more prevalent on poor land than in soil of good heart. Cabbages are sown for seed purposes at any time between the middle of March and the end of May. The plants which stood the winter for seeding this summer, though much attacked in places by troublesome insects, give promise of a good crop.

Onions.—The unprecedented demand for Onion seeds during the seed season, and the general shortage of the seed crop last year, made it very difficult for orders to be executed. Then Onion-bulbs realised prices very much in advance of their usual average value, and some who had bulbs being held over for planting for seed found it more profitable to sell them on market, especially as there is always a risk in planting Onions for seed. As no seed was carried over and the acreage planted for seed is very small, there is every probability of prices ruling very high in the future. But the foreigner, who has the advantage of a more equable climate, is now growing the finer varieties of English Onions for seeds.

Radishes.—A better time for sowing Radish-seeds was scarcely before known. The seeds

were got into the ground under the most favourable conditions, and yet vermin attacked the plants and practically ruined some of the plantations. There has been, therefore, a great scarcity of salad Radishes in some quarters.

nicely. We seem to be depending for garden culture especially upon the second-early varieties to a greater extent than usual, and a great development can be noticed in the dwarf, dark-green-podded wrinkled Peas; quality and flavour are

and The Gladstone, not to mention others, come into this group. The Gladstone is a Pea of medium growth, green-podded, and of the finest quality, reminding us of what the original Veitch's Perfection was in its palmiest days. It is asserted that this type of Pea gives a quite 50 per cent. of increased yield. Glory of Devon comes into this group; it is a Veitch's Perfection greatly improved. The demand for such Peas is always great, the supply never being equal to the demand.

Beet.—The black aphid has been much in evidence on the plants of Beet for seed; they find their way to them when the plants are in bloom, and seem to suck out their life juices. The outlook as to a probable seed crop is by no means assuring. *Pisum.*

ASTER SUBCERULEUS.*

THIS is the handsome blue-flowered Aster shown by Mr. A. Perry at a recent meeting of the Royal Horticultural Society. It has been confounded with *A. diplostaphioides*, but is quite distinct. The pilose leaves are oblong lanceolate, tapering at the base into a short stalk, and the flower-heads are borne at the ends of the stalk. Each measures when fully expanded 3 inches in diameter. The plant, which is an excellent addition to our gardens, is a native of North-west India, whence it was introduced to gardens by Herr Max Leichtlin. For a botanical description of the plant we may refer to Mr. S. le Marchant Moore's account in our number for November 30, 1901.

COLONIAL NOTES.

TOBAGO.

THE following note is extracted from the *Agricultural News*, the review of the Imperial Department of Agriculture for the W. Indies:—

"The site of a botanic station, to be carried on under the auspices of the Imperial Department of Agriculture, was selected in November, 1898. The station is now fully equipped, is a popular place of resort, with one of the most attractive collections of ornamental plants in the West Indies. In addition, there are maintained large collections of economic plants available for distribution throughout the island. A travelling Agricultural Instructor is employed to afford practical information in regard to the cultivation and the treatment of diseases of Cacao and other crops.

Altogether the prospects of Tobago are brighter than they have been at any time during the last thirty years. It is estimated that there are large stretches of fertile and accessible lands still available for the cultivation of Cacao, Rubber, Cocoa-nuts, fruit, Cotton, Limes, and Tobacco. The absence of destructive hurricanes, the fairly equable rainfall (averaging 65 inches per annum), with the improved means of communication by land and sea, as also the nearness of a large and increasing market in Trinidad for all kinds of produce, render Tobago a promising field for intending settlers."

GREAT STORM IN NATAL.

The *Natal Mercury* for June 9 gives a long account of the great storm which swept over a vast area in Natal on the night of May 31, causing great loss of life and damage to property, whole districts being devastated. Before describing the havoc, the article gives an interesting account of some of the weather reports telegraphed from other districts during the day before the storm. "Pouring rain, with a bitterly cold wind," was mentioned as prevailing at Kimberley; "splen-

* *Aster subceruleus*, S. le Marchant Moore, in *Gardeners' Chronicle*, November 30, 1901, p. 385.



FIG. 10.—ASTER SUBCERULEUS: RAY FLORETS OF BRIGHT MAUVE COLOUR, DISC YELLOW.

Cases are known in which beds were sown, but the plants were so decimated by insect attacks that scarcely a Radish was to be found in a rod of ground. The spell of north-westerly winds which happened worked all the mischief.

Peas.—The early varieties are carrying fair and in not a few cases good average crops, and under the recent dry sunny weather are ripening off

generally excellent; they are of vigorous growth and great croppers. A raiser named Burbidge has done much to increase the type. There are the English Wonder, British Wonder, Witham Wonder, Rivenhall Wonder, &c. The trade is greatly indebted to Burbidge in this respect. Omega may be said to have been the precursor of the section; Gradus, Thomas Laxton, Autocrat,

did rain" had begun to fall in parched Grahams-town; two waterspouts had been observed off the coast at East London; snow was falling in the Orange River Colony; and from several stations in Natal came the news of "rain setting in." Between eight and nine in the evening the storm was raging with great violence, and continued to increase until two hours after midnight, when it gradually abated. "When daylight broke Durban found itself isolated as well as battered by the ravages of the dreadful night."

At South Coast Junction in the Umbilo River valley, where a large proportion of the vegetables sold in Durban are grown, the huts of the Indians and natives, who mostly cultivate garden produce, were swept away by the overflow of the Umhlatuzan and Umbilo rivers, and some 200 of the people drowned, only a few who got caught in the trees escaping. At Bellair Station Mr. Woolridge, a fruit farmer, after anxiously watching until he thought the storm had passed, found his house being washed bodily into the river. With difficulty he freed himself from the wreck, and succeeded in saving his wife. Both were seriously injured, but his two little children were killed. Destruction and disaster are mentioned in many quarters. In Durban in fifteen hours the rainfall was 10½ inches, and at Pinetown over 15 inches. The illustrations show uprooted trees and unroofed houses in Botanic Garden Road, Durban, and other remarkable effects of the storm; also six views of Dundee, Natal, under snow, presenting more the appearance of our British Dundee in winter than views in Natal.

Many singular circumstances are recorded. While Dundee, Glencoe, and the surrounding district were under snow, and had experienced the full violence of the storm, even the telegraph-poles being blown down, Ladysmith and the country around for some distance appeared as an oasis in the desert, the storm not having visited it. Durban was threatened with a stoppage of the water supply, the mains having burst; but the damage was promptly repaired. In other districts gardens and farms were turned into lakes, and great ruin of crops and destruction of cattle is recorded. On the Biggarsberg the snow was 9 inches deep on the levels and 4 to 6 feet in the drifts, and there was great loss of stock.

LEAVES FROM MY CHINESE NOTE-BOOK.

ICHANG TO KAITING.

(Continued from p. 5.)

May 1.—As yesterday was fair, to-day has been foul—one chapter of accidents the whole day through! We made our usual early start, and, assisted by a superabundance of shouting, all went well until we reached the foot of the Lien-Shui-Che rapid at 7.30 A.M. In attempting to tie up in order to carry out a line our tie-rope broke, and we were washed down the river. After a while we managed to get up to the foot of the rapid again. This time we carried out our line safely, and were all but over when a small boat, which, in spite of our remonstrance, insisted in attempting to get over inshore of us, through the breaking of its rope, was washed across our bows. One unfortunate man was dragged in and drowned. We were washed down-stream at a terrific rate, got into several strong whirlpools and were nearly capsized. With the utmost difficulty we got clear of these dangers and managed to haul in our rope. Eventually we managed to get up to the foot of the rapid again, and this time got safely over. On investigating matters, I found two men badly cut and bruised about the legs and shoulders, and totally unfit for work. Several others were suffering from minor cuts and bruises. The tracking-path here being so steep and of sharp rocks, a good foothold was impossible.

The owner of the junk to which the small boat belonged, on seeing the accident, sailed away as rapidly as he could, in spite of the fact that I sent my lifeboat after him. However, the wind was strong and my boat the faster, so we overtook him in a couple of hours and went alongside. I went on board and explained what had happened through the carelessness of his men, and asked what he intended doing in the matter. Chinese-like, he evaded my question, and wanted to chat about the weather. This was annoying, so, cutting him short, I demanded to see his Customs' papers. He was anxious to talk then, but having secured his name and number, I would have none of it, telling him I should report the matter to the magistrate at Wushan city. We had a brother of the deceased on board, and I watched how he bore his grief. Beyond the fact that he was silent and took little or no part in the day's work afterwards, there was nothing to indicate there was anything amiss. The fatal accident upset matters generally, every possible thing going wrong afterwards.

We reached the city of Wushan about 5 o'clock, and I sent in immediately to the magistrate. After stating the case, I requested that justice should be done towards the relatives of the deceased in accordance with Chinese law. The magistrate was very polite and attentive. He pointed out that, strictly speaking, the accident happened outside his jurisdiction, but promised to investigate and do what he could in the matter. In the course of our conversation I gleaned that a tracker's life was fixed at 6,400 cash (about 15s.) and a coffin should the corpse be recovered. It may not be out of place here to relate how the business was settled, though it only came to my ears some months afterwards. The magistrate found the junk owner guilty of culpable negligence, mulcted him to the tune of a hundred thousand cash (about £12), gave the deceased's brother 6,400 cash, and pocketed the balance!

Walking was impossible to-day, and I only noted a couple of fresh plants—*Pittosporum pauciflorum* on the cliffs and *Delphinium anthriscifolium* on the foreshore. On entering the Szechuan part of the gorge, I observed a fine road on the right bank excavated and blasted out of the cliff. At the Lien-Shui-Che rapid, about a hundred yards up the glen on the right bank of the river, *Abutilon sinense* occurs. I found it there in March, 1901, and intended looking for it again had no accident prevented. The plant attains to 5 to 6 feet in height, and its large golden-yellow flowers make it conspicuous. Dr. Henry first discovered it in the Ichang gorge, but my efforts to rediscover it there were futile.

May 2.—We waited till 8 o'clock this morning to see if there were any fresh developments *re* our drowned tracker, but nothing transpired. So leaving the deceased's brother behind to collect the "cash" we continued our journey. The river rose considerably during the night, and the current was very strong. We encountered many rapids to-day, three of them (Sha-ma-Tan, Cho-Tan, and Lung-po-Tan) being severe. The hill-sides of to-day's country were all highly cultivated. The Pulse and Barley crops were ripening fast. In some places the people were busy reaping them. The absence of opium continued most marked. I noted a small patch of *Nicotiana rustica*. This is most unusual, this species being relegated to higher altitudes.

From Ichang upwards I was struck with the enormous quantity of Orange and Pomeloe trees grown. They were everywhere, and I no longer wondered where the quantity comes from which passes through Ichang annually. They are particularly abundant on the more sloping precipices of the gorge. Many of the trees were of large size, and looked very healthy. So far I did not notice the presence of the borer-insect in any of the trees. The Oranges are mostly tight-skinned

and of excellent flavour, but the Pomeloes are too bitter for European palates. Lemons of excellent quality also occur. I enjoyed a nice walk to-day, and gathered several fresh plants. These included *Hypericum sinense*, *Gleichenia dichotoma*, *Premna ligustroides*, *Platycarya strobilacea*, and *Buddleia asiatica*. The last-named is a most charming shrub, with white fragrant flowers. Much to my surprise I came upon one large tree of *Keteleeria Davidiana*. I fancy this solitary specimen must have been planted among some old tombs. Hitherto I have not found it below 1,500 feet alt. On moist grassy banks *Fragaria indica* was plentiful, its tempting-looking but insipid fruit contrasting well with the green grass around. Curiously enough the Chinese consider the fruit poisonous.

I also noticed several Cherry-trees with the fruit colouring. Our old friends, *Sophora viciifolia*, *Rosa laevigata*, and *R. moschata* were still with us, but past their best. We moored for the night just above the Lung-Po-Tan. With but a slight wind we made but little progress against the strong current, but we met with no accident. E. H. W.

(To be continued.)

FORESTRY.

THE LOCUST-TREE.

It is not my intention to enter into a controversy with Mr. Simpson on forestry. I only want to give a precise answer to the question he puts in the *Gardeners' Chronicle* of June 17, 1905, p. 370. At what size, for what purposes, and at what price could Mr. Booth dispose of a thousand acres of Locust-trees? As I remarked on p. 246 of this journal, in Hungary they afforested with great success the sandy plains with this species, after trials with many different trees. A report with all details regarding this enormous plantation, made by a Royal Hungarian Forest Inspector, appeared in a German forest journal in April, 1899. They work this Locust-forest at twenty years' rotation, and do a very large and profitable timber trade. The timber is used for many purposes. What are a thousand acres compared with as many square miles?

I wish I had a thousand acres in Hungary, and another thousand in Germany. In the number for May, 1899, of the above-named journal, reference is made to a report of a Royal Inspector of Coal-mines in Germany. He states that the wood of the Locust-tree is best fitted for carpenters' work in a coal-mine, and also for pit-props. It lasts longer than Oak. The same result has been attained in France. The Inspector closes his report by stating that *Acacia*-wood was rather dear, owing to its scarcity in the market. Is it not a misfortune that the excellent wood of a tree like the Locust-tree, imported more than 200 years ago, growing on the poorest soils and under almost any conditions, is not yet to be had in any quantity? I blame England as much as Germany for this neglect. Almost all the nations display in this respect the same ignorance and indolence, which cost us more, as an enlightened Englishman said, than all the money spent on our education.

A nobleman who has a large plantation on his estate near Berlin, tells me that he sends off waggon-loads of this wood, and sells it well, although single trunks and small quantities do not pay. Many careless calculations and unverified statements are printed, as I see, for instance, on p. 145 of the latest part of the *Transactions of the Royal Scotch Arboricultural Society*, Vol. xviii., where it is stated that "all over Germany there is no coal," whereas we have in truth an enormous part of our population working in coal-mines. So long as this

carelessness continues we shall never progress. It is the same with the school of forestry and the introduction of foreign trees, a question which many of our official foresters consider to be frivolous. So much for the Locust-tree.

Mr. Simpson tells us in the same article that the main obstacle to selling Douglas Fir on the market is that for timber merchants it is simply "Spruce," worth 2d. or 3d. a foot. It is almost twenty years ago that my old friend, the late Mr. McCorquodale, head forester to Lord Mansfield at Scono Palace, cut the first thinnings in a Douglas Fir plantation. This operation gave rise at the time to a good many articles, which

WINCHFIELD LODGE.

Our illustration (fig. 11) gives a view of the residence of Spencer Charrington, Esq. The estate is pleasantly situated at a distance of half-a-mile from Winchfield station on the London and South Western Railway. The house is reached by a short carriage-drive entered from the Odiham and Hartley Row road. About twenty years since the mansion was partly rebuilt and enlarged by the present owner. The grounds are not extensive; they are well sheltered by numerous trees, of which the principal is Oak, which luxuriates at Winchfield. The soil is a heavy loam overlying a clay subsoil. The

Gabrielle Luizet, Sunset, Eugénie Resal, and Magna Charta, besides many others. A specimen of *R. rugosa*, 12 feet in height and 8 feet in diameter, is noteworthy.

Pergolas are here a popular form of garden decoration. Two of these structures run almost parallel to each other, near to the front of the mansion, and must have been made many years ago, judging by the age of the plants with which they are covered. Oak and Chestnut are the woods used for supports. In one case Honeysuckles are almost wholly employed in furnishing the pergola.

Flowering shrubs and trees are freely represented in the grounds. One specimen of *Spiræa*



[From a photograph by F. Mason Good.

FIG. 11.—WINCHFIELD LODGE: VIEW ON THE TERRACE.

appeared in the *Gardeners' Chronicle*, 1887, and in the *Perthshire Constitutional*. "The largest Larch in this plantation measured 12 cubic feet; the largest Douglas Fir of the same age 27 cubic feet. The sale of the thinnings of the Douglas plantation at Taymouth took place on December 23, and they sold at about the same rate as Larch—about 1s. per foot" (*Perthshire Constitutional*, January 11, 1888). I think the main obstacle to the selling of Douglas Fir at the same price as Spruce Fir lies in another direction than Mr. Simpson will have us believe. *John Booth, Corresponding Member of Royal Horticultural Society, Berlin, June, 1905.*

WHITBY JET.—According to the researches of Mr. SEVARD the structure of this substance shows its affinity to wood of the *Araucaria* section.

house is clad with Virginian-Creepers and Roses, of which the latter ramble away very freely owing to the soil being suitable for their growth. On the south-eastern side the varieties Lamarque, Gloire de Dijon, and Reine Marie Henriette fill a large space, and grow to fully 20 feet high.

Roses are greatly favoured by the owner, who has planted them in all sorts of places and conditions, not in any formal arrangement, but just where they would be likely to succeed and produce a desirable effect, such as on pillars, on chains in festoons so as to hide fences, cover banks, as standards in the borders, or dwarf plants in small beds; and indeed they appear to luxuriate everywhere. The best use has been made of such varieties as *Félicité-Perpétue*, *Crimson Rambler*, *Aimée Vibert*, *Leuchstern*, *Penzance Briars*, *Splendens*, *Marie Hoste*, *Madame*

confusa, 10 feet high and nearly as much through, was at the time of my visit laden with its pure white blossoms, presenting a remarkably fine appearance. Many other varieties of this genus are here growing.

Hardy plants are cultivated somewhat extensively at Winchfield Lodge, and include popular kinds of *Narcissus*. Spanish Iris are also extensively grown for supplying flowers for cutting. A remarkably fine bed of seedling *Delphiniums* (*Kelway's strain*) is a grand sight; these are enhanced by plants of *Crimson Rambler Rose* in the centre of the bed.

Mr. Whitworth, the gardener, appears able to grow *Hollyhock* plants for several years in succession. A batch of these plants (*Sutton's seedlings*), planted-out three years ago, have each year given good spikes of flowers, and promise during the

present year to develop half-a-dozen inflorescences from each plant. On the south-west side of the mansion is a remarkably fine croquet lawn, an acre in extent, possibly one of the best in the country. The turf is very firm and the grass close in growth, and reflects much credit on its management.

The kitchen and fruit gardens are not extensive, but they are well managed. A bed of Sutton's April and Flower of Spring Cabbages proved the value of these varieties for yielding an early supply of these vegetables. Peach-trees on walls were carrying good crops of fruit, Waterloo and Rivers' Early York especially. Bush Apple-trees are very promising. *A Wanderer*.

NOTICES OF BOOKS.

THE AMATEUR GARDENER'S ROSE-BOOK, by the late Dr. Julius Hoffmann. Translated from the German by John Weathers. (Longmans, Green & Co.)

This book comes as a surprise, first that British amateurs should be thought to require any addition to the multitude of Rose-books written for their learning, and next that it should be considered desirable for English Rose-growers to be put in possession of a book on this subject made in Germany. Hotter summers, more brilliant light, more evenly distributed rainfall, more severe weather in winter, must all tend to make the German gardener's practice different from our own. But however much details may differ, the general principles of cultivation remain the same. The author's statement that Roses dislike a heavy soil or one that is tenacious or clayey requires some modification, for in this country such a soil, if drained and properly worked, is by no means unpropitious to the growth of Roses.

We do not think our rosarians would care to carry out the manorial details mentioned on p. 18, details more suitable for Chinese than for British gardeners; but the directions for making a compost-heap are very serviceable. The coloured plates, though showing the flowers reduced in size, are better representations of Roses than are usually met with. An alphabetical list of select Roses with short descriptive notes is a useful addition to the book. Some names are not familiar to us, whilst we miss others, such as *Félicité-Perpétue*. The name *Belle Siebrecht* should be cancelled as a useless synonym, at least in this country. A peculiarity about William Allen Richardson, which we have seen year after year, is not mentioned—viz., that the earliest flowers to open are nearly white and all but destitute of the orange-fawn colour which afterwards becomes so conspicuous. There seems to be a public for any work about Roses, so we have no doubt that many will be glad to add this useful book to their collection.

INSECT LIFE.

Mr. F. V. Theobald has published through Messrs. Methuen a second edition of his very serviceable little hand-book bearing the above title. The earlier chapters are devoted to an account of the structure and classification of insects in general. The succeeding ones include a summary account of the several natural orders, with special references to those insects which are of importance from a practical point of view. The gardener is thus provided with an easy means of identifying his enemies, of learning their ways, and of compassing their destruction. A special appendix is devoted to the use of insecticides, and the necessity of acting on the motto "Prevention is better than cure" is duly emphasised. Washes of soft-soap and quassia are highly spoken of for green-fly: 4 to 6 lb. of quassia should be boiled and mixed with

6 to 10 lb. of soft-soap also boiled—the total quantity of water being 100 gallons. This wash should be used in the form of fine spray. The proper method of employing the very poisonous substance, Paris-green, is explained. Arsenate of lead is said to have many advantages over Paris-green, like which it is extremely poisonous. It is made by dissolving separately in water $2\frac{3}{4}$ ounces of acetate of lead and 1 ounce of arsenate of soda. These quantities are sufficient for 10 gallons of water, and when the mixture has been made add 1 lb. of treacle. For wire-worm, applications of nitrate of soda and kainit are recommended. It need hardly be said that these substances are valuable fertilisers. Superphosphates are of little or no value for destroying grubs in the soil.

GREENHOUSES, HOW TO MAKE AND MANAGE THEM.

Mr. W. F. Rowles gives us under this title a sketch of the methods of constructing a greenhouse and its accessories, and then goes on to the means of stocking it by propagation or purchase. Pots and potting next engage attention, then comes a chapter on soils and manures, followed by others on watering, ventilation, shading, tying, training, pruning, forcing and other details of management. All these diverse subjects are so concisely and clearly treated that we can but heartily commend the book to the notice of the amateur, whilst the most expert gardener will find practical hints that will be of use even to him. Messrs. C. Arthur Pearson, Henrietta Street, Covent Garden, are the publishers of this useful little book, the cost of which is only one shilling.

HOW TO MAKE AND MANAGE A GARDEN.

Mr. W. F. Rowles, whose little treatise on the construction and management of greenhouses we have just had occasion to commend, now undertakes a wider flight, and in the little volume above-named tells us how to choose the site of a garden, how to make a vegetable-, a flower-garden, or an orchard, how to deal with paths, borders, rockeries, drains, and this done, how to grow and propagate the plants whose culture may be desired. The book is not only sound as regards practice, but in the sections relating to the formation of flower-beds and bedding-out generally, the author gives evidence of good taste and of a recognition of the beauty of appropriateness. A garden calendar, showing what is to be done in each month, is full of useful practical hints. As a thoroughly practical little book this may confidently be recommended.

EXPERIMENTS WITH PLANTS. By W. J. Osterhout. (Macmillan & Co.)

The object of this little book is not to teach vegetable physiology, but to induce the would-be student to teach himself. The school-boys in Dickens's *Nicholas Nickleby* had first to spell the word "window," and, the task accomplished, they were then directed to go and clean it. This is the method of teaching in favour now, and there can be no doubt that self-gained knowledge of this character is longer retained and is of greater practical value than that which is obtained from books or imparted by a teacher. In the present book a part of the plant is taken—say a seed, and then the questions are asked, such as, What is it? What does it look like? What parts does it consist of? What work does it do; how does it do it? What helps, and what hinders it? The answers to such questions as these are to be supplied, not by the text-book nor by the lecturer, but are, so far as circumstances permit, to be elicited by the pupil himself by means of observation and experiment. In theory this plan is excellent, but in practice, as most teachers and examiners

know, the average beginner requires a little assistance at the start, otherwise he becomes, as it were, stupefied at the mass of detail before him. He does not know what to look for or what to do, and in his helplessness wastes valuable time, or becomes so disheartened that he abandons the task as beyond his powers. The Huxleyan plan, which was only an amplification of the methods of teaching anatomy in the medical schools, was in so far better that the lecturer explained first what was to be looked for, what was to be found out, and what were the best means of compassing these results. The ground having been cleared, the next step was to put the student in the way of confirming, or it may be of refuting, what he had been told by actual examination of the object or by well-devised experiment. For these latter purposes the book before us is excellently adapted. It contains chapters on the awakening of the seed, the work of roots, leaves, stems, flowers, and fruits, the influence of circumstances on the growth of plants, the occurrence of fermentation and decay, and the "making of new kinds of plants" by cross-breeding as exemplified by Burbank's experiments, and by "mutation" as propounded by Professor de Vries and explained in our columns recently. A "mutation" is defined to be the sudden appearance of a variation which comes true from seed, whereas a variation, fostered and protected by the "selection" exercised by the seedsman, aided by the elimination or "roguing" of undesirable competitors, soon runs out or reverts when the protection is withdrawn. Experiments and observations on this subject are clearly of the utmost scientific and practical value, and it is satisfactory to learn that such investigations are in progress in various experimental stations in the United States. The book before us affords an admirable preparation for such and similar experiments, and it is much to be wished that our gardeners, or the more advanced among them at any rate, should be made not merely to read, but to work through it. It is to be desired that some botanist would prepare a companion volume on comparative morphology and on the classification of plants, subjects with which young gardeners of the present day are less well acquainted than were their predecessors.

L'HYBRIDATION DES PLANTES.

Those gardeners interested in the practice of cross-breeding, and to whom the French language offers no impediment, will find in the little volume published by M. Amat, 11, Rue Cassette, Paris, a useful practical treatise. It is written from a gardener's point of view by M. Raphael de Noter, and those amateurs who desire to "try their luck" in this fascinating pursuit will find ample directions and suggestions, which will lead them on to make research in departments of practical science not entering into the scheme of the present volume.

HOW TO KNOW WILD FRUITS. A Guide to Plants when not in flower by means of Fruit and Leaf, by Maude Gridley Peterson. (Macmillan.)

This is a book which, as its title implies, is designed to facilitate the identification of wild plants when the flowers are not available. The plants in question are those native of the North-Eastern States of America. Descriptions of the fruits are given, and analytical tables to help the observer in his search. Unfortunately, by some error in folding or cutting the sheets, the use of this table becomes difficult; but this accident may be confined only to the copy before us. The book is illustrated with characteristic representations of several of the plants mentioned. For practical purposes the fruits are, in spite of the caution not to trust too

implicitly to colour, arranged according to their colour. A glossary is appended, which is more popular than scientific. A student who in an examination should give the following description of the pollen would, we fear, not satisfy the examiner: "Pollen, the anther-borne grains which fertilise the ovule." The definition of a cell "as a structure enclosing a cavity" would prove equally unsatisfactory. We must remember, however, that the purpose of the book is not the instruction of the student, but to prepare the way for those who wish to know the names of certain trees and shrubs selected on account of the attractive appearance of their fruits or seed-vessels. From this point of view the book will be useful as an introduction to more pretentious treatises.

MY GARDEN IN THE CITY OF GARDENS. (John Lane: The Bodley Head, London, and New York.)

This book, sent out without the author's name or pseudonym, is "a memory," and it has illustrations. These pictures of Oudh houses and gardens are a very pleasing feature of the book. As to the letterpress, that furnishes another instance of the manner in which ladies and others, supposedly writing about gardens, introduce pages of digression upon irrelevant subjects. The cultivation of plants is here quite a minor matter, as room is chiefly filled by descriptions of pig-sticking, cookery, the Indian Mutiny, stuffing and mounting birds, gossip, flirtation, polo-ponies, and other topics having no possible connection with a garden.

Such gardening as is effected is, as may be expected, superintended by the writer, not undertaken by her. She admires the "wealth of colour in tree, shrub and creeper. The *Hibiscus mutabilis*, 20 feet high, covers itself all over with large pink-and-white blooms, exactly like paper flowers! The *Bauhinia acuminata* is graceful, with its pendulous branches of pointed, divided leaves, with their large, loose panicles of whitish and pale pink. The *Buddleias* with their orange bells are rampant. So are the *Lantanas*. About the stone pillars of the verandah are clambering the *béla béla* Jasmine, the white-flowered *Bona Nox* or Evening Glory *Ipomœa*, the *l. grandiflora* and the *Passiflora cœrulea* (the handsome blue Passion-flower), the scarlet Cypress Vine (*Quamoclit*), the Star *Ipomœa (coccinea)* (a blaze of scarlet), the lilac Railway Creeper (*pulchella*), and the blue-and-white *limbata*," whatever they may be.

We have several such descriptions, appreciative and popular though somewhat unscientific, of the flowers found near the author's residence. As an account of nine months in a plain station the book should be acceptable, as it is pleasantly if discursively written. It appears to have been originally a diary or series of letters, and to have been re-arranged for the purposes of publication.

BULBS.

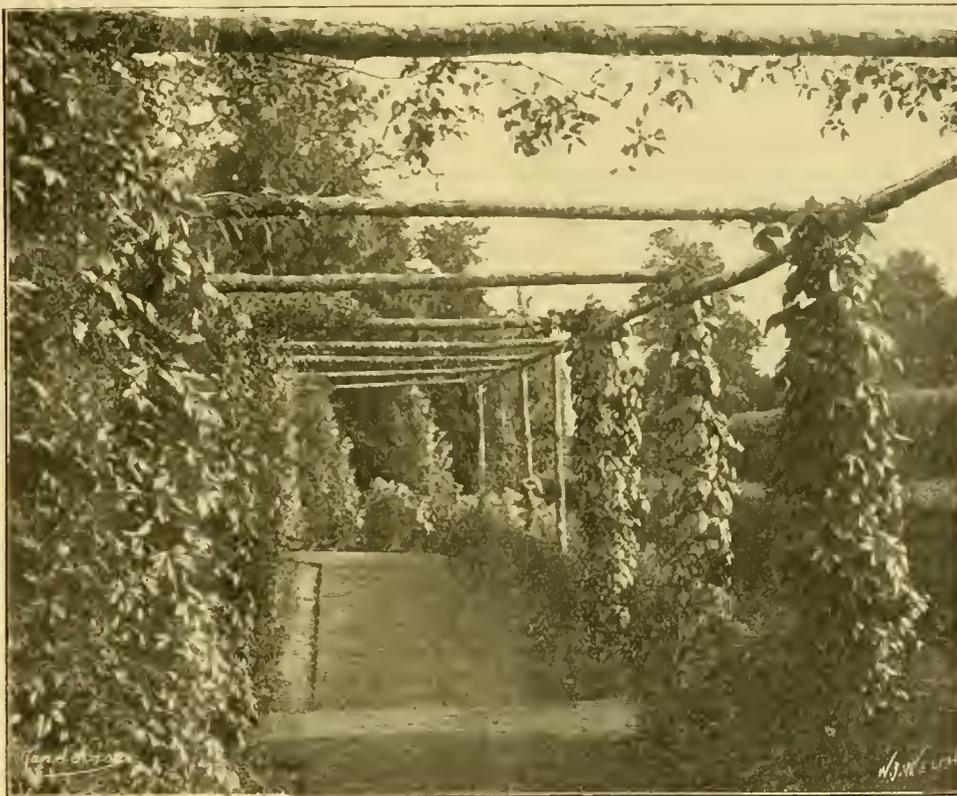
M. Raphael de Noter has published a useful little book entitled *Monographie Horticole des Plantes bulbeuses*, &c. The word bulb is used in a widely comprehensive sense to include most of the *Liliaceæ*, *Amaryllidaceæ*, and *Iridaceæ* commonly cultivated in European gardens, as well as *Cyclamens*, *Oxalis*, and various other bulb or tuber-forming genera. Short descriptions, accompanied in many cases by illustrations, are given of the several species, together with useful cultural notes. In a preliminary chapter the author gives a concise statement as to the culture of these plants in various European countries, but, strangely enough, he omits all mention of Ireland. Had he visited that country, or seen the fine collections of Tulips and Narcissus annually exhibited in London and other centres, he would, we are sure, have avoided this injustice to the neighbouring island. The book is published by M. Charles Amat, 11, Rue Cassette, Paris.

PERGOLA AT SWANMORE.

The illustration at fig. 12 represents a portion of a pergola in the gardens here, made some six years ago. Ivies were used because they afford a varied and pleasing effect, especially during the winter months. This point of view is too often lost sight of in planting these fashionable structures; everybody seems to require a rich summer effect only. This is quite right where absence from home during the autumn and winter is enforced, but to those who see much of their garden during early autumn and throughout the winter, winter effects are valuable.

This was the first pergola formed in this neighbourhood; it was made with stout Larch-poles grown on the estate, planted twenty-five years ago, so that in this detail even this

furnished with Ivy, "dentata," which is especially suited for this purpose; the leaves are large and pendent in habit, and give a bold appearance to the entrance, between which this is formed. This pergola is built on three sides of a square; inside the latter is a Rose garden on grass, sunken 2 feet from the base of the pergola. As previously noted the entrance is between the pair of Ivy-clad pillars; the pergola runs at right-angles from the entrance so far, then branches off at the two corners furnishing both sides of the Rose garden. A variety of subjects is employed for covering the structure, one of the most effective being the old Virginian-creeper, the trails of which hang gracefully down, and when coloured in the autumn the foliage has a rich effect. Quite in the foreground is a thickly clad pillar of the common Hop, which for extra quick



[From a photograph by F. Mason Good.]

FIG. 12.—PERGOLA OF IVY AT SWANMORE PARK.

pergola is interesting. The space from one post to the other, and the width of the path, which is grass, is 8 feet. It is 8 feet high.

In various gardens I have since noted other measurements, and have come to the conclusion that for all practical purposes, such as viewing the plants that adorn the structure, convenience in attending to them, and the welfare of plants growing underneath, 8 feet intervals and 8 feet in height meet the general requirements. Of course, in larger structures built for different objects, such as hiding objectionable buildings in the distance, greater height, width, and solidity are imperative. Pergolas when carefully constructed fill most effectively this object.

Lord Battersea, in his garden at Overstrand, has well illustrated the value of pergolas for hiding objects in the distance. As far as I can see, a plainly-built pergola, whether of wood, brick, or stone, answers the same purpose as an elaborate and expensive structure, because the object is to cover the pergola as quickly as possible by quick-growing plants.

The pair of pillars seen in the foreground are

growth is unsurpassed. Then there are such subjects as *Vitis Thunbergii*, which is here much superior to *V. Coignetiae*; *Actinidia arguta*, with its rich golden-coloured leaves in the autumn, is a superior plant; *Aristolochia Siphis* is one of the best summer and autumn plants, having bold foliage and making quick growth; *Lonicera aureo-reticulata*, with its golden, spray-like growths hanging loosely down, is effective, and most useful for covering the stems of Roses on the pillars which have become bare of growth. *Clematis Kermesiana*, having small claret-coloured flowers, is especially effective as a late and free-flowering variety, and the effect is the greater when planted close to Paul's single white Rose. Roses, of course, predominate in furnishing the arches, such free-flowering sorts as *Félicité-Perpétue*, which is quite one of the best, *Euphrosyne*, the earliest to open, and other varieties include *Dorothy Perkins*, *Wichuriana* varieties, *Crimson Rambler*, *Queen Alexandra*, *Thalia*, *Polyantha grandiflora*, *P. simplex*, *Psyche*, *Claire Jacquier*, *Brunonis*, *Bouquet d'Or*, &c. *E. Molyneux*.

KEW NOTES.

MEGACLINUM PLATYRHACHIS, *Kolfe*.—A species that was sent to Kew from Zomba, British Central Africa, in 1899, and flowered for the first time under cultivation in July, 1903, is now again in flower in the warm Orchid-house. Of all the wonderful forms of inflorescence in the Orchidaceae, none is more extraordinary than that produced by this plant, as is well shown by the figure in the *Botanical Magazine*, t. 7946. The pseudo-bulbs are much like those of a *Bulbophyllum*, and are 2 to 3 inches in length, with two oblong, leathery leaves, varying in length from 4 to 6 inches. The inflorescence is produced from the base of the pseudo-bulb; it has a terete peduncle 6 inches in length, from the end of which the rhachis is very much flattened, resembling a slender greenish-yellow strap, with the small flowers arranged in a row down either side and facing the rhachis. This remarkable inflorescence continues to grow for nearly three months at the apex, at which point the fresh flowers are produced as the old ones fade away at the base. The rhachis ultimately attains a length of from a foot to 15 inches, and is about $1\frac{1}{2}$ inch in breadth. *W. H.*

LINDENIA RIVALIS, *Benth.* (see illustration in *Gardeners' Chronicle*, August 6, 1881, p. 181).

This fine old species from Guatemala is now flowering in the stove. It forms a compact bush with woody growths and opposite, lanceolate leaves from 4 to 6 inches in length. The flowers are terminal and usually solitary. The corolla-tube is 6 inches in length, of a light red colour. The limb of the corolla is pure white, and measures 3 inches across. It is easily propagated from cuttings inserted over considerable bottom-heat. They should be grown on under stove conditions in a light, rich, loamy compost.

GLORIOSA CARSONI, *Baker*.

This very beautiful species flowered in the stove at Kew in July of last year for the first time under cultivation (see *Gardeners' Chronicle* for August 20, p. 127, 1904). It is now flowering profusely in the same house again. It has a strong growth some 6 feet in length, terminated by several flowering branches. The flowers have a diameter of 4 inches, the colour of which is brownish-red, each segment having a margin of golden-yellow. It was collected three years ago about 50 miles south of Lake Tanganyika. *W. H.*

TREES AND SHRUBS.

PYRUS JAPONICA AS A HEDGE PLANT.

It cannot be said that the ordinary method of planting this Japanese *Pyrus*, which is that of putting a plant here and there in the shrubberies, or placing an odd one to grow against a wall, is the best method of illustrating its beauty as a flowering plant. Some years since I collected what plants there were from the shrubberies, and arranged them on each side of a path near an entrance to the kitchen garden here, intending to treat them as a hedge on each side of the path. The plants were topped occasionally during the summer, and the side-shoots were repeatedly pinched, until now the hedges are 8 feet high and nearly a yard through. The growth on the top is quite vigorous, and with that it is intended to form an arch over the path connecting the two hedges together. For the last two months the hedges have been one mass of blossom, the deep scarlet colour having a gorgeous effect. In no other form of training can this plant display its beauty better. It is quite optional how high such a hedge shall grow; anything between 4 feet and 8 feet will suffice. Stout plants put out 2 feet apart in deeply-trenched, well-manured soil quickly attain to a desirable height, and should be

topped occasionally to induce a thickly-grown base. When the desired height is attained much summer pruning of the young growth should be done to induce the formation of spurs as thickly as possible over the whole of the hedge, as from these a yearly crop of blossom is assured. There is no reason why other varieties of *Pyrus*, especially the white-flowered form, should not be treated in a similar way.

THE DOUBLE-FLOWERED KERRIA JAPONICA AS A WALL-PLANT.

Although this Japanese plant is usually seen growing as a bush in the shrubberies, where it flowers grandly in April, it is even better when growing at the foot of a wall having a northern aspect. There being so few flowering plants that are suitable for that aspect, such walls are usually covered with evergreens, of which Ivy predominates. This *Kerria* covers thickly the whole of the northern side of a cottage here, and it is a sight worth going some distance to see. As a rule plants growing in the shrubbery are untidy, the shoots becoming all sorts of lengths and the leaves being generally pale in colour. On the northern aspect the foliage is quite green, which enhances the appearance of the deep orange-coloured blossoms. Now that the plants in question have filled their allotted space they are closely pruned every year after the flowering season with the garden shears. The plant then makes fresh and vigorous growth, which is made secure to the wall, and in the following spring produces a full crop of handsome flowers. Should this plant be growing in a dry situation it will require an abundance of water applied to the roots during the summer. *E. Molyneux, Swanmore, Bishop's Waltham.*

The Week's Work.

THE ORCHID HOUSES.

By W. H. YOUNG, Orchid Grower to Sir FREDERICK WIGAN, Bart., Clare Lawn, East Sheen, S.W.

*Oncidium*s of the Cool-growing Section, many of which are now resting, need very careful treatment at this period. *O. concolor*, *O. crispum*, *O. Gardnerianum*, *O. Marshallianum*, *O. Mantini* and others that have recently flowered need a very cool, well-ventilated atmosphere during the remainder of the summer. They should occupy a position in the cool-house where the sprayer is not used, and the rooting medium should remain dry until slight shrivelling appears in the younger pseudo-bulbs, when a good watering should be given. Shrivelling caused through flower production cannot be remedied immediately by watering, and the attempt to do so should be avoided, or worse results may follow. *O. Forbesii*, now sending up its floral scapes, should be kept moderately moist at the base. *O. varicosum* is growing, and must be well supplied with water when rooting freely, and as the plants should be near the ventilators the free circulation of air needed induces rapid evaporation, thus necessitating frequent waterings. *O. cheiroporum* also needs liberal applications of water now it is growing freely. Plants of this species should not be exposed to draughts, though fresh air is essential. *O. cucullatum* and its varieties are also growing, and should have water afforded whenever the materials show signs of drying. These may be placed in a lighter position than is suitable for most of the others, associating well in this respect with *Odontoglossum Rossii*. *Oncidium incurvum* grows well in a light position in the *Odontoglossum*-house, and requires an abundance of water during the growing season. The inflorescences are a long time developing, but as soon as they have been removed a thorough rest should be given the plant by withholding water for long periods. Those of the *O. macranthum* group require a plentiful supply of water throughout the summer, regulating the quantity in each case according to the condition of the individual.

It is not desirable to withhold water from these plants for a lengthened period, but the supply should be least during the winter, and at such times as little or no growth is in progress.

Seasonable Work.—Soon after the *Thunias* have passed the flowering stage, the plants should be placed in full sunshine. A sunny sheltered spot outside may be found for them, but before placing them there they should undergo a slight preparation, or the leaves may get scorched. Afford the plants an abundance of water until the leaves begin to fall away, and to keep the latter clean syringe them well on all favourable occasions. Do not allow the deciduous *Calanthes* to suffer from want of water at the base, and should the soil be well filled with roots, apply a light top-dressing of pure fibrous loam. Chemical manures must not be used if permanent good results are desired, but when the pseudo-bulbs are filling up, a little weak liquid farmyard-manure may be afforded advantageously. Apply light fumigations if insect pests are feared, remembering, however, that the less this is performed the better it will be for the leaves, providing thrips can be kept away by other means. Fumigations in all the houses should be done rather frequently, deferring the operation until late in the evening, when the sun has lost its power, and shading the plants earlier than usual on the following morning that harm to the foliage may not follow. It is also a good practice to spray the plants once a week with a mild solution of the N.L.-All, sold for the purpose, doing this early in the afternoon so that most of the liquid will have evaporated by nightfall. This is the only safe and effectual method of ridding *Cattleyas* and allied genera of the troublesome scale which infests the rhizomatous portions of the plants.

THE FLOWER GARDEN.

By W. A. MILLER, Gardener to Lord HENRY C. BENTINCK, M.P., Underley Hall, Westmoreland.

Carnations.—Pay frequent attention to the tying-up of flower-stems of the border varieties. Take advantage of showery weather to apply a dressing of soot to the beds, or if dry weather occurs afford water abundantly.

Hollyhocks.—The present is the time to propagate these if it is desired to increase the stock of any choice varieties. Cut the small shoots found at the base of the plants into short lengths, with a bud to each. Insert them firmly in sandy soil in a frame. Keep the atmosphere close, and shade the plants from strong sunshine until they have made roots, then gradually inure them to normal conditions and pot them singly. They will soon make sturdy plants.

Eryngiums are now developing their flower-spikes, and should be afforded neat stakes to prevent them suffering damage from winds, also to improve their appearance by spreading-out the growths to make the most of the beautiful steely-blue involucres, and stems of such kinds as *E. Oliverianum*, *E. alpinum*, &c., and the silvery-white of *E. giganteum*. *E. bromeliæfolium* and others of the *Pandanus*-leaved group are useful for affording attractive foliage.

Rudbeckia "Golden Glow" is an effective plant for the back row in large borders, and associates well with shrubs having purple leaves. The plants will require stout stakes, as will also *Helenium grandicephalum aurantiacum*.

Aquatic and Waterside Plants.—Do not allow the slow-growing species to become smothered by those of quicker growth. Amongst many kinds the following are good:—*Butomus umbellatus*, *Cyperus longus*; *Glyceria aquatica spectabilis variegata* is a pretty variegated grass. The green variety is a rapid grower, only fit for the roughest places. *Mimulus Brilliant* is very bright, and does well in the bog. *Polygonum amplexicanle* and *P. a. oxyphyllum* are useful plants. *P. amphibium* is suitable for the margin of streams. *P. sphaerostachyon* has bright crimson flowers 9 to 12 inches high, and is the gem of this genus.

Shrubbery.—*Spiraea arisefolia* is now at its best, especially where the plant has plenty of moisture and space to develop perfectly; it is a very graceful decorative plant. *S. Douglasi* is of a

more erect habit, and succeeds by the side of a stream, where its dense red flowers are very effective. *S. callosa rubra* is a fine variety. *S. japonica* "Anthony Waterer" is a specially good variety; its deep rose-pink corymbs keep their colour in strong sunshine. *Neillia* (*Spiræa*) *opulifolia* is conspicuous with its feathery clusters of white flowers. *N. opulifolia aurea* makes a bright display at the present time with its golden-coloured foliage.

THE KITCHEN GARDEN.

By W. FYFE, Gardener to Lady WANTAGE, Lockinge Park, Wantage.

Peas.—Every effort should be made to prolong the season of this favourite vegetable. Make still another sowing of Autocrat, the best of all late Peas, as with favourable weather they may yield some supplies in autumn. Sow also some of the favourite early dwarf varieties, such as Carter's Little Marvel, May Flower, and Daffodil, all of which have done well here this summer. For affording late supplies I have sometimes been successful with Early Giant and Sutton's Duchess of York, varieties growing from 3 to 4 feet high.

Cauliflowers.—Continue to plant out such varieties as Autumn Giant and Self-Protecting Broccoli as plants become fit for this purpose. These varieties, if given proper attention, will furnish a constant supply up to the end of the year. At the same time it is well to keep up successional batches of the smaller-growing varieties, such as Extra Early First Crop, Early London, and Walcheren, from which a succession of milk-white, medium-sized heads will be assured.

Savoy.—Make successional batches of the variety Dwarf Curled. It is medium in size, excellent in quality and appearance. Plant at distances of 18 inches each way.

Onions raised from seeds sown early in the season are in a somewhat advanced condition. Keep a sharp look-out for mildew, and upon its first appearance use sulphur freely, in sufficient quantities to cover each plant with the powder. When the bulbs are in process of forming apply frequent applications of liquid-manure, occasional dustings of soot, and some approved fertiliser, keeping them well supplied with water. The general Onion crop, which to all appearance requires thinning, may with advantage be allowed to remain in that condition, experience having shown that the results may be expected to be satisfactory.

Mushrooms.—This is not an ideal season for the production of Mushrooms, yet beds carefully made up with well-prepared material in a cool position, preferably under an open shed behind a wall with north aspect, should afford supplies through September. In order to keep the spawn moving as long as possible, the beds should be made of good substance. Insert the spawn when the temperature of the bed is 80°, and cover the surface with about 1 inch deep of loam. In order to retain the moisture in the bed as long as possible, cover it with straw and mats, which should occasionally be damped to lessen the need for applying water to the beds.

General Work.—Shallots and Garlic may now be pulled, and if the weather is fine be left on the ground to dry; otherwise put glass frames over them. When the flowers of herbs begin to show colour they should be cut, tied into bunches, and dried in an open shed.

FRUITS UNDER GLASS.

By F. JORDAN, Gardener to Dr. CORBET, Impney Hall Gardens, Droitwich.

Figs.—Trees which are now swelling the second crop of fruit should have been freely thinned, as was advised in a previous Calendar. They will now well repay the most liberal culture that can be given them, including frequent applications of diluted liquid-manure, and rich top-dressings of loam and half-decayed manure. Do not allow the third crop of fruits to remain on the trees, but remove them as soon as they can be seen, and so allow the trees to have a proper season of rest before forcing again commences. Thoroughly cleanse the trees of red-spider or other insects as

soon as they have been cleared of fruit. Syringe them frequently and afford copious root-waterings. Any trees that require to be shifted into larger pots or tubs should be attended to as soon as the second crop of fruit has been gathered, as the roots then will be in an active condition, and will soon enter the new soil. Overpotting should be guarded against. Trees that are of full size and are in a healthy and fruitful condition need not be moved oftener than once in two or three years. Good drainage is essential. Pot the trees firmly, using good turfy loam and lime-rubble, with a free sprinkling of bone-meal.

Succession Figs.—Trees in houses which are now supplying ripe fruits will need a slightly drier atmosphere with liberal ventilation to prevent the fruits cracking. Overhead syringing must be discontinued, but a moist atmosphere should be maintained by frequently damping the available surfaces in the house. No fire-heat will be necessary through the day, but if a little be employed at night, with ventilation, it will improve the quality of the fruit. If intended for home consumption each Fig should be allowed to hang until quite ripe, but those intended for packing need to be gathered when dry a day or two before they would ripen perfectly. Later trees, which only supply one crop of fruit in the season, should have all weak growths removed, but the shoots should not be pinched. With frequent syringings and liberal treatment in mulching and feeding, these trees will mature a very heavy crop of fruit. In cool-houses it will be necessary to guard against having too much moisture during unsettled weather when the fruits approach maturity.

Pol Vines.—Pinch out the points of the shoots as soon as they attain to the required length, and take great care to preserve the principal leaves in order that the buds may develop perfectly. The canes will soon show signs of ripening, but continue to use the syringe, and apply manures. Gradually increase the ventilation, especially at night. Unless the house can be fully ventilated, or the top lights removed, the Vines should be placed outside against a wall having a south or west aspect to "ripen."

Planting Vines.—It is not yet too late to replant an early vineyard that has not produced so good a crop of Grapes as could be desired. The house should be thoroughly cleansed, and the border made as recommended in the Calendar for April 29. Choose Vines raised from eyes this spring, and otherwise treat them as recommended in the Calendar named above. Much better canes will then be produced next year than would be obtained from Vines planted next spring.

PLANTS UNDER GLASS.

By A. BULLOCK, Gardener to E. J. WYTHES, Esq., Copped Hall, Epping, Essex.

Souvenir de la Malmaison Carnations.—Now that the season of flowering in the case of most varieties is past, those plants it is intended to grow on for another season should be repotted without loss of time. A careful selection of the best and most vigorous plants should be made for this purpose. A suitable compost is one consisting of three parts fibrous loam, pulled to pieces by hand, and one part leaf-mould or spent Mushroom-bed soil, adding to this a liberal dash of silver sand and a little broken charcoal. Before using the soil let an examination be made for wire-worms, any traces of which should be exterminated, as this pest is particularly partial to Carnations, and would quickly destroy them. In potting make the soil reasonably firm by using a suitable potting-stick, after which the plants will require to be staked. This is an operation that requires to be done thoroughly, using Bamboo-canes to support each shoot. Let this work be pushed forward until completed. Damp the stages and floors of the houses containing the plants frequently during hot and dry weather, and shade them from the sun for a week, but admit a free circulation of air night and day. The process of layering should be continued until the desired number of the different varieties are obtained.

Tree Carnations will require staking, but one stake will be sufficient for each plant, to which the growths may be slung. Continue to stop the stronger growths for a week or two longer in order to induce a bushy habit in plants intended for flowering in late winter, but after this date plants that will flower early in the autumn should not be stopped. Diluted sheep manure may be afforded those plants that are well rooted. In the evening on very hot days syringe the plants overhead with clear water. Upon the appearance of aphids apply a dusting of Tobacco-powder.

General Remarks.—Maintain a tidy appearance in all plant-houses by removing dead leaves or flowers. Attend to the tying of Chrysanthemums, &c., daily. Keep a sharp look-out for any appearance of mites on tender plants, particularly on winter-flowering Begonias, *Dædalacanthus parvus*, *Browallia speciosa*, *Torenia Fournieri*, &c., and destroy the insects by means of frequent immersions in Quassia-extract. Assist batches of plants coming into bloom by applying a light dusting of Clay's Fertiliser over the surface of the soil about once a week. Continue the repotting of plants as they become ready for larger pots.

THE HARDY FRUIT GARDEN.

By W. H. CLARKE, Gardener to Sir WILLIAM PLOWDEN, Aston Rowant House, Oxon.

Apricots.—Examine the trees carefully, and expose the fruits to the full sunlight by tying the shoots aside or by the partial removal of leaves which shade them. Insects such as woodlice and earwigs are capable of damaging the fruits long before they are ripe; therefore take pieces of Bean-stalks, or small pots in which a little moss is placed, and hide them amongst the foliage of the tree. These means will serve to catch many of the depredators. A good and perhaps the most effectual system I have adopted is to smear the wall just above the ground-level with some sticky substance, such as paraffin mixed with soft-soap, to stop the insects crawling up the wall. At the same time a greased band must be placed round the tree-stem. The trees will now be making new growths from the points of the shoots which were pinched back some time ago. These secondary shoots should be pinched back to the first leaf. Continue to apply liquid-manure to the roots of the trees at frequent intervals. If the ground is of a porous nature, a top-dressing of half-rotten cow-manure will prove beneficial. In districts where the branches of Apricot-trees are prone to "gum," eventually dying, allow sufficient young shoots to extend for filling up a blank space should it occur; such trees should be well nourished, and only lightly cropped.

Peach-trees on Walls will now require further attention; the shoots should be secured to the wires, or nailed as the case may be, stopping the laterals to one leaf, and cutting out entirely extra-vigorous shoots, stopping those which are moderately so. Shoots having no fruit upon them may be removed, laying-in the current year's growth, thereby giving it an opportunity to mature. Keep the trees free from aphids by an application of Quassia-extract, syringing them afterwards or next day with clear water.

Plums.—If heavy crops are swelling, the clusters may be thinned, and where large fruits are preferred to a greater number of small, undeveloped ones, the thinning must be done liberally. Culinary varieties may be gradually thinned as the fruits reach the size for cooking purposes, finally leaving only such a crop to mature as will not overburden the tree.

Pears.—It can now be determined which fruits are likely to remain on the trees, and where several of a cluster are swelling evenly together, remove some of the least exposed fruits. In doing this take into consideration the natural size of the fruits and the vigour of the individual tree. If the crop is general throughout the tree one or two fruits of such varieties as Pitmaston Duchess or Doyenné du Comice will be sufficient to leave on a spur; smaller-fruited varieties may be cropped rather more numerously. In no case permit such a crop to remain as would seriously lessen the vigour of the tree.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Letters for Publication, as well as specimens and plants for naming, should be addressed to the EDITOR, 41, Wellington Street, Covent Garden, London. Communications should be WRITTEN ON ONE SIDE ONLY OF THE PAPER, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

Special Notice to Correspondents.—The Editor does not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editor does not hold himself responsible for any opinions expressed by his correspondents.

Illustrations.—The Editor will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens, or of remarkable plants, flowers, trees, &c.; but he cannot be responsible for loss or injury.

Local News.—Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY, JULY 11	<ul style="list-style-type: none"> Royal Horticultural Society's Summer Exhibition in the Grounds of the Royal Hospital, Chelsea (3 days). Harrow Flower Show. Wolverhampton Floral Fête (3 days). Cambridge Horticultural Show.
WEDNESDAY, JULY 12	<ul style="list-style-type: none"> Reigate Flower Show. Bath Rose and Begonia Show. Nottingham Horticultural and Botanical Society's Exhibition (2 days). Lee and District Flower Show (2 days). Beckenham Rose and Horticultural Show.
THURSDAY, JULY 13	<ul style="list-style-type: none"> Potters Bar and District Amateur Rose Society's Show. Chipping Norton and North Oxon Rose Show.
SATURDAY, JULY 15	<ul style="list-style-type: none"> Kidderminster and District Summer Flower Show.

SALE FOR THE WEEK.

FRIDAY NEXT—*Cattleya Schrödera*, *Dendrobium Findlayanum*, &c. by order of Messrs. Saender & Son; also Imported and Established Orchids from various sources, by Protheroe & Morris, at 67 and 68, Cheapside, E.C. (For further particulars see our Advertisement columns.)

AVERAGE TEMPERATURE for the ensuing week, deduced from observations of Forty-three Years at Chiswick —63°3'.

ACTUAL TEMPERATURES:—

LONDON.—Wednesday, July 5 (6 P.M.): Max. 74°; Min. 58°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—Thursday, July 6 (10 A.M.): Bar., 30.1; Temp., 66°. Weather—Dull, with occasional sunshine.

PROVINCES.—Wednesday, July 5 (6 P.M.): Max. 69°, Guildford; Min. 57°, N.E. Scotland.

Shows of the Week.

THE commodious Hall of the Royal Horticultural Society was, on Tuesday last, filled by Sweet Peas, to the almost complete exclusion of other subjects, the exceptions being such as were submitted for inspection by the various Committees. Change is desirable, no doubt, and on ordinary Tuesdays the long, straight benches become somewhat monotonous to the frequent visitor, who has learnt to know within a little what Messrs. So-and-So are likely to exhibit, and where the groups displayed by Messrs. This-and-That will be found. There could be no doubt as to the elegance, the varied and delicate colouring and the fragrance of the Sweet Peas, but they are deficient in interest as compared with many other flowers. They appeal to the eye rather than to the intelligence, and great as has been the progress in colour and refinement, there is a monotony of form which is apt to engender a sense of indifference, if not of absolute weariness, when Sweet Peas are shown in such vast quantities as they were on Tuesday last. This, perhaps, is the

case, less or more, in all special exhibits of whatever genus, but it was emphasised in this case by the circumstance that all these beautiful forms are derived from one and the same species, and consequently that the range of variation is limited by comparison with that which occurs in most other garden favourites. For purposes of general decoration there is an appearance of weediness which renders them ineffective, although their grace and delicacy of colouring fit them well for dinner-table adornment, as was well illustrated in the numerous tables shown in competition on Tuesday. The judges must have had no little difficulty in coming to a decision as to the relative merits of the exhibits, and where so much depends on individual taste we doubt not that a second set of arbiters would frequently have come to a different conclusion. As tables so decorated are mostly intended to be seen by artificial light, it would be well on another occasion if some at least could be shown in a room illuminated by the electric-light only. The first prize in one class was given to a group consisting of a tasteful arrangement of a variety with pale lavender flowers intermixed with *Asparagus plumosus*, and with trails of the broader-leaved *A. scandens* laid on the cloth.

There were endless differences in shades of colour in the general collections, but not much actual novelty, the variety attracting most attention being "Helen Lewis," as shown by a private exhibitor, Mr. WATSON, from the gardens at Orford House, Ham Common. This is a beautiful variety with large flowers of a salmon-pink colour with a suspicion of orange, fading off into pale yellow, the colour of the standard being distinct from that of the wings. Such a combination of colours cannot be adequately shown in black-and-white, but its form and general appearance are illustrated in Mr. WORTHINGTON SMITH'S drawing in another column (fig. 15, p. 35).

As we have intimated, exhibits other than Sweet Peas were rare, and some of greater intrinsic interest, as many might think, certainly of greater novelty, were we know excluded. On another occasion this boycotting policy might well be modified without prejudice to the Sweet Peas. From what we learn, however, there must have been some misunderstanding, for although "groups" were excluded, new plants and plants for certificate were invited, and, as our report shows, some were exhibited.

Another event of the week consisted in the great display of Roses made in the grounds of the Royal Botanic Society, Regent's Park, as these pages were passing through the press. The National Rose Society's Metropolitan exhibitions were wont to be held at the Crystal Palace, and for the last four years in the gardens of the Inner Temple. Circumstances have prevented the Society from availing itself this year of either of these localities. The beautiful gardens of the Royal Botanic are well adapted for an exhibition of this kind, and we doubt not that if the weather continues as fine as at the time of writing the success of the show will be assured, and that the Society will not suffer from its enforced migration. In another column we shall give as full a report as the time at our disposal will permit.

CLEMATIS ARMANDI* (see Supplementary Illustration).—This is a new hardy evergreen species first discovered in 1869 by PÈRE DAVID in the principality of Mu-piu, Western China. It was described and figured by FRANCHET in his *Plantæ Davidianæ*, ii., t. 2. Subsequently Dr. HENRY, and later Mr. E. H. WILSON, rediscovered it in the mountains of Hupeh, Central China, the latter of whom in 1900 sent seeds to Messrs. JAS. VEITCH & SONS. Plants raised from these seeds flowered for the first time in Messrs. VEITCH'S Coombe Wood Nursery in the spring of this year. This species is of rapid growth, and is one of the earliest of all to flower. So far it has proved perfectly hardy, retaining its foliage all through the winter and on into the late summer, its evergreen character making the species unique amongst hardy Clematis. The leaves are three-foliolate (ternate), very coriaceous; leaflets oblong or oval, 6 inches by 2½ inches, acuminate, sometimes slightly cordate at the base, prominently three-nerved, reticulate, glabrous save when very young. The flowers are borne on the old growths in axillary cymose clusters. The individual cymes are three to many-flowered. The flowers are white, often rosy-pink on the back, 2½ inches in diameter, fragrant, pubescent on the underside, with six to eight or only four petals. The bracts subtending the pedicels and cymes are pubescent, and so also are the very young shoots. Some botanists consider Clematis Armandi to be a variety of the polymorphic *C. Meyeriana*, *Botanical Magazine*, t. 7897; but Messrs. FINET and GAONEPAIN, the latest monographers of the genus, agree with FRANCHET in considering it a good species, and certainly Mr. WILSON'S specimens are very different in the inflorescence. However, let its botanical affinity be as it may, for horticultural purposes it is abundantly distinct. Clematis Meyeriana has smaller white flowers, and usually pinnately five-foliolate leaves. It is relegated to the warmer parts of the Yangtze Valley and China generally, where a warm temperature and sub-tropical climate obtain. Clematis Armandi, on the contrary, occurs only on the mountains from 2,000 to 4,000 feet. Its distribution extends from Hupeh, Central China, to the far west of Szechuan (Tibetan border). On scrub-clad mountains it is very common, festooning bushes and rocks. When in flower it presents a picture not easily forgotten. Mr. WILSON tells us that he counted as many as thirty flowers in one axillary cluster. The Chinese name for it is Wei-ling-hsien.

THE ROYAL HORTICULTURAL SOCIETY'S SHOW AT CHELSEA.—The Royal Horticultural Society will hold their summer show, by the kind permission of the Lords Commissioners, on Tuesday, Wednesday and Thursday next, July 11, 12 and 13, in the grounds of the Royal Military Hospital, Chelsea. The ground is ten minutes' walk from Victoria Station and about five minutes from the Sloane Square District Railway Station. The London County Council steamboats are now running, and Chelsea Bridge pier almost adjoins the main entrance. Omnibuses from all parts run along King's Road, Chelsea, which borders the estate on the north side, and Pimlico Road, over the Albert suspension bridge, and to Sloane Square. These directly connect the show with Liverpool Street, the Bank, Fleet Street, Piccadilly, Westminster, Victoria, Islington, Holloway, Shepherd's Bush, Clapham Junction, and most other parts of London. The arrangements will be similar to those made at the shows in the Temple Gardens and to the summer shows hitherto held at Holland House by the Society. The show will be open at 12.30 on July 11 to Fellows of the

* *Clematis Armandi*, Franchet in *Nouv. Arch. du Muséum*, ser. ii., viii. (1865), p. 184; O. Kuntze, *Mon. Clemat.*, p. 152; Finet and Gagnepain, "Contrib. Flor. Asie Orientalis," *Bull. Soc. Bot. France*, Nov. 13, 1903.



CLEMATIS ARMANDI, A CHINESE SPECIES, WITH WHITE OR CREAM-COLOURED FLOWERS.

Society free, and to the general public on payment of 7s. 6d.; on Wednesday, July 12, the charge for admission will be 2s. 6d., and on Thursday, July 13, the price will be 1s. Silver Cups and Medals will be awarded according to merit, and the classification will include Roses, Orchids, fruit, and vegetables, hardy herbaceous and out-doors groups, alpinas, and rock gardens, foliage and flowering plants generally, and there will be a special tent for horticultural sundries and appliances. Lieut. CHAS. GODFREY'S band will play each day, and ample arrangements for refreshments have been made.

FLOWERS IN SEASON.—From Messrs. GAUNTLETT, of Redruth, we have received a consignment of noteworthy flowers in the shape of cut specimens. They are not novelties, but many are of special interest:—

Ozothamnus thyrsoides, which the Kew authorities say should be called *Helichrysum diosmifolium*, is a Composite shrub with linear leaves, on thick-set ascending branches bearing very numerous small white flower-heads. It is a most showy shrub.

Buddleia variabilis is remarkable for its lanceolate leaves, hoary on the under surface, and with long elegant spikes of bluish flowers. It is figured in *Gardeners' Chronicle*, August 20, 1898, p. 139.

Phlomis fruticosa is a very old friend. *Phormium tenax* var. *viridis* is sent in flower, the blooms being of a deep red colour.

Escallonia langleyensis × has pretty rose-coloured flowers. It is cross between *E. macrantha* and *E. Philippiana*. An illustration was given in the *Gardeners' Chronicle*, July 10, 1897, p. 15.

Olearia macrodonta is remarkable for its boldly toothed leaves and showy flower-heads. It was illustrated in the *Gardeners' Chronicle*, Sept. 4, 1886, p. 305.

With these came also some fine varieties of Japanese Irises.

A ROSE SHOW AT THE CRYSTAL PALACE.—For many years the shows of the National Rose Society were associated with the Crystal Palace, and they were so popular that this year the authorities at the Palace have determined to hold one under their own management. At the exhibition, which takes place on Saturday, July 8, a sum of £225 is offered in prizes, and fourteen medals will be awarded for groups.

THE ROATH PARK, CARDIFF.—According to a "Guide," of which a copy is before us, this comprises an area of over 100 acres, divided into six distinct portions intended for use as playing grounds for athletes and for children; pleasure grounds for those who take their pleasure less energetically; and a botanic garden for those who seek interest as well as pleasure and recreation. The catalogue of the plants, arranged in their several natural orders, is very full and evidently very carefully compiled. It gives one an idea of the trouble involved in keeping such a collection properly labelled. In these days, when the study of systematic botany is, we may say, systematically neglected, it is refreshing to see what is done in Cardiff towards remedying this defect. The ordinary gardener has or ought to have much better chances of familiarising himself with the characteristics of the principal natural orders than with the minutiae of what we may call laboratory botany, to which too exclusive attention is paid nowadays. Without wishing to derogate in the slightest degree from the importance of the study of microscopical anatomy and of the physiology of plants, we yet think that for the average practical gardener a knowledge of the conformation of the principal natural orders is of greater immediate value. We note incidentally that a collection of Ferns derived originally from the gardens of the late Mr. E. J. Lowe is to be met with here. Fern-lovers should take note of

this. Lakes, ponds, aquaria, and "wild-gardens" add to the attractions of this park. Lists of the birds and mammals, including the otter, are given, whilst of the rabbit it is said that it is frequently seen, but is not encouraged—a circumstance which does not surprise us. Mr. W. W. PETTIGREW is the Superintendent of the Parks Department, and to him the Cardiff people are under great obligations for the preparation of this useful guide.

AN OBJECT-LESSON.—When, thirty-three years ago, Japan began her new career, there were a few people like ITO clever enough to see and say that the study of ancient classics alone, to the neglect of the study of Nature, meant ruin to the country; but such ideas would never have been adopted had not Japan been in deadly peril. All the nations of Europe bullied and insulted her, and it was only their mutual jealousies which saved her from complete subjugation. In the presence of that peril the pedants held their peace, and everybody saw the necessity for an immediate radical reform. In time Nature was studied by every child in Japan, and in consequence scientific methods of thinking and acting have permeated the whole nation. All ancient and modern European literature is open to the Japanese who know English, and English is the one language other than Japanese which every cultured man must know. In the matter of self-protection everyone can see the result. Because the Japanese have studied Nature their scientific officers and men have marched or sailed to victory in every engagement; their statesmen will do exactly what is best for Japan in the negotiations for peace; their country will quietly take its place as one of the first-class Powers of the world, and every person who knows anything about Japan is quite sure that ambitious, wrong-headed schemes of conquest are altogether impossible to the scientific minds of the Japanese. If Japan had not been in great danger we know that she would not have taken to nature-study, and some of us think that it may need a state of danger in England to produce the necessary desire for reform. The South African muddle was worried through, and almost everybody seems to think that all such muddles may also be worried through, but some of us think that we may not always be so lucky. Danger is close enough even now, and we can only hope that if it becomes great it may grow slowly enough to let us learn something from the object-lesson which is being given us day by day in the news from Russia and the Far East. *John Perry*, in "Nature."

FLOWERS AND INSECTS.—Mlle. JOSEPHINE WÉRY concludes, from some experiments recorded in the *Bulletin* of the Royal Academy of Sciences of Belgium, that the attraction exerted on insects by the form and colouration of flowers is much greater than that exercised by their pollen, their perfume, and their nectar collectively.

HENRY ECKFORD TESTIMONIAL.—The contributions to this Fund up to Saturday evening, July 1, amounted to 836 shillings.

"THE JOURNAL OF ECONOMIC BIOLOGY."—Under this title a new periodical is announced to be published, edited by WALTER E. COLLINGE, Lecturer in Zoology and Comparative Anatomy in the University of Birmingham, with the co-operation of Professor A. H. REGINALD BULLER, the University of Manitoba; ROBERT NEWSTEAD, Liverpool School of Tropical Medicine; Professor GEO. H. CARPENTER, The Royal College of Science, Dublin; and A. E. SHIPLEY, Christ's College, Cambridge. The need of a recognised medium for the publication of original investigations has long been felt by workers in economic biology. No such paper at present exists in this country, and the difficulty of obtaining prompt publica-

tion, with the necessary illustrations of papers of a high standard, is well known. A special feature will be made of the illustrations, and every care will be used to see that the papers are of an equal standard. The Journal will be issued at a prepaid annual subscription of 16s., four parts to the volume, the first of which will appear on September 29. A number of British and foreign biologists have already promised their support, and it is hoped that the Journal will be found in the libraries of all universities, university colleges, schools of agriculture, experiment stations, the public libraries of all large cities, and in the private libraries of zoologists, botanists, entomologists, mycologists, &c. All business and literary communications should be addressed to the editor, and all subscriptions should be forwarded to Messrs. DULAU & Co., 37, Soho Square London, W.

SIR EVERARD IM THURN.—Among the honours published in celebration of the King's birthday we learn that the rank of K.C.M.G. has been conferred upon our correspondent EVERARD FERDINAND IM THURN, Esq., C.M.G., Governor and Commander-in-Chief of the Colony of Fiji, and His Majesty's High Commissioner for the Western Pacific. Previous to his appointment to Fiji, Sir EVERARD held magisterial office in British Guiana, and to him we are indebted for much valuable information on the flora of that Colony and of Roraima, whence he introduced many remarkable Orchids and other plants. Sir EVERARD'S services were largely utilised by the Government in the settlement of boundary questions relating to Venezuela and to British territory. Subsequently he was appointed to Ceylon, so that he has well won the honour now bestowed upon him.

PRESENTATION TO A GLASGOW SEEDSMAN.—On the eve of the marriage of Mr. DANIEL GRANT PURDIE, manager of the firm of Messrs. SMITH & SIMONS, a very representative meeting of the trade gathered in McCULLOUGH'S Restaurant, Maxwell Street, to wish him God-speed. Under the presidency of the senior partner of the firm, Mr. GEORGE DAGO SCOTT, who was supported by the junior partner, Mr. ROBERT SADLER, and Mr. ANDREW CUNNINGHAM (Messrs. CUNNINGHAM & WYLLIE), a very harmonious meeting was held. The toast of the guest of the evening was proposed from the Chair in words of appreciation for services rendered during the past fifteen years to the firm. The presentation consisted of a solid silver tea and coffee service, and in a few feeling remarks Mr. PURDIE acknowledged the fraternal feelings which prompted such a handsome gift on the occasion of his wedding. The toast of the seed trade, proposed by Mr. DRUMMOND CAIRNS, was heartily responded to; and Mr. PETER DREW, of Edinburgh, replied, advocating the holding of a social gathering frequently with a view to the formation of a trade association for instructive purposes, emulating the work already done by kindred associations in Edinburgh and Dublin. This suggestion, needless to say, was heartily supported, and in all probability will be acted upon this year. The Chairman expressed himself in full sympathy with the movement of an association being formed for the improvement of the members.

ACETYLENE LIGHT AS AN AGENT FOR FORCING PLANTS.—The Cornell University Experiment Station has been interested during the past winter in testing the influence of the acetylene light in promoting plant growth. It is a notorious fact that the months of November, December and the fore part of January are trying periods for the greenhouse man. It is at this time that he struggles with the contradictory problem of insufficient light and the necessity of ventilation and watering. During the past

winter experiments have been conducted by M. J. IORNS, a graduate student in the Department of Horticulture at the forcing-houses of Cornell University, having for their purpose a comparison of the influence of acetylene and electric light on plant growth under different temperatures. In a recent number of the *Acetylene Journal* a condensed statement of the gross results obtained are presented. It was found that acetylene light, approximating closely to the quality of the sun's spectrum, exerted an energetic influence on plant growth. Plants grown under acetylene light vegetated much more rapidly than others not under its influence, and those grown for cut flowers reached the blooming stage considerably in advance of their competitors grown under ordinary sunlight only. Easter Lilies grew twice as high and bloomed ten days to two weeks in advance of those outside of the acetylene lighted area. The growth of Radish and Lettuce was greatly hastened, and the yield in a given time much increased. The branches of flowering shrubs responded in a marked degree to the influence of the light. Those under acetylene light bloomed several days in advance of those in the same temperature and influenced by daylight only. It was also proved that the plants under the influence of acetylene light only would form chlorophyll as if grown in sun-light. *The National Nurseryman*.

"**LUCRETIA**" BRAMBLE.—We are indebted to Messrs. ROBERT VEITCH & SON, of Exeter, for a specimen of this white-flowered Bramble. It is attractive when in flower, the blossoms resembling those of small Roses, and it ripens its fruits earlier than the ordinary Blackberry.

SEEDING AND GERMINATION OF MECONOPSIS INTEGRIFOLIA.—Messrs. J. VEITCH & SONS, Chelsea, inform us that they have gathered ripe seed of this plant in their nurseries, Langley and Coombe Wood. Plants have produced fine capsules, as have those exhibited at the various horticultural meetings. The first ripe seed was gathered on June 19, and on June 22 test-sowings were made under various conditions. The seed sown in a cold frame grew best, and commenced germinating on July 4.

CARBONATE OF BARYTA.—The *Revue Horticole* has an article on the use of this substance as a poison for rats, voles, &c. The baryta is used in the proportion of twenty parts to eighty of Wheat flour. Water and yeast are added to form a paste, which is allowed to ferment and then baked so as to form hard cakes. These cakes are steeped in skim milk and then broken up into pieces of the size of a Hazel nut and placed in the "runs," care being taken so to place them as to be out of the way of poultry. Spring and autumn are the best periods at which to operate. The poisonous character of the preparation must always be borne in mind, and the workmen after using it should wash their hands in water to which a little vinegar has been added. This removes all trace of the baryta. The results of experiments in fields infested with rats and voles showed that the poison is very efficacious, and its application less costly than the LÖFFLER virus, which is however more suitable when the number of animals is very large and their distribution widely extended.

RESERVE SUBSTANCES: THE WORK OF DECIDUOUS AND OF EVERGREEN LEAVES.—The differences in the process of nutrition, the formation and storage of starch and other hydrocarbons in deciduous and evergreen shrubs respectively is well illustrated by the researches of a French botanist, M. LECLERC DU SABLON, who in the *Comptes Rendus* for June 13 gave a summary of his experiments concerning the hydrocarbonaceous reserves, starch, sugar, &c., in evergreen and deciduous-leaved plants respectively, and at different seasons of the year. He arrives at the

conclusion that the amount of these substances, which in trees with deciduous leaves is greatest in autumn at the fall of the leaf, in trees with evergreen leaves is greatest in the beginning of spring when the buds are about to open. The minimum amount which is observed in May in trees that lose their leaves, is found in July or August in the case of evergreens. These differences are easily explained by the fact that in evergreen leaves assimilation takes place all the year round, but in relatively weak intensity; while in the deciduous leaves assimilation is only carried on from May to October, but then more energetically.



FIG. 13.—ROSE WALTHAM BRIDE.
A summer-flowering hybrid of the multiflora type, with pure white flowers, exhibited by Messrs. Wm. Paul & Son.

PUBLICATIONS RECEIVED.—*Notices sur les Plantes Utiles ou Intéressantes de la Flore du Congo*, Emile de Wildeman, Conservateur au Jardin Botanique de l'Etat, Bruxelles, iii.—*Jahresbericht der Bayerischen Gartenbaugesellschaft* (Year-Book of the Bavarian Horticultural Society), 1904, Munich.—*Bolctim da Sociedade Brotteriana*, J. A. Henriques, 1903, Coimbra. This Bulletin is chiefly devoted to a description of the grasses of Portugal (written in Portuguese) by Senor J. A. Henriques. Imperial Department of Agricultural for the West Indies: *Cultivation of Oranges in Dominica*, by Mr. Hesketh Bell.—*Twenty-fifth Annual Register of the Officers and Students of the Colorado State College of Agriculture and the Mechanical Arts*, an illustrated compendium relating to the above-mentioned College. "Botany, structural and systematic, is taught from text-books and by lectures. A great variety of plants is at hand. In physiological botany the students use compound microscopes and have laboratory practice two hours daily. An herbarium of native and foreign plants and the greenhouses furnish material for study. Instruction in horticulture is given principally by means of lectures. Some of the subjects considered are vegetable gardening, methods of plant propagation, forestry, pomology, floriculture and landscape-gardening."—*Annual Administration Report of the Forest Department of the Madras Presidency*, to June 30, 1904. "The year's administration as a whole may be considered as one of satisfactory progress."

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his Correspondents.)

SWEET PEAS.—As in the case of thousands of cultivators like myself, I cannot doubt the Sweet Pea was the favourite flower of their boyhood; in the light of its development and intensified attractiveness, it can hardly fail, under such exquisite conditions, to remain the chief abiding floral fascination of their maturer years. Some of our grandest Roses do not open with facility, are wanting in fragrance or artistic formation; the Sweet Pea is almost infallible in those respects. Nor is this queen of all annuals so susceptible as many other flowers of greater splendour and impressiveness, to atmospheric influences. One of its most recently originated crosses, indeed, entitled "The Scarlet Gem," seems (from its raiser's indication of its one sole liability or serious limitation) to be an exception to the prevailing rule; it can be, like Hamlet, Prince of Denmark, a remarkable cross introduced by Shakespeare, "too much in the sun." In other words its sensitive nature demands congenial shade, which it finds in my garden, where, during last season, grown up venerable Apple-trees in charming association with Sadie Burpee, Dorothy Eckford (the grandest of all pure white introductions), and Lady Nina Balfour, its effect was very memorable. Another Sweet Pea of recent origination which, while almost equally brilliant, is in the direction of conservation of colour under exacting solar conditions greatly more reliable, is the already far-famed King Edward VII, the brightest and most effective of all the finest existing crimson-coloured varieties. It is a grand grower, and its luminous flowers expand with splendid facility. Gladys Unwin is another remarkable acquisition raised by Mr. Unwin at Histon, Cambridge, generally characterised by competent cultivators as a distinct advance on Countess Spencer. This is a variety which has achieved a very remarkable popularity in virtue of attributes of growth, formation and distinctive colour which it will be difficult for future hybridists to transcend. Other recent creations or introductions of great merit and widely varying hues and characteristics are Bolton's Pink (one of the loveliest of its section), John Ingman and Marchioness of Cholmondeley, Florence Molyneux and Zenie Cuthbertson, in whose success, for various reasons, I am interested. Henry Eckford, Black Michael, and Romolo Piazzani I have not yet seen; but in their merits and those of my Eckfordian namesake I believe. *David R. Williamson*.

GARDEN WALKS.—The formation of my garden paths at this place cost me very little, either in labour or expense. The ground, to begin with, was pasture land, intersected with several hedgerows, which were cleared away. In breaking up that portion of it which I intended for cultivation I simply marked out the spots where paths were wanted, and left the grass which now forms the paths; these vary from 4 to 5 and 8 feet in width. Of course places where the turf was a little bit uneven were put straight; a mowing machine run over these about once a week or thereabouts keeps the grass smooth and tidy; the edges are clipped at the same time, and being done so often there is practically nothing to pick up; the sun soon makes it disappear. These walks are always smooth and soft, like a Persian carpet; they are very much admired, and especially by ladies, who can walk comfortably along and view the trees, shrubs, herbaceous plants, &c., on either side. From frequent use the grass does not seem to wear off. The only gravelled walks I have is one about 5 feet 4 inches wide round my house, and the carriage drive up to the house, which is a short one; these are kept free from weeds by an occasional sprinkling of salt, well rubbed in at the same time with a besom, and watered in if the weather happens to be dry at the time of application. Finding these grass paths so comfortable to walk upon, economical and advantageous in many ways, I might be allowed to suggest that in many large places which are now under-manned on account of reductions of income owing to agricultural depression, they might materially

reduce their labour by allowing great breadths of grass to run wild which are now kept mown, retaining only where advisable a few of those grass paths of such widths as might be deemed necessary. These grass spaces might be planted with a host of things, such as Snowdrops, Crocus, Daffodils, Lilliums, Roses, and herbaceous plants, which would afford a grand and continuous show of flower from, say, February up until September or later. Such an arrangement would put the owner of those hitherto over-shaven and meaningless spaces into the possession, and that too with

brood, kingfishers nesting in holes in the bank, goldfinches, grey linnets and green ones, besides hosts of other and more common birds. During the ensuing transplanting season, we hope to do something more towards the completion of another already partly begun grass walk, which will be about 300 yards long or thereabouts. When this is done, it may be said of me that I left this place a little more beautiful than I found it, and it may also be said of me, as it was of Shenstone and Scott, that in the formation of their respective places according to their

plants are in the frames, and of hybrid Malmaisons, Duchess of Westminster (salmon-pink), and Maggie Hodgson, of the same colour and fragrance as the old crimson Clove, are favourites. A very fine collection of winter-flowering Carnations promises well for bloom, and of showy flowers at present open a quantity of the large canary-yellow Carnation Cecilia is the finest, and it is not possible to conceive a better when grown as it is at Tring Park. *J. O'B.*

WASTE OF WATER.—Lord Rosebery did well to call attention to this subject in a recent speech at Bathgate. It is such an important subject, and often directly connected with gardening, that I venture, as one of the public who has dug several wells and constructed many water-tanks, to draw attention to the present necessity of being thrifty with water supplies. It has often seemed to me that directly people have the luxury of a tap they lose their conscientiousness. As long as they have to pump their water it is tolerably safe from waste. It is but about two years ago that we came to the end of a cycle of abnormally dry years, five very dry ones and about five more in which the rainfall was not up to the average. The wells were very low all over the country and the springs failed. Yet on several occasions, when chancing to talk about the difficulties consequent on this state of things, people said to me airily and unfeelingly, "Oh, we have no bother; we are supplied by the water company now, and it is so nice. We can draw any amount; we have even got nice little fountains in the garden!" These people were not always close to a large town, so that their water company must have been at considerable expense. They never seemed to consider by what means the company obtain their supply, and that this great and perennial serving out of water must cause extra expense all round to be paid for somehow. Surely it is wise to call attention to the growing recklessness of using "company's" water, and to point out that for social ends one ought to be as careful as possible with the supply of apparently so commonplace an article of necessity as water. *A Consumer.*

THE SPORTING OF LILIUM ALEXANDRÆ.—Last year I wrote that my *L. Alexandræ* had formed a bulb which produced a red flower. This year I have two bulbs of the red variety, and they both repeated the colour. My belief is that the white *L. Alexandræ* is not a hybrid. The red variety may or may not be a hybrid, but the white variety is probably only an albino variation of the red one, while the latter is only a reversion to its original colour. The *L. Alexandræ* var. *rosea* is very pretty; its petals are of a soft pale carmine throughout, with a small number of carmine spots towards their base. The midribs are of a strongly-marked carmine; the margins of the petals are white and wavy. Barring the colour, the white and red varieties are identical, whether in height of plant, in foliage, and form of flower. The white variety has a slight tinge of rose colour on the outside of its petals, which might mean that it is related to a red variety. *E. Bonavia, M.D., July 3, 1905.*



FIG. 14.—A JAPANESE POLYANTHA ROSE IN THE GARDENS AT TRELISSICK, TRURO: COLOUR OF FLOWERS PINK.

SPRAYING.—When some years since we first made known the results obtained by spraying in the United States, and recommended the fruit-growers to follow the example of the Kentish Hop-growers, we were met by two obstacles. Our correspondents had a difficulty in obtaining "London-purple" and "Paris-green," so that we had actually to send to Canada for information as to where to get "London-purple." That difficulty has since been overcome. Then spraying apparatus, though common enough in France and the United States, was scarcely known here outside Hop-gardens. Messrs. STRAWSON, of 71A, Queen Victoria Street, and Messrs. MERRYWEATHER & SONS, 63, Long Acre, exhibited at the recent Park Royal Agricultural show various forms of apparatus well adapted for the purpose in view, so that our fruit-growers can no longer plead that spraying material and spraying apparatus are not to be had.

almost magical quickness, of one of the most lovable and enjoyable elysiums of a wild garden that any man could possibly imagine. Without the experience few people can thoroughly appreciate the quiet and comfortable enjoyment of those grass walks, and I would certainly recommend their use where the walking traffic is not very excessive. During last autumn, winter, and spring, we completed a grass path here 150 yards in length by 5 feet in width; this path has a streamlet and border of flowering trees and shrubs 25 feet wide on one side of it, and a similar but wider border on the other. This is a very enjoyable walk, for although we have the London & Birmingham Railway adjoining, we have in the streamlet, which is here dammed up, a waterhen with her

ideas, they displayed a great deal more taste than they did of worldly wisdom. *W. Miller, Berkswell.*

MALMAISON CARNATIONS AT TRING PARK.—The "Malmaison" Carnation is a prime favourite with Lord Rothschild, and several houses of them at Tring Park (gr., Mr. A. Dye) form one of the special attractions in summer. Probably they have never been seen so good as they are at the present time, when two houses are literally a mass of fine fragrant flowers borne on vigorous specimens of this beautiful Carnation, the plants averaging ten blooms. In each house one side is filled with the old blush-white form, and the other with the pink-tinted variety Princess of Wales. Large quantities of succession

SOCIETIES.

THE ROYAL HORTICULTURAL.

JULY 4.—On the occasion of the usual fortnightly meeting on Tuesday last, in Vincent Square, the body of the Hall was given up to an exhibition of Sweet Peas, held under the auspices of the National Sweet Pea Society. Owing to this circumstance there were no groups of the usual type, and all exhibits other than Sweet Peas were such as were submitted to the various Committees for Certificate.

The ORCHID COMMITTEE recommended awards including three First-class Certificates and three Awards of Merit.

The FLORAL COMMITTEE recommended nine Awards of Merit to the plants enumerated below.

The FRUIT AND VEGETABLE COMMITTEE recommended Awards of Merit to Strawberry Bedford Champion, Tomato Sunrise, and culinary Pea Essex Wonder.

A paper by Professor WEBBER, of Washington, was to have been read, but the mail having been delayed the delivery of the lecture was postponed in consequence.

Floral Committee.

Present: W. Marshall, Esq., Chairman; and Messrs. Geo. Nicholson, R. Dean, E. H. Jenkins, W. J. James, W. P. Thomson, Chas. E. Pearson, Chas. Jeffries, Chas. Dixon, G. Reuthe, J. T. Bennett-Poe, Geo. Paul, H. J. Cutbush, Jno. Green, C. E. Shea, E. T. Cook, R. W. Wallace, W. Cutbertson, and R. Hooper Pearson.

Awards.

AWARDS OF MERIT.

Carnation Pride of Westbury.—This is a border variety, with very large cherry-red-coloured flowers. The petals are broad and very slightly fimbriated. Strongly fragrant, but the flower is hardly so smooth in appearance as to be considered of the best form. Shown by Sir SAMUEL SCOTT, Westbury Manor, Bucks (gr., Mr. Tapper).

Carnation "Bob Acres."—A border variety, with scarlet flowers of excellent form, and measuring about 2 inches across, very slightly fragrant.

Carnation Countess of Radnor.—Another border variety, but of a very different type to that of Bob Acres. The flowers are 3½ or 4 inches across, very full, and having slightly fimbriated margins. The two varieties above were exhibited by Mr. JAS. DOUGLAS, Edenside Nurseries, Great Bookham.

Delphinium "Snowflake."—A pure white variety, except for a small green spot at the tip of each petal. Shown by J. BRADSHAW, Esq., The Grange, Southgate (gr., Mr. G. G. Whitelegge).

Eschscholtzia "Carmine King."—An attractive variety with carmine-coloured flowers. Shown by Mr. W. H. GARDINER, St. Byth.

Erica cinerea "Skelwith Fold" variety.—A very richly-coloured variety of this well-known hardy Heath, being a deep violet shade of purple. Shown by Mrs. MARSHALL, Ambleside.

Hemerocallis × luteola.—This is a variety raised from a cross between *H. aurantiaca* major and *H. thunbergii*. The flowers are orange-yellow-coloured, of large size, and a considerable number of them are produced on each cymose inflorescence. Shown by Messrs. R. WALLACE & Co., Colchester.

Rose The Dandy.—Described as a hybrid Tea Rose, of exceedingly bright but rich crimson colour, similar to that of Victor Verdier; very fragrant, of small size, but unusually floriferous. The foliage is of large size, almost smooth, and the variety is recommended specially for its value as a garden plant. Shown by Messrs. PAUL & SON, The Old Nurseries, Cheshunt.

CULTURAL COMMENDATION.

Passiflora quadrangularis Bonapartii.—Magnificent flowers of this interesting and showy Passion-flower were shown by PERCY WATERER, Esq., Fawkham, Kent, and a Cultural Commendation was deservedly awarded.

Jacaranda mimosifolia.—A Cultural Commendation was recommended to this fine greenhouse plant, magnificent panicles of flowers being shown by Lady PLOWDEN, Aston Rowant House, Wallingford, Oxon (gr., Mr. W. H. Clarke). The genus belongs to the Bignoniaceae, and the flowers of this species are blue. A supplementary illustration of its flowers was given in the *Gardeners' Chronicle* for September 24, 1904.

Orchid Committee.

Present: J. Gurney Fowler, Esq., in the chair; and Messrs. Jas. O'Brien (hon. sec.), R. Brooman-White, De B. Crawshaw, H. A. Tracy, R. G. Thwaites, F. J. Thorne, H. J. Veitch, W. A. Bilney, G. F. Moore, A. A. McBean, W. Boxall, H. Little, J. Douglas, W. H. Young, F. W. Ashton, and H. T. Pitt.

By arrangement there was but a small display of Orchids, as the Hall was set apart for the Sweet Peas, but the proportion of exceptionally good things staged in the Committee-room was above the average, the awards being as follows:

FIRST-CLASS CERTIFICATE.

Cymbidium Huttoni, from Messrs. CHARLESWORTH & Co., Heaton, Bradford.—A very remarkable and beautiful species, originally discovered by Hutton when collecting for Messrs. Veitch in Java. The species connects *Cymbidium* and *Grammatophyllum*, the large, grooved pseudo-bulbs, each furnished with two or three bright green leaves, much resembling those of *G. multiflorum*. The manner of producing the pendulous racemes of thick-textured flowers is nearest to *Cymbidium Devonianum*. Two varieties were shown, one lighter in colour than the other, the longest raceme bearing fifteen flowers. Flowers about 2 inches across, yellowish-white, densely spotted with purple, the petals being also tinged with purple on the outer halves. Sepals obovate, acuminate, petals narrower and reflexed; side lobes of the lip large and erect, middle lobe oblong, acuminate. A very distinct and desirable species.

Cypripedium × Daisy Barclay (Godefroye leucocheilum × Rothschildianum), from J. GURNEY FOWLER, Esq., Glebelands, South Woodford (gr., Mr. Davies).—A very beautiful hybrid with flowers extended like those of *C. Rothschildianum*, but dwarfed. The flowers are cream-white, evenly marked with irregular lines of claret-purple colour, the labellum being spotted with rose-purple. A good feature in the flower is given by the unusually large and beautifully marked lower sepals displayed behind the labellum.

Cypripedium Lawrenceanum Hyeuan Bank House variety, from R. BRIGGS-BURY, Esq., Bank House, Accrington (gr., Mr. Wilkinson).—Flowers larger than the original form, and with the large dorsal sepals more flatly displayed. Petals and lip light emerald-green; dorsal sepal pure white with emerald-green lines. Plant of free growth, bearing three flowers.

AWARDS OF MERIT.

Cypripedium Godefroye citrinum, from FRANCIS WELLESLEY, Esq., Westfield, Woking (gr., Mr. Hopkins).—A very large flower, nearly equal in size and in firm substance to that of *C. bellatulum*. Ground colour pale yellow, the sepals and petals having on the inner halves a beautiful irregular network of claret-purple colour, a few small spots of the same tint being on the face of the labellum.

Laelio-Cattleya × Massungana "Harry Goodson" (*L. tenebrosa* × *L. C. Schilleriana*), from H. S. GOODSON, Esq., Fairlawn, Putney (gr., Mr. G. E. Day).—A very bright hybrid with yellowish sepals and petals tinged and veined with brownish-rose-colour. Lip white at the base, side lobe and expanded front lobe purplish-crimson.

Oncidium crispum "Shrubbery variety," from F. MENTEITH OGILVIE, The Shrubbery, Oxford (gr., Mr. Balmforth).—Flowers large and finely-formed, of a dark chocolate-brown colour with chrome-yellow crest with raised, reddish tubercles. A remarkably dark-coloured flower with wavy edges to the segments.

CULTURAL COMMENDATION

to Mr. Balmforth, gr. to F. MENTEITH OGILVIE, Esq., Oxford, for *Cypripedium niveum*, a small stand with thirty-six fine, pure white flowers being shown.

FRANCIS WELLESLEY, Esq., showed *Laelio-Cattleya × Mrs. Freke-Gould* (*L. tenebrosa* × *C. × intertexta*). A pretty flower with silver-white sepals and petals delicately veined with rosy-lilac on the outer halves; front of lip bright-purple.

DE B. CRAWSHAW, Esq., Rosefield, Sevenoaks (gr. Mr. Stables), showed two plants of *Odontoglossum × crispodinei* (*crispum* × *Coradinei*), a great improvement on the best forms of *O. × Coradinei* and equal in size to *O. crispum*. Both came from the same pod of seeds, but one had the white ground colour and form of lip of *O. crispum*, the other more nearly approached *O. Coradinei*, and had cream-coloured sepals and petals, with one large irregular brown blotch on each sepal and

occasionally one on a petal. Lip whitish with large brown blotches. The other variety had both sepals and petals uniformly blotched.

R. G. THWAITES, Esq., Streatham (gr. Mr. Black), showed *Odontoglossum Pescatorei album* Thwaites' variety, a model pure white flower with orange crest.

HENRY LITTLE, Esq., Twickenham (gr., Mr. Howard), showed a flower of *Laelio-Cattleya × Ivernia Little's variety* (*L. C. callistoglossa* × *L. tenebrosa*), much darker in colour than the original. Sepals and petals purplish-lilac, lip claret-purple.

H. T. PITT, Esq., Rosslyn, Stamford Hill (gr., Mr. Thurgood), showed the very beautiful *Odontoglossum crispum* "Fearnley Sander," a large and finely-shaped flower, heavily marked with reddish-purple, the fringed margins and a few transverse lines only showing between the markings. Flower purple at the back.

MESSRS. J. BRUCE, Surrey Street, Strand, sent two specimens of *Epidendrum alatum*.

Fruit and Vegetable Committee.

Present: J. Cheal, Esq. (in the Chair); and Messrs. S. Mortimer, A. Dean, W. Pope, E. Beckett, J. McIndoe, Geo. Kelf, F. Q. Lane, H. Parr, T. Coomber, J. Willard, Geo. Norman, and Owen Thomas.

The principal exhibit brought before this Committee was that of a dozen excellent British Queen Pines grown by Mr. Coomber, gardener to Lord LIANGATTOCK, The Hendre, Monmouthshire. For the excellence of culture shown the Committee awarded a Silver-gilt Banksian Medal.

MESSRS. GEO. BUNYARD & Co., Maidstone, Kent, showed sixteen varieties of Strawberries.

A box of fine Peaches, grown as near the metropolis as Regent's Park, was shown by Mr. Geo. Kelf, gardener to Miss ADAMSON, South Villa, Regent's Park. The variety was Dr. Hogg (Silver Banksian Medal).

Mr. G. PENWILL, 80, High Street, Totnes, staged examples of Penwill's Champion Raspberry.

AWARDS OF MERIT.

Strawberry Bedford Champion.—A variety having large oval or roundish-shaped fruits with one or more deep sutures. Their great size is a pronounced characteristic (see p. 11 in our last issue). It is of agreeable flavour, and develops very high colour. Its cropping qualities were demonstrated by several trusses with numerous flowers and fruits. Shown by Messrs. LANTON BROS., Bedford.

Tomato Carter's Sunrise.—A variety with medium-sized fruits of the Perfection type. The plant is a heavy cropper, the individual bunches averaging 1½ lb. weight of about eight to ten fruits. A stem exhibited was carrying five heavy trusses of fruits. Reference was made to this variety on p. 17. Shown by Messrs. CARTER & Co., Holborn, London.

Pea Essex Wonder.—Apparently one of the taller-growing varieties. A very prolific cropper, and well-filled pods were shown. Exhibited by Mr. HORDAY, Romford, Essex.

NATIONAL SWEET PEA.

JULY 4.—The fifth annual show under the auspices of the National Sweet Pea Society was held on the above date in the Hall of the Royal Horticultural Society, Vincent Square, Westminster. Previous exhibitions have been held at the Crystal Palace and Earl's Court, but none was more successful than this one. In many of the large classes there were from six to twelve exhibitors; in the first one, for instance, which called for nineteen bunches, distinct, there were nine exhibitors. The classes for table decorations occupied a large amount of space, and non-competitive collections of Peas in bunches were unusually numerous. The new Hall, therefore, was not in the least too spacious, and, indeed, the Peas left very little space available even for the few things that were submitted for inspection by the Committees of the Royal Horticultural Society. Six new varieties were granted awards.

Much confusion was caused by the non-observance by some exhibitors of the stipulation printed in the Schedule, that "in Classes 1 to 35 inclusive, twenty sprays shall form a bunch—more than this number will disqualify." In Class I (Special Audit Class) it was found that so many exhibitors had exceeded this number that there were scarcely sufficient exhibits remaining to which the prizes could be awarded, and most of

he best flowers having thus been disqualified, we have thought it better not to refer to this class in our report below. It had not been decided at a late hour on Tuesday afternoon what course should be pursued in the matter of awarding the prizes, which included the Silver Cup offered by Messrs. SUTTON & SONS. At the same time the judges had, in our opinion, no option in the matter. Disappointing though it is, the failure to observe a definite stipulation in a schedule, whether by accident or not, can only be followed by disqualification. No other course

Gladys Unwin, Black Knight, Jeannie Gordon, Prince of Wales, Gracie Greenwood, Duke of Westminster, Duchess of Sutherland, Mrs. Walter Wright, Navy Blue, Grey Friar, America, Hon. Mrs. E. Kenyon, Coccinea, Lady Grizel Hamilton, George Gordon, and Maid of Honour. The 2nd place was taken by Mr. W. FIRTH, Wiston Hall, Leicester (gr., Mr. F. Clark). Some of the more notable flowers in this group were Countess Spencer, America, Miss Willmott, and Black Knight. 3rd, Mrs. A. TIGWELL, Harrow View, Greenford, Southall.

Some of the best shown by this firm were King Edward VII., Gracie Greenwood (very refined flowers), Miss Willmott, and Lady Grizel Hamilton. The 2nd prize collection was shown by Messrs. STARK & SON, Great Ryburgh, Norfolk, who had the varieties Jessie Cuthbertson and Enchantress in excellent condition. The 3rd place was taken by Mr. C. W. BREADMORE, Winchester.

Six groups were staged in the class for *twelve bunches in distinct varieties*, that of Mr. A. MALCOLM, Town House, Duns, being easily 1st, although the 2nd prize collection, shown by a fellow-townsmen of Mr. Malcolm, contained some good vases of flowers. The latter was put up by Mr. T. DUNCAN, Fogo School House, Duns, who is to be congratulated on his success as an amateur. The best examples in the premier group of this class were the varieties Bolton Pink (grand flowers), Edward VII., Dora Breadmore, Scarlet Gem, and D. R. Williamson. 3rd, Mr. J. WATSON, The Gardens, Orford House, Ham Common.

Although the trade was excluded from Classes 6 to 10, there was no lack of other competitors. In the class for twenty-four bunches in distinct varieties as many as seven persons competed. This was a strongly-contested class, and the quality throughout was remarkably good. The fortunate exhibitor was Mr. JONES, Bryn, Penylan, Ruabon, who secured the 1st prize for a splendid lot; followed by Mr. A. WOOTTEN, Croft House, College Road, Epsom, 2nd; and by W. H. RAWNSLEY, Esq., Well Vale, Otford (gr., Mr. T. Vickers).

Class 7, for *eighteen bunches*, was also strongly contested, there being no fewer than eight entries, one competitor being disqualified for intermixing grasses among his flowers, this being contrary to the scheduled rules. Mr. STEVENSON, Woburn Place Gardens, Addlestone, was awarded the 1st prize, his premier bunches being those of Gladys Unwin, Lovely, and Black Knight. Mr. E. BEWLEY, Rathgar, Co. Dublin, was 2nd; and Mr. Brown, gr. to W. D. WINTERBOTTOM, Esq., Ashton Hall, near Derby, 3rd.

Twelve Bunches, Distinct.—There were as many as eleven exhibits in this class. The best display was staged by W. A. BANKIER, Esq., Clock House, Epsom (gr., Mr. H. Randall), whose flowers exhibited good cultural skill, the individual blooms being of large substance and good form. The pick of the varieties were Dorothy Eckford and Countess Spencer. 2nd, Mr. W. F. HUTCHINS, Trewarrick, St. Austell. 3rd, Mr. J. T. BLENCOWE, Eastcott Gardens, Kingston Hill.

For Nine Bunches, Distinct.—C. K. WILD, Esq., The Grange, New Eltham, Kent (gr., Mr. E. F. Usher), was 1st. The variety King Edward VII. was shown well by Mr. WILD. The 2nd place was taken by Mr. M. Y. GREEN, The Lodge, Eynsford; and the 3rd by S. F. JACKSON, Esq., Danchurst, Epsom (gr., Mr. E. Boyd).

DECORATIVE CLASSES.

The Decorative Classes were a feature of the exhibition, and demonstrated the adaptability of the Sweet Pea for this branch of the florist's art. The table decorations ran down one side of the Hall, there being no fewer than two dozen tables arranged in one row, and even these did not accommodate the whole. It must have been a heavy task to find the best among the admirable displays. The 1st prize in the Amateur class went to Mrs. E. J. SELL, Kempton Villa, Luton, for a very neat arrangement. The colour of the varieties Agnes Johnston and Lady Grizel Hamilton contrasted well. The 2nd prize was awarded to Mrs. BECKETT, Aldenham House Gardens, Elstree. The 3rd prize went to Miss L. E. KING, Abbeydale, Coggeshall, Essex, with a simple arrangement composed of the variety Lady Grizel Hamilton intermixed with grasses, &c.

Class 39 was open to all exhibitors, and thirteen decorated tables were staged, the best being arranged by Mr. W. MARPLE, Penkridge, near Stafford, who utilised the variety Jeannie Gordon with graceful foliage. 2nd, Miss C. B. COLE, The Vineyard, Feltham. 3rd, Mrs. F. BREWER, Sniffeld House, Richmond.

The best bowl was adjudged to be that staged by Mr. C. W. BREADMORE, 120, High Street, Winchester. It was lightly arranged, the Sweet Peas being well seen, and not hidden by foliage. 2nd, Mr. W. J. NOY, Claypolds Road, Brentford.

The best épergne was arranged by Miss COLE, The Vineyard, Feltham, who utilised a Bruce flower-holder for the purpose. 2nd, Mrs. BREWER, Suffield House, Richmond.

BEST VARIETIES IN EACH COLOUR.

Eighteen classes were devoted to an exhibition designed to illustrate the best varieties of a particular

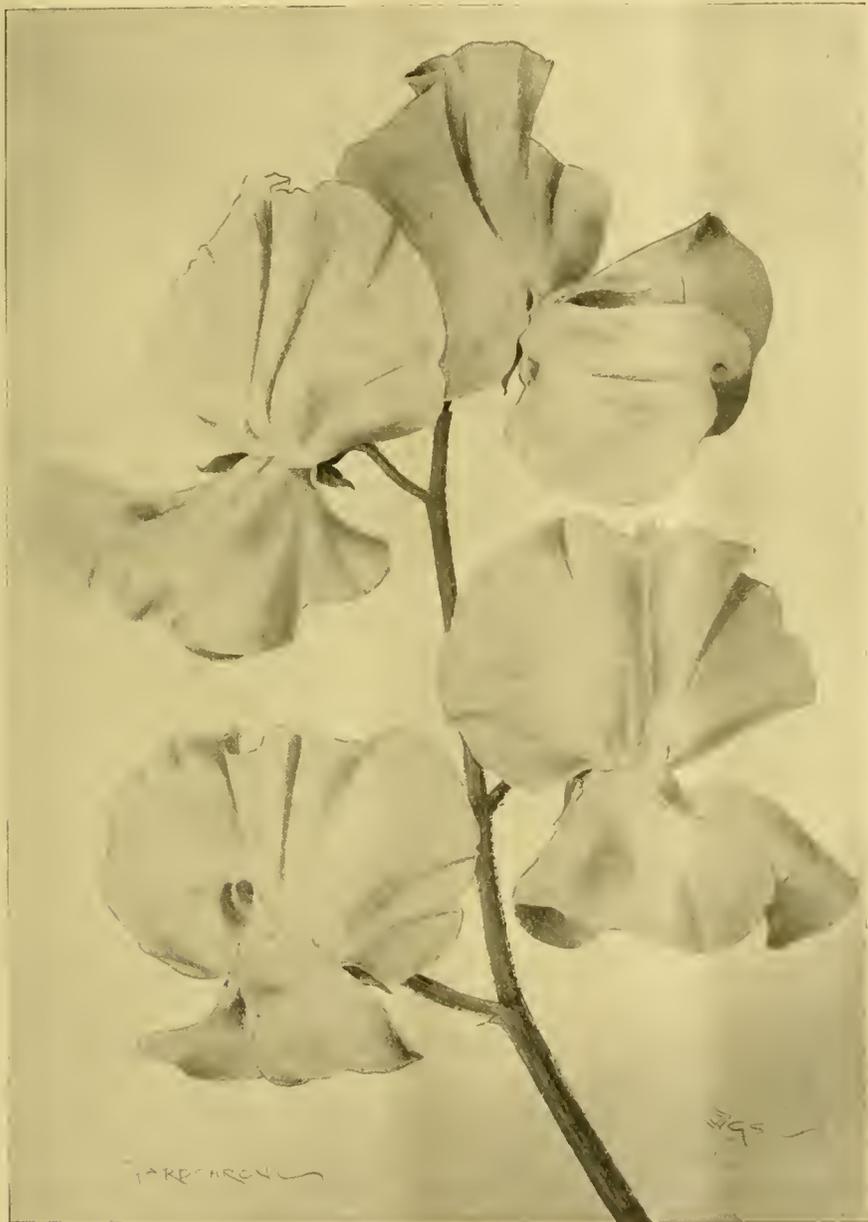


FIG. 15.—SWEET PEA "HELEN LEWIS": THE BEST NOVELTY AT THE SHOW ON TUESDAY LAST. (SEE P. 36.)

would be fair to those exhibitors who are careful to observe the conditions. Much work had to be done by Mr. HORACE J. WRIGHT and his Committee, whose task was the more severe owing to the matter just described.

COLLECTIONS OF VARIETIES.

In the class for a *Collection of nineteen Varieties* to include one variety only of each colour given in the Society's classification table there were six exhibits. As in the preceding class some confusion obtained with regard to conditions, the result being that two competitors were disqualified. The premier prize was secured by Messrs. CLARK & CO., Maison Dieu Road, Dover, who had a fine assortment of the best colours, the individual flowers showing good culture. The varieties staged were Dorothy Eckford, Miss Willmott,

For *thirty-six Bunches, Distinct*, there were five competitors. The quality of the exhibits was generally good, the 1st prize being secured by A. S. HAYMAN, Esq., Hapsford House, Frome (gr., Mr. F. Ackland), who had a bright array of bold, well-developed flowers. As a selection of the best flowers in this exhibit we may include Countess Spencer, Countess of Radnor, Navy Blue, Janet Scott, Emily Eckford, and Salopian. Mr. C. W. BREADMORE, 120, High Street, Frome, was placed 2nd; followed by Messrs. J. HOUSE & SON, Westbury-on-Trym.

Twenty-four Distinct Varieties, in bunches of twenty sprays each.—There were five exhibitors in this class, and keen competition resulted. 1st honours fell to Messrs. SALTMARSH & SON, Chelmsford, who had a remarkably good collection displayed to advantage.

colour. The colours are those adopted in the Society's classification list, which, on the whole, are satisfactory, but the difficulty there is in drawing arbitrary distinctions in the colours is apparent in several of the classes where room is left for much difference of opinion, as shown by the fact that several varieties were exhibited with success in more than one class. As a guide to those who require to cultivate a limited number of varieties, and wish them to be as distinct as possible, the results of the competition have some value, and we therefore append sufficient details for this purpose. The classes were arranged for two bunches, distinct.

In that for *blush-coloured flowers* we could only find the exhibit awarded the 3rd prize, the varieties being Countess of Aberdeen and Duchess of Sutherland.

Crimson.—There were nearly one dozen exhibits, and the comparatively new varieties Scarlet Gem, and King Edward VII. were shown in almost all of them.

Cerise.—Coccinea was the only variety exhibited in this class.

Rose and Carmine.—The 1st prize was gained by the varieties Prince of Wales and Mrs. Dugdale; the 2nd prize by Prince of Wales and Royal Rose, and the 3rd prize by the Prince of Wales and Lord Rosebery.

Pink.—The varieties Mrs. K. Smith and Countess Spencer won the 1st prize, Countess Spencer and Janet Scott the 2nd prize, and Gladys Unwin and Prima Donna the 3rd prize.

Orange Shades.—In the 1st and 2nd prize exhibits, the varieties were Gorgeons and Miss Willmott; and the varieties Miss Willmott and Lady Mary Currie won the 3rd prize.

Yellow and Buff.—The Hon. Mrs. Kenyon was exhibited in all the three 1st-prize exhibits, the companions being Lady Ormsby Gore, Queen Victoria, and Venus, in the order in which they are here given.

Lavender Colour.—In the three first exhibits the beautiful variety Lady Grizel Hamilton was shown, the companion varieties being those following in the order named—Countess of Radnor and New Countess.

Blue.—The 1st prize for blue flowers was won by the varieties Navy Blue and Captain of the Blues. The 2nd prize by Emily Eckford and Countess Cadogan; and the 3rd prize by the varieties Rev. D. R. Williamson and Miss H. C. Philbrick.

Mauves.—The three best varieties in this class were Dorothy Tennant, Mrs. Walter Wright, and Admiration.

Violet and Purple.—The Duke of Westminster, Mrs. Walter Wright, and the Duke of Clarence won prizes.

Maroon and Bronze.—The varieties Black Knight and Othello were successful for 1st, 2nd and 3rd prizes.

Magenta. In the 1st and 2nd prize exhibits the varieties were George Gordon and Calypso.

Picoté edged.—In the three best exhibits the varieties were Lottie Eckford and Dainty.

Striped and Flaked Red and Rose Colour.—America, Aurora, and Jennie Cuthbertson were successful in this class.

Striped and Flaked Purple and Blue Colour.—Princess of Wales and Senator.

Bicolor Peas.—1st, Jeanie Gordon and Triumph; 2nd, Triumph and Prince Edward of York.

Fancy Varieties.—1st, Agnes Johnston and Gracie Greenwood; 2nd, Gracie Greenwood and Duchess of Westminster; 3rd, Gracie Greenwood and Agnes Johnston.

AWARDS TO NEW VARIETIES.

Helen Picree.—Flowers bluish-purple and white, curiously blended, the deeper-coloured veining being very pretty; standard erect. Those shown had three, and in some cases two flowers only on a spike (Award of Merit).

Evelyn Byatt. Standard erect, of orange-red colour; wings of deeper red, of rose rather than orange shade. Generally two but occasionally three flowers on a spike (Award of Merit).

Both of these varieties were exhibited by MESSRS. WATKINS & SIMPSON, 12, Tavistock Street, London.

Helen Lewis.—This is the handsomest of the novelties exhibited for the first time, and was therefore awarded a First-class Certificate and a Silver Medal, being the best novelty for the year (see fig. 15, p. 35). The specimens were shown by Mr. J. WATSON, jun., the

Gardens, Orford House, Ham Common, and were splendidly cultivated flowers. Generally there were four very large flowers, and occasionally three flowers on a spike; standard erect and very spreading, colour bright salmon-red; the wings are deeper in colour, of rosy shading. The same variety was also shown by other exhibitors under the names of Mrs. Mark Firth and the Hon. Mrs. C. R. Spencer.

Mrs. Hardcastle - Sukes.—This variety has large pink flowers of a bright and attractive shade of colour. Generally there are three flowers on a spike. Shown by Mr. BOLTON, Carnforth (Award of Merit).

Tom Bolton.—A variety with mauve-coloured flowers, approaching the shade of Lady Grizel Hamilton. Shown by Mr. BOLTON, Carnforth (Award of Merit).

TRADE EXHIBITS.

Mr. ROBERT SPENHAM, Tenby Street, Birmingham, staged a collection of many of the finest varieties (Large Silver Medal).

Messrs. WEBB & SONS, Wordsley, Staffordshire, put up a very artistically-arranged collection. They used yellow-coloured drapery and glass girandoles to enhance the effect (Large Silver Medal).

Messrs. JOHN PEED & SON, West Norwood, London, contributed a commendable collection of the most popular varieties (Silver Medal).

Adjoining the last-named group was a similar one put up by Messrs. J. CHEAL & SONS, Crawley (Large Silver Medal).

Messrs. BARR & SONS, King Street, Covent Garden, utilised a staging with a groundwork of "art" cloth on which to display a collection that included many of the best varieties (Large Silver Medal).

Messrs. WM. CUTBUSH & SON, Highgate, London, N., arranged an exhibit of excellent flowers in fancy vases and in bamboo epergnes. The method of staging was pleasing, and different to that adopted by the majority of exhibitors (Large Silver Medal).

Messrs. C. STARK & SON, Great Ryburgh, Norfolk, showed a bright collection of well-known varieties (Large Silver Medal).

Messrs. JONES & SONS, Coton Hill Nurseries, Shrewsbury, put up a collection of well-grown flowers, amongst which we noticed some of the more recent novelties (Silver-gilt Medal).

Mr. HENRY ECKFORD, Wem, Shropshire, sent a beautiful display of these lovely flowers. Included were most of the best and newest varieties, the majority of which have been raised by the exhibitor. The whole collection showed perfect culture (Gold Medal).

Messrs. GILBERT & SON, Bourne, Lincolnshire, were represented by a collection in which blue-coloured varieties were prominent. Gypsophila was utilised freely with the Sweet Peas (Silver Medal).

Messrs. G. & A. CLARK, Ltd., Dover, had a good display in fifty varieties. The quality of the flowers was commendable (Silver-gilt Medal).

Some excellent flowers were staged by Mr. ROBT. BOLTON, Warton, Carnford. The quality was equally meritorious throughout the collection (Gold Medal).

Messrs. E. W. KING & Co., Coggeshall, Essex, used tall flower bowls and taller vases for displaying their group of these flowers. Ferns, small Palms, Gypsophila, &c., were liberally used for greenery (Large Silver Medal).

Mr. CHAS. BREADMORE, Winchester, contributed a nice collection staged in vases and in epergnes, and plentifully relieved with foliage plants. A vase containing the variety Dora Breadmore was very effective in appearance (Large Silver Medal).

A very bright lot was displayed by Messrs. BAKERS, Wolverhampton and Codsall. The flowers showed exceptional culture, and the varieties were of the best. Altogether an excellent group, and displayed with good taste (Gold Medal).

Messrs. CARTER, High Holborn, London, arranged their group in three large glass epergnes and in fancy glass vases beneath the taller receptacles. Red and scarlet varieties were prominent in this group (large Silver Medal).

Messrs. DOBBIE & Co., Rothesay, showed some well-grown flowers in most of the best known varieties. The display was enhanced by yellow drapery and a white table ground (Gold Medal).

Messrs. H. CANNELL & SONS, Swanley, Kent, arranged a collection on a high staging. The quality of the flowers was commendable. The "haulm" was freely used among the flowers, furnishing a natural and pleasing foliage (Silver-gilt Medal).

Mr. W. J. UNWIN, Histon, Cambridge, put up a collection, among which were several seedlings of merit (Large Silver Medal).

Messrs. WATKINS & SIMPSON, Tavistock Street, Covent Garden, London, staged a group of flowers, among which the varieties Gladys Unwin and Evelyn Myatt were conspicuous (Silver Medal).

MANCHESTER AND NORTH OF ENGLAND ORCHID.

JUNE 22.—Meetings in the summer months are always smaller, and on the date of the last meeting there were only a few plants shown.

W. THOMPSON, Esq., Stone (gr. Mr. Stevens), sent a nice group of plants, prominent in which was a grand specimen of *Coelioda Noezliana*. A new hybrid *Odontoglossum*, the parents of which were *O. Halli* × *O. Rolfeae*, and named *O. × lapidense*, was voted an Award of Merit (Bronze Medal for group).

PHILIP SMITH, Esq., Sale (gr. Mr. Kitchen), staged a group of plants, among which were noticed *Laelio-Cattleya* × *Martinetti* and *Cypripedium* × *Annie Measures*, a good form of *C. Chamberlainianum*. A Bronze Medal was awarded for the group.

Votes of Thanks were passed to Messrs. A. J. KEELING & SON, Mr. JOHN ROBSON, and Father CROMELEHOLME for contributions to the meeting. P. W.

SOUTHAMPTON ROYAL HORTICULTURAL.

JUNE 28, 29.—The annual Rose and summer flower show was held as usual on the Royal Pier, and was a success from a horticultural point of view. Considering the early date and the not too favourable weather, Roses were good in quality if not very numerous. In the amateur division Tea and Noisette varieties were of high-class quality. The arrangements were, as usual, satisfactory in the hands of Mr. C. Fudge, who has acted as secretary for thirty years.

ROSES (OPEN CLASSES).

That for forty-eight distinct varieties was the leading class. Messrs. D. PRIOR & SON, Colchester, won the 1st prize easily with medium-sized, highly-coloured examples of popular varieties. Messrs. JABMAN & Co., Chard, were 2nd.

Trebles in eighteen varieties were splendidly shown by the two firms already mentioned.

In the classes for twelve Tea or Noisette Roses, six blooms of any one dark-coloured Rose, and six blooms of any light-coloured Rose, Messrs. PRIOR followed up their previous success by winning 1st prize in each class.

For eighteen varieties of garden or decorative varieties, three trusses of each, Mr. G. ELLWOOD, gr. to W. H. MYERS, Esq., M.P., Swanmore House, Bishop's Waltham, won the 1st prize with popular varieties.

For six bunches of single-flowered varieties, Mr. ELLWOOD won easily with such typical varieties as The Lion, Leuchstern, Paul's White, Andersoni, and Brunonis. Messrs. B. LADHAMS, The Nurseries, Shirley, Southampton, were 2nd.

In the section for gardeners and amateurs, the class for twenty-four distinct flowers was won by Mr. Neville, gr. to F. W. FLIGHT, Esq., Cornstiles, Twyford, Winchester, who was distinctly ahead with full-sized bright blossoms.

Exceptionally keen was the competition for twelve Tea or Noisette varieties. Mr. NEVILLE again won with superb blooms of the varieties Mrs. E. Mawley, Innocente Pirola, White Maman Cochet, Muriel Graham, Anna Ollivier, and Maman Cochet. Dr. SEATON, Woodside Cottage, Lymington, was 2nd.

Nine exhibitors competed in the class for twelve blooms in not fewer than eight varieties; the best, an even set of good blooms, coming from Dr. C. LAMP-LOUGH, Kirkstall, Alverstokey.

For twelve bunches of garden Roses, Mr. ELLWOOD won with huge bunches of Papa Gontier, Gardenia, Claire Jacquier, Thalia, Carmine Pillar, and Madame Plantier. Mr. W. Valentine, gr. to H. E. SUGDEN, Esq., Ingersley, Chilworth, was 2nd.

The premier bloom in the show was one of Mrs. E. Mawley, belonging to Mr. FLIGHT; and the premier H.P. was a bloom of *Gustave Piganneau* belonging to the same exhibitor.

Baskets of Roses were of noteworthy quality. Miss MILLER, St. Thomas, East Cowes, won with the variety Madame Abel Chatenay, arranged in a mass.

Mr. T. Hall, gr. to Sir S. MONTAGUE, Bart., South Stoneham House, had the best-arranged vase of Roses amongst eleven competitors.

The best arranged group of miscellaneous plants came from Mr. E. WILLS, Winchester Road Nursery, Southampton.

Of hardy cut flowers, those from Messrs. LADHAMS shown in twelve bunches were the most noteworthy.

Sweet Peas made a great display. Messrs. TOOGOOD, BREADMORE, and CARTER all offered prizes. Mr. F. COZENS, Rownhams, with exceptionally fine blossoms,

won easily in one class; and Mr. J. Hughes, gr. to A. P. RALLI, Esq., Twyford Lodge, Winchester, won Mr. Breadmore's leading prize.

VEGETABLES

were shown numerously and well. Mr. ELLWOOD exhibited grandly in the classes for six dishes, where the prizes were provided by Messrs. TOOGOOD, MESSRS. SUTTON & SONS, and MESSRS. CARTER & CO.

There was little fruit shown. Mr. ELLWOOD was the only exhibitor of two bunches of black Grapes, with a commendable exhibit of Black Hamburg.

For two dishes of Strawberries, Mr. J. MATTHEWS won with superb examples of Royal Sovereign and Sir Joseph Paxton. Mr. ELLWOOD was 2nd with the varieties Leader and Royal Sovereign.

Trade exhibits were numerous and good. Gold Medals were awarded to Mr. C. Breadmore for Sweet Peas, and to Messrs. B. Ladhams & Son for a well-planted rockery and cut herbaceous flowers. Silver-gilt Medals were awarded to Messrs. Sutton & Sons for Melons, Peas, Tomatos, and Cucumbers; to Messrs. Toogood & Sons for Sweet Peas; to Messrs. Jarman & Co. for Sweet Peas, Roses, Zonal Pelargoniums, and Sweet Sultan The Bride, and Bridegroom.

NATIONAL ROSE.

JULY 6.—The annual exhibition of the National Rose Society on Thursday last was held this year for the first time in the gardens of the Royal Botanic Society, Regents Park. So far as the gardens themselves are concerned, they offer an excellent site for such a show, owing to the suitability of the surroundings. The flowers were staged in three tents adjoining the corridor, and together they covered a space exceeding 20,000 square feet. The exhibits, however, were not sufficient to furnish them fully.

Comparing the entries with those of last year they were not unfavourable, but many who entered were afterwards unable to exhibit. The Champion Trophy in the nurserymen's competition was won by Messrs. B. R. CANT & SONS, Colchester; and in that confined to amateurs by E. B. LINDSELL, Esq., Hitchin, who has won the same award so many times previously. Of new Roses there were several shown, and Gold Medals were awarded to two varieties, and an Award of Merit to a third variety.

The Hon. Secretary, Mr. EDWARD MAWLEY, was busy, and tried to make the most of the advantage, which was described in the Annual Report as follows—“For the first time in the Society's existence the Committee will have an entirely free hand in all the arrangements connected with their Metropolitan Show.”

HER MAJESTY THE QUEEN visited the show shortly after noon, and Miss Willmott and other ladies and gentlemen accompanied her through the tents. We should mention that an electric fan was affixed to the middle tent to afford ventilation.

NURSERYMEN.

MIXED CLASSES.

There were four exhibits staged in the class for *Twenty-two Blooms, Distinct Varieties*, therefore the flowers in this class alone numbered 288. The general quality of the blooms was good, and there was less evidence of injury by bad weather than might have been expected. The best collection was that shown by Messrs. B. R. CANT & SON, Old Rose Gardens, Colchester, and they were awarded 1st prize, including the CHALLENGE TROPHY AND GOLD MEDAL. We can only mention a few of the best flowers, which were those following:—Mrs. Cocker, Madame de Watteville, Helen Keller, Ethel Brownlow (wonderfully pretty), Victor Hugo, Marchioness of Downshire, Killarney, Catherine Mermet, Tom Wood, Mrs. John Laing, A. K. Williams (small, but very good in quality), Duchess of Portland (a delightful lemon-coloured Tea), Mrs. Mawley, and Marie Baumann. The judges had much difficulty in separating the 2nd from the 1st prize exhibit, for the collection from Messrs. A. DICKSON & SONS, Newtownards, co. Down, was very little inferior. Among the brightest blooms were Killarney, Ulrich Brunner, Horace Vernet, Mildred Grant, Captain Hayward, Prince Arthur, Hugh Dickson, Chas. Darwin, C. J. Grahame, Fisher Holmes, &c. 3rd, Messrs. D. PRIOR & SON, Myland Nursery, Colchester. 4th, Messrs. FRANK CANT & Co., Braiswick Nursery, Colchester.

Forty Distinct Varieties, three Blooms of each.—There were three exhibits in this class for forty trebles, and the best of these was one from Messrs. ALEX. DICKSON & SONS, Royal Irish Nurseries, Newtownards, co. Down. Some of the most effective varieties were those following:—Hugh Watson (very bright reddish-cerise colour), Ulrich Brunner, Tom Wood,

Mrs. W. J. Grant, Bessie Brown, Earl of Dufferin, Pharisæa, Margaret Dickson, Lady Ashtown and Mildred Grant. In the 2nd prize exhibit there were very pretty brightly-coloured flowers, smaller in size, but less damaged by weather than those in the 1st prize exhibit. Victor Hugo, Duke of Teck, White Maman Cochet, Comte de Raimbaud, and Mildred Grant were especially nice. This collection was shown by Messrs. B. R. CANT & Co., Colchester; and the 3rd prize was awarded to Messrs. D. PRIOR & SONS, Mylands Nursery, Colchester. This class is very exacting, each exhibitor in it having to stage 120 flowers.

Forty-eight Blooms, Distinct Varieties.—In this class there were six exhibits, and the competition occasioned the judges such an amount of work that they were late in making the awards. Eventually the 1st prize was awarded to Mr. HUGH DICKSON, Royal Nursery, Belfast. The best varieties as shown were Bob Davidson, Mrs. Ed. Mawley, Mrs. Jno. Laing, Madame Hoste, Margaret Dickson, Her Majesty, Horace Vernet, Fisher Holmes, Madame Delville, Gustave Piganneau, Earl Dufferin, and others.

The other exhibitors in the class were Messrs. COOLING & SONS, Bath; Messrs. G. & W. H. BURCH, Peterborough; THE KING'S ACRE NURSERY Co., King's Acre, Hereford; Mr. GEO. MOUNT, Canterbury, and Messrs. J. BURRELL & Co., Cambridge.

Twenty-four Blooms, Distinct Varieties.—In this class there were four exhibits, and 1st prize was awarded to Mr. CHAS. TURNER, Slough, who showed the following varieties:—Back row: A. K. Williams, Robert Scott, Dr. André, Maman Cochet, Marie Baumann, Bessie Brown, Ulrich Brunner, Her Majesty; Centre row: Mrs. Jno. Laing, Comte Raimbaud, Ulster, Horace Vernet, Ellen Drew, Countess of Rosebery, White Maman Cochet, Chas. Lefebvre; Front row: Reynolds Hole, Muriel Grahame, Fisher Holmes, Duchesse de Morny, Duke of Edinburgh, Xavier Olibo, Alfred Celorb, and Catherine Mermet. Mr. JNO. MATTOCK, The Rose Nurseries, New Headington, Oxford, was 2nd; and Mr. GEO. PRINCE, Longworth, 3rd. The weather has evidently been unkind to Mr. PRINCE'S Tea and Noisette Roses this year. The remaining exhibitors in this class were Messrs. JAMES SIMPSON & SONS, Dundee.

TEA AND NOISETTE ROSES.

Twenty-four Blooms, Distinct Varieties.—Four competed in this class. Three collections ran each other very close for supremacy, but the final award resulted in Messrs. FRANK CANT & Co., Colchester, being placed 1st. The quality was certainly not up to the standard of last year, but some good flowers were included, notably Maman Cochet, Mrs. Ed. Mawley, Souvenir d'Elise Yardon, Ethel Brownlow, Mme. de Watteville, The Bride, Comtesse de Nadaillac, and White Maman Cochet. The 2nd place was awarded to Messrs. B. R. CANT & SONS, Colchester. This collection also contained some good individual flowers, notably Mrs. Edwin Mawley, Catherine Mermet, Souvenir de Pierre Notting, and Maman Cochet. 3rd, Messrs. D. PRIOR & SON, Colchester.

For Twelve Blooms, Distinct Varieties.—Five competed, the best dozen flowers being those of Mr. JOHN MATTOCK, The Rose Nurseries, Headington, Oxford, who had the varieties Maman Cochet, Bridesmaid, Niphotos, Souvenir d'Elise Yardon, Muriel Grahame, The Bride, Comtesse Nadaillac, Mrs. Ed. Mawley, Ernest Metz, Medea, Souvenir d'un Ami, and Souvenir de Pierre Notting. The 2nd prize collection was not far behind in quality, although neither was first-class; it was put up by Messrs. J. BURRELL & Co., Howe House Nurseries, Cambridge. The best flowers were Maman Cochet, The Bride, and Comtesse de Nadaillac. 3rd, Mr. CHAS. TURNER, Royal Nurseries, Slough.

BLOOMS SHOWN IN VASES AND BAMBOO TRIPODS.

Twenty Distinct Varieties, Three Blooms of Each.—This was quite a novel class, for the flowers were shown in twenty bamboo tripods, each exhibit being arranged on a space not exceeding 7 feet by 3 feet. These tripods were arranged with one stand about 15 inches high at the back and two in front about 1 foot high. The effect in this class was very gratifying. Among five exhibitors the best was Mr. HUGH DICKSON, Royal Nurseries, Belfast, and he was awarded the 1st prize. The foliage of each variety could be seen, and this increased the effect of the display. Those varieties shown best were Ulrich Brunner, Hugh Dickson, Horace Vernet, Gustave Piganneau, J. B. Clark (a red H.P. Rose shown last year), Madame Delville, Duchess of Bedford, and Perle von Godesberg. The 2nd prize was won by Mr. CHAS. TURNER, Royal Nurseries, Slough; and the 3rd prize by Messrs. G. & W. H. BURCH, Peterborough.

There were three entries in the class for fourteen distinct varieties of TEAS and NOISETTES, the 1st prize going to an excellent lot of flowers belonging to Messrs. FRANK CANT & Co., Colchester. The schedule stipulated that they should be shown in vases, which gave better scope for display than the show boxes.

Among the best flowers we may select Mrs. Edward Mawley, White Maman Cochet, Madame Cusin, Maman Cochet, Muriel Grahame and Madame de Watteville. The 2nd place was taken by Messrs. D. PRIOR & SON, Myland Nursery, Colchester. Maman Cochet, White Maman Cochet and Mrs. Edward Mawley were prominent varieties in this group. 3rd, Mr. GEO. PRINCE, Longworth.

In the NURSERYMEN'S CLASS for Exhibition Roses shown in VASES, to include half-a-dozen Tea and the same number of Noisette Roses, seven blooms of each variety, the whole to occupy a space not exceeding 6 feet by 3 feet, there were three competitors. The 1st prize was secured by Messrs. DICKSON & SONS, Newtownards, Co. Down. Lighter-coloured varieties predominated, the best examples being Ulrich Brunner, Frau Karl Drusehki, Mildred Grant, Mrs. W. J. Grant, and Dean Hole. The 2nd prize was awarded to Messrs. FRANK CANT & Co., Colchester, whose flowers were smaller, but possessed much refinement; Maman Cochet, Madame Cusin, Madame de Watteville, and Bessie Brown were some of the better examples. 3rd, Mr. GEO. MOENT, Canterbury.

In the similar class to the last-named for nine varieties only there were four entries, but the 1st prize group led easily. This was shown by Messrs. FRANK CANT & Co., Colchester, whose flowers were good all through the exhibit. It included Maman Cochet (grand flowers), Mrs. E. Mawley, White Maman Cochet (shown well), Ernest Metz, Innocenti Pirola, Madame de Watteville, Golden Gate, Madame Cusin, and Madame Hoste. The 2nd prize was taken by Mr. GEO. PRINCE, nurseryman, Longworth, whose flowers were arranged somewhat stiffly. 3rd, Mr. GEO. MOUNT, Canterbury.

DECORATIVE OR GARDEN ROSES.

This section includes any variety that is not considered to be sufficiently good in quality when cut to be classed as an exhibition Rose. Everyone should know that amongst the merely decorative Roses there are many of the highest value for garden decoration, the single and semi-double flowers, the Polyanthia, like that shown in fig. 14, Multiflora (see fig. 13) and Rambler types, are all so free in flowering that they are essentially garden Roses. The exhibits in this section were staged in order to show as far as possible the foliage and habit of growth of each variety. All Hybrid Perpetuals, other than single flowers, were excluded, and all Teas, Hybrid Teas, and Noisettes mentioned in the National Rose Society's catalogue of exhibition Roses.

Thirty-six Distinct Varieties.—There were three exhibits in this class, each staged on a separate table, round which the visitor could walk and examine the flowers from every point. The 1st prize was awarded to Messrs. FRANK CANT & Co., and among the varieties shown some of the most gorgeous were Irish Glory (large single red), Gustave Regis (semi-double, lemon-yellow coloured), Marquise de Salisbury, Laurette Messimy, the brilliant Rose Liberty, Hélène (pink), Céline Forestier, Madame Antoine Mari (rich pink), Gruss an Teplitz, &c. 2nd, Mr. JNO. MATTOCK, of Oxford; and 3rd, Messrs. PAUL & SONS, The Old Nurseries, Cheshunt.

Eighteen Distinct Varieties.—In this smaller class Mr. GEO. PRINCE, The Oxford Nurseries, Longworth, won 1st prize, showing specially well the varieties Marquise de Salisbury, Mme. Abel Chateaux, Blush Rambler, Bellefleur, Rosa himalaica, &c. R. himalaica, with its pure white, numerous flowers, and richly yellow anthers, was perfectly delightful. 2nd, Mr. CHAS. TURNER, Slough.

Eighteen Distinct Summer Flowering Varieties.—Mr. CHAS. TURNER won 1st prize in this class, and we much admired such varieties as Alba rosea, Crimson Damask, Red Damask, Meg Merrilies, &c. 2nd, Messrs. COOLING & SONS, Bath.

GROUPS OF ROSES.

We have never seen such fine groups of Roses shown at the national exhibition before. Class 15 was for a representative group of Roses placed on the ground. The varieties were to represent the different sections as much as possible. Ferns, &c., could be used for relief and blossoms were shown in all sorts of suitable receptacles. Whole plants, apparently with their feet in buckets of water, were shown of the Rambler varieties in the exhibit from Messrs. PAUL & SON, The Old Nurseries, Cheshunt, who were deservedly awarded the 1st prize, which consisted of a Gold Medal and £5. A large plant of the variety Hendersoni, some 6 feet high and 4 feet across, was much admired, its large richly pink single flowers were irresistibly attractive. Indeed, the varieties in this group were so interesting and good that we moved past with reluctance. The limitations imposed by space and time are, however, imperative. 2nd, Mr. CHAS. TURNER; and 3rd, Mr. GEO. MOUNT. That it was possible to place Mr. GEO. MOUNT 3rd in such a competition will suffice to emphasize the general good quality of these groups.

Representative Group of Cut Roses, arranged on a space not exceeding 100 square feet.—The 1st prize

offered in this class was equal in value to that in the preceding class. Messrs. GEO. JACKMAN & SON, Woking, were 1st; Mr. GEO. MOUNT, 2nd; and Messrs. W. SPOONER & SON, Arthur's Bridge Nursery, Woking, 3rd.

OPEN CLASSES.

For Twelve Blooms of Hybrid Tea Roses, to be of varieties included in the Society's list, five exhibits were entered. The best were shown by Messrs. DICKSON & SONS, Newtownards, Co. Down, who had a really excellent dozen flowers; the variety Dean Hole was beautiful, also Mildred Grant (large flower), Killarney, and Liberty. The 2nd place was awarded to Messrs. F. CANT & CO., Colchester, who had the variety Exquisite in good condition.

The class for eighteen blooms of any white or yellow variety made an excellent feature, and was much admired. The dozen-and-a-half flowers set up by Messrs. F. CANT & CO., Colchester, were admirable. They were of the variety White Maman Cochet, and every flower was a specimen. They were displayed in a bamboo epergne, according to the conditions of the schedule. These were followed by Messrs. DICKSON & SONS' epergne of Frau Karl Druschki, with large flowers, but lacking substance.

In a similar class, but with white and yellow varieties excluded, the stand of the variety A. K. Williams, staged by Messrs. B. R. CANT & SONS, Colchester, was exquisite and quite one of the finest exhibits in the show. The rich colour of this variety was admirably developed and every flower was of perfect shape. The 2nd prize was awarded Messrs. DICKSON & SONS, Newtownards, Co. Down.

For twelve blooms of distinct varieties, in commerce since 1902, half-a-dozen exhibitors competed, the premier dozen flowers being those of Messrs. DICKSON & SONS, Newtownards, Co. Down, who had William Notting, Pharisæer, Dean Hole, Florence Pemberton, Gustave Grunerwald, Countess Annesley, Mrs. David McKee, Dr. J. Campbell Hall, Alice Lindsell, Lady Ashton (fine flower), Countess of Derby, and Madame Paul Olivier (excellent flower). 2nd, Messrs. HUGH DICKSON, Royal Nurseries, Belfast—J. B. Clark (a large scarlet-rose coloured variety, was admired by H.M. the Queen), Hugh Dickson, Prince de Bulgarie, &c. 3rd, Messrs. B. R. CANT & SONS, Colchester.

The best arch decorated with not more than two varieties of Climbing Roses was that arranged by Mr. CHAS. TURNER, Royal Nurseries, Slough. The variety Crimson Rambler almost covered one half of the Bamboo arch with trusses of flowers, while the other was furnished with sprays of Thoresbyana, the white flowers of which formed an excellent contrast to the Crimson Rambler. Mr. GEO. PRINCE was the only other exhibitor, and he was awarded 2nd prize for somewhat similar varieties.

Four groups of single varieties were staged in Class 26 to include twelve distinct varieties. A very charming collection staged by Messrs. COOLING & SON, Bath, was given 1st honours, followed by Messrs. PAUL & SON, Cheshunt, 2nd; and by Messrs. FRANK CANT & CO., Colchester, 3rd. The premier group had R. atropurea, Irish Brightness (good examples), Rosa Andersoni, R. himalaica (a charming white form), Cooling's Crimson Bedder and others in first class condition.

The best nine varieties of Buttonhole Roses was put up by Mr. GEO. PRINCE, Longworth, Berks. Such charming and miniature varieties as Beryl, Madame Anna Chartron, Ma Capucine, Papa Gontier, &c., were eminently suitable for the purpose required. 2nd prize was taken by Mr. JOHN MATTOCK, New Headington, Oxford, with a clean and well-formed collection, the varieties Lady Roberts and Meta being admirable for buttonhole purposes. 3rd, Messrs. F. CANT & CO., Colchester.

AMATEURS.

The principal class in the Amateur's section was that requiring thirty-six blooms distinct, and the 1st prize included the Challenge Trophy. Mr. E. B. LINDSELL, Hitchin, again won this with a very fine lot of blooms, being followed by the Rev. J. H. PEMBERTON, Havering-atte-Bower, and W. BOYES, Esq., Duffield Road, Derby.

In the following class for twenty-four blooms, the Rev. J. H. PEMBERTON was 1st; Mr. LINDSELL, 2nd; and Mr. A. TATE, Leatherhead, 3rd. The Grahame Memorial Prize offered to growers of fewer than 500 plants, for exhibits of nine blooms distinct, was won by Mr. R. W. BOWYER, Hertford Heath, Hertford. Mr. W. R. HAMMOND, Grovelands, Burgess Hill, won the Ben Cant Memorial Prize; and Mr. C. F. II, LESLIE, Hertingfordbury, obtained the President's Cup for the best collection of twelve blooms, limited to growers entitled to exhibit in Divisions E, F, and G.

The Challenge Trophy offered for the best collection of eighteen blooms of Tea and Noisette varieties was won by the Rev. F. R. BURNSIDE, Rochford, Essex; and he also won the following class for eighteen Teas and Noisettes, winning in this class the Cocker Cup.

Mrs. O. G. ORPEN, Colchester, who has previously shown exceedingly tasteful dinner-table decorations

won 1st prize in Class 66, which was for a decoration of cut Roses for the dinner-table, using in this instance the beautiful variety Paul's Single White.

NEW SEEDLING ROSES.

Gold Medals were awarded to—

Tea Rose "Mrs. Miles Kennedy," a white variety with very little pink-coloured blush; and to—

Hybrid Tea "Betty," a variety with very long shell-like petals of salmon-pink colour, and vigorous, smooth-looking leaves. Both varieties were shown by Messrs. A. DICKSON & SONS.

An Award of Merit was also given to a pink Polyantha or Rambler variety named Mrs. F. W. Flight, shown by Messrs. W. CUTBUSH & SONS, Highgate. Other seedlings were exhibited.

MEDAL ROSES.

Amateurs.—The best H.P. was the variety Ulster, shown by E. B. LINDSELL, Esq. The best H.T., was Bessie Brown, shown by A. TATE, Esq.; and the best Tea was White Maman Cochet, shown by the Rev. F. R. BURNSIDE.

Nurserymen.—The best H.P. was the variety A. K. Williams, in the epergne staged by Messrs. E. CANT & SONS, Colchester. The best H.T. was J. B. Clark, a bright crimson-coloured variety exhibited last year; it was shown on this occasion with leaves 4 inches or more across, and 6 inches long, and the flower was quite 5 inches in diameter. This bloom was the most remarkable single item in the show. It belonged to Mr. HUGH DICKSON, Belfast. The best Tea was White Maman Cochet, shown by Messrs. FRANK CANT & CO., Colchester.

Obituary.

M. HENRI DUVAL. — We greatly regret to have to announce the death at Versailles, on June 29, in his thirty-fifth year of this gentleman. Deep sympathy will be felt with his father and the members of his family, who are well known to horticulturists in this country.

GEORGE CROUCHER.—We regret to record the death of this well-known gardener at Ochertyre, near Crieff. Mr. Croucher had been in failing health for many months past, and died on Tuesday, June 27, in his seventy-second year. Deceased was a native of Dunbar, and served his apprenticeship as a gardener in Edinburgh. After his apprenticeship, he entered the service of the late Sir William Keith Murray, Bart., of Ochertyre (father of the present Baronet), in the late fifties, and there he had remained for a period of forty-eight years, having proved himself a highly skilful gardener.

He was a man gifted with a large measure of general intelligence, and devoted himself to a thorough study of horticulture as well as arboriculture, and it always gave him the greatest pleasure to diffuse his knowledge amongst others, as his numerous contributions to these pages testify. He was well versed in matters pertaining to forestry. The collection of Coniferae at Ochertyre was one of the finest in the country, and at the Forestry Exhibition held in Edinburgh in 1884, he was awarded a special honour for a collection of over 150 varieties exhibited from that estate. Mr. Croucher is survived by a widow and grown-up family.

H. H. ORCHARD.—The many gardening friends of Mr. C. Orchard, of Beubridge, I.W., will regret to learn of the death, by drowning in the sea, on July 1, of his nephew, Herbert Henry Orchard, who some three years ago was elected to receive the benefits of the Royal Gardeners' Orphan Fund.

PLANT NOTES.

EXACUM ZEYLANICUM.

THIS is one of the most beautiful blue flowers for the warm greenhouse, but its culture has not been successfully carried out in the greater part of the cases where it has been attempted. Mr. Arthur Dye, gr. to the Right Hon. Lord Rothschild, Triog Park, Tring, has succeeded in growing a fine batch, which are now stout, bushy plants a foot or so across, and densely set with beautiful, star-shaped, violet-blue flowers. Mr. Dye has grown some from cuttings taken and struck when the old plants are in bloom for the next year's flowering, but the greater proportion of

those now in bloom are from seeds part of them saved from plants which flowered last season, and part from seeds imported from Ceylon. The trouble takes place while the plants are small. When they are potted into the flowering-size pots, they do not die, as they often do, without any visible cause, when in the smaller stage. Few blue flowers can surpass those of *Exacum zeylanicum*, and to obtain a good show of them is well worth the care required. There are two forms at Tring Park, the one with the smaller flowers being dwarfier than the other. It is generally named *E. macranthum* in gardens. J. O'B.

MARKETS.

COVENT GARDEN, July 5.

[We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Wednesday, by the kindness of several of the principal salesmen, who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the way in which they are packed, the supply in the market, and the demand, and they may fluctuate, not only from day to day, but often several times in one day. En.]

Plants in Pots, &c.: Average Wholesale Prices.

	s. d. s. d.		s. d. s. d.
Aralia Sieboldi, p. dozen ...	4 0-9 0	Fuchsias, p. doz.	4 0-6 0
Araucaria excelsa, per dozen ...	18 0-30 0	Heliotropes, per dozen ...	3 0-4 0
Aspidistras, green, per doz. ...	24 0-36 0	Hydrangea, Thos. Hogg, p. doz.	8 0-12 0
— variegated, per doz. ...	30 0-42 0	— Hortensia, p. dozen ...	8 0-12 0
Asparagus plumosus nanus, per doz. ...	12 0-18 0	— pauciflora ...	12 0-30 0
— Sprenger, per dozen ...	6 0-9 0	Kalosanthes, per dozen ...	9 0-12 0
— tenuissimus per doz. ...	6 0-8 0	Kentia Belmoreana, per doz. ...	12 0-18 0
Begonias, tuberous, per doz. ...	5 0-8 0	— Fosteriana, p. doz. ...	12 0-21 0
Boronia elatior, per dozen ...	12 0-24 0	Lobelia, per doz. ...	3 0-4 0
Calceolarias, yellow, per dozen ...	4 0-6 0	Latania borbonica, per doz. ...	12 0-18 0
— herbaceae, per dozen ...	6 0-8 0	Lilium longiflorum, per doz. ...	9 0-12 0
Cannas, per doz. ...	5 0-6 0	Marguerites, white, per dozen ...	4 0-8 0
Chrysanthemum coronarium, double yellow, per dozen ...	6 0-8 0	— yellow, dozen	12 0-18 0
Coleus, per dozen ...	2 6-4 0	Mignonette, doz. ...	4 0-6 0
Crotons, per doz. ...	12 0-30 0	Musk, Harrison's, per dozen ...	3 0-4 0
Cocos Weddelliana, per doz. ...	12 0-30 0	Pelargoniums, per doz., Show ...	9 0-12 0
Cyperus alternifolius, p. doz. ...	3 0-5 0	— Ivy-leaved ...	4 0-6 0
Dracaenas, p. doz. ...	9 0-12 0	— zonal ...	3 0-5 0
Ericas, per doz. ...	12 0-30 0	— scarlet do. ...	4 0-5 0
Eulalia japonica variegata ...	12 0-18 0	Petunias, double, per dozen ...	5 0-6 0
Euonymus, per dozen ...	4 0-9 0	Rhodanthe, per dozen ...	4 0-5 0
Ferns, in thumbs, per 100 ...	8 0-12 0	Roses, H.P.'s, per dozen ...	9 0-18 0
— in 48's, p. doz. ...	4 0-10 0	— Crimson Rambler (large), each ...	2 6-7 6
Ferns, in 32's, per dozen ...	10 0-18 0	Saxifraga pyramidalis, per doz. ...	12 0-15 0
Ficus elastica, p. doz. ...	9 0-12 0	Selaginella, doz. ...	3 0-5 0
— repens, per dozen ...	4 0-6 0	Spiraea japonica, per doz. ...	4 0-9 0
		Verbena, Miss Willmott, per dozen ...	6 0-9 0
		— scarlet, per dozen ...	8 0-9 0

Vegetables: Average Wholesale Prices.

	s. d. s. d.		s. d. s. d.
Artichokes, Globe, per dozen ...	2 6-3 0	Lettuces, English, Cos, per score	0 9-1 0
Asparagus, bunch ...	6 0-12 0	Mushrooms (house) per lb. ...	0 6-0 10
— English giant ...	4 0-12 0	Onions, Egyptian, per cwt. ...	5 0-6 0
— ordinary, per bunch ...	1 0-2 6	— Spring, dozen bunches ...	3 0-4 0
Beans, dwarf, per lb. ...	0 3 —	Parsley, per doz. bunches ...	2 0 —
— Channel Is. — laod ...	0 6-0 8	Peas, per bag ...	4 0-6 0
— English, p. lb. ...	0 6-0 8	— English, per bushel ...	2 0-4 0
— Broad, p. pad ...	1 0-1 6	Potatoes, old, cwt. ...	3 6-4 6
Beetroot, bushel ...	2 0-2 6	— Jersey, p. cwt. ...	7 0-7 6
Cabbages, p. tally ...	2 6-3 0	— St. Malo, per cwt. ...	7 0-7
Carrots, new, doz. bunches ...	1 6-2 0	— Cherbourg, p. cwt. ...	6 0-7 0
— Dutch, dozen bunches ...	0 10-1 0	Radishes, p. doz. bunches ...	0 9-1 0
Canflowers, doz. ...	1 9-2 0	Spinach, bush. ...	2 0-3 6
Celery, French, per dozen ...	3 9-4 6	Tomatoes, English, p. lb. ...	0 3 0-0 4 1/2
Cress, doz. pun. ...	1 0 —	— Jersey, p. lb. ...	0 3 1/2-0 4 1/2
Cucumbers, doz. ...	1 9-3 0	— Valencia, per package ...	10 6-13 6
Endive, per doz. ...	1 6 —	Turnips, new, doz. buo. ...	2 6-4 0
Greens, bushel ...	0 9-1 0	Vegetable Marrows	0 3-0 4
Horseradish, per dozen bundles ...	10 0-12 0	Watercress, per doz. bunches ...	0 3-0 8
Mint, per dozen ...	2 0-2 6		
Leeks, per dozen bundles ...	2 6-3 6		
Lettuces, Cabbage, per dozen ...	0 6-10 0		



* * * EDITOR AND PUBLISHER.—Our Correspondents would obviate delay in obtaining answers to their communications, and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all communications relating to financial matters and to advertisements should be addressed to the PUBLISHER; and that all communications intended for publication, or referring to the Literary department, and all plants to be named, should be directed to the EDITOR. The two departments, Publishing and Editorial, are quite distinct, and much unnecessary delay and confusion arise when letters are misdirected.

CALCEOLARIA: *J. H. P.* The flowers are very pretty, but we believe there are as good varieties already in commerce. Send examples to a trade grower for comparison.

CANTERBURY BELL ON FOXGLOVE: *H. E. H.* The flowers you describe as being Canterbury Bells are merely Foxglove flowers in a state of Peloria, that is, they have become "regular" in development, whereas, generally, the Foxglove develops irregularly and forms an irregular flower. It is not uncommon.

CATERPILLARS: *Boy Myrtle.* In the absence of the perfect insect we can at present only say that the caterpillars in question are those of a species of Tortrix-moth; but we will endeavour to rear the insect, and if successful will give you the name in a later issue.

CUCUMBER: *F. W. P.* A very bad case of eelworm at the roots. Turn out the soil, get fresh soil, and bake it or otherwise sterilise it before use.

CUCUMBER-LEAVES: *A. A. W.* There is no "spot fungus" on your leaves. The appearances point to excessive or too rapid feeding, and consequent indigestion. Very likely fungus may appear eventually. Watch your plants, and send us further specimens later on.—*S. B.* Your plants are affected with spot-disease. Try damping the paths with a weak solution of carbolic acid before shutting up at night.

FLOWERS FOR WINTER AND SPRING: *Reader.* To answer your questions would necessitate more time than is at our disposal. You will find what you require in the *Calendar of Garden Operations*, price 7½d. post free from our Publishing department. There is a note on Sweet Peas in the same work, with an illustration of these flowers growing under glass.

FRUIT: *Kentia.* *Fritillaria imperialis.*

FUMIGATING WITH POTASSIUM CYANIDE: *Fumigant.* You will find detailed accounts in our issues for April 23, and May 21, 1904. The proportions recommended for killing fly and other insects on growing plants per 1,000 feet unit is:—1½ ounce sodium cyanide, 3½ fluid ounces sulphuric acid, 10½ fluid ounces water. The foliage of the plants should be dry and the temperature of the house not above 55°. The exposure should be for forty minutes. CAUTION. The vapours are highly poisonous, and extreme caution on the part of the operator is necessary.

GRAPES: *A. J. M.* Your leaves show numerous young mealy-bug, thrips, red-spider, and other abominations, and the berries show signs of the spot-disease. Try again another year, and be more watchful. Clear out the house as you suggest.

ICELAND Poppies: *H. W.* Double flowers are not uncommon, but yours are unusually good.

IVY: *C. E. L.* Generally speaking a tree is the better for having been cleared of Ivy, and rarely suffers injury in consequence. If you think, however, that the trunk of the tree has been covered so thickly and for so long a time that injury might follow the total removal of Ivy therefrom, you should take away a little only at one time, commencing at the top, and thus gradually remove it all.

MADRESFIELD COURT GRAPE: *M. B., Dunstable.* See Mr. Jordan's remarks in the weekly Calendar in last issue, p. 8, column 1.

MELONS AND VINES: *P. T.* Your plants seem in a bad way. There are eelworms in the roots of the Melons, and mites on the Vines. More cleanly and more careful cultivation is desirable.

NAMES OF PLANTS: *W. G. S.* *Iris ochroleuca.*—*T. F. F.* *Campanula glomerata.*—*Perennial.* *Asphodelus ramosus.*—*T. R.* 1, *Sedum rupestre*; 2, *Geranium sanguineum*; 3, *Melittis melissophyllum*; 4, *Campanula Portenschlagiana*; 5, *Sedum glaucum*; 6, *Acantholimon glumaceum.*—*A. P.* 1, *Calycanthus floridus*; 2, *Ruellia Portellæ*; 3, *Ornithogalum.*—*Lord K.* Owing to the heat the flowers of the Rose had perished, but on comparing the wood, foliage, and habit of flowering with living plants, we believe the variety to be that known as Queen of the Belgians.—*J. S. & Co.* *Cedrus atlantica glauca*, probably.—*A. T.* 1, *Galega officinalis*; 2, *Lychnis chalcidonica*; 3, *Polemonium coruleum*; 4, *Asplenium bulbiferum*; 5, *Adiantum*; 6, *Mesembryanthemum falcatum*; 7, 8, labels detached—one is *Pteris cretica*, the

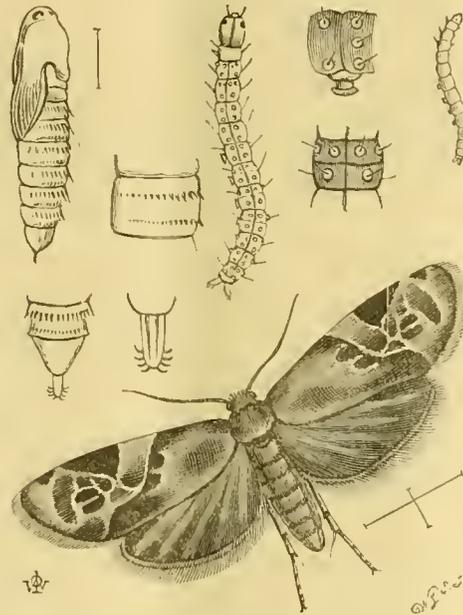


FIG. 16.—TORTRIX ANGSTIORANA, THE VINE MOTH.

other is an *Adiantum.*—*P. & S.* 1, *Syringa Emodi*; 2, *Polygonum cuspidatum.*—*V. I. R.* 1, *Miltonia Russeliana*; 2, *Pleurothallis ornata*; 3, *Stelis micrantha*; 4, *Gongora atropurpurea.* *Novice.* 1, *Lælia tenebrosa*; 2, *Miltonia vexillaria*; 3, *Dendrobium fimbriatum oculatum.*—*F. B.* *Sprekelia formosissima* (*Jacobæa Lily*), an *Amaryllid.*—*Trifolium.* Alsike Clover, a hybrid form much cultivated, and not true *T. pratense.*—*A. G. S.* 1, *Mesembryanthemum Browni*; 2, *Saxifraga Aizoon*; 3, *S. muscoides var. pygmaea*; 4, *S. aizoides*; 5, *Arabis carduchorum*; 6, *Alyssum argenteum.*—*M. W.* 1, *Hedera canariensis*, arborescent form; 2, *Centranthus ruber*; 3, *Sidalcea candida*; 4, *Agrostemma coronaria alba*; 5, *Hemerocallis fulva*; 6, *Juniperus virginiana variegata.*—*A Reader.* *Hieracium aurantiacum.*—*Vitis.* *Deutzia scabra.*

PEACH STONE SPLITTING: *C. B.* A small caterpillar of the Plum Tortrix, similar to that figured in the case of the Vine (fig. 16), was present in your fruit, but we doubt if this was the original cause of the stone splitting. Kindly send another specimen (not over-ripe), and we will investigate further.

PEACH-TREE: *E. H., Tooting.* A minute fungus, *Gloeosporium*, is the cause of the mischief. Infection took place during the flowering stage,

and was probably brought about by insects depositing spores on the stigma when fertilising the flowers. There is no danger of the disease spreading to fruit that has set. Diseased fruit should be collected and burned.

PEACHES: *H. B.* Your fruits are attacked with mildew. Burn the affected fruits, and dust the remaining with flowers-of-sulphur. The caterpillar attacking the Grapes is that of a moth, *Tortrix angustiorana* (see fig. 16).—*Vitis.* The appearances suggest a check from some cause, probably fungus.

PEAS DISEASED: *C. C.* We find traces of fungus, which will probably prove to be the Pea-mildew. Cold, wet weather such as we have recently experienced tends to favour the development of this disease. Overcrowding the rows is a common cause of the fungus obtaining a footing.

POEM: *A. W. S.* We cannot undertake to translate this into modern English.

PTERIS: *W. B.* This form of Pteris, both in the plain and the crested forms, are specially liable to become brown in patches like the specimen you send. Condensed moisture often causes similar damage. The plant received is *Campanula rotundifolia* Hostii.

RHODODENDRONS: *A. M. P.* The young growth has either been frosted, or scorched by the sun shining on the leaves when wet. We have seen the same mischief elsewhere.

ROSES: *A. S. and H. M.* Send to some nurseryman who grows Roses. We do not undertake to name Roses, or florists' flowers of any description.

SCALE INSECTS ON PEACH-TREE AND ROSE-BUSH: *A. S.* The species is the common Peach-scale, *Lecanium persicae.* It occurs on various kinds of plants, but it is most destructive to the Peach when grown under glass. It is, however, by no means scarce on the Peach in the open-air. The paraffin and soap emulsion is the best remedy for this pest. It should be applied in the late autumn or early spring, and the trees should be unnailed.

SEAFORTHIA: *R. P.* We have seen this in flower at Kew, and do not think it is very rare. If the flowers are properly set you might get ripe fruits.

SILVER FIR: *Vitis.* The bark is covered with a coccus allied to the mealy-bug. Scrub with soft-soap to which petroleum has been added in the proportion of a wineglassful to a gallon.

SWEET MAIZE: *E. G. C.* The cobs are as good as could be expected out-of-doors in this climate, unless in exceptional situations. You did quite right in removing the male blossoms.

SWEET PEAS: *S. D. & Son.* The trouble appears to begin in the roots, as if the soil were not suitable; but [without further particulars we can form no idea of the reason the plants go off.

TOMATOS: *M. N. R.* The plants will not be injured by mild fumigation, which we suppose you find necessary to destroy the white-fly, a common pest on Tomatos. We would point out, however, that it will be better to fumigate very mildly, and repeat the process rather than make a severe application. If the plants are growing in pots or in a border composed of very porous soil, they will need frequent saturations with water, and occasionally with manure-water, after the fruits have commenced to swell.

VINES: *A. B.* The leaves are attacked with thrip. As you cannot syringe the Vines, fumigate them with XL-All.

WALLFLOWERS: *Plena.* Pots measuring 5 or 6 inches in diameter should be ample.

COMMUNICATION RECEIVED.—*G. R. S., Boston*—*A. Cogniaux, Nivelles*—*M. de Lairese, Sclessin*—*R. P.*—*H. J. V.*—*H. L. B.*—*Sander et Fils, Bruges*—*W. J. W.*—*Crystal Palace Co.*—*T. R. P.*—*L. J. G.*—*Brighton*—*F. H. S.*—*W. H.*—*W. W. P.*—*J. Roehrs Company, U.S.A.*—*E. C.*—*J. O'B.*—*F. M.*—*Secretary, Southampton Hort. Soc.*—*F. J.*—*N. S.*—*J. W.*—*Merryweather & Sons*—*Hemploe*—*J. Wallis*—*Alwin Berger, La Mortola.*



THE

Gardeners' Chronicle

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CONTENTS.

Aster sub-ceruleus ...	52	Nectarine Victoria ...	51
Belvedere, Isle of Wight, the gardens at ...	41	Orchid notes and gleanings ...	45
Books, notices of—		Over-sea supplies ...	51
Botanical Magazine ...	50	Plants, new or noteworthy—	
Flora Mortolensis	59	Primula taugatica ...	42
Handbuch der Pflanzenkrankheiten ...	46	Refreshments at flower shows ...	52
Index Kewensis ...	60	Societies—	
Publications received	48	Croydon Horticultural ...	57
The Book of the Scented Garden ...	51	Crystal Palace Rose show ...	58
Brussels Botanic Garden	50	Devon and Exeter Horticultural ...	58
Calceolendron capense ...	52	Gardeners' Debating ...	59
Cambridge Botanic Garden ...	46	Hanley Floral Fête ...	58
Chamaedorea with pinnate leaves ...	42	Royal Horticultural ...	53
Chelsea, the Royal Horticultural Society at ...	50, 53	(Scientific Committee) ...	56
Colonial notes ...	44	Strawberries Glorie du Maris and Avant-Garde ...	52
Conifers, growth of ...	48	Thunderstorm, damage caused by ...	51
Eckford, Mr. Henry ...	60	Timber-trees, neglected	45
Fernery, the—		Week's work, the—	
The white fly pest ...	48	Flower garden, the ...	48
Flowers in season ...	50	Fruits under glass ...	49
Ghent water carnival ...	51	Hardy fruit garden ...	49
Kew notes—		Kitchen garden, the ...	49
The Nymphaea-house	52	Orchid houses, the ...	48
Land, the natural fertility of ...	47	Plants under glass ...	49
Lily culture in Bermuda ...	44		
National Sweet Pea Society's recent exhibition, the ...	51, 52		

ILLUSTRATIONS.

Oncidium robustissimum ...	45
Primula taugatica ...	12
Strawberry "Bedford Champion" ...	43
Sweet Pea Henry Eckford ...	47
View in the Victoria House in the State Botanical Gardens, Brussels (Supplementary Illustration).	

AN UNDERCLIFF GARDEN.

AT midsummer I had the opportunity of visiting the extremely interesting gardens at Belvedere, St. Lawrence, Isle of Wight, the property of Mrs. M. Gwytherne-Williams. Being well acquainted with the gardens of the south-west counties, I found many plants that do well in the open in South Devon and Cornwall, but several others I had never met with before without glass protection.

The garden is especially rich in Cactaceous plants, the crannies and fissures in the out-crops of rock, that here and there rise above the ground level to a height of some feet, affording ideal sites for plants of this nature. All appeared in the best of health, and amongst them I noticed Agave Victoria Regina, which had been out for five years; Opuntia Salmiana, O. Rafinesquii, O. humilis, O. arborescens, O. xanthostema rosea, and O. glauca, with leaves 15 inches across; Cereus peruvianus, making strong growth; C. flagelliformis, Mammillaria centricirra, bearing coral-red flower-heads; M. missouriensis, Echinopsis Zuccariniana in flower; E. Eyriesii in bud; Gasteria verrucosa in flower, and numerous other plants of the same class. Kniphofia Northii was bearing a flower-spike over 5 feet in height.

The Mesembryanthemums were a glorious sight, painting the rocks with sheets of

vivid colour. Of flowering shrubs, those in bloom included Audibertia grandiflora, Borenia heterophylla, several nice bushes of Bouvardia triphylla, masses of scarlet, and B. Alfred Neuner, 4 feet in height, coming into flower (these had been out for five years); Buddleia Colvilei, 12 feet in height, past its best; Callistemon salignus, Coronilla varia, with pink flowers; Clanthus puniceus, as a bush, still blooming; Diosma gracilis, Elaeocarpus reticulatus, Eriostemon buxifolium, Habrothamnus (Cestrum) elegans, Illicium religiosum, Lavatera assurgentifolia, Leptospermum scoparium, Ozothamnus rosmarinifolius, Polygala oppositifolia, Solanum aviculare, Sophora vicifolia, Sparmannia africana, and Sutherlandia frutescens just going out of bloom. Among other shrubs and trees were Acacia armata, A. Drummondii, A. retinoides, A. verticillata, Abelia lobata, Bowkeria triphylla from South Africa, 10 feet in height, covered with bud; the New Zealand Brachyglottis repanda, Buddleia insignis, B. variabilis 16 feet high, the South American Casalpinia (Poinciana) Gilliesii, a fine shrub of Cantua dependens from Peru, 6 feet in height, planted in front of a 3-foot wall (this had flowered well and was bearing seed-pods); Capparis montana from the Algerian mountains, bearing flowers like a small single Pæony; Cassia corymbosa from Buenos Ayres (in bush form), C. floribunda, Citharexylum barbinerve, Cephalanthus occidentalis (the American Button-wood), Datura sanguinea from Peru, which flowers until Christmas; Desfontainea spinosa, a Chilean, Holly-like shrub; Desmodium penduliflorum, Diosma ericoides, Distylium racemosum, Dodonea multijuga, Edwardsia (Sophora) microphylla, Embotrium coccineum, a most brilliantly-flowered tree often met with in the south-west; Escallonia suspensa, the Mexican Fendlera rupicola, which flowered freely at the end of May; Feijoa Sellowiana from Brazil, Freylinia cestroides from South Africa, Fuchsia syringifolia, Gardenia globosa, which had passed through one winter; the New Zealand Hakea suaveolens, the Cape Bush-Honeysuckle, Halleria lucida, Halesia hispida, Hedyсарum multijugum, Hovenia dulcis, the Australian Hypocalymma robustum bearing pink flowers, Kunzea peduncularis, 6 feet in height; Lagerstromia indica, a healthy bush 4 feet in height and 5 feet through; Lagunaria Patersoni, 6 feet high, from Norfolk Island; the Cape Silver Tree, Leucadendron argenteum, the well-known Brazilian greenhouse plant, Libonia floribunda, 4 feet across; Medicago arborea, Melaleuca densa, Myrsine semiserrata, Nerium Oleander, the New Zealand pink Broom, Notospartium Carmichaeliae, Osteomeles anthyllidifolia, from the Pacific Islands; Ostryopsis Davidiana, 5 feet in height, which bore yellow flowers as large as florins earlier in the year; Perowskia atriplicifolia, Philesia buxifolia, Pterocarya sorbifolia, Rhabdithamnus Solandri, Shepherdia argentea, Solanum crispum, an immense bush by a trellis; Strophanthus capensis, the Chilean Tricuspidaria dependens, better known as Crinodendron Hookeri, and Veronica Hendersoni variegata. Of climbers, Clematis Nellie Moser was blooming superbly on the house, where Actinidia arguta and Swainsonia galegifolia alba were also in flower; Mandevilla suaveolens was showing bud, and Tacsonia exoniensis was growing strongly. In the garden Mutisia

decurrens had several healthy buds; Manettia bicolor was in flower, and among other climbers were Oxera pulchella, Rhodochiton volubile, here a perennial; Lonicera Hildebrandti, L. tatarica, Dioclea glycinoides, Plumbago capensis, Lasiandra (Pleroma) macrantha, Pueraria Thunbergiana, Brachysema acuminata, Ipomoea (Exogonium) purga, I. rubro-cerulea, Hydrangea scandens, and Lapagerias. A very pretty effect was produced by Polygonum Baldschanicum and Rose Euphrosyne, both in full bloom, covering a trellis and archway, while immediately behind a great plant of Crimson Rambler towered some feet higher. A small stream, that runs through its entire length, adds greatly to the attractions of the garden. Close by a little fall in a shady spot is growing the Elk's-horn Fern, Platycerium alcorni, which has been out three winters; and not far distant is a fine plant of the greenhouse Cyrtidium insigne that flowers finely, and in another portion of the garden a group of the lovely Bletia hyacinthina was in full bloom.

Among other noteworthy plants were Amphererepis albescens in flower, Aquilegia ecalcarata (a very old Columbine with spurless blossoms), Astilbe Davidi (fine), Asclepias Douglasi, Asparagus Sprengeri (which had been out seven years, in robust health), the rarely-seen Campanula punctata, many fine, large plants of Cineraria stellata in full flower, which had been out all the winter without protection; Clivia miniata, numbers of Cyclamen persicum on a sloping bank in the best of health, one corm having perfected 200 flowers during the past spring; Digitalis obscurus, from Granada; Erythraea Massoni, bearing its pink flowers; Erythrina crista-galli "Marie Bellanger," an improvement on the type; Ferula gigantea, the brilliant-flowered Gerbera Jamesoni, Incarvillea Olga, Kitabelia vitifolia, 6 feet in height; Leouotis Leonurus, over 3 feet high; Ligularia macrophylla, Liliium giganteum, with many tall spikes, in a sheltered nook; Limoniastrum Guyonianum, a native of the Sahara about Biskra, bearing rosy-mauve flowers, which has been out two winters; Lobelia laxiflora syn. Siphocampylus bicolor; L. Tupa, from Chili; Megacaryon orientale, Micromeria graeca, a little subshrub, whose leaves, when bruised, emit an ammonia-like aroma; Mulgedium (Lactuca) Bourgaei, 6 feet in height; Myrosma cannaefolia, Ostrowskia magnifica, Pentstemon glaber, P. cordifolium, P. tubiflorum, a pretty species 2½ feet high, bearing white flowers; Putoria calabrica on the rocks; Romneya Coulteri, 6 feet by 6 feet; Salvia dichroa, from the Atlas Mountains, in full bloom, with hundreds of long blue-and-white flower-spikes, one of the sights of the garden, a single plant being 8 feet in height and nearly as much through; Tricyrtis hirta, Tulbaghia violacea, bearing its lavender-pink flower-heads; Veratrum nigrum in bud, Witsenia corymbosa, from the Himalayas, bearing blue flowers; and a small plant of Yucca elephantinis, put out this spring.

Of bulbous plants, Brodiaea laxa was in full bloom, as was Trichonema speciosum. Freesias, Ixias, Sparaxis, Babianas and Tritoma were present in quantity, Brunsvigia gigantea and B. Josephinae were in the best of health, as were many hybrid Hippeastrums; and numbers of self-sown seedlings were springing up around a colony of

Pancratium illyricum. Other bulbs included *Cyrtanthus McKenni*, *C. sanguinea*, *Cummingia campanulata*, from Chili, the Californian *Chlorogalum Pomeridianum*, *Ismene Macleayana* from Lima, *Eucomis pallidiflora*, *Calla Elliotiana* and *C. Pentlandi*.

In a small ornamental pool in front of the house some of the best Water-Lilies were in full bloom, the yellow *Nymphaea Marliacea sulphurea* being very fine and large, far surpassing *N. M. chromatella* close by. That the gardens at Belvedere are eminently adapted for the cultivation of rare and tender plants is proved by the grand collection of these that is to be found there in the best of health, but with the sea at the base of its southern slope and the sudden rise of perpendicular cliffs effectually protecting it on the north, it is little wonder that the climatic conditions are favourable. *S. W. Fitzherbert.*

NEW OR NOTEWORTHY PLANTS.

PRIMULA TANGUTICA, DUTHIE.*

This very remarkable-looking *Primula* was originally discovered in 1880 by Przewalski in the Kansu province of Western China. It was regarded by Maximowicz as a variety of Regel's *P. Maximowiczii*, and was named by him "var. *tangutica*," but this name does not appear to have been published. It has recently been found by Mr. E. H. Wilson on the mountains of Szechuan, growing abundantly in open grassy places at elevations between 11,000 and 13,000 feet above the sea. In Przewalski's specimens the flowers seem to vary in colour from pale yellow to the very dark tint as seen in the plants raised by Messrs. Veitch & Sons from the seeds collected by Wilson. It differs from *P. Maximowiczii* by its longer calyx-lobes, and by the very narrow ligulate lobes of the corolla. The flowers have a strong scent, resembling that of *Jasminum Sambac*. *J. F. Duthie, Kew.*

SPECIES OF CHAMÆDOREA WITH PINNATE LEAVES.

THERE are two distinct groups of species of *Chamædorea* with pinnatisect leaves—viz., a small one with aggregated segments, and a larger one whose segments are not aggregated. The former group contains the species *C. glaucifolia*, *C. elegantissima*, and *C. Klotzschiana*. These three species may be easily distinguished without seeing their flowers and fruits. *C. glaucifolia* and *C. elegantissima* have very small segments, not more than six lines broad, whilst the segments of *C. Klotzschiana* are 2 to 4 inches in breadth. *C. glaucifolia*, one of the most graceful of all species, has leaves with 75 to 80 glaucous segments; *C. elegantissima*, on the contrary, has 30 to 36 bright green segments in each leaf. All the other species of *Chamædorea* have non-aggregate seg-

* *Primula tangutica*, Duthie.—Rootstock short, stout. Leaves all radical, fleshy, glabrous, 2–4½ in. long and ¾–1 in. broad, narrowly oblanceolate, rounded or abruptly acuminate at the apex, tapering downwards into the winged petiole, finely denticulate along the margins of the upper half, midrib stout, lateral veins obscure. Scape 1–3 ft. high, stout, glabrous except just below the flowers. Flowers whorled, drooping, 5–9 in a whorl. Bracts narrowly subulate, shorter than the pedicels, deeply channelled above, pubescent. Pedicels ¼–½ in. long, puberulous. Calyx shorter than the corolla-tube, glabrous outside, puberulous within, divided ½–¾-way down into narrowly subulate somewhat unequal segments, the margins minutely denticulate. Corolla ½ in. across, varying from yellow to dark chocolate or almost black; tube ¾ in. long in the long-styled form, and ¾ in. in the short-styled form, tinged with crimson, the mouth surrounded by a 5 gonal ridge; lobes reflexed, narrowly ligulate, obtuse.

ments. Only one of them is distinguished from the others by its segments being strongly reflexed in the leaves of adult specimens, *C. scandens*,

C. scandens bambusoides, Wendland, which is remarkable for vigorous lateral shoots issuing from the stem several feet above the ground.



FIG. 17.—PRIMULA TANGUTICA: FLOWERS DEEP PURPLE. Section of flower twice magnified; pollen-grains magnified 400 diam.

Wendl.; of this Wendland distinguished five varieties. The best known of these is *C. scandens* var. *desmoncoides*, Wendl., well known in gardens as *C. desmoncoides*, which grows up to about 60 ft. in height. Another newly-introduced variety is

Amongst the species with spreading or erect segments only two have linear segments—*C. graminifolia* with thick stems, and *C. Klotzschiana* with thin stems, and with segments half the size of those of the former, viz., 2 to 3 lines broad.

The segments of the other species are lanceolate, oblong-lanceolate, or elliptical. A few of these, viz. *C. costaricana*, *C. elatior*, *C. elongata*, and *C. inaequilateralis*, have leaves the segments of which are almost imbricate, so closely are they set. Of these four species *C. costaricana* has only 18 to 20 segments on each side of the rachis, whilst the others have more than 20 segments on each side. Of these three *C. elatior* has segments not longer than a foot; the segments of the two others are longer than this; they are distinguished by the

the large mass of other species is not so readily defined. I have had much trouble in making a classification that might enable the gardener to determine a given species without seeing its flowers and fruits. Of course, the scheme adopted must be quite an artificial one; closely allied species are separated, and remotely affiliated ones are brought near together. But I thought it better to give a scheme that would be practically useful to everyone rather than a scientific one, which can be employed only when

will consider first those with 3 to 10 segments. Of these about half have the segments only 2 to 4 times as long as they are broad, whilst the segments of the other half are more than 4 times as long as broad. Of those 2 to 4 times longer than broad, *C. concolor* and *C. brevifrons* have segments 15 to 23 cm. (6 to 9 inches) long; *C. concolor* has 5 to 6 segments on each side of the rachis, *C. brevifrons* 6 to 8 segments. The segments of the other species of the broad-segmented group are 25 to 50 cm. (10 to 20 inches) long. Of these *C. bracteata* has on each side of the rachis 4 to 6 segments; *C. oblongata*, *C. lunata*, and *C. homomalla* have 5 to 7 segments on each side of the rachis; and *C. flavovirens* and *C. alternans* have 6 to 8 segments on each side. The three former species are distinguished by the number of the veins of each segment, the two first plants having only 3-nerved segments, *C. homomalla* 7 to 9-nerved segments. I cannot find any difference between the leaves of *C. oblongata* and *lunata*, but they are distinguished by their male inflorescences, *C. oblongata* having thicker, *C. lunata* thinner rami of the male inflorescence. The two species, *C. flavovirens* and *C. alternans* are easily distinguished; *C. flavovirens* having segments 7 to 9 cm. (about 3 to 4 inches) broad, whilst the segments of *C. alternans* are 11 to 14 cm. broad ($4\frac{1}{4}$ to $5\frac{3}{4}$ inches).

In the group with segments more than four times longer than broad, five species have segments not longer than 18 cm. ($7\frac{1}{4}$ inches), whilst seven species have longer segments. Of the short segmented ones, two species, *C. pygmaea* and *C. Donnell-Smithii*, have segments which are not broader than 1.5 cm. ($\frac{1}{2}$ inch); *C. pygmaea* having 6 to 8 segments on each side of the rachis; *C. Donnell-Smithii*, the most dwarf Palm hitherto known, being only a few inches high, has only 2 to 4 segments on each side of the rachis. The three other species of this group with segments not longer than $7\frac{1}{4}$ inches are distinguished by the number of veins in the segments: *C. bifurcata* having 3-nerved, *C. variabilis* 5-nerved, *C. microphylla* 9-nerved segments.

Of the group with segments longer than $7\frac{1}{4}$ inches we may distinguish three species—viz., *C. Pacaya*, *C. Bartlingiana*, and *C. pinnatifrons*—from the other four by their having segments not longer than a foot, whilst the segments of the four latter are longer. *C. Pacaya* has segments not broader than 4 cm. (nearly 2 inches), whilst those of the two others are at least that width. *C. Bartlingiana* has 5 to 6 segments on each side of the rachis; *C. pinnatifrons* 8 to 10 segments on each side of the rachis. The species with segments longer than 30 cm. (a foot) are *C. paradoxa*, *C. lanceolata*, *C. Sartori*, and *C. Casperiana*. Of these, *C. paradoxa* and *C. lanceolata* have 3-nerved segments, *C. Sartori* has 5-nerved segments, and *C. Casperiana* 9 to 10-nerved segments. The two 3-nerved species are easily distinguishable, *C. paradoxa* having segments 4 to 5 cm. ($1\frac{3}{4}$ to 2 inches) broad, whilst those of *C. lanceolata* are 6 to 7 cm. broad ($2\frac{1}{4}$ to $2\frac{3}{4}$ inches).

We have still to consider those species of *Chamædorea* with non-aggregate, spreading, or erect-spreading lanceolate, oblong-lanceolate or elliptical remote, not decurrent segments, which have 10 to 30 segments on each side of the rachis. Of these we may distinguish two groups: one large one comprising all those with 10 to 22 segments on each side of the rachis, and another smaller one with Palms having more than 22 segments on each side of the rachis. Of the former group (10 to 22 segments) we distinguish those with segments not broader than 5 cm. (2 inches), from those whose segments are broader. Of those whose segments are not broader than 5 cm., five species have not more than 15 segments on each side of the rachis, whilst four have from 15 to 22 segments. The five first may be classed



FIG. 18.—MESSRS. LAXTON'S NEW STRAWBERRY "BEDFORD CHAMPION."

From a cross between a seedling from Noble x Sir Joseph Paxton, and a seedling from Scarlet Queen and John Ruskin. (See description on pp. 11 and 34.)

breadth of their segments; those of *C. elongata* are 1 to $1\frac{1}{2}$ inch broad, those of *C. inaequilateralis* are $1\frac{3}{8}$ to $1\frac{1}{2}$ inch.

Of the species with remote segments three are easily recognisable by their decurrent segments—*C. cataractarum*, *C. Martiana*, and *C. brachyclada*. The differences between these three species are the following:—*C. cataractarum* has very small segments, only 0.8 to 1.3 cm. broad (about $\frac{1}{4}$ to $\frac{1}{2}$ inch); those of the two others are 2 to 2.6 cm. broad (nearly an inch); but in *C. Martiana* are 3-nerved; but in *C. brachyclada* 5-nerved.

Whilst the foregoing twelve species, according to the grouping given, are easily distinguishable,

the plants are in flower. There are two characteristics of great constancy peculiar to the species: the number of segments on each side of the rachis, and the number of veins in each segment. Well-marked characteristics are also the relations between the length and breadth of the segments and the height of the segments. In all cases, of course, the characteristics mentioned are taken from leaves of full-grown specimens. We make thus two groups: one including all those species whose leaves have 3 to 10 segments on each side of the rachis, and another whose leaves have 10 to 30 segments on each side of the rachis. These two groups are nearly equal in number; the former includes twenty, the other fifteen species. We

with those with segments not broader than 3 cm. ($1\frac{1}{2}$ inch) and those with segments 4 to 5 cm. broad ($1\frac{3}{8}$ to 2 inches). The species with narrow segments are *C. Galeottiana*, *C. radicalis*, both with segments not longer than 25 cm. (10 inches), and *C. oreophila* with segments up to 33 cm. long (13 $\frac{1}{2}$ inches). *C. Galeottiana* has 1-nerved, *C. radicalis* 3 to 5-nerved segments. Of the two species with wider segments, *C. Schiedeana* has segments 20 to 35 cm. long (8 to 14 inches), whilst *C. macrospadix* has segments 40 to 45 cm. long (16 to 18 inches).

The second group, with segments not broader than 5 cm. (2 inches) but with more than 15 segments on each side of the rachis, contains *C. brachyclada*, *C. elegans*, *C. Liebmanni*, and *C. corallina*. Of these, *C. brachyclada* has segments 2 to 3 cm. broad ($\frac{3}{8}$ to $1\frac{1}{8}$ inch), *C. elegans* and *C. Liebmanni* segments 3 to 4.5 cm. broad ($1\frac{1}{8}$ to nearly 2 inches), and *C. corallina* segments 5 cm. (2 inches) broad. *C. elegans* is distinguished from *C. Liebmanni* by having a full leafy crown, whose fronds have about 20 segments on each side of the rachis, whilst *C. Liebmanni* has a crown of only 4 to 6 leaves, which have only some 15 segments on each side of the rachis.

The species with 10 to 22 segments on each side of the leaf-rachis, whose segments are broader than 5 cm. (2 inches), are *C. Wendlandiana* with 5-nerved segments, *C. Tepejilote* with 7-nerved segments, and *C. exorrhiza* with 9-nerved segments.

Now we have only those three species to consider which have more than 22 segments on each side of the rachis. Of these, *C. montana* has segments only up to 3 cm. ($1\frac{1}{8}$ inch) broad, whilst those of *C. Poeppigiana* and *C. fragrans* are broader. *C. Poeppigiana* has dark-green leaves with segments 4 to 5 cm. ($1\frac{3}{8}$ to 2 inches) broad, whilst *C. fragrans* has bright-green leaves with segments 5 to 6 cm. (2 to $2\frac{1}{8}$ inches) broad.

It will be easy for the gardener to make for himself a key from the above short notes, which will enable him to determine at once the species of *Chamaedorea* he has in cultivation, even when they are not in flower. There are amongst the above-named species a good many not yet described, though they have been for some long time in cultivation. Full descriptions of them will be found in my monograph of the genus *Chamaedorea*, which will be published shortly. For the new species where no authority is mentioned Hermann Wendland is always the authority.

I have still a few words to say about the limitations of the genus. The species here named are reckoned by some authors as belonging in part to the genus *Morenia* and *Kunthia*. But as there are no differentiating characteristics in these genera I include them with *Chamaedorea*, contrary to Wendland and to the principles of priority. Wendland found that *Kunthia* is by no means the only monoecious species, and that the somewhat mysterious *K. montana* is the same as *C. Lindeniana* or *Morenia Lindeniana*. Both these latter names must be given up and the plant named *Chamaedorea montana*. The genus *Morenia* has this chief characteristic, that the male inflorescences stand in groups on each ring of the stem. But Wendland showed that this characteristic is also to be sometimes met with in species of *Chamaedorea*. Now *Morenia* is the older name, and therefore, says Wendland, all species of *Chamaedorea* must be re-named *Morenia*. But if you wish to separate *Morenia* from *Chamaedorea* the name *Chamaedorea* must not be adopted according to the principles of priority, as there are still two other names that have precedence in *Nunnezia* and *Nunnezharia*. Even *Martinezia* is a name which may come into consideration. But I think it is better from a practical standpoint to preserve the

well-known name *Chamaedorea* and to reject all the other names. It would cause too much trouble in practice if the name *Chamaedorea* disappeared and one of the above-mentioned names took its place. In his manuscript Wendland wrote *Morenia*, but he always spoke of *Chamaedorea*. And so it may rest. Dr. Udo Dammer, Dahlem, Berlin.

THE BERMUDA LILY CULTURE.

The chief industry in Bermuda is Lily farming (*Lilium longiflorum* and the variety *Harrisii*), although the Lily disease has been so prevalent of late years that many farmers have been compelled to give up growing these plants. This disease has given the British Government endless trouble, and nothing has been discovered up to the present that will effectually exterminate the disease, although its ravages have been stopped to a great extent by spraying with Bordeaux-mixture. The ground is cultivated for planting the bulbs in August, after having been allowed to lie fallow during the summer months, although in some cases it is utilised for growing Melons in order to keep the ground free from grass. A few years since the experiment of growing Tobacco for a summer crop was tried, but was soon abandoned, as the growers asserted that the crop took more nourishment from the soil than the Tobacco was worth, and that they had to spend all the money derived from the sale of the Tobacco to purchase manure for the Lilies. In the experimental station nothing but farmyard manure was used when the ground was prepared for Lily culture, and this consisted of as large a proportion of cow manure as possible, as the soil in Bermuda is sandy and porous. The Lilies are propagated by separating the scales from the bulb, and placing these in drills at a depth of 3 inches, allowing 4 inches between the individual scales. This operation is generally carried out during the first week in September, and by the following June these scales form small bulbs 1 to $1\frac{1}{2}$ inch in circumference, when they are dug up, dried, and stored away in sand until the following September, when they are again planted in the ground in rows drawn 3 inches apart, allowing 2 inches between the bulbs in the rows. After a season's growth they are dug up about June, by which time they are from 3 to 4 inches in circumference. The following season they attain a size of from 5 to 7 inches in circumference, which is the smallest marketable size; and they increase their growth until they reach a size of from 11 to 13 inches in circumference, after which they do not increase in size, but deteriorate and split into bulbils. It is when the bulb starts into growth that the disease puts in its appearance, and it is at this time that spraying operations are conducted. The method of preparing the fungicide is as follows: three fifty-gallon barrels are obtained, one for holding the mixture, and the other two for mixing purposes. In each of the two latter barrels 25 gallons of water are placed; in the one case 4 lb. of copper-sulphate is added, and in the other 6 lb. of quicklime. When the sulphate of copper and the lime have dissolved, the contents of the two barrels are poured at the same time into the stock-barrel, which process insures proper mixing. The mixture is then ready for spraying. It is always better to spray the plants the first thing in the morning and the last thing in the evening. The Lilies are sprayed before there is any appearance of the disease, and also at intervals throughout the growing season.

The farmer, as a rule, sells his bulbs in advance, before he puts them in the ground, there being such a demand for good, true bulbs. When these large growers notice a diseased bulb in their batch, they dig it out and burn it. The experimental station advises, after digging the diseased bulb out, that the vacant place be sprinkled with crushed sulphate of iron, this kills any remaining

spores that may be left in the soil. The small growers, and several of these are Portuguese, mix diseased bulbs with the good ones, and sell to the commission man, who buys his bulbs ready dug up on the ground, and employs men to pack them. These men also mix their bulbs, putting the true variety *Harrisii* and the longiflorum together, and selling the mixture as true *Harrisii*. This is a great disadvantage when forcing the bulbs with the intention of obtaining flowers for Christmas, as the *Harrisii* variety will flower by Christmas, but the longiflorum are a week or two later in flowering. Another great mistake on the farmers' part is to dig up the Lilies before the bulbs are ripe, as unripe bulbs are not fit for forcing. For instance, only last January I went to see some private gardens in Newport, R.I., U.S.A., where they annually force large quantities for Christmas. One Scotch gardener told me that a batch he had just started was diseased, and that his Christmas batch also turned out diseased. I informed him they were not diseased, but unripe, and that they would not stand forcing. I know of several similar cases where unripe bulbs have been pronounced diseased. To conclude, I would advise any who force bulbs to dip them before they are potted into a solution of weak permanganate of potash (Condy's Fluid), this kills the spores of the disease in the bulb. Again, when the Lilies have commenced growing in the pots, spray at intervals with Bordeaux-mixture; the spray leaves a bluish sediment on the foliage. This can be easily removed by syringing with clear water; but allow it to remain on as long as possible. Geo. Chisholm, Llanrust.

COLONIAL NOTES.

PESTS AND THEIR PARASITES.

ACCORDING to a recent return issued by the United States Agricultural Department, the direct and indirect yearly losses caused by insects in that country alone amount in the aggregate to the enormous total of over 700 million dollars (£140,000,000). If to this be added the loss in other lands, the amount must be great indeed. Any wise and energetic effort, therefore, which seeks to reduce the number of these destructive agents and to check their ravages is worthy of the keenest attention on the part especially of men who gain their living from the soil.

It is consequently with some interest that we have heard of the work of Mr. George Compere, the travelling entomologist, whose unique and able services have for some time past been requisitioned by the Governments of Western Australia and California.

Mr. Compere gained his knowledge of fruit-pests and parasites under Mr. Arthur Kobele, who at one time was in the service of the Californian Government, and is now the entomological expert of Hawaii. These insect investigators affirm that every pest has its parasite, as, according to the moralist, every evil has its remedy. So that it is only necessary to follow the pest to its original habitat to find the check which Nature herself has provided for it.

This, then, is Mr. Geo. Compere's work. According to Mr. Despeissis, the head of the Western Australian Horticultural and Viticultural Department, he has to direct his attention almost exclusively towards fighting Nature's pests by Nature's own means. To do this he has to follow the pest to its home in many lands, with the view of discovering the parasite that feeds upon it.

His labours appear to have been crowned already with a very fair measure of success, as he has successfully introduced into Western Australia, from Queensland, parasites of the black scale, the soft brown scale, the Cabbage moth, and the Cabbage aphid, with a ladybird, which

ORCHID NOTES AND GLEANINGS.

ONCIDIUM ROBUSTISSIMUM.

A PHOTOGRAPH of a plant in flower, of a single flower, and living examples of the blooms, sent by H. Emmons, Esq., The Copse, Hamble, Southampton, seems to represent the plant described by the late Professor Reichenbach under the above name in the *Gardeners' Chronicle*, September 29, 1888, p. 352. It is closely allied to *O. pulvinatum*, the characters relied on in the description however being present.

The description states: "This is an uncommonly intricate, critical species. It belongs to the *Pulvinata* section, including *O. divaricatum*, *pulvinatum*, and *sphagiferum*. It is, however, quite distinct at first sight in its strong, straight rachis, the side branches of which are not zigzag at all, but straight, too. The flowers are larger,



FIG. 19.—ONCIDIUM ROBUSTISSIMUM.

and the lip has the anterior part of the blade broad as the lateral ones. The sepals and petals are yellow at the top, brown at the inferior part. The lip has the rounded serrate lateral lacinia, as well as the anterior emarginate one, with broad cinnamon-coloured stripes," &c.

Mr. Emmons describes his plant: "Leaves from 1 foot to 1 foot 4 inches long, olive-green in colour and very thick. Length of spike 6 feet 6 inches, with twenty-five branches ranging from 2 feet 2 inches to a few inches long. The largest branch carried one hundred flowers, and the whole spike seven hundred and sixty blooms, each flower an inch in diameter.

ORCHID ARRANGEMENTS.

The useful side of Orchid culture is generally to be seen in the pretty gardens of Ludwig Mond, Esq., The Poplars, Avenue Road, Regent's Park, London, where effective use is made of the Orchids in bloom at all seasons in the floral arrangements in the temperate conservatory. A fine piece of statuary, beside which are ornamental seats, occupy one end, and around is a permanent arrangement of rockery and cork-faced staging. Palms and Ferns, among which are some good examples of the African *Lomaria Boryana* with tall stout crowns are the permanent plants, and among them various subjects in flower are arranged. At

the highest point there were recently several finely-flowered specimens of *Cypripedium Lowianum*, their long sprays arching gracefully among the other plants. Beneath them are good specimens of *Odontoglossum crispum*, pink Milton *vexillaria*, *Laelia purpurata*, *Cattleya Mossiae*, *C. Mendeli*, *Oncidium sarcoodes*, *O. papilio* and other Orchids.

But the Orchids are not allowed to take undue prominence, and herein lies the great attraction of the arrangement. Effectively displayed among the Orchids are good specimens of the white *Francoa*, scarlet *Anthurium*, large-flowered scarlet and yellow *Cannas*, *Mignonette*, and a few other flowers, while diversity of foliage is given by variously-tinted Japanese Maples, variegated *Vitis heterophylla*, &c.

Many Orchids last a long time in flower, and by this method of arranging them with other plants in bloom as they are available it is easy to get a greater diversity of effect than by arranging the Orchids by themselves. Mr. J. O. Clarke has charge of the garden. J. O'B.

NEGLECTED TIMBER TREES.

THE note by Mr. Simpson, in a recent issue of the *Gardeners' Chronicle*, on the Locust tree, served to call to mind several others which, though passed over by planters, are yet deserving of extensive planting in this country, more especially in those parts where the water level is but a few feet below the surface, therefore in boggy land, in the vicinity of lakes, and sluggish streams, reclaimed fen land, and the like. I will place first, on account of its rapidity of vertical stem growth, i.e., 2 to 3 feet in a season, the *Juglans nigra*, usually called Black Walnut from the dark tint of the heartwood (and in aged trees it is nearly all heartwood). Planters should obtain the nuts from the trade, and preferably from Continental houses dealing in tree seeds, making their purchases early in the winter, and either plant the nuts 4 to 6 inches deep in land suitably prepared, and where they will stand to grow to timber size, or stratify them in cold pits or in frames sunk in the soil where some protection from frost may be afforded them in hard weather, and plant them out where they are to stand in the spring, at which season germination will have begun. Much care must be exercised in the planting, so as not to injure either the root or the cotyledon. As older seedlings do not transplant readily and the plants take several years to recover from injuries caused by removal, sowing the seeds once and for all is to be preferred. Afforded a growing space of from two to three yards apart, the young trees make quick growth, and in a few years shade the soil with their ample foliage, shooting up to a great height with straight, cylindrical smooth stems, which do not usually form branches low down, or if they should do so these soon perish owing to lack of light and air. This species of *Juglans* grows as fast as a common Spruce, a Silver Fir, or a Larch, and in forty years becomes of commercial value.

Another excellent and useful tree is the common Alder, *Alnus glutinosa*, sometimes called the Water Oak from its resemblance in habit when growing with a single stem to an Oak. As the Alders throw out suckers freely, they usually assume the appearance of stooled coppice trees, and seldom reach to any large size. This tendency can only be overcome by rigidly grubbing up the suckers whilst these are still small, and confining the tree to one stem. Needless to say, that, like the Willows and Poplars, the tree does best in moist land, on the banks of rivers and lakes, in which situations growth is rapid; and when the locality is very moist and of any great extent, the plants may be set out at 5 or 6 feet apart, no thinning in after years being then required. Matured timber of

has a strong attachment to the mealy-bug. From Spain and the South of France he has obtained parasites of the Grain moth and the Grape Vine scale, with several useful kinds of ladybirds. In Spain, too, he found the parasite of the Codlin moth, a discovery the value of which to the Californian and Australian fruit-growers, should it prove what is expected of it, cannot be over-estimated.

India, we are told, has much to answer for in breeding insect pests, so that it is satisfactory to note that Mr. Compere has been provided with several efficient parasites from that country. Some of the most efficacious of these prey on the eggs and others attack the fruit fly maggot itself. To India, therefore, Mr. Compere looks as a happy hunting-ground in his search for effective allies in the war with his insect enemies.

But South America also has well repaid the investigations of this explorer. In April of last year he visited Rio de Janeiro, "where," he says, "notwithstanding the large amount of fruit exposed for sale, not a single fruit infested with maggot was noticed, and no trace of fruit fly could be detected." In San Paolo he found a few scattered half-decayed Oranges, some of which showed signs of having once been punctured by fruit flies, but the closest scrutiny failed to reveal any maggots in the decayed fruit. Following up this quest, he interviewed the owner of a local orchard, who stated that during eighteen years in which he had had possession of the orchard he had never noticed any damage to fruits caused by fruit flies; in fact he never knew that there were such insects! However, Mr. Compere eventually found a few small *Ichneumon* flies on some Oranges, apparently in search of infested fruits. Upon these he kept a close watch for some time, and at length discovered one in the act of ovipositing in an Orange. This Orange, as soon as the parasite had finished laying her eggs, he took from the tree, placing it in a jar which he kept in his room. Two days later the fruit fly maggots had completed their growth, and pupated in the bottom of the jar. In due course five parasites and two fruit-flies made their appearance. Further examination in this district led to the discovery of the *Staphylinidæ* beetles, whose capabilities in the destruction of maggots of all kinds appear phenomenal. "Beyond question," he affirms, "these beetles destroy the major part of the fruit-fly maggot in Brazil, and also destroy a large number of the parasites as well, eating every maggot with which they come in contact, not discriminating between those parasited and those that are not."

This year Mr. Compere paid another visit to Brazil, that he might become better acquainted with these beetles, and that he might get a fuller supply than he was able to secure on his first discovery of them. Returning from this journey he passed through London, having with him a number of the beetles, which he was found diligently feeding with blow-flies, for which they have a special avidity. It would seem, according to Mr. Compere, that it is no small matter to find sufficient food to satisfy the rapacious appetites of the *Staphylinidæ*, as in default of other nutriment they develop cannibalistic instincts and feed on each other.

If but a fraction of the claims which Mr. Compere advances on behalf of his various parasites prove well-founded, there is no doubt that they will be of the greatest value to Western Australia and California. The beetles in particular will find a wild field for their operations in the former country not only among the fruit pests, especially those which attack the Orange groves, but among the troops of common and blow-flies which have made their home in that favoured land. *The Agent-General for Western Australia.*

the common Alder, when it can be obtained of sufficiently large dimensions, is much valued for piling and underwater constructions, as sluices, flooring in mill-races, lock-gates, and sills, in which situations it is more durable than Oak.

The common Hornbeam (*Carpinus Betulus*) is another much-neglected timber-tree. A form of this *C. B. incisa* is frequently met with as a garden tree. Planted so as to form close cover, its natural tendency to form a spreading, round-headed tree with much useless lop and top is obviated, and tall, straight, smooth stems are obtained instead. The timber has many uses, and makes the best of firewood for burning on the open hearth or in close stoves, being very close grained, and easily split with the axe. *F. M.*

CAMBRIDGE BOTANIC GARDEN.

The Botanic Garden Syndicate reports to the Senate that two new boilers have been procured (*Reporter*, May 9, p. 843; June 13, 1905, p. 1073).

The Botanic Garden was made use of in providing employment for men in need of work.

During the year 1904, 1,658 plants, 2,359 bulbs, and 4,185 packets of seeds were received, while 1,431 plants and 3,140 packets of seeds were distributed. Contributions were received from nearly sixty botanic gardens.

Among the more interesting plants received are *Allium Ellisii* (*Botanical Magazine*, t. 7875), a fine species from Khorasan of a group wholly Oriental; the wild original of the garden Cyclamen; *Celogyne pandurata*, "one of the most remarkable of Orchids," with large green flowers marked with black; *Gloriosa Rothschildiana* (see *Garden*, June 25, 1904, p. 451), a magnificent new species with crimson flowers from near Lake Victoria Nyanza; *Solanum Commersoni*, a species of Potato from the Argentine Republic, formerly recommended only for forage, but now regarded as suitable for cultivation in wet soils that are ill-adapted for ordinary varieties, said to bear tubers of good flavour rich in nutriment; *Davidia involucreata*, a fine new Chinese Cornaceous plant, originally discovered by the Abbé David in the mountains of Mu-Piu west of Szechuan; *Jasminum primulinum* (*Botanical Magazine*, t. 7981), a new species from Yunnan similar to the winter-flowering *J. nudiflorum*, but finer; *Meconopsis integrifolia*, an exceedingly fine Papaveraceous plant, with yellow flowers from Western China (see *Gardeners' Chronicle*, October 1, 1904, p. 240); *M. aculeata*, a rare blue-flowered species; *Impatiens Oliveri* (*Botanical Magazine*, t. 7960), a new species raised at Kew from seeds obtained by Sir John Kirk along the Uganda railway; *Lysimachia Henryi* (*Botanical Magazine*, t. 7961), originally collected by Dr. Henry near Ichang in the Province of Hupeh in Western China; *Clerodendron myrmecophilum* (*Botanical Magazine*, t. 7887), a new species with handsome flowers, of special interest on account of the swollen internodes inhabited by ants; *Pyrus Niedzwetzkyana* (*Botanical Magazine*, t. 7975), a new ornamental ally of the Apple with exceptional redness throughout the plant; *Lonicera etrusca* var. *superba* (*Botanical Magazine*, t. 7977), recently recorded from the Mediterranean region; *Bryonia alba*, a plant used in medicine, obtained from the Continent, hitherto unrepresented in British gardens; *Iris obtusifolia* (*Botanical Magazine*, t. 7701), a new species from the Province of Mazanderan on the south of the Caspian Sea; *Styrax officinale*, the tree which yields the balsamic resinous substance known as Storax; *Angraecum Eichlerianum*, an interesting species lately introduced from Calabar; *Rhizophora Mangle*, the Mangrove of tropical shores; *Cyatnodes empetrifolia*, a rare New Zealand Epacrid; *Tanakaia radicans* (*Botanical Magazine*, t. 7943), the only species of the genus, a native of Japan, peculiar among Saxifragas in having unisexual flowers; *Trichosanthes japonica*, an addition to the few hardy perennial Cucurbitaceae; *Abies Vilmorini* (*A. Pinsapo* × *A. cephalonica*), one of the few hybrid Conifers (illustrated in the *Gardeners' Chronicle*, 1901, February 9, p. 89).

Among the more interesting of British plants received are *Koeleria valesiaca*, found in the Herbarium of Dillenius at Oxford and recently re-discovered in the original locality at Brent Down in Somersetshire; *Malaxis paludosa*, an interesting Orchid, having its leaves fringed with bulbils capable of producing new plants; *Crocus biflorus*, naturalised in Barton Park, Bury St. Edmunds, where it has maintained its ground for more than a century; *Viola calcarea* (see *Journal of Botany*, March, 1904, p. 67), sent from Cheddar by Mrs. Gregory (formerly regarded as exclusively a Cambridgeshire plant), and recently obtained from the Gogmagogs by the Curator and Mr. Hosking; *Fumaria occidentalis*, sp. nov., of more robust habit than any other British fumitory, found in West Cornwall, and described by Mr. H. W. Pugsley in the *Journal of Botany* (August, 1904,

p. 217); *Erica Tetralix* *β* *Watsoni*, found near Truro; *E. Mackaii*, long known in co. Galway; and *E. Stuarti*, found in Connemara and probably a hybrid, described in the *Annals of Scottish Natural History* (July, 1902, p. 177). *Eriocaulon septangulare*, collected by Mrs. Babington, has flowered freely, and appears to be permanently established.

Sauromatum brevipes has been figured and described in the *Botanical Magazine* from Cambridge material (t. 7940). The examination of the living plant has resulted in its reference to the genus *Sauromatum* instead of to *Typhonium*, in which it was formerly placed in the absence of satisfactory evidence as to the nature of the spathe. In the *Gardeners' Chronicle* (June 18, p. 387) *Hemaria Dawsoniana*, an Orchid with copper-veined leaves and white flowers, was illustrated from a photograph by the indoor foreman, Mr. E. Allard.

Among the plants of special interest that flowered were *Gnidia polystachya*, figured in the *Botanical Magazine*, 1905, t. 8001; *Urginea Wightiana*, an Indian species of Squill used in medicine; *Iris Ascheroni*, a new species allied to *I. Grant-Duffi*; *Bartholina pectinata*, a remarkable Cape Orchid with finely divided labellum; *Acacia sphaerocephala*, the species described by Belt in his *Flora of Nicaragua*, which bears "food bodies," and is characterised by hollow spines inhabited by ants; *Richardia cantabrigiensis*, a hybrid raised by the Curator (R. Reimanni × *melanoleuca*), described in the *Gardeners' Chronicle*, April 9, 1904, p. 226, to be figured in *Flora and Sylva*; *Stapelia* sp. nov.; *Listrostachys Sedeni*, an Orchid from British West Africa, contributed by Mr. Cyril Crossland; and hybrid *Gerberas*, raised by the Curator, to whom a Silver Cup was awarded for an exhibit at the Temple Show. The exhibit was illustrated in *The Garden*, 1904, vol. lxv., p. 405.

Samples of various fibre plants have been supplied to Messrs. Deane & Ellwood, of Leicester, for the purpose of experiments in the development of a fibre-extracting machine.

The number of specimens supplied for botanical purposes during the year amounted to 99,355.

BOOK NOTICE.

HANDBUCH DER PFLANZENKRANKHEITEN, von Prof. Dr. Paul Sorauer. Dritte vollständig neubearbeitete Auflage in Gemeinschaft mit Prof. Dr. G. Lindau und Dr. L. Reh, herausgegeben von Prof. Dr. Paul Sorauer. (Berlin, Paul Parey, 1905.)

The third edition of this handbook of plant diseases differs from the last, as Prof. Sorauer has not undertaken to issue the whole of the book himself, but has secured the services of two specialists for co-operation. The reason for this alteration is to avoid getting out of touch with the abundant material collected since the publication of the second edition, and also in order to make the new edition as perfect as possible. The new work has been divided into three volumes, each of which is being prepared by a specialist in the particular branches. The injuries caused by insects are treated by Dr. L. Reh, the zoologist of the Natural History Museum in Hamburg; diseases caused by plant parasites, fungi, &c., are dealt with by Prof. Dr. G. Lindau, specialist on plant-diseases of the Berlin University; whilst Prof. Sorauer himself prepares the volume dealing with injuries caused by atmospheric conditions, exposure, condition and mechanical properties of soil.

The arrangement of the book according to the causes of diseases is the same as in the second edition, and although it would be undoubtedly easier to ascertain the nature of a malady if the matter were arranged according to host-plants, as for instance in Kirchner's work, a repetition of the nature of the disease would be necessary with each host-plant. But Prof. Sorauer lays the greatest stress upon the scientific explanation, the relation of disease to certain conditions in the life of plants, making them susceptible, and on the true origin of disease. The careful study of these items will enable the reader to form an opinion and to rationally deal with such attacks.

From this point of view every one of the three scientists has based his special subject upon conditions under which disease develops, and points out such circumstances which induce a plant

to take disease, *i.e.*, make a plant susceptible, as conditions of weather, culture, &c. Professor Sorauer, as is probably known, was the first defender of the view that there is a predisposition of plants for disease, and though he stood alone in this theory on the publication of the first edition of his work, it has been recently taken up by eminent investigators. In consequence of this theory, the parasites themselves do not receive exclusive attention, but such important factors as may be responsible for the attack of parasites are also treated on.

Guided by this idea, the third edition of the handbook deals largely with the predisposing or disease-favouring factors, and calls attention to the fact of a relationship of plants to their places of growth and their surroundings, and to the individual development of plants, the conditions of nutrition of which deviate from their natural mode of growth. In consequence, the secret of combating epidemics lies more in the study and prevention of the unnatural conditions than in the method of combating the disease itself, as is the case at present by our methods of spraying, &c.

First Volume.—These observations are explained in the introduction to the first volume. It is pointed out what should be considered a disease, and the conditions of plants changed by cultivation for the purpose of utility, though they cannot actually be called diseased conditions, are referred to.

This necessitates a study of the dependence of an organism on its surrounding, and answers the question of the primary cause of disease, mode of parasitism, heredity of diseases, and degeneration. The special text treats in the first instance of such unsuitable conditions of soil, as may be due to exposure or mechanical influence. In the same part the chemistry of the soil, superabundance or deficiency of water or nutritious matter, is discussed. In the second portion the author deals with atmospheric conditions, in particular injuries by frost and the evil effects due to superabundance or deficiency of warmth and light, or lightning, storm, and hail. In the conclusion of the first volume, the damages by noxious gases are described. Of great practical value will be found the advice how to treat wounds on trees, &c., the chapters on manipulating hide-bound trees, on grafting and pruning, which have been richly illustrated with drawings based upon scientific investigations.

In the second volume, Professor Lindau begins with the explanation and description of diseases caused by plant-parasites; in the second part he intends dealing with parasitic Algae, and in the last with phanerogamic parasites. In the first chapters we are glad to say bacterial diseases of plants have been treated with great care, and the great gap noticed in other handbooks of plant-diseases is herewith filled. Later on, mycelial fungi (*Eumycetes*), in the following orders of *Phycomycetes*, *Oomycetes*, *Zygomycetes*, *Ascomycetes*, *Basidiomycetes*, and *fungi imperfecti*, will be dealt with.

Dr. L. Reh is responsible for the third volume. His speciality is the investigation of the morbid conditions caused by injurious insects, and the methods of treating such attacks. Starting with the systematic arrangement of worms and noxious Crustaceae, other chapters deal with centipedes, scolopendria, spiders, mites and other insects, and finally with vertebrates. In connection with the description of the parasites of the animal kingdom, the author considers their natural enemies, both from the animal and the plant world (insect-killing fungi, &c.), and the mechanical means of combating such pests. The last section treats of the predisposing conditions of plants for attacks of parasitic insects.

Each special author has endeavoured to give scientific information, but in a simple manner, so

as to enable every reader, even one without previous knowledge of the subject, to make ready and efficient use of the material. The handbook is plentifully illustrated, printed in large type of Roman characters on a good quality of paper. It will be issued in sixteen to eighteen parts, at the price of three shillings each, and is intended to be concluded by the end of next year. H. G.

THE FERTILITY OF LAND.

A VERY interesting article appears in the second number of the new *Journal of Agricultural Science*, by Mr. A. D. Hall, M.A., the Director of the Rothamsted Experimental Station, "On the Accumulation of Fertility by Land allowed to Run Wild."

an extensive vegetation may decay with such rapidity that no reserve of fertility accumulates. In temperate climates, and with a particular distribution of the annual rainfall, occur the grassy, treeless prairies and steppes which provide the ideal conditions for the accumulation of fertility. But that fertility does increase when land is in the state of permanent grass has long been an axiom in agriculture, and the results brought forward by the author from the researches of Rothamsted show at what rate the increase takes place under prairie conditions in this country—namely, when the land is left absolutely to itself and not even grazed by stock.

In 1882 about an acre of land, which had carried Wheat for forty years in succession in the famous experimental Wheat-field at Rothamsted, was not harvested, the crop was allowed to stand and shed its seed without cultivation of any kind. In the following season a fair quantity of Wheat came up on this part of the field, but gradually got weaker as the season advanced, and the weeds increased their hold on the land. The Wheat was left to struggle on without cultivation, and by the fourth season only a few stunted plants of Wheat could be found, each carrying but one or two grains in the ear. With these the Wheat disappeared, and has never been seen again in that part of the field. This illustrates the fact that our farm-crops have become so specialised that they are unable to exist in competition with weeds and other natural vegetation, and are entirely dependent on cultivation to relieve them from that competition.

The piece of land in question has been left untouched since that time, and has covered itself with a coarse, grassy herbage interspersed with Thorn-bushes and Briars, young Oaks, and other shrubs of the district. This piece of land now represents the results of something more than twenty years of prairie conditions in England, and as samples of soil had been taken at starting, it affords an opportunity of gauging the rate at which fertility is accumulating. A very similar experiment was also made with a portion of another field which had carried Beans from 1847 to 1878, and Clover from 1883 to 1885. After the Clover the field was fenced off, and has been left untouched ever since.

Both of these fields show a marked gain of carbon and nitrogen down to the depth of 27 inches, the increase in the lower depths being due to the roots which have decayed in that stratum. The total gain of nitrogen per acre is estimated at about 2,200 lb., which is at the rate of more than 100 lb. per acre per annum. So great an accumulation of nitrogen is manifestly impossible to account for in the present state of our knowledge, and is left unexplained by the author. A point of considerable interest is that at the present time (1905) the vegetation on the Wheat-field waste contains a fair proportion of leguminous plants, while this class of plants is, and has been for many years, since the dying out of the Clover, absent from the field which had previously carried Beans. It is therefore impossible to refrain from correlating the absence of leguminous herbage on these old Bean and Clover plots with the well-known fact that land becomes "sick" of the leguminous crops in a way that never happens with other farm crops. J. J. Willis, Harpenden.



FIG. 20.—SWEET PEA HENRY ECKFORD: COLOUR SALMON-SCARLET. An excellent variety seen in general collections this year for the first time.

PLANT PORTRAITS.

VRIESEA x LEOPOLDIANA.—A cross between *V. splendens* and *V. Malzinei*. Wittmack in *Garten Flora*, t. 1539, June.

HEMANTHUS "FASCINATOR," a form of *H. Lindeni*. *Wiener Illustrierte Gartenzeitung*, June.

ROSE LILLA RAUTENSTRAUCH, H.T. Lambert, flesh-coloured. *Rosenzitung*, May.

RHODODENDRON NUTTALLI, *Revue de l'Horticulture Belge*, July.

It is well known that the fertility of "virgin" soils is due to the accumulation of the *débris* of a natural vegetation which has been in occupation of the soil for a long epoch previously. Only when the climate and rainfall are suitable to the growth of the plants and the partial preservation of their residues does a virgin soil of any richness arise. On the one hand, virgin soil may be as poverty-stricken as the most worn-out European field, because it has never carried any vegetation; on the other hand, as in the tropics, the *débris* of

THE GHENT RAILWAY STATION.—Many of our readers are familiar with the railway-station at Ghent, and will be interested to hear that a large square space in it, left unoccupied in consequence of some recent alterations, has been utilised as a garden. Australian Palms, Mexican Agaves, Brazilian Musas—in fact, plants from all quarters of the world flourish side by side, foliage-plants being mixed with Pelargoniums, Begonias, and other summer flowers. The whole is a charming oasis in a desert of platforms and locomotives, and it gives pleasure to every traveller who passes it.

THE FERNERY.

THE WHITE FLY, ALEYRODES VAPORARIORUM.

IN my cool fernery this pest is one which is constantly attempting to invade it from the beginning of May onwards, and if allowed to obtain a footing it does more than any other pest to disfigure the plants. It appears not only to suck the pieces of the fronds, but also to gnaw their epidermis, since wherever they congregate or where one has settled for a short time, a sinuous white marking appears, not unlike that produced by the operations of mining grubs. During the winter, under the quite cold conditions to which my Ferns are subjected, they disappear entirely, and since the flies do not start with a maggot form, they do not hibernate as grubs in the soil. Eggs alone enable them to reappear the following season, and these are plentifully laid upon the discoloured fronds. The result is that deciduous Ferns are quite free from attack until the fitting or perfect stage is reached, while evergreen ones are the sole source of the succeeding generations, and show signs of their presence by minute markings as described as soon as the eggs are hatched.

Early in April the hatching begins, sometimes earlier in mild seasons, and the larvæ are then visible on the frond backs only as tiny, whitish, slow-creeping insects, which appear to travel but little, feeding exclusively on the old fronds on which they originate. It is quite a month or six weeks before they arrive at full growth, when they are light-brown in colour, and then after a short period of dormancy in a chrysaloid state they turn into the white or greenish-yellow flying form, and may then be found still on the undersides of the fronds in a more or less quiescent state for some days afterwards, especially if the weather be dull and cool. A warm day, however, stimulates them to activity, and their jerky snipe-like flight begins conjointly with a general attack upon all the Ferns, and very quickly with a general distribution of eggs, which now speedily hatch, the whole place becoming pervaded with fresh generations of life unchecked. With a knowledge of their genesis in the spring, however, as indicated above, it is fairly easy to nip the invasion in the bud by means of XL-All vapour in the proportions prescribed by the makers. I prefer the liquid form to the cake after trial of the latter. This remedy should be used in April as soon as the young are perceived on the old frond backs, and if applied then it will destroy the entire generation at one operation. If left until the white flying form is seen, two vaporisings are advisable at intervals of a week or ten days, since it is fairly sure that a certain percentage of the insects will be in their temporary dormant transition stage, during which they appear to be indifferent to the effects of the fumes, and consequently survive. The second fumigation destroys these, and none is left. Under warm winter conditions I cannot speak from experience as to their hatching-time, but it is clear that that is the point to study, as there is ample subsequent time to take measures to eliminate the pest. This fly is supposed to be an exotic introduction, but if so it has certainly naturalised itself thoroughly, for it is by no means confined to glasshouses, being plentiful all over the country where Ferns and probably other plants are weakened by over-shady conditions. In my own garden the Roses are a prey to it as well as the outdoor Ferns, and it makes its appearance in the flying state out-of-doors simultaneously with its fellows under glass. I have alluded to its erratic flight, and in this it reveals an instinctive cunning, since it may be seen darting in zigzag fashion to an adjacent frond, as we imagine, but

slipping behind it, it will settle on another, and thus elude our search unless we know the trick. The best way is to note where their fresh markings appear, or where the insects seem to alight, and then to glance upwards, when despite their colour they may be discerned as dark markings, and be caught by a rapid pinch of finger and thumb, as they are a trifle sluggish in starting, and in chilly or dull weather especially fly but little. *Chas. T. Druery, V.M.H., F.L.S.*

THE GROWTH OF CONIFERS.

THE following details relating to the trees at Murthly in Perthshire are taken from the last number of the *Proceedings of the Royal Scottish Arboricultural Society*. It is interesting to compare these figures with those given in the "Conifer Conference Report," relating presumably to the same trees, in the *Journal of the Royal Horticultural Society* (1892), vol. xiv., p. 533.

NAME OF TREE.	Year Planted	Girth, ft. in.		
		1892.	1900.	1904.
<i>Abies amabilis</i>	1885	...	...	1 11
" <i>brachyphylla</i>	1855	...	...	1 2
" <i>grandis</i>	1852	4 8	6 10	7 6
" <i>magifica</i>	1867	2 7	3 8	4 2
" <i>nobilis</i>	1847	6 1	6 6	7 8
" <i>Nordmanniana</i>	1854	4 0	4 9	5 4
" <i>Pinsapo</i>	1847	6 6	7 10	...
" <i>Veitchii</i>	1835	...	1 4	1 9
<i>Araucaria imbricata</i>	1847	4 0	4 8	4 10
<i>Cedrus Deodara</i>	1842	6 8	7 4	7 9
" <i>libani</i>	?	11 8	12 5	12 8
<i>Cupressus Lawsoniana</i>	1859	...	4 2	4 7
" <i>L. var. erecta viridis</i> ... ..	...	...	2 8	2 11
<i>Libocedrus decurrens</i>	?	3 6	4 5	4 11
<i>Picea ajanensis</i>	1885	...	1 7	2 3
" <i>sitchensis (Menziesii)</i>	1845	9 7	11 3	12 4
<i>Pinus monticola</i>	1850	5 6	6 2	6 6
<i>Pseudotsuga Douglasii</i>	1847	8 10	9 10	10 2
<i>Sequoia gigantea</i>	1857	9 3	10 7	11 9
<i>Taxus baccata</i>	?	...	10 8	10 10
<i>Thuja gigantea</i>	1862	...	3 7	4 3
<i>Tsuga Mertensiana (Albertiana)</i>	1860	5 5	6 4	6 9
<i>Castanea vesca (Spanish Chestnut)</i>	?	...	19 2	19 4

Note.—The measurements are taken at 5 feet from the ground.

In the Forestry Section at the recent Royal Agricultural Society's Show at Park Royal, photographs of a few of the largest Conifers at Linton Park, Kent, were exhibited. The measurements taken in 1903 were as follows:—

NAME OF TREE.	Years of age.	Height.	
		ft.	ft. ins.
<i>Abies concolor</i>	44	87	11 7
" <i>nobilis</i>	59	83	7 8
<i>Tsuga Mertensiana</i>	41	72	5 8
<i>Pinus austriaca</i>	64	83	9 0
<i>Sequoia sempervirens</i>	61	68	12 0
<i>Sequoia gigantea (Wellingtonia)</i>	44	81	12 1
<i>Pinus excelsa</i>	61	64	9 0
<i>Abies cephalonica</i>	59	73	11 0

Details concerning these trees were also given in the "Conifer Conference Report," p. 491.

PUBLICATIONS RECEIVED.—*Bulletin of the Department of Agriculture, Kingston, Jamaica, June.* Contents: Report on Diploma Examination, Bud-rot of the Coconut Palm. "The disease is the result of a bacterial rot of the terminal bud and its wrappings, including the flower-buds. Diseased trees should be felled, and the terminal bud burned or properly disinfected with sulphate of copper. Only the most energetic action is likely to avail."—*Royal Botanic Gardens, Kew, Bulletin of Miscellaneous Information.* Appendix III., 1905. Contents: New Garden Plants of the Year 1904, a valuable list for horticulturists and botanists.

The Week's Work.

THE FLOWER GARDEN.

By W. A. MILLER, Gardener to Lord HENRY C. BENTINCK, M.P., Underley Hall, Westmoreland.

The Wild Garden.—The following are a few of the stronger-growing plants in flower at the present time:—*Crambe cordifolia*, a Cruciferous plant, developing large panicles of white flowers; *Ligularia macrophylla*, with oval glaucous leaves and dense heads of yellow flowers; *Phlomis fruticosa*, a hardy shrub, with greyish-coloured foliage and yellow flowers, a useful subject for furnishing steep banks; *Carduus heterophyllus*, the flowers of this plant present a bright patch of purple colour, which, in company with the white-coloured variety of the Melancholy Thistle, forms a good contrast in colour; *Epilobium angustifolium*, the well-known Willow-herb.

The Rock Garden.—*Romneya Coulteri* should be furnished with liberal supplies of water to encourage strong growth. *Edraianthus dalmaticus* and *E. serpyllifolius* are both comparatively easy of culture. If the roots of these plants have been washed bare of the soil by heavy rains give them a top-dressing of sandy leaf-mould. *Bellis rotundifolia* *corulescens* should be planted in a sheltered corner of the rockery. *Lathyrus rotundifolius*, Wood's variety, develops a salmon-scarlet-coloured flower of very pleasing appearance. *Colutea bullata* is a "pigmy" amongst the Bladder Sennas, its crowded habit of growth is a noticeable character of the species. Keep a sharp look-out for snails.

Shrubberies.—See that freshly transplanted trees are well supplied with water, especially during a period of drought. *Kalmia latifolia* is a very choice shrub. It should receive the same treatment as is given to *Rhododendrons*, and forms a good subject for planting in the front row of the border, as it is rather slow in growing. It is a favourite plant for furnishing cut flowers, which last for a long time when placed in water. *K. angustifolia* is smaller than *K. latifolia*. *Zenobia speciosa* forms a good companion plant to the above. This plant requires shelter, and thrives well in a compost of loam and sandy peat. *Diervilias* are conspicuous shrubs when in flower, and succeed in any ordinary garden soil. The varieties *Van Iloutte* and *Eva Rathke* are of the best forms.

Dahlias.—Place strong stakes to support these plants, and frequently apply waterings of weak liquid-manure. If earwigs are destroying the growing points, trap them in small flower-pots half-filled with hay, and inverted on the top of the stakes. Rarer varieties can be propagated from small cuttings placed in a shaded propagating case.

Tulips.—Bulbs planted especially for supplying cut flowers should be lifted every two or three years after the foliage has become yellow and limp. Sort the bulbs, and store them till planting-time arrives. Late-flowering self-coloured varieties and the Parrot Tulips are excellent subjects for indoor decoration.

Anemone coronaria should also be lifted and divided when the foliage has matured. This plant can also be propagated from seed. Beds of the various kinds of *Narcissus* that have become too crowded should have the bulbs lifted and transplanted when the foliage has died down.

THE ORCHID HOUSES.

By W. H. YOUNG, Orchid Grower to Sir FREDERICK WIGAN, Bart., Clare Lawn, East Sheen, S.W.

Lalia Jongheana often fails to flower, the cause being in most instances that the plants are grown in too warm an atmosphere and shaded. The best results are obtained by growing the plants in baskets or perforated pans, suspended near the roof-glass of a cool intermediate-house, and kept there throughout the year. Should any of the plants need fresh rooting material, it may be afforded now whilst they are making new growth and roots. They must never be given large or frequent supplies of water, though naturally most will be needed when root-action is greatest. During the long resting period the plants will only require water after long intervals of time,

but it should be supplied before much shrivelling is evident in the pseudo-bulbs.

Laelia pumila and its variety *praestans* differ from the above in that these require more dense shading and ample supplies of water, though as regards temperature, &c., their requirements are nearly the same. These may be grown in small pans with perforations in the sides, good drainage, and a small portion of equal parts of peat and sphagnum-moss to root in. New growths are now starting, and repotting or renovation of the surface materials should be proceeded with ere long. The variety *L. p. Dayana* requires a cool, moist atmosphere at this season; it should be well shaded, and never be allowed to suffer a long period of drought at the base. Cultivate the plants in pans or baskets, affording plenty of drainage material, and a small portion of peat and sphagnum-moss, which may be renewed as soon as new growths appear.

Laelia cinnabarina, which has proved such a valuable agent for hybridisation purposes, is a somewhat difficult species to keep in good condition. A fair measure of success may be obtained by growing it at the cool end of a *Cattleya*-house in well-drained pots, and treating it somewhat similarly to the *Cattleyas*, though, if anything, it must be kept dry for a longer period, and only be given a very moderate supply of water when growing. During healthy root-action liberal applications may be administered if the plants are in peat and sphagnum-moss, but should leaves be introduced a more restricted supply must be given.

Laelia harpophylla should be grown under cooler conditions than *L. cinnabarina*, a moderately light position in the cool intermediate-house suiting it best. Having more slender pseudo-bulbs, the plants must not be subjected to protracted periods of drought, though when in a dormant state infrequent waterings will be all that is needed. This species succeeds when grown in a leaf mixture, which, however, should be kept very porous by adding some small crocks.

Laelia monophylla also thrives when leaves are added to the rooting medium. It may be planted in a pan half filled with drainage material, then adding a layer of the mixture and a surfacing of chopped sphagnum-moss. Suspend the plants at the warm end of an *Odontoglossum*-house, and whilst growing and developing their tiny floral scapes, keep the materials in a moist condition, but throughout the rather long resting period only apply water when shrivelling is anticipated.

Laelia flava, *L. longipes*, and allied kinds grow best in shallow baskets with very little material about their roots, and their cultural requirements are usually obtainable in a cool position in a *Cattleya* house. Much water is only required when the plants are rooting freely. *L. rubescens*, also known as *peduncularis*, should be grown in a basket placed near to the glass at the warmer and lighter part of this house, and be kept well on the dry side, excepting in the most active season.

THE KITCHEN GARDEN.

By W. FYFE, Gardener to Lady WANTAGE, Lockinge Park, Wantage.

Cabbage Seeds.—The early spring Cabbage is a vegetable of considerable importance, and the best variety that I know for this purpose is Ellam's Early, which has proved more satisfactory than all others grown side by side here. Sow the seeds on rather poor, well-worked, and clean ground. Throw plenty of lime into the soil during its preparation, and apply water if the soil is in a dry condition. Give a good dusting with soot previous to sowing the seeds. Sow thinly in order that the plants may have every chance from the commencement to grow sturdily and make many roots. The third week in the present month will be sufficiently early for the first sowing to be made, and a fortnight later the main crop may be sown; also seeds of the Red or pickling Cabbage, which in some establishments is much valued for cooking purposes. By about the third week in September these plants will be sufficiently advanced for planting out. Such varieties as Ellam's Early need not be given more than 15 inches between the rows, and a foot from plant to plant in the row. Larger-growing varieties will need a distance of 2 feet each way.

Peas.—Late crops are of considerable importance. When late plants are well above the ground, thin them out freely if they are too thickly placed. Then apply a mulch of stable-yard manure, and if the weather is dry afford plenty of water to the plants. When sowing late crops of Peas, bear in mind that they may have to withstand rough weather and high autumn winds.

Globe Artichokes.—Heads of fine quality can only be obtained from a good variety, and after liberal cultivation, otherwise this vegetable may be considered little better than an overgrown weed. During the summer months the plants require much moisture at the roots in the form of liquid-manure, and also liberal mulches of farmyard manure. If they are given these conditions, and the heads are kept regularly cut before the stem becomes firm, the fleshy scales, for which they are cultivated, will be in the best possible condition, and may be kept so for at least a week after being cut, provided the end of the stem is placed in water in a cool place.

Early Potatos.—When the ground is required for another crop the Potatos may be lifted and stored, but until the skins are well set the work will have to be done with the greatest care, and the tubers removed to a dark, cool site. Exposure to the light at this season would soon depreciate the appearance of the tubers for table use.

THE HARDY FRUIT GARDEN.

By W. H. CLARKE, Gardener to Sir WILLIAM PLOWDEN, Aston Rowant House, Oxon.

Layering of Strawberry Plants.—Immediate attention should be given to this work. Those cultivators will obtain the strongest layers who possess young plants put out late last summer for this purpose, and which have had all their flower-trusses removed. Such plants will produce very strong runners, equally valuable for layering for forcing, or for raising plants to be grown in beds. The variety *St. Antoine de Padoue*, if required for fruiting in pots during the coming autumn and winter months, should be layered at once into the pots in which they will fruit. Afford them close attention in regard to the application of water to the roots and syringing of the plants. Expose them to full sunshine. For forming permanent beds or for planting-out on the short cropping system, the layers should be placed in 3 or 4-inch pots, filling the same up to within 1 inch of the rim with a good rich compost, in which the plants will root very freely, placing a stone on each layer to secure it in position, and to conserve moisture about the plant. Only the strongest layer should be selected and the others be pinched off. After a month has elapsed the layers will be sufficiently rooted to be severed from the parent plant. Keep the pots moist during dry weather by plunging them to half their depth in the soil. Upon removing the rooted layers place them in a shady position for a few days. In some districts a few plants amongst some varieties become unfruitful, and care should be taken not to propagate from these. The Royal Hautbois may be grown on a partially shaded border or under the partial shade of trees. To secure fruitfulness, runners of this class must be obtained from a plantation having male and female plants.

Loganberries, Blackberries, &c.—As the new growths increase in length they should be kept free from the fruiting canes by securing them to separate poles. When the fruit has been gathered the plants should be treated as Raspberry-canecan. In districts where birds are very numerous, all ripening fruits will need to be protected with fish netting.

The Fig.—Attend to the growths of these, and secure for every shoot ample space for its development. Retain short-jointed shoots in preference to long and sappy ones. Trees carrying heavy crops and growing on porous soils should be afforded liquid-manure frequently, as advised in previous calendars.

The Codlin Moth.—This pest may be reduced by timely attention to the removal of all Apples which are infested with maggot borings. These should be carefully collected with all fallen fruits, and if not given to the pigs, should be destroyed by burning.

PLANTS UNDER GLASS.

By A. BULLOCK, Gardener to E. J. WYTHES, Esq., Copped Hall, Epping, Essex.

Amasonia punicea.—Propagation of this useful decorative plant by cuttings may still be done if it is desirable to increase the stock. Loam, peat, and silver-sand in equal parts should be the compost employed from the time the cutting is inserted until the plant blooms. Like most of the tender stove flowering plants, Amasonias are liable to attacks of mites and thrips, and precautions should be taken to guard against these pests by dipping the plants periodically in a solution of Quassia-extract. Pots containing the cuttings should be plunged to the rims in Cocoa-nut fibre upon considerable bottom-heat. Great care will be necessary to successfully cultivate the plants. Excessive supplies of water would prove fatal to them. During the period of growth let the plants be placed upon a shelf near to the glass in a warm and moist atmosphere, shading them from hot sunshine.

Thyrsacanthus rutilans may be easily propagated, and it is an effective plant for grouping in batches, &c. Cuttings inserted now and treated precisely as for Amasonias will furnish a good display of bloom during the winter months.

Jasminum Sambac, fl. pl.—The fragrance of this plant when in bloom is alone sufficient to render it indispensable, but it is also of easy culture. One plant will produce a number of growths suitable for making into cuttings. They should be detached with a good "heel" and placed in pans of silver-sand, pegging them down with a piece of wire or stick to keep them from shifting. Frequent waterings should be afforded them, and when the cuttings are nicely rooted they should be potted carefully into small pots and placed in a propagating frame for a few days. They will grow strongly, and when about 6 inches in length pinch the points out to ensure a bushy habit. The plants should be grown and flowered in an intermediate temperature, and where they will receive shade from the sun.

Hydrangeas.—Cuttings should be inserted singly in small pots for flowering in early spring.

Mignonette.—Make a sowing in pots. Use a compost of sifted lime-rubble, loam, and leaf-soil, and make this very firm in the pots. A few slates placed over the pots will shade the seeds from the sun, and also keep them cool, but must be moved directly there are signs of germination.

FRUITS UNDER GLASS.

By F. JORDAN, Gardener to Dr. CORBET, Impney Hall Gardens, Droitwich.

Strawberries.—An endeavour should be made to have all these plants in the pots in which they will bear fruit by the end of the present month. Use clean pots and provide good drainage, applying a dusting of soot over the crocks to keep out earth-worms. Good fibrous loam, manure from an old Mushroom-bed, with a sprinkling of bone-meal and of wood-ashes or lime-rubble, varying in quantity according to the nature of the loam used, will form a good compost. Pot very firmly and do not disturb the roots during the operation more than is actually necessary. As soon as the plants have begun to make fresh growth, place them on a good ash bottom on an exposed site where the sun's rays will reach them. Bear in mind that Strawberry plants should never be allowed to want for water at the roots. Pinch out the runners as they appear, and keep the soil in the pots free from weeds.

Peach and Nectarine-trees growing in pots in an orchard-house require very careful treatment. During the latter stages of growth the fruits swell rapidly, and rich stimulants should be given until the fruits approach ripeness. Over-cropping of weakly-growing trees should be particularly guarded against. Continue to pinch out the laterals until the end of the present month, and prevent any overcrowding of the shoots by removing such as will not be required for bearing fruits next year or for the proper furnishing of the trees.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Letters for Publication, as well as specimens and plants for naming, should be addressed to the EDITOR, 41, Wellington Street, Covent Garden, London. Communications should be WRITTEN ON ONE SIDE ONLY OF THE PAPER, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY, JULY 18	Royal Horticultural Society's Committees Meet, and National Carnation and Picotee Society's Show. National Rose Society's Show at Gloucester.
WEDNESDAY, JULY 19	Northumberland and District Flower Show at Newcastle (3 days). Wimbledon and District Flower Show.
THURSDAY, JULY 20	Horticultural Club (annual outing. Visit to Wisley).

AVERAGE TEMPERATURE for the ensuing week, deduced from observations of Forty-three Years at Chiswick—63'4".

ACTUAL TEMPERATURES:—

LONDON.—Wednesday, July 12 (6 P.M.): Max. 79°; Min. 64°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—Thursday, July 13 (10 A.M.): Bar., 30'3; Temp., 72°. Weather—Bright sunshine.

PROVINCES.—Wednesday, July 12 (6 P.M.): Max. 74°, Guildford; Min. 57°, N.E. Scotland.

The Chelsea Show of the Royal Horticultural Society.

FAVOURED with brilliant weather, and in an ideal situation, the Show of the Royal Horticultural Society in the grounds of Chelsea Hospital was in so far a great success. The site was all that could be desired, with fine trees, shady avenues, and ample space for tents and visitors. Close by are the Ranelagh Gardens, under the charge of an old Chiswick man, and themselves good examples of the landscape gardener's art, with their picturesque undulations, the well-kept sward, and the trees, many of which are of great interest and beauty. The gardens, tended by the Chelsea pensioners themselves, often decorated with the flag they served so well, and filled with Carnations and other flowers, together with succulent Lettuces, are pathetic, and call for sympathy and gratitude to the veterans who are passing the evening of their lives in this pleasant retreat. Very pleasant also was it to hear Sir GEORGE WHITE'S crisp speech at the luncheon given by the Council to the Committees. Sir GEORGE WHITE—he of Lady-smith—is now Governor of Chelsea Hospital, and it was largely to him that the Society was able to hold its show in so admirable a site. An acknowledgment was therefore due to him, and his impromptu speech in reply, though brief, was quite one of the best we ever heard on a similar occasion, and served, had such been necessary, to deepen the gratitude and respect felt for the distinguished soldier.

As to the Show itself it was large, and the space available was large also, so that the crowding experienced at the Temple was not felt here. As an exhibition it was exceedingly pretty, and the quality of the exhibits good throughout, though, so far as we saw, there was no very striking novelty or plant of special interest. But the site and the other circumstances we have mentioned rendered the Show one of the most pleasant

and satisfactory within our recollection. Occasion was taken, as we have already mentioned, by the President and Council to call the Committees together at the luncheon and to express, through the President, an acknowledgment of the services so disinterestedly rendered by the members. It is not often that the Council and the Committees can meet together, but such meetings are most advantageous and agreeable, tending as they do to facilitate the work of the Society, and to promote goodwill and earnest co-operation all round. We must not forget the heavy labour thrown on the Secretary, the Superintendent, and the members of the staff on these occasions, nor can we fail to acknowledge their courtesy and assistance to the Press. For the details of the Show we must refer our readers to another column.

Some of the visitors to the Royal Horticultural Society's show took the opportunity to look in at the old Physic Gardens, which is not more than five minutes' walk from the site where the show took place. The alterations which have been made in the Physic Gardens during the short time that has elapsed since its reorganisation are very marked indeed. We have never seen the Garden in such generally good condition as it is now. Mr. W.M. HALES has not only shown that he could remake the walks, restore the verges to neatness and make and keep the Garden tidy, but that he is also a first-rate cultivator of plants.

There is now a very nice selection of species in the houses, a selection that is especially useful to students, and the species are happily represented by well-grown examples. There is no reason why a collection of botanical plants should appear "weedy," if the same pains be taken to grow them well as are bestowed on the culture of decorative plants in any good garden. In the beds out-of-doors the same care is evident, and the examples of this and that "Order" are very much better than they might be expected to be in such an unfavourable situation. We will only mention one instance of this, though there are many that could be enumerated. *Romneya Coulteri* has grown to a bush of about five feet high, and as much through. At the present time this fine specimen is furnished freely with flower-buds, that in the course of a few days will afford quite a delightful show.

BRUSSELS BOTANIC GARDEN.—Our Supplementary Illustration shows a view in the Victoria-house at the Brussels Botanic Garden. It tells its own tale, but it also gives us an opportunity of alluding to the changes that have been made in the arrangement and disposition of the plants. In times not far remote, a botanic garden, especially a continental one, was too often a miserable spectacle. The cultivation of the plants was bad, the houses ill-constructed, the means at the disposal of the authorities wretchedly inadequate, and the arrangement of the species, such as it was, strictly according to the natural orders to which the plants belonged. Nowadays, a different plan is carried out. Classification is not neglected, but in addition physiology, variations and adaptations to circumstances are illustrated by the living plants. At Brussels, and to some extent at Zurich and at Basle, it would almost seem as if the directors had taken DARWIN'S *Animals and Plants under Domestication*, DE VRIES' lectures or similar works, and had set to work to illustrate

them (so far as the plants are concerned), so that the books in question form to a certain extent a detailed catalogue of the contents of the garden. Some pamphlets explanatory of the arrangements made at Brussels may, from their completeness, be taken as an index of the various adaptations to circumstances manifested by plants, of their manifold variations, their response to stimuli, their hereditary characteristics, and so forth. In the Cactus-house at Brussels the plants are even so arranged that they show the presumed relationship and derivation of each group. A genealogical tree is thus constructed, the study of which cannot fail to impart to the observer new ideas as to the meaning of the conformation of the several plants, and to enable the student to appreciate the significance of much which before was meaningless. A botanic garden so arranged is thus made the means of conveying much more varied information than was formerly the case.

FLOWERS IN SEASON.—From Messrs. ROBERT VEITCH & SON, of Exeter, we have received a collection of interesting and attractive plants, such as *Coriaria terminalis* with long spikes of yellow berries (see *Gardeners' Chronicle*, October 24, 1903, p. 282), *Lonicera Hildebrandtiana*, the remarkable Honeysuckle with very long yellow flowers (see *Gardeners' Chronicle*, September 17, 1898, p. 219).

Spiraea Aruncus Kneiffii.—A variety with the elegant spray-like inflorescence of the common form, with remarkably deeply lacinate foliage.

Ceanothus "Indigo".—A form whose name is indicative of its colouration.

Dianthus Emile Paré is one of the mule pinks, of free-flowering habit, and small flesh-coloured double flowers.

Genista ænensis.—A leafless or nearly leafless species, with numerous slender, cylindrical, green branches (virgate), bearing dense masses of yellow, pea-shaped flowers.

—Mr. R. LINDSAY, of Murrayfield, Midlothian, sends us a specimen of a shrubby *Senecio*, *S. Buchananii*, from New Zealand. It has ovate, leathery, rugose leaves covered with rust-coloured down on the under surface. The flower-heads are numerous in terminal panicles, without any ray-florets. Mr. LINDSAY tells us it forms a compact bush about 2 feet in height.

"BOTANICAL MAGAZINE."—In the June number coloured figures and descriptions are given of the following plants:—

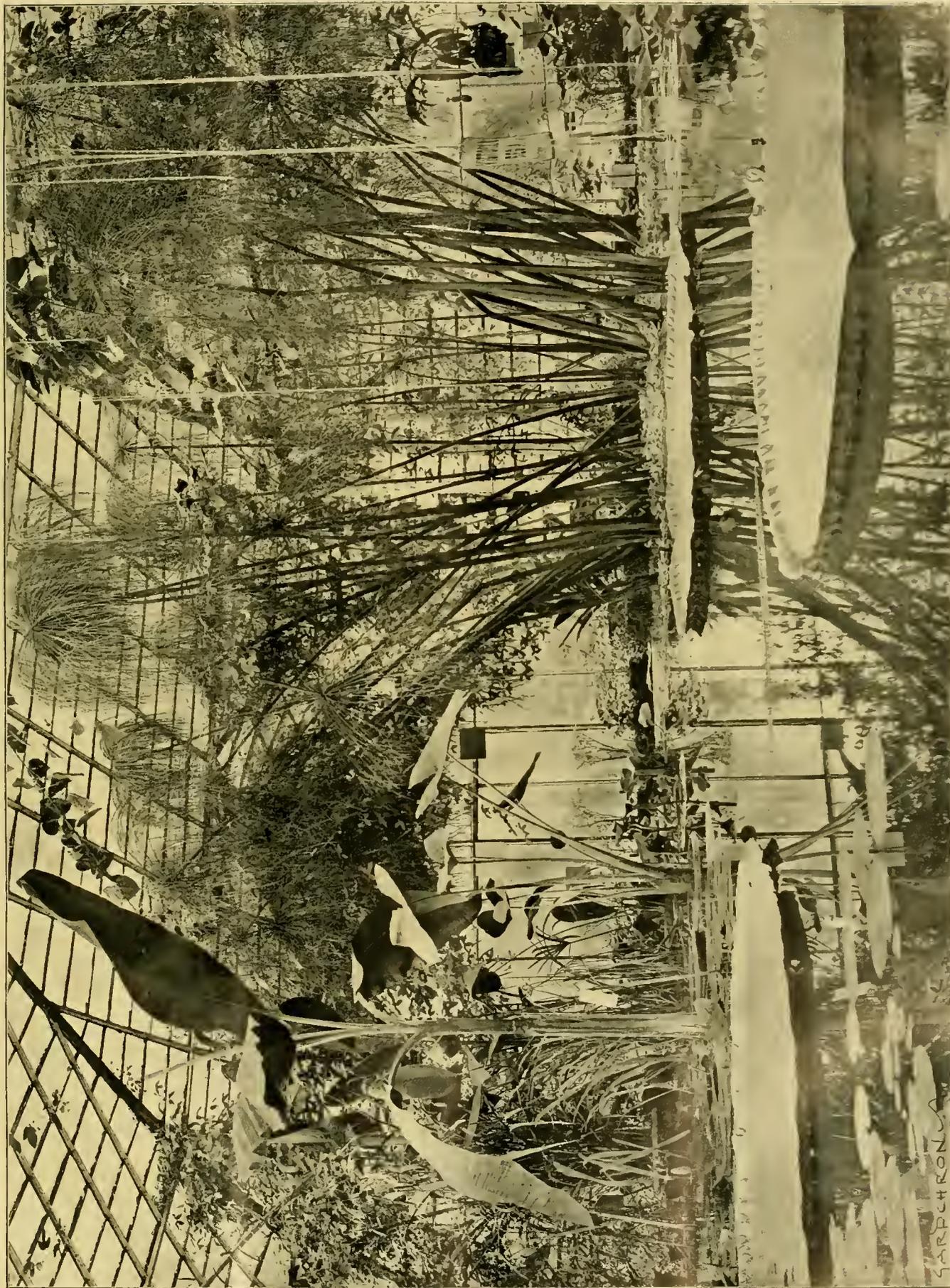
Cucullia tuberosa, Nuttall, t. 8022.—An extraordinary plant with great, broad, many-ribbed, succulent leaves like those of a *Funkia*, but with a loosely-branched corymbose cyme bearing what look like the fruits of some Umbellifer, but which examination shows to be Composite flower-heads. It is a native of North-east America, but the specimen figured was communicated by Mr. W. E. Gumbleton.

Pernettya mucronata, Gaudichaud, t. 8023.—A plate showing varieties with differently coloured berries. The rarity of colour-variation in fruits, at least so far as decorative purposes are concerned, is commented on.

Coleus shirensis, Gürke, t. 8024.—A species from British Central Africa closely allied to *C. thyrsoideus*, but differing in the foliage. It flowered at Kew during the winter and early spring.

Colchicum Steveni, Kunth, t. 8025.—A Levantine species which produces its small lilac-coloured flowers simultaneously with the leaves. The flowers are destitute of the checkered markings so conspicuous in other species.

Listrostachys Monteirae, Rehb. f., t. 8026.—An Orchid from West Tropical Africa with the habit of an *Angræcum*, bearing long, pendulous racemes of buff-coloured, long-tailed flowers from the axils of broad, oblong, retuse leaves. Kew.



VIEW IN THE VICTORIA HOUSE IN THE STATE BOTANICAL GARDENS, BRUSSELS.

THE VICTORIA NECTARINE.—This is a variety whose fruits are of rich flavour, of rather more than moderate size, and which are generally more or less green in appearance. It is essentially a Nectarine that requires to be grown under good conditions in a glass-house. We have recently received half-a-dozen fruits from Mr. W. HONESS, Cobham Park Gardens, Cobham, that were so highly coloured that they might easily have been mistaken for another variety. It is only in favourable southern districts that Victoria can be grown so well, but when this has been done the variety is superb.

DAMAGE BY THUNDERSTORM.—Much damage was caused to garden crops in Middlesex, Surrey, and Essex on Sunday, July 9, when a violent thunderstorm, accompanied by a deluge of rain, visited London and the neighbourhood. Our correspondent, Mr. MARKHAM, Wrotham Park Gardens, Herts, states that the rain-gauge there measured 3 inches of rain during the day, and that the fruit and vegetable crops were almost decimated by the large hailstones that fell. Mr. STEPHEN CASTLE writes, stating that in Mr. J. SWEET'S market nursery at Whetstone the damage to glass in the vineries and plant-houses was very great, but it is practically covered by insurance. Far greater damage was, however, done to the 100,000 plants in the standing beds outside. Ericas were badly cut, and damage is feared also from the fact that the pots were flooded. Marguerites were entirely ruined. Hydrangeas were riddled, and rendered almost leafless.

WAKE UP, OXFORD!—According to a statement published in the current number of *Nature*, no less than a sum of £564,000 as capital and an annual income of £93,000 is required in order to bring the University up to its proper level as a means of advancing learning in various branches, not omitting the classical and modern languages, mathematics and theology, but including also many subjects now imperfectly provided for. We have slipped so far behind American and German, and to some extent even Japanese educational establishments and methods that the sums above mentioned, though apparently large, are doubtless no more than adequate. In the same journal we read that Mr. ROCKEFELLER has presented to the General Educational Board, for the extension of higher education in the United States, the sum of £2,000,000, as well as a gift of £200,000 to Yale University. After that the half-million asked for Oxford seems paltry.

WATER-CARNIVAL IN GHENT.—On the occasion of the seventy-fifth Anniversary of Belgian Independence, the Communal Administration of Ghent organised a most successful water-party. This took the form of a procession of boats, some fifty-three in all, prettily and artistically decorated with flowers and other ornamental accessories. Knowing well the natural advantages of the town for such a water carnival and the excellent taste of our Belgian friends, we can well understand that the scene was very beautiful. Enormous quantities of flowers were employed; we read, for instance, of more than one thousand blue-flowered Hydrangeas being seen in one arrangement, charmingly blended with pink varieties of the same plant. The whole affair reflected much credit on both organisers and participators.

OVER-SEA SUPPLIES: JUNE.—The Trade and Navigation Returns for the past month continue to bear an inspiring aspect, both imports and exports exhibiting an increase as compared with June, 1904—the latter being very marked. The imports reached £43,557,407, as compared with £42,196,784 for the same period last year. The exports are recorded at £25,985,397, as compared with £24,069,770 for June last—an increase of

£1,915,627. Appended is our usual list of fruit and vegetable imports:—

IMPORTS—JUNE.	1904.	1905.	Difference.
Fruits, raw—	£	£	£
Apples	113,679	53,177	-60,502
Apricots and Peaches	4,619	6,911	+2,302
Cherries	170,623	146,723	-23,900
Gooseberries	13,402	7,183	-6,219
Pears	974	98	-876
Plums	1,353	219	-1,134
Strawberries	39,360	28,326	-11,034
Vegetables, raw—			
Onions ... ..bush.	46,989	50,251	+4,562
Potatos ... ..cwt.	681,083	644,232	-36,851
Tomatos	135,927	124,869	-9,058
Gross total, including varieties of fruits and vegetables not enumerated in this Table	1,698,334	1,484,781	-213,553

Compared with the above totals, those for June, 1885, only twenty years since, are of interest to all: Apples, 389 bushels; miscellaneous (the only other record), 191,009 bushels; total value, £170,867. The reader is doubtless aware that there has long existed in Rotterdam an Onion and Potato Exchange, doing business during part of the year. Fruit and vegetables generally are now to be added to the business, and the Exchange will be open all the year round. Imports of cut flowers for the past month were valued at £13,115, as against £12,475 for June, 1904—a gain of £640.

MEDAL FOR STRAWBERRIES.—We omitted to state on p. 34 that Messrs. GEO. BUNYARD & Co., Maidstone, were awarded a Silver Knightian Medal for the collection of sixteen varieties of Strawberries exhibited at the Royal Horticultural show on the 4th inst.

"THE BOOK OF THE SCENTED GARDEN."—By F. W. BURBIDGE. (JOHN LANE, The Bodley Head, London and New York.) This book is an expansion of a paper on "Fragrant Leaves v. Sweet-scented Flowers," read before the Royal Horticultural Society in 1898. It makes pleasant reading, for it includes legends and poetical quotations as well as more serious discourse concerning the sense of smell and its use or neglect. The essential oils and their uses are mentioned, and so are chemical perfumes. There is no attempt to compile an absolutely complete reference work upon vegetable perfumes. At the same time, most of those best known are mentioned. A chapter on the scent of fruits would have proved interesting. Mr. BURBIDGE claims that floral odours are evanescent and leaf-odours permanent, or, as he expresses it: "Flower perfumes are positive, being mostly given off whether we like it or not; and some people are so extremely sensitive to perfumes that those of Hyacinths, Narcissus, some Lilies (especially *L. auratum*), and even Roses, prove disagreeable, and at times actually injurious. To those who suffer from strong floral perfumes I can strongly recommend the more negative qualities of fragrant leaves." A list of books relating to the subject, from Exodus to BULWER LYTTON and Mrs. EWING, is given, as well as an alphabetical list of plants yielding perfumes, and a general index. We should have liked to see some further allusion to the purpose and significance of these varied perfumes. Some mention might also have been made of the atrocious odours of some Arums, *Stapelias*, *Phallus impudicus*, &c., because, however objectionable to us, they are evidently appreciated by other members of the cosmos, and have their place in the vast system of the universe. Altogether this is a welcome addition to the Handbooks of Practical Gardening—a series to which we have frequently before had occasion to refer favourably.

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his Correspondents.)

THE NATIONAL SWEET PEA SOCIETY.—My primary object in writing this letter is to appeal to schedule-framers and committees of societies to request that in framing their schedules and regulations to exhibitors they will adopt clear and unmistakable terms, and will refrain from imposing conditions that exhibitors cannot comply with accurately unless they possess the precision of an automatic machine. In Class 1 for nineteen bunches of Sweet Peas, in which was offered the Sutton Challenge Cup, a Gold Medal and £3 in cash as the 1st prize, some half-dozen (I believe the correct number was eight) of the collections were disqualified owing to the inclusion of one or two flowers too many throughout the whole collection of nineteen varieties. Amongst these unfortunate exhibitors were several members who have supported the Society from its start, and have become annual exhibitors, and the collections were brought and staged, after being grown specially for the class, from a distance of over 300, 200, and 100 miles respectively. Is it fair to these exhibitors, who did their best to comply with the conditions of the competition, that it should be possible for them to be disqualified simply because in a collection of Sweet Peas, in which they were required to set up 350 flower-stems, they happened to have 381 or 379? Strangely enough the judges passed over those exhibits which contained fewer than the required number, and awarded prizes to two of these collections, some of the vases containing only fifteen and eighteen flowers. Now the schedule reads thus:—

"Class I. Special Audit Class.—Nineteen bunches of Sweet Peas." (The varieties to be shown are specified.) At the top of this page of the schedule is a head-note—"In Classes 1 to 35 inclusive twenty sprays shall form a bunch, more than this will disqualify."

Now I maintain that fifteen or eighteen sprays do not constitute a bunch according to the terms of the schedule, therefore those exhibits which contained fewer than twenty sprays in a vase were equally "not according to schedule." I do not pretend to say that the judges were wrong in disqualifying those exhibits in which they found in one or two vases twenty-one flowers; but I do complain of the stipulation that makes such an error difficult to avoid. I will also show that the judges in their endeavours to follow the stipulations of the schedule on this one point, passed over far graver grounds for disqualification which were found to exist in two of the collections to which they awarded prizes. As there were but three of the collections in this class which the judges had not disqualified, several of the unfortunate exhibitors asked to be allowed to scrutinise these more fortunate exhibits. Permission to do this was granted by the Secretary and Chairman of the Committee, and in the presence of a member of the Committee and an outsider appointed by the Secretary, a thorough investigation of these exhibits was made, with the result that in the collection which had been awarded the 1st prize was found a vase containing twenty-one flowers; in that which was awarded the 2nd prize was a vase containing two varieties, viz., *Lovely* and *Jeanie Gordon*; while the vase which was supposed to represent *Jeanie Gordon* contained a variety that was not allowed in the competition at all. The remaining collection (awarded the 3rd prize), which averaged sixteen or seventeen flowers in a vase, also included a vase containing two varieties. These facts were proved conclusively, and admitted both by the Secretary and the Chairman of Committee. In my opinion, after this had been proved, one of two alternatives should have been adopted. Either the whole of the exhibits should have been disqualified and the competition have been rendered void, or the collections should have been judged on their merits by independent judges. For my own part I can easily understand how such a mistake might be made (twenty-one flowers were found in two of my vases). I have always made a practice when staging flowers at the National Sweet Pea Society's show to count out twenty of the best flowers

from a variety, and then proceed to arrange a vase. Placing them in one by one, I possibly come across a flower that is not quite up to colour, or which has some other defect. It is put aside and another flower is substituted to make up the exact number. Perhaps one's attention is diverted for the moment by some inquirer, or by some unavoidable jostling of passers-by in the busy room, and two flowers have been added instead of one, or the offending flower has not been abstracted. Such a mistake is almost excusable when one has to put up say some sixty or seventy bunches in a given time, and the exhibitor wishes to stage them to the best advantage. If a slight margin were allowed a poor flower might be discarded without having to include another. It is very disappointing when exhibitors have spent some hours in staging their flowers to the best of their ability to see them so grievously disarranged as they were at this show in order to ascertain whether there was one flower [spray] too many in a vase. I am convinced that had the whole of the classes throughout the show been scrutinised in the same way the majority of the exhibits would have been found to contain similar mistakes. In class 2, for nineteen varieties also, the same judges acted, and two of these collections were disqualified for the same reason, but that which was awarded the 1st prize held a vase containing eleven flowers only. Should not that have been disqualified when "twenty flowers [sprays] shall form a bunch"? *F. J. Clark, Wistow Gardens, Leicester.*

— It is doubtful if there was ever such a scene in an exhibition-room as that which occurred in the Hall in Vincent Square on the occasion of this annual exhibition. Those who were not present, but have since read the reports, will know that ten of the twelve competitors in Class 1, for nineteen bunches, were disqualified, nine of them for having more sprays than the stipulated number (twenty) in a bunch. In addition to the six cash prizes in this class, the Sutton Silver Challenge Cup and a Gold Medal were offered to the winner, which handsome prizes render the disappointment all the greater to the exhibitor who had the best exhibit, but who through an inadvertence was ruled out of competition. As one of the judges who has enjoyed the honour of acting in that capacity in the two leading classes since the inception of the Society, I must say that it was the most disagreeable task that has ever fallen to my lot. If any of the exhibitors felt more miserable than I did I pity them! When I and my colleagues (Mr. C. Foster, Reading, and Mr. Burpee, New York) received our instructions as to the classes, we were entrusted with, we were told to be very particular as to the number of "sprays" contained in each bunch. In closely scanning the first exhibit we quickly found more than the orthodox number. I reported the matter to the Secretary, who was emphatic in his adherence to the rule—or special clause. In a short time we found many had committed the same error. I once more consulted him, pointing out what must eventually happen, that the whole class would be spoilt and broken up, giving much annoyance and possibly damaging the otherwise splendid display. Like a true soldier, Mr. H. Wright said, "You must carry out the regulation at any cost." We then made what I call a wholesale disqualification. The exhibitors as a body took the disappointment very well, and I think were satisfied with the explanation we gave them afterwards. Now the next point to consider is, what is likely to be the result of such wholesale disqualification, and what is the remedy? In the first place nothing but harm must follow to the Society. Although exhibitors know they were to blame, they will be chary again of going to such trouble and cost, to find all their labour lost by the inadvertence of including just one more spray than the regulation number. Now, in my opinion, the remedy is a simple one. Stipulate for so many bunches to be staged in the Society's vases which are of a uniform size and cannot hold more than a reasonable number with credit, allowing exhibitors to place whatever number they choose, in the same way that garden Roses are now exhibited. The judges would then have a more pleasant task, as they

would then consider quality of bloom, and would know how to deal with over-crowding. As long as the vases were of a uniform size, all competitors would be placed on an equality. The adjudication would then simply hinge upon correct nomenclature, quality of bloom, and taste in arrangement. If the Executive Committee think well to adopt a suggestion of this character, I believe they would act wisely in the interest of exhibitors and the Society. *E. Molyneux.*

"CROCUS ROTULORUM."—A writer in a Dunstable newspaper comments on this rare plant. The name occurs on a tablet a hundred years old in Millbrook church, Beds, erected to the memory of one Thomas Allen, a groom, by John, Earl of Upper Ossory, Amphill. The Earl himself caused the memorial to be erected, and he gives his own title as "Lord Lieutenant and Crocus Rotulorum." The manner of the groom's death is also mentioned, as well as the very great age of a horse and its burial in Millbrook churchyard, for the inscription states that the groom died "in consequence of a blow from a horse" (whether from the mouth or not is not stated) "his Lord had just dismounted him, aged 81 and is buried in this churchyard, 1805." *Custos Rm.*

LARGE STRAWBERRIES.—This season I have grown two continental varieties of Strawberry, which I imported from France. They are Gloire du Maris and Avant-Garde. The first, to my thinking, is by far the finest both in colour and size that I have ever seen. The bed where they are planted is small, yet nevertheless from a morning's gathering one weighed over 2 ounces, two turned the scale at 2 ounces, and several were 1½ ounce, and of a somewhat conical shape, while the general growth was large. The colour is a bright orange-vermilion, even, and extremely beautiful. When fully ripe the flavour is delicate and sweet. The seeds are a buff-yellow, and slightly imbedded. The inflorescence is large and plentiful, and the plant growth is healthy and strong. It is early and may be said to be prolific. It is the best fruit of the kind that I have hitherto had. Avant-Garde is small in berry; its flowers are pink, which is a new colour. It is not worth growing, the fruit being anything but pleasant to the palate. I still find the piquant Sir Charles Napier not only pleasing to the eye, but with crushed white cane sugar and cream it is delicious for the dessert. Waterloo is as usual excellent, but not very prolific. *Harrison Weir, Poplar Hall, Appledore, Kent, July 9.*

CALODENDRON CAPENSE.—It may interest readers of the *Gardeners' Chronicle* to know that my specimen in Italy of this beautiful tree has been covered for weeks with a profusion of beautiful flowers, resembling those of the Horse-Chestnut. It was planted at La Mortola about thirty-five years since, and has attained a height of 30 feet. *T. Hanbury.* [This species was figured in our issue for May 13, 1905, p. 292, and Supplementary Illustration. Ed.]

REFRESHMENTS AT THE ROSE SHOW.—The "tea under the shade of the trees" at the late Rose Show at the Regent's Park was for the few only, both accommodation and attendance being quite inadequate for the needs of the visitors. Those who ventured to wait upon themselves and carry away chairs and ices to some little distance from the refreshment-room were unfortunate in finding the ices unacceptably salt and otherwise undesirable. The scarcity of waitresses, of tables and of chairs, and of tempting refreshments, was the subject of much comment. [Many similar complaints have reached us with reference to the refreshments at the Temple, and even at Chelsea, and as these complaints are repeated annually it would be well if the organisers of these shows would make some effort to improve matters. Ed.]

ASTER SUB-CÆRULEUS.—With reference to your illustration of *Aster sub-cæruleus* in a recent issue, we should like to say that we showed this plant in fine condition before the Royal Botanic Society on June 7 last, when it received a First-class Certificate. *R. Wallace & Co., Colchester.*

KEW NOTES.

THE NYMPHÆA-HOUSE.—This is always a great attraction to the numerous visitors throughout the summer months, and the many curious and beautiful plants grown therein are a source of much wonder, more especially so the curiously shaped Gourds, there being many enquiries as to their utility for culinary purposes.

Although the house was quite empty and in the hands of the painters until the middle of March, it is now well furnished with a great variety of plants, some of the climbers having made 30 to 50 feet of growth, and the numerous aquatic plants have been in their full beauty for some time. *Nelumbium speciosum* is now a mass of foliage, with a good crop of flowers developing; some of the leaf-stalks are 7 feet in height, surmounted with large handsome peltate blades. Other tall-growing aquatics are *Æschynomene indica*, with pithy stems 10 feet in height; *Hydrolea spinosa*, with tall spiny stems and masses of small bright blue flowers. *Thalia Schumanniana* is a new Maranta-like plant which promises to make a fine specimen. *Lasia heterophylla* is an interesting Aroid, with a slender red-black spathe, which succeeds well under aquatic conditions. Amongst the smaller plants in the tanks, *Hydrocleis Comersoni* is very beautiful with its floating leaves and large bright yellow *Enothera*-like flowers; and also *Heteranthera reniformis*, with small white stellate flowers. Amongst the other aquatics grown are *Pistia stratiotes*, *Cabomba caroliniana*, *Neptunia oleracea*, *Vallisneria* (male and female), and *Limnobium bogotensis*.

The Nymphæa-tank is in very good condition just now, the flatness of the Nymphæas being relieved by *Sagittarias*, *Pontederias*, the giant Papyrus, and also by the large pans of *Hedychium* grown near the edge, many of which make growths 8 feet in height. *H. spicatum*, *H. elatum*, and *H. coronarium* are amongst the kinds that are grown. *Nymphæa gigantea* occupies the centre of the water, its large blue flowers being the finest of all blue Nymphæas. Other species, hybrids, and varieties now flowering are *N. Omarana*, *N. Deania*, *N. pulcherrima*, *N. Rudgeana*, *N. flava*, *N. Lotus*, *N. L. rubra*, *N. L. dentata*, *N. L. devoniensis*, *N. L. thermalis*, *N. stellata*, *N. s. cœrulea*, *N. s. cœrulea* "Berlin variety," *N. s. zanzibarensis*, and also *N. s. zanzibarensis* var. *rosea*. The plants growing in the border round the house are too numerous to mention; the most conspicuous are probably the groups of bright-coloured *Acalyphas*. Others worth special notice are *Dyschoriste Hildebrandtii*, *Eranthemum tuberculatum*, *E. variegatum*, *Oxalis Ortgiesii*, *Sanchezia nobilis*, and *Astrochilana ugandensis*, which is a new species from Uganda.

Perhaps the most striking of the Cucurbitaceae are *Lagenaria enormis*, the Bottle-Gourd; *Trichosanthes anguina*, the Snake-Gourd; *Luffa ægyptica*, and *Benincasa cerifera*, which has a large fruit the shape of a Vegetable-Marrow, with a white, mealy surface covered with stiff hairs; *Dioscorea prehensilis* is a rapid climber with a curtain of growth 50 feet in length. The root-stock is the most extraordinary part of the plant; it has large tubers at the base enclosed in a network of strong roots, which are covered with very stiff spines, apparently Nature's protection of the tubers from burrowing animals. *Solanum pensile* is one of the most showy amongst the climbers with its large, pendent panicles of dark blue flowers. *S. Wendlandi* and *S. Seafortianum* are also grown on the roof. *Vitis pterophora* is a very beautiful species with stems 40 feet in length and red, aerial roots growing down to the ground. In the porch may be seen a border of the fine *Impatiens Holstii* [figured in our issue for July 1], bushy plants 1½ foot in diameter, and flowering very freely. It should become one of the most popular of greenhouse plants when more widely known. *W. H.*

SOCIETIES.

THE ROYAL HORTICULTURAL. SUMMER SHOW AT CHELSEA.

JULY 11, 12, 13.—The second summer Exhibition of the Royal Horticultural Society has this season been held in the grounds attached to the Royal Military Hospital, Chelsea. Until three years ago, exclusive of the ordinary fortnightly meetings, the Society held but one great show in the Temple Gardens, but since that time, from the courtesy of the owner, there have also been displays in Lord Hechester's park at Holland House, Kensington. Suitable and delightful as Holland Park is for the holding of such a show, it has been evident during the present week that the Chelsea Hospital grounds are equally so. It was a pleasant revelation to many of the visitors to learn that there are so many acres of grass, large trees, and shrubs in the heart of Chelsea as are contained in these grounds and in the adjoining Ranelagh Gardens.

In order to give an idea of the extent of the exhibition, we may say that, according to Mr. Wright, who had the management of the show, the area covered by the five tents was 2,400 square feet more than is available for the purpose in the Temple Gardens. The exhibition at Chelsea was a decided success, apart from financial considerations, of which we know nothing, although it can hardly be said that there were any novelties of outstanding importance.

The ORCHID COMMITTEE recommended Awards, including two First-class Certificates and two Awards of Merit, and the FLORAL COMMITTEE seven Awards of Merit.

At the luncheon offered to the Committees and Judges speeches were made by Sir Trevor Lawrence (who said the Society had now 9,200 Fellows), Sir George White, Mr. T. Challis and Mr. George Paul.

We are indebted to the Sécrétaires, also to Mr. Frank Reader and the rest of the Society's officials, for the courtesy shown us on this and similar occasions.

Orchid Committee.

Present: Norman C. Cookson, Esq., in the Chair; and Messrs. Jas. O'Brien (Hon. Secretary), De B. Crawshaw, J. Gurney Fowler, F. Sander, J. Colman, H. J. Chapman, H. T. Pitt, W. Cobb, F. W. Ashton, W. H. Young, W. H. White, A. A. McLean, H. A. Traey, G. F. Moore, W. Doxall, W. Thompson, R. G. Thwaites, H. Little, T. W. Bond, R. Brooman-White, W. Bolton, and H. J. Veitch.

The Orchids occupied one side of the central staging in the large tent.

JEREMIAH COLMAN, Esq., Gatton Park, Reigate (gr., Mr. W. P. Bonnd), staged the first group, a very fine display, and excellently well arranged. From the back the long twining spikes of large yellow flowers of *Oncidium macranthum* were arching forward among sprays of *Asparagus scandens*, some hundred feet of this graceful festooning being used. In the middle was a neat and attractive arrangement of white *Cypripedium niveum*, together with bright tufts of British Orchids, a novel feature. Among them were *Orchis pyramidalis*, *O. maculata* and *Ophrys apifera*. Behind them and beneath the sprays of *Oncidiums*, was a good selection of *Pitheche* plants, including *Nepenthes Mastersiana* × *N. Curtisii*, *N. Hookeriana* × *N. Curtisii*, and other *Oncidiums*, the best being *O. crispum* Mary Coleman, a fine white flower with a large purple blotch on each segment. Others noted were *O. × Wilekanum* Rothschildianum, good *Epidendrum prismatocarpum*, *Phalenopsis Rimestadtiana*, *Miltonia vexillaria alba*, bright *Masdevallias*, *Lælio-Cattleya* × *Canhamiana alba*, *L.-C. × Wilsoni*, *L.-C. × Sunrise*, *Cattleya Mendeli*, *C. Warscewiczii*, *Miltonia Warscewiczii*, *Dendrobium* × *Cassiope*, *Bulbophyllum harbigerum*, &c. At each end were arrangements of the orange-scarlet-coloured *Epidendrum* × *Boundii*, which is almost perpetual-flowering.

MESSRS. CHARLES-WORTH & CO., Heaton, Bradford, had a very fine group of considerable variety, but chiefly hybrids. Two of the finest were a grand dark-coloured form of *Lælio-Cattleya* × *Dominiana* and an equally fine *Cattleya* × *F. W. Wigan*. The centre of the group was made up of a fine selection of *Lælio-Cattleya* × *Aphrodite*, *L.-C. × eallistoglossa*, *L.-C. × Canhamiana* and other *Lælio-Cattleyas*, *Cattleya Mossie Reineckiana* and *C. M. variabilis* were

very fine; *C. Eldorado alba* and other *Cattleyas* good and well bloomed. The best of the *Cypripediums* was *C. × Daisy Barclay* (Godfroyæ leucocheilum × Rothschildianum), a fine white flower with claret-purple lines. Other good things were *Brasso-Cattleya* × *Helen*, *Phalenopsis violacea*, *Odontoglossum* × *Othello*, *O. × Rolfeæ*, and other hybrid *Odontoglossums*; *Ornithocephalus grandiflorus*, *Oncidium macranthum*, *Brassia Gireoudiana*, *Zygotetulum xanthinum*, *Lælio-Cattleya* × *Lucilla* var. *dulsis*, a pretty yellow flower; and a very remarkable generic hybrid named *Schom-Cattleya* × *spiralis* (*Schomburgkia tibicinis* × *C. Mossie*). The growths much resembled a stout *Lælio-Cattleya* × *Schilleriana*, with two to three ovate, hard leaves at the top. Inflorescence produced like that of *Schomburgkia*, with a cluster of flowers at the top of a stem 18 inches long. Sepals and petals narrow, twisted, rose-coloured. Lip three-lobed, the side-lobes folded over the column, middle lobe ovate, rolled back on the basal part. Base of lip white, front rose-purple.

MESSRS. SANDER & SONS, St. Albans, had a very fine group, in which their superb strain of *Lælio-Cattleya* × *Martinetii* formed the salient feature. A great many varieties were staged, some with rose-coloured sepals and petals and purple labellums, after the manner of the original form, but the greater part having bronzy-yellow and reddish-rose sepals and petals and purple labellums veined with claret colour. Some of the best were *L.-C. × Martinetii Flambeau*, of the orange-tinted class, and for which a First-class Certificate was awarded to Messrs. Sander, June 25, 1902. *L.-C. × Martinetii tesellatum* had chrome-yellow sepals and petals, and purple lip edged with lilac, and resembled the *L.-C. × ochracea*, for which an Award of Merit had been given previously to Messrs. SANDER. *L.-C. × Martinetii splendens* was the largest of the bronze-tinted section. Among the forms of *L.-C. × Canhamiana*, *L.-C. × C. Vulcan* was a very large mauve-coloured flower with intensely dark purple lip. *Cattleya Warscewiczii* "Our Queen" and *C. Mossie Reineckiana* (see Awards) were distinct varieties; *C. M. Reineckiana vestalis*, a pretty white variety with a violet tint on its white-edged labellum; and *Miltonia vexillaria Empress Augusta*, *M. × Bleana*; a noble plant of *Vanda cœrulea*, with three spikes; *Cattleya Warscewiczii Sanderæ*, a richly coloured form of *C. W. saturata*, and without the light colour seen on the lip of other forms; and other good Orchids were included, the whole being well arranged with Maidenhair Ferns.

Sir FREDERICK WIGAN, Bart., Clare Lawn, East Sheen (gr., Mr. W. H. Young), followed with a neat group of good things, among which were the very beautiful *Zygotetulum* × *Roebliangianum*, now grown into a very fine specimen; two examples of *Phalenopsis violacea Schröderiana*, with flowers almost entirely of a rich carmine-rose, and seemingly very distinct from the typical *P. violacea*; *Miltonia vexillaria rubella*, *M. v. superba*, *Cypripedium superbiens*, *C. Curtisii*, *C. callosum Sanderæ*, *C. × Gowerianum magnificum*, *C. concolor Sanderæ*, *C. × Cymatodes*, and other *Cypripediums*; *Lælio-Cattleya* × *Hippolyta langleyensis*, *L.-C. × H. Phœbe*, fine *Cattleya Mendeli*, *Sophro-Cattleya* × *Chamberlainiana*, various *Oncidiums*, &c.

MESSRS. HUGH LOW & CO., Enfield, completed the side by arranging at the end a very effective group in which were excellent forms of *Cattleya Mossie*, *C. Gaskelliana*, and *C. Mendeli*, one fine specimen of *C. Mendeli* bearing twenty-one flowers; *C. bicolor Grossi*, *C. Leopoldi*, and other *Cattleyas*. At one end was a selection of the orange-coloured *Epidendrum vitellinum*, in the middle several good specimens of the fringed-lipped *Brassavola Digbyana*, and at the other end a selection of pretty *Masdevallias*, including *M. muscosa*, *M. Schroderiana*, *M. ochthodes*; also *Calanthe veratrifolia*, *Bulbophyllum Dearei*, *Epidendrum prismatocarpum*, *Lycaste tricolor*, the fine *Cypripedium* × *I'Ansoni* with three flowers, *C. Stonei*, *C. niveum*, *Oncidium earthaginense*, *Phalenopsis Sanderiana*, *Lælio-Cattleya* × *C. G. Roebliang* and other showy kinds.

Awards.

FIRST-CLASS CERTIFICATE.

Cattleya Mossie alba Tracy's variety, from NORMAN C. COOKSON, Esq., Oakwood, Wylam, Northumberland (gr. Mr. H. J. Chapman).—A very finely-formed pure white flower with chrome-yellow disc to the lip. The plant was given an Award of Merit, June 28, last year, and a discussion then took place as to its being a form of *C. Gaskelliana*. The question arose again, but a large majority of the Committee supported the continuation of the name originally given. It is one of

the finest of white *Cattleyas*, and much freer-growing than *C. Mossie* usually is.

Cattleya Mossie Reineckiana excelsa, from Messrs. SANDER & SONS, St. Albans.—Flowers large and finely shaped, the petals being broad, and both sepals and petals pure white. The front lobe of the lip was beautifully marked with ruby-crimson with a clear violet shade over the surface, the crimped margin white. A very handsome flower.

AWARDS OF MERIT.

Cattleya Warscewiczii "Our Queen," from Messrs. SANDER & SONS, St. Albans.—A "white gigas" of the same class as that figured in *Lindnia*, vol. x., as *C. Leopold II.*, though the plant was not vigorous enough to show at its best. Sepals and petals pure white; lip purplish-rose with the usual light patches, one each side at the opening of the tube.

Bulbophyllum Lobbii colossum, from WALTER COBB, Esq.—A very large form of the fine old species. It was first shown by F. W. Moore, Esq., Curator of the Royal Botanic Gardens, Glasnevin, Dublin, July 23, 1895, and now again by Mr. Cobb in an enormous specimen with some forty flowers, the noble plant also securing a Cultural Commendation. Scape one-flowered. Flowers over 4 inches across, buff-yellow, faintly marked with purple. Lip hinged. Dr. Lindley mentions the original form as *Bulbophyllum Lobbii* in the *Gardeners' Chronicle*, 1847, p. 423. "How fine a plant of its kind this is may be surmised by its having been taken for a *Culogyne*." Native of Java.

Floral Committee.

Present: W. Marshall, Esq., Chairman; and Messrs. C. R. Fielder, W. Bain, G. Reuthe, R. C. Noteutt, W. P. Thomson, H. J. Cutbush, J. W. Barr, C. J. Salter, Jno. Green, Jno. Jennings, H. B. May, Chas. Dixon, M. J. James, Jas. Walker, Chas. Jeffries; Geo. Paul, R. Hooper Pearson, W. G. Baker, J. F. McLeod, and Arthur Chapman.

ROSES.

MESSRS. PAUL & SON, the Old Nurseries, Chesbunt, contributed a pleasing display to the Rose section, having a well-arranged group in one of the corners of the large tent. The whole of the flowers were cut specimens, some in vases, others in epergnes, while tall sprays of the pillar varieties were accommodated in pails of water. The new H.T. *The Dandy* was included; there were also such grand varieties as *A. K. Williams*, *Ulrich Brunner*, *Mrs. W. J. Grant*, *Duke of Edinburgh*, *General Jacqueminot*, *Cherry Ripe*, *Papa Gontier*, &c., forming altogether an admirable display.

MESSRS. WM. PAUL & SON, Waltham Cross, Herts, staged a beautiful collection of Roses, all cut flowers. There were baskets of such handsome varieties as *Le Progrès*, of apricot-yellow colour; *Celia*, a pleasing rose-pink shade, and of very free-flowering habit; *Earl of Warwick*, H.T. *Prince de Bulgarie*, *Countess Cairns* (new), *Louis van Houtte*, one of the best dark-coloured Roses; *A. K. Williams*, of most perfect form; *Frau Karl Druschki*, &c. The whole was arranged with great skill and taste.

MESSRS. HOBBIES, Ltd., had a nice lot of cut Carnations, arranged in vases; also a very showy exhibit of cut Roses, in a number of varieties. A new bedding *Coleus* exhibited by this firm, and named *Ruby Gem*, has long, narrow, fimbriated leaves of purple colour with a little red colour in the centre.

MESSRS. GEO. JACKMAN & SON, Woking Nursery, Surrey, made a magnificent display with cut Roses, showing single blooms of exhibition varieties, and gorgeous bunches of decorative sorts.

MESSRS. WOOD & SON, Woking, and Tongham, Surrey, showed flowers of a Rose named *Mrs. Neate*, a pink-coloured H.T. that may prove to be of merit.

Mr. G. H. F. Nye, Grosvenor Floral Dépôt, 39, Chapel Street, Belgrave Square, exhibited bunches of *Roses*, *Liliums*, *Sweet Peas*, &c., designated as flowers for table and decorative purposes.

MESSRS. W. CUTBUSH & SONS, Barnet Nurseries, and Highgate, London, N., exhibited a grand lot of cut specimens of the new pink-flowered Rambler Rose, named *Mrs. F. W. Flight*, a variety that has been already eulogised in these columns.

STOVE AND GREENHOUSE PLANTS.

MESSRS. WM. BULL & SONS, King's Road, Chelsea, contributed a collection of ornamental stove and greenhouse foliage plants. Several good specimens of *Dracæna Victoria* were prominent, alternating with plants of *Pandanus Veitchii*. Plenty of colour was furnished by such subjects as *Dracænas*, *Caladiums*,

Codiaeums (Crotons), Phyllanthus nivosus, &c. Nidularium Innocenti striatum was staged well. Palisota Barteri was shown in fruit, the bunch of red capsules being conspicuous. Tillandsia Zahnii was in flower. Tree-Ferns found a place in the collection at the background.

Messrs. HUGH LOW & CO., Bush Hill Park Nurseries, Enfield, exhibited a collection of highly coloured Codiaeums, representing selected varieties, also plants of Medeola asparagoides var. myrtifolia; a group of well-flowered Bouvardias, and plants and flowers of Tree and Souvenir de la Malmaison Carnations.

Messrs. JOHN LAING & SONS, Forest Hill, London, N., put up a batch of Caladiums. The plants were very finely coloured, although perhaps not so large as they are shown at the Temple Flower Show. The following were notable varieties in the collection:—Colonel John Hay (see Awards), Mrs. Laing, Madame Schmidt, Alexander III., l'Insolite, Silver Cloud, Rio de Janeiro, Joseph Cremazy and Marquis d'Albertas.

Messrs. J. PEED & SONS, West Norwood, London, brought a collection of Caladiums in most of the handsomer varieties. The foliage was not of large size, but the colours were well developed. Some of the finer specimens were Oriflamme, C. E. Dable, Marquis d'Albertas, Icaris, Diamantina, Emil Neubert, &c. The same firm also made a good display of Gloxinias and Streptocarpus, which side by side with decorative plants interspersed amongst them produced a very good effect.

Messrs. W. & J. BROWN, Stamford and Peterborough, exhibited a group of plants of Trachelium coeruleum in flower, also cut Roses, a group of Pelargoniums representing their "Cactus" strain, Verbenas Miss Willmott and a variety named Heliotrope, and other plants.

FERNS.

Although only two exhibitors staged Ferns, they constituted an interesting feature of the show, and we have never seen them shown better. Mr. H. B. MAY, Upper Edmonton, filled one side of the centre stage in the large tent with a superb collection. There were upwards of 300 species and varieties, all the choicest sorts being represented in clean, healthy plants. A large number of choice things might be enumerated. The Adiantums included fine specimens of Farleyense, macrophyllum, peruvianum, rubellum, and other tinted varieties; Aspleniums of the Pterioides type; cicutarium, Polypodium Mayi, Schneideri, and many of the small-growing sorts on stems. The choice Davallias and the American varieties of Nephrolepis were features.

Messrs. HILL & SON, Lower Edmonton, made a grand show with a group which occupied over 830 square feet on the ground in the large tent. The background was made up of grand specimens of the larger-growing Ferns, and round the front were many beautiful and choice sorts. The tinted varieties are always a feature with this firm, and many of the Adiantums were beautifully coloured; also Lomarias, the Platyceriums, especially angolense and Veitchii, were grand. Davallias of the filipensis varieties were very fine, also Nephrolepis Fosteri. This variety varies considerably, but as shown by Messrs. HILL it is one of the prettiest we have.

CARNATIONS AND SWEET PEAS.

Messrs. PEED & SONS, West Norwood, London, S.E., exhibited a collection of Malmaison and Tree Carnations. A row of the yellow variety Cecilia at the back contrasted well with the Asparagus, &c., used. Lady Rose is a good rose-coloured "Malmaison," Lord Milner is a good scarlet variety. There was a batch of the white border variety Hildegarda, which is one of the best white varieties. Agnes Sorel is of rich dark crimson colour. The border variety M. C. Higgs resembles a "Malmaison" variety both in colour and in size.

Mr. Phillips, gardener to E. WAGG, Esq., The Islet, Maidenhead, staged an excellent group of Carnations all of the "Malmaison" type. The yellow variety Cecilia was prominent. There were in addition good specimens of Sir C. Freemantle (scarlet-pink), Mrs. Martin Smith, Nautilus, Calypso, Princess of Wales, &c.

Messrs. B. S. WILLIAMS & SON, Upper Holloway, London, N., exhibited a group of Carnations in pots, chiefly of Souvenir de la Malmaison and "tree" varieties.

Mr. J. DOUGLAS, Edenside Nurseries, Great Bookham, staged a collection of very choice border Carnations, one variety being given an Award of Merit;

Lady Dartmouth (of salmon-yellow colour), and Carabas (pink) were also very fine.

Mr. J. R. BOX, West Wickham, Kent, put up a mixed group, comprising Carnations, excellent tuberous-rooting Begonias, Hydrangeas, Trachelium coeruleum, with foliage plants, Caladiums, Begonia Rex, Palms, &c. Several new Begonias were included, among them we admired the rich scarlet colour of the variety Miss Stuart.

Messrs. WM. CUTBUSH & SON, Highgate, London, N., staged a charming group of flowering plants in one corner of the large marquee. The general design consisted of banks of flowers, Roses, Hydrangeas, Carnations, Verbenas, Lantanas, &c., toward the back, with a groundwork of dwarf-growing Roses, Verbenas, Ericas, &c., interrupted with clumps of Carnations and standard plants of Lantanas. Maidenhair Ferns were freely used, while tall Palms gave suitable relief at the background. The display was much admired.

A group of "Malmaison" Carnations in large pots was staged by Mr. Goatley, gr. to Lady HARMSWORTH, Sutton Place, Guildford. The varieties Princess of Wales and Churchwarden were represented in about equal numbers. The plants were well grown, but the manner of staging was too formal and flat to produce the best effect.

Messrs. JONES & SONS, Shrewsbury, staged Sweet Peas and Carnations. The Sweet Peas represented about seventy varieties. Some good Carnations were shown by Messrs. JONES.

Mr. CHAS. W. BREADMORE, Winchester, staged a display of Sweet Peas in about sixty of the best varieties in cultivation, having the flowers in first-class form.

Mr. A. F. DUTTON, Iver, Bucks, showed Carnations in his usual superb style, using for the purpose handsome glass receptacles. A vase contained five most perfect flowers of the Malmaison variety Sault. When we mention that such varieties as Harlowarden, Mrs. Thos. Lawson, Enchantress, Harry Fenn, Floriana, and Fair Maid were included, each shown to perfection, some idea may be gained of the beauty of this exhibit. Adjoining were specimens of the "Shasta" or "Moon" Daisy, also shown by Mr. DUTTON.

Messrs. J. KING & SONS, Coggeshall, brought a small display of Sweet Peas, some of which were arranged in the Bruce flower-holders.

Messrs. H. CANNELL & SONS, Swanley, Kent, exhibited a collection of Sweet Peas arranged prettily in vases, with plenty of Pea foliage amongst them, also a collection of Cactaceous plants, remarkable for the very healthy condition in which the different plants were shown. Pilocerus senilis (Old Man's Cactus) was represented by half-a-dozen specimens; Euphorbia grandiformis was a most vigorous plant; Cereus flagelliformis cristata (the Rat's-tail Cactus), grafted on the night-flowering Cereus, was evidently growing well; Euphorbia caput-Medusa was very fine, also Echinocactus Emoryi (the Fish-hook Cactus), E. Grasoni, E. saglionis (in flower), Cereus peruvianus monstrosus, minor, &c., all the plants being in excellent and vigorous condition showing good cultivation. A small group of selected varieties of Cannas was shown by the same firm, and those flowers were as rich in colour and brilliant as ever.

Messrs. R. H. BATH, Ltd., The Floral Farms, Wisbech, exhibited Sweet Peas well, also blooms of Carnations and bunches of Roses.

Messrs. JAS. CARTER & CO., High Holborn, London, showed Sweet Peas arranged in large glass stands, as well as in smaller glasses. They were of good quality and very effective.

Messrs. G. STARK & SON, Great Ryburgh, Norfolk, exhibited a collection of Sweet Peas, including some novelties.

Messrs. GILBERT & SON, Anemone Nurseries, Dyke, Bonne, Lincolnshire, showed bunches of Sweet Peas neatly and attractively disposed in glasses, the Pea flowers themselves being of considerable merit.

Mr. W. J. UNWIN, Histon, Cambridge, exhibited varieties of Sweet Peas, disposed very tastefully in vases, with no grasses or Gypsophila, or anything else but the natural foliage of the plant—and this is generally all that is necessary to relieve the colour of the flowers.

Mr. H. J. JONES, Rycroft Nursery, Hither Green, Lewisham, staged collections of Sweet Peas, zonal Pelargoniums, tuberous-rooting Begonias, Nicotiana Sanderi, and forms of Chrysanthemum maximum—the Moon or Shasta Daisy. The Sweet Peas made a bold show; we noted such newer varieties as Gladys Unwin, King Edward VII., Bolton's Pink, Lady Aberdare, Remolo Piazani, Dora Breadmore, &c.

TUBEROUS-ROOTED [BEGONIAS.]

Messrs. THOS. S. WARE, Ltd., Feltham, Middlesex, had a group in which two varieties were selected for awards. The following plants were also of much merit:—Lord Rosebery (bright crimson double), In-victa (salmon-pink), W. G. Valentine (scarlet), Duchess of Portland (having shades of salmon, yellow, and rose colours), and Lady Coventry (pink with white margin to the petals). The same firm exhibited a collection of cut Roses.

Messrs. BLACKMORE & LANGDON, Twerton-on-Avon, Bath, made a magnificent exhibit, in which the general quality was very high, especially from the point of view of colour. That named J. Hooper, for instance, was of the most brilliant scarlet; it possessed fine, broad petals, a little fimbriated, and only open to criticism at all from the point of view of form, as form is understood by the florists. Mrs. W. J. Neal (double white), Mrs. J. B. Blackmore (double pink, very fine), Amy (of rosy-salmon colour), Dr. Crook (of deepest crimson colour), J. Crooks (of apricot-yellow colour), and Hilda Langdon (pale pink), were amongst the very best of an unusually fine collection.

Messrs. JNO. LAING & SONS, Forest Hill Nurseries, London, S.E., arranged a pretty exhibit of tuberous-rooted Begonias in which single and double-flowered varieties were about equally represented. In the centre of the exhibit was a group of plants of a good new white double-flowered variety named Miss Willmott. A single flower named Fringed Beauty was also worthy of remark. In colour it is pink, and the petals are well fimbriated. The same firm exhibited a group of well-grown crimson-flowered Gloxinias.

Mr. A. LL. GWILLIM, Eltham, Kent, also exhibited Begonias and cut flowers of Gloxinias.

HARDY PLANTS.

Hardy plants were as usual a great and attractive feature, many firms bringing displays of the best flowers in season.

Messrs. WALLACE & CO., Colchester, had a very fine display of these flowers set out in an excellent manner. One side of the exhibit was in the nature of a water-garden forming an adjunct to a rock-garden. It contained many of the best hybrid Water-Lilies, apparently quite at home. The margin of the pond was delightfully set off with Iris levigata, Spirea palmata, and other plants of a moisture-loving nature. Messrs. WALLACE also contributed Calochortus, Lilies in great quantities, and other such good things as Romneya Coulteri, Funkias, Day Lilies, Eryngiums, &c. One item of excellence was a brilliant lot of Calochortus clavatus having rich golden-yellow flowers, each measuring 4 inches in diameter.

Similar in many respects to the above was the group of hardy plants arranged by Messrs. WM. CUTBUSH & SONS, Highgate. This group was richer in Water-Lilies, and included many fine groups of hardy Sarracenias, S. flava, S. Drummondii, and others. The margin was planted with Iris levigata, Adiantum pedatum, groups of Spirea palmata, and Astilbes in variety. There were in addition excellent masses of Liliun Henryi, L. excelsum, Funkias, Hemerocallis citrina, H. Thunbergi, together with Campanulas, Phloxes, and other things. Some very fine examples of Liliun auratum virgale were in this group.

Messrs. PAUL & SON, Old Nurseries, Cheshunt, showed hardy cut flowers, in which Phloxes in variety, Potentillas, Gaillardias, Campanulas, and a host of other showy subjects were displayed to advantage.

Mr. GEO. REUTHE, Keston, Kent, staged a mixed group of plants, in which such semi-hardy shrubs as Embotrium coccineum, Rhododendron cinnabarinum, and others appeared. Masses of Alstromerias, a large assortment of Ixias, Andromeda (Zenobia) speciosa, Primula capitata, (Enothera Arendi (a rose-coloured flower, not unlike O. speciosa rosea in colour), Campanula Hendersoni, C. G. F. Wilson, and others.

Messrs. B. S. WILLIAMS & SON, Holloway, N., contributed a varied assortment of cut flowers, including Iris, Achillea, Gaillardias, Campanulas and a small collection of early Gladiolus.

Messrs. G. & A. CLARK, Dover, had a fresh-looking group of these flowers, in which Iris aurea, I. Monnierii, Alstromerias in variety, Eremurus Bungei, Centaurea ruthenica, Campanulas, some of the earlier Sun-flowers, Poppies, Heucheras and the like were prominent.

THE CRAVEN NURSERY, Clapham, Yorks, had much that was interesting in a very compact group. The dwarfed Campanulas, as G. F. Wilson, pulloides and pulla, were in plenty. We also noticed C. Van

Houttei. *Wulfenia carinthiaca* was also noted; its blue flowers are ever welcome.

A very extensive exhibit of hardy things was arranged by Messrs. BARR & SONS, Covent Garden. Here we noted many fine spikes of *Acanthus mollis* and *A. spinosus*, *Galega officinalis compacta*, the white perennial Pea, early *Phloxes*, *Helenium cupreum*, a large array of *Delphiniums*, masses of white and nankeen *Lilies*; also *Lilium Brownii* in fine condition. The Maryland Worm-grass, *Spigelia marilandica*, develops more or less tubular flowers, the tube being of a crimson colour. Early *Gladiolus* were abundant and good.

Mr. AMOS PERRY, Winchmore Hill, had a display of hardy flowers, in which *Lilies* were a strong feature. We noted *L. Browni*, *L. colchicum*, *L. excelsum*, *L. Martagon dalmaticum*, *L. canadense*, *L. pardalinum*, *L. auratum*, *L. Hansonii*, and *L. speciosum* among others. Early *Gladiolus*, *Pinks* in variety, *Platycodon Mariesi* and *P. autumnale*, *Heleniums*, notably *H. cupreum*, were all conspicuous. Varieties of *Water-Lilies* in trays were good.

St. Brigid Anemones and others, such as *King of Scarlets*, *King of Salmons*, and *Sir J. Paxton*, of rosy-mauve colour, formed the chief subjects in an exhibit staged by Messrs. REAMSBOTTOM & CO., Gleashill, King's County, Ireland. The blossoms were of excellent form, rich and telling in their variety.

Early *Gladiolus* in a large number of varieties came from Mr. WM. DULL, Chelsea.

Messrs. GEO. BUNYARD & CO., Maidstone, brought an extensive exhibit of cut hardy flowers in great variety, including such good things as *Centaurea ruthenica*, *Helenium pumilum magnificum*, the white perennial Pea, the pale-blue *Scabiosa caucasica*, *Monarda didyma*, *Galega Hartlandi*, *Iris aurea*, *I. Monnieri*, *Lilium candidum* and others. The examples in the majority of instances being cut with nearly full-length stems, gave an excellent idea of their merit and decorative worth in the garden.

Mr. N. LEWIS, Bridgewater, staged a small collection of hardy flowers, chiefly in the cut state.

Mr. B. LADHAMS, Shirley, Southampton, group was strong in *Pinks* and *Gaillardias*, *Heucheras*, *Galega Hartlandi*, *Day-Lilies*, *Campanula celtidifolia alba* (very fine), *Eriogonum macrocarpa*, *E. speciosa* (a profuse flowering plant, the pure white blossoms being of large size).

Mr. M. PRICHARD, Christchurch, Hants, brought a meritorious group of cut flowers. *Phloxes* were very fine, the intensely-coloured variety *Coquelicot* being especially prominent; *Iris Kämpferi*, *Spirea palmata* (unusually brilliant in colour), *Gaillardias*, *Acanthus*, *Pyrethrums*, *Eryngiums*, *Campanulas*, were all noteworthy and good.

Quite one of the best exhibits of cut flowers was constituted by the eighteen varieties of newer *Water-Lilies* from the gardens of L. CURRIE, Esq., Minley Manor, Farnborough, Hants. The handsome blossoms were arranged in shallow pans amid their own foliage, and included such varieties as *gigantea* (the most shapely of all white-flowered kinds), *Marliacea alba*, *M. carnea*, together with such richly-coloured forms as *igneae*, *Froehelii*, &c.

Mr. JOHN FORRES, Hawick, Scotland, brought an exhibit of herbaceous *Phloxes*, *Pentstemons*, and *Delphiniums*. The *Pentstemons* were of a high-class strain, and chiefly of the lighter-coloured varieties.

The Misses HOPKINS, Mere, Cheshire, arranged a small group of hardy plants, in which *Dianthus Napoleon III.*, dwarf *Campanulas*, and *Primula capitata* were noted.

Messrs. GEO. JACKMAN & SON, Woking, staged an admirable array of hardy cut flowers, having *Pyrethrums*, seedling *Iris Kämpferi*, many *Potentillas*, *Campanula × Fergusonii* (new), *Phloxes*, *Water-Lilies*, the dainty little *Fuchsia pumila*, and others.

Messrs. T. S. WARE & CO., Ltd., Feltham, staged a number of the best hardy flowers in season. *Water-Lilies*, dwarf and tall-growing *Campanulas*, *Heucheras*, *Gaillardias*, and a host of other showy and seasonable things were seen to advantage.

MISCELLANEOUS.

Mr. R. ANKER, Addison Nursery, Napier Road, Kensington, W., exhibited berried plants of *Nertera depressa* in ornamental "bijou" pans, also tiny *Cactus* plants in pots, and several larger specimens of *Cactaceous* species.

Mr. VINCENT SLADE, Staplegrave Nurseries, Taunton, Somerset, showed cut flowers of zonal *Pelargoniums*. They represented about seventy distinct

varieties. We noticed *Lady Warwick*, *Duke of Bedford* (Scarlet), *Lord Strathcona*, *Hall Caine*, *Prince of Orange*, &c.

Messrs. BARR & SONS, King Street, Covent Garden, and Messrs. J. CARTER & CO., High Holborn, brought a number of their interesting pigmy trees.

Mr. H. B. MAY also staged a batch of zonal *Pelargoniums*, among which were noticed several of the "Cactus" type; a collection of cleanly-grown *Codiaeums* (*Crotons*) in most of the improved varieties, including *C. edmontonense* (see Awards); *C. Prince of Wales*, *C. Hawkeri*, &c.; and some excellently-flowered plants of *Ixoras* in varieties.

Awards.

AWARDS OF MERIT.

Betonica spicata robusta.—This is the name under which a very old and well-known perennial-flowering plant was exhibited. The flowers are produced in a close pyramidal spike of some 3 inches in length, and of a rosy-pink colour. The plant is of compact habit, and attains to some 18 inches in height. *Betonicas* are now included in the genus *Stachys*. From Mr. AMOS PERRY, Winchmore Hill.

Caladium Colonel John Hay.—A variety with moderate-sized leaves of bright rosy-pink colour and white blotching. Shown by Messrs. J. LAING & SONS.

Carnation "Miss Willmott".—This new seedling border variety is of most pleasing colour, which may be described as cherry-red. The flower is about 3½ inches across, of excellent form, and the petals have a smooth, unbroken outline. Shown by Mr. JAS. DOUGLAS.

Codiaum (Croton) Edmontoniense.—This is an exceedingly good *Codiaum* of the narrow-leaved type, being not more than 2 inches across at the widest point. The young leaves are coloured rich red, yellow, and green, and the older leaves red and green only. They twist prettily towards the end or for half their length. There being but few new *Codiaeums* nowadays of superior quality, this variety will be likely to meet with much appreciation. Shown by Mr. H. B. MAY.

Thalictrum Delavayi.—A very interesting species of recent introduction, growing from 2 to 3 feet high. The drooping flowers are campanulate, and produced in considerable profusion. The roundly ovate sepals are of mauve-blue colour, and in this respect quite distinct from other members of this genus. The pale glaucous foliage is somewhat sparsely produced, and in other ways it is similar to that of other species of the *Meadow-Rue* genus. From Messrs. WALLACE & CO., Colechester.

Tuberous Begonia Mrs. Arthur Paget.—This is a delightful flower, double, about 6 inches across, of salmon-rose colour, becoming paler towards the centre of the flower, which is pure white. The form is very good.

Tuberous Begonia "Water-Lily".—This variety has very broad petals, which are white with shading of green colour. The form is not of the best florist's type, but the disposition of the petals and their great breadth give to the flower an appearance somewhat suggestive of that of a *Water-Lily*. Both of these varieties were shown by Messrs. T. S. WARE, Ltd.

Fruit and Vegetable Committee.

Present: Geo. Bunyard, Esq., chairman; and Messrs. F. Q. Lane, Jos. Cheal, J. Jaques, Geo. Woodward, W. Fyfe, H. Markham, H. Somers Rivers, G. Kelf, C. Foster, J. Willard, and Geo. Reynolds.

Collectively the exhibits, although but few in number, were in some instances remarkable for their excellence, and this most noticeable in the *Cherries* and *Plums* sent by Mr. HUDSON, gr. at *Gunnelsbury House*, Acton; the collections of *Melons* from Mr. MORTIMORE, of *Rowledge*, and the *HORTICULTURAL COLLEGE*, *Swanley*; the *Strawberries* shown by Messrs. G. BUNYARD & CO., *Maidstone*; and those shown by Mr. PETERS from the gardens of H. P. STURGIS, Esq., *Givons Grove*, *Leatherhead*.

Mr. S. MORTIMER, *The Nurseries*, *Rowledge*, *Farnham*, *Surrey*, showed a dozen fruits of a slightly ribbed, dark green *Cucumber*, 1½ foot in length, having a short neck, and regular width from end to end, and spineless. The variety was named *Aristocrat*. This exhibitor showed sixty *Melons* in variety, as well grown as possible, and in a perfectly ripe condition. Two dozen consisted of *Sutton's Best-of-All*, a large, finely netted rind; and one dozen of *Sutton's Hero* of *Lockinge*, a yellow-skinned fruit of medium size, also

finely netted; and two dozen *Sutton's Superlative*, a large fruited variety of a greenish-yellow colour, and much netted.

Mr. GEO. PENWILL, fruit-grower and nurseryman, *Totnes*, staged two boxfuls of his new *Raspberry Champion*, an oval fruit of a red colour and moderate size. Some cut canes shown of this variety were loaded with fruits in every stage of development. It seems to be a great acquisition. It does not turn dark in colour, and is therefore excellent for jam-making. The plant is stated to continue in bearing for two months.

LEOPOLD DE ROTHSCHILD, Esq., *Gunnelsbury House*, *Acton* (gr., Mr. J. Hudson), exhibited nine boxes of *Cherries* gathered from the open wall, some, as, for example, *Black Tartarian* and *Bigarreau Napoleon*, were taken from trees planted in 1850. The other varieties shown were very fine of their kind, and consisted of the mottled red-and-yellow *Emperor Francis*, *Governor Wood*, *Late Duke*, *Bigarreau de Schrecken*, *Old Bigarreau*, *Tradescant's Late Heart*, *Elton*, &c. The *Plums*, the produce of pot trees, mostly many years old, were as good as possible, and comprised *Keine Claude Du Comte Athens*, *Early Transparent*, *Kirke's*, *Jefferson*, and *Transparent*. The stand contained fruits of *River's Orange Nectarine*, *Early Silver*, and *Downton Improved*, likewise gathered from pot-trees.

Messrs. GEO. BUNYARD & CO., *Maidstone*, showed pot trees of *Peaches*, *Cherries*, *Pears*, *Plums*, *Apples*, *Figs*, *Raspberry-canes* in fruit, *Cherries* as gathered fruit, *Red* and *White Currants*, a few dishes of last year's *Apples* in an apparently well-preserved condition. Among the pot-*Cherries* there were noted *Bigarreau Napoleon*, *Black Tartarian*, *Noire de Schmidt*, and *Emperor Francis*. The *Peaches* included *Early Alexander*, *Amsden June*, and *Waterloo*. None of them were full-grown. Last year's *Apples* consisted of *Mirfitt's Seedling*, *Calville Rouge*, *Winter Peach*, *Tibbet's Pearmain*, *Belle du Bois*, and *Alfriston*. *Fay's Red Currant*, as shown, is of a dark red colour, the fruits large, and the bunches 3 to 4 inches in length. Among the *Cherries* shown in plates there were *Napoleon*, *Monstrueuse de Metz* (a handsome fruit), *Géant de Hedelfingen*, *Bedford Prolific* (a fine dark crimson), *Bohemian Black*, *Black Tartarian*, and *Frogmore Bigarreau*. A tray of *Strawberries* numbering sixteen dishes was the most interesting exhibit, all of the fruits being fine of their kind. A *cockscomb-shaped* fruit, *Givon's Prolific*, dark crimson, with embedded seeds, was highly commended; *Louis Gautier*, a white suffused pink fruit, of *cockscomb* shape, is said to be a fine prolific variety. Others consisted of *President*, *Sir Joseph Paxton*, *Dr. Hogg* (still one of the best), *Eleanor*, *Kitley's Goliath* and *Latest-of-All*. *Imperial White Raspberry* is a good, large, prolific variety; even still more prolific are *Loganberry*, a *crimson-fruited* hybrid. *Blanche Four Seasons* is a small, free-fruited, yellow variety, and *Brooke's Seedling*, a large-fruited red fruit. Of *Peas* in pod there were sixteen dishes and varieties, mostly long-podded and well filled with seeds.

H. P. STURGIS, Esq., *Leatherhead*, *Surrey* (gr., Mr. W. Peters), showed four plants of *Givon's Grove Late Prolific Strawberry*, the plants very vigorous and fruits of an enormous size. The plants had been lifted from a north border. The variety was raised in Mr. STURGIS's garden, and took an *Award of Merit* in 1901 and a *First-class Certificate* in 1902. A boxful of extremely large fruits was also shown of this variety.

THE *HORTICULTURAL COLLEGE*, *Swanley*, exhibited a collection of *Melons*, seedlings raised at the *College*. With few exceptions they seemed to consist of one strain, and in appearance they were of large size and nicely netted.

Messrs. J. CARTER & CO., *Seedsman*, 237 and 238, *High Holborn*, *London*, showed a unique collection of *culinary Peas*, every one good of its kind. The produce was taken from plants the seeds of which were sown on March 30 for the purpose of showing the various stages of maturity. Many of the varieties were nearly ripe, as in the case of *Exonian*, *Carter's Superior*, *American Wonder*, *Wm. Hurst*, *Carter's Eight Weeks*, *Carter's First Crop*, *The Dawn*, *Carter's Edward VII.*, *The Pilot*, *First Early*, *May Queen*, and *Alpha*. *Quite Content* is a variety with pods some 6 inches long and proportionately broad. A number of *Cabbage Lettuces* were shown, including their *Perpetual*, *Holborn Standard*, *Green-fringed*, and *Endive-leaved*, a variety with deeply lacinated leaves, and

good close heart. The table of exhibits was set off by small Palms embedded in blue Lobelia, and a few dishes of Sunrise Tomato were distributed about.

AWARDS MADE BY THE COUNCIL.

GOLD MEDALS.

J. Colman, Esq., for Orchids; H. B. May for Ferns; Wallace & Co. for Herbaceous Flowers and Lilies; Wm. Paul & Son for Roses; Charlesworth & Co. for Orchids; Cutbush & Sons for Herbaceous Flowers.

SILVER CUPS.

Leopold Rothschild, Esq., for a Collection of Fruits; Lady Harmsworth for Carnations; L. Currie, Esq., for Water-Lilies; Carter & Co. for Flowers and Vegetables; Geo. Bunyard & Co. for Fruit-trees and Herbaceous Flowers; Barr & Sons for Herbaceous Flowers; Ware & Co. for Begonias; Paul & Son for Roses; Sander & Co. for Orchids; T. Cripps & Son for Trees and Shrubs; G. Jackman for Roses and Herbaceous Flowers; Amos Perry for Herbaceous Flowers; W. Bull & Son for Ornamental Foliage Plants; J. Hill for Ferns; Blackmore & Langdon for Begonias; David Russell for Trees and Shrubs.

SILVER-GILT FLORA MEDALS.

Sir F. Wigan, Bart., for Orchids; Rev. Farrer for Alpine Plants; H. J. Jones for Sweet Peas, &c.; M. Pritchard for Herbaceous Flowers; L. R. Russell for Trees and Shrubs; Mr. Box for Begonias; Hugh Low & Co. for Carnations, &c.; Pulham & Son for Rockwork and Alpines; Mr. Riley for Summer-houses.

SILVER-GILT KNIGHTIAN MEDAL.

Mr. Mortimer for Melons.

SILVER-GILT BANKSIAN MEDALS.

Jones & Sons for Sweet Peas and Carnations; G. & A. Clark for Herbaceous Flowers; J. Peed & Sons for Herbaceous Flowers; J. Cheal & Sons for Herbaceous Flowers and Shrubs; A. F. Dutton for Carnations; W. Wood & Sons for Horticultural Sundries; Manifattura di Signa for Terra-cotta Garden Vases; Merryweather & Co. for Spraying and other Machines; Mr. Castle for Garden Furniture and Seats; Champion & Co. for Tubs for Shrubs.

SILVER FLORA MEDAL.

E. Wagg, Esq., for Carnations; J. Laing & Sons for Caladiums; H. Cannell & Sons for Cacti, &c.; T. Broadmore for Sweet Peas; G. Reuthe for Alpines; Hobbies, Ltd., for Roses, &c.; Messrs. Ladhams for Herbaceous Flowers; R. H. Bath, Ltd., for Sweet Peas and Roses; V. Slade for Pelargoniums; Reamsbottom & Co. for Anemones; Fromow & Sons for Shrubs; Liberty & Co. for terra-cotta vases.

SILVER KNIGHTIAN MEDAL.

Swanley College for Melons.

SILVER BANKSIAN MEDAL.

Miss Hopkins for Herbaceous flowers; H. P. Sturges, Esq., for Strawberries; B. S. Williams & Son for Herbaceous Flowers; J. Forbes for Phlox and Pentstemons; Mr. Penwill for Raspberries; Messrs. Stark for Sweet Peas; Jas. Douglas for Carnations; F. Unwin for Sweet Peas; Gilbert & Son for Herbaceous Flowers; G. Gwillim for Begonias; J. Bentley for Horticultural Sundries; Corry & Co. for Horticultural Sundries; Dollond for Instruments; Messrs. Shanks for Lawn Mowers; Mr. Dowell for Orchid Pots; Anglo-Continental for Fertilisers; Doulton & Co. for Terra-cotta Pots, &c.; J. K. King for Sweet Peas; Jas. George for Horticultural Sundries; T. Green & Son, Ltd., for Lawn Mowers; W. Herbert for Horticultural Sundries; T. Syer for Ladders and Tools; J. Williams for Table Decoration; Mr. de Luzy for Sprayers; Mr. Pinches for Plant Labels; Economic Fencing Co. for Fencing; Mr. Sage for Horticultural Sundries.

TENT CONTAINING SUNDRIES.

One large tent was entirely occupied by various articles for garden use.

Messrs. T. GREEN & SON, LTD., Southwark Street, S.E., showed lawn mowers including examples driven by motor power; Messrs. MERRYWEATHER & SONS, Long Acre, had various spraying machines, hosing ladders, &c.; Messrs. JOSEPH BENTLEY, LTD., Barrow-on-Humber, Hull, in addition to weed-killers and insecticides, displayed bones and other manures; Messrs. TABOR & CO., Duncedin House, Basinghall Avenue, London, showed manures and fertilisers; Mr. J. WILLIAMS, Baling, displayed stands for rural table decoration; Mr. GEO. H. SAGE, 71, Manor Road,

Richmond, in addition to horticultural sundries, made a feature of the Bruce flower-holders; Mr. H. PATTISON, 1, Farm Avenue, Streatham, brought examples of his horse-boots for lawns; Mr. RICHARD PINCHES, 3, Crown Buildings, Crown Court, S.E., had an assortment of tree and plant labels of most durable make; Messrs. WOOD & SON, Wood Green, London, N., had a large display of watering-cans, syringes, spraying-machines, manures, and a host of other horticultural sundries: some handsome terra-cotta vases and flower-pots were shown by MANIFATTURA DI SIGNA, Italy; Messrs. DOULTON, Lambeth, also showed garden ornaments in terra-cotta and other ware; THE LUBROSE PAINT CO., Moorgate Station Chambers, E.C., displayed samples of their specialities in paints.

OUT-OF-DOOR EXHIBITS.

Mr. DAVID RUSSELL, The Essex Nurseries, Brentwood, arranged a large, irregular group of shrubs and small trees, mostly those having variegated foliage. There were *Acer palmatum* in variety, *Thuyas*, *Ivies*, *Euonymus latifolia alba*, *Eleagnus variegata*, *Buxus*, *Aralia pentaphylla* with white-and-green leaves, *Yews*, and *Retinospora pissifera aurea*.

Messrs. THOS. CRIPPS & SON, Nurseries, Tunbridge Wells, arranged a large and imposing group of Golden Elms, *Quercus Concordia*, *Alnus glutinosa aurea*, *Vitis purpurea*, and other species; Bamboos and Japanese Acers, many of them fine specimens.

Mr. L. R. RUSSELL, Richmond Nurseries, Richmond, Surrey, showed a group consisting of similar plants differently disposed, and generally of a larger size; and the group enlivened by *Clematis* plants in bloom.

Messrs. J. CHEAL & SONS, Crawley, showed a group consisting of variegated and green Conifers, Maples, New Zealand Veronicas, *Spiraeas*, *Funkias* in variety, *Ivies*, purple Beech, and other hardy things.

Messrs. BARR & SONS, King Street, Covent Garden, London, and Ditton Hill, Surrey, showed a healthy lot of pigmy trees, mostly consisting of Conifers, in ages ranging from eighteen years to sixty years old; specimens of *Zelkova Keaki*, *Quercus*, and Acers, likewise formed a part of the group.

Messrs. W. FROMOW & SONS, Sutton Court Nurseries, Chiswick, W., showed a group of hardy trees and shrubs, mostly Japanese Maples, and set off by a few *Lilium japonicum*.

LIBERTY & CO., Regent Street, London, W., showed rustic pottery of very vigorous, not to say rough designs, modelled after early Mexican or Peruvian styles. The exhibitors call it quasi-Celtic. We noted bordering for flower-beds, vases, pans for holding plants, sundials, &c., in terra-cotta.

Messrs. DOLLOND & CO., London, showed amongst other objects in terra-cotta various sundials, many of them of great age. One was mounted on a baluster from old Kew Bridge.

A clever thermograph was shown, extremely sensitive, which indicates and registers the temperature at any moment of the day or night—a good instrument for the gardener to put into his forcing-house, simple in structure, and not liable to get out of order. A registering rain-gauge, which does not store the rain-water, but empties it when the catch trough has caught one-tenth of an inch. There were anemometer or air-measurers for use in mines, passages, &c., sunshine recorders, and other instruments of utility.

Messrs. PULHAM & SON, 71, Newman Street, London, W., exhibited a quantity of vases and pedestals, edgings, sundials, fountains, balustrades, finials in artificial stone. This firm showed specimens of their work in rockery building, furnishing the rockeries with appropriate plants.

Messrs. D. J. SYER & Co., 45, Wilson Street, Finsbury, London, and at Birmingham, showed a handy barrow containing in separate compartments tools for carpentry, smithing and glazing, fitted with a work-bench on the top. It is provided with movable handles and two wheels. There were exhibits of a useful nature for gardeners, such as a tool grinder worked by a pedal; step-ladders, hose-winders, hammers, ladders, trestles.

Messrs. ALEX. SHANKS & SON, LTD., Arbroath, and Bush Lane House, Cannon Street, E.C., exhibited two petrol motor-mowing machines, having ball-bearings for the cutter and roller-bearings on the main drum: one provided with a seat for the driver. A number of hand-mowers were also shown, one hand-mower (The 'Aledonia) with corrugated roller and adjustable handles to suit the driver was observed. It is said to be extremely easy in use.

GARDEN FURNITURE, SUMMER-HOUSES, &c.

Mr. CASTLE, Baltic Wharf, Westminster, S.W., showed a collection of garden seats, benches, folding chairs, tables made of teak wood (old ships' timber). The various articles were of a plain, substantial character, simple and without not destitute of a certain degree of elegance.

Messrs. CHAMPION & Co., 115, City Road, London, showed well-finished plant tubs, polished and varnished and bound with copper or brass hoops, and furnished with copper or wooden handles. These tubs are well adapted for use in halls, conservatories and apartments.

A water-butt nearly square in the cross-section and tapering to the top was another exhibit.

Mr. C. W. RILEY exhibited portable summer-houses in rustic woodwork, tasteful in design, and capable of containing from six to twenty persons. This exhibitor, whose address is Villa Rustica, Norwood Road, Herne Hill, S.E., showed wooden tubs and small garden-seats and settles in rustic work.

Scientific Committee.

JULY 4.—Present: Dr. M. C. COOKE, V.M.H. (in the chair); Professor Boulger, Messrs. Holmes, Saunders, Gussow, Masee, and Chittenden (Hon. Secretary).

Biota Attacked by Insects.—Mr. WORSLEY sent specimens, which Mr. SAUNDERS reported were attacked by an aphid, *Lachnus epressus*, and a species of *Diaspis* (scale insect). A large number of varieties of Chinese Conifers had been attacked and destroyed.

Pear Midge.—Mr. SAUNDERS reported as follows upon this pest:—"The Pear midge (*Diplosis pyrivora*) seems to be spreading more and more every year in this country, and unless some means can be found to check it Pears will become a rare fruit. I think it is very clear that if all fruit-growers in districts where this insect abounds would agree together on some common line of action as regards the destruction of this pest its numbers would soon be very materially lessened, and in the course of a few years it would be stamped out. These remarks apply to a very considerable number of injurious insects, which at present run riot among our crops, and which isolated attempts to check are of little use, as a fresh supply is always forthcoming from neighbours' gardens, &c. The Pear-midge lays its eggs in the blossoms before and after they open; if before, the ovipositor of the insect pierces the petals, and the eggs are laid on the anthers; if the flowers are already open, they are deposited in the ovary; in either case the young larvae find their food close at hand when they are hatched. In June they leave the fruit, sometimes before it has fallen, sometimes afterwards. They then bury themselves in the soil $\frac{1}{2}$ inch, or perhaps somewhat deeper, and become pupae, from which the flies emerge in the spring just before the flower-buds open. The best means of destroying this pest are—(1) by strewing kainit under the trees at the rate of 4 oz. to the square yard early in June, so that the grubs may fall on it; or (2) in the course of the winter remove the top soil to the depth of 2 inches, and either burn it or bury it not less than a foot below the surface, or trench the ground under the trees in the winter, which will bury the pupae so deep that the flies cannot find their way to the surface; (3) in the spring, before the time that the flies make their appearance, the ground under the trees should be rolled, so that it will make the escape of the flies more difficult through the hard soil. In orchards where grass grows under the trees it is impossible to employ these methods. In that case the grass should be thoroughly drenched with a strong solution of paraffin emulsion early in April in order to destroy the flies as they are leaving the soil, and again in June, when the grubs are leaving the fruit. If it be found that nearly the whole crop is infected, it should be gathered and burnt while the grubs are still in the fruit." [The insect was figured in our columns on May 29, 1905, p. 315. Ed.]

Interesting Orchids.—M. F. W. MOORE, V.M.H., sent the following interesting Orchids from the Botanic Gardens, Glasnevin:—

No. 1. *Stauroopsis fasciata*, a native of the Malaya, and a rare species, belonging to the distichous-leaved section. It is rarely found in collections, and is remarkable for the curious shape of the lip and the attachment of the lip.

No. 2. *Bulbophyllum sanrocephalum*, also a rather rare plant, native of the Philippines. It is remarkable for its swollen peduncle, and belongs to the clavate

group. The species in this group are closely allied, and are all characterised by the swollen flower-stalk, in which the flowers are generally sunk.

No. 3. *Bulbophyllum quadrifarium* (Rolfe). This is a new species from Madagascar, recently named and described. It is very rare, and is remarkable in having a portion of the peduncle carrying the flowers quite square, so that it has a four-sided appearance. There are numerous scales concealing the flowers. The inconspicuous flowers seem to be highly self-fertile, as a number of fruits were produced on each inflorescence.

No. 4. *Bulbophyllum erythrorachis* (Rolfe). A new species like the last two, with a long, club-shaped, red rachis.

No. 5. *Bulbophyllum infatum* (Rolfe). A new species with a curiously inflated rachis about 2½ inches long and ¼ inch in diameter, bearing numerous small greenish-white flowers.

Fasciated and Contorted Teasels.—Prof. DOULGER, on behalf of Dr. MASTERS, showed a walking-stick made from a curiously contorted Teasel stem. Professor de Vries has stated that this peculiarity can be perpetuated by seed, but after growing the seed obtained from Professor de Vries and following the directions given for at least ten years, Dr. MASTERS has failed to obtain any contorted specimens, although by continued pinching a large amount of variation may be observed in the foliage, sometimes four leaves occurring in a whorl, and so on.

Disease of Salsafy.—Mr. SAUNDERS showed a specimen of Salsafy attacked by the fungus *Cystopus tragopogonis*, very commonly found upon Goat's-beard.

Damage by Hail.—Dr. PLOWRIGHT sent specimens of Peas, Cabbage, and Apples illustrating the damage done by a recent hailstorm to these crops.

Excrecences on Tree Trunks.—Mr. BENEDICT sent an example of an excrescence on the trunk of a Poplar about 8 inches in diameter, covered with small shoots and adventitious buds, stating that similar excrescences were developed on Laburnum, Elm, and Plane. It was thought that the tree had made an effort to heal a wound made in pruning or otherwise, and that from the callus formed numerous adventitious buds had arisen, and that neither a fungus nor an insect was the cause of the trouble. The sender thought that probably too deep planting had been a contributory cause.

British Dye Plants.—Dr. PLOWRIGHT sent the following notes with specimens of the dyes described:—

1. *Hedera Helix.*—The Ivy is a plant we always regard as being one of the most sombre of our English phanerogams. I was very much astonished a short time ago to find that the ripe berries yielded, on boiling with water and a small quantity of alum, a rich reddish-purple fluid which had the property of conveying to wool a reddish tint. There are very few red colours yielded by our British dye plants. The red dye of Ivy-berries is not mentioned by Linnaeus nor by Withering, or any of the botanical writers of that period which I have read. The roots of the plant from which the berries were taken, it may be observed, show numerous stains of red. The colouration of the roots is not soluble in boiling water or in alcohol. The colour is mostly in the cortex, but extends to the outer part of the wood, old roots and rootlets both showing it.

2. *Crataegus Oxycantha.*—The Mayflower has many poetical associations, few plants have not, but it will come as a surprise to many people (but not to all) that the blossom is capable of yielding a dye. One would hardly have expected the beautiful white petals to have yielded such a deep shade of yellow as they are capable of imparting to wool when mordanted with alum.

3. *Populus nigra.*—The colouring matter contained in the male catkins of the Black Poplar was not known to the older botanists, or, at any rate, was not referred to by Linnaeus. This is possibly accounted for by the fact that it does not easily impart itself to wool, and could not be used for that purpose by any of the rough-and-ready processes then employed. My attention was first drawn to it by noticing how the foot pavements in towns were stained by the crushing underfoot of the catkins which had fallen from the tree when in bloom in spring. The stains are a bluish or bluish-green colour, and remain visible for a considerable time. The catkins, or rather the anthers, are of a brilliant red, so that the contrast is very marked. The colour yields itself freely to boiling water to which alum is added, but the salt is not sufficiently acid to produce the full deep red. Unlike most colouring matters obtained from flowers,

this red is very permanent to light. The specimen shown was made in 1902, as the label shows. It was exposed to direct sunlight in a north window until the present time. As far as my remembrance goes, it has lost little, if any, of the colour, but the ink with which the label was written has faded to such a degree as to be barely legible. The red colour is also soluble in alcohol. Linnaeus noticed other colours which, although yielding themselves to alcohol and water, were not available for tinctorial purposes, such as the red which the flowers of *Hypericum perforatum* yield to alcohol, and the green which the flowers of *Delphinium Consolida* give to solutions of alum in water. It is curious that the Poplar catkins escaped him.

4. *Lithospermum officinale.*—The old writers from Linnaeus were acquainted with the fact that the root of this plant imparts to fats, oils, alcohol, and wax a red colour. They also state that the roots were used by the young women of Sweden to impart a pink colour to their complexion. Mr. E. J. Tatum was kind enough to send me some specimens of this plant in April. The colour is confined to the cortical portions of the main roots. It is distributed in patches, which, when rubbed between the fingers, stain them red in the same manner but to a less degree than the true Alkanet-root does. The red colour imparts to solid paraffin a red tint very similar to that from the root of *Echium vulgare*. The red colouration is more abundant in the roots of *Lithospermum* than in those of *Echium*.

Exotic Spider.—Dr. PLOWRIGHT also sent a specimen of a large spider (sp. ?) which had been imported alive in a cold-storage chamber.

Strawberries Attacked by Millipedes.—Mr. SAUNDERS reported upon these as follows: "The 'beast' attacking the Strawberries is one of the 'snake millipedes,' the spotted snake millipede (*Julus guttatus*). This is a most destructive pest in gardens, since it attacks the roots of various plants. While in the soil it is almost impossible to kill them with any insecticide; but if a strong solution of common salt or nitrate of soda can be brought to bear on them it will kill them. They may be trapped by burying small slices of Mangold, Turnip, Carrot, or Potato near the plants they are feeding on, just below the surface of the soil. These traps should be examined every morning; a small skewer stuck into the pieces will show where they are buried. The millipedes appear, however, to be so fond of ripe Strawberries that I doubt if these baits would tempt them away from them. Placing straw, &c., under the fruit, as is so often done, I am sure encourages these pests."

Scale on Ash.—Mr. SAUNDERS reported:—"The insects infesting the pieces of Ash-stem are scale insects. The larger white woolly ones are female specimens of *Pseudo-coccus aceris* (Signoret); the insect itself is at one end of the ovisac, almost hidden by the wool-like matter with which the eggs are surrounded. The other insects, which look like small long white specks (only ½ mm. or 1-40th of an inch in length) are the males of *Chionaspis salicis*, an insect which is very common on the Ash, various kinds of Willow, and the Alder. The female scales are nearly twice the length of the males, and are of a more or less oval or rounded form. The best means of destroying the pseudo-coccus is by brushing off the white ovisacs, and then spraying with a strong solution of paraffin emulsion; or in the course of the winter, after the leaves have fallen and before the buds show any signs of opening in the spring, with a caustic wash. The same methods will destroy the chionaspis."

Violets Attacked by Eridium.—Dr. COOKE reported on these, received from Bournemouth: "The Violets are attacked by Violet cluster cups (*Journal of the Royal Horticultural Society*, xxvii., 1902, p. 25, pl. i., fig. 21). Plants once attacked seldom recover. As a precaution, all the infected plants should be rooted up and burnt. The residue should be sprayed with Bordeaux-mixture to preserve them from infection by any spores left on the soil. It is an endophytic parasite, and cannot be eradicated from a plant in which it has become established."

CROYDON HORTICULTURAL.

JULY 5.—This well-supported Society of gardeners, amateurs, and cottagers held its thirty-eighth summer show in the meadow adjoining Haling Park, the residence of Miss Watney, on the above date. The exhibits were numerous, and many of them good of their kind, but not of a sort which tests the cultural skill of the gardener; and fruit was almost absent.

ROSES.

Nurserymen's Classes.—In the class for forty-eight Roses, distinct, the National Rose Society's Silver-gilt Medal went with the 1st prize. In this competition,

in which there was only one exhibit, the 1st prize was worthily awarded to Messrs. D. PRIOR & SON, Colchester, for H.P.'s and Teas, and so good were the blooms individually that it would serve no good purpose to select varieties.

For twenty-four Roses, distinct, three blooms of each, 1st, Messrs. D. PRIOR & SONS, with one of the most interesting exhibit of Roses in the show, all the blooms being of perfect shape and well developed.

For twenty-four Roses, distinct, shown by those who did not compete in the two previous classes—1st, Messrs. J. R. BOX & CO., West Wickham, Croydon, and Shirley.

Forty-three-six Roses, distinct (amateurs), 1st, A. TATE, Esq., Downside, Leatherhead, with two boxes of superb flowers, the finest being Bessie Brown, which was awarded a Silver Medal. The 2nd prize fell to Mrs. HAYWOOD, Woodhatch Lodge, Reigate (gr., Mr. C. J. Salter), for very even, nice blooms, with but few weak ones amongst them, fresh looking, and only lacking a little in size to have taken the 1st place. Incidentally we heard that Reigate rosarians suffered greatly from the hard frost that occurred late in May.

For twelve Roses of one variety (amateurs), J. BRADFIELD, Esq., was 1st, with the variety Ulrich Brunner, all of which were excellent blooms, and almost equal in size. 2nd, Mrs. HAYWOOD, with Caroline Testout, in our opinion as good almost as the foregoing.

LOCAL ROSE CLASSES.

Twelve Roses distinct.—1st, E. M. PRESTON, Esq., Shirley Hurst, Shirley, with a good stand, the finest blooms being Frau Karl Druschki (Silver Medal), Caroline Testout, Marchioness of Londonderry, &c. 2nd, Lieut.-Col. J. W. JEROME, 244, South Norwood Hill.

TABLE DECORATIONS.

A large portion of the middle marquee was assigned to table decorations, and the most imposing of these was set up by Mr. T. BUTCHER, The Nurseries, South Norwood, whose exhibit consisted of Sweet Peas and Shirley Poppies.

The best exhibit of Gloxinias and ornamental foliage plants or Ferns on a table 8 feet by 4 feet. The 1st was from Mr. T. Padley, gr. to W. G. RAIFORD, Esq. The varieties were seedlings from erect, spotted, edged, and self-coloured flowers, the plants exhibiting great vigour in leaf and flower. A varied and pleasing collection. 2nd Mr. G. Barnes, gr. to S. A. READ, Esq., Hurstleigh, South Park. This exhibit and that which took the 3rd prize possessed too little variety of colour.

Twenty-four Bunches of Sweet Peas.—1st, Mr. W. Lintott, gr. to W. GREENWELL, Esq., Marden Park, with a collection of fine, well-developed blossoms in most of the newer tints. We noted Countess Spencer, Robie Sydenham, Orange Countess Mrs. Walter Wright, Janet Scott, and Scarlet Gem. The 2nd prize was taken by Mr. G. DAVIDSON, Elm Lodge, Quadrant Road, Croydon.

Groups of Plants arranged for Effect.—1st, Mr. Burdett, gr. to E. C. P. HULL, Esq., Earlswood Mount, Redhill, with a lightly-disposed group, of which the salient points were bright yellow *Codiums*, *Cordylines*, *Kalanchoes*, *Gesnera coccinea*, *Palms*, and *Caladiums*, with a groundwork of dwarf things thinly spread about.

A small collection of Cacti and Melon Cacti was shown by Mr. C. A. BLOGG, 46, Haling Road, Croydon, who was awarded 1st prize. The species shown did not include any varieties or large specimens.

AMATEURS AND GARDENERS.

Fifty Fruits of Strawberries.—1st, Mr. W. LINTOTT, gr., Marden Park; 2nd, Colonel INGLIS, Craigendown, Reigate, both showing Royal Sovereign.

Other fruit staged was not remarkable. Cucumbers were plentiful, also Peas, Broad Beans, and Tomatos.

NOT FOR COMPETITION.

Mr. J. R. BOX, Nurseryman, West Wickham and Croydon, showed a group in which tuberous Begonias formed the groundwork of small groups of scarlet Carnations, *Caladiums*, Maidenhair Ferns, Asparagus, &c.

Mr. T. BUTCHER, Nurseryman, Croydon and Shirley, exhibited Palms healthy and well-developed, also flowering decorative plants, Ferns, Lilies, *Hydrangea Hortensia*, *H. paniculata*, &c.

Messrs. THOMAS WARE & CO., Ltd., The Nurseries, Feltham, Middlesex, contributed a number of Nymphæas and a large assortment of hardy herbaceous flowers, making a very gay display.

Mr. EBENEZER POTTEN, Camden Nurseries, Cranbrook, showed Roses in single blooms and triplets, but very few were good blooms. The best were Madame Ravary, Killarney, and La France. This exhibitor set up a table of hardy herbaceous cut flowers, and among them, Eclair, a fine purple Phlox.

Messrs. J. PEED & SON, nurserymen, West Norwood, S.E., showed a table set out with Sweet Peas in great variety.

Mr. J. R. BOX contributed a small table set out with hardy herbaceous cut flowers, *Dianthus barbatus*,

Delphinium nudicaule, Verbascum Chaixii, Lychnis Haageana being uncommonly choice and good.

Messrs. G. JACKMAN & SON, Woking Nurseries, Surrey, likewise made a pretty display with hardy herbaceous plants, and amongst them some handsome seedlings of Iris Kämpferi.

Messrs. JOHN LAING & SONS, The Nurseries, Forest Hill, London, staged six dozen Rose blooms, H.P. and Tea varieties, of fine quality, hardy herbaceous flowers in some quantity, and all of them showing great vigour.

Messrs. JONES & SONS, Coton Hill, Shrewsbury, showed forty-two varieties of Sweet Peas very strong and good.

Messrs. CHEAL & SONS, Nurseries, Crawley, furnished a lot of tabling with capital cut flowers of hardy plants.

HANLEY FLORAL FÊTE.

JULY 5, 6.—The ninth annual horticultural show and fêtes, under the auspices of the Corporation, was held on these dates, and was again favoured with excellent weather. Year by year this function grows in importance and in attractiveness, and since the first show was held in 1897 no less a profit has been made than £3,260 17s. 10d. This year's show was equal to any that have been held in Hanley Park. Never before has a finer or more comprehensive display of flowers been seen in the district, and this despite a season which has not been by any means in favour of the horticulturist. The fruits made in every sense a much finer show than last year, and the wreaths and baskets of flowers also made an excellent display.

In the class for a group of plants arranged for effect, the 1st prize was awarded to Messrs. J. CYPHER & SONS, Cheltenham, who included several excellent Orchids in their display. The group staged by Mr. JAMES BLACKER, Selby, ran the 1st prize collection very close for premier honours, but it was rather heavily staged. Another good group was shown by Messrs. ARTINDALE & SONS, Sheffield.

Messrs. CYPHER also secured 1st place in the class for a group of Orchids in flower, with Ferns and other suitable foliage plants. 2nd, Mr. WM. VAUSE.

The class for a group of Malmaison and other Carnations was keenly contested: it resulted in Mr. P. BLAIR, Trentham Hall Gardens, Stoke-on-Trent, winning the 1st place, followed by Mr. JNO. SCOTNEY, Tittensor Chase Gardens, Stoke-on-Trent, and Mr. GOODACRE, Elvaston Castle Gardens, Derby.

The best stand of seventy-two distinct varieties of Roses was those shown by Messrs. J. Townsend & Sons, Worcester; and the same firm was also 1st in almost all the other classes for Roses.

The best collection of hardy perennials, occupying a space 16 feet by 4 feet, was that put up by Messrs. G. GIBSON & Co., Bedale.

The class for a dessert-table, to be decorated with flowers and foliage, and containing not more than fourteen dishes of fruits, made a pleasing feature. The prizes were valuable, the 1st, totalling 15 guineas in value, being won by Mr. J. H. GOODACRE, Derby, who was also 1st for a collection of twelve dishes of fruits, in not fewer than eight distinct kinds.

The best four bunches of Grapes, including two black and two white varieties, were shown by Mr. T. BANNERMAN, Rugeley.

DEVON AND EXETER HORTICULTURAL.

JULY 7.—The two-hundred-and-first Exhibition of the Society was held, as usual, in the charming grounds of Northernhay, Exeter's most popular pleasure-ground. Some members of the Committee, when the year's arrangements were being made, strongly advocated a Rose show, while others preferred the usual date, about the third week in August, when outdoor fruits and vegetables are at their best. The date fixed was a compromise, and the result was unsatisfactory, for it was a week or ten days too late for Roses at Exeter, and more than a month too early for fruit and vegetables. The entries prove this. There were in all 80 Classes, against 114 last year, while the entries totalled 250 against 663 last year—less than half! But for the trade exhibits the show would have been a comparative failure.

OPEN CLASSES.

Roses.—Cut Blooms, Thirty-six Distinct H.P.'s.—There were but two entries, the 1st prize going to THE DEVON ROSERY CO., Torquay; and the 2nd prize to Messrs. JARMAN & Co., Chard. The class for twelve H.P.'s, three blooms of each, falling to the same firms in the same relative positions.

For twelve distinct Teas, Hybrid Teas and Noisettes, three blooms of each, Messrs. JARMAN & Co. were 1st; and the DEVON ROSERY CO., 2nd.

For a table measuring 8 feet by 4 feet, furnished with fruit and flowers for dessert, the 1st prize was awarded to Mr. W. BROCK, Exeter (gr., W. Rowland), the only entry.

CLASSES CONFINED TO SUBSCRIBERS.

For twelve blooms of Roses on long stems, all distinct, the 1st prize went to Dr. SAMWAYS, Clyst St. George (gr., A. Williams), who staged a meritorious twelve; and was closely followed by Sir DUDLEY DUCKWORTH-KING, Weir House (gr., S. Baker), Col. HARDINGE, Exeter (gr., A. Evans), being 3rd.

The other classes for Roses were not well filled, and do not call for particular comment.

CUT FLOWERS.

The competition in this section was more spirited, and although nothing very new or rare was shown, the specimens were well grown and of considerable merit.

For twelve bunches of hardy herbaceous flowers, distinct (bulbous species admitted), Rev. E. HEATHCOTE, Reive (gr., G. Wilton), was 1st; Miss FARRANT, Huxham, 2nd; an extra prize to Col. SANFORD, Wellington (gr., Mr. Kitley).

The best exhibit of nine bunches of Sweet Peas, distinct, was shown by Mr. J. H. LEY, Trehill, 1st; Sir DUDLEY DUCKWORTH-KING, 2nd; and an extra prize to Mrs. S. P. POPE, Exmouth.

PLANTS.

The best exhibit of a group of miscellaneous plants arranged in an oval space of 10 feet by 12 feet was one from Mr. W. BROCK; Mr. T. KNAPMAN being 2nd.

For nine Gloxinias (six distinct), Mr. C. M. COLLINGWOOD, of the Institution for the Blind, Exeter, was 1st with plants of exceptional merit. Mr. J. H. LEY, Trehill, was a good 2nd.

For six double tuberous-rooted Begonias, Mr. COLLINGWOOD was 1st for well-grown plants hardly at their best.

The best exhibit of six single tuberous-rooted Begonias was shown by Mr. W. BROCK, Exeter; Mr. O. BURTON, Sowton, being 2nd.

Mr. O. BURTON won the 1st prize for six Fuchsias; and Mr. W. BROCK was 2nd, both exhibits being excellent, and near in respective merit.

FRUIT AND VEGETABLES.

For White Grapes, Rev. A. H. HAMILTON-GELL, Winstade (gr., G. Barnes), was 1st, with Duke of Buccleuch—the only entry; while Mrs. F. HEARN, Exeter, was 1st for six Peaches—also the only entry.

VEGETABLES generally were not of the usual high quality staged at this show, for reasons assigned above. The principal prize-takers were Dr. SAMWAYS, Sir DUDLEY DUCKWORTH-KING, Captain RATCLIFFE, Mr. VICKERY, and Mrs. HEARN.

TRADE EXHIBITS.

Messrs. ROBERT VEITCH & SON, Exeter, had a large miscellaneous collection in which several of the new Roses were staged, also Romneya Coulteri, in fine form; Coriaria terminalis, Lonicera Hildebrandti, Black Currant Boskoop Giant, Gerbera Jamesoni, Spiraea Aruncus Kneiffii, Polygonum Baldschuanicum, Genista æthensis, and a large collection of Sweet Peas.

Mr. W. J. GODFREY, Exmouth, showed Solanum Wendlandi, Carnations Godfrey's Pride and Reginald Godfrey; Cannas, Pelargoniums, Sweet Peas, &c.

Mr. G. KESWELL, Bowhill, Exeter, had a general collection of conservatory plants, including fine double Begonias.

Messrs. CURTIS, SANFORD & Co., Torquay (Devon Rosery Co.), had Roses (H.T.) Princess Charles de Ligny, Ligne Aremburg (H.P.), Hugh Watson, Florence Pemberton, &c.

Messrs. JARMAN & Co., Chard, showed Roses, Sweet Peas, new Sweet Sultans, and other subjects in good form.

Messrs. W. B. SMALE, Torquay; JAMES WALTERS, Mount Radford; TUPLIN & SONS, Newton Abbot; and SAUNDERS & BISS, Exeter, had special exhibits, all the trade exhibitors being awarded Certificates of Merit.

The exhibition was honoured by a visit from H.R.H. The Princess Frederica of Hanover, who was on a visit to Mr. and Mr. Byrom, of Culver, near Exeter. The Princess was accompanied by her husband, Baron von Pawel-Rammingen.

Messrs. Robert Veitch & Son and Mr. W. J. Godfrey, of Exmouth, on behalf of the nurserymen exhibiting, presented Her Royal Highness with a beautiful bouquet of pink and yellow Carnations.

ROSE SHOW AT THE CRYSTAL PALACE.

JULY 8.—The Crystal Palace Company having lost the exhibitions of the National Rose Society, have this season held one under their own management. They issued a schedule of prizes to the large amount of £225, and in the various classes very liberal prizes were offered. The schedule was an ambitious one, for it included a class for seventy-two distinct varieties, similar to the largest class in the National Rose Society's schedule.

In this competition there were as many as seven exhibitors, being more than the National Rose Society have had for some years past. The 1st prize consisted of the sum of £10, with 2nd, 3rd, and 4th prizes of £8, £6, and £5. Most of the competitors were members of the National Rose Society, and some of

them expressed pleasure at the luncheon at being enabled once again to exhibit Roses in the familiar Crystal Palace.

The show was a very good one indeed for the present indifferent season, and to the onlooker at least it would appear that in the future there will still be a Crystal Palace Rose Show.

The arrangements, &c., were in the capable hands of Mr. Geo. Caselton, Superintendent of the Crystal Palace Gardens.

NURSERYMEN'S CLASSES.

Messrs. ALEX. DICKSON & SONS, Newtownards, co. Down, surpassed six other exhibitors in the very exacting class for seventy-two blooms, distinct. Their best blooms were Killarney, Chas. Darwin, Madame Delville, Chas. Lefebvre, Mildred Grant, Chas. Grahame, Gustave Pigancan, the very lovely White Maman Cochet, Star of Waltham, Duke of Wellington, and the pink-coloured Countess Annesley. 2nd, Messrs. B. R. CANT & SONS, The Old Rose Gardens, Colchester, who won 1st prize in the similar class at the National Rose Society's exhibition. There were some very pretty flowers in this collection, among which may be mentioned Mildred Grant (capital), Golden Gate, Horace Vernet, Reynolds Hole, Mrs. Ed. Mawley, A. K. Williams, and Duke of Wellington. 3rd, Messrs. D. PRIOR & SONS, Mylands Nursery, Colchester.

Forty-eight Blooms of H.P.'s, Distinct.—In this class the winners of the 1st and 2nd prizes in the previous classes changed places, Messrs. B. R. CANT & SONS being 1st and Messrs. A. DICKSON & SONS, 2nd. The 1st prize exhibit was remarkable for containing a very large proportion of richly-coloured varieties of the Victor Hugo and Duke of Connaught types, the colours being in many instances very highly developed. The collection as a whole was composed of rather small-sized flowers. The largest and fullest flower in Messrs. DICKSON'S collection was the variety Francois Courtin. Messrs. FRANK CANT & Co. were 3rd, and Messrs. D. PRIOR & SON, 4th.

Twenty-four Blooms, Distinct.—Just as at the Regent's Park Show, Mr. CHAS. TURNER, Royal Nurseries, Slough, won the premier award in this class, and showed a collection like one previously noticed, which was remarkable for rich colours. The only white Rose in this stand was a bloom of Frau Karl Druschki, which has this season been shown very indifferently. Excluding five other blooms of various shades of pink colour, all the others were of some shades of red or crimson. The 2nd and 3rd prizes were won by Mr. JNO. MATTOCK, New Headington, Oxford; and Messrs. JNO. JEFFERIES & SON, Cirencester, respectively. There were two other exhibitors.

TEAS AND NOISSETTES.

Twenty-four Blooms, Distinct.—There were five exhibitors in the largest class for Teas and Noisettes, the 1st prize being won by Messrs. FRANK CANT & Co., who had amongst others very good blooms of Bridesmaid, Golden Gate (rather pale), Souvenir de Pierre Notting, &c. 2nd, Messrs. D. PRIOR & SON, Colchester, whose best bloom was Maman Cochet; and 3rd, Mr. GEO. PRINCE, Longworth. Teas and Noisettes are very small in size generally this season.

Twelve Blooms distinct.—Mr. HENRY DREW, Longworth, Berks, won the 1st prize for twelve blooms, and generally they were very pretty specimens. The varieties were Maman Cochet, White Maman Cochet, Mrs. Ed. Mawley, Niphotos, Madame de Watteville, Souvenir d'Un Ami, Medea, Muriel Grahame, Madame Vermorel, Madame Hoste, and Madame Cusin. 2nd, Messrs. G. & W. H. BUCH, Peterborough. 3rd, Mr. JNO. MATTOCK.

ROSES IN VASES.

Some of the exhibits in vases were uncommonly attractive, a group of hybrid Teas being the best. The 1st prize for twelve varieties of Roses, five blooms of each, was won by Messrs. BENJ. R. CANT & SONS, 2nd, Mr. GEO. PRINCE; 3rd, Messrs. FRANK CANT & Co.

The collection of nine vases of hybrid Teas which gained the 1st prize for Messrs. A. DICKSON & SONS was very fine, consisting as it did of good flowers, and vigorous foliage of the varieties Marquise Litta, Mrs. David McKee, the beautiful Killarney, Dean Hole, Mildred Grant, Lady Ashtown, Chas. Grahame, Florence Pemberton, and Mrs. W. J. Grant. 2nd, Messrs. F. CANT & Co.; and 3rd Messrs. JNO. JEFFERIES & Co., Cirencester.

GARDEN OR DECORATIVE ROSES.

Messrs. PAUL & SON, The Old Nurseries, Cheshunt, had the best collection of garden Roses arranged on a space of 16 feet by 6 feet; Mr. JNO. MATTOCK being 2nd.

A class for a collection of single Roses was won by Messrs. FRANK CANT & Co. Rosa moschata alba, R. himalaica, Irish Brightness (crimson), R. rugosa alba, Irish Beauty (white), were some of the prettiest shown; but the intense heat of the afternoon caused these flowers to droop very much.

Messrs. FRANK CANT & Co. won 1st prize for bunches of twelve varieties of buttonhole Roses. This was a very good collection, but was remarkable for not containing the well-known "buttonhole" variety W. A. Richardson. We will give the names. They were as follows:—Gustave Regis, Liberty, Peace (pale yellow), Madame Jean Dupuy, Sulphurea, Maria Christina, Perle d'Or, Papa Gontier, Alberic Barbier, Lady Roberts, Ma Capucine, and Souvenir de T. Levet. 2nd, Mr. Jno. MATTOCK; and 3rd, Mr. Geo. PRINCE.

Other classes for nurserymen included one for a single vase of Roses, won by Messrs. JNO. JEFFERIES & SON; a basket of Roses, won by Mr. JNO. MATTOCK; and a dinner-table decoration of cut Roses, won by Miss MATTOCK, who employed a single Rose, white with faint blush, probably of the variety Una.

AMATEURS.

A similar number of classes was reserved for amateurs. The class for thirty-six blooms, distinct, was won by that indefatigable exhibitor the Rev. J. H. PEMBERTON, Havering-atte-Bower, Essex; Mr. CONWAY JONES being 2nd. The best eighteen blooms, distinct, were shown by Mr. M. BURDFIELD, Denne Park Gardens, Horsham. The same number of Teas and Noisettes were best from A. HILL GRAY, Esq., Newbridge, Bath; and the winning collection of twelve Teas and Noisettes was shown by Mr. W. MEASE, gr. to A. TATE, Esq., Downside, Leatherhead. Mr. MEASE had also the 1st prize for garden or decorative Roses. There were other classes, most of which were reserved for growers of a certain number of plants only.

NON-COMPETITIVE EXHIBITS

were numerous, the highest awards to these being two Gold Medals, which were obtained by Messrs. W. PAUL & SON, Waltham Cross, who showed a collection of Roses; and by Messrs. GEO. BUNYARD & Co., Maidstone, who had Roses, flowers of hardy herbaceous plants, Strawberries, &c.

Other firms exhibiting were Messrs. J. Peed & Sons, West Norwood (Silver Medal); Messrs. Jackman & Sons, Woking (Silver-gilt Medal); H. Cannell & Sons, Swanley (Silver-gilt Medal); J. Cheal & Sons, Crawley (Silver Medal); G. Reuthe, Keston (Silver Medal); H. J. Jones, Lewisham (Silver Medal); J. Laing & Sons, Forest Hill (Silver-gilt Medal); M. Prichard, Christchurch (Silver-gilt Medal); T. S. Ware, Ltd., Feltham (Silver-gilt Medal); Williams, Ealing (Silver Medal); and Mr. David Russell, Brentwood (Silver Medal).

GARDENERS' DEBATING SOCIETIES.

BRIXTON, STREATHAM, AND CLAPHAM HORTICULTURAL.—The above Society held its annual outing on Thursday, July 6, visiting, through the kindness of Mr. Leopold de Rothschild, the gardens and grounds at Gunnersbury House. The outing was in every way a success. The new annual garden was of great interest, and the rough flagstones for pathways with dwarf plants growing between were a novelty. Tropaeolum "Ball of Fire," and Salvia splendens growing in boxes on the roof of the house, presented a gorgeous effect viewed from the lawn. The beds of Roses, the Japanese garden, the unique collection of Water-Lilies, the imitation old wall, were all of interest. In the Bamboo-garden Arundinaria nitida was specially noted for the perfect condition of its foliage. The visitors were much impressed with their cordial and hospitable reception, and they will long cherish pleasant memories of the afternoon spent at Gunnersbury. J. M. B.

"**FLORULA MORTOLENSIS.**"—This is a catalogue of plants growing wild in the neighbourhood of La Mortola, and has been prepared by Mr. ALWIN BERGER. It has been drawn up by order of Sir THOMAS HANBURY for the benefit of the numerous visitors who come to see his gardens, many of whom are often not less interested in the indigenous than in the luxuriant tropical and subtropical plants under cultivation. The vegetation of this portion of the Italian Riviera in the immediate neighbourhood of Mentone is both rich and varied, as this useful catalogue abundantly testifies. Its luxuriance is due to the "great variety of locality that exists. There are dry, steep rocks, deep and fertile soil, bare sunny banks, shady and woody places, water-channels, the bed of a torrent, and the sea shore. The sub-soil is almost entirely limestone, in many places rich in fossils. Sand occurs only in one isolated spot close to the garden entrance, but it contains chalk as well, and does not influence in any way the wild vegetation." We should add that Mr. BERGER calls attention to the following volume as containing good illustrations of the Riviera plants:—*Contributions to the Flora of Mentone, and to a Winter Flora of the Riviera, &c.*, by J. TRAHERNE MCGGRIDGE (1871), and *Flowering Plants and Ferns of the Riviera, &c.*, by C. Bicknell (1885).

MARKETS.

COVENT GARDEN, July 12.

[We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Wednesday, by the kindness of several of the principal salesmen, who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the way in which they are packed, the supply in the market, and the demand, and they may fluctuate, not only from day to day, but often several times in one day. Ed.]

Plants in Pots, &c.: Average Wholesale Prices.

s. d. s. d.	s. d. s. d.
Aralia Sieboldi, p. dozen ...	4 0-9 0
Araucaria excelsa, per dozen ...	16 0-30 0
Aspidistras, green, per doz. ...	24 0-36 0
— variegated, per doz. ...	30 0-42 0
Asparagus plumosus nanus, per doz. ...	12 0-18 0
— Sprengeri, per dozen ...	6 0-9 0
— tenuissimus, per doz. ...	6 0-8 0
Begonias, tuberous, per doz. ...	4 0-6 0
Boronia elatior, per dozen ...	12 0-24 0
Calceolarias, yellow, per dozen ...	4 0-6 0
— herbaceous, per dozen ...	6 0-8 0
Canna, per doz. ...	5 0-6 0
Chrysanthemum coronarium, double yellow, per dozen ...	6 0-8 0
Coleus, per dozen ...	2 6-4 0
Crotons, per doz. ...	12 0-30 0
Cocos Weddelliana, per doz. ...	12 0-30 0
Cyperus alternifolius, p. doz. ...	3 0-5 0
Dracaenas, p. doz. ...	9 0-24 0
Ericas, per doz. ...	12 0-30 0
Eulalia japonica variegata ...	12 0-18 0
Euonymus, per dozen ...	4 0-9 0
Ferns, in thumbs, per 100 ...	8 0-12 0
— in 48's, p. doz. ...	4 0-10 0
— in 32's, per dozen ...	10 0-18 0
Ficus elastica, p. doz. ...	9 0-12 0
— repens, per dozen ...	4 0-6 0
Fuchsias, p. doz. ...	4 0-6 0
Heliotropes, per dozen ...	3 0-4 0
Hydrangea, Thos. Hogg, p. doz. ...	8 0-12 0
— Hortensia, p. dozen ...	8 0-12 0
— paniculata ...	12 0-30 0
Kalosanthes, per dozen ...	9 0-12 0
Kentia Belmoreana, per doz. ...	12 0-18 0
— Fosteriana, p. doz. ...	12 0-21 0
Lobelia, per doz. ...	3 0-4 0
Latania borbonica, per doz. ...	12 0-18 0
Lilium longiflorum, per doz. ...	9 0-12 0
Marguerites, white, per dozen ...	4 0-8 0
— yellow ...	12 0-18 0
Mignonette, doz. ...	4 0-6 0
Musk, Harrison's, per dozen ...	3 0-4 0
Pelargoniums, per doz., Show ...	9 0-12 0
— Ivy-leaved ...	4 0-6 0
— zonal ...	3 0-5 0
— scarlet do. ...	4 0-5 0
Petunias, double, per dozen ...	5 0-6 0
Rhodanthe, per dozen ...	4 0-5 0
Roses, H.P.'s, per dozen ...	9 0-18 0
— Crimson Rambler (large), each ...	2 6-7 6
Saxifraga pyramidalis, per doz. ...	12 0-15 0
Selaginella, doz. ...	3 0-5 0
Spiraea japonica, per doz. ...	4 0-9 0
Verbena, Miss Willmott, per dozen ...	6 0-9 0
— scarlet, per dozen ...	6 0-9 0

Vegetables: Average Wholesale Prices.

s. d. s. d.	s. d. s. d.
Artichokes, Globe, per dozen ...	1 6-2 0
Asparagus, English giant ...	4 0-12 0
— ordinary, per bunch ...	1 0-2 6
Beans, dwarf, per pad ...	6 0-
— Channel Island, per lb. ...	0 5-0 6
— English, p. lb. ...	0 5-0 6
— Broad, bush. ...	1 3-1 6
— per bag ...	3 0-4 0
Beetroot, bushel ...	3 0-4 0
Cabbages, p. tally ...	2 6-3 0
Carrots, new, doz. bunches ...	1 6-2 0
— French, dozen ...	3 0-
Cauliflowers, per dozen ...	1 9-2 0
Cress, doz. pun. ...	1 0-
Cucumbers, doz. ...	2 6-4 0
Endive, per doz. ...	1 6-2 0
Horseradish, per dozen bundles ...	10 0-12 0
Mint, per dozen ...	2 0-2 6
Leeks, per dozen bundles ...	1 6-2 0
Lettuces, Cabbage, per bushel ...	1 0-1 6
— English, Cos, per score ...	0 9-1 0
Mushrooms (house) per lb. ...	0 6-0 10
Onions, Egyptian, per cwt. ...	4 6-5 0
— Spring, dozen bunches ...	2 6-3 0
Parsley, per doz. bunches ...	1 6-2 0
Peas, per bag ...	3 0-6 0
— English, per bushel ...	2 0-4 0
Potatoes, old, per cwt. ...	3 6-4 6
— Jersey, p. cwt. ...	8 6-9 0
— St. Malo, per cwt. ...	7 6-8 6
— Cherbourg, p. cwt. ...	6 0-7 0
Radishes, p. doz. bunches ...	0 9-1 0
Spinach, bush. ...	1 0-1 6
Tomatoes, English, p. lb. ...	0 3-0 4 1/2
— Jersey, p. lb. ...	0 3-0 4 1/2
— Valencia, per package ...	10 6-13 6
Turnips, new, doz. bun. ...	3 0-4 0
Vegetable Marrows, per dozen ...	2 0-
Watercress, per doz. bunches ...	0 3-0 8

Foliage Plants, &c.: Average Wholesale Prices.

s. d. s. d.	s. d. s. d.
Asparagus plumosus, long trails, each ...	0 4-0 6
— medium, bunch ...	0 9-1 0
— short sprays per bunch ...	1 0-2 6
— Sprengeri ...	0 6-1 0
— tenuissimus ...	9 0-12 0
Adiantum cuneatum, per dozen bunches ...	4 0-6 0
Cycas leaves, each ...	1 6-2 0
Fern, English, p. doz. bunches ...	2 0-3 0
Grasses, hardy, p. doz. bunches ...	2 0-4 0
Ivy-leaves, bronze long trails, per bundle ...	1 0-2 0
— short green, doz. bunches ...	1 0-1 8
Moss, per gross ...	5 0-6 0
Myrtle, per dozen bunches ...	3 0-5 0
Smilax, p. dozen trails ...	4 0-6 0
Hardy foliage (various), per dozen bunches ...	3 0-4 0

Cut Flowers, &c.: Average Wholesale Prices.

s. d. s. d.	s. d. s. d.
Alströméria, per doz. bunches ...	3 0-4 0
Bouvardia, per doz. bunches ...	6 0-8 0
Calla æthiopica, p. doz. bloom. ...	3 0-4 0
Carnations, per doz. blooms, beat American vars. ...	2 6-5 0
— smaller do. ...	0 6-1 0
— Malmaisona ...	8 0-12 0
Cattleya, per doz. blooms ...	10 0-12 0
Coreopsis, p. doz. ...	3 0-4 0
Eucharis grandiflora, per dozen blooms ...	1 0-2 0
Gardenias, per doz. blooms ...	1 0-1 6
Gladiolus Colville, doz. bun. ...	2 0-3 0
— broncheyensis p. doz. spikes ...	3 0-4 0
Gypsophila, per dozen bunches ...	2 0-3 0
Iris, Spanish, per doz. bunches ...	2 0-3 0
— best English, per dozen ...	9 0-12 0
Lilium candidum ...	0 6-1 0
— lancifolium, rubrum and album ...	2 0-3 0
— longiflorum ...	2 0-3 0
— tigrinum ...	1 6-2 0
Lily of the Valley, p. doz. bncls. ...	9 0-12 0
— extra quality ...	18 0-
Marguerite, white, p. doz. bncls. ...	3 0-4 0
— yellow, per doz. bunches ...	2 0-3 0
Mignonette, doz. ...	4 0-6 0
Musk, Harrison's, per dozen ...	3 0-4 0
Pelargoniums, per doz., Show ...	9 0-12 0
— Ivy-leaved ...	4 0-6 0
— zonal ...	3 0-5 0
— scarlet do. ...	4 0-5 0
Petunias, double, per dozen ...	5 0-6 0
Rhodanthe, per dozen ...	4 0-5 0
Roses, H.P.'s, per dozen ...	9 0-18 0
— Crimson Rambler (large), each ...	2 6-7 6
Saxifraga pyramidalis, per doz. ...	12 0-15 0
Selaginella, doz. ...	3 0-5 0
Spiraea japonica, per doz. ...	4 0-9 0
Verbena, Miss Willmott, per dozen ...	6 0-9 0
— scarlet, per dozen ...	6 0-9 0
Mignionette, doz. ...	4 0-6 0
Musk, Harrison's, per dozen ...	3 0-4 0
Pelargoniums, per doz., Show ...	9 0-12 0
— Ivy-leaved ...	4 0-6 0
— zonal ...	3 0-5 0
— scarlet do. ...	4 0-5 0
Petunias, double, per dozen ...	5 0-6 0
Rhodanthe, per dozen ...	4 0-5 0
Roses, H.P.'s, per dozen ...	9 0-18 0
— Crimson Rambler (large), each ...	2 6-7 6
Saxifraga pyramidalis, per doz. ...	12 0-15 0
Selaginella, doz. ...	3 0-5 0
Spiraea japonica, per doz. ...	4 0-9 0
Verbena, Miss Willmott, per dozen ...	6 0-9 0
— scarlet, per dozen ...	6 0-9 0

Fruit: Average Wholesale Prices.

s. d. s. d.	s. d. s. d.
Apples, Tasmanian, case ...	8 0-12 0
Apricots, French, per half bush. ...	4 6-5 6
Bananas, bunch ...	6 0-14 0
— Jamaica ...	3 6-8 0
— loose, per doz. ...	1 0-1 6
Cherries, per half bush. ...	6 0-12 0
Currants, Black, p. half bushel ...	4 0-6 0
— Red, per half bushel ...	4 0-6 0
— White, per lb. ...	0 6-
Figs, per dozen ...	2 0-6 0
French Plums, p. box ...	1 5-2 0
Gooseberries, per half bushel ...	2 6-3 0
— ripe, per peck ...	2 0-2 6
Grape-fruit, case ...	13 0-
Grapes, Alicante, per lb. ...	1 0-1 3
Grape, Hambro, per lb. ...	0 10-2 0
— Muscats, lb. ...	1 0-2 6
Lemons, per case ...	7 0-26 0
Melons, each ...	1 6-4 0
— French, Rock ...	4 0-5 0
Nectarines, A. p. dozen ...	12 0-18 0
— B., per dozen ...	3 0-6 0
Oranges, per case ...	13 0-26 0
— Jamaica, per case ...	13 0-
— Murcia, case ...	13 0-15 0
— Valencia, per case ...	11 0-24 0
Peaches, A., doz. ...	8 0-12 0
— B., per doz. ...	2 0-6 0
— French, per box ...	0 9-1 6
Pines, each ...	2 6-5 0
Raspberries, p. lb. ...	0 3-0 4
Strawberries, Kentish, peck ...	1 6-3 0

REMARKS.—Strawberries are still arriving in considerable quantities, but owing to the wet weather they come in a soft condition. There are but few English Apricots obtainable in the market, although French and Spanish fruits are plentiful; those from the Continent arrive in boxes and in half-sieve baskets. Supplies of ripe Gooseberries are limited; those seen are of good quality, and mostly the variety Golden Drop. Large quantities of Tomatoes are arriving, some from the Canary Islands, but the majority are Channel Island produce. Home-grown Tomatoes are now appearing plentifully in the market. Peaches and Nectarines are very abundant. Trade on the whole is good.

COVENT GARDEN FLOWER MARKET.

THERE is a considerable falling off in supplies, and even those growers who do send find a difficulty in selling their produce. Some few things are still in demand, but trade generally is very dull. Small plants of Rose Dorothy Perkins in 48's and 32's are very pretty. Crimson Ramblers are also good. Growers with a local trade are now sending their surplus produce to market. Crotons, Dracaenas, Pandanus, and other foliage plants are to be had in well-coloured specimens. Show Pelargoniums are still plentiful, and zonals are still of good quality, as are also Ivy-leaved varieties; but although the best of these sell readily, there is no demand for plants of second quality. Bouvardias are already seen, but they are not wanted. Supplies of Verbenas hold out; they are still very good. Campanula Mayi is marketed by several growers. Marguerites are plentiful; the yellow varieties do not find such a ready sale as formerly. The variety Queen Alexandra is very good. Eulalia japonica variegata is not often seen in such good quality as now. Fuchsias are still very good. Among Lilliums there are Harrisii, longiflorum, lancifolium album and rubrum, also auratum. Good Mignonette may still be had, but if the hot weather continues supplies will soon be over. Some good Ericas are noticed, but there are many of these plants that are not well flowered. Tuberous-rooting Begonias may be had in good plants both in 48's and 60's. The Kalosanthes (Crassulas) are still plentiful. Ferns and Palms do not

command much attention, and to find purchasers they must be offered at low prices.

CUT FLOWERS.

Supplies are not quite so abundant, although still equal to all demands. Roses seem to sell for fairly good prices, while the best quality Carnations do sell well, but the small blooms and second quality Malmesons do not find purchasers at any prices. Flowers of Azalea mollis from retarded plants are seen, but meet with no demand. Lilies in all varieties especially *L. candidum*, are plentiful and cheap. Poppies of various sorts are showy, but it is only the best Iceland varieties that sell well. Among other hardy flowers those of *Alströmarias* are very pretty. The Shasta Daisies arrive in large quantities. *Gypsophila paniculata* is now obtainable; this species will displace *G. elegans*, which is still plentiful. Chinese Asters are already coming into the market, but the blooms are somewhat small. *Coreopsis grandiflora* is a favourite flower, and *Centaurea suaveolens* (Sweet Sultan) sells well. *Eucharis*, *Stephanotis*, *Tuberose*, and other flowers with short stems find few purchasers. Large supplies of hardy Fern-fronds and hardy foliage of various sorts, including Oak with bronze-tinted tips, are to be had; also Maidenhair Fern, *Smilax*, *Asparagus*, &c. *A. H.*, Covent Garden, Wednesday, July 12.

FRUITS AND VEGETABLES.

The following are the latest wholesale prices to hand from the undernoted markets:—

LIVERPOOL.—Vegetables: Potatoes, 3s. 3d. to 8s. 6d. per cwt.; new, 1s. 9d. to 2s. per 21 lb.; Turnips, 6d. to 8d. per dozen bunches; Carrots, 6d. to 8d. do.; Cucumbers, 1s. 9d. to 3s. per dozen; Onions, foreign, 2s. 6d. to 4s. per bag; Parsley, 4d. to 6d. per dozen bunches; Lettuces, 4d. to 6d. per dozen; Cauliflowers, 1s. 3d. to 2s. 6d. do.; Cabbages, 4d. to 7d. do.; Peas, 4s. to 6s. 6d. per hamper; Beans, 4s. do.—Fruit: Oranges, Valencia, 10s. to 21s. per case; Lemons, Palermo, 9s. 6d. to 20s. do.; Apples, Lisbon, 9s. 3d. to 11s. 6d. do.; Tomatoes, 8s. 6d. to 12s. do.; Melons, Valencia, 36s. 10s. do.; Bananas, 4s. to 8s. per crate.

EDINBURGH.—Oranges, Valencia, 15s. per case; Grapes, English, 1s. 9d. to 2s. per lb.; do. Belgian, 1s. 4d. do.; Lemons, Palermo, 10s. to 18s. 6d. per case; Apples, Australian, 13s. 6d. to 15s. 6d. per case; do. Lisbon, 15s. do.; Bananas, 5s. 6d. to 10s. per bunch; Nuts, Barcelona, 35s. to 38s. 6d. per bag; Nuts, 18s. 6d. to 20s. per cwt.; Figs, 9s. per dozen; Walnuts, Italian, 6s. 6d. per cwt. Vegetables: Tomatoes, Guernsey, 53d. to 6d. per lb.; Onions, Egyptian, 4s. per cwt.; do. Valencia, 7s. 6d. to 8s. do.; Carrots, 1s. per dozen; Potatoes, Canary, 8s. to 8s. 6d. per cwt.; do. Maltese, 7s. 6d. do.

DUBLIN.—Vegetables: Potatoes, new, sandy, 4s. 6d. to 5s. per cwt.; clays, 5s. to 5s. 6d. do.; Cabbages, York, 5s. to 9s. 6d. per load; Cauliflowers, 2s. to 2s. 6d. per basket; Parsley, 2s. per bag; Parsnips, 2s. 3d. to 2s. 6d. per cwt.; Carrots, 10d. to 1s. per dozen; Onions, Tripoli, 4d. to 5d. per bunch; Turnips, white, 13d. to 2d., do.; Rhubarb, 11d. to 1s. per bag; Salad, 6d. to 11d. per dozen; Peas, 4s. to 4s. 6d. per bag.

ENQUIRY.

GERMINATION OF SEEDS.—Can any of your readers give me an idea as to how long the following seeds take to germinate, if good?—*Clivia nobilis*, sown May 20, in temp. 85° (approx.); *Agapanthus*, *Amaryllis*, *Begonia Rex*, *Phoenix dactylifera*, *Latania borbonica*, all sown on May 26 in a cool-house: *Arum*, *Camellia*, *Ardisia crenulata*, *Hydrangea grandiflora*, *Nephrolepis exaltata*, *Aloe* (Waggon Hill), and *Cactus*, all of which have been sown in a cool-house. *T. R. P.*

TRADE NOTE.

MR. H. ELLIOTT, of Courtbushes Nurseries, Hurstpierpoint, has taken over the glass portion of the Hassocks Nurseries, Hassocks, Sussex, so long carried on by Messrs. W. Balchin & Son, where he intends largely to extend the culture of Tree- and Souvenir de la Malmesons Carnations.

GARDENING APPOINTMENTS.

MR. C. CORKE, for some time employed by Messrs. JOHN PEED & SON at their Breamham Nurseries, as gardener to Mrs. ARNOLD, Burton Joyce, Sidcup, Kent. Mr. ROBERT WEEKS, for the past four years Foreman at Cuffhells, Lyndhurst, as Gardener to J. M. YOUNG, Esq., Oak Bank, Hamilton, Ontario, Canada. Mr. J. K. HOARE, for the past five years General Foreman in The Gardens Iwerne Minster House, as Gardener to JAMES HAWKE DENNIS, Esq., Grebehurst Park, Surrey.

CATALOGUES RECEIVED.

BROWN, THOMPSON & CO., 86, Patrick Street, Cork—Flower & Vegetable Seeds.

MR. ECKFORD.—We are glad to learn that the Council of the Royal Horticultural Society has selected this well-known raiser of Sweet Peas to receive the Victoria Medal of Honour in Horticulture.

"INDEX KEWENSIS."—The Oxford University Press announces that the second part of the second supplement to the *Index Kewensis* will be ready immediately. This supplement covers the period 1896 to 1900. In the original work the genera and species of flowering plants from the time of LINNÆUS to 1885 were enumerated; and the first supplement carried on the list to 1895.

ANSWERS TO CORRESPONDENTS.

* Owing to pressure of matter we are compelled to hold over a Report of the Wolverhampton Show until our next issue.

BEGONIA: *T. G.* Sufficient Tobacco-juice to discolour the water will be sufficient. Dip the plants occasionally in a weak mixture rather than incur a risk of injuring them by the use of a stronger liquid.—*W. H.* Your leaves are affected with the mite. Dip the leaves in tobacco-water.

CUCUMBER LEAVES: *G. B.* Your leaves have one of the forms of "spot" which is so destructive. The shortest way is to destroy the whole crop, turn out the soil, whitewash the walls, mixing a little sulphur with the whitewash, and start afresh.

CUCUMBER: *G. B. M. R.* The plants are affected with a slime-fungus, of which we will endeavour to give you the name in next week's issue. Try an application of powdered sulphur to the healthy plants as a preventive.

EARWIGS: *Hemploe.* Continue with the solution of soft-soap and paraffin, keeping it mixed well during its application. Be careful not to use too strong a mixture.

FLOWER-DISPLAYERS: *C. M.* They can be obtained from Mr. J. Williams, Oxford Road, Ealing.

FUNGUS ON HEDGE: *J. W.* The fungus on your hedge is what is generally called *Roestelia laecrata*, but which is a form of a very different-looking fungus growing on Junipers. Cut the affected branches off and burn them, and if there are any Junipers in the neighbourhood destroy them also.

LILIUM AURATUM BULBS: *J. P.* Your bulbs are attacked by bulb-mites and other insects. Fungus probably comes to aid in the destruction.

MELON: *Constant Reader.* We cannot find any insect, but the appearances suggest injury from a mite or other biting insect, which has killed the skin. We do not think it is scald from syringing.

NAMES OF FRUITS: *In forwarding Peach or other soft fruits to be named, it is imperative that two specimens of each variety be sent, also a shoot with foliage, as identification is sometimes established by the character of the glands. The fruits should be gathered just before they are quite ripe. Wrap each fruit in tissue-paper, and pack them very carefully in soft material and in a wooden box that will not be likely to get crushed in the post. Pack sufficiently tightly to prevent the fruits from shaking in the box. In the case of Peaches it should be stated whether the tree produces large or small flowers. Do not post at the week-end, when delay may be reasonably expected.*—*E. Bambridge.* Peach Sulhamsted.—*H. F.* Grape West St. Peter's.

NAMES OF PLANTS: *J. S.* *Listera ovata*, the Twayblade.—*G. H.*, Yorks. *Oncidium Harrisonianum*, of the Pulvinata section, so far as we can judge by the small specimen sent. There is little room for doubt, as the cushion-like crest is peculiar to this small section.—*J. J.* A variety of the Japanese Iris, *I. Kämpferi*.—*W. F. B.* A viviparous form of grass, probably *Poa alpina*—*Bids*. Probably *Broughtonia sanguinea*, but it is difficult to be quite certain from the pressed flowers. Can you send us a rough sketch of the plant as growing?—*R. E.* 1, *Catananche cœrulea*; 2, *Veronica salicifolia*; 3, *Agrostemma coronaria*; 4, *Mimulus glutinosus*; 5, *Lysimachia vulgaris*; 6, *Linaria reticulata*.—*G. L. M. R.* 1, *Veronica longifolia*; 2, *V. longifolia* var. *subsessilis*; 3, *Lonicera*; 4 and 5, varieties of *Artemisia abrotanifolia*.—*G. H.* 1, *Agrostemma coronaria*; 2, *Galega officinalis*; 3, *Codium elegan-*

tissimum; 4, *Epilobium angustifolium*; 5, *Thalictrum majus*; 6, *Erigeron* sp.—*W. J. D.* *Tragopogon pratense*.—*A. T.* See last week's issue; 5, *Adiantum Capillus-Veneris*; 7, *Pteris cretica*; 8, *Adiantum excisum multifidum*.—*T. G.* *Linaria hepaticifolia*.—*B. L.* A Maple, probably *Acer dasycarpum*.

OAKS: *J. C.* Both leaves sent appear to be *Quercus rubra*, but foliage alone is insufficient to enable us to determine the species with certainty. The best Oak for affording colour in autumn is *Quercus coccinea* var. *splendens*; but all the forms of *Q. coccinea* are good. A form known as *Q. Greyana* colours well; *Q. palustris* colours well in some positions; *Q. rubra* is variable in this respect. See an article in our issue for April 1, 1905, p. 194.

ORPHAN FUND: *W. M.* We are more than surprised that any reader of this Journal should be ignorant of the names of the Executive of this excellent Charity. The Secretary is Mr. Brian Wynne, 30, Wellington Street, Strand, London, W.C., and donations can be sent to him, or to any of the members of the Committee.

PEACH WITH ILL-FORMED STONE: *C. B.* It is quite clear that the injury is not in the first instance due either to fungi or insects. The cause is due to some cultural defect that can only be ascertained on the spot. We advise you to keep plenty of lime in the soil; take care that the drainage of the border is efficient, and that the roots are not allowed to suffer from drought or from excessive wet.

PEACHES: *R. H. C.* The cracking is due to unequal growth, but what caused that irregularity we cannot tell.

PEAS: *W. D.* The pods are affected with thrip. Try spraying the Peas with an infusion of Quassia—a handful of Quassia-chips in a gallon of boiling water, and allowed to cool before use.

PINK: *Hemploe.* It is quite likely that the circumstances were as described by your friends. We have known the variety Mrs. Sinkins to behave in a similar manner, and occasionally to revert to the single form.

PURCHASE OF BULBS: *F. B.* We cannot advise you in this matter. Consult a solicitor.

ROSES: *A. J. F.* Some boring insect. You can do nothing but burn the affected shoots. Watch the answers in this column for the next week or two.

SWEET PEA: *E. J. L.* The unusual number of flowers is due to fasciation or a fusion of two or more flower-spikes—an abnormality of not infrequent occurrence.

TOMATO: *G. B.* Your Tomatoes are affected with fungus—*Cladosporium fulvum*. Try spraying with Bordeaux-mixture. Be sure to burn the affected plants.

ZYGOPETALUMS: *W. J. N.* Your plants appear to be affected with what is known among Orchid growers as "spot," the cause of which has never been definitely settled, but which in many instances seems to be brought about by cultivation in the same house, and perhaps in one not quite suitable, for a number of years. Once affected the plants are liable to it even on the current year's growth, which up to a certain point seemed healthy. It would be best to get rid of these plants and procure fresh stock. But if you elect to keep them, cut away all the affected parts and give the plants a change for five or six weeks under a shady wall in the open garden.

COMMUNICATIONS RECEIVED.—Basil Levet (your communication has been forwarded)—*J. C. & Co.*—*T. E. H.*—*E. McF.* Sydney.—*James Veitch & Sons.*—*H. C. L.*—*H. R. H.*—*J. F. D.*—*J. S.*—*F. W. M.*—*W. S.* (photograph).—*Mrs. O.*—*F. D. D.*—*J. C. & Co.*—*J. R. P.* & *S.*—*J. O'B.*—*J. S.*—*F. J.*—*J. D.*—*A. D.*—*S. A.*—*Sir Chas. S.*—*Essex.*—*N. S.*—*F. G. B.*—*North-East-Amateur National Carnation and Picotee Society*—*Rufus*—*Constant Reader*—*Nectarine*—*W. R. Smith*—*Ajax*—*Swailey Horticultural College*—*C. C.*—*A Reader*—*E. C. C. D.*—*W. H. C.*—*G. B.*—*Nil Desperandum*—*Anxious.*

MARRIAGE.—On the 8th inst., at St. John's Church, West Chelsea, Mr. HORACE R. ELTON, was married to Miss FLORENCE OUTRAM, the only daughter of the late Mr. ALFRED OUTRAM.

(For Weather see p. viii.)

THE Gardeners' Chronicle

No. 969.—SATURDAY, July 22, 1905.

CONTENTS.

Aldenham House, Elstree ...	64	Orchid notes and gleanings—	
Books, notices of—		Orchids at Messrs. Sander & Son's nursery ...	62
Alpine Flora ...	70	Pine sawfly in North Wales, the ...	72
Carnations, Picotees, and Pinks ...	70	Plants, new or noteworthy—	
Clay's Successful Gardening ...	71	Primula ovalifolia ...	62
The Vegetable Garden	70	Plant notes—	
Campanula turbinata "Isabel" ...	72	Gloriosa Rothschildiana citrina ...	67
Carnation, the ...	61	Poisons, the sale of ...	71
Carnations Bob Acres and Miss Willmott ...	72	Potato disease, the ...	32
Carnations, exhibiting	71	Roses at l'Hay, France	70
Carnations, some good varieties of ...	71	Roses at Lowdham ...	67
China, plant collecting in ...	65	Roses, some varieties of seeds, the germination of some ...	71
Climbing plant used as an emblem, a ...	71	Societies—	
Colonial notes ...	66	Cambridge Horticultural ...	77
Coombe House, Croydon ...	66	National Carnation & Picotee ...	74
Cymbidium Huttoni ...	63	National Rose at Gloucester ...	77
Dust nuisance, the ...	71	Reigate Horticultural Royal Horticultural ...	77
Edinburgh, the forthcoming International Show at ...	70	Wolverhampton Floral Fete ...	76
Flowershow at Chelsea, the recent ...	72	Strawberries and Red Currants, some new ...	73
Forestry at Park Royal	63	Timber value of exotic trees ...	64
Fruit register—		Week's work, the—	
Two new Strawberries	67	Aplary, the ...	69
Larch-trees, giant ...	70	Flower garden, the ...	69
National Sweet Pea Society's recent exhibition, the ...	72	Fruits under glass ...	68
Nursery note—		Hardy fruit garden ...	69
Reuthe, G. ...	78	Kitchen garden, the ...	68
Nurserymen's outing, &c ...	71	Orchid houses, the ...	68
Odontoglossum crispum	67	Plants under glass ...	68

ILLUSTRATIONS.

Carnation Bob Acres ...	65
Carnation Miss Willmott ...	73
Cymbidium Huttoni, inflorescence of ...	63
Honeycomb, uncapping a sealed frame of ...	69
Lilium Bakerianum (Lowii) ...	75
Odontoglossum, a prolific flower of ...	67
Pine saw-fly, the ...	71
Primula ovalifolia (Supplementary Illustration).	
Summer-house exhibited at the recent Chelsea Flower Show ...	72

THE CARNATION.

THE National Carnation and Picotee Society (Southern Section) was to the fore in Vincent Square last Tuesday. It is just thirty years since the formation of the Society. I met the late Mr. E. S. Dodwell at a Carnation exhibition at Manchester in 1875, and it was evident that the Carnation, the Tulip, and the Auricula as florists' flowers were in the hands of enthusiastic cultivators there. Mr. Dodwell, who had cultivated the Carnation for twenty-five years previous to this, but had not grown a plant for twenty years, thought that something ought to be done in the South. A meeting was held during the following autumn. Very few of the members of the first committee remain to see the great work that has been accomplished. I well remember the beautiful Carnation and Picotee blooms that were exhibited at Manchester, but flowers were not admitted unless they were flakes and bizarres, or white-ground Picotees, no self colours or yellow-ground Picotees; none of what for exhibition purposes are termed "fancies." When the Southern growers began their work in earnest it was felt that something should be done outside the rather restricted groove in which the florists had hitherto been content to work. Prizes were offered for yellow-ground Picotees, and although the varieties exhibited were not of a high standard of merit, it was not long before there was improvement, not only in these yellow-ground varieties, but also in the flaked and bizarre

varieties. Soon afterwards prizes were offered for self-coloured flowers, and also for the so-called fancy varieties. If we may judge by the taste of the flower-loving public, the flakes, bizarres, and white-ground Picotees are not the most highly esteemed nowadays. The self-coloured varieties stand first, and for garden purposes deservedly so, as they grow so freely, and flower-beds can be formed of one colour—white, bluish, pink, rose, apricot, buff, amber, crimson, red, scarlet, and many shades of each colour.

Yellow-ground Picotees have now so much improved that they hold the second place in popular esteem. The class for "fancies" was introduced specially for all Carnations that might be produced from seed, but which could not be admitted into the other classes, although there are many very beautiful and remarkable flowers amongst them, as might have been seen at the exhibition which was held on Tuesday. There are of course many Carnation fanciers who do not care for any flower that is not in accordance with the old types, and I for one have intense admiration for the fine form, the rich and varied markings of the bizarre and flaked varieties, also for the pure white of the Picotee, with no spots or bars to dim its lustre, only the pretty margin, broad or narrow, of red, rose, scarlet or purple.

Many of the varieties now grown have been cultivated to such a high standard of excellence that they cannot be shown better, but by continuing to raise seedlings there is still a chance of obtaining improved varieties. Moreover, in the process of raising seedlings from flaked varieties and Picotees, many varieties are produced of rich self colours and exquisite form.

The results obtained from the seeds of the white-ground Picotee are very remarkable. In some of the varieties that have the merest line of colour on the edge of the petals, the seedlings will produce self-coloured flowers of this colour only, purple-rose, red or scarlet, and in the case of the bizarre and flaked varieties, many of quaint design and varied colours, which in the old days were thrown over the garden fence, are now treasured. In addition to the improvements to be expected from the raising of seedlings, there is the advantage that if the seed has been saved from choice varieties and cross-fertilised flowers, a more vigorous class of plants may be obtained. In the course of years old varieties become weaker in constitution, and must be replaced by others of more vigorous growth. The subject of deterioration in varieties was treated upon very fully in the *Gardeners' Chronicle* for March 25, 1905, p. 184, and need not be further enlarged upon now, except to state that its effects may be greatly modified by careful cultivation, and by the introduction of new varieties.

Many amateurs do not plant the seedling Carnations at the right time, and thus they fail to obtain satisfactory results. The young seedlings should be planted now, or at least not later than September, so that the plants may be well established before the winter, in good deep soil that has been enriched with some decayed farmyard manure. The best time to sow the seed is in March or April; if sown too early some of the plants will make an attempt to throw up flower-stems too late in the season properly to develop the blooms.

The single-flowered Carnation with its five petals produces seed very freely indeed, without any attempt on the part of the cultivator to pollinate the flowers. Not so the garden Carnation; the anthers which contain the pollen are hidden amongst the petals, and must be sought for. When the pollen is in a state of powder carefully remove it with a fine brush and apply it to the stigma of the flower it is intended to pollinate. This is found in the centre of the flowers, in the form of two horn-like processes more or less curled; the pollen is gently applied with the aforesaid brush. If the flower has been fertilised the petals will soon collapse.

The propagation of the Carnation is not so well understood as it ought to be. Layering is the next best method to that of seed-production, and the best time to do the work is when the flowering period is over; some of the surface soil is removed and replaced with the fine, sandy soil in which the layers are to be pegged down. A good compost to make these layers in is one consisting of one part sand, one part fine loam, and one part leaf-mould.

I am frequently asked if Carnations can be propagated by slips or cuttings. The process is not so certain a one as layering; for although many varieties can be freely propagated by slips others are more difficult to raise. So long ago as the time of Queen Elizabeth the Carnation was propagated by slips, and it is interesting to read in *The Winter's Tale* the conversation between "Polixenes" and "Perdita," that the "Carnations and streaked Gilliflowers" are mentioned. "Perdita" was no florist; she says, alluding to the "streaked Gilliflowers":—

"Of that kind
Our rustic garden's barren; and I care not
To get slips of them."

As companions of the Carnation they may have some claim to be admitted as "the fairest flowers of the season," and "Polixenes" remonstrates with her:—

"Wherefore, gentle maiden,
Do you neglect them?"

Her objection was that they were by some called "Nature's bastards" [and her further remarks show that the practice of cross-breeding was not unknown in those days]. She adds—

"I'll not put
The dibble in earth to set one slip of them."

Some of us can remember that the former editor of the *Gardeners' Chronicle* protested quite as strongly against the cross-fertilisation of Orchids. The point to which I would call attention is that in these early days Carnations were propagated by slips. Some varieties cannot easily be propagated by slips, although most of them can, and they root most freely in a very gentle bottom-heat in a frame or handlight.

The seedlings which have been raised during the present season, if planted early, will produce a hundred blooms less or more on each plant. These, if cut with long stems, flowers and buds together, accompanied with Carnation foliage, form the most charming of table decorations.

If there are any incipient examples of Carnation-rust to be seen, the affected parts must be carefully cut out and destroyed; for as the summer advances into autumn this tiresome pest will rapidly develop, and if the spores become scattered the labour of getting rid of the disease will be greatly increased. *J. Douglas.*

NEW OR NOTEWORTHY PLANTS.

PRIMULA OVALIFOLIA, Franchet.*

[SEE SUPPLEMENTARY ILLUSTRATION.]

THIS very handsome species was discovered in 1869 by David on the borders of E. Tibet, in the Province of Moupin. It has since been collected by A. Henry and Wilson in Hupeh and Szechuan and by Pratt near the Tibetan frontier in W. Szechuan. Its nearest ally is, according to Franchet, *P. Davidi*, another most lovely plant, found also by David in Moupin. It differs from the latter by its oval, crenate, and usually long-petioled leaves, and by its longer and narrower calyx-lobes. *J. F. Duthie, Kew.*

[Our illustration was taken from a living specimen furnished by Messrs. James Veitch & Sons, who have the plant in cultivation. En.]

ORCHID NOTES AND GLEANINGS.

ORCHIDS AT MESSRS. SANDER AND SONS'.

CYPRIPEDIUM FAIRRIANUM has arrived at St. Albans at last. For many years Messrs. Sander have persistently striven to secure an importation of this gem among Cypripediums, and no fewer than six collectors were successively sent out for the purpose of procuring this plant as their chief object. At last a small consignment of healthy, compact tufts has been secured. About the identity of the coveted species there can be no doubt. The difference in the form and length of the leaves, and the superior length of the old flower-spikes on some of the imported plants, seem to indicate that there will be some variation in the flowers, although all are true Fairrianums. The leaves of some of the imported plants are broad and short, and resemble those previously in cultivation, although they are much larger, while the leaves of a few are nearly a foot long, and narrow in proportion to their length. Amateurs will rejoice at the opportunity to satisfy their cravings for this charming plant. The difficulty, however, is that there will not be enough to "go round," and it is said that no more can be imported until some better prospect of security for the collector is forthcoming.

Although the re-introduction of this small healthy batch of *C. Fairrianum* was not directly due to the agency of either of the travellers specially sent by Messrs. Sander, their labours were not altogether wasted, for through them many other good plants were introduced, and among the more recent importations now at St. Albans are the stock of the handsome *Cymbidium Sanderi*, the few specimens of the showy *C. Parishii Sanderæ*, and various other promising species not yet proved.

* *Primula ovalifolia*, Franchet. — Root-stock short, stout, giving off many fibrous roots. Leaves all radical, subcoriaceous, more or less bullate; blade $2\frac{1}{2}$ –4 inches long, and $1\frac{1}{2}$ –2 inches wide, broadly ovate to obovate-lanceolate, rounded at the apex, abruptly or gradually tapering into the petiole; margins crenate; midrib stout; main lateral nerves 10–12 pairs, often spreading at a right angle to the midrib, the interspaces sharply reticulate; upper surface glabrous, the lower paler, densely puberulous along the nerves and midrib, the latter clothed also with reddish, spreading hairs; petiole varying in length, often longer than the blade, covered with reddish, woolly pubescence, like that of the midrib. Scape usually exceeding the leaves, its upper portion as well as the pedicels woolly-pubescent. Bracts lanceolate, acuminate, about as long as the pedicels at the time of flowering, reddish-brown, the margins ciliate. Pedicels (in flower) shorter than the calyx. Calyx 5–6 in. long, campanulate; lower portion of tube pubescent; lobes about as long as the tube, lanceolate-acuminate or triangular, the margins ciliate. Corolla violet-purple, about $\frac{1}{2}$ inch across, tube equalling or (in the short-styled form) exceeding the calyx; limb concave, spreading; lobes obovate, shortly two-lobed. [See Franchet in *Bull. Bot. Soc. France*, xxxiii., p. 67; *Pax. in Engler Jahrb.*, x., 176; ex Hemsley in *Journ. Linn. Soc.*, xxvii. (1859), p. 41.]

Hybrid Orchids take up a great proportion of this vast establishment, and house after house is filled with seemingly endless quantities of them. A range of warm-houses running side by side is devoted to the raising of seedlings, and their growth in the earlier stages, and with regard to the seed-raising, Mr. J. Godseff, the talented manager, states that the crosses which were found difficult to raise when the house was newly constructed come very freely and with greater vigour now that the house has lost its newness. Cypripediums occupy many houses, one house having a large quantity of yellow forms of *C. insigne*, the best of which much resembles a yellow *C. i.* Harefield Hall; another house has batches of *C. bellatulum*, *C. niveum*, *C. Godefroyæ*, *C. concolor*, and their hybrids, and with them the new yellow *C. Sanderæ*, of the *C. concolor* class, but larger and with a broad and differently shaped lip.

The next house has Cypripedium Sanderianum and its hybrids, and *C. Rothschildianum* and its hybrids. Indiscriminate crossing has been abandoned here long ago, and only crosses of the best forms effected. Of these there are in different stages of growth enormous quantities.

The present season is one of the least varied perhaps in the matter of Orchids in bloom, but even now there is a very fine show of *Lælio-Cattleyas* in three houses. The showiest batch in bloom is *Lælio-Cattleya* × *Martineti*, obtained between a fine dark form of *L. tenebrosa* and a richly-coloured *C. Mossiæ*. The plants of this batch vary in an extraordinary manner, some being white tinged with rose and with purple labellums, others of various shades of rose and purple, this class showing little trace of *L. tenebrosa*; the other set has the bronzy-orange sepals and petals of *L. tenebrosa*, though broad and flat, and intensely dark claret-purple labellums. The same variation shows in the fine strain of *L.-C.* × *Canhamiana* and the newer *Cattleya* × *Roehrsiana*, one being pure white with dark purple lip, the other having the crimped petals tinted with lilac. Batches of *Lælio-Cattleya* × *bletchleyensis*, *L.-C.* × *Aphrodite* and other showy hybrids are in bloom or bud, and most of the other favourites are showing well for flower.

The arrangement of rockery-approaches, with similar constructions in the ends of the houses on which to arrange plants in flower, and the facing of the staging with ornamental plants always form an attractive feature in the St. Albans nurseries. In one of these groups at the ends of the houses stands the finest specimen of *Vanda Lowii* ever grown. It now has over a dozen leading growths, and is still producing more. Around it are *Vanda Kimballiana*, *Renanthera Imschootiana* with pretty crimson flowers, *Aërides expansum Leonis*, *A. crassifolium*, and another fine *Aërides* from Annam; also a distinct type of the true *Vanda Parishii*, and some other species.

At the entrance of another house is a noble specimen of *Brassia verrucosa major* with thirty spikes, some fine *Odontoglossum crispum*, a large specimen of *Nanodes Medusæ* with its singular ruby-red flowers, and other fine species being grouped with it.

The cool-houses, filled for the greater part with fine *Odontoglossum crispum*, have but few in flower, as usual at this season. Among those noted were a remarkably fine *O. ramosissimum*, the singular little *O. stellatum*, and a few hybrids. The collection of *Masdevallias* had several examples of *M. muscosa*, *M. trichæte*, *M. calura*, and other species usually called "botanical," in bloom; and with regard to these singular species the collection is being increased at St. Albans, and quite an interesting show of *Bulbophyllums*, *Cirrhopetalums*, curious *Epidendrum*s, *Cœlogynes*, *Dendrobiums*, &c., chiefly of recent importation, is being established. Among those in bloom were the pretty *Dendrobium bellatulum*, a dwarf

form of *D. ciliatum*, *Sarcochilus divitiflorus*, *Pachystoma Thompsonianum*, *Chondrorhyncha Chestertoni*, and several small species of *Epidendrum*, *Polystachya*, and *Pleurothallis*. The large range, nearly 300 feet in length, and in five divisions, completely filled with hybrid *Lælias*, *Cattleyas*, and *Lælio-Cattleyas* of flowering size, present a fine sight of vigorous plants. Few are in bloom, but a great number are showing for flower.

The next intermediate range has *Cattleyas* and other Orchids, the great bulk of which, however, are grown at Bruges. Among those remarked were a recent importation of *Cattleya elongata*, a fine lot of *Cattleya Schröderæ*, *C. Mendeli*, and other large-flowered kinds. In bloom were several *Lælia majalis*, a finely-coloured *Cattleya Loddigesii*, the pure white *C. intermedia Parthenia*, and a large form of the white *C. Mossiæ Wageneri*, *Oncidium lamelligerum*, *Epidendrum prismatocarpum*, a large specimen of *Oncidium phymatocœlum* with many elegant flower-spikes, and one of the noblest and most vigorous specimens of *Vanda cerulea* ever seen, with some fifty broad, fleshy leaves on a single stem, and three fine spikes of sky-blue flowers of fine size, each with about fifteen blooms.

The range connecting another large block of warm-houses is filled with Burmese *Dendrobies*, *D. Wardianum*, *D. crassinode*, *D. Brymerianum*, *D. Bensonæ*, &c., among the last-named two white varieties being in bloom.

In one of the side houses a good variety of *Pescatorea Klabochozum* is in bloom intended for crossing with another section of *Zygopetalum*; also *Calanthe veratrifolia*, a nice batch of which has been imported, various *Spathoglottis*, *Cœlogynes*, a sturdy lot of *Vanda Sanderiana*, which promise a good show of flowers; the true *Vanda insignis*, still a rare plant; a fine batch of *Stenoglottis longifolia*, with tall sprays of pretty lilac-and-white flowers; a good lot of *Phalæopsis*, several of the *P. grandiflora* being very large specimens.

NEW AND RARE PLANTS OTHER THAN ORCHIDS.

Nicotiana Sandera × has been one of the most satisfactory plants both to the vendors and purchasers, and endeavours are being made to preserve the brightest crimson, magenta, rose, and white types true, and to still further improve the strain. It is noteworthy that the flowers of this plant keep open and bright in dull and sunny weather alike, while *Nicotiana affinis* and others close the segments of the flowers, giving them a drooping appearance, according to the weather.

The foliage *Begonias* raised at St. Albans out of the handsome *B. Bowringiana* have also developed a new and extremely beautiful race, with wonderfully coloured leaves, the midribs having a glowing cinnabar scarlet appearance. A fine set are *B. Mrs. H. G. Moon*, *B. Her Majesty*, *B. Fearnley Sander*, *B. Non Plus Ultra*, and *B. Our Queen*. These are bright and charmingly coloured, whether used planted out in the rockeries, or arrangements planted in the Orchid-houses, as well as when grown in pots.

Gloriosa Rothschildiana, the most beautiful of the genus, is established in a good batch which by the variation in the foliage promises some variety in this always beautiful flower.

Cycas Micholitzii is a remarkable species of elegant habit, and showing the new character in a Cycad of having the lower leaflets pinnate; *Alpinia Sandera* has Bamboo-like growth, the leaves variegated white and green. It is said to be a fine plant for indoor decoration. *Anthuriums* are much grown of two sections, viz., the *Schertzerianum* and the *Andreanum* classes. Both are very showy and varied, but the newer forms of the *Andreanum* class, now least in

evidence, are said to bloom well in autumn and winter.

Polypodium Knightia is an ideal basket plant with long, drooping, feather-like fronds much divided. Many other freshly-imported promising plants are being established, and of older favourites *Dracena Sanderiana*, *D. Godseffiana*, and *Asparagus myriocladus* are as well worthy of their place as decorative plants as ever.

It is interesting to note that while the vast establishment at Bruges, with its many houses of

CYMBIDIUM HUTTONI.

Owing to the courtesy of Messrs. Charlesworth & Co. we are now able to illustrate in figs. 21 and 22 this remarkable and beautiful species, for which the firm obtained a First-class Certificate at a meeting of the Royal Horticultural Society on July 4. As was stated in our report of that meeting, the species was originally discovered by Hutton when collecting for Messrs. Veitch in Java. The species connects *Cymbidium* and

halves. The sepals are obovate, acuminate, petals narrower and reflexed. The side-lobes of the lip are large and erect, middle lobe oblong, acuminate.

FORESTRY.

SOME NOTES AT PARK ROYAL.

GENERALLY speaking, the exhibition alluded to on p. 18 did not differ very much from that of last year, the exhibits in most cases being the same, the most interesting coming from private estates. One of these, from the Duke of Northumberland's woods, Alnwick Castle, was instructive, only it was missed by many visitors owing to its position. This consisted of two Scotch Fir stems, about twenty years old perhaps, of the dimensions of short pit props, "showing the effects of thick planting in producing crops and good quality of

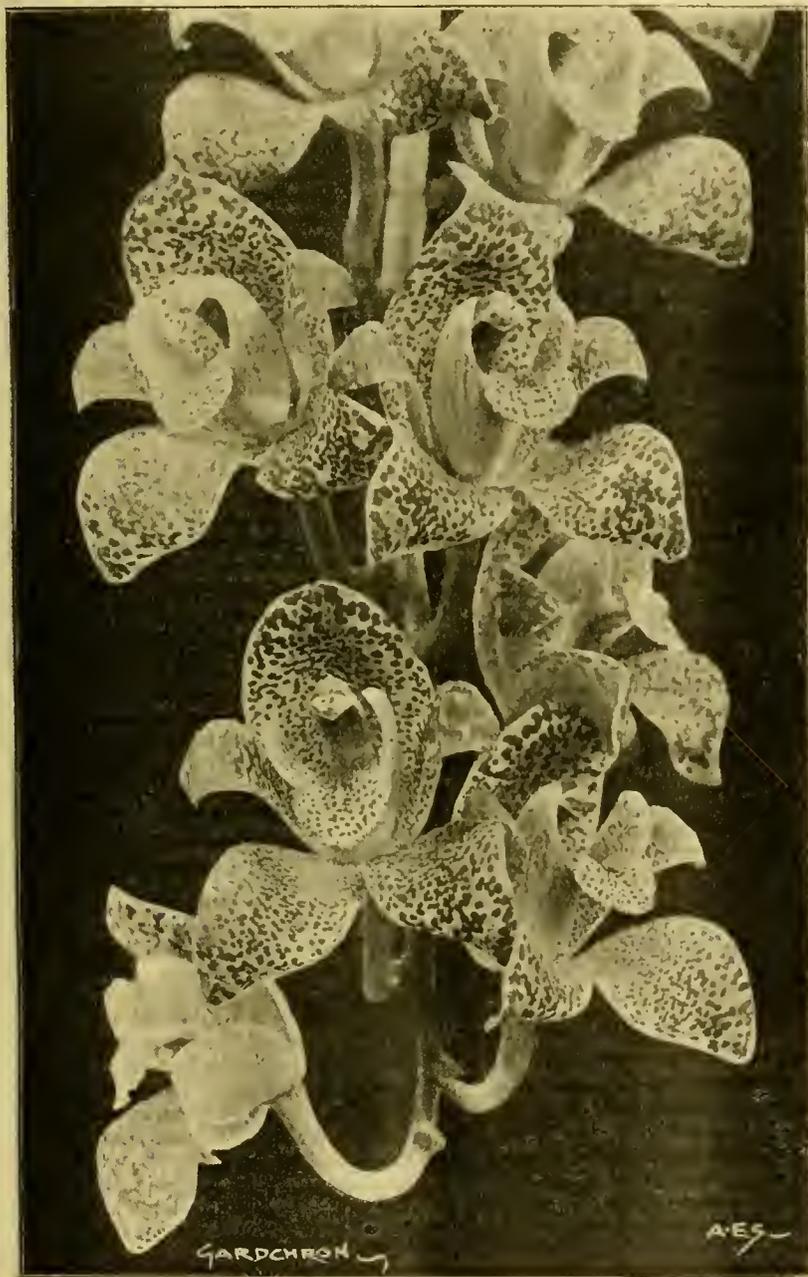


FIG. 21.—CYMBIDIUM HUTTONI: FLOWERS NATURAL SIZE, YELLOW WITH PURPLE SPOTS.



FIG. 22.—CYMBIDIUM HUTTONI, SHOWING HABIT OF PLANT.

timber." Both examples were about the same girth, but the wide-planted one, owing to having had too much room, had the objectionable strong, rigid, side branches and was tapering, and the boards from trees grown on the same principle were full of large knots and rough. The dense-planting example was about as thick at the small end as at the bottom, cylindrical, and the side branches were small and dead approaching the shedding stage. Boards of the same showed few knots, and they were small. The rough and inferior specimen came from a plantation planted at the rate of 2,722 to the acre, and the good specimen represented 4,840 to the acre. Considering, therefore, that the latter was of superior quality in every way, and that the trees were of the same age, the reader may draw his own conclusions as to the value of the crop per acre in each case at their age.

From Earl Powis's estate came a section of Douglas Fir, forty years of age, varnished, showing the colour and annual rings, and indi-

Palms, Orchids, &c., and outdoor acres of Bay trees and Azaleas, steadily becomes a wholesale-market-supplying nursery, the parent establishment at St. Albans still caters for plant-lovers of all kinds, and especially for those who appreciate new things. J. O'B.

PLANT PORTRAIT.

DEBREGEASIA VELUTINA.—A tree of the Nat. Ord. Urticaceae. Native of India. Leaves shortly stalked, rugose, lanceolate, serrate. Fruits yellow in small globular heads.

Grammatophyllum, the large grooved pseudo-bulbs, each furnished with two or three bright-green leaves, much resembling those of *Grammatophyllum multiflorum*.

The manner of producing the pendulous racemes of thick-textured flowers is nearest to that seen in *Cymbidium Devonianum*. Two varieties were shown, one lighter in colour than the other, the longest raceme bearing fifteen flowers. The flowers were each about 2 inches across, in colour yellowish-white densely spotted with purple, the petals being also tinged with purple on the outer

ating a stem about 24 inches in diameter; and beside this was a Larch section, about 100 years old, as shown by the rings, of no greater bulk than the Douglas. I laid the one on the other to measure, and judging approximately, but pretty nearly, I calculated that the conditions being about equal, the Douglas Fir will produce about as much timber in forty years as the Larch will do in a hundred. The heart of the Douglas was as red as Mahogany, and constituted about two-thirds of the section, which exceeds that of any other of our forest trees. The early formation of heart-wood is of much importance in the value of timber.

Another exhibit which attracted much attention among planters was a neatly-assorted collection from the Country Gentleman's Association of seeds of about forty varieties of our principal forest trees, with pots of newly-sprung live seedlings representing the different seeds. This, I believe, is the first exhibition of the kind, and interested many who perhaps never saw some of the seeds exhibited before, nor the seedlings either. Should the C.G.A. exhibit the same again, I would suggest that instead of sprouting seeds for the occasion, it would be better to procure one, two, and three years' seedlings and pot them for the purpose. This would be easier and better. If the Association on the next occasion could also set up a clump of small scaffold-poles near their pavilion, showing how thickly the actual crop of trees are where they grow, it would give us the beginning and end of the business. This was suggested at the time of the Forestry Exhibition in Edinburgh in 1884, but the idea was not acted upon.

The plots in the forestry section, correctly described in the catalogue as "Collections of choice hardy ornamental trees and shrubs," were such as one sees at flower-shows, but could not be regarded as forestry exhibits. There was one solitary Japanese Larch, representing forestry; all the others were garden and park subjects. The useful Firs and hardwoods were not there. Perhaps it would be difficult, but more real, living forestry is wanted at these forestry exhibitions. There is too much of the museum about them. In the agricultural division attached to the forestry section, living plants, consisting of cereals, grasses, roots, &c., and showing cultural results and experiments, were more interesting, and attracted the notice of the visitors.

Samples of creosoted trunks in variety were exhibited, showing creosoting by pressure and absorption. The latter is the slowest process, but much the easier and least expensive. In other respects this exhibit had little interest, timber-creosoting having been long understood and practised in railway material. The question now is whether it is cheaper to buy creosoted timber or to creosote one's own when there is much timber on the estate. By the absorption process the wood is simply put into the boiler and allowed to soak, a slow fire being lit under the boiler. By the pressure system a good deal of the engine-tenters' duties are involved, and the plant is more expensive at the outset.

Instructive exhibits from one of the Forestry Schools, Cambridge, if I remember, were examples of young trees showing the right and wrong root-form in young forest trees, and some frightful examples of the latter were exhibited of various ages, showing how the wrong form, once established, is retained by the tree. This exhibit has only come to the fore within the last few years since attention was drawn to it. All the examples were described as from English nurseries except one or two from a German nursery, probably one which supplies English planters, as in the Continental forests the wrong root form is practically unknown.

An interesting exhibit to forestry students was that showing the damage done to

forest trees by diseases, insects, voles, and squirrels. The two last were perhaps the only ones that excited much interest among practical foresters because they can be dealt with. Forest tree diseases and insects are a heavy feature at agricultural schools, but most of them are either so little feared in practical forestry or so hopelessly beyond the forester's control when they do appear, as in the Larch disease and Larch aphid for example, that the forester troubles little about them. I think Dr. Somerville told one of the examiners of the late Forestry Committee that the insects to be feared in forestry were about half-a-dozen or fewer, and were out of the reach of preventive measures. If the forester could get rid of the rabbit pest and the Larch disease, it is doubtful if he would trouble his head very much about any of the other plagues. These two undoubtedly do far more harm than the insects, diseases and plagues put together. An extraordinary exhibit, according to the catalogue description, was a door, from Ryston Hall, Norfolk, made of Black Oak dug out of Roxham Fen, and supposed to be "70,000 years old." Some wondered if this was a misprint for 7,000. *J. Simpson.*

THE TIMBER VALUE OF EXOTIC TREES.

I have had twenty-six years' experience here with several members of the Pine family, as well as with Larch, in all to the extent of 500,000 trees, and I have come to the conclusion that in our case it has been to some extent a waste of time and capital.

Every person who contemplates planting trees in large numbers should study well the conditions of the locality, his requirements, and whether he is planting for obtaining immediate profit, or for the benefit of his heirs. If he wishes for immediate profit, then extra caution is needed in selecting the varieties.

The Larch is the most serviceable tree to plant for the purpose of yielding timber for use on the estate in fencing and so on. At one time it paid to plant Larch for producing Hop poles at twelve to fifteen years' planting, but now that wire is so much employed, Larch under eighteen or twenty years from planting is of no value.

The point then to consider is of what value are the small poles that must be taken away as thinnings? By leaving them too thickly the whole of the plantation would be spoiled because the trees would be drawn up too weakly to be of real value. Then again the Larch disease is a terrible scourge where it attacks a plantation badly. In our particular case I have come to the conclusion that one cause only is answerable for our trouble in that direction, viz.—stagnation about the roots, or in other words unhealthy conditions. Spring frosts, damaged bark and insect pests are all pegs to hang excuses upon.

The elevation here is 400 feet above sea-level. The soil varies. In some fields there is from 1 foot to 2 feet of stiff, stony soil overlying a hard pan of almost clay; below this is a bed of chalk. To look at the soil as moved for agricultural purposes the stranger would say that Larch would revel in such soil. And so they do for fifteen years or so, making leading growths of from 2 to 4 feet in a season. After that period canker appears, and it is worse in the trees on some sites than those on others. That is in my opinion the time when the roots have got down to this hard pan, or subsoil. The water from excessive rains cannot percolate away quickly enough for the welfare of the roots. I know this is the case, because where the soil has been trenched from 2 to 3 feet deep or more canker is unknown. Some may say, Why not employ the remedy? I say in reply, It will not pay to do so. The cost of trenching such soil would be ruinous. Acres and acres of Larch that have arrived at that stage have been cleared as useless, and the land returned to agriculture, under which it is much more profitable.

If Hazel is planted, what are the results from a well-grown crop? Ten years are required to produce a growth suitable for local use, such as sheep-hurdles, hoops for casks, thatching-spars, &c. For this the handsome sum of £3 to £5 per acre is realised, and for ten years' growth.

As an experiment my employer, Mr. W. H. Myers, M.P., planted 2,000 *Thuya gigantea* alternately with Larch. The trees have made quite good progress, but of their value as timber-trees, or even for use on the estate as fencing, I think little of them. From other sources on the estate I have cut trees of this variety 30 feet high, but I find the wood is very soft at that age, and when the trees are stocked after being cut a time they become exceptionally light, which is not an indication of durability.

Scotch, Corsican, and Austrian Pines have all been tried, as well as Spruce. All grow fast; but of what value are they? At the most 4d. per foot is the price obtained. For ornament or shelter all are interesting and useful. As a wind-guard, the Austrian Pine is unsurpassed; but as a timber-tree it is perhaps the worst—it produces too many branches, and these are too near together for the timber to be desirable.

I could continue my narrative of ill-success, but sufficient has been said to warn would-be planters to think twice before they embark largely. *E. Molyneux, South Hants.*

ALDENHAM.

It is doubtful whether there exists in the kingdom a finer private school in which to study arboriculture, so far as relates to that phase of it illustrated by choice trees and shrubs, than that furnished by Lord Aldenham's beautiful gardens and grounds at Elstree. Not only is the owner a lover of trees and shrubs, but his son, the Hon. Vicary Gibbs, is a great authority on them; and endless as seems to be the variety there gathered from all parts of the world, yet Mr. Gibbs knows them and can call them all by their names. But a striking feature of the planting at Aldenham is its complete association with decorative aspects. Really, it would seem as if this feature had been the primary aim of the planters, everything is so harmonious. Yet such a suggestion would probably be disregarded, as after all it would seem that in finding the most fitting site or place for each tree or shrub, the decorative effect had naturally followed. To indicate the varieties planted at Aldenham would need a big volume, and no one however devoted to arboriculture can see them all in a day. Really the collection becomes a school, and it may be hoped may be preserved as such for horticulture for all time.

The owner of Aldenham has been fortunate in securing for a gardener one so thoroughly sympathetic as is Mr. E. Beckett. Not only does he too, seem to know everything, but he appears, like his enthusiastic employers, to know no finality.

To the ordinary visitor, however, fond of trees and shrubs and of hardy plants of all descriptions also there may seem to be enough of everything, but that can hardly be; new forms still seem to be constantly cropping up, and room must be found for them. Established things grow apace and need more room, for crowding is not tolerated here; indeed, one of the special charms of the planting is that each plant has room, and thus can not only display its full character, but, being thus individualised, each specimen commands all the greater interest. The abundance of water brought here and there in lakes large and small, in moats, streams, or rivulets, with here and there much effective rockwork, enables myriads of aquatic or semi-aquatic plants to be grown in great luxuriance. The extent of the well-kept grounds thus utilised seem to be illimitable; rich verdure is everywhere, and with

beds, borders, or plantations, all is kept clean and neat. It is a happy circumstance that, allied to such devotion to arboriculture, there should be such refined taste shown, for the most captious cannot but be delighted with the perfection of keep found on every hand.

In the hardy plant department and the kitchen garden the borders are rich with perennials. A

One of the most effective of June-flowering perennials is *Inula glandulosa fimbriata*, 20 inches in height, flowers large, charmingly fimbriate, and of a rich orange colour. *Anchusa italica superba*, plants 2 feet in height, is here a very fine form, and much superior to the tall, loose-growing varieties often seen. Both the double-white and

grow vegetables, he drained, trenched, buried down deep trimmings of all descriptions, and added to the ground other material wherever obtainable, also wood-ashes, old mortar rubbish, leaf-soil, and manure, until now the level of the garden quarters is 15 inches above its original plane, and thus it is that vegetables of the very finest quality are produced.

Runner Beans planted quite thinly here grow so tall that the rows are all staked with Hazel-branches 12 feet in height. Peas also grow very tall, for Mr. Beckett, giving the rows ample room and tall supports, holds that one tall row is better than two dwarf ones. His own raised Pea Edwin Beckett is in full bearing 5 feet in height, and Aldenham, 6 feet in height, is following suit; but a grand seedling from these two Peas, not yet named, carries such superb pods with eleven and twelve Peas in them that even Aldenham is quite eclipsed. This Pea promises to be the finest exhibition-variety in cultivation. Onions, both autumn and winter sown, are in splendid form, and of the best varieties. Vegetable-Marrows are here from plants running loose after being raised under frames, fruit very freely. In every department the same high culture is seen, and associated with successful exhibiting may be found perfect culture everywhere, nothing being neglected. A. D.



FIG. 23.—BORDER CARNATION BOB ACRES: COLOUR OF FLOWERS SCARLET. (SEE P. 72.)

striking feature by-and-bye will be the long, broad border specially devoted to Asters, of which there is a collection of some hundred of the best varieties obtainable. The plants are lifted, divided, and replanted each year, the growths being not only thinned, but well tied out to some four to six sticks per plant, and in that way flowers of the finest quality are obtained. The plants are 4 feet apart, and there are about 250 of them.

purple Rockets are plentiful here also, but these are merely a few plants out of a great collection.

Mr. Beckett has won most fame in horticulture as a vegetable grower. He began a successful career many years ago in the great conservatory at South Kensington, in contending with so accomplished an exhibitor as the late Mr. C. W. Miles, of Wycombe Abbey, and at Aldenham he has reached the apex in competitions. Faced with a stiff, cold, ungenial soil, which in prior days would not

LEAVES FROM MY CHINESE NOTE-BOOK.

(Continued from p. 21.)

May 3.—A lovely night succeeded a lovely day. We left our last night's moorings at 5 A.M. and arrived here at 11.30 A.M. Owing to a strong head-wind we were obliged to remain here. The river was rising, and the current in the gorge was too strong to stem with the wind against us. Our last night's moorings were very uncomfortable, the wash and swirl of the river caused us to bump against the shore in an unpleasant manner, and once or twice I awoke with a start.

In the late afternoon I went for quite a long walk along the fine broad road which runs through this gorge on the left bank. It is a well-paved road, cut out of the solid rock, a good three paces broad, and high up above the high-water level. It is in a splendid state of repair. It was built by a widow in memory of her husband, and must have cost an enormous sum of money. Much blasting and building up have had to be done. This and the road through part of the Wushan Gorge represent engineering feats of which no country need feel ashamed.

During my walk I collected several fresh plants, and noted the Pomegranate naturalised on the cliff. It was very common. The fresh plants included—

Solanum xanthocarpum, *Embelia Ribes*, *Saponaria Vaccaria*, *Citrus japonica*, *Ligustrum strongylophyllum*, *Wikstromia micrantha*, and *Cynanchum* sp.

The last-named is the species noted before with opposite leaves. Its flowers are small and yellow in colour. *Embelia Ribes* is the commonest shrub on the rock just above high-water mark. *Citrus japonica* "Kumquat" was common on the cliff, and evidently spontaneous. The common trees hereabouts were—

Pistacia chinensis, *Gleditschia sinensis*, *Sapium sebiferum*, *Alcurites cordata*, *Cupressus funebris*, *Ficus infectoria*, Loquat, Orange, Pomeloe, Plums, and Peaches.

The fruits of the Loquat were just colouring, and the leaves of the Tallow tree (*Sapium sebiferum*) just unfolding. A kind of Wheat new to me, having long and bluish-coloured ears, was grown hereabouts.

May 4.—The wind died away during the night, and it was dead calm when we started through the gorge at 5 A.M. This gorge is to my mind the grandest of all; its cliffs are frightfully steep and almost devoid of vegetation. One

overhanging peak is fully 2,500 feet high. The river has a very tortuous course through this gorge, so much so indeed that a fair wind may become a head wind ere the end of the gorge is reached. There are many legends connected with this valley dating back to the time of the "Three Kingdoms," some doubtless with a dash of truth in them.

Opposite the "Goose rock," or rather looking down on it, is a hill some 500 feet high, crowned with a grove of Pistacia and Banyan trees, in the midst of which nestles a famous temple. This temple is said to be 1,700 years old, and tradition has it that it was here the famous hero Liu-Pei died.

At 1 o'clock we were opposite the salt-wells. These are situated right on the foreshore, and it is only possible to work them in the low-water season.

At 3.30 P.M. we reached the famous city of Kiu-Fu, which is now a mere fragment of what it was in the days of the "Three Kingdoms." We moored for the night here, and having complied with the custom of giving the crew a small gratuity, everybody was happy.

Although slightly north of Ichang, the seasons are earlier here. This is partly due to its being closed in by mountains, and partly to the nature of the soil; the latter is of a brick-red colour and very porous. The Wheat and Pulse crops were being harvested, and we purchased ripe Cherries, but they had little or no flavour. The Irish Potato was largely planted, but looked very weakly. Maize was cultivated, but I saw no Opium, and very little land prepared for Rice.

On the right bank were some magnificent groves of Bamboos. I noted several large trees of the "Litchi" cultivated; and the trees of Orange and Loquat are larger than I have met with before. In a garden attached to a farm-house I remember seeing some large trees of the double-flowered Peach, the only large trees of this kind I ever saw. The flowers were peach-coloured or crimson, sometimes half-and-half, but more frequently striped. Rosa Banksie was very common here, and is the first of the Roses to bloom.

The only new plant I gathered to-day was *Viburnum buddleifolia*, a species apparently intermediate between *V. utile* and *V. rhytidophyllum*.

Kiu-Fu is a famous mart for vegetables, and our crew seemed intent on loading the boat down with them. What they intended doing with all the Cabbages purchased passed my comprehension.

May 5.—We had to get three fresh coolies at Kiu-Fu, and this procedure, together with a thunder-storm, delayed us till 9 A.M. The officials in this province seem very careful with foreigners. The magistrate here insisted on sending a soldier with us to the next district town—an unnecessary honour which has to be paid for.

We experienced much difficulty from shallows to-day, and passed a couple of junks badly ashore. We moored for the night at the village of Anping-just, below which is a nasty rapid called La-Pa-Tan.

Anping is a wretched little village, situated on the side of a steep hill well above high-water mark. Iron is worked inland from here, and is brought to this place and sent upwards and downwards. This and Chinese macaroni are the only articles of trade the place boasts.

During the forenoon I noted some men washing for gold. The quantity obtained is very small, the men being only able to earn a hundred cash (about 3*d.*) per day each. In my walk I noticed much land being prepared for Rice, and also a nice lot of Opium. The latter was just being cleared off the ground to make room for Rice.

I gathered several fresh plants to-day, includ-

ing *Sterculia platanifolia*, *Vaccinium* sp., and a new species of *Elæagnus*. This latter was a bush 4 feet high, with pure white flowers, and leaves smaller and thinner in texture than any other species I am acquainted with. Small thickets of Scrub Oak (*Quercus chinensis*) were common, and *Diospyros Kaki* was commonly cultivated. *Cupressus funebris* continued practically the only Conifer.

May 6.—A heavy thunderstorm, which began about 4 A.M. and lasted till 8 o'clock, delayed our start till 8.30 A.M. The rain fell in torrents, and water was pouring into the Yang-tsze on every side. This water was a bright copper-red, a sign we are within the red-basin of Szechuan. The red-basin extends a little west of Kiu-Fu; and includes within its limits more than half of the huge province of Szechuan—in fact, it may be appropriately applied to almost the whole area of eastern and central Szechuan. It owes its name to the preponderance of red clayey sandstone and sandy clays of enormous stratigraphical development which impart their characteristic brick-red colour to the surface when it is exposed. The soil is remarkably rich, and it is to this that Szechuan owes its enormous wealth as an agricultural province.

A fair wind sprung up about 10.30 A.M., and we made good progress until a heavy shower forced us to tie up at 2 P.M. The wind then veered round and blew down the river. Starting again at 3.30 P.M., we got over Miao-che-tsze rapid safely and moored two miles above it. This Miao-che-tsze rapid is situated just above the village of Kulin, and is one of the worst during the low-water season. It annually becomes more difficult from the *débris* brought down by a small torrent.

On the south bank is a pretty temple nestling inside a grove of Cypress and *Melia Azedarach*, which crowns the rocky knoll. The "Pride of India" was in full flower and made a startling display. The trees were some 15 to 20 feet high, and the size of the panicle of flowers enormous. It does not appear to grow into large trees, at least not in the Yang-tsze Valley. *Aleurites* and *Pistacia* trees were again common.

May 7.—It rained gently all night, and it was just after six o'clock when we made a start. The country is still very hilly, but the hills are not so high and the slope more gradual. Every possible place is cultivated. At 11.30 A.M. we passed the town of Yung-Yang. This place is surrounded by a good wall, though most of the people appear to prefer to dwell outside it. Much of the land inside the wall is devoted to various crops. This city, in the time of the "Three Kingdoms," offered a very stubborn resistance to Liu Pei. This genius eventually took it, and marched on Cheng-tu. On a high hill overlooking the town is a fort, one of a large series which were built at the time of the Taiping rebellion. The trade of Yung-Yang consists of opium and salt. It boasts several fine buildings, one of which has a very ornate exterior. The Roman Catholic fathers are busy building a large school here.

On the right bank and facing the town is a very fine temple, dedicated to Chang Pei, a famous general, and half-brother to Liu Pei. One of the features since entering Szechuan has been the abundance of the Irish Potato; it is grown everywhere, and is undoubtedly a valued crop. The haulms are very weakly. They are planted far too thickly, and seldom if ever is any attempt made to earth them up.

On leaving Ichang I engaged a crew of twenty-four hands—seventeen trackers and seven deck hands. Only twice was I able to count this number. The deficiency was always amongst the trackers. The reason was always the same—"They run away." This often was so, I know; but the real reason was that every man short meant that man's wages in the pocket of the head tracker.

I poured vials of wrath on their heads, but all to no purpose. To satisfy me they told some plausible tale, and afterwards got the requisite number of men for a time.

We reached the Hsin-Lung-Tan (New Dragon rapid) at 5 P.M., ascended it, and moored for the night. This rapid was formed by a landslide in 1896, and at low-water ranks with the Hsin-Tan as the worst rapid on the river. With the water at its then existing height it was quite a small affair, and I could scarcely persuade myself that it was the same frightful rapid I first saw in March, 1901.

The only new plants to-day were *Onychium japonicum*, *Boltonia indica*, *Vitis* sp., *Adina globifera*, *Sedum* sp., *Diospyros* sp. nov., and *Vitis inconstans*. The last-named with simple and trifoliate leaves was common on the cliffs. The ubiquitous funeral Cypress, *Aleurites* and Banyan, together with *Quercus chinensis* and *Ehretia macrophylla* were the principal trees.

E. H. W.

(To be continued.)

COLONIAL NOTES.

HEATING OF PLANT HOUSES.

THE present system of heating plant house boilers by means of coal seems to be unworthy of the progressive age in which we live. In the first place the smoke is a nuisance, especially in a place of purity and sweetness, such as a garden should be. The boiler-house and coal store are unsightly; the labour of stoking and carting coal is unnecessarily laborious; the danger from sparks is in this climate sometimes a real one, while the fire cannot be shut off in time of danger. It seems to me that there is abundant scope here for the substitution of gas for coal as a fuel, especially in towns where gas is readily available. Can any of your readers inform me of an effective gas-installation, on a fairly large scale, of the kind to which I have referred? *J. H. Maiden, Director Botanic Gardens, Sydney.*

COOMBE HOUSE, CROYDON,

THE pretty residence of Frank Lloyd, Esq., is less than a mile from the large town of Croydon. On entering the grounds by the front lodge there is a bank thrown up several feet in height, on which are good forms of Ivy and varieties of Lord Penzance's Briars. These have plenty of room to show their beauty in a perfectly natural manner. Close by is a fine clump of the Thimble-berry. In some beds on grass at the other side of the bank are some fine examples of Roses, such as *R. Wichuraiana*, *R. polyantha*, *Royal Scarlet*, *Persian Briars*, *Ramblers* over arches, all in the very best possible condition.

In a corner I notice a fine plant of *Prunus Pissardi*, with a well-flowered Rose in the foreground—a lovely picture. A good many beds are filled with all the choicest varieties of Teas, H.T.'s and H.P.'s. Near by is a magnificent *Acacia* with a mass of white flowers and surrounded by large trees of *Abies*, &c., which add to its magnificence.

In the rock garden are some fine clumps of rock Roses, of which *H. Pelisse* and *Bridesmaid* are conspicuous. A cross from these two varieties, effected by Mr. Lloyd, has beautiful bright salmon-coloured flowers. The beautiful *Onosma tauricum* is very pretty, also a fine lot of alpine Poppies. In an herbaceous border adjacent are some fine *Spiræas*, notably *S. Aruncus* and *S. aquilegifolia*; the former is a mass 5 or 6 feet in diameter. The beautiful *Iris Mrs. Neubronna* (yellow), is conspicuous amongst all the best sorts. An extraordinarily fine batch of choice *Delphiniums* decorates another border, and a large collection is also in evidence in another quarter.

In the kitchen garden (No. 1) is the most gorgeous sight of all, consisting of a grand collection of *Pæonies*; there are 150 plants which

have borne 4,000 blooms. The blooms are perfect and the scent delightful.

In the glasshouses plants are largely grown for house and conservatory decoration. In one house is a fine batch of the *Begonia Worthiana*, of which a group of plants was awarded a Silver Cup at the recent Temple Show. These handsome flowers are being yearly improved upon in form and colour.

In an adjoining house are some *Codiaeums*, amongst which are several very good seedlings, raised here by Mr. Mills the head gardener. In another house is a very fine batch of *Calanthes* and some *Cypripediums*. Good and healthy plants are noticed of *C. Rothschildianum*, *C. Veitchii*, *C. Lawrenceanum*, &c., also some *Cattleyas*, *Dendrobium nobile*, and others of the section are looking well, making grand growths. Some specimen *Codiaeums* (*Crotons*) are in the centre of the house, and a fine plant, some 10 feet high, of *Dracena Sanderiana*, some very good *Cymbidium*s, also a lot of *Paneratiums* and *Begonia Gloire de Lorraine* (*Coombe House var.*). In another house the cool-growing *Orchids* are looking very robust. Fruit is not cultivated extensively indoors at Coombe, but crops of Peaches, Figs, &c., are grown on the walls out-of-doors.

Some thousand *Chrysanthemums* are grown, and Mr. Mills does not propagate them until March; the plants are in very fine vigour, and he seems justified by results, as he has gained many medals, prizes, and cups. All his plants have not been grown this way till this year.

On the lawn in front of the mansion are some fine old Cedars, which are in a delightful state of preservation. The low branches are pegged to the ground, and the interstices planted with Ivy, which has a charming effect.

Two beds are filled with fine plants of *Rosa polyantha Leuchstern*, the flowers of which are of bright rose colour. The long branches laden with flowers and hanging loosely over the beds are exquisite. Other handsome varieties are to be planted in like manner. Mr. and Mrs. Lloyd are extremely fond of many plants, but of none more than *Roses* and *Paeonies*. *W. A. Cook, Shirley Park Gardens.*

PLANT NOTES.

GLORIOSA ROTHSCHILDIANA CITRINA.

A BEAUTIFUL novelty, widely distinguished from any other *Gloriosa* in colour, is now in flower in the Right Hon. Lord Rothschild's gardens at Tring Park (gr., Mr. A. Dye). In form it is similar to the typical *Gloriosa Rothschildiana*, illustrated in the *Gardeners' Chronicle*, May 23, 1902, p. 323, and its flowers develop in a similar manner—that is to say, the segments are at first reflexed, and as they approach maturity they assume a horizontal position. On opening, the blooms are of a clear citron-yellow with a feather-like band of deep claret colour up the middle of each segment. As the flower matures the claret colour suffuses more of the yellow tint until when the flower is fading the whole has become tinged with claret colour. The bright citron-yellow is quite different to the more or less buff-tinted yellow of other *Gloriosas*.

Typical *G. Rothschildiana*, with its rich ruby-crimson flowers, is also in great beauty, and some forms of it out of a recent importation, but so far the original is the best, although the more recently imported are not yet strong enough to appear to advantage.

At Tring Park the *Gloriosas* are used for dinner-table decoration, and few flowers are so well adapted for the purpose, if cut with their own foliage. *J. O'E.*

ODONTOGLOSSUM CRISPUM.

MESSRS. SANDER have sent us from Bruges a malformation of this species, such as we have never met with before, though "median proliferation" is exceedingly common in other flowers. The perianth segments, numbered in the diagram (fig. 24) from 1 to 6, present no special peculiarity beyond the fact that the lip is represented by an ordinary flat segment. The inferior ovary and the column are wanting, the centre of the flower being occupied by a tuft of adventitious flower buds on short stalks, numbered 1. to vi.

The illustration shows one of the flowers of the natural size, with a diagram showing the arrangement of the parts, and one of the adventitious flower-buds slightly enlarged. The growth of



FIG. 24.—PROLIFEROUS FLOWER OF ODONTOGLOSSUM. (See Text.)

the central axis of the flower, instead of stopping short, has gone on and produced a tuft of buds as in an ordinary spike.

FRUIT REGISTER.

TWO NEW STRAWBERRIES.

"LAXTON'S LATEST 1904" was kindly sent me for trial in 1903 and fruited last year, when I formed a very high opinion of its merits. This opinion is amply confirmed this season. The plants yield a heavy crop of large, wedge-shaped fruits, of a dark crimson colour, which runs right through the fruit. The flesh is very solid, of excellent flavour, and ripens later than *Waterloo*. Several fruits weighed 1½ oz. each, and measured 6¾ inches in circumference. It is without doubt the finest late Strawberry known.

Bedford Champion yields a very heavy crop of large, round, firm fruits of a bright red colour. The plant is a vigorous grower, more compact in habit than *Royal Sovereign*, which ripens about the same time. Its general character is well represented by fig. 18 on p. 43 in the *Gardeners' Chronicle* for July 15. This variety will be a good one for market growers. *W. H. Divers, Belvoir Castle Gardens.*

THE ROSARY.

ROSES AT LOWDHAM.

CLIMBING ROSES have grown in favour immensely since the introduction of *Crimson Rambler*, and many varieties have been added to this section in order to meet the increasing demand for them. The following varieties were noted in flower during a recent visit to Messrs. Pearson & Son's Nursery, Lowdham, Notts, where an erection has been built in order to afford means of conveying a correct idea of the value of different varieties for covering pillars, pergolas, &c.

Gloire de Margottin.—Very bright red, a full flower, and a good grower.

Rubin.—Bright purplish-red, very free, similar to *Fellenberg*, but more purple in colour, effective at a long distance.

Morgenrot.—A fine single red flower, better than *Carmine Pillar*.

Una.—Single white, very free-flowering.

Conrad Meyer.—A very strong grower, flowers of bluish colour. It belongs to the *R. rugosa* section, but covers a pole well.

Leuchstern.—Rosy-pink with white eye, single, flowering in clusters. One of the best.

Dorothy Perkins was not in flower, but is well known, and ought to be in every garden.

Ards Rover.—Single red, fine large flower, and possesses a good constitution.

Francois Crousse.—Of bright red colour, full flower.

Climbing Captain Christy.—Similar to the ordinary form in its flowers, but this is a good climber if obtained true.

Meg Merrilies.—One of the *Penzance Briers*, very fine as seen here on a pole. Of deep pink colour, single, it is also valuable for planting as a single specimen in a "wild garden," and is capable of forming a huge bush.

Anne of Gierstein.—Another *Penzance hybrid*, very similar to the above, but deeper in colour.

Among dwarf varieties, hundreds of which were in full flower, I noted the following:—*Madame Ravary*, T., yellow, very good; *Florence Pemberton*, H.T., bluish, very fine; *Lady Moyra Beauclerk*, rose-coloured; *Madame E. A. Nolet*, a very free bloomer; *Le Progrès*, yellow, full of flowers; *Mrs. Jas. Hill*, having a nice long bud of bluish colour and very promising; *J. Campbell Hay*, H.T., pink, a good variety, with large foliage; *Lady Ashtown*, of pink colour, a finely-shaped bud; *Mamie*, H.T., a fine full flower.

Many older varieties were looking extra well, and all were very clean and healthy. A Rose with a perfume of *Violet* is a novelty to many; it is called *Eugénie Lamesch*, and has small pink, yellow, and white flowers in clusters; this is a pretty variety, belonging to the dwarf polyantha class.

In addition to the *Roses*, I could not help admiring the fruit-trees which are distributed in large batches over the 100 acres forming the nursery, all clean and healthy; and a peep at the Vermorel spraying machines explained part of the reason why such a success has been achieved. *W. H. Divers, Belvoir Castle Gardens.*

NOTES ON VARIETIES.

The present Rose season, so far as my own observations extend, has been distinguished by the brilliancy of the *Hybrid Perpetuals*, and the comparative failure of the more delicate *Teas*. Here the most successful among the latter have been *Anna Olivier* in the garden, and *Devoniensis* at the study-window; both of these exquisite varieties have been exceptionally fine. Of the *Noisettes* the most conspicuous, by reason of its floriferousness, has been *Bouquet d'Or*; almost

rivalled in productiveness, and quite eclipsed in perfect purity and sweetness, by its aspiring companion, Madame Alfred Carrière, one of the loveliest of Hybrid Noisettes. William Allen Richardson and L'Idéal have not as yet florally achieved very much, but they are full of promise for the early autumn months. Just at the crucial period when they were beginning to grow they suffered very greatly from lack of rain, without whose truly beneficent ministrations the strongest and most vigorous varieties will not adequately succeed. This season has been generous in the direction of heat, but moisture has been very conspicuous by its absence.

As previously indicated, the Roses that have grown and flowered most effectively under such trying conditions have been the Hybrid Perpetuals and Hybrid Teas. Of the former the grandest in their floral impressiveness have been Frau Karl Druschki, some of whose satin-white flowers in my garden have been nearly 7 inches across; Margaret Dickson, perhaps the most effective Rose for garden-culture that the famous Newtownards Rosarians have produced; Clio, a very beautiful and grandly growing Rose, a native of Waltham Cross; A. K. Williams, which is not invariably reliable at first, but generally improves, and is always seen to best advantage during the autumnal months; Charles Lefebvre, which was a special favourite of the late Dean Hole, and when seen at its finest is not easily surpassed; Duke of Edinburgh, Horace Vernet, and Lady Helen Stewart, three of the loveliest of velvety crimson Roses, which have recently found a formidable rival in a luminous Newtownards namesake of my own. Very prominent among pink-coloured varieties have been Mrs. Sharman Crawford and Mrs. John Laing. I have hitherto regarded Mildred Grant as essentially an exhibition variety; in the garden its flowers are certainly enormous, with rugged shell-petals, but they are comparatively few.

The finest in Scottish gardens of the Hybrid Teas this season have been Caroline Testout, La France, and Clara Watson, which combine the richest fragrance with splendidly commanding floral effect; Madame Pernet Ducher, whose deep colour in bud-form does not suggest its subsequent pure white revelation; Papa Gontier, an invaluable rose, beautiful at all stages of its exquisite evolution; Viscountess Folkestone and Gloire Lyonnaise. I should have given Captain Hayward highly honourable mention among the most distinguished of the Hybrid Perpetuals. David R. Williamson, South-west Scotland.

The Week's Work.

THE ORCHID HOUSES.

By W. H. YOUNG, Orchid Grower to Sir FREDERICK WIGAN, Bart., Clare Lawn, East Sheen, S.W.

Club-stemmed Dendrobiums, as *D. thyrsiflorum*, *D. densiflorum*, *D. Farmeri*, and other similar plants, are termed, comprise a number of excellent species that are admired whenever they are seen in flower. It is now their season of growth. They need a good share of heat and moderate light, but not a large amount of atmospheric moisture, or water at the base, until root-action occurs, which will be when the club-shaped pseudo-bulbs are nearing completion. The necessary potting operations should be given attention soon after growth commences, or just as the roots emerge from the bases. Let the pots be drained to two-thirds of their depth, and use a compost of good peat two parts and sphagnum-moss one part. Being of rapid development, the compartment they occupy must be well ventilated, but free from draughts and sudden fluctuations of temperature, or the young tender foliage may become spotted. When the pseudo-bulbs have reached their full size diminish the supply of water, and remove the plants to cooler and drier quarters, such as a Cattleya-

house affords. On the approach of winter a dry and moderately airy position may be found for them in a vinery or elsewhere, and throughout the long resting period only give water when signs of shrivelling appear in the younger pseudo-bulbs.

Dendrobium moschatum, &c.—The species named is a strong-growing kind that delights in an abundance of heat, light and atmospheric moisture during its growing season, therefore let the plants be placed in an ordinary plant stove. Once established in a good-sized, well-drained pot, only annual resurfacings of good peat and sphagnum-moss will be necessary, applying this just as new roots emerge from the young growths. At this period a liberal supply of water at the base is needed, but only limited applications at other times. Provided the position suits the plants, they may remain in the warm-house throughout the year, if it can be kept very dry during the winter and spring months. *D. Dalhousianum* needs similar treatment in most essentials, though perhaps dryness at the base should be maintained for longer periods. *D. chrysoctoxum* and *D. suavisimum* are also heat-loving species, and may be treated like those already noticed, though if convenient somewhat cooler and drier quarters may be given them during winter.

Resting Dendrobiums.—Such early-growing species as *D. Wardianum*, *D. crassinode*, *D. primulinum*, *D. aureum*, &c., will in many instances have finished growing, and should be given the treatment that will ensure a thorough ripening of their pseudo-bulbs. The first two species may be removed to a vinery where more light and air are obtainable as soon as the terminal leaf is seen. Continue to afford an abundance of water, and syringe the foliage to keep it free from insects. As the foliage loses colour and begins to fall away, decrease the water supply until it is only needed at long intervals. *D. primulinum* may be suspended in a Cattleya-house, and be treated similarly to *D. crassinode* and *D. Wardianum*. *D. aureum* may remain where it has made its growth, but as the pseudo-bulbs mature very much less water will be needed, and when the leaves turn yellow and fall away apply little or none until the following season.

THE KITCHEN GARDEN.

By W. FYFE, Gardener to Lady WANTAGE, Lockinge Park, Wantage.

Asparagus Seedlings.—If seeds were sown in their permanent quarters, let the plants be thinned to 12 inches apart that they may grow sturdily. Destroy weeds by a frequent use of the hoe.

Endive.—As many of the early-sown plants are likely to bolt, make a liberal sowing now in good rich soil. Let the early plants be well blanched before they are used for salading, otherwise the leaves will be very bitter. A simple and effectual method of blanching them is that of placing a broad board in such a position as to rest on the plants.

Tomatos will still require attention at least once a week in the removal of all lateral growths. The single stem system is the best. By regular tapping each plant-stem or the stake occasionally when the plants are in bloom, or by means of a piece of fur attached to the end of a stick, help to secure the better distribution of the pollen. Do not allow the soil to become too dry, but bear in mind that much water at the roots or on the stems and foliage is not favourable to Tomato culture. The practice of trimming the leaves by the wholesale removal of healthy foliage we do not practise, and do not recommend. The removal of a few leaves here and there to admit light is permissible.

Cucumbers that are growing in frames need somewhat different treatment to those grown upon a trellis in a house. Space being more limited, the main stems must be stopped more frequently to cause the development of side shoots, which will soon show flowers. When one or two fruits have developed the shoots should be stopped a joint beyond the fruit. Admit as much light as possible to established plants, and afford them considerable water when they are fruiting. Syringe the foliage frequently, for a dry atmo-

sphere would favour the attacks of red-spider. Avoid over-crowding by removing early all matured vine and foliage, there may then be expected a succession of young and vigorous shoots that will bear fruits.

Ridge Cucumbers now growing freely in a warm sheltered position should be afforded water freely. Do not allow the shoots to become over-crowded, nor let the fruit be too old before cutting, fresh young fruits being much the best.

Broccolis and Kales.—The planting of several kinds of Broccolis and Kales should now be completed. Firm ground will afford the best results.

PLANTS UNDER GLASS.

By A. BULLOCK, Gardener to E. J. WYTHES, Esq., Copped Hall, Epping, Essex.

The Conservatory.—Every opportunity should be embraced for tying and for thinning overhead creepers. Afford these plants copious applications of diluted liquid manure from the drainings of the farmyard, and apply the same early in the morning when a free circulation of air will soon remove any disagreeable smell.

Specimen plants of *Allamandas*, *Clerodendrons*, *Bougainvilleas*, &c., that have completed this season's growth may be removed to cooler quarters, and allowed full exposure to sunshine, the better to ripen their growth. Specimens planted in the borders and trained over the roof should be well thinned out, in order to allow a free circulation of air to pass between the growths.

Clerodendron fallax.—Seeds of this plant are freely produced, and sufficient should be allowed to ripen from plants now passing out of bloom for next year's sowing. No advantage is gained by retaining the old plants for flowering a second season, but sufficient should be saved to afford a supply of cuttings for propagating purposes early in the spring. Plants intended for flowering in the autumn will be benefited by an occasional light dressing of Clay's fertilizer.

Glorinias.—As these plants are removed from the conservatory or flowering-house they should be placed in a cool frame where they can ripen. They should also be fumigated to destroy thrips or other insects present. Diluted liquid-manure should be afforded them until the foliage shows signs of decay.

Fuchsias.—Plants intended for furnishing cuttings for autumn propagation will require to be thoroughly ripened, therefore they should be stood out-of-doors in a position where they will be fully exposed to the sun's rays for a week or two, after which they should be shortened back and started into growth. By this treatment suitable cuttings will be available early in September.

Bouvardias, *Salvias*, *Libonias*, &c., that are planted in ashes or planted in the borders will occasionally require pinching, they should also be afforded copious supplies of liquid-manure. Overhead syringings with clear water morning and evening during very hot weather will be of great benefit to these plants.

FRUITS UNDER GLASS.

By F. JORDAN, Gardener to Dr. CORBET, Impney Hall Gardens, Droitwich.

Pears and Apples.—These trees require an abundance of water, and should be examined several times daily, or they may be removed to the open air and the pots partially plunged in the soil. The fruits will ripen well in such conditions. Continue to pinch the shoots, in order to assist the formation of fruit-buds for bearing next season.

Cherries.—The trees of all except late-fruited varieties will have been cleared of fruit, and may be taken out of the house and the pots plunged in the open ground. Syringe the trees daily, and afford water to the roots as often as it is necessary. Afford abundance of air to late varieties, and do not permit too much atmospheric moisture when the fruits show signs of ripening.

Plums.—Afford later varieties of Plum-trees more room after early varieties have been removed out of doors, and stage them by themselves, if possible. Keep the shoots closely pinched; apply diluted liquid manure and guano-

water to the roots alternately. Syringe the trees with soft water only or the "bloom" on the fruits will be damaged or destroyed.

Melons.—The present season has been a good one for Melon culture, there having been plenty of sunshine, therefore with careful attention to watering and ventilation high flavour has been obtained in the fruits. In dull and wet weather greater care is necessary in damping and ventilating, or canker is liable to appear. In the structure where fruits are commencing to ripen, keep the atmosphere moderately dry, and maintain a free circulation of warm air. Cease to apply manure-water, but afford clear water in moderation. Plants make more lateral growth at this season, even if the rooting medium is a limited one, and they should be examined at least once a week that the laterals may be removed. Apply liquid-manure or some other stimulant to plants carrying heavy crops of fruit, regulating the supply in accordance with the amount of leaf-growth and the quantity of soil the roots have for growing in. Close the house early in the afternoon with plenty of atmospheric moisture. Where Melon-fruits are required late in the autumn, and good houses are at command having means for providing plenty of top and bottom heat, a sowing of seeds should be made now, selecting a strong growing and quick maturing variety. Good varieties of Melons are numerous, but those who have not grown Veitch's Late Perfection for ripening very late in the season should try this excellent variety. The late Melon-plants should be either planted out as recommended in previous Calendars, or be grown in pots. Encourage them to make sturdy growth by affording freer ventilation on all favourable occasions than is generally recommended for Melons.

Melons in Frames.—Remove all surplus growths as they appear, and avoid injuring the principal leaves. Raise the fruits on inverted pots to give them full exposure to the light. Any plants that are in flower should be kept in slightly drier conditions until the fruits are set. Top-dress the plants with loam if necessary, but this will depend upon the depth of fermenting material, and the quantity of compost given them in the first instance. Syringe the plants and close the frames early on bright afternoons, and when the roots need water apply liquid-manure or guano-water, but be careful not to apply too much water in dull or unsettled weather.

Tomatos.—Make a sowing of seed to raise plants for fruiting in the winter. Two good varieties for this purpose are Frogmore Selected and Sutton's Winter Beauty. Raise these seedlings in a cool pit, and afterwards keep the plants in a nice light position near to the glass, endeavouring to encourage a firm but not a strong growth. Repot the plants into 6-inch pots as they become ready, and remove them out-of-doors to an open position where lights can be placed over them in wet weather. Subsequently repot the plants into 8-inch pots, using a moderately rich compost of loam, wood-ashes, lime-rubble, and a sprinkling of bone-meal. Afterwards they may again be placed out-of-doors for a time.

THE FLOWER GARDEN.

By W. A. MILLER, Gardener to Lord HENRY C. BENTINCK, M.P., Underley Hall, Westmoreland.

The Flower Beds and Borders.—Keep all plants in a growing condition by affording them water in dry weather. Remove the seed-pods from Violas, take away old blooms of Roses, and afford manure and water to encourage the plants to make a good autumnal show. Do not let Sweet Pea or pea pods, but cut all fully-grown flowers. Afford water to the plants.

Carnations.—Prepare compost in readiness for layering, by thoroughly mixing together two barrowloads of loam, one of leaf-mould, and one of river-sand. Let this be sifted through a 3/4-inch siddle. Towards the end of the present month the shoots will be ready for layering. In doing this work clear away the bottom foliage, loosen the soil round the plant, and apply some fresh compost. With a sharp knife make an upward cut through the third or fourth joint in a shoot about half an inch up the centre of the stem. Gently bend the shoot so that the slit becomes well open, press it into the soil, and secure it firmly with pegs made

from twigs of Willow or common bracken. Add a little more soil afterwards, and apply water liberally in dry weather. If birds are troublesome place some stones amongst the layers. These will also act as a mulch to prevent rapid evaporation.

Hydrangea paniculata grandiflora can be propagated by inserting young or partially-ripened shoots into porous soil in a shady frame. Take advantage of showery weather to apply a little artificial manure to established plants.

Roses of the Rambler type.—The strong shoots require tying at short intervals of time. Afford ample waterings. The advantages following deep cultivation are clearly shown when a period of drought sets in. Queen Alexandra, Leuchstern, Thalia, and Euphrosyne are good varieties of the type. Madame Norbert Levavasseur is a dwarf variety with purplish - crimson flowers. The Wichuraianas make graceful weepers on standard Briar stocks. Amongst many good sorts the following are distinct and beautiful: Adelaide Moule, Edmond Proust, Elisa Robichon, Dorothy Perkins, Francois Foucard, René Andry rubra; all are robust growers and splendid for covering ground, owing to their prostrate habit. Rugosa repens alba has single white stellate flowers and pendent growth.

THE HARDY FRUIT GARDEN.

By W. H. CLARKE, Gardener to Sir WILLIAM FLOWDEN, Aston Rowant House, Oxon.

Summer Pruning.—This operation may now be undertaken, although little remains to be done if early attention was given to the pinching and thinning of shoots, as directed in previous Calendars. Examine trees which have been so treated and remove or closely cut back any cross shoots that are not required. All spur growths which were previously pinched and have made considerable growth again should be stopped back to two leaves beyond the previous stopping. In such cases the main branches will be thinly disposed so that the sun's ray can shine perfectly through the tree. Extension shoots that are making a moderate amount of growth only may be left their full length, but to balance the growth of a tree an extra vigorous shoot should be stopped, thus diverting the sap into the weaker ones.

Wall Trees.—Secure the leading shoots whilst they are still in a growing state, for after the growth has stopped it becomes difficult to train a bent or crooked shoot. Cordons, whether of upright, oblique, or horizontal form, should be treated similarly. Attention should also be given to the fruits, and in cases where there are heavy crops make a final thinning of the fruits. Cleanse the trees of any insect pests at the same time.

Neglected Trees.—Trees that have not received the attention that was recommended in previous Calendars will need much more pruning at this date. In order not to inflict on the trees a severe check by the removal of much growth at one time the pruning should be performed at two operations, commencing with the upper portions of the tree first where the strongest growths are found, then in ten days afterwards finishing with the lower parts of the tree. The removal of a large number of shoots from a tree that is in active growth might cause temporary stagnation at the roots, and a loss of vigour to the tree. Trees to be pruned should have their side-branches removed down to the fourth leaf from the base, and this is best done by a sharp pressure of the shoot against the pruning-knife. It is not wise to prune closer than advised, in case these basal eyes commence to grow with the advent of warm, showery weather in August and September.

Syringing Wall-trees.—During hot, dry weather wall-trees should be syringed once each day after 5 P.M.

THE APIARY.

By CHLORIS.

When to add Supers.—For the want of a little knowledge on this topic much valuable time is lost, and often through the crowded state of the hive a swarm issues. When all the frames or sections, save those on the outside, are filled and

sealed, then is the time to add another rack or super.

How to add a Super.—This is a very important point. On many occasions I have seen successful beekeepers create quite an uproar when performing what is to many of us a very simple operation. Never choose a day which is cloudy and the bees are having a slack time, for then they seem more prone to sting. The correct position for the new super is underneath those that are already nearly completed. Place the new super ready at hand, have the smoker well filled and burning furiously, give the bees a slight puff at the entrance and wait two or three minutes; then remove the roof, and as you turn back the quilts, puff smoke across the frames or sections. This done, lift the crates by giving them a slight twisting movement, and lift them gently without jar. Give another whiff of smoke to drive the bees down from the excluder. Having completed this, put on the new crate, place the other or others on the top, cover up snugly, and replace the roof. All this can be performed in a very few moments and without any unnecessary commotion.

How to Remove Crates when Full.—The amateur imagines this to be an easy task, and being anxious to harvest his first surplus, takes off the rack to a little distance from the hives and there leaves it, imagining that whilst he fetches others the bees will be in process of removing. To his horror he finds there is a perfect hubbub, for the bees far and near seem to have scented it, and are helping themselves. Many beautiful sections have been spoiled in this manner, for the bees in their desire to rob, perforate the cappings, and afterwards these "weep," as it is called. Take a board the size of the super, and in the middle place a Porter Bee Escape. Put this under the rack the previous evening and next morning the super will be deserted. Remove it to a safe distance and at the same time cover it. This naturally makes us consider the next process.

Extracting.—Make the extractor clean by rinsing well with boiling water and dry perfectly.

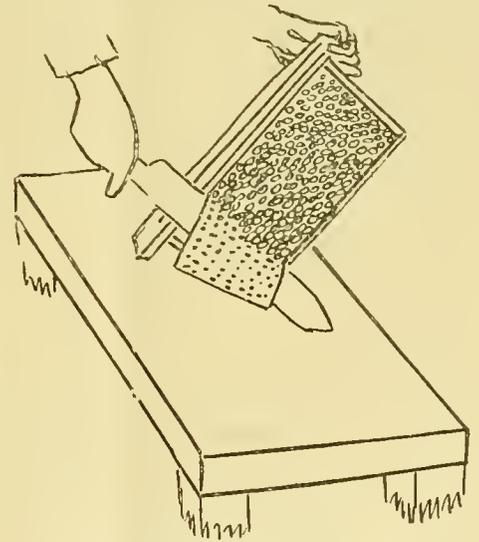


FIG. 25.—UNCAPPING A SHALLOW FRAME OF SEALED HONEY IN ORDER TO EXTRACT THE HONEY.

Oil it well, but not to overflowing, as many do. To secure the best results all honey to be extracted should be in sealed combs. Take a good knife and lean the comb over and cut off the cappings from the bottom upwards, as in the sketch. Perform this operation in the evening at dusk, or you will wish the honey and bees at the bottom of the sea. After all the combs are extracted return the crates with empty combs to the hives to be cleaned out by the bees. If they are left in the open robbing will be the result.

Where to place the honey.—Much trouble has been caused at different times by carelessness after extracting. The honey is often left in the open, so that bees come to help themselves, as also do the wasps. Place the honey in closed tins or jars, and keep it in a warm place.

APPOINTMENTS FOR THE ENSUING WEEK.

WEDNESDAY, JULY 26	Cardiff and County Horticultural Society's Exhibition (2 days). Southern Counties Carnation Show at Southampton.
FRIDAY, JULY 28	
	Royal Botanic Society Meet. Handsworth Horticultural Show (2 days).

AVERAGE TEMPERATURE for the ensuing week, deduced from observations of Forty-three Years at Chiswick—63.4°.

ACTUAL TEMPERATURES:—

LONDON.—Wednesday, July 19 (6 P.M.): Max. 75°; Min. 58°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—Thursday, July 20 (10 A.M.): Bar., 30.3; Temp., 73°. Weather—Bright sunshine.

PROVINCES.—Wednesday, July 19 (6 P.M.): Max. 71°; Guildford; Min. 57°, N.E. coast of Scotland.

Roses, Roses, Roses! BEFORE the season of Roses is over it may be well to call attention to many points about Roses and Rose culture which still require elucidation. There are many to whom a Rose is a Rose, and who would resent as profane sacrilege any attempt at analysis or experiment. No one will question their right to enjoy their Roses in their own way. There are others eager to know the how and the why, and their enjoyment is as keen as that of their fellows, with the addition of a greatly enhanced interest and the ever-present anticipation of novelty and perhaps improvement.

From this point of view an article in the current number of the *Revue Horticole* deserves the attention of rosarians. It gives a brief account of the now famous Rosary established at l'Haÿ, near Bourg la Reine, by M. GRAVEREAUX, which was visited by some of the deputation from the Royal Horticultural Society which visited Paris this spring. No fewer than one thousand five hundred varieties, or so-called varieties, are cultivated, a herbarium has been formed, and a library established. But this was only the beginning. The project expanded, and now a collection as complete as possible of all the wild species from every country is being made, a vast correspondence is established, hybridisation and cross-breeding are carried out, a laboratory is proposed, trials instituted, and every means taken to study and to demonstrate the subject in its scientific, artistic, cultural, and even commercial aspects. In the arrangement of his trial grounds M. GRAVEREAUX has had the advantage of the talent and skill of M. ED. ANDRÉ. That gentleman has lately revisited the "Roseraie de l'Haÿ," and, in the journal to which we have alluded, gives a brief account of some of the trials and experiments now in progress. These trials are carried out in beds set apart for the purpose, and their general character can be gleaned from the following brief note:—

Experiments showing the methods of pruning most appropriate for particular varieties.—Four specimens of the same variety are placed side by side. Of these four, one is hard-pruned, the second moderately, the third still less, whilst the fourth is not pruned at all.

Experiments to induce flowering at different periods, e.g., early-flowering, mid-season (normal), late-flowering.

Investigations as to the best stocks.—Fifteen different varieties are used as stocks, the scion being the same in each case. The

Roses used as stocks are *R. laxa*, *canina-rubiginosa*, *arvensis*, *inermis*, *Manetti*, *indica* major, *De la Grifferaie*.

Enquiries as to the influence of different soils.—Soil has been procured from various Rose-growing centres, Angers, Orleans, Lyon, Golfe Juan, Luxembourg, La Brie, Ivry, Villejuif, &c., and the same variety has been planted in each.

Experiments relating to the use of manures.—Various commercial manures are tested comparatively.

Trials with artificial manures of different composition.—For this purpose the Roses of the same variety have been planted (a) in arable land, (b) in pure sand. In each case (a and b) the Roses are grown (1) without any addition to the soil, (2) with a complete manure, (3) with a manure without nitrogen, (4) with one from which potash is excluded, (5) with one into the constitution of which no phosphates enter.

Diseases of Roses.—In this case comparative trials are made of various fungicides and insecticides.

Production of new varieties by cross-breeding.—A special quarter is reserved for the examination of the numerous crosses raised between *Rosa rugosa* and other species and varieties.

Influence of grafting on the production of varieties.—Fixation of sports.

Merits of new varieties.—All new varieties are obtained and their relative merits tested. If judged of sufficient value, they are drafted off into the general collection.

Influence of light-rays of different colours on the growth and colouration of Roses.

Production of perfumes.—Each variety has its special odour.

Colours of Roses.—In a catalogue which is in course of preparation the colours will be described tersely and precisely, so as to be easily comparable.

Classification of Roses according to their perfume.

This is indeed a vast programme, and it may be feared that its projector may be overwhelmed by the amount of detail he has accumulated. Concentrated effort on one or two particular points might yield more satisfactory results. In any case we owe not a little to M. GRAVEREAUX for making plain to us what we do not know about Roses, and what we may expect to know in future as the result of his experiments.

INTERNATIONAL SHOW AT EDINBURGH.—The Council of the Royal Caledonian Horticultural Society met on the 12th inst., when arrangements were further matured for this forthcoming event on September 13 to 15. Already a considerable number of applications for space for non-competitive exhibits has been received. The last date for receiving these is July 27. On the representation of prospective exhibitors the Council has modified the rule as to staging exhibits by 11 P.M., and has now resolved that, with the exception of a few classes of exhibits which are specially mentioned in the schedule, all exhibits must be in the Waverley Market by midnight on September 12, and all staging must be completed by 3 A.M., Sept. 13.

GIANT LARCH-TREES.—Some notable Larch-trees were recently felled at Bedburn, near Hamsterley. About 5 or 6 feet from the ground-level the largest had a girth measurement of 8 feet 9 inches, whilst near the base the measurement exceeded 12 feet. The second largest tree was felled first; its extreme height was 98 feet,

and it was calculated that the largest tree would be a few feet higher. It is estimated that the trees are over a century old.

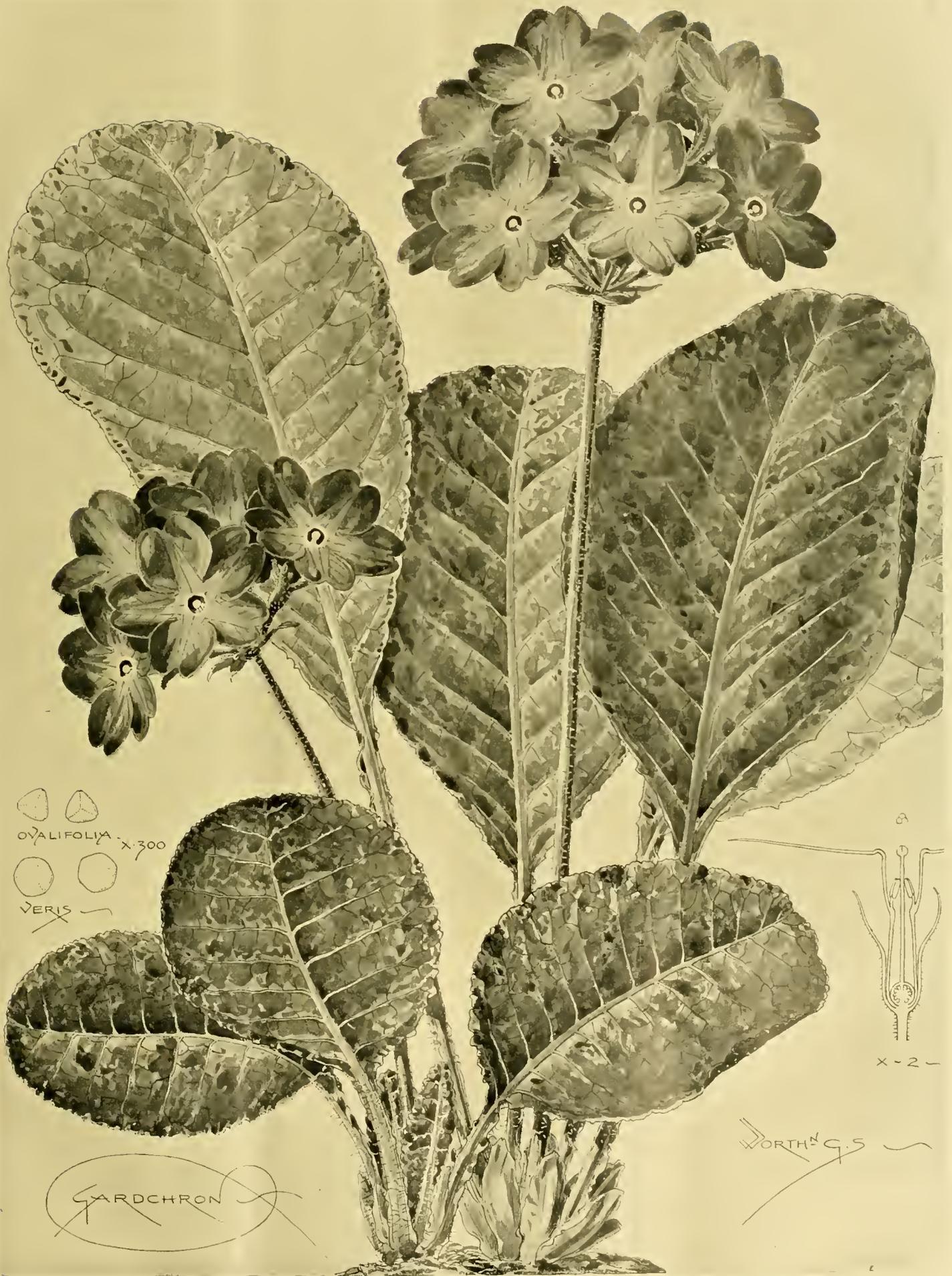
ALPINE FLORA.—Many of our plant-loving readers may be thinking of visiting the Alps at this season. A book small enough to go in the pocket, and containing a large number of coloured illustrations, has just been published by Dr. GUSTAV HEGI and Dr. DUNZIGER, of Munich, through J. F. LEHMANN, of Munich (WILLIAMS & NORGATE). It comprises the most conspicuous plants of Switzerland, Bavaria, and Tyrol. The text is in German, but the plates appeal to wanderers of any nationality.

MR. R. DEAN.—A number of the members of the National Chrysanthemum Society presented their Secretary with a substantial cheque at their meeting on Wednesday last. Great sympathy was expressed with Mr. DEAN in his illness.

SOUTH-EASTERN AGRICULTURAL COLLEGE.—The Archbishop of CANTERBURY visited, on Wednesday, July 19, the South-eastern Agricultural College at Wye, Kent. After service in the parish church, His Grace was entertained at luncheon in the College refectory by the Principal (Mr. M. J. R. DUNSTAN), and gave a short address to the students. A speech was also made by Mr. ALFRED AUSTIN, the Poet Laureate.

THE VEGETABLE GARDEN.—Mr. JOHN MURRAY has published a new edition of the English translation of the famous book, *Les Plantes Potagères*, issued by Messrs. VILMORIN, ANDRIEU ET CIE. It will be remembered that the authorship of the original work was in large measure due to the late HENRY DE VILMORIN. He had special opportunities and special capabilities for the task. Mr. ROBINSON rendered his countrymen good service by bringing out an English version, showing the principal types with their French representatives. As to British varieties the list is not so complete as it might be. Those interested in Potatos, for instance, will look in vain for any mention of several of the leading kinds. These were, of course, not included in the original work, but their absence from the newly published English edition is to be regretted.

CARNATIONS, PICOTEES AND PINKS.—Mr. H. W. WEGUELIN has opportunely brought out a second and revised edition of his book bearing the above title. It is published by Messrs. COLLINGRIDGE, 148, Aldersgate Street. The fact that this work has arrived at a second edition is a sufficient indication of its merits. All that we need say is that it deals with the different sections of the species *Dianthus Caryophyllus*, explains their peculiarities, details the method of cultivation suitable for each, shows in what way they may be propagated and reproduced, and in fact conveys just the information which the beginner needs. The change in public fashion is shown by the popularity of the self-coloured forms and the relegation to the florists of the old school, of whom few are now left, of the flakes and bizarres, which although interesting are not so effective in the borders or so attractive as cut flowers as are the self-coloured varieties. The Malmaison Carnations, in spite of their size, their want of refinement, and the relative difficulty of their cultivation are in high favour. The source whence this section was derived is not stated. We are glad to see the author expressing his disapproval of the childish practice of "dressing," and also of that "monstrosity" the paper collar. The illustration of a scarlet flake on p. 83 well shows the throttled appearance that flowers provided with such an appendage have. Difference of opinion upon such matters as these may still be expected till the Carnation Society discourages the practice, if not directly, at least by encouraging more natural procedures. On one



PRIMULA OVALIFOLIA—A CHINESE SPECIES, SHOWING SECTION OF FLOWER AND POLLEN-GRAINS X 300 DIAM.

point all honest men will agree, and that is that the practice which is said to exist among a certain class of exhibitors, of showing flowers which have not been grown by themselves, should meet with stern reprobation. There may be exceptional cases where, in order to make up a group or for some special purpose, it may be allowable to ignore the rule that the flowers exhibited should have been grown by the exhibitor, but in such instances the fact should be expressly stated, and no competition allowed where the conditions are not equal.

FLOWERS AND FRUITS IN SEASON.—Flowers of *Azara microphylla* are frequently seen, but fruits are much less common. Messrs. ROBERT VEITCH & SON, of Exeter, sent us a specimen bearing numerous orange-coloured berries, each about the size of the head of a large pin. Messrs. ROBERT VEITCH & SON also sent us ripe fruits of *Lucretia* Blackberry on July 17. They state that the fruits ripen quite three weeks in advance of ordinary Blackberries. It is very prolific, some of the sprays bearing eight to ten fruits.

"CLAY'S SUCCESSFUL GARDENING."—A third edition of this little handbook of practical horticulture has been issued (CLAY & SON, Stratford). Although published in the interest of a firm of manure manufacturers, it is something more than a mere trade list, as it contains articles on various departments of gardening by several experts of acknowledged position. It seems to have been as difficult to exclude "Clay's Fertiliser" from these articles as it was to keep CHARLES THE FIRST's head out of Mr. DICKS' memorial. At the end of the book is a statement as to the nature and composition of the fertiliser, which affords a proof that the good opinion held as to the virtues of this manure are justified.

MR. J. F. WILKE, the Curator of the gardens of the Zoological Society at Rotterdam has just completed twenty-five years of service in that establishment. We have had to refer to his labours on various occasions and congratulate him on having secured the approval of his employers and the respect and goodwill of his associates. Mr. WILKE is an old Kewite, and is well known to many in this country.

"THE SCOTTISH GARDENER AND NORTHERN HORTICULTURIST."—This is a newcomer, published monthly at a cost of 2d. It has only now come to our notice (the first number is dated June), or we should have welcomed it earlier. It is intended alike for professionals and for amateurs. We note among its contributors Mr. ARNOTT, Mr. LINDSAT, Mr. WOODROW, Mr. WHITTON, and others who do not hail "from Fleet Street," and who we are proud to number among our own collaborators; we are therefore in a position to congratulate our Scottish friends on the possession of a journal of their very own. We trust that its contents may be as valuable as those of its predecessor under a similar name. Doubtless we shall soon have to announce its publication as a weekly journal. The office of the *Scottish Gardener* is at 34, Robertson Street, Glasgow.

HENRY ECKFORD TESTIMONIAL.—The contributions to this fund up to the evening of Saturday, July 15, amounted to 913 shillings.

THE SALE OF POISONS.—In the House of Commons, on the 13th inst., Mr. ALEXANDER CROSS, M.P., asked the President of the Board of Agriculture when he proposes to introduce his Bill dealing with the sale of substances used extensively and in large quantity in horticulture and agriculture, but which are technically included as poisons under the schedules of the Pharmacy Act, in view of the efforts made to monopolise the trade in such articles by retail

druggists, to the injury of these industries of farming and gardening; and in reply he received the following answer:—"The Bill in question falls within the province of the Privy Council rather than my own, but I am in communication with my noble friend the Lord President as to the advisability of its introduction at no distant date, and, further, that the Bill is in a state of preparedness."

DUST NUISANCE.—Messrs. HOPE & SONS write:—"After considerable experience with our Asphalte Westrumite we now find that two barrels of it mixed with an equal quantity of water will cover 800 yards square, or a length of road 100 yards long by 8 yards wide, and would keep down the dust for many weeks. As you well know, the dust nuisance is an infliction to many a country house that has its gardens, containing either flowers or fruit, abutting on a road, and worse still, as is often the case with country houses, that front right on the highway."

NORTH LONDON NURSERYMEN held their annual outing on Thursday, 13th inst., when a visit was paid to Epping. Cricket was indulged in by the members, the teams being selected by Mr. FRANK ROCHFORD and by Mr. ALFRED WARD. One party drove round the Forest, another enjoyed themselves at quoits, &c.



FIG. 26.—THE PINE SAWFLY.
(See p. 72.)

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his Correspondents.)

SOME GOOD CARNATIONS.—Among the many pink forms of *Souvenir de la Malmaison* Carnation there are few that surpass the variety *Duchess of Westminster*, which is of dwarf, robust habit, and produces handsome compact flowers of a beautiful rose-pink colour, with a delicious clove scent. It has in addition a most perfectly formed calyx, one of its best points. The new yellow *Malmaison* "*Yaller Gal*" is a welcome addition among Carnations. The growth is strong and vigorous, while the flower, borne on a dwarf erect stem, is of large size and of true *Malmaison* form. The colour of the flower is a beautiful pale yellow. Absence of perfume somewhat detracts from its value. *Cecilia* forms an excellent companion to *Yaller Gal*; although not a "*Malmaison*," produces splendid blooms that are over 6 inches in diameter and of sulphur-yellow colour. *Miss Audrey Campbell* is a yellow border variety similar to *Cecilia*, except that the flowers are of smaller size. The plant is well adapted for pot culture, two-year-old plants yielding a quantity of fine flowers. *Trojan*, a pure white variety of the same type as the last-named, is equally good. *Nell Gwynne* still holds the lead as the best white *Malmaison*. Of the

crimson kinds, *Maggie Hodgson* is good. Prime Minister is one of the best scarlet varieties, and forms an excellent variety for growing as large specimen plants. The same may be said of *Sault*, the flowers of which are of a delicate salmon colour. Another worthy of notice is *Calypso*, a fine strong variety with flesh-coloured flowers, the centre petals of which are splashed with bright pink. *Gemma* and *Baldwin* are two good bright rose-pink kinds worthy of notice. *J. Murray, Sopley, Christchurch.*

EXHIBITING CARNATIONS.—Those who delight in seeing flowers, florist's or otherwise, exhibited in a natural manner, and who for years have complained of the paper collar with which Carnations are defaced, have now just cause for a fresh outcry against the unparalleled distortion of the flower, caused by the abundant use of flexible lead wire. This was all too evident on Tuesday last in some of the competitive groups of Carnations staged in pots in the Royal Horticultural Hall, Vincent Square. I am not acquainted with the rules of the National Carnation and Picotee Society, but I should very much question if this method of bending down, doubling back, and eventually endeavouring to make three or four flowers face in one direction at the top of a nearly 3 feet stake, could by any stretch of imagination be regarded as an improvement. To the visitor the contorted lead wire was far too prominent; it was abundant and all too visible on all sides of several large groups, and, in the interests of the flower it throttled to such perfection, the wire should be seen no more. Happily, there were many exhibits of Carnations in the same building where the flowers could be seen in a more or less natural manner: so that one turned away from groups where little remained of the natural grace or beauty of a flower which has been long prized in this country. Not all the competitive groups of plants were thus treated, a fact we noted with pleasure. *E. H. Jenkins, Hampton Hill.*

A LOYAL PLANT.—Some loyal colonists in the Transvaal at the present time adorn the outside of their abodes with a climbing species of *Ipomoea* (probably *rubro-cœrulea*, see *Botanical Magazine*, 3297), as it displays the national colours of red, white, and blue. From seeds sent home the plant is now daily in flower under glass in this city. Its solitary leaves are green, soft to the touch, and heart-shaped, bearing stalks on their axils carrying two or three flowers. By 3 A.M. the elegantly-folded elongated buds are already half-open. The flower resembles that of our climbing *Convolvulus*. The corolla is not, however, of the familiar white or pink colour, but is of a brilliant blue with five central bands of dullish red, and a white centre forming the tube of the corolla. Gradually the central bands intermingle with the surrounding blue and become more distinctly red, while the blue changes to mauve, and incurving of the corolla visible to the naked eye sets in. As the incurving proceeds, say from 12 to 2 P.M., complete dispersion of the red-coloured bands takes place, and a uniform pink colour is found in the outer portion of the corolla. Thus by 4 P.M. the corolla is seen to consist of its white tube with a crown of pink. The corolla thus altered may persist for more or less of the day following. The incurving ceases when the pistil and upper stamens are reached. *Observer, St. Andrews, July 5, 1905.*

GERMINATION OF SEEDS.—In reply to "T. R. P.'s" enquiry on p. 60, I may say that some of the seeds enumerated may remain dormant for a considerable time, but under favourable conditions they should have germinated before now. *Clivias* usually start very soon after they are sown. *Begonia Rex* should germinate in a few days, and there will be no chance of this growing now. *Nephrolepis exaltata* should start within a week or so after being sown. *Palm-seeds* vary considerably. I have known *Kentia* seeds to begin to grow six months after being sown, but I have always found *Livistona chinensis* to start very soon, and seeds of *Phoenix* usually do so. The seeds of *Arum* usually germinate within a week. It would seem that there must be something wrong in the treatment that has been afforded the seeds. It may be that there is something in

the soil that has caused the seeds to damp-off, or insects may have eaten them. It is remarkable that such a variety of subjects should have all failed. "T. R. P." does not say if he has raised any seeds under the same conditions as those which have failed. If the soil gets too dry after the seeds have begun to swell, it will cause failure. Over-watering, too, may cause them to rot off before they get through the soil. The Palm-seeds might be taken out of the soil, washed, and resown. It may be that the seeds have been buried too deeply. *H.*

THE RECENT CHELSEA HOSPITAL SHOW.—The Gardening Press is, as a rule, very complimentary towards the London flower shows, but sometimes seems to be too much so. That was, I think, somewhat the case with the recent Chelsea Show. Certainly it was a great show in the sense that it was big [“pretty” was our expression], but it was terribly formal, and in a great number of exhibits exceedingly commonplace. It was at the best a third-rate copy of the Temple Show. It is a fair question to ask, Is such a show needed? The attendance on the part of both Fellows and public was so poor, relative to what is seen at the Temple, that one wonders whether the lack of attendance was not due to indifference to the show; certainly some members of the trade, which do so much to make London shows, were intensely disappointed at the poor attendance and the lack of return for all their outlay. Nevertheless the Chelsea Gardens offer a far better site for a show than the Temple Gardens, as there is ample elbow-room for everyone. *A Fellow.*

LARGE STRAWBERRIES AND NEW RED CURRANTS.—Kindly allow me to correct a printer's error as given in my last letter. The name of the Strawberry is Gloire du Mans, not Maris. Also I forgot to mention that this grand fruit is derived from a cross between the varieties Sharpless and Noble. As regards the somewhat new Red Currants “Comet” and “Star of the North,” both are excellent in their way. The first is a strong grower, with dark-green, leathery leaves, and bears long, large bunches of fruit, very bright, and deep-red in colour, of good flavour and great size. No. 2 is a prolific bearer of long racemes of berries, which are sweet and luscious, but of moderate size. It is not so worthy of attention as Comet, nor of a like noble appearance, though it is about one fortnight earlier in ripening. Comet is an acquisition that not only merits but will find favour. *Harrison Weir, Kent.*

CAMPANULA TURBINATA “ISABEL.”—This excellent plant was exhibited in considerable quantity by Mr. M. Prichard at the Royal Horticultural Society's meeting on the 18th inst. The primary characters of *C. carpatica* or its variety *turbinata* are absent in the variety Isabel, which partakes of the more widely opened, shallow, saucer-like blossoms of *C. c. pelviformis*, and indeed it would appear to be a deeply-coloured and large-flowered form of this distinct variety. The flowers are coloured deep violet, and in the mass as a bedding plant, for which its profusion of flowers admirably adapts it, the variety would be most effective. The plant is about 1 foot in height, the handsome blossoms 1½ inch or more across, so that its decorative value can be gauged with some accuracy. The variety originated as a seedling in Mr. Prichard's nursery from seed-heads taken from *Campanula carpatica* Riverslea, I believe. In any case, the plant is of undoubted merit, and quite worth the attention of gardeners and amateurs. *E. H. Jenkins.*

THE PINE SAWFLY IN NORTH WALES (see fig. 26, p. 71).—It may serve a useful purpose to call the attention of foresters and nurserymen to the fact that this very destructive insect has put in an appearance in South Carnarvonshire. As the larvæ are gregarious, the colonies sometimes numbering upwards of a hundred individuals, and as they usually consume practically the whole of the leaves, they are readily detected. The following description of the caterpillars, abridged from Miss Ormerod's “Manual,” will enable anyone to

identify them:—“They have a pair of claw-like feet on each of the three segments immediately behind the head, the next segment is footless; the succeeding seven segments have each a pair of sucker-feet, and the tail is furnished with a pair. . . . The colour varies much with age, health, and weather. . . . When full-grown it has a rusty-brown head, dark forehead, and black jaws and eyes; it has an interrupted black line along each side, formed of a patch of black dots on each segment; the true feet are black; the sucker-feet are yellow, and a black line at the base; when full grown it is about an inch long.” As remedial measures, crushing with a gloved hand is recommended, or they may be shaken from the trees on to cloths spread on the ground. A useful leaflet (No. 103) concerning the pest has been issued by the Board of Agriculture; copies may be obtained, gratis and post free, on application to the Board, 4, Whitehall Place, W.C. *C. W. Herbert Greaves, Pullheli.*

FLOWER-SHOW ENUMERATORS.—The unfortunate disqualifications which occurred at the recent Sweet Pea Show help to emphasise the

“twenty sprays shall form a bunch. The vase with only eleven sprays ought certainly to have been disqualified, and the collection also which your correspondent says averaged sixteen or seventeen flowers in a vase. I fully sympathise with the judges and secretary. These occurrences are most unpleasant to all, but it is best to set a correct standard and adhere rigorously to it. Justice and fair play always win in the end. *W. H. Divers, Belvoir Castle Gardens.*”

THE POTATO DISEASE.—The first evidence of the presence of the too well-known *Phytophthora infestans* amongst our Potato crops this year that has come under my notice, and so far happily the only one, was seen in a small cottage garden in Surrey recently. I refer to it specially because it illustrates so forcibly all that the Editor has from time to time urged as to the necessity for the destruction of diseased haulm. Close behind an Ivy-covered outhouse was a festering heap of garden refuse, much of it evidently having lain there from last year. Adjoining it was a patch of Potatoes, and it was evident the disease-spots had started from close to the refuse-heap. The

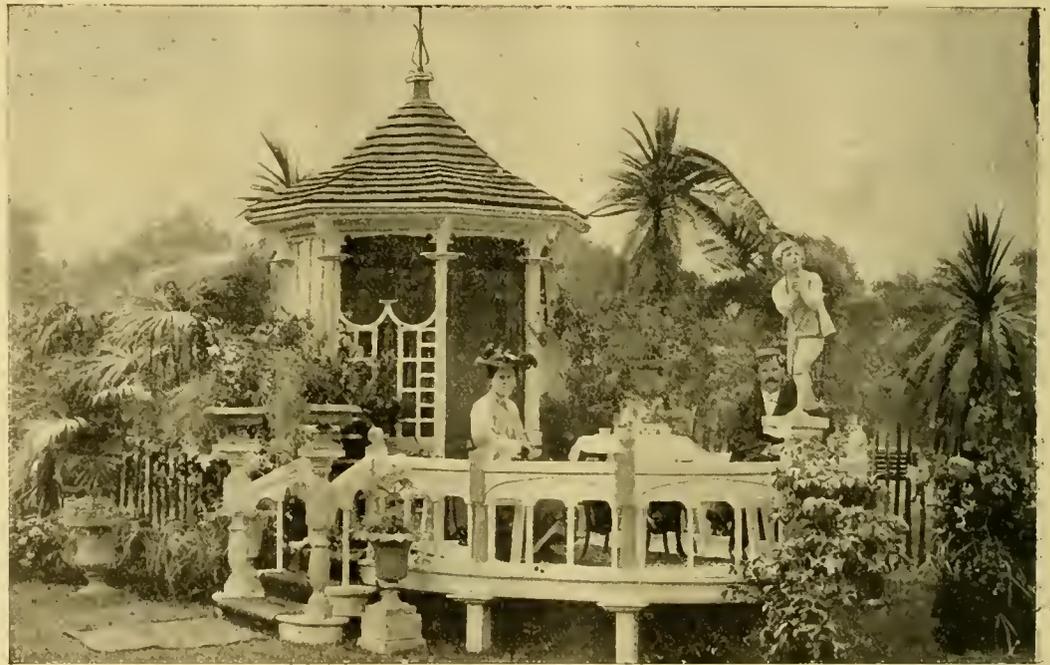


FIG. 27.—THE NEW “ALEXANDRA” TEA OR SUMMER-HOUSE.

Exhibited by Messrs. W. Wood & Son, Ltd., at the Royal Horticultural Show at Chelsea. See last week's issue. (Photo by J. Gregory.)

need there is at so many shows for the appointment by committees of enumerators of exhibits independently of judges. What could be more absurd at the Sweet Pea Show than to bring men like Messrs. Molyneux, Foster, and Burpee together to judge of the merits of the various bunches of Sweet Peas put before them, and then to compel them to count the numbers in scores of the bunches as a preliminary to making awards? If the Committee choose to set up arbitrary conditions as to numbers, let the Committee appoint some from their own body to see that those conditions are carried out. Judges, except in any case of glaring impropriety, should consider that exhibits staged under the eye and authority of the Committee are according to schedule, and proceed to deal with them on their merits. A wise enumerator would rather see an error corrected than hastily disqualify an exhibit. *D.*

JUDGING AT THE SWEET PEA SHOW.—In accordance with the regulation as to numbers, quoted from the schedule on p. 51, the judges were quite right in disqualifying those exhibitors who staged more than the stipulated number of sprays. To say that any man of average intellect cannot count correctly up to twenty is absurd. The fault appears to have been that the judges did not also disqualify those with fewer than twenty sprays, as they were evidently “not according to the schedule,” which expressly states that

patch was as badly diseased, the leaves being blackened with fungoid spots, as may be usually seen on plots a month later. Out of practically thousands of Potato-patches, I had not seen a disease-spot elsewhere. Here were enough to infect the entire parish, and as the muck-heap was left to fester instead of being burned it was the cause of the infection. *A. D.*

TWO NEW CARNATIONS.

In this issue we give illustrations at figs. 23 and 28, pp. 65 and 73, of two new varieties of Carnation that have been shown by Mr. Jas. Douglas, Edenside Nurseries, Great Bookham. The first of these varieties, named Bob Acres (see fig. 23), was given an Award of Merit at the Royal Horticultural Show, in the Vincent Square Hall on July 4. It is a border variety having rich scarlet-coloured flowers 2 inches or more across, of excellent form, and possessing considerable fragrance.

“Miss Willmott” is shown at fig. 28, and was greatly admired at the Royal Horticultural Society's show at Chelsea. Like Bob Acres this variety is suitable for cultivation in the border. The flowers are of a shade of colour we may describe as cherry-red, they are three inches and a half in diameter, and of excellent form, with smooth petals of unbroken outline.

SOCIETIES.

THE ROYAL HORTICULTURAL.

JULY 18.—On the occasion of the fortnightly meeting of the Committees on Tuesday last, the annual show of the National Carnation and Picotee Society was held in the Hall, at Vincent Square, Westminster. In consequence there were fewer groups of Orchids and other plants for inspection by the Committees than usual.

The ORCHID COMMITTEE recommended four Awards of Merit to novelties; and the FLORAL COMMITTEE recommended eleven Awards of Merit.

No novelty was certificated by the FRUIT AND VEGETABLE COMMITTEE at this meeting.

In the afternoon a lecture on "The Wisley Gardens" was given by Mr. S. T. WRIGHT, and was illustrated by lantern-slides.

Floral Committee.

Present: W. Marshall, Esq. (Chairman); and Messrs. H. B. May, Geo. Nicholson, Jas. Walker, Jno. Green, C. J. Salter, J. T. Bennett-Poe, Geo. Paul, R. Hooper Pearson, Harry Turner, Chas. Dixon, H. J. Jones, W. Cuthbertson, W. P. Thomson, E. H. Jenkins, M. J. James, H. J. Cuthush, E. T. Cook, Geo. Gordon, R. M. Wallace, J. F. McLeod, and Jno. Jennings.

A very praiseworthy group of flowers of hardy herbaceous plants came from Lady HARMSWORTH'S garden at Guildford (gr., Mr. Goatley). There were fine bunches of excellent Phloxes, such as Coquelicot and Le Siècle; Pentstemons of the large-flowered type; the old *Monarda didyma*, *Lychnis chalconica*, *Lilium Henryi*, also a few shrubby plants such as *Ceanothus Gloire de Versailles*, *Roses*, &c. (Silver-gilt Flora Medal).

Lady PHILLIMORE, Cam House, Campden Hill, W. (gr., Mr. Becht), showed an extensive group of single-flowered Hollyhocks, cut off at a point near to the ground. There were named varieties having yellow, rose, red, purple, and white-coloured flowers. The plants having been grown within two miles of Charing Cross, their qualities could hardly be expected to be of the best (Silver Banksian Medal).

Messrs. R. WALLACE & Co., Kilmfield Nurseries, Colchester, showed a collection of hardy flowers, having a selection of many of the best things now in season.

Messrs. BARR & SONS, King Street, Covent Garden, also showed some excellent examples of hardy flowers.

Messrs. J. CHEAL & SONS, Lowfield Nurseries, Crawley, exhibited a very showy group of hardy flowers, in which the herbaceous Phloxes and other species in season were represented.

The Misses HOPKINS, Mere, Knutsford, Cheshire, staged Gaillardias and other showy border flowers.

Mr. M. PRICHARD, Christchurch, Hants, exhibited a collection of border flowers, in which the most beautiful and striking feature was a group of the deeply-purple-coloured variety of *Campanula* "Isabel" (see note on p. 72). The *Pyrethrums*, *Heleniums*, *Gaillardias*, *Astilbes*, *Corcopsis*, &c., were all finely grown specimens (Silver-gilt Banksian Medal).

Mr. J. F. McLEOD, Dover House Gardens, Roehampton, exhibited some finely-coloured plants of a good seedling variety of *Codiaeum* named Florence. It is a narrow-leaved form, coloured yellow and green.

Mr. H. B. MAY, Dyson's Lane Nurseries, Upper Edmonton, staged a group of *Codiaeums* (*Crotons*) similar to that displayed by him at the recent flower show at Chelsea (Silver Flora Medal).

Messrs. HUGH LOW & Co., Bush Hill Park Nurseries, Enfield, exhibited cut Carnations, showing a large number of varieties (sixty-one) of the "tree" and "border" types (Silver Banksian Medal).

Messrs. PHILLIPS & TAYLOR, Lily Hill Nurseries, Bracknell, Berks, exhibited Carnations in pots, having about thirty plants in as many varieties.

Messrs. THOS. WARE, Ltd., Feltham, Middlesex, contributed a well-arranged exhibit of Carnations. The flowers were shown in a light and graceful manner. An epergne containing the white Everlasting Pea, *Lathyrus latifolius albus* "White Pearl," occupied the centre of the group (Silver Banksian Medal).

Mr. J. DOUGLAS, Edenside Nurseries, Great Bookham, showed a collection of very choice Carnations. Two of the best varieties that had not been previously exhibited are described under "Awards" (Silver Banksian Medal).

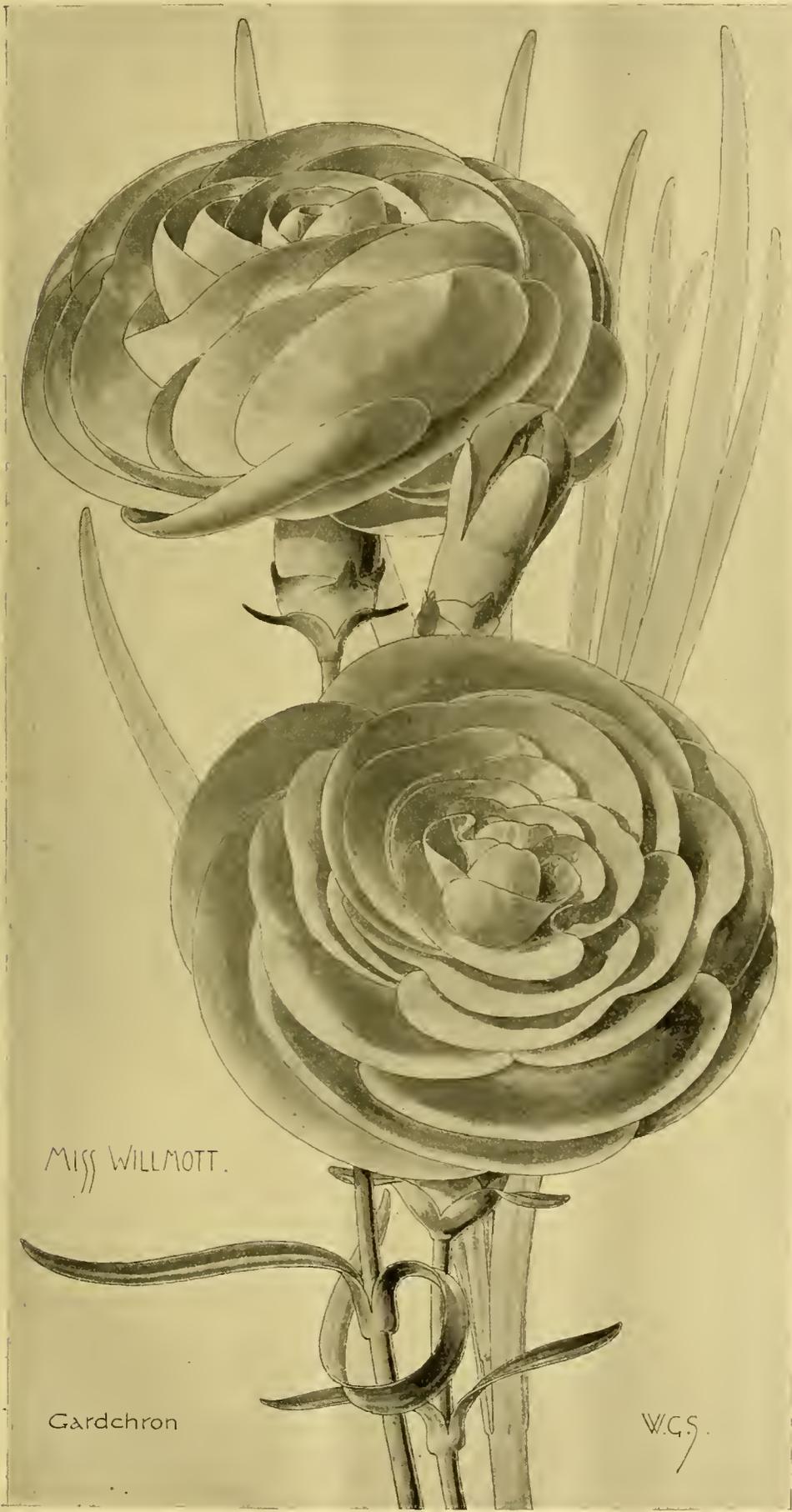


FIG. 28.—CARNATION MISS WILLMOTT: COLOUR CHERRY-RED.

(SEE P. 72.)

Gardchron

W.C.S.

Messrs. CUTBUSH & SONS, Highgate, London, N., showed some excellent Carnations, among which was a fine assortment of "Malmansons." Tree and border varieties were also represented, and the whole was staged with artistic effect (Silver Flora Medal).

Messrs. JOHN PEED & SON, West Norwood, London, S.E., staged a batch of "Tree" Carnations, with Acers, Ferns, &c., for relief; the white variety Hildegarde was shown well.

Messrs. BLACKMORE & LANGDON, Twerton Hill Nurseries, Bath, showed some well-grown flowers of Carnations, using Bamboo stands and vases for their display.

Mr. A. F. DUTTON, Iver, Bucks, showed a splendid batch of Carnations, chiefly of the American type of flower (Silver-gilt Banksian Medal).

Messrs. JAS. VEITCH & SONS, Ltd., King's Road, Chelsea, set up a most interesting group of plants, among which were several new Chinese plants. The more noteworthy was a white Astilbe (see Awards), *Lilium Sutchuenense*, and *Sencio Ligularia var. speciosa* (see Awards). The collection also embraced such fine plants as *Buddleia variabilis* Veitchiana, *Astilbe Davidii*, *Lilium Bakerianum* (showing forms of this variable species, see fig. 29, p. 75), *Vitis Thomsoni*, *V. armata*, and *Actinidia chinensis*. *Clethra canescens* was shown well, as was also *Amorpha canescens*. *Cornus macrophylla* is a tree 20 feet or more in height; it forms a handsome subject when covered with its numerous umbels of white flowers. Messrs. VEITCH also showed small pot plants of *Solanum Wendlandi*, each carrying excellent trusses of flowers; a batch of the beautiful *Exacum macranthum*, whose flowers are of the loveliest shade of deep blue; *Allamanda grandiflora*, and a representative collection of tree and border Carnations (Silver-gilt Flora Medal).

Messrs. H. CANNELL & SONS, Swanley, Kent, staged an extensive group of Gloxinias, small plants in 48's, but well flowered, and representing most of the best named varieties of these showy flowers. Plants of *Kochia scoparia* were used as a background to the Gloxinias. Messrs. CANNELL also showed a selection of very well grown Shirley Poppies, and a distinct coloured Antirrhinum called Defiance. The colour may be described as orange-scarlet (Silver Banksian Medal).

G. FERGUSON, Esq., The Hollies, Weybridge (gr., Mr. Smith), staged a group of *Campanula Fergusoni*, a hybrid form resembling *Campanula turbinata*. The group was very prettily arranged, Ferns, Bamboos, Asparagus, and such-like plants being freely intermixed with the *Campanulas* (Silver Flora Medal).

Mr. H. CRANE, Woodview Terrace, Highgate, showed a number of small-flowering *Violas* arranged in the form of sprays (Bronze Banksian Medal).

Messrs. W. & J. BROWN, Stamford and Peterborough, exhibited flowers of the climbing *Roses* Lady Gay and Dorothy Perkins; also cut *Roses* of other varieties, and flowers of the "Cactus"-like *Pelargoniums*.

Linaria vulgaris Peloria. Flowers of this interesting plant were shown by Mr. WILLIAM MARSHALL, Chairman of the Floral Committee.

Awards.

AWARDS OF MERIT.

Adiantum Mayii.—This is described as a seedling from *A. fragrantissimum*. The plant is remarkable for its long pinnules and the delicate tracery in the fronds. It is a very elegant variety. Shown by Mr. H. B. MAY.

Astilbe grandis.—The plants of this Chinese species were 7 feet or more high, and had compound ternately pinnated leaves, and inflorescences some 4 feet long, bearing white *Spiraea*-like flowers. From Messrs. JAS. VEITCH & SONS.

Carnation Liberty.—This is a fancy border variety. The flowers are of large size, and full in the centre. In colour they have a yellow ground heavily striped with crimson. Shown by Mr. JAS. DOUGLAS.

Carnation Viscountess Ebrington.—This is a first-class self-coloured variety, being of very pale buff. The flowers are of satisfactory form and size. Shown by Mr. JAS. DOUGLAS.

Lilium Sutchuenense.—This Chinese species has very narrow lanceolate leaves, from 3 to 3½ inches long, and deep orange-red coloured flowers, like those of *L. tigrinum*. The petals are very much recurved, and thickly spotted with blackish-brown spots. Some of the growths had six flowers on each, but others had fewer. It is a comparatively small, elegant species of considerable refinement, having a pretty effect as

grown in pots. Shown by Messrs. JAS. VEITCH & SONS.

Phlox "Dorcen". A pink-coloured variety of herbaceous *Phlox*, with a ring of reddish-rose colour round the centre of each flower. The flowers are of regular form, and individually measure 1½ inch across. Shown by J. BRADSHAW, Esq. (gr., Mr. Whitelegge).

Sencio Ligularia var. speciosa.—This is one of the largest-growing Groundsels from Central China. Its great green leaves and immense spikes of yellow flowers will make the species valuable for planting in the "bog" or "wild" garden. Shown by Messrs. JAS. VEITCH & SONS.

Violas, Councillor Watters (DOBBIE & Co.), a purple-coloured variety; Mr. McFarlane (DOBBIE & Co.), purple and blue-coloured, of the "Magpie" type; Isalde (DOBBIE & Co.), pale yellow, rayless; and Stark's Royal Sovereign (STARK), very deep, rich yellow, rayless. All these varieties have been cultivated at Wisley, and were selected from a large number growing there by a deputation from the Floral Committee, which visited Wisley for this purpose on Monday last.

Orchid Committee.

Present: Harry J. Veitch, Esq., in the Chair; and Messrs. Jas. O'Brien (Hon. Secretary), De B. Crawshaw, W. A. Bilney, H. Little, W. Cobb, W. Boxall, F. W. Ashton, G. F. Moore, H. T. Pitt, W. H. Young, and R. Brooman-White.

There were no groups staged, the exhibits being confined to those intended to go before the Committee for Awards.

AWARDS OF MERIT.

Laelio-Cattleya × chardwarensis (L. cinnabarina × C. dolosa), from G. F. MOORE, Esq., Chardwar, Bourton-on-the-Water (gr., Mr. Page). A very pretty and delicately-tinted flower. The plant bore an inflorescence of eight flowers, arranged bouquet-like on a stem 9 inches long. Flowers 3½ inches across. Sepals and petals lanceolate, the petals broader than the sepals, both blush-white with a rose tint in some stages of the flower and a buff hue in others. Lip three-lobed, the side-lobes turned back at the tip, middle lobe ovate; both pale yellow beautifully veined with rose-purple.

Miltonia verrillaria radiata magnifica [], from Mrs. HAYWOOD, Woodhatch, Reigate (gr., Mr. C. J. Salter).—A very distinct variety, with large rosy-lilac flowers, the labellum having a large white disc, on which were numerous claret-purple lines radiating from the base and some shorter dotted lines between (Botanical Certificate).

Maxillaria picta Warley variety, from Miss E. WILLIOTT, Warley Place, Great Warley, Essex (gr., Mr. Preece).—It differs from the type in its broader segments and the character of the markings.

Notylia multiflora, from Messrs. HUGH LOW & Co., Enfield.—A singular species with ovate leaves and long pendulous racemes of small green-and-white flowers.

C. J. LUCAS, Esq., Warnham Court, Horsham (gr., Mr. Duncan), sent *Laelio-Cattleya × Geoffrey* (*Laelia longipes* Lucasiana × *Cattleya Warszewiczii*), a very pretty hybrid preserving the shape of the yellow-lipped form of *L. longipes*, known as *L. Lucasiana*, but with the segments nearly as broad as *L. pumila*. Sepals and petals light rose coloured; lip much crimped, rose-coloured at the base and margin, the rest orange coloured.

The Rt. Hon. Sir A. B. CROSSLEY, Bt., M.P., Somerleyton Hall, Lowestoft (gr., Mr. Hanson), sent a fine flower of *Laelio-Cattleya × Olive* (*L. pumila* prestans × *C. Dowiana aurea*).

J. GURNEY FOWLER, Esq., Glebelands, South Woodford (gr., Mr. Davis), sent *Laelio-Cattleya × Hy*. Greenwood Glebelands variety), a dwarf, large-flowered variety with white sepals and petals delicately tinged with lilac, and a fine purple front to the labellum. Also *Cypripedium × Penelope* (*Morganie × superbians*).

Messrs. JAS. VEITCH & SONS, Chelsea, showed *Cattleya × Carmen* (*Warszewiczii × Luddeimanniana*), a fragrant flower of a light rose colour with ruby-purple front to the lip.

Messrs. HUGH LOW & Co. sent *Phalenopsis violacea* Low's variety (a very fine form).

Fruit Committee.

Present: Geo. Bunyard, Esq., in the Chair; and Messrs. Jos. Cheal, W. Bates, S. Mortimer, A. Dean, H. J. Wright, Jno. Basham, Geo. Kelf, J. Lync, F. Q. Lane, Geo. Reynolds, J. Willard, J. Jacques, C. Foster, Owen Thomas, J. McIndoe, and A. H. Pearson.

Messrs. JAS. CARTER & Co., 237, High Holborn, London, showed a collection of 125 distinct varieties of culinary Peas. All the varieties were sown on March 30, and the exhibit was interesting in showing the fruiting period of the various varieties (Silver Banksian Medal).

Messrs. JOHN K. KING & SONS, Coggeshall, Essex, showed a similar but somewhat smaller collection of culinary Peas. They were selected from a trial of 180 distinct varieties, and were all sown on the same day.

A box of Early Rivers' Nectarine was staged by Mrs. HAYWOOD, Woodhatch Lodge, Reigate (gr., Mr. Salter). The box contained about four dozen fruits, all of high-class finish and of great size (Silver Knightian Medal).

Mr. George NORMAN, Hatfield House Gardens, Hatfield, Herts, showed a splendid box of Brown Turkey Figs, and was deservedly awarded a Silver Banksian Medal.

Messrs. ROBT. VEITCH & SON, Royal Nurseries, Exeter, displayed a dish of bramble fruits named *Rubus Lucretia*. The variety is remarkable for its early period of fruiting. The fruit closely resembles the common Blackberry in other respects, but it is deficient in flavour.

Messrs. HOBBS, Ltd., Norfolk Nurseries, Dereham, showed a Red Currant labelled Chevalier's Sensation. It is very similar to the variety known as Comet.

Mrs. PULLINGER, Morrey Lodge, Campden Hill, W. (gr. Mr. Winfield), showed an enormous Cucumber labelled Improved Telegraph.

Lecture on "Wisley."

The afternoon lecture was given by Mr. S. T. Wright, the Superintendent of the Wisley Garden. With the aid of an excellent series of photographic illustrations, Mr. Wright succeeded in conveying a very good idea of the beauty and interest of the Society's new garden. As we alluded to the subject quite recently we need do no more than state that Mr. H. J. Veitch, who was in the Chair, reiterated the promise given by the Council, of eventually establishing a research station at Wisley, and stated that Mr. Massee had already begun some experiments, the nature of which did not transpire.

NATIONAL CARNATION AND PICOTEE.

(SOUTHERN SECTION.)

JULY 18.—This Society held its annual exhibition on the above date in the Royal Horticultural Hall, Vincent Square, Westminster. So far as we could judge, the exhibits were about equal in number to those staged last year, the entries being 452; and in regard to the quality of the flowers, it may be said that some of the specimens were excellent. The President of the Society, Martin R. Smith, Esq., was successful in many of the classes in the first division as usual, and there were four of his varieties included in the collection of nine seedlings that were awarded First-class Certificates of Merit.

The exhibition served to remind many who are not Carnation specialists of the peculiar characteristics that separate the florist's, "bizarre," "flaked," "fancy," and "self" Carnations, and of the Picotees. The self-coloured Carnations undoubtedly make the best show, but some of the Picotees, of light edges and heavy edges, are really beautiful in their markings upon close inspection. The flakes, bizarres, and "fancies" also have their admirers.

Most of the flowers were unfortunately staged with paper collars in boxes, and "dressed" to appear as perfect as possible from the florist's standpoint; but in a few instances there could be seen flowers disposed in vases relieved by Carnation foliage, where in our opinion they had a much better effect. In some of the groups of plants shown in pots the leaden wires used to support the flowers were too obtrusive.

Mr. T. E. Henwood, the Secretary, was kept busy during the whole day.

BIZARRES AND FLAKES.

The best twenty-four bizarres and flakes in not fewer than twelve dissimilar varieties were staged by Mr. F. WELLESLEY, Westfield, Woking. Form was the principal feature of this collection, every flower being shown in good condition; but the markings and colours were also good. The varieties shown were Master Fred, George Melville, Robert Lord, Meteor, Guardsman, Gordon Lewis, Robt. Houlgrave, H. Shoemith, C. J. Keen, J. S. Hedderley, Sportsman, Wm. Skirving, A. Curzon, and George. There were two other competitors—MARTIN R. SMITH, Esq., Hayes, Kent; and Mr. CHAS. TURNER, Slough, who were awarded 2nd and 3rd prizes respectively. Mr. SMITH put up some good flowers, notably Meg Merrilies, Hotspur, Lighthouse, R. Houlgrave, Challenger, and Autocrat.

In Division II., in a class for twelve "dressed" blooms distinct, there were five collections, and the 1st prize was won by Mr. R. C. CARTWRIGHT, Kings Norton, Worcestershire, who showed the varieties Gordon Lewis, W. Prescott, Admiral Curzon, Master Fred, Robert Houlgrave, W. Skirving, Geo. Melville, Guardsman, Sarah Payne, Merton, J. S. Hedderley, and Calypso. 2nd, Mr. H. R. TAYLOR (gr. Mr. Gilbert), Oakleigh, Cheam. 3rd, Mr. PEMBERTON, Bloxwich.

SELF-COLOURED FLOWERS.

Mr. WELLESLEY was also first in the class for twenty-four "selfs" having the same opponents who followed in the same order as in the previous class.

He had very fine flowers indeed, showing the varieties Ensign (white), Bridegroom (rose-pink), Seagull (salmon-pink), W. H. Parton (crimson), Borrás (cherry-red), Germain (yellow), Cassandra, Mrs. E. Hambro (white), Mrs. Guy Seabright (pink), Her Grace (white), Mrs. R. C. Cartwright (salmon-red), and Lady Hermione (salmon-rose). The 2nd prize collection from H. R. TAYLOR, Esq., Oakleigh, was also very good. 3rd, Mr. W. SPENCER, jr., Windsor.

FANCY FLOWERS.

The Class for twenty-four "fancy" flowers was also contested by the same three growers as in the preceding classes, but they had an additional rival in the firm of Messrs. BLACKMORE & LANGDON, Twerton Hill

Mr. SMITH staged the best six flowers of a yellow or buff-ground fancy Carnation, having King Solomon; but he had worthy competitors in Mr. WELLESLEY, with Westfield Seedling; and in Messrs. BLACKMORE & LANGDON, with Richness.

In Division 2, the variety Argosy, shown by Mr. F. H. A. BOOTH, won the 1st prize in a similar class for six blooms.

MESSRS. BLACKMORE & LANGDON easily carried off the 1st prize for six blooms of any variety of "fancy" Carnation other than yellow or buff-coloured grounds. The variety was Millie—excellent flowers in every respect. Mr. WELLESLEY followed 2nd with the same variety; and Mr. SMITH was placed 3rd with The Nizam.



FIG. 29.—LILIUM BAKERIANUM (LOWII),

Forms of which were shown by Messrs. James Veitch & Sons on Tuesday last at the Royal Horticultural Society's Meeting. Flowers greenish-yellow or white, purple-spotted. (See p. 74.)

The 1st and 2nd groups ran each other close for supremacy, but Mr. Wellesley's flowers had more substance and were of slightly better form. The varieties in this group were Daffodil, Gloriosa, Sir Bevy's, Benbow, Mrs. Guy Seabright, Bridegroom, Much the Miller, H. J. Cutbush, Mrs. F. W. Flight, Pink Pearl, Mrs. Eric Hambro, Comet, Nubian and Mrs. Charrington. The best flowers in the 2nd prize group were Daffodil, Mary Hambro, H. J. Cutbush, Mrs. E. Hambro and Etna.

The best six flowers of any variety of self-coloured Carnation belonged to MARTIN SMITH, Esq., who had the beautiful white variety Mrs. Eric Hambro in fine form. Scarcely less inferior were the half-dozen flowers of Mrs. F. W. Flight staged by Mr. F. WELLESLEY.

In DIVISION II. the variety Daffodil shown by Mr. R. C. CARTWRIGHT also gained 1st prize. Messrs. PHILLIPS & TAYLOR were 2nd with the variety Mrs. M. Y. Charrington.

In DIVISION II. in a class for twelve blooms, distinct, Mr. R. C. CARTWRIGHT had the 1st prize.

Nurseries, Bath. Mr. MARTIN SMITH was the successful exhibitor, and a well-grown lot of flowers were those shown by him. The Skipper, Hesperus, Cavalier, Juno, and Merlin occupied the back row, and were all of first quality; and there were in addition good flowers of Mandarin, Hidalgo, Pasquin, Mrs. Leo Hunter, Heeuba, Merlin, Molly Maguire (grand flower), Sam Weller, Andromeda, Cheops, King Solomon, Cavalier, Juno, and Robin Hood. 2nd place was awarded Mr. WELLESLEY, who showed Perseus, Professor Cooper, Monarch, Miss Leese, and Molly Maguire in fine condition. 3rd, Messrs. BLACKMORE & LANGDON.

In Division II., for twelve blooms, distinct, F. H. A. BOOTH, Esq., Hoe Place, Woking (gr. Mr. Nash), had 1st prize for twelve very pretty flowers, showing Argosy, Monarch, Foeman, Hidago, Lady Bristol, Brodriek, Oakley, Jno. Seabright, Eldorado, Professor Cooper, Amphion, and Gipsy Queen. Mr. W. SPENCER, jun., ran very closely for 2nd place; and Mr. R. C. CARTWRIGHT was 3rd. There were six exhibitors.

In DIVISION II., Mr. R. C. CARTWRIGHT obtained 1st prize with the variety Millie in a similar class for six blooms.

PICOTEES.

In the class for twenty-four Picotee flowers Messrs. BLACKMORE & LANGDON dropped out, leaving the field to the remaining three, Messrs. SMITH, WELLESLEY, and TURNER, who were placed in the order named. Mr. SMITH had some perfectly-formed flowers, possessing great refinement. The Mrs. H. Hoskier shown in his group was the best heavy-edged white-ground Picotee in the show, and the Pride of Leyton the best light-edged white-ground Picotee shown. Other beautiful examples were Brunette, Baliol, Favourite, Winston Churchill, and Amy Robsart. Mr. WELLESLEY showed a collection that ran the 1st prize group close for supremacy, having Lavinia, Little Phil, Mrs. Barron, Ganymede, Pride of Leyton, and others in first-class condition.

Mr. WELLESLEY reversed the order of position with Mr. SMITH in the class for twenty-four yellow-ground "Picotees," and certainly his collection was worthy

the position. His flowers were a remarkably fine lot, and contained the premier heavy-edged and the premier light-edged yellow-ground "Picotees" in Gronow, which secured the former distinction, and in Miss Walter Heriot, which gained the latter. To do the group justice each variety should be noted, but owing to considerations of space we select Lady St. Oswald, Gertrude, Daniel Defoe, Gronow, Lney Glitters, and Othello. Mr. SMITH had Raphael, Ida, Maria, Chryseis, &c.

Mr. WELLESLEY staged six exquisite flowers of Mrs. W. Heriot in the class for the best six yellow-ground Picotees. Mr. SMITH was 2nd with smaller but good flowers of the same variety. 3rd, Mr. C. TURNER.

In a similar class in Division II., the variety Mrs. W. Heriot was awarded 2nd and 3rd prizes.

In Division II., the best collection of twelve blooms of white-ground Picotees was shown by F. H. A. BOOTH, Esq., who had the varieties W. H. Johnson, Lavinia, Pride of Leyton, Brunette, Beswick, Fanny Tete, Favourite, Mrs. Barron, Mrs. Openshaw, Amy Robsart, G. Darling, and Nellie. 2nd, Mr. H. R. TAYLOR; and 3rd, Mr. HAYWARD MATHIAS, Hazel Parton, Medstead. There were seven exhibits.

In Division II., in a class for twelve yellow-ground varieties, there were seven collections, and of these one from Mr. W. SPENCER, Jr., won the 1st prize. The varieties Gronow, Mrs. Walter Heriot, and Epsom, were the prettiest flowers in this exhibit. 2nd, F. H. A. BOOTH, Esq.; and 3rd, Messrs. PHILLIPS & TAYLOR, Lily Hill Nurseries, Bracknell.

SINGLE BLOOM CLASSES.

The best scarlet bizarre was Robt. Houlgrave, staged by Messrs. PHILLIPS & TAYLOR, Bracknell; the best crimson bizarre was Mr. TURNER's Arline; and the premier pink bizarre, Wm. Skirving, shown by Mr. J. FARLIE, Acton. Among the "flakes" the best purple was Gordon Lewis, shown by Mr. WELLESLEY; the best scarlet, Sportsman, belonging to Mr. H. R. TAYLOR, Cheam, Surrey; while the best rose flake was shown by Mr. WELLESLEY in H. Shoemith.

In the classes for single blooms of Self Carnations the premier flowers were the following:—White or blush-white, Mr. E. CHARRINGTON's example of Mrs. Eric Hambro; rose or pink, Gay Sbright, shown by Mr. CARTWRIGHT; scarlet, red, or crimson, Mrs. Best, shown by Messrs. PHILLIPS & TAYLOR; maroon or purple, W. H. Parton, shown by Mr. W. H. PARTON, yellow, Daffodil, also shown by Mr. PARTON; buff, Mrs. Cartwright, shown by Mr. R. C. CARTWRIGHT.

Among the "fancies" the best yellow-ground variety was Westfield Seedling, shown by Mr. WELLESLEY; Mr. MARTIN SMITH taking 1st for any other fancy not of yellow ground, with the Mizam.

The best Picotees were as follows:—Reds:—The best heavy-edged was Brunette, shown by Mr. WELLESLEY, who also showed the best light-edged red in Mrs. Gorton. Purples: the premier heavy-edged was Mrs. Openshaw, belonging to Mr. H. R. TAYLOR; and the premier light-edged, Mrs. Farquhar, shown by Mr. W. SPENCER. Rose or Scarlet: Little Phil took 1st prize among heavy-edged varieties; while the same distinction was won by Fortrose for the best light-edged. They were shown by Mr. W. H. PARTON and Mr. WELLESLEY respectively. Yellow-ground, the best heavy-edged was Dalkeith, from Mr. MARTIN SMITH.

PREMIER BLOOMS.

The best specimens in the show of the various types of flowers were the following:—Bizarre R. Houlgrave, shown by Mr. WELLESLEY; flake H. Shoemith, from the same grower; self Ensign, belonging to Mr. MARTIN SMITH; fancy Brodrick, shown by Mr. BOOTH, Woking; heavy-edged white-ground Picotee Mrs. Hoskier, and light-edged white-ground Picotee Pride of Leyton, both shown by Mr. MARTIN SMITH. Mr. WELLESLEY had both the best heavy-edged yellow-ground Picotee and the best light-edged yellow-ground Picotee in Gronow and Mrs. Walter Heriot respectively.

THE PRESIDENT'S CUP.

The President of the Society, Martin R. Smith, Esq., as usual offered a cup to the winner of the highest aggregate number of points gained by any one competitor in the first division. Cups were also offered in the remaining three divisions. Mr. WELLESLEY secured the cup in the Division I., with the largest aggregate number of points; in Division II. Mr. CARTWRIGHT was successful; in Division III. Mr. FARLIE, and in Division IV. Mr. PARTON.

CARNATIONS IN VASES.

An interesting class was that for twelve distinct varieties of "sells," "fancies," and "yellow ground" Carnations, three flowers of each variety. The schedule stipulated that they be shown in vases with Carnation foliage to each. One was thus the better enabled to appreciate the beauty of these charming flowers, although perhaps the method is not so well suited for judging individual blooms. The best were shown by Mr. SMITH, who had Cecilia, Cavalier, Mandarin, The Seer, Merlin, Sunshine, Hidalgo, Thais, Molly Maguire, King Solomon, Gronow, and Juno. 2nd, Mr. WELLESLEY. 3rd, Messrs. BLACKMORE & LANGDON.

In Division II. there was a similar class for six varieties distinct. "Sells," "fancies," and "yellow grounds" were permissible, and the flowers were arranged in vases with Carnation foliage. The 1st prize collection contained the varieties Voltaire, Agnes Poirée, Richness, Bridegroom, Mrs. W. Heriot, and Perseus. All of these were very good flowers. 2nd, Messrs. PHILLIPS & TAYLOR, who had brightly coloured flowers of rather smaller size. 3rd, H. R. TAYLOR, Esq. (gr., Mr. Gilbert).

CARNATIONS FOR DECORATION.

The chief exhibits in the decorative classes were the single vases of Carnations, a superb arrangement of the variety Richness, with grasses, &c., winning the 1st prize for Messrs. BLACKMORE & LANGDON.

GROUPS OF CARNATIONS IN POTS.

Three collections were staged in the class for a group of plants to be arranged in an area of 50 square feet, but the 1st prize exhibit was far ahead of the remaining two. It was put up by Mr. Blick, gr., to MARTIN SMITH, Esq., and was excellent in every respect, the group being arranged with great skill, and containing flowers of the highest excellence, notably examples of "Malmaison" Mrs. Martin Smith at the background. Mr. H. LAKEMAN, Thornton Heath, Surrey, was 2nd.

SEEDLING VARIETIES WHICH RECEIVED CERTIFICATES.

Nine Certificates of Merit were awarded to the following varieties:—

Cheops (fancy), having a pale cream ground with an edging of purple and stripes down the petals, which were broad and well rounded.

Mrs. Hoskier (white-ground Picotee)—Pure white, with broad petals having a well-defined pink margin.

Roger Bacon (white-ground Picotee).—Rather a small flower of pure white ground, with a bright pink margin to broad petals. These three varieties were shown by MARTIN R. SMITH, Esq.

W. E. Dickson (heavy red-edge).—A perfectly formed flower of moderate size, having a deep crimson edge to the broad, clear, white petals.

H. Shoemith (rose-coloured flake).—A regular, well-formed flower, evenly flaked with rosy-pink colour on a clear white ground. These two varieties were exhibited by F. WELLESLEY, Esq.

W. H. Parton (self).—Of deep maroon or crimson colour with broad petals and pronounced perfume. From Mr. W. H. PARTON.

Pusquin (fancy).—A well-filled flower, having a yellow ground with heliotrope and pink markings. Shown by MARTIN R. SMITH, Esq.

R. A. Rowberry (fancy).—This variety has a buff-coloured ground with bright rosy-pink markings shading off down the petals; a very good bloom. Shown by W. SPENCER, jun.

Liberté.—See description on p. 75, col. A.

DIVISIONS III. AND IV.

These Divisions enabled the smaller growers to compete among themselves, the larger exhibitors in the preceding Divisions being excluded. The number of flowers in the classes do not exceed six, while those from thirty to thirty-four inclusive only call for three blooms in each class. The principal prize-winners in Division III. were Mr. FARLIE, Mr. PHILLBRICK, Mr. J. J. KEEN, Mr. J. J. SHELDON, Mr. WALKER, Mr. CHARRINGTON, and Hon. Mrs. TRELAWNEY.

WOLVERHAMPTON FLORAL FÊTE.

JULY 11, 12, 13.—The seventeenth annual Floral Fête was held in the West Park on the above dates in delightful weather. Prizes amounting to something like £800 attracted many well-known exhibitors, and the display of flowers, fruit, and vegetables, accommodated in six capacious marquees, must be chronicled as one of the most successful of summer shows ever held in Wolverhampton. Upwards of sixty entries were received in excess of those of last year, the total number being about 900; but in consequence of some of the exhibitors failing to show in all the classes in which they had entered, several table-spaces were left unfilled.

PLANTS.

The 1st prize of £25 offered for a group of plants not to exceed 350 square feet, was awarded to Messrs. J. CYPHER & SONS, Cheltenham, whose group, consisting mainly of Orchids, Lilliums, Ixoras, Codiaeums, and Palms, was arranged in a most artistic manner. Mr. W. VAUSE, Leamington, was 2nd with a group less graceful, and in which the colour-blending was not so finely executed. A special prize of a Gold Medal was awarded to Messrs. T. CRIPPS & SON, Tunbridge Wells, for a splendid collection of Japanese Acers.

Messrs. J. CYPHER & SONS also received the premier award of £15 for twelve stove and greenhouse plants, amongst which were superb examples of Bougainvillea Cypheri, Ixora Williamsi, Statice profusa, and Codiaeum mortefontaineense.

First prizes for six Orchids, six large Palms, twenty flowering and foliage plants (in pots not exceeding 8 inches), and twelve flowering and foliage plants (Orchids excluded), were also won by Messrs. J. CYPHER & SONS.

For six distinct varieties of exotic Ferns, J. A. KENRICK, Esq., Edgbaston (gr., Mr. A. Cryer), was an easy 1st.

For a group of one class of plants in flower occupying ground space of 9 feet by 5 feet, H. LOVATT, Esq., Bushbury (gr., Mr. R. Sharpe), was placed 1st with Cannas. 2nd, C. H. MANDER, Esq., Wolverhampton (gr., Mr. C. Weaver), with a nice clean batch of Clerodendron fallax. 3rd, G. H. KENRICK, Esq. (gr., Mr. J. V. Macdonald), with Hydrangeas. An extra prize was awarded to Mr. JOHN E. KNIGHT, Wolverhampton, for decorative Chrysanthemums.

TUBEROUS BEGONIAS covering a table space of 10 feet by 5 feet brought two entries, one exhibit being exceedingly good and the other indifferent. The 1st prize winner was Mr. F. DAVIES, Pershore, whose flowers were unusually large, finely proportioned and variously coloured. In addition to the prize of £7, a Gold Medal was also recommended by the judges.

In the class for a group of plants arranged on a space of 300 feet (open to amateurs only), J. A. KENRICK, Esq., Edgbaston (gr., Mr. A. Cryer), well served the 1st prize of £10. The plants were exceedingly well grown, and many of them abundantly flowered. The same exhibitor gained 1st prize for six stove and greenhouse plants, while H. LOVATT, Esq. (gr., Mr. R. Sharpe), was 1st with six Caladiums and twelve Begonias.

ROSES (OPEN).

Roses were largely and well shown. For seventy-two distinct varieties, Messrs. A. DICKSON & SONS, Newtownards, won the 1st prize. Particularly good were the varieties E. Mawley, Countess of Derby, C. J. Grahame and Dr. Andry.

With three blooms each of twelve distinct varieties, Messrs. A. DICKSON & SONS scored again.

For twenty-four distinct varieties Messrs. A. DICKSON & SONS were placed 1st, and Messrs. J. TOWNSEND & SON, 2nd.

The 1st prize for twelve Roses introduced in the years 1902-3-4 was also won by Messrs. A. DICKSON & SONS; Messrs. B. R. CANT & SONS being 2nd.

For twelve blooms of any dark red Rose (one variety) Mr. HUGH DICKSON and Messrs. A. DICKSON & SONS were placed 1st and 2nd respectively; and for twelve light-coloured Roses (one variety), Messrs. B. R. CANT & SONS, Messrs. J. TOWNSEND & SON, and Mr. HUGH DICKSON were placed in the order named.

With twelve distinct Tea varieties Messrs. B. R. CANT & SONS were 1st, and Mr. HUGH DICKSON, 2nd.

The best collection of six vases of Sweet-Briar Roses, in as many varieties, Messrs. GUNN & SON, Olton, and C. H. MANDER, Esq., won 1st and 2nd prizes respectively.

BOUQUETS AND CUT FLOWERS (OPEN).

THE LEAMINGTON NURSERYMEN & FLORISTS CO., Leamington, secured the 1st prize for a bouquet composed entirely of Orchids, somewhat heavily arranged.

For a bridal bouquet the 1st prize went as mentioned in the previous class; and for a bridesmaid's bouquet Messrs. JENKINSON & SON were the only competitors.

The first award of £10 for an arrangement of hardy border flowers, occupying a space of 15 by 5 feet, was won by Messrs. HARKNESS & SONS, Bedale, whose bold masses of Gaillardias, Lilliums, Spanish Irises, and Campanulas were most effective.

A five-guinea Silver Cup and £20, offered for a display of plants, floral decorations, &c., to be staged in a space not exceeding 200 square feet, went to Mr. JOHN E. KNIGHT, Wolverhampton, with an exceedingly light and tastefully arranged group, in which Carnations, Lilliums, Codiaeums, Cannas, and Bamboos, were the leading features. G. H. KENRICK, Esq., Edgbaston (gr., Mr. J. V. Macdonald), was 2nd with a very creditable display.

Messrs. M. JENKINSON & SON received the 1st prize for a daintily arranged dinner-table decoration, consisting of small-flowered Orchids and Asparagus arranged in rustic stands, &c.

A class for a dinner-table decoration confined to Sweet Peas was keenly contested, Mrs. E. WINCHESTER, Northfield, was adjudged to be 1st.

The £5 prize for the most tasteful arrangement of Pansies and Violas was gained by Messrs. W. FEMBERTON & SON, Bloxwich; with Mr. ALDERMAN WATERS, Acocks Green (gr., Mr. F. C. Brooks), 2nd.

SWEET PEAS.

A class for eighteen varieties of Sweet Peas, occupying a space of 8 feet by 4 feet, brought strong competition. Mr. T. JONES, of Ruabon, had a choice selection, with which he gained the 1st position.

For the special prizes offered by Mr. H. ECKFORD, of Wem, Mr. T. JONES was again 1st.

By far the largest number of exhibitors entered for the SYDENHAM prizes, and, as in the two last-named classes, Mr. T. JONES carried off the principal honour. Mrs. A. G. HOLFORD was 2nd; and Mr. A. HUGHES, 3rd.

FRUIT.

The best four bunches of Grapes, distinct varieties, two black and two white, were shown by Lord SAVILLE, Rufford Abbey (gr., Mr. J. Doe), who had Black Hamburg and Madresfield Court (very good), Buckland Sweetwater (indifferently coloured), and Muscat of Alexandria.

The best two bunches of white Grapes came from W. A. H. BASS, Esq., Burton-on-Trent (gr., Mr. R. Nisbet), 2nd, Lord BAGOT, Rugeley (gr., Mr. T. Bannerman), 3rd, Lord HARRINGTON, Elvaston Castle, Derby (gr., Mr. J. H. Goodacre). The last-named exhibitor had the best green-fleshed Melon, and Lord BAGOT (gr., Mr. T. Bannerman), the best scarlet-fleshed Melon.

The Earl of LATHOM, Ormskirk (gr., Mr. B. Ashton), was 1st with a dish of six Peaches; and Lord BAGOT (gr., Mr. T. Bannerman), 2nd.

The Earl of HARRINGTON was 1st with six Nectarines, and three dishes of Strawberries.

Lord SAVILLE, Rufford Abbey, was 1st with eight dishes of fruit consisting of magnificent examples of Madresfield Court and Buckland Sweetwater Grapes, Stirling Castle and Dymond Peaches, Improved Downton Nectarine, Royal Sovereign Strawberry, Brown Turkey Figs, and Royal Jubilee Melon.

VEGETABLES.

Prizes offered by Messrs. Sutton & Sons, Reading, for six distinct kinds of vegetables, went to Lord ALDENHAM, Elstree (gr., Mr. E. Beckett), the Earl of LATHOM, Ormskirk, and the Earl of CARRINGTON, in the order named.

The Earl of LATHOM was 1st for Messrs. Webb & Son's prizes.

MISCELLANEOUS EXHIBITS.

Messrs. DICKSONS, Chester, sent about a hundred kinds of hardy cut flowers, among which were noted good examples of double and single Delphiniums, Romneya Coulteri, and Gladioli.

Messrs. DOBBIE & Co., Rothesay, contributed fifty varieties of Sweet Peas and a few choice hardy flowers.

Messrs. CLIBRAN & SONS, Altrincham, Manchester, sent hardy flowers.

Messrs. BAKERS, Wolverhampton, occupied practically the whole of one side of a large tent with a superb collection of Sweet Peas, choice Roses, and a rich assortment of hardy herbaceous and alpine flowers, being awarded a Silver Cup in addition to the Gold Medal.

Mr. JOHN FORBES, Hawick, N.B., sent hardy flowers and East Lothian Stocks.

Mr. W. WATERS, Westleigh, Acocks Green, exhibited Violas.

Messrs. WEBB & SONS, Stourbridge, put up a nicely-arranged group of small, well-flowered Gloxinias, Lilies, Sweet Peas, and hardy flowers (Gold Medal).

Messrs. JARMAN & Co., Chard, contributed about sixty varieties of Sweet Peas, and some very good cut Roses.

From Messrs. HEWITT & Co., Solihull, came a large bank of hardy cut flowers.

Mr. C. W. BREADMORE, Winchester, had Sweet Peas. Rustic table decorations beautifully arranged with Carnations and Smilax; also forty varieties of Sweet Peas, including grand vases of Countess Spencer and Orange Countess, came from Mr. ROBERT SYDENHAM, Birmingham.

Messrs. R. SMITH & Co., Worcester, had a group of foliage and flowering plants, and a large collection of cut border flowers and sprays of shrubs.

Choice Melons and vegetables were sent by Messrs. SUTTON & SONS, Reading.

Mr. A. WEBSTER, Head Gardener of the Wolverhampton Corporation, contributed an effective group of plants, consisting of Gloxinias, Liliiums, Cannas, and foliage plants.

Mr. E. MURRELL, Shrewsbury, staged Roses.

Mr. J. H. WHITE, Worcester, sent a representative collection of hardy flowers and cut Roses.

Messrs. T. B. DOBBS & Co. had a display of flowering plants in the open air.

Medals of different value were awarded for most of the exhibits in this section.

CAMBRIDGE HORTICULTURAL.

JULY 11.—The annual flower show of the above Society was held in the very beautiful grounds of St. John's College, Cambridge, on the foregoing date, and in brilliant weather. H. O. Fordham, Esq., is the energetic secretary. The show contained more exhibits than usual, the competition in many of the classes being exceedingly keen. Roses occupied a large area in one tent, and were of exceptionally good quality.

In the class for thirty-six distinct varieties of Roses Messrs. F. CANT & Co., Colchester, were 1st; with Messrs. B. CANT & Co., Colchester, 2nd; and Messrs. J. BURRELL & Co., Cambridge, 3rd. That such well-known growers competed is evidence that the flowers were good and of the finest varieties.

In the class for twenty-four distinct varieties of these flowers Mr. H. DREW, Longworth, was 1st with excellent specimens; Messrs. B. CANT & Co. taking

2nd; and Messrs. D. PRIOR & SONS, also of Colchester, 3rd prizes.

In the class for twelve Teas and Noisettes Messrs. J. BURRELL & Co. were a good 1st; Messrs. B. CANT & Co., 2nd.

Roses were also largely contributed by local growers. In the same tent as the Roses were staged the collections of hardy perennials. A very meritorious display, and one that was admirably set up, was contributed by the Master of Sidney Sussex College. This exhibit embraced twelve distinct kinds.

Another collection containing eighteen hunches came from Dr. J. H. DALTON; JAS. CARTING, Esq., coming 2nd in the same class.

The collections of Sweet Peas formed a striking feature, although many exhibitors require to set up their flowers with greater lightness to produce the best effect. Mr. JOHN HALL had the best twelve bunches of these flowers, and also the best six bunches in the respective classes, the quality, colour and bunching of his flowers being alike excellent.

The best collection of stove and greenhouse flowers belonged to E. B. FOSTER, Esq., who had also the best six bunches of these flowers.

Zonal Pelargoniums were largely shown. M. J. FULLER, Esq., had the best twenty-four bunches, followed by Mr. G. BULL, 2nd; but the latter grower was 1st in the class for twelve bunches, while Mr. H. E. GRAY had the best six bunches.

Plant groups were few in number, but those staged were meritorious. R. L. HUDSON, Esq., set up the best group, which was arranged in a light and graceful manner. The 2nd prize group came from ARTHUR MATTHEW, Esq.

Begonias were a feature, the majority of the plants being well grown and freely flowering. Mr. MATTHEW had the best twelve plants, his specimens carrying superb flowers.

Stove and greenhouse plants were not strongly represented.

Some very good fruit was present. Mr. A. BRISCOE set up the best collection of six dishes. Mr. FOSTER had the best black Grapes in well-finished fruit of Black Hamburg. Mr. BRISCOE took 1st place for Peaches, and also for Cherries. Superb Black and White Currants came from Mr. FOSTER; Mr. DOBBS having equally fine Red Currants.

The various vegetables shown were excellent produce, the basket of eight kinds set up by Mr. DIGGLE being of first-rate quality. This received 1st prize; but Mr. BRISCOE followed closely with good samples.

REIGATE HORTICULTURAL.

JULY 12.—The nineteenth Annual Exhibition was held on the above date in the grounds of Stone House, Reigate, by the kind permission of A. J. Waley, Esq., the President. The Society is in a most flourishing condition, and is fortunate in having secured this enthusiastic gentleman for its President. The beautiful grounds were lighted up in the evening by thousands of fairy lamps producing a very pretty effect upon the steep hill-side.

The exhibition under notice was the most successful ever held in the ancient town of Reigate, there being 1,000 entries. The manner in which the exhibits were staged reflected great credit upon the Committee and hard-working Secretary, Mr. F. Phillips.

The Gardeners' classes were well represented and keen competition was noticeable, and there was a large attendance of visitors.

PLANTS.—In the class for a group of plants arranged for effect there were six competitors, the 1st prize being secured by E. C. P. HULL, Esq. (gr., Mr. H. Burdett), with a lightly disposed group, similar in arrangement to those seen at larger provincial shows.

In the class for four Caladiums, Col. R. W. INGLIS won 1st prize; and for four flowering stove and greenhouse plants, J. WELCH, Esq. (gr., Mr. D. Bone), won 1st prize.

TABLE DECORATIONS.—For six table plants, Col. R. W. INGLIS was again 1st. In the competition for a table of Carnation flowers, J. AUERBACH, Esq. (gr., Mr. W. Blackwood), proved a good exhibitor, staging flowers of good quality. Mrs. FEARON received 1st prize for a table decoration arranged as for six persons.

FRUIT was decidedly good, and a severe competition resulted, the 1st prize for a collection of six dishes being awarded to Col. R. W. INGLIS (gr., F. Phillips). Grapes came from COSMO BONSOR, Esq. (gr., C. Blurton), who secured 1st prize.

Roses were not exhibited so well as usual, the May frosts having done much injury in this neighbourhood. Mr. C. J. SALTER, Woodhatch Lodge Gardens, secured 1st prizes in the classes for eighteen blooms, distinct, and twelve blooms, distinct.

There were several non-competitive exhibits, including one of Water-Lilies from LEOPOLD DE ROTH-SCHILD, Esq., Gumersbury House, Acton. Roses from F. C. PAWLE, Esq. Hardy flowers from Messrs. J. CHEAL & SONS, Lowfield Nurseries, Crawley; also from Messrs. JNO. LAING & SONS, Forest Hill; and Messrs. SPOONER & SONS, Hounslow.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT.

AT the recent monthly meeting eight new members were elected. Sick pay distributed to members since the last meeting amounted to £23 2s. William Marshall, Esq., has consented to preside at the annual dinner, which will be held in October next.

NATIONAL ROSE.

EXHIBITION AT GLOUCESTER.

JULY 18.—In beautiful summer weather the provincial show of the National Rose Society was held in conjunction with the annual show of the Gloucestershire Rose Society in the Spa Cricket-field, Gloucester, on the above date. It is ten years since the National Society similarly favoured the city, and no doubt the success achieved on that occasion, combined with the efforts of local Rose-growers, was responsible for a second visit. The total entries for the National and the county sections numbered 304, which constituted practically a record for a provincial show, and resulted in an exceedingly fine exhibition. In welcoming the Mayor of Gloucester, who formally opened the show, Mr. C. E. Shea (President of the National Society) said in reference to holding their provincial meeting in Gloucester, that if ever a decision was justified by results it was certainly the case in regard to that show, which those who had an opportunity of walking round would declare was a magnificent exhibition.

The show on the whole was thoroughly representative, not only in its variety but in the portions of the Kingdom from which the exhibits came. The most coveted among the nurserymen's awards was, of course, the National Rose Society's Jubilee Trophy, which is always competed for most strongly at their provincial shows, and it affords us pleasure to record that our Irish neighbours, Messrs. ALEXANDER DICKSON & SONS, Newtownards, Co. Down, and who have also a large rosary at Ledbury, Gloucestershire, we will not say were well to the front, but were in advance of all competitors for the trophy. In their magnificent winning stand of thirty-six blooms, distinct varieties, were the two finest Roses in the show, Mildred Grant and Helen Keller, which were awarded the National Society's Silver Medal. Among other fine flowers we noticed were Dean Hole, Duchess of Portland, Charles J. Grahame (a beautiful crimson rose awarded the National Society's certificate), Mrs. W. J. Grant, Bessie Brown, Mrs. Sharman Crawford, Florence Pemberton, and Robert Scott—all Roses of their own raising. The 2nd prize was awarded to Messrs. R. HARKNESS & Co., Hitchin, who showed very well, and were in the running with the Irish Roses. The 3rd prize went to Mr. HUGH DICKSON, of Belfast, another Irish grower who has been exhibiting exceedingly well this season. In his stand was a fine specimen of the Rose for which he is responsible, J. B. Clark.

In the next class for seventy-two varieties, open to nurserymen, the Irish Roses again "walked away, hands down."

In the class for twenty-four varieties of three blooms of each Messrs. A. DICKSON & SONS were placed 1st. Here we noticed some delightful trebles of Killarney, the beautiful pink Rose Mamie, and a fine truss of a grand dark Rose; "George Dickson," a large deep crimson, with well-formed, leathery petals—a Rose that might be described in constitution as an advance on Horace Vernet. Messrs. HARKNESS & Co. came in for the 2nd award. The King's Acre Nurseries, Hereford; Messrs. Perkins & Sons, Coventry; G. Prince, Berks; S. Treseder & Son, Cardiff; J. Mattock, Oxford; H. Drew, Berks; and J. Jefferies & Son, Cirencester, also figured in the prize-list.

AMATEURS.

Mr. CONWAY JONES, of Huaclecote, near Gloucester, followed up his successes at recent Rose shows by winning the Jubilee Trophy of the National Society for amateurs—a circumstance which gave a great deal of satisfaction locally. The trophy had been won for a good many years by Mr. LINDSELL, of Hitchin, Mr. Conway Jones having been 2nd to him on three occasions, but Mr. LINDSELL had this year to be content with the 3rd place.

In the city amateur classes the piece of plate given by the Mayor and Corporation for the best display of Roses was won by the Misses PIKE; and the 2nd (a piece of plate) by Mr. JOHN STEPHENS. The Sheriff's prize (a piece of plate) for six varieties was secured by Mr. T. A. WASHBOURN.

The local cottagers' exhibits were a distinct advance on anything previously shown, both in point of number of entries and quality of the blooms. The city member's prizes were won by C. MEEHAM, 1st; W. C. FRITH, 2nd; and A. V. WRIGHT, 3rd; and those offered by Mr. Henry Terrell, K.C., were awarded as

follows: C. MEEHAM, 1st; A. V. WRIGHT, 2nd; and E. BOLTON, 3rd.

It should be added that the Mayor of Gloucester, Councillor W. Langley Smith, entertained a large party of friends and officials to a luncheon on the exhibition ground. In responding to the toast of the "National Rose Society," the President, speaking of the progress the Society had made, pointed out that while ten years ago, when Gloucester was last visited, the membership was only 370, it now stood at nearly 1,600. In congratulating Mr. Conway Jones upon winning the Challenge Trophy he said the exhibition at Gloucester this year was the best provincial show he had ever attended. Referring to the change of *locale* of the metropolitan show of the Society this year from the Temple Gardens to the Royal Botanical Gardens, he said that they took more money at the gate than they ever did at the Temple, while they had also been able to assure the world that the Botanical Gardens were not so far removed from the centre of civilisation as most people thought.

From Another Correspondent.

JULY 18.—This meeting of rosarians was held at The Spa, and resulted in a great gathering of most of the leading growers, trade and amateurs. Amateurs were represented by the Rev. J. H. Pemberton, E. B. Lindsell, Conway Jones, R. Foley Hobbs, W. Boyes, W. Whittle, R. Hill-Gray, Rev. R. Powley, F. Dennison, J. Bateman, and others.

The Roses were staged in a spacious, well-ventilated marquee, and maintained their freshness throughout the day. The quality of the flowers was good. There were many grand specimens. It was noticed that the two most popular flowers in the exhibition were Bessie Crown and White Maman Cochet, which were to be found in almost every stand, grand boxes of twelve being staged. All the classes were filled, and in the majority there was keen competition. The show was well managed, and the executive are to be congratulated on the excellence of the arrangements.

The Jubilee Challenge Trophy (nurserymen), for thirty-six, distinct, was won by A. DICKSON & SONS, Newtownards, with an even and bright collection of well-built flowers, containing very fine examples of Helen Keller, Mildred Grant, Her Majesty, Mrs. W. J. Grant, and Duchess of Bedford, the first-named two winning the Silver Medals for the best H.P. and H.T. respectively; R. HARKNESS, of Hitchin, being a close 2nd with grand specimens of Florence Pemberton, Clio, and Bessie Brown.

For seventy-two, distinct, Messrs. A. DICKSON was again 1st.

The Jubilee Trophy (amateurs), for twenty-four varieties, was won by Mr. CONWAY JONES, of Gloucester, with a stand of bright, fresh flowers, Her Majesty and Horace Vernet being very fine. Mr. F. DENNISON, of Keulworth, was an excellent 2nd with well-built flowers of good substance, and with more lasting qualities than that which at the time of judging obtained the 1st place. To Helen Keller and Mildred Grant, in Mr. DENNISON'S stand, were awarded Silver Medals.

For thirty-six varieties the Rev. J. H. PEMBERTON took the 1st prize.

DECORATIVE ROSES.

In the class for eighteen bunches J. MATTOCK exhibited a magnificent collection, which, staged facing the entrance to the tent, formed an attractive feature. In this exhibit fine bunches were staged of Bardon Job and Prince de Bulgarie. In PAUL & SON'S collection, which came 2nd, were excellent examples of The Queen and Prince de Bulgarie.

For twelve bunches, amateurs, the Rev. J. H. PEMBERTON was awarded the 1st prize for an elegant group, grand bunches being staged of Dorothy Perkins, The Garland, and Crimson Rambler, together with Souvenir de la Legion d'Honneur, Blush Rambler, Madame Alfred Carrière, Laurette Messimy, and Gustave Regis. The 1st prize for six bunches was awarded to Mr. CONWAY JONES.

ROSES IN VASES.

For twelve distinct, five blooms of each, Mr. GEORGE PRINCE, of Oxford, was 1st for a fine lot. Mrs. J. Laing (very fine), White Maman Cochet, Mildred Grant, and Ulster (very good), being the best. The effect of this collection was somewhat handicapped by the height of the vases. Messrs. A. DICKSON and J. JEFFRIES were 2nd and 3rd respectively.

NEW SEEDLING ROSES (GOLD MEDAL CLASS).

The undermentioned Roses were exhibited by A. DICKSON & SONS, but no Gold Medal awarded:—Souvenir de C. J. Grahame, an exceedingly bright-red, pointed, globular hybrid-perpetual, of medium-sized flowers, was awarded a Card of Commendation. The other Rose was Mrs. John Bateman, a cerise hybrid Tea, somewhat short and close in the petal, but very full, globular.

GARDENERS' DEBATING SOCIETIES.

DEVON AND EXETER GARDENERS'.—This Association held their summer outing on the 12th inst., when about sixty members and friends journeyed to the lovely Devonshire sea-side resorts of Lynton and Lynmouth. The party on arrival at Lynton proceeded to Hollerday, Sir George Newnes' marine residence, which is perched on an eminence 800 feet above sea-level, that overlooks the Bristol Channel. From Hollerday the party proceeded to Tee Abbey, which is situated on the coast, at the end of the Valley of Rocks. This place figures in the romantic history of the neighbourhood, and is familiar to readers of "Lorna Doone." Glen Lyn, in Lynmouth, was next visited, the beautiful ravine being found at its best. Admirable arrangements for the party were made by Mr. W. Charley (hon. sec.), and Mr. W. Mackay (hon. treasurer). A. H.

IPSWICH GARDENERS' ASSOCIATION.—A party numbering about fifty members of the Ipswich District Amateur Gardeners' Association spent on Wednesday, 12th inst., by the kind invitation of Mr. Alan Turner and Mr. J. G. Cranfield, an enjoyable time in the beautiful grounds adjoining the residences of these gentlemen at Burstall. The party journeyed by brake and by cycle, and at their destination were met by Mr. Turner, who conducted them over the estate.

SOUTHAMPTON HORTICULTURAL.—The annual garden fête in aid of the funds of the Southampton Horticultural Society was held on Wednesday the 12th inst., and was a great success. The beautiful grounds attached to Sir Samuel Moutagu's residence at South Stoneham were again kindly lent for the purpose. This estate is always beautiful, and on the occasion of the fête was in first-class order, the flower-beds presenting a wealth of bloom.

SCHEDULES RECEIVED.

MOUNTAIN ASH FLOWER SHOW, to be held in the Pavilion, Mountain Ash, on Thursday, August 24, 1905.

NURSERY NOTES.

A HARDY PLANT NURSERY.

The popularity of hardy plants has no stronger evidence than the number of nurseries which have of recent years sprung into existence to cater for this form of gardening. One of the more recent of these is the Fox Hill Hardy Plant Nursery, at Keston, in Kent, belonging to Mr. Reuthe, who has been well known as a specialist in these flowers for many years past. As a commencement Mr. Reuthe has acquired about 4 acres of land situated on the southern slope of a rising ground, and has planted this with many of the finest species of hardy and alpine plants. Many of these are quite new plants; others are older, but worthy of a place in the hardy flower garden. We noted a few of the more striking plants in flower at the time of our visit. (Enotheras were at their best. (E. speciosa, E. missouriensis, with large yellow flowers, a fine plant; E. riparia, growing extensively, made a bold show, it is of slender habit, and produces tufts of yellow-coloured flowers in abundance. Thalictrum Delavayi, that recently received an Award of Merit, was doing well. Aquilegia chrysantha hybrida is a good form of Columbine, the long-sprayed flowers are bright yellow. Coreopsis grandiflora Eldorado represents one of the best selections of this handsome border plant. Ozothamnus rosmarinifolius, a curious Composite, makes a splendid subject for the shrubby or border; it produces dense feathery panicles of white flowers. Many improved varieties of Pentstemon (Chelone) barbata were seen; while a bed of the beautiful Dianthus deltoideus was literally covered with flowers.

Another plant that was a mass of flowers was Cistus salvifolius; C. lusitanicus has an adpressed habit, and develops numerous white flowers pleasingly blushed with rose-colour at the base of each petal, and set off by the deep yellow-coloured stamens. Potentilla Friedrichsenii is one of the shrubby forms of this handsome genus. Linum flavum, as the name indicates, has flowers of yellow colour; it is very effective in the border. The "heads" of Achillea Eupatorium attract attention.

Other good garden plants that we can only name are Bupthalmum salicifolium, Glaucium

Serpieri, Erodium Manescavi, Calandrinia umbellata, Robinia hispida, Iris Monnier, and Agrostemma arosanguinea.

A water-garden is in course of formation, and hardy aquatic and bog plants are already represented by many of the best varieties and species of these plants. Shade-loving plants are accommodated in the cool retreat of an adjoining wood.

MARKETS.

COVENT GARDEN, July 19.

Plants in Pots, &c.: Average Wholesale Prices.		s. d. s. d.	
Aralia Sieboldi, p. dozen ...	4 0-9 0	Heliotropes, doz.	3 0-4 0
Araucaria excelsa, per dozen ...	18 0-30 0	Hydrangea, Thos. Hogg, p. doz.	8 0-12 0
Aspidistras, green, per doz.	24 0-36 0	— Hortensia, p. dozen ...	8 0-12 0
— variegated, per doz.	30 0-42 0	— paniculata ...	12 0-30 0
Asparagus plumosus nanus, per doz.	12 0-18 0	Kalosanthes, per dozen ...	9 0-12 0
— Sprengeri, per dozen ...	6 0-9 0	Kentia Belmoreana, per doz.	12 0-18 0
— tenuissimus, per doz.	6 0-12 0	— Fosteriana, p. doz.	12 0-21 0
Begonias, tuberous, per doz.	4 0-6 0	Lobelia, per doz.	3 0-4 0
Campanula isophylla, p. doz.	4 0-8 0	Latania borbonica, per doz.	12 0-18 0
— Mayi, per doz.	6 0-8 0	Lilium longiflorum, per doz.	9 0-12 0
Cannas, per doz.	5 0-6 0	Marguerites, white, per dozen ...	4 0-8 0
Chrysanthemum coronarium, double yellow, per dozen ...	6 0-8 0	— yellow ...	12 0-18 0
Coleus, per dozen	2 6-4 0	Mignonette, doz.	4 0-6 0
Crotons, per doz.	12 0-30 0	Musk, Harrison's, per dozen ...	3 0-4 0
Coccoloba Weddelliana, per doz.	12 0-30 0	Pelargoniums, per doz., Show ...	9 0-12 0
Cyperus alternifolius, per dozen ...	3 0-5 0	— Ivy-leaved ...	4 0-6 0
Dracaenas, per dozen ...	9 0-24 0	— zonal ...	3 0-5 0
Eriacas, per doz.	12 0-30 0	— scarlet do. ...	4 0-5 0
Eulalia japonica variegata ...	12 0-18 0	Petunias, double, per dozen ...	5 0-6 0
Euonymus, per dozen ...	4 0-9 0	Rhodanthe, per dozen ...	4 0-5 0
Ferns, in thumbs, per 100 ...	8 0-12 0	Roses, H.P.'s, per dozen ...	9 0-18 0
— in 48's, p. doz.	4 0-10 0	— Crimson Rambler (large), each ...	2 6-7 6
— in 32's, per dozen ...	10 0-18 0	— Dorothy Perkins, each ...	3 0-6 0
Ficus elastica, p. doz.	9 0-12 0	Saxifraga pyramidalis, per doz.	12 0-15 0
— repens, per dozen ...	4 0-6 0	— Selaginella, doz.	3 0-5 0
Fuchsias, p. doz.	4 0-6 0	Spiraea japonica, per doz.	4 0-9 0
		Verbena, Miss Willmott, per dozen ...	4 0-6 0
		— scarlet, per dozen ...	4 0-6 0

Vegetables: Average Wholesale Prices.

s. d. s. d.		s. d. s. d.	
Artichokes, Globe, per dozen ...	1 6-2 0	Mushrooms (house) per lb. ...	1 9-2 0
Asparagus, English giant ...	4 0-12 0	Onions, Egyptian, per cwt. ...	4 6-5 0
— ordinary, per bunch ...	1 0-2 6	— Spring, dozen bunches ...	2 6-3 0
Beans, dwarf, per pad ...	6 0-	Parsley, per doz. bunches ...	1 6-2 0
— Channel Island, per lb.	0 5-0 6	Peas, per bag ...	3 0-6 0
— English, p. lb.	0 5-0 6	— English, per bushel ...	2 0-4 0
— Broad, bush, 1 3-1 6	3 6-4 0	Potatoes, old, per cwt. ...	3 6-4 6
— per bag ...	3 6-4 0	— Jersey, p. cwt.	8 6-9 0
Beetroot, bushel	3 0-4 0	— St. Malo, per cwt. ...	7 6-8 6
Cabbages, p. tally	2 6-3 0	— Cherbourg, p. cwt. ...	6 0-7 0
Carrots, new, doz. bunches ...	1 6-2 0	Radishes, p. doz. bunches ...	0 9-1 0
— French, dozen	3 0-	Spinach, bush, ...	1 0-1 6
Cauliflowers, per dozen ...	1 9-2 0	Tomatos, English, p. lb. ...	0 3-0 4
Cress, doz. pun.	1 0-	— Jersey, p. lb.	0 3-
Cucumbers, doz.	2 0-3 0	— Valenceia, per package ...	10 6-13 6
Endive, per doz.	1 6-2 0	Turnips, new, doz. bun. ...	3 0-4 0
Horseradish, per dozen bunches	10 0-12 0	Vegetable Marrows, per dozen ...	1 6-
Mint, per dozen ...	2 0-2 6	Watercress, per doz. bunches ...	0 3-0 6
Leeks, per dozen bunches ...	1 6-2 0		
Lettuces, Cabbage, per bushel ...	1 0-1 6		
— English, Cos, per score ...	0 9-1 0		

Foliage Plants, &c.: Average Wholesale Prices.

s. d. s. d.		s. d. s. d.	
Asparagus plumosus, long trails, each ...	0 4-0 6	Grasses, hardy, p. doz. bunches	2 0-4 0
— medium, each ...	0 9-1 0	Ivy-leaves, bronze long trails, per bundle ...	1 0-2 0
— short sprays, per bunch ...	1 0-2 6	— short green, doz. bunches	1 0-1 6
— Sprengeri ...	0 6-1 0	— tenuissimus ...	9 0-12 0
— tenuissimus ...	9 0-12 0	Moss, per gross ...	5 0-6 0
Adiantum cuneatum, per dozen bunches ...	4 0-6 0	Myrtle, per dozen bunches ...	3 0-5 0
Cycas leaves, each ...	1 6-2 0	Smilax, p. dozen trails ...	4 0-6 0
Fern, English, p. dozen bunches	2 0-3 0	Hardy foliage (various), per dozen bunches	3 0-4 0

Cut Flowers, &c.; Average Wholesale Prices.

s.d. s.d.		s.d. s.d.	
Alströméria, per doz. bunches ...	2 0-3 0	Mignonnette, doz. bunches ...	2 0-4 0
Bouvardia, per doz. bunches ...	6 0-8 0	Odonoglossum crispum, pr. dz. blooms ...	2 0-2 6
Calla æthiopsica, p. doz. blooms	3 0-4 0	Pelargoniums, per dozen bunches:	
Carnations, per doz. blooms, best American vars. ...	2 8-5 0	— Show ...	4 0-6 0
— smaller do. ...	0 6-1 0	— Zonal, double scarlet ...	4 0-8 0
— Malmaisons ...	6 0-10 0	— salmon and pink ...	4 0-6 0
Cattleya, per doz. blooms ...	10 0-12 0	Poppies, Iceland, doz. bunches ...	0 6-1 6
Coreopsis, p. doz.	2 0-3 0	— Oriental, doz. bunches ...	4 0-6 0
Eucharis grandiflora, per dozen blooms ...	1 0-2 0	Pyrethrum, doz. bunches ...	2 0-4 0
Gardenias, per doz. blooms ...	1 0-1 6	Rhodanthe, doz. bunches ...	2 0-3 0
Gladiolus Colvillei, doz. bun.	1 0-2 0	Roses, 12 blooms, Niphotos ...	0 6-2 0
— brenchleyensis	3 0-4 0	— Bridesmaid ...	1 0-2 0
Gypsophila, per dozen bunches	2 0-3 0	— Kaiserin A. Victoria ...	2 0-4 0
Iris, Spanish, per doz. bunches	2 0-3 0	— General Jacqueminot ...	0 6-1 0
— best English, per dozen ...	9 0-12 0	— C. Mermet ...	2 0-3 0
Lilium candidum	0 6-1 0	— Caroline Testout ...	1 6-3 0
— lancifolium, rubrum and album ...	1 0-2 0	— Liberty ...	2 0-4 0
— longiflorum ...	2 0-3 0	— Mad. Chatenay ...	2 0-4 0
— tigrinum ...	1 6-2 0	— Mrs. J. Laing ...	2 0-4 0
Lily of the Valley, p. doz. bnchs.	6 0-9 0	— Sunrise ...	1 0-2 0
— extra quality	18 0 —	Stephanotis, doz. trusses ...	1 6-2 6
Marguerites, white, p. doz. bnchs.	3 0-4 0	Sweet Peas, doz. bunches ...	1 0-3 0
— yellow, per dz. bunches ...	2 0-3 0	Sweet Sultan, per dozen ...	3 0-4 0
		Tube roses, per dozen blooms	0 3-0 6

Fruit: Average Wholesale Prices.

s.d. s.d.		s.d. s.d.	
Apples, Tasmanian, case	10 0-14 0	Grapes, Hambro, per lb.	0 10-2 0
Apricots, French, per half bush.	4 6-5 6	— Muscats, lb. ...	1 0-2 6
Bananas, bunch	6 0-14 0	Lemons, Naples, per case ...	20 0-25 0
— Jamaica ...	3 6-8 0	Melons, each ...	2 6-3 6
— loose, per doz.	1 0-1 6	— French, Rock Nectarines, A., p. dozen ...	12 0-18 0
Cherries, per half bush. ...	6 0-12 0	— B., per dozen	3 0-6 0
Currants, Black, p. half bushel	6 0 —	Oranges, Jamaica, per case ...	13 0-14 0
— Red, per half bushel ...	4 0-6 0	Peaches, A., per dozen ...	8 0-12 0
— White, per lb.	0 6 —	— B., per doz. ...	2 0-8 0
Figs, per dozen ...	1 0-5 0	— French, per box ...	0 9-1 6
French Plums, p. box ...	1 0-1 6	Pines, each ...	2 0-4 6
Gooseberries, per half bushel ...	2 6-3 0	Raspberries, p. lb.	0 4-0 5
— ripe, per peck	2 0-2 6	Strawberries, one pound flat punnets, per dozen ...	12 0-15 0
Grape-fruit, case	13 0 —		
Grapes, Alicante, per lb. ...	1 0-1 3		

REMARKS.—The Strawberry season is now almost over; good prices are obtainable for selected 1st quality flat punnets, consignments realising 12s. to 15s. per doz. Californian Plums have now made their appearance, making 10s. to 12s. per case of 13 lb. for selected varieties. Cherries have not been so good for several seasons past; some very fine examples realised 8s. to 10s. per peck. Figs are very plentiful, consequently prices for these fruits are low. Supplies of Oranges are over in as much as Spain is concerned; those from Jamaica now arriving are not ripe enough to meet with a ready sale. The supply of Tasmanian Apples from cold storage is now almost exhausted. Trade generally is good.

COVENT GARDEN FLOWER MARKET.

The market all round is now very dull. Many growers have now finished sending for the season. Some good compact plants of Rose Dorothy Perkins are arriving, and these still realise as much as 6s. each. The Crimson Ramblers are almost over. Verbenas the King is very fine. I think there is no doubt that this will supersede the variety Miss Willmott for market purposes. All the Verbenas have to be offered at very low prices to clear. Good Hydrangeas are still seen. Some fine plants of Lantanas in various colours are seen; those in 48's realise about 8s. to 10s. per dozen, and large plants in 32's as much as 24s. per dozen. Campanula isophylla alba and C. Mayi are now very good. Liliun Harrisii in nice dwarf plants are plentiful. There are still many show Pelargoniums seen, but these do not sell readily. Zonals vary very much in quality, some are good, but the majority are inferior. Bouvardias are seen, but are not wanted. Marguerites, both white and yellow varieties, are still of good quality. Among Ferns and Palms there is little variation. Some very good Crotons are seen. Asparagus Sprengeri in fresh-looking plants in 48's and in larger sizes, A. plumosus, and A. tenuissimus are all well grown. Eulalia japonica variegata and Cyperus alternifolius are plentiful. Some growers are still marketing bedding plants. Asters, Antirrhinums, and Zinnias are to be had.

CUT FLOWERS.

There is no improvement in the trade for cut flowers, and many remains unsold. Supplies of best Roses are

perhaps a little short, but there are very large quantities of ordinary quality. Carnations are over plentiful. Sweet Peas cannot be cleared at any price. Liliuns are also very cheap. Lily of the Valley does not sell well. Large quantities of hardy flowers are now coming in the market, of which the double white Stocks are of splendid quality. Gladiolus The Bride is over-plentiful. I noticed some of the choicer hybrid Gladioli are also to be had. Gypsophila paniculata is seen in large heaps. Calliopsis grandiflora is good. There will be no improvement in the cut flower trade until late in the autumn. While so much produce remains unsold it can hardly pay for cutting and sending to market in such large quantities. A. H., Covent Garden, July 19.

FRUITS AND VEGETABLES.

The following are the latest wholesale prices to hand from the undernoted markets:—

LIVERPOOL.—Vegetables: Potatoes, 3s. 6d. to 7s. 6d. per cwt.; new, 1s. to 1s. 3d. per 21 lb.; Turnips, 6d. to 8d. per dozen bunches; Carrots, 6d. to 8d. do.; Cucumbers, 1s. 9d. to 3s. per dozen; Onions, foreign, 2s. to 4s. per bag; Parsley, 4d. to 6d. per dozen bunches; Lettuces, 6d. to 8d. per dozen; Cauliflowers, 1s. 6d. to 2s. 3d. do.; Peas, 4s. to 6s. per hamper; Beans, 3s. 9d. to 4s. do.—Fruit: Oranges, 8s. to 21s. per case; Valencia, 9s. 6d. to 10s. 9d. do.; Apples, Lisbon, 8s. 3d. to 10s. 3d. per box; Bananas, 4s. 6d. to 7s. 6d. per crate; Tomatos, Valencia, 7s. to 9s. 6d. per case.

EDINBURGH.—Oranges, Valencia, 15s. per case; Grapes, English, 1s. 9d. to 2s. per lb.; do. Belgian, 1s. 4d. do.; Lemons, Palermo, 10s. to 18s. 6d. per box; Apples, Australian, 13s. 6d. to 15s. 6d. per case; do. Lisbon, 15s. do.; Bananas, 5s. 6d. to 10s. per bunch; Nuts, Brazilian, 35s. to 38s. 6d. per bag; Nuts, 18s. 6d. to 40s. per cwt.; Figs, 9d. per dozen; Walnuts, Italian, 6s. 3d. per stone; Dates, Hallowil, 15s. 6d. per case; Tomatos, Guernsey, 5½d. to 6d. per lb.; Onions, Egyptian, 4s. per cwt.; do. Valencia, 7s. 6d. to 8s. do.; Carrots, 1s. per doz.

DUBLIN.—Vegetables: Potatoes, new, sandy, 4s. to 4s. 6d. per cwt.; clays, 4s. 6d. to 5s. do.; for clay, choice, up to 5s. 6d. per cwt.; Cabbages, 4s. 6d. to 10s. 6d. per load; Cauliflowers, 1s. to 1s. 6d. per basket; Parsley, 4s. to 5s. per bag; Carrots, 8d. to 9d. per dozen; Turnips, white, 4d. to 6d. per bunch; Salad, 3d. to 8d. per dozen; Scallions (young Onions), 3d. to 5d. per bunch; Thyme, 3d. to 4d. do.; Peas, 2s. 3d. to 2s. 6d. per small bag.



METEOROLOGICAL OBSERVATIONS taken in the Royal Horticultural Society's Gardens at Wisley, Surrey. Height above sea-level 150 feet. The following are the "mean" readings for the week ending July 15, 1905.

1905.	TEMPERATURE OF THE AIR.				TEMPERATURE OF THE SOIL at 9 A.M.			RAINFALL.	SUNSHINE.
	At 9 A.M.		DAY.	NIGHT.	At 1-foot deep.	At 2-feet deep.	At 4-feet deep.		
	Dry Bulb.	Wet Bulb.	Highest.	Lowest.					
JULY 9 TO JULY 15.	deg.	deg.	deg.	deg.	deg.	deg.	deg.	ins.	hr. min.
MEANS	69	63	77	59	54	67	65	61	8 11

GENERAL OBSERVATIONS.

THE FOLLOWING SUMMARY RECORD of the weather throughout the British Islands, for the week ending July 15, is furnished from the Meteorological Office:—

"The weather at the commencement of the week was close and changeable, thunderstorms occurring on Sunday over nearly the whole of Great Britain, as well as in some neighbouring portions of Ireland. Later on the weather over England improved very materially, but in Ireland, Scotland and Wales it remained somewhat unsettled, with frequent though not heavy falls of rain. Intermittent fogs, often of great density, were reported at many of our coast stations.

"The temperature was above the mean, the excess ranging from only 3° in Scotland, N., and the Channel Islands to 7° in the Midland Counties, and to as many as 8° in England, N.E. and E. At many places in the west and north the highest readings were recorded on Sunday, but over the kingdom generally they occurred on Thursday or Friday, the thermometer on one or other of those occasions rising to 86° and upwards in

most districts, and to 86° in the Midland Counties (at Bawtry). The lowest readings occurred as a rule some time during the earlier half of the week, when the thermometer fell below 50° in many districts, and below 45° in Scotland, N. and E., and Englaod, N.W. At a number of the English stations the thermometer on subsequent nights failed to sink below 60°.

"The rainfall amounted to less than the mean in all districts excepting Scotland, E., and England, N.W., where the normal quantity was just reached. In the latter districts heavy local falls were experienced with the thunderstorms of Sunday.

"The bright sunshine was in excess of the mean in most of the Wheat-producing districts, as well as in England, N.W., and Ireland, N.; elsewhere the average duration was not reached. The percentage of the possible duration ranged from 56 in Englaod, E., and 51 in the Midland Counties, to 29 in Ireland, N., 27 in England, S.W., and 23 in Scotland, N."

THE WEATHER IN WEST HERTS.

A very warm and sunny week.—During the eight days ending on the 15th the weather continued very warm. On all but one day during this warm period the temperature in the thermometer screen rose to or above 76°, and on the two hottest days exceeded 80°. The nights were also equally warm, the exposed thermometer never falling lower than 45°, and on the warmest night 61° was registered, which is, with one exception, the highest minimum reading that I have yet recorded here. Since then the days have been of only about average warmth, but on one night the thermometer exposed on the lawn fell to within 7° of the freezing-point. The ground is now not so warm as it has recently been, but is still 1° warmer at 1 foot deep, and 2° warmer at 2 feet deep, than is seasonable. The fall of rain during the week amounted altogether to little more than a tenth of an inch. Percolation through the bare soil gauge has now nearly ceased, no measurable quantity of rain-water having come through the 2½ feet of soil in that gauge for several days. There was again a splendid record of sunshine, the mean daily duration for the week averaging 8½ hours, or 2½ hours a day more than is usual at this season. As in the previous week, calms and light airs prevailed. The mean amount of moisture in the air at 3 o'clock in the afternoon was about three per cent. less than the July average for that hour. E. M., Berkhamsted, July 19, 1905.

For actual temperature and condition of barometer at time of going to Press, see p. 70.]

ANSWERS TO CORRESPONDENTS.

* * * EDITOR AND PUBLISHER.—Our Correspondents would obviate delay in obtaining answers to their communications, and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all communications relating to financial matters and to advertisements should be addressed to the PUBLISHER; and that all communications intended for publication, or referring to the Literary department, and all plans to be named, should be directed to the EDITOR. The two departments, Publishing and Editorial, are quite distinct, and much unnecessary delay and confusion arise when letters are misdirected.

ACER OBTUSATUM: Sir A. B. H. Fruits of Maples with three carpels are not uncommon, especially in the Sycamore, but we do not remember to have seen as many in this particular species. The presumption is that the ancestral Maple had five carpels, of which three are now habitually abortive.

AGERATUMS: N. S. The bedding varieties of Ageratum are not annual plants, and should not be exhibited in a collection of annuals. An annual is a plant that springs from seed and produces flowers and dies within a given year.

"ALPINE FLORA." Tourist. You will find Dr. Hoffmann's book on this subject, called Alpine Flora, translated by Mrs. A. Gepp, suitable for your purpose. It contains numerous coloured plates and is published by Longmans, Green & Co. A similar work, but in German, is noticed at p. 70. M. Correvon's Flore Colorée de Poche (Paris: Paul Kleinsieck) may also be commended to your notice. If you want a more complete book, apply to David Nutt, Long Acre, for Paitson's Translation of Gremli's Flora of Switzerland; but this has no illustrations.

ASPENIUM: A. H. P. You should send specimens that we may see them.

BEAN RUST: W. W. The rust is the work of a fungus, Uromyces fabæ. Spraying with dilute Bordeaux-mixture arrests the spread of the disease. In dealing with small breadths of Beans in gardens spraying with potassium permanganate or potassium sulphide is as effective

and is more readily obtainable. Infected plants should be burned as soon as the Beans are gathered, and not on any account be thrown on the manure-heap or the disease will be perpetuated. Wild Vetches are liable to become infected with the same disease, and should not be allowed to grow in hedges or waste places near the garden.

CARNATION: *G. R.* Your pure white Carnation Queen Alexandra is very good in many respects, but we doubt if it would find favour with the Carnation specialists, who would reject it at once as a show variety because of its fimbriated petals. The non-splitting calyx is a good feature. You should have submitted it to the National Carnation Society on Tuesday last.

CORRECTION.—On p. 43, col. 3, for *Klotzschiana*, read *Koschnyana*.

CUCUMBER: *G. B. M. R.* The powdery mass consists of the spores of a slime fungus called flowers-of-tan—*Ethalium septicum*. Except by smothering the plants it is not injurious, and if in abundance it can be got rid of by syringing.

CURRENTS: *C. P.* A fasciated bunch due to the union of several branches. Common in many plants, but we never saw it in Red Currants before.

EMPLOYMENT AT KEW: *Constant Reader.* Candidates for employment in the Royal Gardens, Kew, should be over twenty but not more than twenty-five years of age. They must have had at least five years' experience in good private gardens or nurseries. Apply to the Curator, who will send you a form of application.

EXPORTING ORCHIDS: *E. C., Java.* *Vanda suavis*, *Coleogyne speciosa*, *Bulbophyllum Lobbia*, and most of the other species you mention are plentiful enough in gardens here, and certainly would not pay you to send as established plants in Wardian cases. *Phalenopsis* and other plants likely to be profitable to the sender have to be specially prepared and forwarded by the quickest route, with an attendant to look after each consignment on the journey. It is expensive, but this is the only system that will ensure a return for the outlay. To send Orchids from Java with any degree of certainty that they will arrive in good condition it is necessary that they should be forwarded in the resting season. Ordinary packing-cases would not be satisfactory throughout, although occasionally plants might get through in that way. The question of freight and the determination who should take the risk is subject to arrangement between sender and consignee, but importers are very much averse from taking risks in such cases. It would never pay to buy Wardian cases in Europe to be sent out empty for the purpose of exporting Orchids to this country. If you elect to make the venture you could get them much cheaper in Java. We advise great caution in undertaking such a business. We know of no work dealing commercially with Java Orchids.

GRAPES SWEATED: *A. B. C.* We suppose you mean what is termed scalding, an injury which is caused by a lack of ventilation early in the morning when there is bright sunshine. All you can do is to cut away the berries which are affected most, and prevent a similar occurrence in the manner indicated above.

GROUND AROUND BUNGALOW: *Ajax.* Consult a solicitor.

HARDY PERENNIALS: *J. R. H.* The compilers of the schedule may have intended to include only herbaceous hardy perennials, but as it was not stated, the Roses and Clematis were permissible, both species being hardy perennials.

INSECT ON POTATO: *C. S. & Co.* All we find is a ladybird, which preys on the green-fly.

MARÉCHAL NIEL ROSE: *Sir C. S.* The injury generally results from frost or some other cause that ruptures the bark and sets up irritation in the cellular tissue. We have never been able to discover that a fungus or insect had anything to do with it.

MELON: *F. E. C.* The small ornamental Melon you send is the sweet-scented or Queen Anne's Pocket Melon. The perfume, which resembles

that of other Melons without being so strong, is rather agreeable as the fruit ripens, but the taste is not equally pleasant, and the plant is consequently only grown as a curiosity or as an ornamental climber.

MELON CANKER: *Anxious.* The plant is badly affected with canker. Try an application of lime and wood-ashes on the wound, or turn out the plant if the case demands it.

NAMES OF PLANTS: *W. T.* *Cornus suecica*.—*A. K.* A variety of Ivy (*Hedera Helix*), probably pedata.—*Nil Desperandum.* *Erigeron speciosus*.—*E. C. C. D.* *Rubus phœnicolasius*; *Hieracium aurantiacum*.—*D. W.* 1, *Olearia Haastii*; 2, *Hippophae rhamnoides* (sea Buckthorn); 3, *Ligustrum lucidum*; 4, *Spiræa arifolia*; 5, *Lonicera Ledebourii*; 6, *Rhus Cotinus*.—*H. E. W.* 1, *Asplenium Ruta-muraria*; 2, *A. trichomanes*; 3, *Ceterach officinarum*.—*J. A. B. R.* 1, *Dianthus plumarius* var.; 2, *Veronica (garden hybrid)*; 3, *Calochortus venustus*; 4, *Mimulus cardinalis*; 5, (*Eurotia eximia (marginata)*); 6, *Erigeron mucronatum*.—*W. R., Liverpool.* The plant is *Orobanche minor*, a parasitical plant perhaps introduced with seed.—*J. M.* *Saponaria Vaccaria*, *Asplenium trichomanes*.—*C. E.* *Selaginella Poulteri* var. *auræa*.—*F. C. E.* *Selaginella*.—*W. T., Derbyshire.* The Orchid is *Odontoglossum crispum*. The Begonia may have been kept in too close an atmosphere, and subjected to excess of moisture at the top.

NECTARINES: *Nectarine.* These fruits are very liable to split from the cause you describe. Place the pots on some moisture-holding material, so that the soil in the pots will become dry more gradually. Do not apply any more manure of any kind. The skin of certain varieties of Nectarine is very apt to shrivel if the sun's rays reach them at a time when the skin is in a damp condition.—*E. H. C.* Irregular growth, probably due to alternations of moisture and drought.

NURSERY: *Rufus.* The rent varies according to the value of the land, labour, building, and materials in a particular district. If the rent is sufficient to pay about 7 per cent. on the capital value it is reasonable.

ODONTOGLOSSUM CRISPUM: *Selsdon.* As soon as your plants of *Odontoglossum crispum* pass out of bloom, a period of rest should follow. This will be induced by keeping the rooting medium moderately dry, the house cool, well shaded and ventilated, and the atmosphere moist by frequently damping the stages, floors, &c. The dry conditions at the roots should not be permitted long enough to cause severe shrivelling in the pseudo-bulbs. A good practice is to spray the plants overhead in the morning, and again late in the afternoon, for by this means frequent watering of the potting materials is obviated. When the new growths develop and have attained to a length of a couple of inches, the necessary potting operations may be given attention. Plants having ample pot-room, and being in satisfactory health and condition, will only need a renewal of the surface materials. Those selected for shifting into other pots should be turned out of the old ones, have all the leafless pseudo-bulbs removed, and a large portion of the old potting material. Then pot them up into receptacles that will be large enough for two years' growth, filling the pot half full of drainage material, and the remainder with good peat and sphagnum-moss, used in equal proportions. Make this compost moderately firm, but not hard, and let it be level with the rim of the pot, and well up to the base of the new growths. If a small portion of decaying Oak-leaves be introduced, try to keep it below the surface, or use chopped sphagnum-moss alone to finish off the potting operation. After this work has been done continue to treat the plants as described above until root-growth becomes active, when more liberal supplies of water should be given. If the house is in a dry and exposed position, employ the top ventilators only, leaving these open at night when the weather is favourable.

ODONTOGLOSSUM CRISPUM: *Old Subscriber.* A white unspotted flower with less yellow on the lip than usual.

PEAR LEAVES: *J. R. P.* We have never known the Pear midge to injure the leaves of the tree. Indeed, it would be impossible for them to do so seeing that they (the larvæ) spend the whole of their lives inside the embryo fruit.

PEAS: *C. C.* The Pea-stems are badly attacked by the fungus named last week. There is no evidence that the maggots have injured the roots. If the manure is sprinkled with kainit when it is turned the maggots will be destroyed.

PROPAGATION OF PLANTS: *W. R. S.* Most plants are propagated both by buds or by tubers, which are modified buds, and by seed. If the development of tubers is in excess, the flowers are likely to be deficient, and *vice versa*. There is no special name to express what you have described.

PURPLE PODED PEA: *W. D. A.* Of little value for culinary purposes.

ROSE-BRANCHES INJURED: *A. J. Fender.* The twig you sent contained a chain of eggs of the Rose sawfly, *Hylotoma rosæ*, Lin. This the female sawfly accomplishes by piercing a hole with her ovipositor in the twig of the food-plant, and as a result the growth of the tissues of the twig is arrested, causing it to curve downwards and inwards on the infected side. As a remedy we would advise you to cut off the diseased shoots and burn them.

ROSES: *Essex.* *Pharisaer*, *Prince de Bulgarie* and *Pauline Bersez* are all excellent varieties for growing in the open, being vigorous, free-flowering and suitable for use as cut flowers. *Hélène Welter* is a new variety not in general cultivation. The variety *Lamarque* is a very free-flowering Rose, but sensitive to cold, and would require a favoured situation outside. *J. B. Clarke* is a new variety, evidently an acquisition for exhibition purposes, but its behaviour in the flower-garden has to be determined.—*W. H. C.* We cannot undertake to name varieties of Roses, or other florists' flowers. Send to a trade grower who has means of comparing them with flowers in his collection.—*Amateur.* We cannot recommend French nurserymen. Advertise in the horticultural Press. In regard to the question of budding, the present is a suitable time for the operation; but do not delay, as the proper season for this work will soon be past. Do not cut the Briars back before budding, but leave them until next March.

SOLANUMS: *Constant Reader.* There appears to be no disease in the plants you have sent us, but the flowers have failed to set from some reason which we cannot determine here. Do not apply stimulating manures to the plants when they are flowering, nor keep them in too high a temperature.

STRAWBERRY PLANTS: *North East.* When the crop has been gathered, if you determine to keep the plants for another year, let all the old foliage be cut away, and then spray the plants with water in which flowers of sulphur has been mixed. Do not obtain layers from these plants.

SWEET PEAS: *T. C.* The leaves have been eaten by the larvæ of some insect, but what we cannot tell.

VINE: *A Reader.* The black dots are the excreta of some insect, readily removable with the point of a knife, and will do no harm; but perhaps the insect may do harm, and a sharp look-out should be kept for it.

COMMUNICATIONS RECEIVED.—*S. W. F.*—*W. P. & Sons—Sulton & Sons—Dr. Schönland. Grahamstown—C. B. C.*—*J. H. P.*—*R. S., Luscombe—T. H.*—*W. H. Y.*—*L. M.*—*L. S.*—*Rev. J. H. P.*—*J. H. W.*—*A. D.* (slips will be sent to you).—*G. H. S.*—*H. R. G.*—*E. L.*—*J. S.*—*T. B. B.*

DIED.—*Mrs. H. Richardson.* On July 7, Mrs. H. Richardson, wife of Mr. H. Richardson, horticultural sundriesman, of Camden Town, London. Mr. Richardson desires to thank many friends who have expressed sympathy.

THE

Gardeners' Chronicle

No. 970.—SATURDAY, July 29, 1905.

CONTENTS.

Apple-trees, espalier-trained 97	Nursery notes— A trial ground at Reading 81
Books, notices of— British trees 92	Sweet Peas at Marks Tey 95
<i>Campanula turbinata</i> Isabel 96	Plants, new or noteworthy— <i>Stauhopea devonensis</i> 82
Carnations and Picotees, staging 96	Scen'ry in a Mentone garden 96
Chinese note-book, leaves from my 94	Societies— British Gardeners' 98
<i>Coreopsis</i> with tubular ray florets 51	Durham, Northumberland and Newcastle Botanical and Horticultural 98
Cucumber "spot" 96	North Lonsdale Rose Royal Horticultural (Scientific Committee) 97
Currants, red 95	Wimbledon and District Horticultural Trillium grandiflorum, raising seedlings of 96
Cuthbert, Mr. George, accident to 92	Turnip seed case 92
Forester, duties of an English 100	Week's work, the— Flower garden, the 89
Fruit crops, report on the condition of the out-door 81-87	Fruits under glass 89
Fruit-growing industry, the Government report upon the conditions of the 90	Hardy fruit garden 89
Funkias 91	Kitchen garden, the 89
Garden notes 94	Oreoid houses, the 88
Kew notes 95	Plants under glass 88
<i>Lilium sutchucense</i> 91	
Norwich public gardens 93	
Peas, how to preserve 100	

ILLUSTRATIONS.

Carnation <i>Pride of Westbury</i> 88
<i>Funkia Sieboldi</i> from a Donegal garden 94
Lemon, the Metford, in the Temperate-house, Kew 95
<i>Lilium sutchucense</i> (Supplementary Illustration). View in the Chapel Field Gardens, Norwich 93

OUR FRUIT REPORT.

ONCE again we have to thank the numerous correspondents who have favoured us with information concerning the fruit crops for the present year. As in 1903 we have a deplorable record to chronicle, though not quite so unfavourable a one as in that year. The full details are given on succeeding pages, together with a summary on p. 87, which will show the state of affairs at a glance. By way of illustration let us take the figures relating to the Apple-crop in England as the one of most importance commercially. The total number of records from north and south and east and west for England alone is 192. Of these, an average crop is recorded in 28 cases only, while 163 are reported as under and only one as over average. This solitary instance is so remarkable that it may be of interest to record the precise locality—viz., Cranford, Middlesex. In the case of Apples we may also note that some of our correspondents have made no return other than a dash (—). We have taken that to mean a failure of the crop, as it is not probable that any of our reporters have no Apple trees under their care.

With Pears the record is a trifle, but only a trifle, more satisfactory, there being 48 averages against 141 under average. Here again there is a solitary instance of the crop being over average. This time the favoured locality is in Derbyshire.

Plums are the most important crop next to Apples from our present point of view, but of 191 replies from England alone, 50 record an average crop, 10 are over, and no fewer than 131 under average. Cherries are reported on by 180 observers. The average here is good—viz., 104, 10 being over, and 66 under average. It is not obvious why Cherries should have been so favoured.

Peaches, Apricots, and Nuts we may pass over without special comment, but "small fruits" show a more favourable record than Apples or Plums, thus of 192 replies received from England, 97 show an average crop, 73 are over average, and only 22 under. For Strawberries we received 191 reports from England, 92 being favourable, 44 over average, and 55 under average.

The returns from Scotland, Wales, Ireland, and the Channel Islands tell their own tale, and need not be specially referred to here.

As to the causes which have induced this poor show of fruit, we do not think we have any need to inquire further. Spring frosts and east winds occurring at or about the flowering period are responsible for most of the mischief. As these occur pretty regularly, it would seem as if our hybridisers and cross-breeders had been lacking in enterprise, or they would have long ago given us later-flowering or more hardy varieties.

A TRIAL GROUND.

BANDS of colour, belts of colour, strips of colour—colour everywhere—blue, crimson, red, yellow, white, in beds, in borders, in lines, in circles, in serpentine waves. And the colour was, with one exception, pure of its kind, without shade or blend. This is what Messrs. Sutton's trial-grounds at Reading showed from the windows of the train one hot July day. A closer inspection on the ground showed, not self-colours, but an infinite variation, gradation and blending of tints. So much for looking at things at a distance and at close quarters. The exception we have alluded to was a marvellous mosaic, or rather several beds, of shades of yellow, crimson, and purple, with scarcely a green leaf to be seen. These mosaics appeared as such both on a distant and on a near view; and the constituents were not of glass nor of coloured stone, but of flowers—flowers of various kinds of dwarf *Tropaeolums*, grown in admixture, suggesting a huge flower-salad or a creamy mayonnaise speckled with red and purple. Those who love bright colours and striking effects should take note of these beds of mixed *Tropaeolums*.

But as to the details—where are we to begin? Still more important, where are we to leave off? How are we to arrange our materials? Perhaps, if we "cool our eyes" a little on the grass plots first, we may find a way out of the maze of detail. These grass plots are very interesting. Each plot is devoted to one species; one forms a dense, smooth carpet; one is patchy, one burns in a dry season, whilst its neighbour keeps its green colour. We will not burden the reader with the names of these grasses; we allude to the matter to show how Messrs. Sutton acquire their experience, which enables them to "prescribe" for the formation of croquet-lawns, putting-greens, cricket-grounds, and other requirements on varied soils and under different conditions. These plots are, of course, kept mown and rolled; but hard by are similar plots in which each species is allowed to do its best, and prove its right to the name it bears. To the student of grasses it need hardly be said that these plots are most instructive, but so brilliant are the masses of many-hued flowers that when the eyes have rested a little the fascinations of colour exert their sway, and we find ourselves saying, "What's that? and that? and that?" and even admiring a ribbon border of the old pattern so much in favour a quarter of a century ago. This one must be 1 or 2 furlongs in length, and it is formed of a row of dwarf pink *Godetia* in front, one of *Duchess of Albany* (white) in the middle, and at the back *Scarlet Queen*, a

little taller than the others. That the lines are so true, so free from rogues, so uniform in stature and flower, is a striking testimony to the careful selection and excellence of cultivation bestowed on the plants. Of course, the "ribbon" is made in conformity with the particular requirements of the case. We should not recommend its general adoption in gardens. Elsewhere these *Godetias* are grown in single beds, one variety to each bed. One known as *Crimson King* was particularly effective. *Bridesmaid* is another beautiful variety with white and pink-flushed flowers. But if we once begin to enumerate varieties, the prospect of bringing this article to a close will be remote.

It must suffice to say that at this particular time the *Godetias* contributed the most important feature of the display so far as colour is concerned. Next in order in this respect were the *Tropaeolums*, to which we have already referred. They vary greatly in habit; some are loose and rampant, others compact and tufted, of which *King of Tom Thumbs* is specially noticeable; some with leaves of a greenish-purple hue, such as *Empress of India*; others, like *Cloth of Gold*, so yellow that even when not in flower they are serviceable as bedders; and as to the flowers they are of all shades, cream colour and yellow, passing to deep red, and some, like "*Chameleon*," not knowing which colour to adopt, make a compromise by forming stripes of red on a yellow ground. Truly a wonderful range of variation in one species, and as they, like the *Verbenas* and many other plants mostly come true from seed, it is clear the old notions of species must give place to conceptions more in accordance with facts. *Clarkias* are near allies to *Godetias*, but generally with smaller flowers, some with flakes and marginal spots as in a *Picotee*.

As to *Stocks* and *Antirrhinums*, *Lobelias* and *Candytufts*, *Seedling Carnations* and *Sweet Peas*, we can only mention them as contributing in no small degree to the beauty of the trial-grounds. But there are so many plants of which a like remark might be made that we are compelled to pass them by and confine our attention to a few specialties like the *Eschscholzia*. In addition to the ordinary single and double yellow varieties, there are masses of "*Mandarin*," in which the outer surface of the petals is of a deep orange colour, and the very beautiful *Rose Queen*, in which the petals are white, deeply flushed with rose on the outer side. *Miss Jekyll* is commemorated by a tall-growing *Nigella* with azure-blue petals. The so-called *Swan River Daisy*, *Brachycome iberidifolia*, has slender, wiry, glabrous stems, very finely cut leaves and long-stalked flower-heads, each about the size of a sixpence, the ray florets of a blueish-violet surrounding a blackish "disc." Seen in the mass this is both novel and beautiful. *Chrysanthemum* "*Morning Star*" is very conspicuous. It is said to have been selected from the wild, corn-field weed, *C. segetum*, and has robust stems, succulent foliage and bold flower-heads of a creamy-white or pale sulphur-yellow colour. A "*British Botanist*" coming across such a specimen would have "his mind improved" as to the extent and limitations of the process of variation.

Coreopsis grandiflora is well known, but worth notice for the size and attractiveness of the yellow flower-heads, which do well for purposes of table decoration. Moreover, if autumn-sown it is said to withstand our winters with impunity.

Nemesia strumosa was an introduction of Messrs. Sutton, who have "improved" it in variety of colour: but further improvement is needed as to habit. *Lavatera* "*rosea splendens*" is a selected variety of *L. trimestris*, with larger, more perfect, and deeper-coloured flowers than the type. *Diascia Barberae* is a plant that will interest the botanist, as the corolla has two spurs, and thus approximates to the peloriate variety of *Linaria*.

Our note-book is not half exhausted, but the patience of the reader will surely give out if we go on longer. We have said enough to show the almost infinite diversity of colour and form, to say nothing of interest, which is spread out before the visitor in the Reading trial-grounds at this season.

REPORT ON THE CONDITION OF THE OUT-DOOR FRUIT CROPS.

[FROM OUR OWN CORRESPONDENTS.]

THE WORDS "AVERAGE," "OVER," OR "UNDER," AS THE CASE MAY BE, INDICATE THE AMOUNT OF THE CROP; AND "GOOD," "VERY GOOD," OR "BAD," DENOTE THE QUALITY.

. FULLER COMMENTS WILL BE GIVEN IN THE FOLLOWING NUMBERS. SEE ALSO LEADING ARTICLES ON PAGES 81, 90.

COUNTY.	APPLES.	PEARS.	PLUMS.	CHERRIES.	PEACHES AND NECTARINES.	APRICOTS.	SMALL FRUITS.	STRAWBERRIES.	NUTS.	NAME AND ADDRESS.
SCOTLAND—										
0, Scotland, N.										
CAITHNESS	Average	Average	.....	Under; bad	.....	.....	Under; bad	Average; good	.....	W. F. Mackenzie, The Gardens, Thurso Castle, Thurso
MORAYSHIRE	Under; bad	Average; good	Over; good	Average; good	Over; good	Over; good	Average	Average	.....	D. Cunningham, Darnaway Castle Gardens, Forres.
ORKNEYS	Average; good	Under; good	.....	Under; good	Under; very good	.....	Under; very good	Average; good	.....	Thos. McDonald, Balfour Castle Gardens, Kirkwall, Orkney.
SUTHERLAND	Under	Average	Average	Average	.....	.....	Average	Over	Average	D. Melville, Dunrobin Castle Gardens, Golspie
1, Scotland, E.										
ABERDEENSHIRE ...	Under; bad	Under; bad	Under; bad	Average; good	.....	.....	Average; very good	Average; good	.....	James Grant, Rothienorman Gardens, Rothie
	Under; bad	Under; bad	Average	.....	.....	.....	Average	Under	.....	John Brown, Delgaty Castle Gardens, Turriff
BANFFSHIRE	Average	Under	Average	Average; good	.....	.....	Average; good	Over; very good	.....	Simon Campbell, Fyvie Castle Gardens, Fyvie
	Average; good	.....	Average; good	Average; good	.....	.....	Average; very good	Over; very good	.....	John M. Troup, Balmoral Castle Gardens, Ballater
BERWICKSHIRE	Average	Under	Under	Average; good	Average	Average; good	Average; good	Average; very good	.....	J. Fraser Smith, Cullen House Gardens
	Under	Under	Under	Under	Under	Under; good	Average; good	Average; good	Under	James Gemmill, Ladykirk Gardens, Berwick-on-Tweed
CLACKMANNAN-SHIRE	Under	Average	Average	Average; very good	Under	Average	Under	Average	.....	A. Kirk, Norwood Gardens, Alloa
	Under; bad	Under; bad	Average	Over; good	.....	.....	Average; good	Average; bad	.....	A. Blackwood, Academy Gardens, Dollar
FIFESHIRE	Under	Under	Under	Average	.....	Average	Over	Average	.....	William Henderson, Balhinnie Gdns., Markinch, Fife
	Under	Average	Average	Average	.....	.....	Under	Under	.....	Peter McRobbie, Tarvit Gardens, Cupar
FORFARSHIRE	Under	Under	Average	Average	.....	Average	Average	Average	.....	Chas. Simpson, Wemyss Castle Gardens
	Under	Under	Average	Average	Average	Under	Under; good	Average; good	.....	W. McDowall, Brechin Castle Gardens, Brechin
HADDINGTONSHIRE	Under; good	Under; good	Over; very good	Average; good	.....	Average	Over; very good	Average; good	.....	Thos. Wilson, Glamis Castle Gardens, Glamis
	Under; good	Under; good	Average; good	.....	Average; good	Average; good	Over; good	Over; good	.....	William Alison, The Gardens, Seaview, Monifieth.
KINCARDINESHIRE..	Under; bad	Average; good	Under; bad	Under; bad	Average; good	Over; very good	Over; very good	Average; good	.....	R. P. Brotherston, Tynninghame Gdns., East Lothian
	Average	Under	Under	Average	Under	.....	Average	Average	.....	William Galloway, Gosford Gardens, Longdidry, East Lothian
MIDLOTHIAN	Over	Average	Under	Average	.....	.....	Average	Over	.....	John M. Brown, Blackhall Castle Gardens, Banchoy, Aberdeen
	Under; very good	Under; very good	Under; good	Average; good	Under; good	Under; good	Average; good	Over; good	Under	William Knight, Fasque Gardens, Laureneckirk
PEEBLESSHIRE	Under; good	Under; bad	Under; good	Average; good	.....	Average; good	Average; good	Under; bad	.....	James Whytock, Dalkeith Gardens, Midlothian
	Under	.....	Under	Over; good	.....	.....	Over	Over; very good	.....	D. Kidd, Carbery Tower Gardens, Musselburgh
PERTHSHIRE	Under	Under	Under	Average; good	.....	.....	Average; good	Average; good	.....	M. McIntyre, The Glen Gardens, Innerleithen
	Under	Under	Under	Average	.....	.....	Over; good	Average; good	.....	William Young, Stobo Castle Gardens, Stobo
PERTHSHIRE	Under; good	Under	Average; good	Average	Average	Over; very good	Average; good	Average; very good	.....	Wm. McDonald, Cardrona Gardens, Innerleithen
	Average	Under	Average	Over; very good	.....	.....	Over	Over	.....	J. Farquharson, Kinfauns Castle Gardens, Perth
PERTHSHIRE	Under	Average; good	Over; good	Average	Average	Average; good	Average; good	Average; good	.....	John Robb, Drummond Castle Gardens, Crieff
	Under	Average; good	Over; good	Average	Average	Average; good	Average; good	Average; good	.....	James Ewing, Castle Menzies, Aberfeldy
6, Scotland, W.										
ARGYLLSHIRE	Under; bad	Under; bad	Average; good	Average; good	Average	.....	Over; very good	Over; very good	Under	D. S. Melville, Poltalloch Gardens, Lochgilphead
	Under	Under	Average	Under	.....	.....	Average; good	Over; good	Over; good	Henry Scott, Torloisk Gardens, Aros, Isle of Mull
AYRSHIRE	Under; bad	Under	Average; good	Under	.....	.....	Average	Under; good	.....	William Priest, Eglinton Gardens, Kilwinning
	Average; good	Average; good	Under; good	Average; good	.....	Under; good	Average; very good	Average; good	Under	D. Buchanan, Bargany Gardens, Dailly
BUTESHIRE	Over; good	Average; good	Under	Over; good	Average	Under	Over; good	Average	.....	Thomas Gordon, Ewenfield Gardens, Ayr
	Under	Under	Under	Over; very good	Under; bad	.....	Average	Average	.....	M. Heron, Mount Stewart Gardens, Rothesay
DUMBARTONSHIRE ..	Under	Average	Average	Average	.....	Under	Average	Over; good	Under	George McKay, Balloch Castle Gardens
	Average	Under	Average	Average; good	.....	.....	Over; very good	Under; good	.....	D. Stewart, Knockdery Castle, Cove
DUMFRIESHIRE	Under	.....	Under	Under	.....	Under	Average	Under	.....	John Urquhart, Foddam Castle Gdns., E. Lochmaben
	Under; good	Under; bad	Under; good	Average; good	.....	.....	Average; very good	Average; very good	.....	R. Wishart, Banfoot Gardens, Langholm
KIRKCUDBRIGHTSHIRE	Under; good	Under; good	Average; good	Average; very good	Under; bad	Under; bad	Average; very good	Average; very good	Under; good	John Mackinnon, Terregles
	Under; bad	Under; good	Under; good	Average; very good	.....	.....	Over; very good	Over; very good	.....	James McDonald, Dryfeholm Gardens, Lockerbie
KIRKCUDBRIGHTSHIRE	Under; good	Average; good	Average; good	Over; good	.....	.....	Over; very good	Over; very good	.....	N. Macfarlan, Glenlie Park Gardens, New Galloway
	Under; bad	Under; good	Average; good	Average; good	Average; very good	.....	Average; very good	Average; very good	.....	Wm. Thomson, Cally Gardens, Kirkcudbright

CONDITION OF THE FRUIT CROPS—(continued).

COUNTY.	APPLES.	PEARS.	PLUMS.	CHERRIES.	PEACHES AND NECTARINES.	APRICOTS.	SMALL FRUITS.	STRAW-BERRIES.	NUTS.	NAME AND ADDRESS.
6, Scotland, W.										
LANARKSHIRE	Under ; good	Under ; good	Average ; good	Average ; good	.....	.....	Average ; good	Average ; good	.....	James Miller, Castlemillk Gardens, Rutherglen
RENFREWSHIRE	Under	Under	Under	Average	Under	.....	Under	Average	.....	John Methven, Blythwood Gardens, Renfrew
	Under	Under	Average	Average	.....	.....	Average ; good	Average ; good	.....	Thomas Lunt, Ardgowan Gardens, Inverkip
STIRLINGSHIRE	Under ; good	Under ; good	Average ; good	Under ; good	Under	Under	Over ; good	Average ; good	.....	Alex. Crosbie, Buchanan Castle Gardens, Dymen
WIGTONSHIRE	Under ; good	Average ; good	Average ; good	Average ; good	.....	.....	Over ; good	Average ; good	.....	John Bryden, Dunragit Gardens, Dunragit
	Under ; good	Under	Under	Under ; bad	Under	Average	Over ; good	Over ; good	Under	James Day, Galloway House Gardens, Garliestown
ENGLAND—										
2, England, N.E.										
DURHAM	Under	Under	Under	Average	.....	.....	Under	Under	.....	Robt. Draper, Seaham Hall Gdns., Seaham Harbour
	Under ; good	Average ; good	Under	Average ; good	.....	Under	Under ; good	Average ; very good	.....	James Noble, Woodburn Gardens, Darlington
	Under ; bad	Under ; bad	Under	Under	.....	Under	Under	Average ; good	.....	James Machar, Smelt House Gardens, Howden-le-Wear
NORTHUMBERLAND	Under	Under	Under	Average	Under	Under	Over ; Gooseberries excepted	Under	.....	George H. Ackroyd, Howick Gardens, Lesbny
YORKSHIRE	Under	Under	Under	Average	.....	.....	Average	Average ; good	.....	Bailey Wadds, Birdsall Gardens, York
	Average	Average	Under	Under	.....	.....	Average	Over	.....	J. Simpson, Studfield, near Sheffield.
	Under ; bad	Under ; bad	Under ; bad	Under ; good	Under	Under ; bad	Average	Under ; good	.....	John Snell, Newall Carr, Otley, Yorks
	Under ; bad	Average ; bad	Under ; bad	Average ; good	Average ; good	Over ; good	Under ; good	Under ; bad	Average ; good	J. S. Upex, Wigganthorpe Gardens, York
	Under ; bad	Under ; bad	Average	Average ; good	Average	Average	Under	Under	Under	J. Allsop, Dalton Hall Gdns., Dalton Holme, Beverley
	Under ; good	Under ; bad	Under	Under	Under	Under	Under	Over ; good	Under	Henry J. Clayton, Grimston Gardens, Tadcaster
	Under ; bad	Average	Over ; good	Average	Under	Over ; good	Over ; good	Average ; good	Average	A. E. Sutton, Castle Howard Gardens, Welburn
	Under ; good	Average ; good	Under ; bad	Average ; good	Average ; good	Average ; good	Average ; good	Average ; good	.....	John McClelland, Ribston Hall Gardens, Wetherby
3, England, E.										
CAMBRIDGESHIRE ...	Under ; bad	Under ; bad	Under ; bad	Under ; bad	Average ; good	Under ; good	Under ; good	Under ; bad	Under ; bad	R. Alderman, Babraham Hall Gardens, Cambridge
ESSEX	Average ; good	Under ; good	Average ; good	Over ; very good	Average ; good	Over	Average ; very good	Under ; bad	Average ; good	A. Bullock, Copped Hall Gardens, Epping
	Under	Average	Average	Average	Average	Average	Under	Average	.....	Henry Lister, Easton Lodge Gardens, Dunmow
	Much under	Much under	Much under	Under	Average	Under	Average	Average	Average	H. W. Ward, Lime House, Rayleigh
	Under	Under	Under	Average	Under	.....	Average ; good	Average	Average	W. R. Johnson, Stanway Hall Gardens, Colchester
HUNTINGDONSHIRE	Average	Under ; good	Average ; very good	Average ; good	Average ; good	Over	Average ; good	Over ; very good	Average ; good	F. W. Seabrook, Ramsey Abbey Gardens
LINCOLNSHIRE	Under	Under	Under	Average ; good	Average	Average	Average ; good	Under	.....	H. Vinden, Harlaxton Manor Gardens, Grantham
	Under ; bad	Under ; bad	Average ; good	Average ; good	Average ; very good	Average ; very good	Average ; very good	Average ; very good	Under ; good	F. J. Fleming, Welby Old Hall Gardens, Grimsby
NORFOLK	Under ; good	Under ; very good	Under ; good	Morello average	Average ; good	Under ; very good	Over ; very good	Average ; very good	.....	Thomas H. Cook, The Royal Gardens, Sandringham
	Much under	Much under	Much under	Sweet under	Average ; good	Under ; bad	Under ; good	Under ; good	Average ; good	Ernest C. Parslow, Shadwell Court Gardens, Thetford
	Average ; good	Average ; good	Under ; good	Average	Under	Under	Over ; very good	Over ; very good	Average	J. Wynne, Sedgeford Hall Gardens, King's Lynn
	Under ; bad	Under ; bad	Over ; very good	Average ; good	Under	Under	Under ; bad	Over ; very good	Average	J. W. Bradbrook, Ketteringham Park Gardens, Wymondham
	Under ; good	Under ; good	Under ; good	Average ; very good	Under ; good	Average ; good	Under ; good	Over ; very good	.....	W. N. T. Witton Park Gardens, North Walsham
SUFFOLK	Average ; good	Average ; very good	Under ; bad	Over ; very good	Under ; bad	Average ; good	Over ; very good	Average ; good	Average	A. McVill, Estate Office, Moulton Paddocks, Newmarket
	Under ; bad	Average ; very good	Average ; good	Under ; bad	Average ; good	Average ; good	Average ; very good	Over ; good	Under	Thos. Simpson, The Gardens, Henham Hall, Wangford
	Under ; bad	Average	Average ; good	Under ; bad	Under ; bad	Average ; good	Average ; good	Average ; very good	Average	A. Hickford, Darsham House Gardens, near Saxmundham
4, Midland Counties.										
BEDFORDSHIRE	Under	Average	Under	Average	Average	Over	Over ; good	Over ; good	Average	H. Nimmo, Cranfield Court Gardens, Woburn Sands, R.S.O.
	Under ; very poor	Average	Average ; good	Morellos very good	Average ; very good	Average	Average	Average ; very good	.....	T. W. Birkinshaw, Hatley Park Gardens, Sandy
	Under ; good	Under ; bad	Under ; bad	Average ; good	Average	Average	Average ; very good	Average	Under	H. W. Nutt, Flitwick
	Under	Average ; good	Average	Average	Average ; good	Average ; good	Average	Average	Average	George Mackinlay, West Park Gardens, Ampthill
	Under	Under	Under	Average ; good	Under	Under	Average	Under ; bad	Under	Wm. F. Palmer, Froxfield Gardens, Woburn
	Under ; good	Under ; good	Average ; very good	Average ; good	Average ; good	Under ; good	Average ; very good	Under ; good	Average ; good	C. J. Ellett, Chicksands Priory Gardens, Bedford
	Under ; good	Under ; good	Under ; good	Average ; good	Average ; good	Average ; good	Average ; good	Under ; good	Under	Charles Stillwell, Putteridge Bury Gardens, Luton
LUCKINGHAMSHIRE	.....	Under ; bad	Under ; bad	Average ; good	Average ; very good	Under ; good	Average ; very good	Under ; bad	Average	James Wood, Hedsor Park Gardens, Bourne End
	Average ; good	Under ; very good	Under ; good	Average ; good	Average ; very good	Under ; good	Average ; very good	Average ; good	Under	John Fleming, Wexham Park Gardens, Slough
	Under ; good	Under	Average	Under	Average	Under ; good	Over ; good	Under	Under	Chas. Page, Dropmore Gardens, Maidenhead
	Under ; good	.....	.....	.....	Under ; good	Under ; good	Average ; good	Under ; good	Under ; bad	W. Hedley Warren, Aston Clinton Gardens, Tring
	Under	Average ; good	Under	Average	Under	Under ; bad	Over ; very good	Average ; good	Average ; good	James MacGregor, Mentmore Gardens, Leighton Buzzard
WESHIRE	Under ; bad	Under ; good	Under ; bad	Morellos average ; good	Under ; bad	Average ; good	Average ; good	Average ; good	.....	W. C. Breese, Moreton Hall Gardens, Coughton
	Under	Under	Under	Average	.....	.....	Over ; good	Average ; good	.....	Peter Wilkinson, Walton Lea Gardens, Warrington
	Under ; good	Average ; good	Average ; good	Over ; good	Average ; good	Over ; good	Over ; good	Under ; bad	Over ; good	Charles Flack, Cholmondeley Castle Gardens, Malpas

CONDITION OF THE FRUIT CROPS—(continued).

COUNTY.	APPLES.	PEARS.	PLUMS.	CHERRIES.	PEACHES AND NECTARINES.	APRICOTS.	SMALL FRUITS.	STRAW-BERRIES.	NUTS.	NAME AND ADDRESS.
4, Midland Counties.										
CHESHIRE	Under; good	Under; bad	Under; bad	Average; good	.....	Under; bad	Average; good	Average; very good	.....	N. F. Barnes, Eaton Gardens, Chester
	Under; good	Under; good	Under; bad	Average; very good	Average; good	Under; good	Over; good	Over; very good	.....	Geo. Cliffe, Tatton Park Gardens, Knutsford
DERBYSHIRE	Under	Under	Under	Average	.....	.....	Average	Over	Average	Edward Slater, Norton Priory Gardens, Runcorn
	Under; good	Under; good	Under	Over; very good	Under; bad	.....	Average; good	Over; good	.....	J. C. Tallack, Shipley Hall Gardens, Derby
	Under	Under	Under	Average	.....	Under	Average	Average; very good	Average	T. Keatley, Darley Abbey Gardens, Derby
	Under	Under	Under	Under; good	.....	.....	Under	Under; good	.....	W. Chester, Chatsworth Gardens, near Chesterfield
HERTFORDSHIRE.....	Under; good	Over; very good	Under; good	Average; good	.....	Under; bad	Over; very good	Average; good	.....	F. G. Mills, Glossop Hall Gardens, Glossop
	Under	Under	Under	Under	.....	.....	Average; good	Average; good	Average	James Tully, Osmaston Manor Gardens
	Under; good	Under; good	Under; good	Under; good	Under; good	Average; good	Average; good	Under; bad	.....	Thomas Hedley, Lane House Gardens, Kings Walden, Hitchin
	Under; bad	Average; good	Under; very good	Average	Under	Average; good	Over; very good	Average	Under	C. R. Fielder, North Myms Park Gardens, Hatfield
	Under; good	Under; good	Average; very good	.....	.....	.....	Average; good	Average; good	Average; good	C. E. Martin, The Hoo Gardens, Welwyn
	Under	Average	Under	Average	Under	.....	Average	Under	Over	Thos. Rivers & Son, Sawbridgeworth
	Under	Under	Under	Average; good	.....	Average	Over; good	Average	Average	G. Norman, The Gardens, Hatfield House, Hatfield
LEICESTERSHIRE ...	Under; bad	Average; very good	Under; good	Average; good	Under; bad	Average; good	Average; good	Under; good	Over; good	Ed. Beckett, Aldenham House Gardens, Elstree
	Under	Average	Under	Under	.....	.....	Average	Under	Average	A. Wulff, Frithsden Gardens, Great Berkhamsted
	Under; bad	Average; very good	Under; good	Under	.....	.....	Average	Under	Average	Arthur Dye, Tring Park Gardens, Tring
	Under	Average	Average	Under; bad	Average	Average	Over; very good	Average	Average; good	Wm. Whitelaw, Batchwood Gardens, St. Albans
	Under	Average	Under	Average	Under	Average; very good	Average	Average	Average	Hy. Parr, Trent Park Gardens, New Barnet
	.....	.....	Under	Under	.....	Under	Good	Over; very good	.....	G. Milford, Egerton Lodge Gardens, Melton Mowbray
	.....	Under; good	Under; good	Under; good	Under; good	Under; good	Average; very good	Under; good	Under; bad	.....
NORTHAMPTON-SHIRE	Under; good	Average; very good	Average; very good	Average; very good	Over; good	Over; good	Over; good	Over; very good	Under	W. H. Divers, Belvoir Castle Gardens, Grantham
	.....	.....	.....	.....	.....	.....	Under	Average	.....	W. Wadsworth, Barkly Lane, Queensborough
	Under; good	Average; good	Average; good	Average; good	.....	Under; good	Average; very good	Average; very good	Over; good	Robert Johnston, Wakefield Lodge Gardens, Stony Stratford
	Under; good	Average; good	Average; good	Average; good	Under; good	Under; good	Over; very good	Under; bad	Average; good	J. Shennan, Holdenby House Gardens, Northampton
NOTTINGHAMSHIRE.	Under; good	Under	Average; good	Average; good	Average	Average; good	Average	Under	Average	Il. Turner, Fineshade Abbey Gardens, Stamford
	Average; good	Under	Average; good	Average; good	Average	Average; good	Average	Under	Average	J. B. Oundle
	Under; bad	Under; good	Under; good	Under; good	Average; good	Average; good	average; good	Under; good	Under; bad	Amos Parr, Holme Pierrepont Hall Gardens, Nottingham
OXFORDSHIRE	Under; good	Under; very good	Under	Average; good	Under	Over; very good (protected)	Over; very good	Average; good	Under	James Gibson, Welbeck Gardens, Worksop
	Under	Under	Much under	Average	.....	.....	Average	Average; very bad	.....	J. R. Pearson & Sons, Chilwell Nurseries, Loddham
	Under	Average	Under	Average; good	Average	Under	Average	Average	.....	A. W. Culloch, Newstead Abbey Gardens, Nottingham
	Under; good	Average; (on walls) very good	Under; very good	Average; good	Average; good	Average; good	Average; good	Over; very good	Average; good	W. H. Clark, Aston Rowant Gardens, Wallingford
SHROPSHIRE	Under; good	Under	Under	Average; good	Average; good	Under	Average; good	Average; good	Average	John A. Hall, Shiplake Court Gardens, Henley-on-Thames
	Under; good	Under	Under	Average	Under	Average	Over; good	Over; good	Under	A. J. Long, Wyfold Court Gardens, Reading
	Under; bad	Under; bad	Under; bad	Average; good	Average; good	Under; good	Over; very good	Over; very good	Over; good	P. O. Knowles, Friar Park Gdns., Henley-on-Thames
	Under; good	Under; bad	Under; good	Average	Average	Over; good	Over; very good	Over; very good	Average	J. B. Wheatley
	Under; good	Under	Under	Average; good	Average; good	Under	Average; good	Average; good	Average	A. S. Kemp, Broadway, Shifnal
STAFFORDSHIRE	Under; good	Under; good	Under; good	Average; good	Average; good	Average; good	Average; good	Average; fair	Under	James Londen, The Quinta Gardens, Rugeley
	Under	Under	Under	Average	Average	Over	Over; very good	Over; very good	Average	C. Robinson, Pitchford Hall Gardens, Shrewsbury
	Under	Under	Average	Average; good	Average; very good	Average	Under; bad	Over; very good	Average; very good	Thos. Canning, Aldenham Park Gardens, Salop
	Under; good	Under; bad	Under; good	Under; bad	.....	Average; good	Average; very good	Average; good	Average; good	T. Bannerman, Blithfield Gardens, Rugeley
	Under; bad	Average	Under	Under	Average	Average	Average; good	Average	Average; good	G. H. Green, Enville, Stonnbridge
WARWICKSHIRE	Under	Under	Under	Under	.....	Under	Average; good	Under; bad	Under	C. A. Bayford, Shugborough Gardens, Stafford
	Under	Under	Under	Average	.....	Under	Average	Average	Under	G. Woodgate, Kollerton Hall Gardens, Burton-on-Trent
	Average; very good	Under; good	Average; good	Over; very good	Under; good	Under; bad	Over; good	Average; very good	Under; good	Ed. Gilman, Ingestre Gardens, Stafford
	Average; good	Under; bad	Under; bad	Average; good	.....	Average; good	Average; good	Over; very good	.....	John Wallis, Moore, Newcastle
5, Southern Counties.	Under	Under	Under	Under	.....	Under	Under	Average; good	.....	W. Bennett, Rangemore Gardens, Burton-on-Trent
	Under; bad	Under; bad	Under; bad	Average; good	Average; good	Average; good	Average; good	Average; good	.....	H. T. Martin, Stoneleigh Abbey Gardens, Kenilworth
	Under	Under	Under	Under	.....	.....	Over	Over	Under	W. Miller, North Warwickshire
BERKSHIRE.....	Under; bad	Under	Under	Under	Average	Average; fair	Over; very good	Over; good	.....	Thos. Masters, Estate Office, Shuckburgh, Daventry
	Under	Under	Average	Average	Under	Average	Average	Average; good	Under	J. Howard, Benham Park Gardens, Newbury
	Under	Under	Under	Under	Average	Average; good	Average	Average; good	Under	William Eyle, Lockinge Gardens, Wantage

CONDITION OF THE FRUIT CROPS—(continued).

COUNTY.	APPLES.	PEARS.	PLUMS.	CHERRIES.	PEACHES AND NECTARINES.	APRICOTS.	SMALL FRUITS.	STRAW-BERRIES.	NUTS.	NAME AND ADDRESS.
5, Southern Counties.										
BERKSHIRE.....	Under; good	Under; good	Over; good	Average; good	Average; good	Average; good	Over; good	Average; bad	Average	James Coombes, Englefield Gardens, Reading
	Under; bad	Average; fair	Average	Under	.....	Average	Under	Under; bad	.....	Wm. Pope, Highclere Gardens, Newbury
DORSETSHIRE.....	Under	Average	Under	Average	Average	Under	Average; good	Average	Under	T. Turton, Castle Gardens, Sherborne
	Under; good	Under	Average; good	Average; good	.....	Under	Average; good	Under; good	Average	Thos. Denny, Down House Gardens, Blandford
	Under; good	Under; bad	Under	Average	Average	Average; good	Average; good	Under; bad	Under	Ben Campbell, Kingston House Gardens, Dorchester
	Under; good	Average; good	Average; bad	Under; bad	Under; bad	Under; good	Over; bad	Under; good	.....	Alfred Coleman, Motcombe, Shaftesbury
HAMPSHIRE.....	Under; good	Average; good	Under; very bad	Under; very bad	Over; good	Average; good	Average; very good	Over; good	Over; very good	H. Kempshall, Abbotsbury Castle Gdns., Dorchester
	Under; good	Under	Under; bad	(Morello) Average; good	Under; good	Under; bad	Over; good	Under; bad	Over; very good	Arthur Lee, Palace House Gardens, Beaulieu, Brockenhurst
	Average; very good	Average; good	Under	Average; good	Under	.....	Over; very good	Over; very good	Average	Edwin Molyneux, Swanmore Park, Bishop's Waltham
KENT.....	Under; bad	Under	Average	Average	Under; bad	Under	Average	Under; bad	.....	James Wasley, Sherfield Manor Gdns., Basingstoke
	Under; bad	Under; bad	Over; good	Average; good	Average; good	Average	Over	Average; good	Under	J. Bowerman, Hackwood Park Gardens, Basingstoke
	Under; good	Under	Under; bad	.....	Under	Under	Average; good	Over; very good	.....	Noah Kneiler, Malshanger Park Gardens, Basingstoke
	Under; good	Under; bad	Over; good	Average; good	Over; good	Average; good	Over; very good	Under; good	Average	Ernest G. Gilmore, Northbourne Abbey Gardens, Eastry
	Under	Under	Average	Under	Average	.....	Average; good	Over; good	.....	Fredk. Marks, Walmer Place, Walmer
	Under; good	Under; good	Under; good	Over; very good	Average; good	Under; good	Average; very good	Average; good	Under; good	H. J. Knight, Preston Hall Gardens, Aylesford
MIDDLESEX.....	Under	Under	Under	Under	.....	.....	Average	Average	Average	George Woodward, Barham Court Estate Gardens, Keston, Maidstone
	Under	Under	Average	Under	Average	Average	Over	Average	Average	Alfred O. Walker, Ulcombe Place, near Maidstone
	Under; good	Under	Average	Under	Under	.....	Over	Over; very good	Average	Wm. Lewis, East Sutton Park Gardens, Maidstone
	Under	Much under	Over	Under	Average	.....	Average; good	Average; good	Average	Geo. Fennell, Bowden, Hadlow Road, Tonbridge
	Under; good	Under	Under; good	Under	.....	.....	Under; good	Average; bad	Under	B. Champion, Mereworth,
	Under	Under; bad	Under	Under	.....	.....	Average	Average	Under; bad	George Lockyer, Mereworth, Maidstone
	Average; very good	Average; good	Under; good	Average; very good	Under; good	Under; very good	Over; very good	Under; good	.....	W. E. Humphreys, Blendon Hall Gardens, Bexley
	Under	Under	Under	Under	Under	Average	Average	Under	.....	W. Dixon, The Old House Gardens, Walmer
	Under	Average	Under; bad	Under	Average; good	Under; bad	Average; good	Average; good	Under	John Selway, Betteshanger Gardens, Eastney
	Under	Under	Under; bad	Average; good	Average; good	Under	Average; good	Average; good	Average	Geo. Wythes, Syon House Gardens, Brentford, W.
SURREY.....	Average; good	Under	Under	Average; very good	Under; good	.....	Average; good	Over; good	.....	H. Markham, Wrotham Park Gardens, Barnet
	Average	Average	Average	Under	Average	Under	Over	Over; good	.....	James Hudson, Gunnersbury House Gardens, Acton, W.
	Average	Under; bad	Average; under	Average; good	Under	Under	Average; good	Under	Under	W. Watson, Harefield Place, Gardens, Uxbridge
	Over; very good	Under; bad	Under; bad	Under; bad	Average	Average	Average; good	Average; good	Average; good	W. Bates, Cross Deep Gardens, Twickenham
	Average; good	Under	Under	.....	Average; good	.....	Average; very good	Under; good	.....	Robert H. Cronk, Cranford House Gardens, Hounslow
	Under	Average	Under	.....	Under	.....	Average	Average	Average; good	James Hawkes, Osterley Park Gardens, Isleworth
	Under	Under	Under	Under	.....	.....	Under	Under	Average; good	William Bain, Barford Gardens, Dorking
	Under; good	Average; good	Over; good	Average; good	.....	Average; good	Over; good	Over; very good	Average; good	S. T. Wright, R.H.S. Gardens, Wisley, Ripley
	Under	Under	Average	Average; good	Under	Under	Average; good	Average; very good	Average	W. P. Bound, Gotton Park Gardens, Reigate.
	Average; good	Under; good	Over; very good	Over; very good	Average; good	Average; good	Over; very good	Under; good	Average; good	C. W. Knowles, Bagshot Park Gardens, Bagshot
SUSSEX.....	Under	Under	Average; good	.....	Average; good	Under	Over; very good	Under	Average; good	G. J. Hunt, Ashstead Park Gardens, Epsom
	Under; bad	Average	Average; good	Average	Average; good	.....	Average	Under	.....	W. Wilks, (Rev.), Shirley Vicarage, Croydon
	Under; good	Under; good	Average; good	Average; good	Average; good	Under; bad	Over; good	Under; bad	Under	W. Honess, Cobham Park Gardens, Cobham
	Under; bad	Average	Average; good	Average	Average; good	.....	Average; good	Under	Under	C. J. Salter, Woodhatch Lodge Gardens, Reigate
	Under; good	Under	Under	Average; good	Average	Under	Average; good	Average	.....	Alexander Dean, 62, Richmond Road, Kingston-on-Thames
	Under	Under	Under	Average; good	Under	Average; very good	Under	Under	Under	Geo. Kent, Norbury Park Gardens, Dorking
	Under; good	Under; good	Under; good	Under	.....	.....	Average; good	Average; very good	Under	Geo. Hal-ey, Riddings Court Gardens, Caterham
	Under	Under	Average; good	.....	Average; good	Under	Over; very good	Under	Average; good	W. C. Leach, Albury Park Gardens, Guildford
	Under; bad	Average	Average; good	Average	Average; good	Average	Over; good	Under; bad	Average; good	A. Wilson, Eridge Castle Gardens, Tunbridge Wells
	Under; good	Under; good	Average; good	Average; good	Under; good	.....	Average; good	Average; good	Average; good	Alex. Reid, Possingworth Gardens, Cross-in-Hand
SUSSEX.....	Under; bad	Average; good	Under	Average; good	Average; good	.....	Over; good	Average; good	.....	W. H. Smith, West Dean Park Gardens, Chichester
	Under; very good	Average; very good	Average; very good	Average; good	Over; good	.....	Over; very good	Average; good	Over; good	Wm. Brunson, Brambletye Gardens, East Grinstead
	Under; bad	Under; bad	Average; very good	Over; very good	Average; good	Under; very good	Average; good	Under; bad	Average; good	Geo. Grigg, Ashburnham Place Gardens, Battle
	Under; good	Average; very good	Average; good	Average; very good	Under	.....	Over; very good	Over; very good	Over; good	Chas. Jones, Ote Hall Gardens, Burgess Hill
	Average; good	Average; good	Under; bad	Under; bad	Average; good	.....	Over; very good	Average; good	Under; bad	C. Allen, Worth Park Gardens, Crawley
	Average; good	Under; good	Under	Under; good	Average; good	Average; good	Over; very good	Over; very good	Average; good	E. Burbury, Arundel Gardens, Arundel
	Under	Average	Under	Under	Average	Average	Over	Under	Average	H. C. Prinsep, Buxted Park Gardens, Uckfield

CONDITION OF THE FRUIT CROPS—(continued).

COUNTY.	APPLES.	PEARS.	PLUMS.	CHERRIES.	PEACHES AND NECTARINES.	APRICOTS.	SMALL FRUITS.	STRAW-BERRIES.	NUTS.	NAME AND ADDRESS.
5, Southern Counties.										
WILTSHIRE	Under	Under	Average	Under	Under	.....	Average ; good	Under	.....	Henry Gandy, Longleat Gardens, Warminster John Banrerman, Lackham Gardens, Lacock Thomas Challis, Wilton House Gardens, Salisbury George Brown, Bowood Gardens, Calne W., Malmesbury
	Under	Under ; good	Average	Under	Under	Average	Average ; good	Average ; good	Under	
	Under ; good	Under ; good	Under ; bad	Under ; good	Average ; very good	Average ; good	Over ; good	Over ; good	Over ; good	
	Under ; good	Under ; good	Under ; good	Average ; good	Average ; good	Under ; good	Under ; good	Average ; good	.....
	Under	Under	Under	Under	Under	Under	Over ; good	Under ; good	.....
	Under ; good	Under ; good	Over ; very good	Average ; good	Average ; very good	Average ; good	Over ; very good	Under ; good	Over ; very good	S. W. Tucker, Longford Castle Gardens, Salisbury
7, England, N.W.										
CUMBERLAND.....	Under ; bad	Under ; bad	Under ; good	Average ; good	Average ; good	Over ; very good	Average ; very good	Average ; very good	.....	A. L. Statham, Eden Hall Gardens, Lagwathby
LANCASHIRE	Average ; good	Under	Under	Average ; good	Average ; Under	.....	Average ; good	Average ; very good	.....	Wm. P. Roberts, Cueden Hall Gardens, Preston
	Under ; good	Under ; good	Under	Average	.....	.....	Average ; good	Average ; good	.....	E. F. Hazellon, Knowsley Gardens, Prescot
	Average	Under	Under	Under	.....	.....	Average	Over ; good	.....	Wm. Ashton, Wroughtingon Hall Gardens, Wigau
WESTMORELAND	Under	Under	Under	Under	.....	Under	Average	Average	.....	F. Clarke, Lowther Castle Gardens, Penrith
	Under ; bad	Under ; bad	Under ; bad	Under	.....	.....	Average ; good	Under ; bad	.....	W. A. Miller, Underley Gardens, Kirkby Lonsdale
	Under ; bad	Under ; bad	Under ; bad	Under ; bad	Average ; good	.....	Average ; very good	Average ; good	Under	W. Gibson, Levens Hall Gardens, Milnthorpe
8, England, S.W.										
CORNWALL	Under	Average	Under	Morellos under	Average	.....	Over	Average ; very good	.....	A. Mitchell, Tehidy Park, Camborne
	Under ; good	Under ; good	Under ; good	Average ; good	Under ; good	.....	Over ; very good	Average ; very good	.....	Alfred Read, Port Eliot, St. Germans
	Under ; good	Under ; good	Under	Average ; good	Under	Under	Over ; very good	Average ; very good	Average	A. C. Bartlett, Pencarrow Gardens, Washaway
	Under	Under	Under	.....	Average	.....	Over	Average	.....	Wm. Sangwin, Trelissick Gardens, Truro
	Under	Under	Under	.....	Under	.....	Average ; good	Average ; good	.....	Richd. Gill, Tremough Gardens, Penryn
	Average	Under	Average	Average ; good	Under ; bad	Under ; bad	Over ; very good	Over ; very good	.....	W. H. Bennett, Menabilly Par Station
DEVONSHIRE	Average ; good	Much under ; fair	Under ; bad	Under ; good	Under ; bad	Average ; good	Average ; good	Over ; very good	Average ; good	Andrew Hope, 38, Prospect Park, Exeter
	Under ; bad	Under ; bad	Under ; bad	Under	Under	.....	Over ; very good	Over ; very good	Under	Geo. Baker, Membrand Gardens, Newton Ferrers, Plymouth
	Under	Under	Under	Average	Average ; very good	Average ; very good	Average ; very good	Average ; very good	Average	James Mayne, Bicton Gardens, East Budleigh
	Average	Under	Under	Under	Average	Average	Over	Average ; good	.....	G. Foster, Teignmouth, Devon
	Under ; good	Under ; bad	Under ; good	Average ; good	Over ; very good	.....	Over ; good	Over ; very good	Over ; very good	C. W. Bloye, Pinhay Gardens, Lyme Regis
	Under	Under	Average	Under	Under	Under	Average ; good	Average ; good	Average	T. H. Shade, Poltimore Gardens, Exeter
	Under ; good	Under ; good	Under ; good	Under ; bad	Average ; good	.....	Average ; good	Average ; good	Under	T. Seward, Saltram Gardens, Plympton
	Under ; good	Under ; poor	Under ; good	Average ; good	Under ; good	Over ; good	Over ; very good	Over ; good	Average ; good	S., Pynes
GLOUCESTERSHIRE...	Average	Under	Under	Under	Average	Under	Over ; very good	Under ; bad	Average	William Keen, Bowden Hall Gardens, Gloucester
	Under ; good	Average ; good	Average ; good	Average ; good	Under ; good	Average ; good	Over ; good	Average ; good	Over ; good	John Bunting, Tortworlb Gardens, Falfield
	Under	Under	Under	Average	Average	Average	Over ; good	Average ; bad	Over	W. H. Berry, Highnam Court Gardens, Gloucester
HEREFORDSHIRE ...	Under ; good	Under ; good	Average ; good	Total failure	Average ; good	Average ; good	Average ; good	Over ; good	Average ; good	John Watkins, Pomona Farm, Withington, Hereford
	Under	Under	Under	Under	.....	Under	Average ; good	Average ; good	Over	Thos. Spencer, Goodrich Court Gardens, Ross
	Under ; good	Under ; good	Average ; good	Average ; good	Under ; bad	.....	Over ; very good	Average ; good	Over ; very good	F. Clark, Shobdon Court Gardens, Shobdon
	Under ; good	Under ; good	Under ; good	Over ; good	Over ; very good	Average ; good	Over ; very good	Under ; bad	Over ; very good	George Mullins, Eastnor Castle Gardens, Ledbury
	Under	Under	Under	Average	Under	Under	Over ; very good	Average ; good	Average	C. Smith, Barton Court Gardens, Cotwail, Malvern
MONMOUTHSHIRE ...	Under	Under	Under	Under	Average	Under	Over ; good	Over	Under	John Lockyer, Park Gardens, Pontypool
	Under	Under ; good	Average ; good	Average	Average ; very good	Average	Over ; very good	Average ; good	Average	W. F. Wood, Llanfrechfa Grange Gardens, Caerleon
	Under ; good	Under ; good	Under ; good	Under	Average ; good	Under ; good	Average ; good	Average ; very good	Average	Thos. Coomber, The Hendre Gardens, Monmouth
	Under	Under	Average	Average	Under	Under	Average ; good	Average ; small	Over	Henry Townsend, Maindife Court Gdns., Abergavenny
	Under ; good	Under ; good	Under ; good	Under	Under	.....	Average ; good	Average ; good	.....	J. Basham, Fair Oak Nurseries, Bassaleg, near Newport
SOMERSETSHIRE	Average ; good	Under ; bad	Average ; good	Under ; bad	Under ; bad	Average	Over ; very good	Over ; very good	Average ; good	William Hallett, Cossington, Bridgwater
	Under ; bad	Under ; very bad	Under ; good	Average ; bad	.....	Over ; very good	Over ; good	Average ; good	Under ; bad	John Crook, Forde Abbey Gardens, Chard
	Average	Under	Under	Under	Under	Under	Over ; very good	Over	Over	Samuel Kidley, Chipley Park Gardens, Wellington
WORCESTERSHIRE ...	Average	Under	Average	Average	Under	Average	Over	Over	Over	A. Young, Witley Court Gardens, Stourport
	Under ; good	Under ; good	Average ; good	Average ; small	Average ; good	Over ; very good	Over ; good	Average ; good	Over ; good	Wilm. Crump, Madresfield Court Gardens, Malvern
	Under ; good	Under ; good	Under ; bad	Under ; good	Average ; very good	Average ; very good	Over ; very good	Over ; very good	Under	F. Jordan, Impney Gardens, Droitwich
WALES—										
ANGLESEA	Average ; good	Under ; good	Under ; bad	Average ; good	.....	.....	Average ; very good	Average ; very good	.....	Thos. Marsh, Penrhos Gardens, Holyhead
BRECONSHIRE	Under ; very good	Under ; bad	Under ; bad	Under ; very good	Under ; good	Under ; good	Over ; good	Over ; very good	.....	Albert Ballard, Glanusk Park Gardens, Crickhowell
CARMARTHENSHIRE	Under ; bad	Under ; bad	Under ; bad	Average ; good	Under ; bad	.....	Average ; very good	Over ; very good	Under	William Parker, Neuaddlawr Gardens, Llandovery
CARNARVONSHIRE...	Under	Under	Under	Average	Average	.....	Over ; good	Average ; good	.....	H. Weaver, Vaynoi Park Gardens, Bangor
	Under	Under	Under	Under	.....	.....	Over ; very good	Over ; very good	Average	T. Evans, Gwydyr Castle Gardens, Llanrwst
	Under ; bad	Under ; bad	Under ; bad	Under ; bad	.....	Under ; bad	Average ; good	Under	.....	Walter Speed, Penrhyn Castle Gardens, Bangor
DENBIGHSHIRE	Under	Under	Under	Average ; good	Average ; good	Over ; very good	Over ; very good	Over ; extra good	Average	W. Weir, Rhosnessney, Wrexham

CONDITION OF THE FRUIT CROPS—(continued).

COUNTY.	APPLES.	PEARS.	PLUMS.	CHERRIES.	PEACHES AND NECTARINES.	APRICOTS.	SMALL FRUITS.	STRAW-BERRIES.	NUTS.	NAME AND ADDRESS.
WALES—										
FLINTSHIRE	Under	Under	Under	Average	Under	Average	Average	Over; very good	Average; good	John Forsyth, Hawarden Castle Gardens, Chester
GLAMORGANSHIRE	Under; good	Average; good	Under; good	Under	Over; very good	Over; very good	Over; very good	Over; very good	Average	R. Milnes, Margam Park Gardens, Port Talbot
MERIONETHSHIRE...	Under; good	Under; very good	Under; good	Under; good	Average; very good	Over; very good	Over; very good	Average; good	.....	Hugh A. Pettigrew, St. Fagan's Castle Gardens, nr. Cardiff
PEMBROKESHIRE ...	Average	Under; bad	Average	Average	Average	.....	Average; good	Average; good	Average	J. S. Higgins, Rhŷg Gardens, Corwen
IRELAND—										
9, Ireland, N.										
GALWAY .....	.....	Under; bad	Under; good	Average; good	.....	.....	Average; good	Under; bad	.....	Thomas Dunne, Lough Cutra Castle Gardens, Gort
LONGFORD	Under; good	Average; good	Under; good	Average; good	.....	.....	Average; very good	Over; good	.....	Andrew Porter, Woodlawn Gardens
MAYO.....	Under	Average	Average	Average	Average	.....	Over; very good	Over; very good	Average	John Rafferty, Castle Forbes Gardens, Newtownfortes
TYRONE	Average; good	Under; good	Under; good	Average; good	Under; good	.....	Average; good	Over; very good	Average; bad	Patriek Connolly, Cranmore Gardens, Ballinrobe
CLARE	Under	Average; good	Under	Under	.....	.....	Average; good	Average; very good	.....	Fred W. Walker, Sion House Gardens, Sion Mills
10, Ireland, S.										
CORK	Under; bad	Under; bad	Under; bad	.....	.....	.....	Over; very good	Over; very good	.....	William Clarke, Castle Crine Gardens, Sixmilebridge
KILDARE	Under; good	Under; good	Average; very good	Under; good	Under; bad	Average; good	Average; good	Average; very good	.....	C. Price, Mitchelstown Castle Gardens
KILKENNY	Under	Under	Under	Over; good	Under	Under	Average; good	Average; good	.....	Frederick Bedford, Straffan House Gardens
ROSCOMMON	Average; good	Under; bad	Average; good	Average; good	.....	Under; good	Average; very good	Average; very good	Over; good	Henry Carlton, Castle Gardens, Kilkenny
WATERFORD	Under	Under	Average	Average; good	Under	.....	Average; good	Average; good	Average	Terence Rogers, Frenchpark House Gds., Frenchpark
LIMERICK.....	Average; good	Average; good	Under; good	Over; very good	Average; very good	.....	Over; very good	Under; bad	.....	Thomas Dunn, Stranally Castle Gardens, Tallow
CHANNEL ISLANDS—										
GUERNSEY	Average	Under	Under	Average; good	Under	Average	Over; very good	Over; very good	.....	W. Bowles, Adare Manor Gardens, Adare
JERSEY	Under; good	Under; very good	Under	Average; good	Under	Under	Average; good	Average; good	.....	C. Smith & Son, Caledonia Nursery
ISLE OF MAN.....	Under; very good	Under	Under	Average; good	Under	.....	Over; very good	Under	.....	H. Becker, The Nurseries, Five Oaks
	Under	Under	Under	Under	.....	.....	Average	Average	.....	R. Reid, Spring Grove, St. Lawrence
										James Inglis, The Nurseries, Brunswick Road, Douglas

SUMMARY.

Records.	Apples.	Pears.	Plums.	Cherries.	Peaches.	Apricots.	Small Fruits.	Straw-berries.	Nuts.	
SCOTLAND.										
Number of Records	(50)	(47)	(45)	(47)	(29)	(21)	(49)	(50)	(9)	
Average	9	17	25	33	9	9	29	29	1	
Over	2	0	3	5	1	3	14	14	1	
Under	39	30	20	10	10	9	6	7	7	
ENGLAND.										
Number of Records	(192)	(190)	(191)	(180)	(152)	(139)	(192)	(191)	(134)	
Average	25	48	50	104	84	63	97	94	66	
Over	1	1	10	10	5	15	73	44	24	
Under	163	141	131	66	63	61	22	55	45	
WALES.										
Number of Records	(12)	(12)	(12)	(12)	(7)	(7)	(12)	(12)	(6)	
Average	2	1	1	6	4	2	5	4	5	
Over	0	0	0	0	1	3	7	7	0	
Under	10	11	11	6	2	2	0	1	1	
IRELAND.										
Number of Records	(12)	(12)	(12)	(7)	(7)	(4)	(12)	(12)	(4)	
Average	4	4	4	3	2	2	8	5	3	
Over	0	0	0	2	0	0	4	5	1	
Under	8	8	8	2	5	2	0	2	0	
CHANNEL ISLANDS.										
Number of Records	(4)	(4)	(4)	(4)	(2)	(2)	(4)	(4)	0	
Average	1	0	1	2	0	0	3	2	0	
Over	0	0	0	0	0	0	1	1	0	
Under	3	4	3	2	2	2	0	1	0	

The Week's Work.

PLANTS UNDER GLASS.

By A. BULLOCK, Gardener to E. J. WYTHES, Esq.,
Copped Hall, Epping, Essex.

"Rex" Begonias.—In order that the plants may fully develop size and brightness of foliage, they should be planted out on a wall prepared for the purpose where there is shade and moisture with ample light. Young plants can be easily raised at the present time from perfectly developed leaves, which should be laid on the surface of silver sand or cocconut-fibre in boxes, and made secure by means of wire pegs. The boxes should be stood in a shady position in a house having a warm, moist atmosphere, and be syringed occasionally.

Philodendron Lindeni is another useful plant that is seen to the best advantage when growing from a wall together with *"Rex" Begonias*, of secured to the pillars in a stove-house. The best method of propagation is to divide an old plant, that has become leggy, into pieces consisting of two or three joints in each, and inserting them singly in small pots, and plunging them in a bottom-heat, where they will make roots quickly. Plants propagated at the present time will be useful for planting out next spring.

Passiflora quadrangularis.—This is one of the most useful stove climbing flowering plants that should be selected if it is desirable to cover a large area quickly. The plant gives little trouble beyond that of regulating the growths occasionally, and of maintaining an abundance of moisture at the roots and overhead. Well-matured growths, if cut in pieces of about a foot in length and inserted in cocconut fibre, will make roots readily, and should afterwards be taken out and potted-up. When again established they may be planted-out.

Eucharis grandiflora.—Those plants that flowered some time ago will by now have completed their growth, and should be afforded rest by removing them to slightly cooler quarters. Less water at the roots will be required, but on no account must they be allowed to become dry. Let the foliage be sponged carefully with soft-soap and water, and by this means remove all traces of mealy-bug and thrips.

Smilax (Asparagus medeoloides), &c.—This useful decorative plant requires little attention beyond that of supplying water to the roots and of supporting the growths with some string strung vertically. Continue to propagate *Tradescantias*, *Oplismenus Burmanni variegatus (Panicums)*, and other "edging" plants, to replace those that have become ragged and untidy.

THE ORCHID HOUSES.

By W. H. YOUNG, Orchid Grower to Sir FREDERICK
WIGAN, Bart., Clare Lawn, East Sheen, S.W.

Cypripedium Lawrenceianum.—The essential needs of this easily-cultivated decorative species are as follows: Considerable heat and moisture, and rather dense shading, conditions that can generally be supplied in any East Indian-house. Having recently flowered, the plants, which are most effective when grown as specimens, should, where needed, be pulled to pieces and remade. Use moderately large and shallow pans half filled with drainage material, and as a rooting medium equal parts of turfy peat and sphagnum-moss. Separate the old back growths from the one which flowered last, and select pieces from the latter of average size and merit to make the new specimens. The potting material should be applied rather loosely, but sufficiently firm to secure the growths in position. When completed, place the plants on a bench in the conditions described above, and afford them water overhead almost daily. The old portions of the plants should be placed on a moist stage until many of them push forth new growths, when these in turn may be converted into other specimens. *C. Gowerii*, a hybrid from the above species and *C. Curtisii*, is also a very desirable kind, and will thrive under similar conditions and treatment, though, being at present rare, pots rather than pans will be suitable.

Cypripedium barbatum.—Since hybridisation has given us so many more attractive flowers this species has been somewhat relegated to the

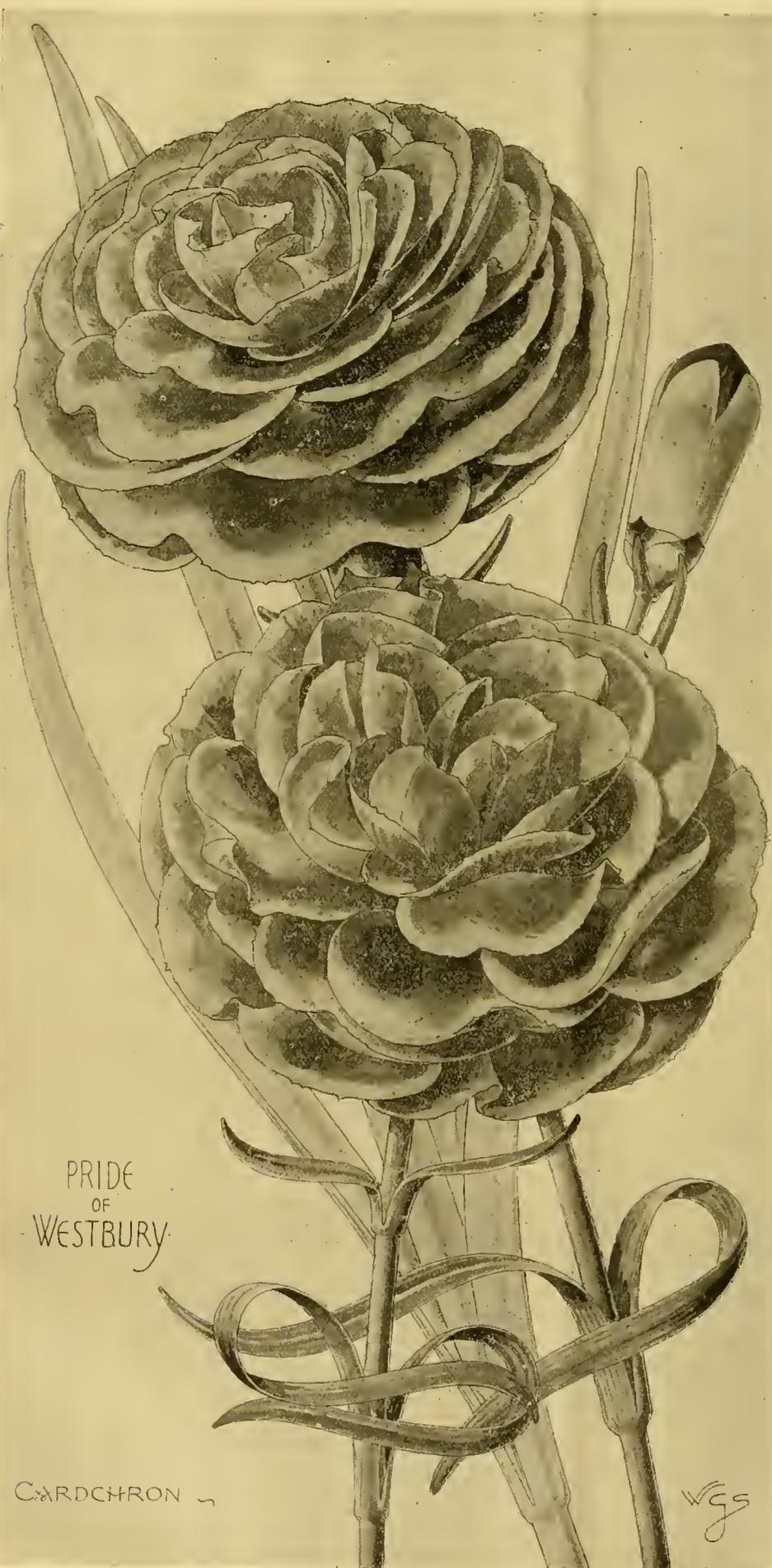


FIG. 30.—BORDER CARNATION, PRIDE OF WESTBURY: COLOUR OF FLOWERS CHERRY-RED,

For which Sir Samuel Scott obtained an Award of Merit at the
Royal Horticultural Society's Meeting on July 4.

background. It is, however, a useful kind for supplying flowers for cutting, as some varieties, such as *C. b. nigrum*, *C. b. giganteum*, and the pretty *C. b. Warneri*, have decided merit. Culturally they may be treated in the same manner as the above, and should there be a spot where they cannot be staged, plants of this species may be placed there. In the Phalænopsis-house here, a portion of the stage, being too near the suspended plants to allow of its being used in the ordinary way, is covered with *C. barbatum*, which thrives so well that two crops of bloom are yielded annually. A thin layer of crocks is placed on the stage, and the plants are held in position with a thin, loose layer of peat and sphagnum-moss. Water overhead is afforded abundantly whenever the least sign of dryness appears.

Cypripedium callosum would not call for any special notice were it not for the remarkable variety known as *C. c. Sanderæ*, which should be in every collection. Plants of the typical forms should be grown in good-sized, well-drained pots or pans in a situation as advised for *C. Lawrenceanum*. They should not be disturbed at the roots except when it is absolutely necessary, but it is essential that the plants should have fresh, sweet surface materials. To increase the number of growths divide the rhizomes of the back growths with a thin-bladed knife, being careful not to detach any of the living roots. *C. x Maudia*, a hybrid between *C. c. Sanderæ* and *C. Lawrenceanum* Hyeanum is a superior form, which deserves to become very popular.

Sophranitis grandiflora.—This attractive Orchid is now pushing forth new growths, which in due course should each produce brilliantly-coloured flowers. The plants should at this season occupy a position far removed from the roof-glass, on a stage in the coolest and most shaded house. They may be grown in well-drained pots or pans in ordinary Orchid compost, or in one having a little decaying Oak leaves introduced. When the latter is used more of compost is necessary, and the surface should consist of sphagnum-moss alone. Repotting or renovation of the surface may be carried through in the near future, afterwards keeping the materials moist by spraying or careful watering. Vigorous root action does not take place until later in the season, but when it occurs a good supply of water is needed. Hybrids between this and other Orchids need treatment in accordance with the known peculiarities of the other species concerned. If the hybrids are from *Cattleya anrea*, moderate heat is needed, but if from *C. Harrisonia*, cooler treatment is desirable.

THE HARDY FRUIT GARDEN.

By W. H. CLARKE, Gardener to Sir WILLIAM PLOWDEN, Aston Rowant House, Oxon.

Watering.—This is an important operation in fruit cultivation, and the weather this season being very dry, particular attention should be given to trees growing on walls. The raised border keeps the roots of the trees drier than the other parts of the garden, and the bricks and mortar below the surface absorb a large amount of moisture. In many gardens such borders will have been mulched some time ago, and this is a great help in hindering the sun's rays from extracting the moisture from the soil. For the production of fine fruit, moisture is essential. Trees which are swelling crops should be given periodical waterings—one or two applications weekly will not be too much on light, porous soils; but soils of a more retentive character will not require water so frequently. Liquid-manure may be given at each alternate watering, either poured on to the ground and watered-in immediately afterwards with clear water, or diluted before application. Where this cannot be procured in sufficient quantity, one or other of the well-known commercial manures may be used according to the instructions issued with each; be careful to apply less rather than more than is recommended. Trees ripening their fruits should not be so watered, otherwise they will split.

Trees planted last season will require sufficient water to keep them growing and healthy, and in many instances the formation of fruit-buds on such trees requires an extra amount of nourishment.

Apricot and Peach-trees should be examined daily, as the earlier varieties are now ripening. For home consumption only the ripe fruits should be gathered, but those required for packing should be gathered before they are quite ripe, as they will ripen during the journey, and there is less risk of bruising them. Care should be given in taking these fruits from the tree, as some varieties adhere to the branch much more closely than do others. What pressure is needed should be applied at the base of the fruit next the branch, the fingers so holding the fruit that no bruise will result.

Strawberry-beds.—Where the fruit has been gathered the beds may now be cleared of all runners, removing with a sharp knife the oldest leaves from the plants; but do not denude them severely of foliage, or it will check the building-up and formation of fruiting crowns for another season. Clear the beds of all weeds and the straw mulching, stirring the surface-soil afterwards with a Dutch hoe.

Birds.—In consequence of the dry weather and the absence of other food for birds, all small fruits must be protected from them by netting.

FRUITS UNDER GLASS.

By F. JORDAN, Gardener to Dr. CORBET, Impney Hall Gardens, Droitwich.

Pines.—Now that most of the fruits have been cut from the early Queens, thoroughly cleanse the pit and make it ready to receive the smooth Cayennes and other winter-fruiting plants, which generally show the fruit at about the present time. It is not always advisable to put in much fresh fermenting material at this season of the year. The quantity required to keep up a steady bottom-heat of 85° to 90° will depend on the amount of fresh material that was put in last winter. All the material, however, should be cleared out of pits at least once each year in order to get rid of crickets, cockroaches, &c., and the walls should be well washed with hot lime-wash. Plunge the plants at distances of 2 feet apart, and give careful attention to ventilation, watering, and to keeping the atmosphere moist, using as little fire-heat as possible in all the divisions.

Succession Plants.—The re-arrangement of the first division will cause the second division to need filling up, and unless a sufficient number of plants are in their fruiting pots, others that require potting should be attended to at once. Do not disturb the beds very much to induce a flush of bottom-heat. Keep the plants growing steadily until it is time to rest them, by ventilating the pit freely during the early part of the day, but closing it again early in the afternoon, with plenty of moisture.

Suckers.—The general stock of suckers from the early Queens should now be potted up, although it is best to pot up a few of the strongest at intervals as they become large enough. Use pots 6 to 8 inches in diameter, according to the size of the suckers, plunging them in an old pit with sufficient fermenting material to keep the bottom-heat at about 90°, care being taken first to thoroughly cleanse the pit. Afford water sparingly until root action has commenced, and spray the plants overhead each afternoon at closing time, keeping the atmosphere of the pit rather close and moist for a few weeks. Shade the plants lightly during the brightest part of the day, gradually increasing the ventilation and withdrawing the shading as the plants become rooted.

Cucumbers.—Young plants may now be planted or seeds may be sown to succeed those that have been fruiting during the summer months. These plants will then supply fruits during the autumn. Those intended for winter-fruiting may be grown sturdily, and have all the early fruits removed from them. Where plants which have fruited are allowed to remain, remove any old growths if the plants show signs of weakness from over-cropping, and afford them a light rich top-dressing, and stimulants to encourage fresh growth. Sow seeds at about the middle of next month for winter-fruiting, and encourage them to make strong, sturdy growth by free ventilation, planting them in a compost containing rather more loam than is generally used for Cucumbers.

THE KITCHEN GARDEN.

By W. FYFE, Gardener to Lady WANTAGE, Lockinge Park, Wantage.

Celery.—The maggot of the Celery-fly has been very active in some quarters this season. The only remedy which I have found to answer is to crush the grub between the finger and thumb, removing and burning the affected parts of the foliage. If an insecticide were used sufficiently strong to kill the maggot the plant would most assuredly suffer, as the maggots have hatched from eggs deposited between the upper and under surfaces of the leaf. Plants intended for September supply will now be well advanced, and should have all suckers removed. Keep the outer leaves tied well together by the use of raffia, making sure that this is not tied sufficiently tight to break or injure the centre leaves, which are the edible portion of the plant. Afford the plants liberal supplies of water, with occasional doses of diluted liquid manure. The Celery is a gross-feeding, free-rooting plant. It will be found by this time that at the surface of the trenches there is a mass of fibrous roots which will be considerably benefited by a top-dressing of some light, rich material. This top-dressing will assist in keeping the plants from "bolting." Celery intended for exhibition in August will require close attention in order to get it perfectly clean and well blanched. I have found the benefit upon many occasions of removing all the blanching material, thoroughly washing the plants with clear water, removing insects or decaying substances, and then applying fresh and clean material.

Carrots sown for pulling in the autumn may be thinned to 3 inches apart. When rain is apparent apply a good dusting of soot. Take every opportunity to destroy weeds in this and every quarter of the garden.

Onions that were raised in autumn and were transplanted in the spring should have their necks twisted, with the object of obtaining better maturation in the bulbs by preventing an over-development of top-growth. Pull any that are already matured and expose them to the sun, where they will become of good condition for storing.

Parsley.—The present is a good time to sow seeds for raising plants to supply Parsley during winter. Sow the seeds in drills 1 foot apart in different aspects, so arranged that frames may be placed over the plants. Splendid Curled is an excellent variety.

THE FLOWER GARDEN.

By W. A. MILLER, Gardener to Lord HENRY C. BENTINCK, M.P., Underley Hall, Westmoreland.

Roses.—Budding is the principal mode of propagation. If stocks of Briar standards, cuttings, or seedlings were planted out last winter, they will soon be ready to be operated on. Choose plump, half-ripened buds. If standards are used, bud on the medium-sized laterals as near to the main stem as possible. The shoots should not be more than half ripened, with the sap flowing freely, so that the wood will lift easily from the bark. Use a sharp knife, and have lengths of raffia about 12 inches long in readiness for tying around the inserted buds. Propagation by layering can be done at the present time. Choose for this purpose moderate and firm growths that are not quite ripened. Bend the shoot, make an incision, and split up the stem about 3 inches. Remove the soil 3 inches deep or so, then peg the shoot into the hole firmly, and tie it to a neat stake, filling in around the split part with a compost of sandy soil, which should be made rather firm.

Wallflowers should be transplanted as soon as they are large enough to handle. When they have become established after the transplanting, pinch the tops from the plants, which will make them dwarf and of bushy habit.

Cyclamen hederifolium.—The seed of this will soon be ripe. Cyclamen seed is best sown when freshly gathered, so prepare pans containing a light compost and place them in a shady frame.

English Iris.—If beds of these have become overcrowded or the bulbs are too near the surface they should be lifted when ripe, replanting them in light, rich, sandy soil, in a position that is fully exposed to the sun yet is sheltered from strong winds and is well drained.

APPOINTMENTS FOR AUGUST.

JULY 31 to	AUG. 15	{ National Horticultural Exhibition at Bruges, Belgium.
TUESDAY,	AUG. 1	{ Royal Horticultural Society's Committees Meet.
WEDNESDAY,	AUG. 2	{ Midland Carnation and Picotee Society's Show at Birmingham (2 days). Chesterfield Horticultural Society's Show.
MONDAY,	AUG. 7	{ Bank Holiday. Basingstoke Horticultural Society's Exhibition. Dudley Horticultural Society's Exhibition. Seaham Harbour Horticultural Exhibition. Ramsey Horticultural Show (2 days).
TUESDAY,	AUG. 8	{ Flower Show in Abbey Park Leicester.
WEDNESDAY,	AUG. 9	{ Exmouth Horticultural Society's Show.
THURSDAY,	AUG. 10	{ Royal Botanic Society (Anniversary Meeting).
TUESDAY,	AUG. 15	{ Royal Horticultural Society's Committees Meet.
WEDNESDAY,	AUG. 16	{ Harpenden Horticultural Show Wilts Horticultural Society's Show.
THURSDAY,	AUG. 17	{ Taunton Deane Horticultural Society's Show.
SATURDAY,	AUG. 19	{ Sheffield Flower Show.
TUESDAY,	AUG. 22	{ Brighton Horticultural Society's Show (2 days).
WEDNESDAY,	AUG. 23	{ Shropshire Horticultural Society's Exhibition at Shrewsbury (2 days). Flower Show at Arundel.
THURSDAY,	AUG. 24	{ Aberdeen Flower Show (3 days).
SATURDAY,	AUG. 26	{ Hawick Flower Show.
TUESDAY,	AUG. 29	{ Royal Horticultural Society's Committees Meet.
WEDNESDAY,	AUG. 30	{ Bath Floral Fête.

SALES FOR THE WEEK.

TUESDAY, AUGUST 1—
Sale of the Lease and Goodwill, followed by the Stock of Seeds and Utensils in Trade re Jacob Wrench & Sons, Ltd. By Protheroe & Morris, on the Premises, 29, King William Street, E.C.

WEDNESDAY, AUGUST 2
219 cases of *Lilium Harrisii*, 9,000 *Freesias*, &c., at Protheroe & Morris' Rooms, 67 & 68, Cheapside, E.C., at 1 o'clock.

(For further particulars see our Advertisement columns.)

AVERAGE TEMPERATURE for the ensuing week, deduced from observations of Forty-three Years at Chiswick—63°2.

ACTUAL TEMPERATURES:—

LONDON.—Wednesday, July 26 (6 P.M.): Max. 85°; Min. 65°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—Thursday, July 27 (10 A.M.): Bar., 30.1; Temp., 75°. Weather—Dull.

PROVINCES.—Wednesday, July 26 (6 P.M.): Max. 78°, Guildford; Min. 67°, N. of Ireland.

The Fruit-Growing Industry.

FOR many years the desirability of making an exhaustive inquiry into the conditions and prospects of the fruit-growing industry has been widely recognised. Some time since a well-considered scheme for such an investigation was set out by an organisation concerned in the promotion of fruit-culture, which was warmly supported by a few large landowners, amongst whom a former Duke of Bedford was prominent. The funds required, however, for a private enquiry were necessarily large, and a sufficient sum could not be raised to carry out the work efficiently, and it was in consequence dropped.

The Committee appointed by Lord Onslow in December, 1903, "to inquire into and report upon the present position of fruit culture in Great Britain, and to consider whether any further measures might with advantage be taken for its promotion and encouragement," have completed a very important task, and appear to have performed their work in a thoroughly satisfactory manner. The Report recently

issued (to which reference has been previously made) is practically a summary of the evidence taken, of the conclusions arrived at, together with the recommendations made by the Committee. Whether the full Report, including the questions and answers, will be published later is not stated; but it is very desirable that this should be issued, as much additional information would be afforded.

Some care seems to have been exercised in the selection of representative and independent witnesses, though the number might have been extended with great advantage by the inclusion of some ten or twelve exceptionally qualified men, who appear to have been strangely overlooked.

In the course of an investigation like this omissions must inevitably occur, but it is remarkable that no cognisance whatever has been taken of the effects upon the fruit industry of climatal variability. Yet the growers' returns, the market rates, and the whole aspect of the fruit-growing question must depend ultimately upon this. Perhaps it was considered as outside the work of the Committee because no remedy could be suggested, but it has a most important bearing upon the prospects of the industry and the limits within which extension is desirable or likely to yield reliable returns. In this connection the annual returns of the fruit crops in Great Britain, which have been published by the *Gardeners' Chronicle* for over forty years, with the expenditure of much labour and money, would have furnished important information that would have well repaid careful analysis. These also have been quite ignored by the Committee, though every matter bearing upon their inquiry should at least have had some consideration. The report for the present year is given in the current issue (see pp. 82—87).

Insufficient attention has been paid to the fact that a large portion of modern commercial fruit-growing is only a part of highly developed market-gardening, and the more generally the cultivator works upon this plan the better the average results. Ample proof could have been afforded of this in some of the districts visited by the Committee, and many of the most successful growers would refer their success mainly to having early learnt the imprudence of having "all their eggs in one basket." Intensive cultivation—i.e., the best form of market gardening or market farming, including as much fruit as can be safely and satisfactorily depended upon—is giving by far the largest returns from the land at the present time, and is most promising for the future. We cannot, therefore, help regarding it as a mistake on the part of the Committee that these points have not been adequately dealt with.

Turning to the Report it will only be possible to glance at the inquiry in a general way, as a full discussion would require more space than can be spared here. It is estimated that the total area under fruit in Great Britain does not exceed three hundred thousand acres, but "it is not possible to obtain absolutely accurate figures," partly because there has been a strange overlapping in the returns collected by the Board of Agriculture, and no account is taken of any orchards in holdings of less than 1 acre. The progress of the industry as shown by the increased acreage under fruits in recent

years is especially referred to, orchards having increased from 148,221 acres in 1873 to 243,008 acres in 1904; while small fruits have advanced from 69,792 acres in 1897 to 77,947 acres in 1904. This is an increase of 43.9 per cent. for thirty-one years in the case of orchards, and 11.7 per cent. for seven years as regards small fruits. During the corresponding period nearly all ordinary farm crops show a great decrease in area; the Wheat acreage, for instance, has fallen no less than 46.3 per cent. in sixteen years; and this fact has induced the Committee to state that fruit culture "is the only form of agriculture which has exhibited any sign of progress in recent years."

The increasing demand for fruit both in a fresh and in a preserved state was well established by the examination of several witnesses, some being experienced jam-makers. There was also a general consensus of opinion that fruit growing could be still further extended with advantage. Several very able cultivators, however, strongly urged cautious advance, and one witness appropriately pointed out that on a large area recently planted with fruit-trees the full bearing stage has not yet been reached.

As regards the improved value of land under fruit, both in rental and for sale, there can be no question, and ample evidence was given upon this point, also as showing the increased labour required in districts where fruit-culture has become an important part of the local industry. Reference was further made to the additional labour demanded for cider-making, jam-making, and basket-making, all of which are connected with the fruit trade; and the evidence tends to show that within judicious limits the extension of fruit-growing results in general benefit to the country.

In summarising the difficulties and drawbacks of the industry, the Committee classified the chief alleged disadvantages as follows:

I. Insufficiency of knowledge in regard to—

- (a) The right kinds and varieties of fruit to plant.
- (b) The character of the soil, and the effect of manuring.
- (c) The pruning and the general treatment of fruit-trees.
- (d) Diseases and insect-pests, and the methods of combating them.
- (e) Packing and grading.

II. Land tenure, especially the difficulty of obtaining land for the cultivation of fruit, and of adjusting equitably the respective interests of landlord and tenant.

III. Taxation grievances.

IV. Railway grievances.

V. Foreign competition and tariffs hostile to British fruit.

VI. The insufficient inspection of fruit, especially of foreign fruit.

VII. The difficulty of obtaining labour in country districts.

VIII. The insufficiency of markets.

IX. The ravages of birds.

X. The effect of the rise of price in sugar on the jam industry.

Under each of these heads a good deal of evidence was taken, much of which is open to considerable discussion or requires fuller explanation than is afforded in the Report to hand. As regards the first, want of knowledge is most marked in the case of diseases



LILIUM SUTCHUENENSE, A NEWLY-INTRODUCED LILY FROM CHINA: FLOWERS ORANGE-COLOURED WITH PURPLISH SPOTS.

and insect pests, packing and grading, and upon a point not mentioned, namely, the selection of suitable sites for fruit trees, which is quite distinct from the soil question. Reference is made to the work done by horticultural instructors under county councils and to various colleges and institutions, but though the Committee state they are "most anxious not to disparage any of the good work which has been accomplished so far," it does not seem that they give full credit to the efforts made by this and other journals, long before the County Councils came into existence, and to the lecturers and instructors who in many instances are highly qualified men who have performed most useful work.

It is recommended that a sub-department of the Board of Agriculture be formed to deal with horticulture and pomology, and it is most earnestly hoped it will lead to due action being taken in that direction. It is intended to perform a twofold service, first, as a bureau of information and an intelligence department; second, that an experimental fruit station should be established for research, with perhaps a demonstration farm in addition. Both the latter would be used as training establishments.

The whole scheme is commendable in its inception and principles, but a large part of its usefulness to fruit-growers and horticulturists will depend upon how it is developed and upon the capabilities of those who are entrusted with the task. A broad-minded appreciation of the requirements of cultivators, combined with thorough practical as well as scientific knowledge, is essential.

Under land-tenure the Committee rightly consider that every facility should be afforded for fruit-growers (on a small scale especially) to become the owners of the land planted; and on the question of valuation for tenants they express strong approval of the Evesham custom. In this system the incoming tenant pays a valuation to the outgoing tenant, and the landlord is only concerned in ascertaining that the new tenant is a reliable man. As a matter of fact the right of refusal is rarely acted upon.

As regards taxation it is especially suggested that the assessment of fruit-land for local rates should not be increased for five years from the time of planting in the case of small fruits, for seven years in the case of a mixed plantation, and for twelve years in the case of orchards, an equitable plan for assisting the fruit-grower to recover from the outlay necessitated in fruit planting. In reference to glass-houses it is also suggested that the allowance for repairs and depreciation, as concerns the income-tax rebate, should be increased from one-sixth to one-third, and the Committee further recommend that the "Agricultural Rates Act should be amended so that in future glasshouses used for commercial purposes may for the purpose of that Act be held to be land and not 'buildings.'"

Much evidence was taken upon the railway grievances which would require considerable space to deal with in detail. One point of some importance is the suggestion that owner's risk rate should be abolished, an increase of 5 per cent. on the present charges being considered a fair amount to bring it within the Company's risk. If, however, that is not done, it is considered that the

words "culpable negligence" should be substituted for "wilful misconduct" in the conditions as affecting the Company's servants. In view of the combination amongst railway companies, it is considered that an official or a department should be entrusted with the duty of watching over the companies' actions, and to report to Parliament accordingly.

The foreign tariffs, the inspection of foreign fruits, the labour difficulty, the question of increasing markets, and the ravages of birds, all bring out various subjects of interest and importance, but sufficient has been said to indicate the general scope of the Report. It will be remembered that the suggestions made are recommendations only. Unless the Board of Agriculture itself or some influential outside action be taken, the whole work of the Committee, as is often the case in such circumstances, will remain as a dead letter. Horticulturists and fruit-growers generally should therefore express their views fully and freely, and endeavour to bring some pressure to bear upon the completion of the work.

FRUIT CULTURE.—According to the Report on the Agricultural Returns for 1904, just published, the total area of land utilised for small fruit-culture in England was 70,612 acres, Kent heading the list with 22,519 acres, no other county having as much as 5,000 acres. The total area in England used for orchards was 236,705 acres, of which Kent occupied 29,055 acres; Hereford, 28,042; Devon, 27,316; Somerset, 25,265; Worcester, 22,387; Gloucester, 20,385; all the other counties having a very much smaller acreage under orchard culture. Scotland had 6,072 acres devoted to fruit-culture, and 2,490 acres to orchards.

IMPORTS OF FRUIT.—Some reductions appear in the imports of fruit in 1904, the two largest items—Oranges, and more especially Apples coming to our shores in diminished quantities. Grapes, Pears, and Cherries were nevertheless largely increased, the quantity of the two latter being twice that of 1903. All three were the highest since they have been returned in their present form by weight, instead of, as formerly, in measure. The heavy importation of Potatoes in 1903 was still further increased in 1904, and the total amount was only just short of half a million tons. Nearly half of these imports are credited to France, while Germany and Belgium together only make up three-fourths of the French total. Onions were also imported in very large quantity, although not quite reaching the total of 1903.

WOBURN EXPERIMENTAL FRUIT FARM.—A copy of the fifth report issued by the Duke of BEDFORD, K.G., and Mr. SPENCER PICKERING has been issued, and may be obtained from Messrs. EYRE & SPOTTISWOODE. The report deals especially with the results of observations made during the last ten years on the growth of Apple-trees, the effects of pruning, replanting, various methods of planting, watering, manuring, and many other points which are elaborated with much detail, and will demand further notice on our part later on. We can here only state that if the results of these experiments be confirmed elsewhere, fruit-growers must considerably modify their present notions as to the relative advantages of pruning, pinching, thinning the fruit, careful as opposed to careless planting, and so forth. Elaborate as are the experiments and the records relating to them, it is obvious that they must be repeated on a large scale in many different localities before accurate general conclusions can be drawn.

LILIUM SUTCHUENENSE? (see Supplementary Illustration).—This beautiful Lily of the Martagon section is a native of the Chinese province of Sutchuen, and was exhibited by Messrs. JAMES VEITCH & SONS, of Chelsea, at a recent meeting of the Royal Horticultural Society. It was originally introduced by M. MAURICE DE VILMORIN, and was shown among several other novelties introduced by Mr. E. H. WILSON. The narrow, almost linear leaves are spirally disposed, and closely approximate. The perianth segments are strongly recurved, deep orange with purplish spots. The plant was figured in the *Botanical Magazine*, t. 7715, and, judging from specimens from Messrs. VEITCH, is subject to considerable variation in stature, degree of branching, and size of flowers. It is nearly allied to *L. tenuifolia*.

THE MIDLAND CARNATION SHOW, will, we may remind our readers, be held in Edgbaston Botanic Gardens, Birmingham, on Wednesday and Thursday next, August 2 and 3. The Secretary and Treasurer is Mr. T. HUMPHREYS, Botanic Gardens, Edgbaston.

HOLLAND PARK AND THE WEST LONDON HOSPITAL.—On behalf of the Ladies' Association who are working in aid of the new casualty ward at the West London Hospital, the gardens at Holland House will be opened to the public, by permission of Lord and Lady ILCHESTER, on Saturday, July 29, from 2 to 5 P.M., on payment of 2s. 6d. each, and from 5 to 8 P.M., on payment of 1s. each. The Irish Guards' Band will play, and tea will be sold at 6d. per head.

COREOPSIS.—In Composites in general the outer florets, florets of the ray, as they are called, are flat and strap-shaped, whilst those of the disc are less conspicuous and regularly tubular. In a *Coreopsis* just brought under our notice the ordinarily flat or ligulate florets are developed in a tubular fashion, and are quite sterile, thus resembling the outer florets of *Centaurea*.

NATIONAL POTATO SOCIETY.—We are informed that, on the invitation of Professor MIDDLETON, Director of the Cambridge University Agricultural experiments, the National Potato Society will inspect the Potato trials at Impington, near Cambridge (Iliston Station), on Friday, August 4. Members who would like to be present and would travel from London are requested to communicate with the Secretary, Mr. WALTER P. WRIGHT, Postling, Hythe, in order that a special fare may be applied for. The Society's trials at Reading may be inspected on Wednesday, August 2. Visitors should communicate with Professor PERCIVAL, University College, Reading.

HORTICULTURAL CLUB.—About seventy members and friends visited the Wisley Gardens on Thursday, July 20, and spent an enjoyable hour in this Surrey woodland. The party was conveyed by special saloon carriages to Weybridge, where brakes were in readiness for the drive to Wisley. After an inspection of the Royal Horticultural Society's garden, lunch was served at the Hut Hotel. The drive was resumed through beautiful lanes to Chertsey, where a launch was waiting to continue the journey to Kingston. Here brakes were again in readiness to take the party, at the kind invitation of Mr. JAMES WALKER, to his charming garden on Ham Common. The magnificent fruit-houses were inspected, and a delightful hour spent in the grounds, where refreshments were provided. There were several guests, among them Mr. ARDERNE from South Africa. Among those present were Mr. H. J. VEITCH and Mrs. VEITCH, Mr. ARTHUR SUTTON, Mr. W. A. BILNEY (who was heartily thanked for his kindness in helping forward the arrangements), Mr. H. P. MAY, Mr. GEO. MONRO, Mr. A. WATKINS, Mr. G. INGRAM, Mr. G. GORDON, and Mr. ASBEE.

* *Lilium sutchuense*, FRÉCHET in MOROT, *Journal de Botanique* vi. (1892), p. 318.

VISIT TO MONIFIETH NURSERIES.—In the *Dundee Courier* for July 24 appeared a description of a visit of inspection from agriculturists and others to the nurseries of Messrs. W. P. LAIRD & SINCLAIR, Ltd., Monifieth, near Dundee. We are informed that the newest varieties of Potatoes to the number of forty are being tested there this year. Golden Wonder, Highlander, Conquering Hero, Eldorado, Sim Gray, Pearl, Diamond, Money Maker, Duchess of Cornwall, and many other well-known varieties are making fine growth and looking well. Mr. COLIN MACPHERSON'S three new varieties, introduced by this firm last year, namely, The MacPherson, New Victoria, and Early Champion, are said to be looking well.

ACCIDENT TO MR. GEORGE CUTHBERT.—Those of our readers who know the very kindly disposition of Mr. GEORGE CUTHBERT, Sen., head of the firm of R. & G. CUTHBERT, nurserymen, Southgate, will hear with great regret that he sustained a very serious accident on the 24th inst. While attempting to stop a runaway horse and van which had been unloading at the premises, Mr. CUTHBERT was knocked down, and his foot being caught in the front wheel, was dragged for a distance of about 25 yards, and frequently dashed against the kerbing of the path. Though Mr. CUTHBERT'S clothes were torn to pieces, no bones were broken, but the shock is naturally a very severe one. The condition of the patient is described as being as good as could be expected.

"BRITISH TREES."—Messrs. HUTCHINSON & Co. are bringing out in fortnightly parts a book bearing this title. The trees are drawn and described by REX VICAT COLE. The work is beautifully illustrated and well got up. Artists often see plants with very different eyes from botanists, hence it is not at all uncommon for an artistic representation to be unrecognisable from a botanical point of view. This cannot be said of Mr. VICAT COLE'S drawings. The landscape views are delightful, and the botanical details so accurately rendered as to satisfy the most fastidious. The text is similarly correct, though in his desire to avoid technicalities the author has often to employ a sentence where a word or two would suffice. It is not the people who really seek information and knowledge that object to scientific phraseology. The student soon gets accustomed to it and recognises its necessity. The present part is concerned solely with the common Ash; its varieties are not mentioned.

ROYAL BOTANIC SOCIETY.—Considerable difference of opinion exists amongst the Fellows as to the expediency of accepting, as a means of improving the financial position of the Society, the pending proposal of the Council to increase the Fellows' annual subscription from 2 to 3 gs. In many quarters it is thought that this proposal will, if carried, make the position worse, and that the necessity for such a change would not exist if more popular methods of management were adopted. Several Fellows who hold this view intend to support a resolution for the appointment of a committee of inquiry, which will be moved by Mr. J. S. RUBINSTEIN at the Fellows' meeting to be held in the Gardens at 4.45 on Friday, July 28. We cannot chronicle the result till next week.

SALVIA DICHROA has afforded a splendid spectacle with Mr. FITZHERBERT at King's Wear. It is over 8 feet high, with hundreds of flower-spikes.

"THE ART OF CONSERVING," by VERA GALWAY. (JOHN & ED. BUMPUS, LTD., Oxford Street, W.)—Viscountess GALWAY has filled a little book about conserving fruits and vegetables

that should prove useful to all who wish to accept her offer and have Plum-tart at Christmas and Raspberries-and-cream in March. The apparatus recommended is a German one, made by one Herr LEONHARD, and known by him as a Frisc-balter. Briefly, it is a scheme for sealing fruits, &c., in closely sealed jars and Pasteurising it. Viscountess GALWAY remarks that the excellent bottled vegetables procurable abroad are prepared when the vegetables are young. She adds: "I am assured that most of the Peas are preserved at Metz, which is the great Pea-growing centre. We are much too fond of large vegetables, and until we cultivate the small French vegetables, such as Carrots the length of one's finger, and the small soft Pea and delicate French Bean, I fear our efforts in vegetable conserving will be not all successful, as it is impossible to kill the germ without otherwise boiling the Pea." Apart from the last sentence we agree with these remarks; English market growers too often sacrifice quality to quantity. The recipes seem excellent, and have been tested by the writer; but the translator is not always sufficiently careful as to grammar. We read everywhere here of litres and grammes, and only find the British cook's equivalent for them in one place, yet the reading of a Centigrade thermometer is always translated into Fahrenheit. It must not be overlooked that the preservation of certain fish and savories is also mentioned in this little book.

IMPATIENS HOLSTII is doing well in the open-air with Mr. GUMBLETON at Queenstown.

SIR EDMUND LODER'S GARDEN at Leonardslee, Horsham, Sussex, is a most interesting one, and contains many tender species which Sir EDMUND has succeeded in acclimatising there. Our correspondent Mr. W. A. COOK, late gardener at Shirley Park, Croydon, has been appointed to take charge of Sir EDMUND'S garden as from July 12.

THE FARADAY HOUSE JOURNAL.—This is the official publication of the Electrical Standardising, Testing, and Training Institution known as Faraday House. The July number of the Journal chronicles the moving of the Association into larger and more convenient premises in Southampton Row, and it contains pictures of the old and of the new Faraday House, and portraits of the members of the Board of Control.

GARDEN CITY ASSOCIATION.—We learn from *The Garden City*, which is the official organ of the Association of that name, that an exhibition of Cheap Cottages was to be held in Garden City. The cottages were to be such as are most appropriate for the housing of garden citizens. The DUKE of DEVONSHIRE opened the Exhibition on July 25. Detailed information on the subject is to be obtained from the Secretary, Mr. W. COOPER, 347, Birkbeck Bank Chambers, Holborn, W.C.

TURNIP-SEED CASE.—Mr. Justice BUCKNILL has recently given judgment in a case where a farmer brought an action against a firm of seedsmen for breach of contract in supplying the plaintiff with something that was not what he expected it to be. The seedsmen relied on the now familiar exemption clause in their invoices, and the judge found in their favour with costs. The case was one of "sporting," which, as everyone knows, is very common among Brassicaceous plants. It by no means follows that the seedsmen are to blame in such cases, for, as a general rule, they exercise great caution to prevent accidental admixture. Their reputation is at stake, and the fierce competition that now exists is a great safeguard to the purchaser. Whether the "sport" in this case originated from accidental cross-breeding, from reversion, or natural varia-

tion, was beyond the power of the judge to decide, but, at any rate, he has absolved the seedsmen from responsibility in the matter.

PUBLICATIONS RECEIVED.—*Annual Report on the Government Cinchona Plantation and Factory in Bengal, for the year 1903-4*, by Colonel Prain, I.M.S. There has been an increased out-turn of quinine and cinchonidine, but less cinchona febrifuge was required than in the previous year.—*Annual Report of the Royal Botanic Garden, Calcutta, for 1904-5*. Among the chief out-door works of the year were the deepening of several of the tanks, and alterations in the gardens. Colonel Prain and Mr. Drummond completed their investigations into the species of Agaves. The herbarium is greatly improved by the addition of new cabinets, and the library has also been enlarged. It is desirable that the botanic staff should be increased, as the work becomes increasingly heavy.

NEW OR NOTEWORTHY PLANTS.

STANHOPEA DEVONIENSIS, LINDL.

A NATURAL HYBRID?

I HAVE received from Mr. P. Wolter, Magdeburg, our zealous and skilful German hybridist, the flower of a Stanhopea he has raised by crossing *S. tigrina*, Lindl. × *S. insignis*, Frost. Unfortunately he does not remember which was the seed-bearing plant, but he is quite sure of the plants themselves and of the correctness of the names. I was highly astonished to find that the hybrid is exactly and in every respect like the Duke of Devonshire's Stanhopea, figured more than sixty years ago by J. Lindley in his *Sertum Orchidaceum*, Plate I. In this figure the blade or epichilium had an undivided apex, whilst it is in fact three-pointed, an error already pointed out by Reichenbach in the *Xenia Orchidacea*, L., p. 119 (and repeated in Walper's *Annales*, VI., p. 586). It is remarkable that already Dr. Lindley was astonished at the close resemblance of *S. devoniensis* with the two other species (the supposed parents). In his valuable work *Folia Orchidacea*, Pt. I. (Stanhopea), he adds to the Latin text some interesting remarks. He says: "Resembles *S. tigrina*, from which it is distinguished by the slightly divided epichil and almost wingless column. To *S. insignis* it approaches in form, although so different in colour; but the hypochil is very deep, broader than long, and prominent in front instead of being pressed backwards. The flowers are extremely sweet-scented, yellow with deep crimson blotches; the lip is white with a few spots here and there, and a deep purple stain over half the hypochil. . . . I am indebted to General Doreier for a variety with a deep blood-red hypochil, said to come from Guatemala." Thus Dr. Lindley's text, and I have nothing to add to this masterpiece of description.

The native country of *S. tigrina* is without any doubt Mexico, where this striking plant already in olden times of Montezuma had the tongue-breaking name "Coatzonte Coxoahitl," and also for *S. devoniensis* the Central American source is stated, but *S. insignis* is of doubtful origin. From the days of *Botanical Register* until our days, Brazil is said to be the native country, but even Dr. Cogniaux, the author of the most recent and exhaustive monograph of Brazilian Orchids, says, "Habitat in Brasilia, loco haud indicato" ("Grows in Brazil, but nobody knows the place"), and he cited Loddiges, the author of the *Botanic Register*, and M. Gaudichand, as authorities for his statement. Moreover the habitat "Brazil" is extremely vague and quite worthless. Other authorities declare the plant to be a native of the Peruvian Andes, but Lindley asserts, in the *Folia Orchid.*, l.c., p. 7, that the Peruvian plant is not *S. insignis*, but *S. Bucephalus*. Under these circumstances, and considering the well-known carelessness of early collectors and importers in respect to the habitat.

of their plants, it is not impossible that *S. insignis* is a native of Central America. The amount of doubtful notes about the native habitats of *Stanhopeas* cannot be better illustrated than by the fact that of twenty-three species quoted by Reichenbach in the sixth volume of Walper's *Annales*, no fewer than nine are of uncertain origin. "Allata esse dicitur e Mexico," "Brasilia," "Guatemala," and other similar notes occur very often. After all, the flower at hand is so exactly similar to the typical *S. devoniensis* that the most hair-splitting description cannot show any real difference, and we are indebted to Mr. P. Wolter for this unintentional but nevertheless very interesting result of his efforts. *Dr. Kranlin, Berlin.*

attached, and in summer whole streets of fore-courts are gay with flowers.

It is only within comparatively recent years that the Corporation of Norwich has taken up public gardening. The principal of the city gardens is Chapel Field. It is a spacious triangular enclosure containing five avenues of Elms and Limes. Formerly a dismal waste, it was railed-in about 1866, but no attempt was made to cultivate it until about a quarter of a century ago, when it was re-turfed, flower-beds were formed and shrubs planted, and it was then used as a public park. For some years the gardening work was put out to tender, and the contractor had also charge of the Castle gardens, taken over by the city upon the discontinuance

appointment was conferred upon Mr. James Ward. Under that gentleman's management a great improvement has already been effected in all the parks and gardens.

Chapel Field, the most popular as well as the most important of the public gardens of Norwich, has never been more beautiful. From early spring to late summer there is a remarkably brilliant display of flowers. There is no carpet-bedding in the gardens, but some 28,000 plants are used, and every variety is systematically labelled with its popular name, its order, and habitat. Last autumn extensive work was carried out in the formation of new beds, the re-edging of walks, and other improvements which will greatly tend to the development of the gardens.



FIG. 31.—VIEW IN THE CHAPEL FIELD GARDENS, NORWICH.

NORWICH PUBLIC GARDENS.

Norwich has long been known as "The City of Gardens," and the distinction is not altogether misapplied. Evelyn, who visited it in October, 1671, says, "The suburbs are large, the prospects sweet, with other amenities, not omitting the flower gardens, in which all the inhabitants excel." The city covers a very extended area, and behind many of the residences, even in the main streets, there are fine pleasaunces which, all unknown to the crowds who throng the thoroughfares, are laid out in quaint old-fashioned style. Every suburban villa has its garden, and there are at least half a dozen residences within fifteen minutes' walk of the city which stand in park-like grounds. Many artisans' dwellings have garden-ground

of the Castle as the county prison. Then, through the action of the Norwich Playing-fields and Open-spaces Committee, other areas were transferred to the Corporation, including four churchyards which have been transformed into gardens, and last year, through the munificence of a private individual, an additional pleasure-ground, the Woodlands Park, passed into their keeping.

To the north-east of the city is Mousehold Heath, of 300 acres, which has been planted with trees and shrubs, and intersected with rural walks and roads. Minor places of public resort are Waterloo Park and Gildencroft Gardens.

Rather more than two years ago the Corporation, in consequence of the great extension of this part of their public work, decided to discontinue the contract system, and placed the whole of the gardens under a Parks Superintendent. The

The Castle gardens are situate in what was the moat of the ancient stronghold. The Castle itself has been converted into a museum, and its precincts laid out as a garden. Upwards of 10,000 plants are planted out in the Castle and museum gardens. At Waterloo Park 30,000 Wallflowers are planted for flowering in spring, and the extent of the work in the other gardens, &c., may be estimated from the following figures: Gildencroft and St. Augustine's Churchyard, 12,000 plants; Haymarket (open space), 1,860; Isolation Hospital Grounds and Garden, 7,000; St. John de Sepulchre Churchyard, 5,000; St. Clement's Churchyard, 4,500; St. Saviour's Churchyard, 3,000. The pot plants at the cab shelters, the plants in the shrubberies at Prince of Wales' Road, St. Catherine's Plain, and St. Andrew's Hall Plain, brings the total number

to 104,560. Mr. Ward also has the superintendence of the Norwich Officials' bowling-green, the Riverside Road slopes, the Carrow Bridge Garden, and the Corporation Nurseries.

Norwich has the unenviable reputation of being one of the most heavily rated municipalities in the United Kingdom, but the citizens do not object to the increased expenditure involved by the development of its public gardens, and probably no work is more appreciated than that of the Parks Superintendent. *Correspondent.*

FUNKIAS.

As hardy border plants or in appropriate corners of the rockery, there are few finer subjects than the Funkias, and among them the finest is *F. Sieboldi* (fig. 32). The bold glaucous foliage and the conspicuous fragrant pale lilac blossoms are most attractive. No special cultivation is required; but it must be remembered that snails appreciate the plant as much as we do. In our own experience we have found it difficult to keep the Funkias to ourselves. For the photograph we are indebted to Miss Wallace, of Ardnamore, Donegal.

LEAVES FROM MY CHINESE NOTE-BOOK.

(Continued from p. 65.)

May 8. — To-day's journey was through new country to me, my highest point hitherto having been the Hsin-Luog-Tan. The country in some respects resembled that around Ichang, the hills having the same pyramidal shape. Forts or redoubts were common, crowning the tops of the higher hills. These date back to the time of the Taiping disturbance.

The character of the flora began to change somewhat. I gathered several fresh plants to-day, including—

Houttuynia cordata, *Lysimachia Henryi*, *Ligustrum sinense*, *Saxifraga sarmentosa*, *Catalpa Fampferi*, *Populus adenopoda*, *Bischofia javanica*, and *Koelreuteria bipinnata*.

This was the first time I have seen the *Koelreuteria* in the actual Yang-tsze valley, and the same remark applies to the *Bischofia*. The latter grows to a large size, and is known as the "Wu-yang" amongst the Chinese. The wood is soft and of little value.

I also noted a Euphorbiaceous tree allied to *Sapium* which was quite new to me. Its bright orange-coloured leaves made it conspicuous; these were the old leaves about to be replaced by new ones. It only grows 10 to 15 feet high. Its seeds are used medicinally in cases of diarrhoea. It is the "Pa-tou" tree of the Chinese. *Deutzia scabra* was very common to-day on the cliffs. *Cupressus funebris* was particularly abundant, giving the hillside the appearance of being well wooded. Clumps of small Pines occurred at intervals.

Silkworm raising is a common industry. I looked into one house where there were thousands of the worms in large trays being fed. The room was frightfully stuffy and the air foul. I very quickly made my exit. The worms were fed on the leaves of the Mulberry (*Morus alba*), which by the way has black fruits hereabouts. These fruits are much smaller than those of *Morus nigra*, but quite equal to them in flavour.

We encountered no rapids of any consequence to-day, and made good progress—30 miles. We moored for the night about 12 miles below Wan Hsien. The day was the hottest we have had so far; at 3 P.M. it was 87° F. in my cabin. The crew rested for a couple of hours after noon on account of the fierce sun.

May 9. — We made our usual early start; reached the city of Wan at 2.30 P.M., and moored well above the town. Near the east end of the city the river takes a bend almost at right-angles. The left bank is strewn with huge boulders, and the right is a sloping shingle-bank. Wan is unquestionably the most beautiful city on the Yang-tsze, being picturesquely situated on the sides and summits of a number of hills arranged in a half-circle. Many Banyan and other trees give it a peaceful air, and the number of junks moored here testify to its great commercial importance. Several fine pagodas built on lofty eminences ensure good luck for the town. The hill-sides around are all highly cultivated, and in March are one mass of yellow "Rape." Of this so-called "Rape" there are two distinct kinds—one with lyrate, and the other with amplexicaul leaves,

It is undoubtedly one of the most valuable timbers in Central and Western China. The tree is exceedingly common from Ichang westward, both in the immediate vicinity of the river and on the mountains north and south up to 3,000 feet altitude. Its handsome appearance is well deserving of Fortune's eulogy (see *Gardeners' Chronicle*, 1880, p. 228). This Cypress deserves the attention of the authorities of the Hong Kong Botanic Gardens in particular for planting in the new territory of Kowloon; and not only ought it to be largely planted there, but in other of our colonies with a warm temperate or sub-tropical climate. Not only is the timber valuable for boat-building, but also for house-building and general carpentry. *Cupressus funebris* is certainly one of the handsomest and most useful of all the Asiatic Conifers.

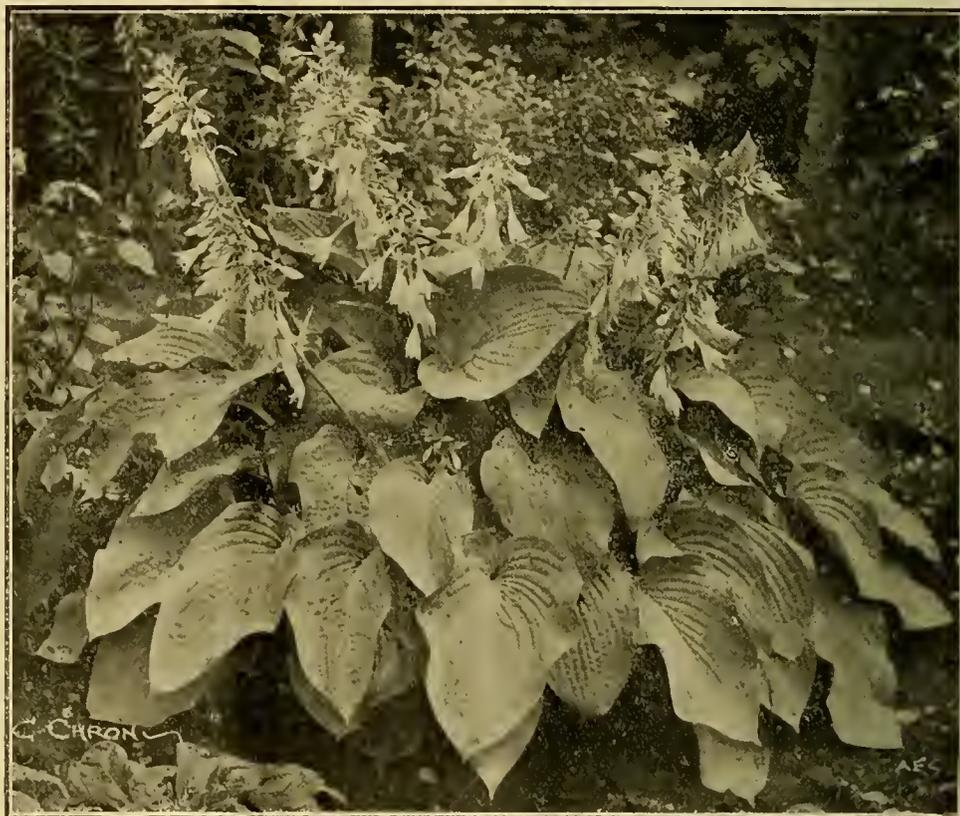


FIG. 32.—FUNKIA SIEBOLDI, FROM A DONEGAL GARDEN.

called respectively the "great" and "little" Rape. The latter is the earliest and less grown of the two. Wan is considered halfway to Chungking, and a feed of pork for the crew is the usual custom. I had hoped to get a little further to-day, but the Fates in the shape of the crew willed otherwise, and I was forced to be content to remain here till the following day.

Here our useful little lifeboat left us and returned to Ichang. The crew of this boat were good-natured and obliging, and went about their work in a quiet and businesslike manner, a pleasant contrast to the crew of my boat, who were for ever shouting or quarrelling. I gave them the customary present of silver, and they seemed very well pleased.

Close to where we were moored the people were busy building boats. With the exception of a few slabs of Oak-wood athwartships, these boats are built entirely from the timber of *Cupressus funebris*. The timber, which is very close-grained, is known as "Peh-mu," "White-wood."

Planted near some graves I noted several trees of what I take to be the *Thuja plicata*, mentioned by Dr. Masters in the *Index Florae Sinensis* (*Journal of the Linnean Society*), vol. xxvi, p. 540.

The only fresh plants to-day were *Thalictrum minus* var., *Scutellaria rivularis*, and *Lonicera affinis*. The Honeysuckle is near *L. japonica*, but differs in having glabrous leaves and more slender flowers in much larger corymbs. I only saw one plant trailing over a cliff.

Pears and Plum trees are common around Wan. Loquats were ripe, and we bought some excellent Cherries. The crops continued to be the same as those already mentioned, and sun was badly needed to harvest them. Owing to the long-continued rain the officials have forbidden the killing of flesh or fowl and the capturing of fish, in order to appease the angry god. Thus we were unable to replenish our larder, though we were badly in need of supplies. The pork for the crew was obtained surreptitiously under cover of night.

(To be continued.)

THE METFORD LEMON.

On a former occasion we had an opportunity of figuring the fruit of this variety, remarkable for its large size (see *Gardeners' Chronicle*, April 28, 1900, p. 267). That it is also worthy of notice as a decorative plant for the conservatory is shown by our illustration (fig. 33) of the tree as growing in the temperate-house at Kew. The photograph was obligingly forwarded to us by Mr. C. P. Raffill.

teristic mottling of *C. Chamberlainianum*. The flowers are produced in succession; the scape is erect, 1 foot to 15 inches in height, and densely covered with whitish hairs. The dorsal sepal is rounded in form, of a brownish-green in the centre, shading to a whitish-green at the edge. The petals are spreading, twisted, and almost linear, about 2 inches in length, with a distinct ciliate margin; the ground colour is white, which is densely blotched with red-brown. The pouch is rose-

more in length; the blade is cordate-acuminate in form, 1 foot to 18 inches in length. The inflorescence is borne on a stout, erect peduncle, 6 inches in height. The spathe is 6 inches long by 4 inches broad, of a dark brown-red colour on the inner surface, and densely marked all over with almost black linear markings; the outer surface of the spathe is deep green. The spadix is very thick, almost as long as the spathe, and of the same brown-red colour. The species was figured in the *Botanical Magazine*, t. 7242. *W. H.*

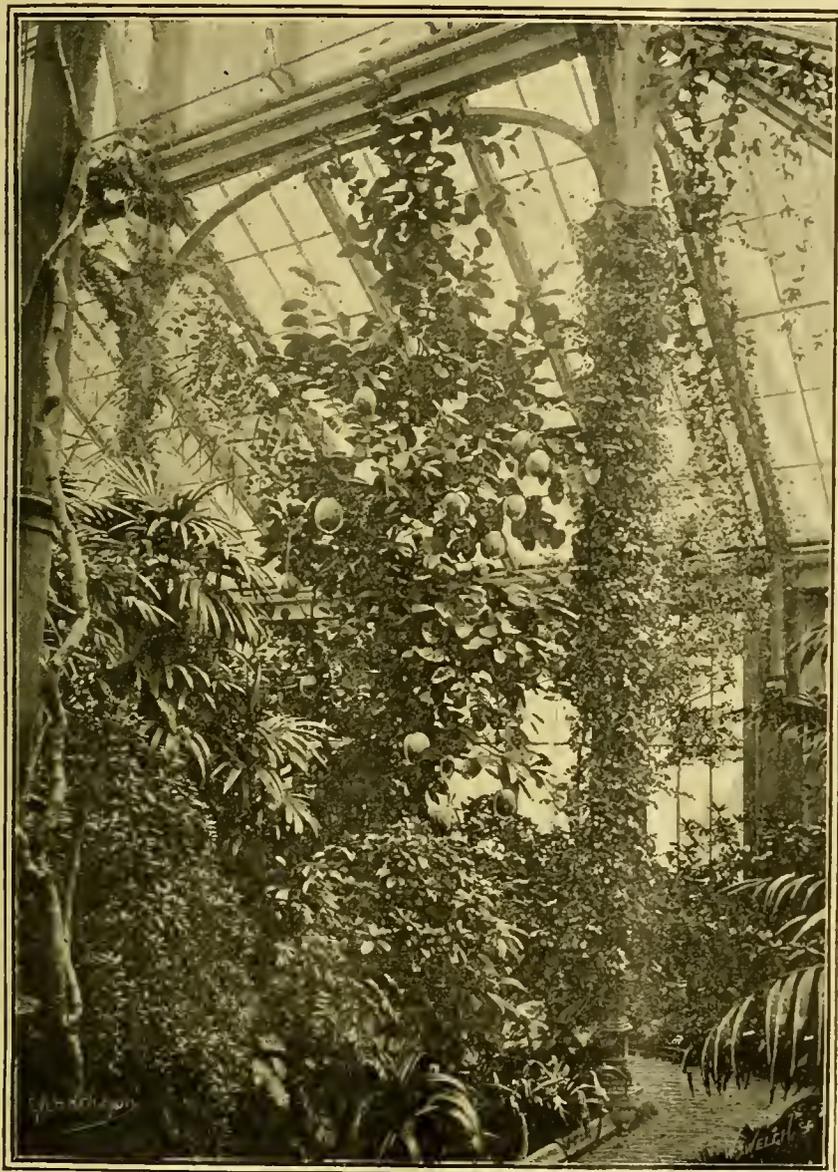


FIG. 33.—THE METFORD LEMON IN THE TEMPERATE-HOUSE OF THE ROYAL GARDENS, KEW.

KEW NOTES.

CYPRIPEDIUM GLAUCOPHYLLUM, *Smith*.—A plant of this recently-introduced species is now flowering in the Orchid-house. It is a native of Java, and was first discovered and described about five years ago. The Kew plant was obtained from Messrs. Sander & Sons, St. Albans, in the early part of the present year, and since that time it has grown vigorously, having all the appearance of being a strong, robust-growing species. It is allied to *C. Chamberlainianum*, which it resembles somewhat in general appearance, though it is totally distinct. The leaves are fleshy and distinctly glaucous, about 8 inches in length by 2½ inches in breadth, without any of the charac-

coloured at first, turning to violet-purple with age. A flower of this charming species is figured in the *Orchid Review* (fig. 44) for July of this year.

SYNDROSPADIX VERMITOXICUS, *Engler*.

This extraordinary Aroid is now in flower in the Begonia-house. It is a native of Tucuman, where the tubers are said to attain to a weight of 4 lb. They are very much like those of an *Amorphophallus*, except that they are rather more globular in form. In this genus the leaves and flowers are produced at the same time, not, as in some allied genera, wherein the leaf succeeds the inflorescence. The strong petiole is a foot or

NURSERY NOTES.

SWEET PEAS.

I was recently at Marks Tey, where Messrs. Dobbie & Co. have established a large seed-farm, and in the company of Mr. Cuthbertson, the head of this firm, I was much interested in all the various crops of seeds which were being grown. It was the Sweet Peas, however, that I went to see, and the sight of these was well worth the journey. More than four acres of ground are devoted to the culture of Sweet Peas for seed; but it was the trial-ground, where only a limited number of each sort was grown for trial, that interested me most. Mr. Cuthbertson pointed out to me that their aim was to supply seed as true to character as possible, and such as they were unable to grow themselves in the first year were given a trial before offering them to the public.

In the trial-ground it was proved beyond doubt that Countess Spencer was very sportive. In the rows of this variety there could be seen more variation than in any other sort, and probably several other varieties which have since been named have come from this parentage. Coming to Gladys Unwin, we found a slight variation here and there, but generally the stock was very true, and proves that this is a variety worthy of attention, for in addition to most stems producing four flowers on each, it is remarkably vigorous and free-flowering.

Coming to the standard varieties which have stood the test for market culture, I found Lady Grizel Hamilton very good; but I think that Miss Philbrick, which is similar, but of a still more pleasing shade, will supersede the older favourite, for as seen at Marks Tey it was certainly one of the best we have. Of the deeper shades, Hannah Dale was one of the best; it is a colour difficult to describe, for the deep purple has a peculiar tinge of red in it. D. R. Williamson is undoubtedly an improvement on Countess Cadogan. Orange Countess closely resembles the variety Helen Lewis, which gained a First-class Certificate and the Silver Medal of the National Sweet Pea Society this season. Mr. Cuthbertson has made some selections from the best varieties, and has already a decidedly improved form of Lord Rosebery, which is one of our best Sweet Peas. Other sorts are being looked after in the same way, and from what I saw when going round I feel there is no doubt that we may get better results from careful selection than from all the cross-breeding that can be done.

We already have too many varieties, but what we want is the best standard sorts kept up to their present standard, or improved upon, and it is only by careful selection that this can be done. I do not mean to say we could not find room for slightly varied shades of colour, but we must look for the best results from carefully weeding out all that show signs of deterioration, and saving the stock seed from the very best types of the various sorts. In my early experience of all seed-saving it was the practice to take a few of the very best plants for sowing, and while ensuring the best for ordinary sale we were keeping up the type, if not improving it, from year to year; and this is what is being done at Marks Tey. *A. H.*

GARDEN NOTES.

THE "BALLARDS," SHIRLEY, the residence of C. H. Goschen, Esq., is situated on the top of the far-famed Shirley and Addington Hills, and commands a splendid view of the surrounding country on the one side, and of London and its suburbs on the other. There is a kitchen and fruit garden of about 3 acres, situated on a south slope, surrounded by high walls, where some excellent crops are secured. Gardening is not carried out to such an extent as it was a few years ago, but some relics of the past show what has been accomplished. The pyramidal fruit-trees, Apple and Pear, are wonderfully good, and usually carry fine crops, this year being no exception. I noticed, fit to cut, some fine rows of Veitch's Extra Early Cauliflower, which were sown in March of the present season; excellent rows of Veitch's Criterion Pea, quite the best I have seen in the district, and a fine batch of Veitch's Golden Ball Lettuce. Over 1,000 plants of Royal Sovereign Strawberry are forced each year, and there is a good bed of plants in the open garden. Peaches and Nectarines and Grapes are looking well, especially a house of Muscat of Alexandria, which have been planted twenty-eight years, and have never failed to yield a good crop of fruits. Mr. Whittle, the present gardener, has had charge of the gardens for more than a quarter of a century. The lawns are well cared for, and on a gentle slope the shrubs and trees present a fine picture.

"HEATHFIELD," SHIRLEY.

This is the residence of H. Goschen, Esq. The gardening is principally outside gardening. All the lawns have nice slopes, and are dotted with flower-beds. Bulbs abound everywhere. A neat little rockery has recently been formed, which bids fair to add materially to the interest and beauty of the garden. The mansion is covered with climbers. There are some fine examples of Rambler Roses trained in different shapes. I noticed some very good Iris and *Chelone barbata* in the herbaceous borders, and a fine lot of *Chrysanthemums*.

In the kitchen-garden the crops were looking well, especially Potatoes and Asparagus. Several ever-flowering beds on the lawn are most useful. One bed contained mixed Tulips, Iris, *Lilium barbatum*, and *Tritoma Uvaria*, so that there is a constant show of flowers without having to rearrange the bed. An Ivy-covered arbour or tunnel is interesting. In the greenhouses were fine batches of *Gloxinias* and *Streptocarpus*, which flourish well under the care of the head gardener, Mr. Fry. W. A. Cook, *Leonardslee Gardens, Horsham*.

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his Correspondents.)

CUCUMBER "SPOT."—I enclose for your inspection a few shoots of Cucumber plants having a few old leaves that had been affected with the "spot" disease and several young leaves made on the same shoots since the affected plants had been vaporised with sulphur on July 8. You will please observe that the young leaves are, so far as I can see, quite free from the disease, which in the case of affected plants during the two previous years attacked every young leaf as soon as it began to unfold. Thus it will be seen that the sulphur-vapour will not only prevent the "spot" disease from attacking Cucumber plants, but that it will also destroy the actual spot itself if applied in time. The house in which the "spot" appeared on the plants is 24 feet wide, and in addition to a row of plants set on ridges running parallel with the side walls, two rows of plants were planted in a ridge formed on the 4-foot-wide pathway, and trained up an X-shaped trellis, the top ends of the frame-work being screwed to the rafters, and the bottom ends let into the ground under the hot-water,

pipe on either side pathway. No. 14 galvanised wire was strained and fastened thereto, and the two rows of plants set anglewise in planting in order to afford mere space for training up the lower part of the sharp-angled trellis, which benefits equally by the morning and afternoon sun. Very little fire-heat was afforded this house, and after the trellises had been pretty well furnished and the plants showed signs of exhaustion, I purposely relaxed the precautionary measures observed in order to be able to test the efficacy of the vaporising sulphur machine on affected leaves. The spot, as might be expected in the circumstances indicated, appeared on the plants grown under less favourable conditions on the X-shaped trellis. The plants were cleared off to-day to make room for a fresh batch of plants growing on in 32-size pots, a little lime being ferked into the ridges before setting the plants thereon. Unfortunately for the purpose of sending you fresher samples of leaves, the plants were pulled and exposed to the sun a short time before I went to obtain specimens of growth to send for editorial inspection and opinion. However, I hope those sent herewith will answer the purpose. [Corroborated. Ed.] *H. W. Ward*.

RED CURRANTS.—We are in danger of getting a little mixed over Red Currants. Various persons, in getting hold of such fine-fruited varieties as *La Versailles*, *La Fertile*, *Red Cherry*, *Fay's Prolific*, or by whatever names these large fruited may be known in commerce, hastily jump to the conclusion that they have something novel, and then give them names. Mr. Harrison Weir refers to "Comet." Why is it that neither Messrs. Veitch nor Messrs. Bunyard catalogue it? Simply because they have found it to be, as Messrs. Bunyard state in their list, the same as *Fay's Prolific*. Mr. Harrison Weir also refers to one named *Star of the North*, very possibly, by the description he gives of its growth, *La Versailles*. So recently as the 8th inst. a large-fruited variety was put before the Fruit Committee with a new name, but it was an old variety. I trust now there is ample room at Wisley a plantation of all the Red Currants in commerce will be made to clear away these objectionable synonyms. *A. D.*

STAGING CARNATIONS AND PICOTEES.—Like all florists' flowers, such as Dahlias, Tulips, *Chrysanthemums*, &c., Carnations are so arranged as to exhibit the best shape and quality of petal, form, and colour, irrespective of any artistic effect. I do not see why the florist should not have a little of his own way in the manner in which he stages his flowers. In connection with all special societies we have to listen to annual bewailings by some persons who are not florists themselves and cannot possibly have any sympathy with the ways of the florist. If every Society which is wishful to encourage the extended growth of the Carnation were to institute classes for other exhibits than the stiffly-arranged flowers they would do much to encourage the extended growth of the flower. If classes should be provided for bunches of Carnations and Picotees arranged as grown with Carnation foliage, splendid exhibits would then be forthcoming, showing well the value of the flower in its true decorative sense. At our small local show, in a neighbourhood where Carnations are highly prized, there used to be classes for individual blossoms which were scantily filled and little admired; but since bunches have been encouraged we can always reckon upon a good entry and an attractive display. *E. M.*

CAMPANULA TURBINATA "ISABEL."—Through the kindness of Mr. Prichard I have grown a plant of this *Campanula* and am delighted with it. In growth, freedom of flower, colour and natural tendency to exhibit its blossoms to the best advantage, I think "Isabel" is much the finest of dwarf-growing *Campanulas*, even better than *C. Rainier*, which is so difficult to obtain true to name, and is not so good for the rockery or for an edging to a path. *E. Molyneux*.

TRILLIUM GRANDIFLORUM.—In my garden here I grow two fairly large beds of *Trillium grandiflorum*, which bloom freely and produce ripe seeds in quantity each year. About two

years ago I instructed my gardener to sow this seed, which he did in a shallow box and placed it in a cold-frame. None of the seed germinated during the first year, but this year, being more than two years from the date of sowing, about half a dozen young plants appeared, and these have now all disappeared for the season or from decay. I may say some of the seeds have been placed in heat without the slightest effect in the way of germination. As I have a quantity of *Trillium* seed now ripening, I shall be obliged if any reader can give me a hint as to the best way to hasten the germination of this seed. *O. O. Wrigley, Wansfell, Windermere, July 24, 1905.*

SCENTS IN A MENTONE GARDEN.—As I spend much time in my little Mentone garden, and as that garden is, as all are, full of scents, I have fallen into a habit of thinking about them as I work, comparing them and noting their qualities, and the memories or ideas they evoke. Some are powerful, some delicate and elusive, some suggestive of far-away England, and some of still more far-away childhood. One of the most delicious scents, spicy rather than sweet and cloying, like the *Narcissus* and *Hyacinth*, of which one wants rather a whiff than a prolonged draught, is that of *Clematis montana*, which for some weeks is one large sheet of bloom. This and many another scent are only to be described when in the future the subject has been systematised and the descriptive terms settled, but it pervades a large portion of the garden and is only surpassed in strength by the Orange and Lemon blossoms, which fill not only the garden but the house, and that day and night for a certain season. I may recall in this connection what a surprise I once felt on opening my window after a very heavy hailstorm at a time of year when these trees were not in blossom, and yet the air seemed full of the scent. It was, I found, that of the leaves, bruised and battered by the hail. What can be more like Orange-blossom (but attenuated to a degree that requires close proximity to smell it) than the so-called *Syringa*? It is known here by its prettier name of *Citronelle*. [Two or three plants are so-called; which is the one intended?] The real *Syringa* is, of course, the *Lilac*, which has very little scent in my garden. In hot and sunny times the *Heliotrepe* breathes odours reminiscent of the childish name of *Cherry-pie*. The great white and blue *Irises* again are to me redolent of a certain period of my childhood, when I had, among other "treasures," a strange hard piece of wood, or what seemed such, which on being scraped gave out a strange smell. It came to me from some deceased elder member of my family, and I was told it was called *Orris-root*. In later times I discovered that *Orris* and *Iris* were the same thing, and when I am cutting off dead heads among my *Irises* I smell that *Orris-root* once more. I am thankful that only 6 inches or so now remain of what was once a large specimen of the evil-smelling *Eucalyptus*. Very healthy, they tell me. Yes; so are tar-soap, chloride of lime, and other disinfecting things, but never will I grow it in a garden. It "wafteth perfume o'er us which few can e'er forget." *Coronilla glauca* I grow, and overlook, so to speak, its powerful, rather rue-like smell on account of its fine masses of yellow blossoms in the spring, followed by its curious claw-like seed-vessels. The *Garlics* again, which insist on thrusting themselves in where they are not wanted like intrusive acquaintances, give me many an unpleasant moment, either when I dig them up or merely tread them down accidentally. Identical in scent with these are the really lovely *Triteleias*, which must always be planted well away from the edge of the flower-beds, since, sweet as they are to look at, a brushing skirt is enough to fill the air with a perfume of a most undesirable kind. Among the plants in my gardens which require handling to make themselves obvious to the sense of smell are the ever-sweet *Lemon Verbena* (*Aloysia*), scented *Pelargoniums*, and the very characteristically-scented *Nasturtiums*, which here grow so rampantly that they have to be kept down with a firm hand lest they should strangle all around them. They have a curious pungent odour unlike that of any other plant I know. The *Lequat*, or Japanese *Medlar*, when in bloom has a smell quite its own; so have the

SOCIETIES.

THE ROYAL HORTICULTURAL Scientific Committee.

JULY 18.—*Present*: Dr. M. T. Masters, F.R.S., in the chair; Dr. M. C. Cooke, Professor Bouger, Messrs. Masee, Gussow, Worsdell, Worsley, Saunders, and Clittenden (Hon. Secretary).

Diseased Potato-leaf.—Dr. COOKE reported on the Potato-leaf brought by Mr. SAUNDERS to the last meeting:—"The black blotch on Potato-leaves bears a superficial resemblance to that caused by *Macrosporium Solani*, but in the specimens submitted to examination no mycelium or conidia could be detected, the spots being entirely barren." The leaves were curled and blotched with yellow and black.

Contorted Teasels.—Dr. MASTERS remarked further upon these, that some plants, specimens of which he showed, had after persistent pinching at last begun to twist, a peculiarity which Prof. de Vries said was an inherited character, but which Dr. Masters, after cultivating the plants (grown from seed received from Prof. De Vries) for ten or more years, had not been able to observe before.

Diseased Mulberry-leaves.—Mr. SAUNDERS showed specimens of Mulberry-leaves from Algiers, apparently attacked by some fungus, which Dr. Cooke and Mr. Gussow undertook to examine.

Dry-rot in Floor-boards.—Mrs. DAVIES sent specimens from Deal of this too well-known trouble, caused by the fungus *Merulius lacrymans*.

White Poplar with two forms of Leaves.—Mr. HOLMES sent shoots of White Poplar showing glabrous dark green leaves on the lower part of the shoot, and white woolly-looking ones above.

Furze Dying.—Mr. HOLMES also sent twigs of Furze, which Mr. SAUNDERS will report upon.

Insects on Biota, &c.—Mr. WORSLEY remarked upon this, reported on at the last meeting by Mr. SAUNDERS, that many garden forms had been attacked and killed by the insects, while the species like *Juniperus chinensis* seemed to be little injured. He suggested that this might be due to the decrease in vigour shown by the vegetatively propagated varieties, as compared with the species usually raised from seed.

NORTH LONSDALE ROSE.

JULY 14.—During the twenty-two years of its existence the North Lonsdale Rose Society has provided the residents in the district with many floral treats. The schedule this year contained several new attractions to the grower of Roses, Sweet Peas, &c., notable amongst which was the Challenge Shield offered as a memorial to the late Mr. Jas. Hodgson. That the extension was justified is amply proved by the fact that the entry was so far in advance of last year; indeed, it was a record for the Society, and Ulverston may feel proud of the fact. The Sweet Peas also were a sight it was refreshing to behold.

MESSRS. A. DICKSON & SONS and Messrs. J. SIMPSON & SONS divided the honours in the nurserymen's section for Roses, the former carrying off amongst other prizes the "James Hodgson" Memorial Shield and the Bronze Medal for the best Rose in the show.

In the amateur classes Mr. R. L. GARNETT was the most successful, his prizes including both the Gold and Silver Challenge Cups (which he now takes for the second time in succession) and a Bronze Medal for the best Tea or Noisette.

Mr. F. J. HARRISON was also a prominent winner again, and for the third time in succession he became the possessor of the Ulverston Urban Council Challenge Cup. The "Myles Woodburne" Challenge Cup went to Mr. JOHN FRAGLE, of Rosside, Ulverston; and Miss NINA DICKSON, of Newby Bridge, took away the "Mr. Myles Kennedy" Challenge Cup.

For Sweet Peas the prizes were well distributed, both the "J. Towers Settle" Challenge Trophies going to Canforth district, the winners being Mr. R. BOLTON, Warton; and Mr. T. PROCTOR, Yealand.

WIMBLEDON AND DISTRICT HORTICULTURAL.

JULY 19.—The thirty-third annual exhibition of this flourishing suburban Society was held, in fine weather, on the above date, the tents and marquee which served to shelter the exhibits being pitched in a field adjoining the Worple Road. There were the usual groups of mixed flowering and ornamental-leaved plants, crowded or otherwise as suited the taste of the exhibitors, and no two were exactly alike. Another form of exhibit, more useful perhaps than the other, consisted of two decorated fire-places. In one of them two or three Cattleyas were placed in the grate and Sweet Pea blossoms in glasses on the mantel-shelf above, the in-

congruity being painfully obvious. Certain species of foliage plants, such as *Dracenas*, *Pandanus*, exotic Ferns, *Caladiums* and *Coleus* were shown in meritorious examples of cultivation; and the flowering plants, viz., zonal *Pelargoniums*, *Fuchsias*, *Gloxinias*, and *Roses*, left little to be desired. *Lilium lancifolium* in variety and *L. auratum* were freely made use of. Tuberous-rooted *Begonias* and herbaceous perennials formed an important part of the display; these last, being contributed mostly by the trade, were not entered for competition. *Roses* were not very abundant, whilst *Sweet Peas*, on the contrary, occupied a good deal of the available table space.

Groups of Plants to cover 50 square feet in semi-circles.—A satisfactory group was arranged by Mr. W. Thornton, gr. to T. E. CROCKER, Esq., "Draymont," Vice-President. The plants chiefly employed were *Gloxinias*, *Francoa racemosa*, *Lobelia tenuior*, *Dracenas*, and *Codiaeums*, these last of quite small sizes. This exhibitor was awarded the 1st prize, and there were in all six groups of varied degrees of effectiveness.

Groups not in the competition were set up at each end of the marquee, that by Mr. J. NASH, Belvedere Nursery, Wimbledon, consisted chiefly of *Lilium lancifolium album*, *L. l. rubrum*, *L. auratum*, *Nicotiana Sanderi*, *Verbena Miss Willmott* in considerable numbers, arranged in small compact groups, and pink and scarlet-flowered zonal *Pelargoniums*. The filling-in and ground-work plants consisted of *Caladium argyrites* and *Adiantum Capillus-Veneris*. This was the most effective group.

The corresponding group arranged by Messrs. D. S. THOMSON & SONS, nurserymen, Wimbledon, took a quadrangular form, and consisted of small pyramidal groups of various plants, such as *Golden and Silver Gymnogrammas*, *Codiaeums*, *Rex Begonias*, red-leaved *Dracenas*, the intervening spaces being filled with dwarf Ferns and flowering sprays of *Gypsophila*. The central group consisted of *Caladiums*, and the back line of the panicle *Hydrangea*, an effective feature of the whole.

For six tuberous *Begonias* (open) Mr. A. SKEGGS was 1st with finely-flowered plants, consisting of five double and one single-flowered varieties, *Salmon Queen* and *Henshaw Russell* being the prettiest ones as regards colour and form.

Single specimen plant in flower (open).—1st, Mr. G. HUTTON for *Clerodendron Balfourianum*, covered in every part with leaves and blooms.

ROSES.

Mr. Gibson, gr. to J. WORMALD, Esq., Morden Park, showed a stand of *Twenty-four Single Blooms with leaves as gathered*, not fewer than eighteen varieties, which took the 1st special prize of £2, given by Mr. and Mrs. Percy Mortimer, Ricards Lodge, Wimbledon Park. Very good were the blooms of *Maman Cochet*, *Marie Rady*, *Capt. Christy*, *Duke of Teck*, *Frau Karl Druselki*, &c.

For *twelve Roses, Distinct, Single Blooms, with leaves as gathered*.—1st, Mr. J. Wilkins, gr. to J. BRIDGEWATER, Esq., Wilton House, New Malden, with choice examples of *Horace Vernet*, *U. Brunner*, *F. Michelon*, *Marquis de Litta*, and *Mildred Grant*. 2nd, Mr. A. Snudden, gr. to J. JEEVES, Esq., Well House, whose flowers were of irregular size, and had suffered much in transit. There were smaller Rose classes, but of no great merit.

SWEET PEAS.

For the best exhibit of six varieties in bunches, Mr. J. WATSON, Junior, was 1st with good robust blooms set upon dense bunches. 2nd, Mr. C. S. JONES, whose flowers were loosely arranged, and with their own foliage and tendrils, a much better way of showing them. There were special prizes for Sweet Peas, the exhibits pleasing as regards colour and variety, if not in the manner of setting them up; and there were competitions for four bunches numbering eight.

FRUIT AND VEGETABLES.

But few exhibits of hothouse or of out-of-doors fruits were observed. The best three bunches of black Grapes, shown in the open class, came from Mr. G. HUTTON, the variety being *Black Hamburg*. The 2nd prize fell to Mr. W. Barnett, gr. to G. H. WILLIAMSON, Esq., Currie Hill, who had the same variety; and Mr. G. HUTTON was awarded 2nd prize for three bunches of some kind of Sweetwater, probably *Foster's Seedling*.

Excellent *Bellegarde Peaches* were shown by Mr. R. S. BARNETT, gr., Ricards Lodge, an exhibitor who was likewise 1st for a dish of beautiful-looking *Lord Napier Nectarines*; as also for a collection of four dishes of fruit, showing *Bellegarde Peaches*, *Lord Napier Nectarine*, *Early Transparent Plum*, and *Moore Park Apricot*. Mr. C. S. Jones, gr. to G. HAMPTON, Esq., Oxford Lodge, was 2nd in this class; and he took 1st for a dish of *Fillbasket Strawberries*, a variety that is being squeezed out of gardens by the larger-fruited, more acidulous modern varieties.

Tomatos were abundantly shown, and the 1st prize for a dish of twelve fruits was taken by Mr. J. DOWNING, gr.

Jasmine and the Japanese Honeysuckle—the latter not a bit like those grown in England. I will not dwell on *Mignonette* or *Violets*, nor can I venture on the large field of the *Roses*, for here a whole chapter would be needed. It is a remarkable thing, it seems to me, if it be true that all cultivated *Roses* come from two or three original stocks, that the scents of various kinds are so peculiar that I doubt not that a little study would enable us to classify them by scent, and to know them in the dark. When the *Roses* are over the garden scents are at an end, for here in *Mentone* "the winter flower is to the winter sweet," and with this I make my bow and resume my digging. H. A. FREEMAN, Parkside, Bromley, Kent.

ESPALIER-TRAINED APPLE-TREES.—Is there growing up a greater taste for flat-trained Apple-trees than has for a long time been evidenced? The popular bush-tree has for many years been most favoured in gardens, and has rendered great service in fruit production. Probably our Apple exhibitions now owe more to dwarf or bush trees for the fine fruit seen than to any other form of tree. But when in the fine kitchen gardens at Hackwood Park, Basingstoke, recently, I saw that during the past few years no fewer than some eighty espalier-trained trees, nearly all on the *Paradise* stock, had been planted, my mind naturally turned to the great value in gardens of this type of tree. I also wondered whether what was there seen was to be taken as indicative of a revival of a form of training and Apple production that has for a long time been too much neglected. That the espalier method of training is derived from the continent there can be no doubt, and one of the earliest recorded references to such trees in English gardens is that of Sir William Temple, who planted a large number in his gardens at Sheen, Richmond, about the close of the 17th century. It is written of these trees that after producing abundant crops for some eighty years they were destroyed, the ground having been purchased by the Crown. That statement seems to be proof conclusive that espalier-trained trees were most successful. A further instance is recorded at Twickenham, where Mr. Secretary Johnston, towards the end of the eighteenth century, planted many flat-trained trees both of Apples and Pears, and those bore heavy crops of fruit. An espalier-trained tree was mentioned and measured in 1831, which had a length of 99 feet from point to point of the branches. It was also a great bearer, and had been planted over forty years. Even now there are many fine old espalier trees about. One of the finest I have seen for a long time was a tree of the variety *Lord Derby*, at *Madresfield Court*, which several years since produced grand crops, and no doubt does so still. At Hackwood Park, Mr. Bowerman found that a few trees of *Lane's Prince Albert*, *Warner's King*, and others, as they extended, gave him splendid fruit yearly. That led to others being planted at the rate of a couple of dozen or so yearly, until now the number is, as said, about 80. The trees are planted 5 feet back from the edges of the broad grass walks, allowing ample room in front for dwarf flowers, herbs, or close-growing crops. Stakes alone are used for supports, and are probably better in some respects than are wire trellises. Certainly at Hackwood stout stakes are cheap. The general distance apart of the trees is 15 feet. Of varieties planted besides those named are *Early Victoria*, *Ecklinville*, *Peasgood's Nonsuch*, *Stirling Castle*, *Tower of Glamis*, *Newton Wonder*, *Beauty of Kent*, *Gloria Mundi*, *Hamburg Seedling*, *Bismarck*, *The Queen*, *Lord Grosvenor*, *Cox's Pomona*, and others. Kitchen Apples are in the majority, but such good dessert sorts as *Cox's Orange Pippin*, *King of the Pippins*, *Ribston Pippin*, *American Mother*, *Allington Pippin*, and *Adam's Pearmain* are included. The immobile nature of well-secured espalier trees is most favourable to large-fruited varieties, as the fruits are scarcely disturbed by wind, and can hang a long time with entire safety. A special reason, also, for favouring the rigid method of training is that the trees can be so easily netted over, not only to protect the bloom in the spring, but also the fruit in the autumn, from the depredations of the birds. A. D.

at Derwent House. 2nd, Mr. R. S. BARNETT, the varieties being respectively Best of All and Satisfaction.

In the Amateurs' division, for a collection of vegetables consisting of six kinds, distinct, Mr. J. H. SULLOCK, Arterbury Road was 1st, his Egyptian Beets, Carentan and Horn Carrots, Peas, Kidney Potatoes, Tomatos and Vegetable Marrows being nice productions.

In the classes for vegetables many of the exhibits were shown in competition for special prizes, and Mr. W. Smith, gardener to S. WILSON, Esq., Old Rectory, Wimbledon, was 1st for Messrs. Thomson & Sons' prize for ten kinds, distinct. His Potatos, Peas, French Beans, Tomatos and Turnips were excellent. 2nd, Mr. J. Dudley, gardener to J. C. PINK, Esq., with productions but little inferior to the foregoing.

Messrs. Sutton & Son's prize for six kinds, the produce of seeds supplied by the firm, was won by Mr. J. WILKINS with capital Tripoli Onions, Peas and Potatos.

There were special prizes for Peas and Tomatos, and the products shown were as a rule of more than average quality. The favourite Pea was Duke of Albany; and the Tomatos consisted of Holmes' Supreme, Sutton's Al and Princess of Wales.

NON-COMPETITIVE EXHIBITS.

Messrs. D. S. THOMSON & SONS showed hardy flowers, including the best of everything that blossoms at this date. This firm staged likewise twenty-seven single blooms of Roses, large and fully developed, besides being particularly fresh-looking. They also showed ten varieties in triplets equally good. F. M.

DURHAM, NORTHUMBERLAND, & NEWCASTLE BOTANICAL AND HORTICULTURAL.

JULY 19, 20, 21.—The summer show at Newcastle was held under exceptionally favourable conditions in respect to weather, the attendance being almost a record one for the Society. The exhibits were generally above the usual standard, and competition was keen in most of the classes. The trade exhibits were more extensive than usual.

Messrs. KENT & BRIDON, Darlington, had a large exhibit of ornamental trees and shrubs, "Malmaison" Carnations, Liliums in variety, Roses, Verbenas, and foliage plants.

Messrs. J. BACKHOUSE & SONS, York, included a miscellaneous collection of rock plants, arranged in their usual characteristic style. They had also a collection of stove and greenhouse foliage and flowering plants.

Mr. J. FORBES, Howick, had a large exhibit of herbaceous and border plants, the Delphiniums and Pentstemons being of exceptional merit. The Phloxes were very remarkable and exceptionally well grown.

Messrs. ORD BROS., North Shields, had a collection of Palms and other fine foliage plants, intermixed with specimen plants of zonal Pelargoniums.

Messrs. DOBBIE & Co., Rotheray, had a fine stand of hardy flowers, a collection of Sweet Peas, and one of Roses.

Messrs. DICKSONS, Chester, had a mixed collection of hardy flowers, the Liliums in this collection being very fine, and the Roses and Carnations making an effective display.

COMPETITIVE CLASSES.

In Class 1 for a group of miscellaneous plants arranged for effect, Mr. T. PATTISON, West Hartlepool, won the 1st prize with a neat and effectively arranged group.

The class for six specimen plants in flower is perhaps the most interesting feature of the whole show, as the exhibitors consist almost entirely of pitmen, who fill in the spare time at their disposal in the cultivation of specimen plants, the Statice, Allamandas, Stephanotis, Clerodendron, Lapagerias, and Rondeletias being remarkable examples of perfect cultivation. Messrs. R. GARDINER & GUYMER were 1st.

In the class for four specimen plants, Mr. J. DIXON, Woodside, Ryton, was 1st, the Rondeletia, Statice profusa, and Clerodendron Balfourii being perfect specimens of cultivation. Messrs. HUNTER & Co., Hexham, were 2nd.

In Class 10 for a collection of Roses arranged for effect, Mr. HUGH DICKSON, Belfast, won the 1st prize with a neatly arranged and extensive collection of good flowers. Messrs. MACK & MILNE, Darlington, were 2nd; and Messrs. HARKNESS & SONS, Bedale, 3rd.

For thirty-six Roses, distinct, Messrs. G. and W. H. BURCH, Peterborough, were 1st.

In a class for forty-eight Roses, distinct varieties, Messrs. J. SIMPSON & SONS, Dundee, were 1st.

For twelve Rose blooms of one variety, Messrs. SIMPSON & SONS were 1st with fine examples of Frau Karl Druschki; and Mr. J. GARDENER, Whickham, 2nd, with the same variety.

The best exhibit of twelve blooms of a Tea Rose was also from Messrs. SIMPSON, with the variety White Maman Cochet.

FRUIT.

In a class for a collection of eight dishes of fruit, Mr. J. C. MCPHERSON, Londesborough Park, Market

Weighton, won the 1st prize, the Grapes, Apples, and Peaches in this collection being of exceptional merit. Mr. E. COMBEY, Lambton Castle, was 2nd; and Mr. W. NICHOLLS, Carlton Towers, 3rd.

For a collection of four dishes of fruit, Mr. MCPHERSON was again 1st; and Mr. COMBEY, 2nd.

For four bunches of Grapes Mr. W. Mark, gr. to Miss MARCHAMP, Farnley Hill, Corbridge, was 1st; and Mr. J. C. MCPHERSON, 2nd.

The best exhibit of two bunches of white Grapes was from Mr. J. C. MCPHERSON.

Mr. D. WILLIAMS had the best dish of Nectarines, and Mr. NICHOLLS the best dish of Peaches.

Mr. J. C. MCPHERSON was 1st for twelve Tomatos.

For a collection of vegetables in eight varieties, Mr. E. KEATH was 1st; Mr. F. BRIGGS, 2nd. Mr. J. C. MCPHERSON won 1st prizes for collections of eight and six dishes respectively.

CUT FLOWERS.

The best bridal bouquet was shown by Mr. T. BATTENSBY, and the best hand bouquet (Orchids excluded) by the same exhibitor. Mr. EDMONSON won the 1st prize for a basket of Roses. For a dinner-table arranged for effect Mr. BATTENSBY won the 1st prize, and the best basket of cut flowers was arranged by the same exhibitor. The best collection of Sweet Peas was from Mr. KEATH.

In the class for twenty-four bunches of hardy flowers Messrs. HARKNESS & SONS were most successful, and for eighteen bunches Messrs. GIBSON & Co., Bedale, were 1st.

The whole of the Amateur and other restricted classes were well filled, and a keen competition in most classes was the result.

Sweet Peas were far more extensively shown than in previous years. H. J. C.

BRITISH GARDENERS' ASSOCIATION.

JULY 21.—The newly-elected Executive Council held its first meeting on the above date, at the Hotel Windsor, Victoria Street. The Secretary, Mr. Watson, reported the progress made since June 1. Twenty-seven new members had joined, bringing the total number up to 650, and donations amounting to £11 17s. had been received, including £10 from Mr. A. K. Bulley, who wrote:—

Dear Mr. Watson—I am afraid I am too far from the centre of action to enter effectually into your movement. But the substitution of organisation amongst gardeners for the present vexatious and chaotic conditions, seems to me wholly good. Its main object must of course be the benefit of gardeners by the thousand-and-one channels which association is always able to command. But it will also be a great advantage to all employers who believe in good work and good pay, for it is certain that it will be the most enlightened and intelligent section of the workers who will be the most prompt to join an Association for the common good.

I wish you well, and enclose £10 towards your initial expenses. Try as soon as you can to get the Association free from any charity basis, even if it means considerable pinching and work done without pay; it is better to do what you can on the saved pennies of the gardeners.—Yours faithfully, ARTHUR K. BULLEY.

Attention was called to the remarks of Sir W. T. Thistleton-Dyer, as well as to those of the Duke of Westminster at the annual dinner of the Gardeners' Royal Benevolent Institution, on June 16. His Grace then said: "But the life of the gardener was not literally a bed of Roses, nor were his gains great. He was a skilled workman who gave an infinite amount of pleasure to the community at large by his labour and ingenuity, and yet his wages compared very unfavourably with those of skilled workmen in other branches of industry. Few gardeners could afford to lay by from their wages a sufficient sum to enable them to meet the rainy day or the inevitable prospect of old age. He therefore commended the charity to their notice, confident that when its objects were more generally known further generous contributions would be forthcoming."

The Council decided to make arrangements for a Conference of members and others interested, to take place in October, during the great autumn fruit show of the Royal Horticultural Society. To this Conference branches of the British Gardeners' Association will be invited to send delegates. A proposal to engage the services of a paid secretary to devote his whole time to the work of the Association was considered, but the Council decided that in the present condition of the Association it would be unwise to incur the expense of a paid secretary and a central office. The Council hopes before long to make arrangements for monthly meetings to take place in or near the Royal Horticultural Society's Hall in Vincent Square concurrently with the meetings of the Royal Horticultural Society.

On the motion of Mr. Winter, seconded by Mr. Watson, Mr. J. Weathers was unanimously elected

hon. secretary of the Association. All communications affecting the British Gardeners' Association should therefore in future be addressed to Mr. J. Weathers, Talbot Villa, Isleworth, Middlesex.

The members of the Executive Council are:— T. H. Candler, The Gardens, Warley Place, Great Warley; G. H. Clack, Putney Park, Putney; W. E. Close, Superintendent of Parks, Fulham; C. H. Curtis, 2, Adelaide Road, Brentford; W. Dallimore, Royal Gardens, Kew; G. Gordon, Priory Road, Kew; J. Lawson, Horticultural College, Swanley; R. Hooper Pearson, 40, Brookelbank Road, Wandsworth; W. Taylor, The Gardens, Tewkesbury Lodge, Forest Hill; W. Watson, Royal Gardens, Kew (Chairman); J. Weathers, Talbot Villa, Isleworth (Hon. Secretary); T. Winter, Superintendent of Parks, Marylebone.

MARKETS.

COVENT GARDEN, July 26.

Plants in Pots, &c.: Average Wholesale Prices.		s. d. s. d.	
Aralia Siebold, p. dozen	4 0-9 0	Heliotropes, per dozen	3 0-4 0
Araucaria excelsa, per dozen	18 0-30 0	Hydrangea, Thos. Hogg, p. doz.	8 0-12 0
Aspidistras, green, per doz.	24 0-36 0	— Hortensia, p. dozen	8 0-12 0
— variegated, per doz.	30 0-42 0	— paniculata	12 0-30 0
Asparagus plumosus nanus, per doz.	12 0-18 0	Kalosanthes, per dozen	9 0-12 0
— Sprenger, per dozen	6 0-9 0	Kentia Belmontiana, per doz.	12 0-18 0
— tenuissimus, per doz.	6 0-12 0	— Fosteria, p. doz.	12 0-21 0
Begonias, tuberous, per doz.	4 0-6 0	Lantanas, per dozen	9 0-12 0
Campanula isophylla, p. doz.	4 0-8 0	Lobelia, per doz.	3 0-4 0
— Mayi, per doz.	8 0-8 0	Latania borbonica, per doz.	12 0-18 0
— pyramidalis	9 0-12 0	Lilium longiflorum, per doz.	9 0-12 0
Cannas, per doz.	5 0-6 0	Marguerites, white, per dozen	4 0-8 0
Chrysanthemum coronarium, double yellow, per dozen	6 0-8 0	— yellow	12 0-18 0
Colens, per doz.	2 6 4 0	Mignonette, doz.	4 0-6 0
Crotons, per doz.	12 0-30 0	Musk, Harrison's, per dozen	3 0-4 0
Cocos Weddelliana, per doz.	12 0-30 0	Pelargoniums, per doz.	9 0-12 0
Cyperus alternifolius, per dozen	3 0-5 0	— Ivy-leaved	4 0-6 0
Dracenas, per dozen	9 0-24 0	— zonal	3 0-5 0
Eulalia japonica variegata	12 0-18 0	— scarlet do.	4 0-5 0
Enonymus, per dozen	4 0-9 0	Petunias, double, per dozen	5 0-8 0
Ferns, in thumbs, per 100	8 0 12 0	Privet, golden, per dozen	5 0-6 0
— in 48's, p. doz.	4 0 10 0	Rhodanthé, per dozen	4 0-5 0
— in 32's, per dozen	10 0 18 0	Roses, H.P.'s, per dozen	9 0-18 0
Ficus elastica, p. doz.	9 0 12 0	— Dorothy Perkins, each	3 0-6 0
— repens, per dozen	4 0-8 0	Selaginella, p. doz.	3 0-5 0
Fuchsias, p. doz.	4 0-6 0	Spiraea japonica, per doz.	4 0-9 0
		Verbena, Miss Willmott, per dozen	4 0-6 0
		— scarlet, per dozen	4 0-8 0

Foliage Plants, &c.: Average Wholesale Prices.		s. d. s. d.	
Asparagus plumosus, long trails, each	0 4-0 6	Grasses, hardy, p. dozen bunches	2 0-4 0
— medium, bunch	0 9-1 0	Ivy-leaves, bronze long trails, per bundle	1 0-2 0
— short sprays, per bunch	1 0-2 6	— short green, doz. bunches	1 0-1 8
— Sprenger, per doz.	0 8-1 0	Moss, per gross	5 0-6 0
— tenuissimus	9 0-12 0	Myrtle, per dozen bunches	3 0-5 0
Adiantum cuneatum, per dozen bunches	4 0-8 0	Smilax, p. dozen trails	4 0-8 0
Cycas leaves, each	1 8-2 0	Hardy foliage (various), per dozen bunches	3 0-4 0
Fern, English, p. dozen bunches	1 0-2 0		

Vegetables: Average Wholesale Prices.		s. d. s. d.	
Artichokes, Globe, per dozen	1 6-2 0	Mushrooms (house) per lb.	1 0-1 9
Beans, English, p. lb.	0 3-0 4	Onions, Egyptian, per cwt.	3 9-4 0
— Broad p. busn.	0 10-1 0	— Spring, p. doz. bunches	2 6-3 0
— per bag	3 0-4 0	Parsley, per doz. bunches	1 6-2 0
Beetroot, p. bush	2 0-2 6	Peas, Yorkshire, per bag	6 0-7 0
Cabbages, p. tally	3 0-4 0	— English, per bushel	3 0-4 0
Carrots, new, doz. bunches	1 6-2 0	Radishes, p. doz. bunches	0 3-1 0
— 1/2 wt. bag	2 6-3 0	Spinach, bush	1 0-2 0
— French, doz.	2 6-4 0	Tomatos, English, p. lb.	0 3 1/2-0 4 1/2
Calliflowers, doz.	1 0-2 6	— Jersey, p. lb.	0 3-0 4
Celery, French, p. dozen heads	3 0-3 6	— Valencia, per package	6 0-14 0
Cress, p. doz. pun.	1 0-1 0	Turnips, new, doz. bun.	1 6-4 0
Cucumbers, doz.	2 0-3 0	Vegetable Marrows, per dozen	2 6-4 0
Endive, per doz.	2 6-2 6	Watercress, per doz. bunches	0 4-0 8
Horseradish, per dozen bundles	8 0-10 0		
Mint, per dozen	1 0-2 0		
Leks, 12 bundles	2 0-3 6		
Lettuces, Cabbage, per dozen	0 6 0 10		
— English, Cos, per score	1 0-1 6		

Cut Flowers, &c.; Average Wholesale Prices.

	s.d.	s.d.		s.d.	s.d.
Alströméria, per doz. bunches ...	2	0-3	Mignonnette, doz. bunches ...	2	0-4
Asters, 12 bunches	2	0-4	Moutbetias, doz. bunches ...	6	0-12
Bouvardia, per doz. bunches	6	0-8	Odon toglossum crispum, pr. doz. blooms ...	2	0-2
Calla aethiopica, p. doz. blooms	3	0-4	Pelargoniums, per dozen bunches:		
Carnations, per doz. blooms, best American vars. ...	1	6-3	- Show ...	4	0-6
- smaller do. ...	0	6-1	- Zonal, double scarlet ...	4	0-8
- Malmaisons ...	6	0-10	- salmon and pink ...	4	0-6
Cattleya, per doz. Chrysanthemums, per doz. blooms	2	6-3	Poppies, Iceland, doz. bunches	0	6-1
Coreopsis, p. doz.	2	0-3	- Oriental, doz. bunches ...	4	0-6
Eucharis grandiflora, per dozen blooms ...	1	0-2	Pyrethrum, doz. bunches ...	2	0-4
Gardenias, per doz. blooms ...	1	0-1	Rhodanthe, doz. bunches ...	2	0-3
Gladiolus Colvillet, p. doz. bunches ...	1	0-2	Roses, 12 blooms, Niphetos ...	0	6-2
- brechenleyensis p. doz. spikes	3	0-4	- Bridesmaid ...	1	0-2
Gypsophila, per dozen bunches	2	0-3	- Kaiserin A. Victoria ...	2	0-4
Iris, best English, per dozen ...	9	0-12	- General Jacqueminot ...	0	6-1
Lilium candidum - auratum ...	0	6-1	- C. Mermet ...	1	0-2
- lancifolium, rubrum and album ...	1	0-2	- Caroline Test-out ...	1	6-3
- longiflorum ...	2	0-3	- Liberty ...	1	6-3
- tigrinum ...	1	6-2	- Mad. Chatenay ...	2	0-4
Lily of the Valley, p. doz. bunches	6	0-9	- Mrs. J. Laing ...	2	0-4
- extra quality 18 0			- Sunrise ...	1	0-2
Marguerites, white, p. doz. bunches	3	0-4	Stephanotis, per doz. trusses ...	1	6-2
- yellow, per doz. bunches ...	2	0-3	Sweet Peas, per doz. bunches	1	0-3
			Sweet Sultan, per dozen ...	3	0-4
			Tuberose, per dozen blooms	0	3-0

Fruit: Average Wholesale Prices.

	s.d.	s.d.		s.d.	s.d.
Apples, Tasmanian, case	9	0-15	Grapes, Hambro, per lb. ...	0	10-2
Apricots, French, per half bush.	6	6-7	- Muscats, lb. ...	1	0-4
Bananas, bunch - Jamaica ...	3	6-7	Lemons, Naples, per case ...	23	0-35
- loose, per doz.	1	0-1	Melons, each ...	1	3-2
Cherries, per half bushel ...	8	0-16	- French, Rock Nectarines, A., p. dozen ...	8	0-15
Currants, Black, p. half bushel	4	0-6	- B., per dozen	2	0-6
- Red, per half bushel ...	3	0-5	Oranges, Jamaica, per case ...	14	0-16
- White, per lb. ...	8		Peaches, A., per dozen ...	10	0-15
Figs, per dozen	2	0-5	- B., per doz. ...	3	0-6
French Plums, p. box ...	1	0-1	- French, per box ...	0	9-1
Gooseberries, per half bushel ...	2	6-3	Pines, each ...	2	0-4
- ripe, per peck	2	0-2	Raspberries, p. lb.	0	4-0
Grape-fruit, case	15	0-25	Strawberries, one pound flat punnets, per dozen ...	6	0-12
Grapes, Alicante, per lb. ...	0	8-1			

REMARKS.—The Strawberry season may be considered over. There are a few in punnets and pecks, but these are mostly bought by the smasher for the making of jam. Cherries are still arriving in moderate quantities, and the best samples make good prices. Peaches and Nectarines are plentiful, and very good prices are obtained for them, considering the large quantities arriving daily. Rock Melons are arriving from France in very good condition. Prices for these are a little lower, owing chiefly to the hot weather, which turns them soft very quickly. English Grapes are coming on to the market. There is not much trade for Muscats yet, and only good ripe fruit is saleable. A few good bunches of Madresfield Court were to be seen on this market last week, but there was little demand. Gros Colmar, Black Alicante, and Black Hamburgs sell best. Trade generally is very good.

DOVET GARDEN FLOWER MARKET.

The London trade for pot plants is now practically over for the season. A few best flowering plants may still be wanted, and there is a little trade for country orders. We are still getting very good Pelargoniums, but the "show" varieties are not quite so plentiful. Zonal varieties are very good, especially F. V. Raspail and King of Denmark. The Ivy-leaved varieties vary much, but Galilee is the best. Verbenas are overplentiful; a variety called The King, from Mr. Sweet, is very fine. Rose Dorothy Perkins is very good from the same grower. Fuchsias vary much in quality; some good plants are seen, but others are of rough appearance. Campanulas are very good; C. isophylla alba is the general favourite. There are several varieties with blue flowers, but the true isophylla appears to be even better than C. i. Mayi, though the latter may be a little deeper in colour. C. pyramidalis, white and blue varieties, are very pretty. Heliotrope is now very good and over plentiful. A few well-flowered plants of the new Gypsophila paniculata flor-pleno are seen. Of Marguerites, white and yellow varieties are still seen, but they are not quite so plentiful. Rhodanthe is very good. Hydrangeas are now nearly past, and what are left are not of the first quality.

Liliums are plentiful, L. Harrisii in good dwarf plants make only about 12s. per dozen. L. lancifolium, both white and rose-coloured varieties, are good. To Ferns there are now some fine plants of Nephrolepis Miersonii, but I find this does not sell so well as might be anticipated. N. Fosteri is also good, and N. Westonii is a good market Fern. These come from Messrs. Cragg, Harrison & Cragg, who were the raisers of the last-named variety. Small Ferns in variety are very plentiful. From Messrs. Denson Bros. are some very fine plants in large 6's. Euonymus, Golden Privet and other hardy shrubs are now filling up some of the stands. Palm growers still send plants, but the trade for them is very quiet.

CUT FLOWERS.

We are already getting some very fine Chrysanthemums, the yellow and the white varieties of Madame Desgranges, from Mr. P. Ladds, are remarkably good. It may be too early to suit some, but they sell well at 3s. per dozen blooms, and some may make more. This useful early Chrysanthemum has certainly been improved by careful selection of stock since it was first distributed. A few years ago, when growing it in Sussex, I found there was considerable variation in a large batch growing in the open ground. All growers will do well to be careful in selecting for stock purposes. Liliums are plentiful; the best L. auratum make 3s. per bunch, but L. lancifolium and longiflorum are very uncertain in price. I also find that Lily of the Valley varies very much. There are large supplies of Roses coming in; the best sell well, but many have to be sold very cheaply. Carnations are now low in price; best American varieties on long stems may be had at from 2s. to 2s. 6d. per dozen. Stephanotis was scarce this morning, but it has previously been very cheap. Tuberose, Gardenias, and Eucharis may be had at moderate prices. Sweet Peas are still fairly good, but prices are low. Hardy flowers are overplentiful. Several growers are sending the Shasta Daisies in large quantities. Gypsophila is seen in large "heaps." Calliopsis, Gladioli, especially The Bride and brechenleyensis, are overplentiful. There are large supplies of all kinds of cut foliage. The Oak with bronzy-red leaves is now very pretty. Hardy grasses in variety, and fronds of hardy Ferns are very plentiful. A. H., Wednesday, July 26.

duration ranged from 58 in the Channel Islands, 57 in England, S., and 55 in England, E., to 19 in Scotland, N., and to only 13 and 12 respectively in Ireland, N. and S."

THE WEATHER IN WEST HERTS.

Again very Warm, Dry and Sunny.—Another warm week, and the sixth in succession. On the warmest day of the past week the temperature in the thermometer-screen rose to 81°, and on the warmest night the exposed thermometer did not fall lower than 58°. The ground is now very warm, the readings at both 1 and 2 feet deep being about 3° warmer than is reasonable. There has been no rain worth mentioning since the 9th inst., or for over a fortnight. Consequently the soil is becoming dry, but every morning a few drops still trickle through the bare soil percolation gauge. As in the two previous weeks there was again a splendid record of sunshine. Taking the week as a whole the mean daily duration was nearly 8 hours a day, which is 1½ hour a day in excess of the July average. Calms, and light airs again prevailed, the direction of these light airs being exclusively from some westerly point. The mean amount of moisture in the air at 3 P.M. was 1 per cent. less than is usual at this season. E. M., Berkhamstead, July 26, 1905.

[For actual temperature and condition of barometer at time of going to Press, see p. 90.]

TRADE NOTICES.

BEDFORDSHIRE SEED COMPANY, LIMITED.—The above-named company has been registered with a capital of £2,000 in £1 shares. Object, to carry on the business of seed growers and merchants, nurserymen, market gardeners, forage contractors, produce dealers, salesmen, manure merchants, box manufacturers, land agents, &c. No initial public issue. The first directors (to number not fewer than two nor more than five) are to be appointed by the signatories. Qualification (except first directors) 100 shares.

REIGATE MUSHROOM COMPANY, LIMITED.—This company has been registered with a capital of £5,000 in £1 shares. Object, as indicated by the title. No initial public issue. The first directors are F. J. Bolton (permanent governing director), and others to be appointed by the signatories. Remuneration of F. J. Bolton £150 for the first year, rising by annual increments. Registered office, Willow House, Godstone, Surrey.

THE WEATHER.

METEOROLOGICAL OBSERVATIONS taken in the Royal Horticultural Society's Gardens at Wisley, Surrey. Height above sea-level 150 feet. The following are the "mean" readings for the week ending July 22, 1905.

1905.	TEMPERATURE OF THE AIR.				TEMPERATURE OF THE SOIL AT 9 A.M.			RAINFALL.	SUNSHINE.	
	At 9 A.M.		DAY.	NIGHT.	At 1-foot deep.	At 2-foot deep.	At 4-foot deep.			
	Dry Bulb.	Wet Bulb.	Highest.	Lowest.						
JULY 16 TO JULY 22.	deg.	deg.	deg.	deg.	deg.	deg.	deg.	ins.	hr. min.	
MEANS	66	60	75	54	48	66	65	62	0.30	8 54

GENERAL OBSERVATIONS.

THE FOLLOWING SUMMARY RECORD of the weather throughout the British Islands, for the week ending July 22, is furnished from the Meteorological Office:—

"The weather was generally fine and dry over England, but slight falls of rain were rather frequent in Scotland and Ireland. Thunder was heard at a few Scotch stations during the earlier half of the week.

"The temperature continued above the mean, the excess ranging from 1° in Scotland, N., to 4° in Ireland, S. The highest of the maxima occurred, with few exceptions, either on the 21st or 22d. In England, S., the thermometer rose to 83°, and in several other English districts to 82°; but in Ireland, N., and Scotland, W., the respective values were 72° and 75°. The lowest of the minima were recorded mostly on the 19th, and varied from 35° in Scotland, N., and 39° in Scotland, E., and England, S.W., to 51° in Ireland, S., and to 54° in the Channel Islands.

"The rainfall was slightly in excess in Scotland, N. and W., and Ireland, N., but was again less than the mean in all other districts. In some parts of central England the week was almost rainless.

"The bright sunshine exceeded the mean over England, the Channel Islands, and Scotland, E., but was deficient elsewhere. The percentage of the possible

CATALOGUES RECEIVED.

THE STREBEL SECTIONAL BOILERS.—These boilers are made in many varieties, and are constructed of sections of the same pattern without changing the relations between heating-surface, grate, fire-box, and flues. The Strebel apparatus is used in the Hamburg Botanic Gardens, at Versailles, Zurich, and many other widely-known places. The London agent is R. O. Meyer, Ltd., Norfolk House, Norfolk Street, Strand.

FRUIT.

GEO. BUNYARD & Co., Maidstone—Strawberries, &c.

BULBS.

HUBERT & Co., Guernsey.
T. METHVEN & SONS, 15, Princes Street, and Leith Walk, Edinburgh.

COLONIAL.

ANDERSON & Co., 399, George Street, Sydney, Australia—Seeds and Plants.

FOREIGN.

EVERARD & Co., Heiloo, nr. Alkmaar, Holland—Bulbs.
ROVELLI FRÈRES, Horticulteurs, Pallanza, Italy—seeds of Trees and shrubs.
M. HERR, Naples, Italy—Bulbs and Seeds.

GARDENING APPOINTMENTS.

MR. JOHN TOY, several years Gardener to Sir E. BLACKETT, Bart., Matfen Hall, Corbridge-on-Tyne, as Gardener to J. W. SIBNER, Esq., Newbiggen House, Kenton, Newcastle-on-Tyne.
MR. JAMES JEFFREY, from the Royal Nurseries, Craigmillar, Edinburgh, as Gardener to the Right Honble. Earl of ANCASTER, Drummond Castle, Perthshire.
MR. T. CATTLEY has succeeded Mr. J. PEACOCK in the charge of Sir EDMUND LECHMERE'S Gardens, Whitwell Hall, York.
MR. E. CROOK, Gardener at Lostock Dene, Bolton, for nine years, as Gardener to E. ASPINALL, Esq., Overdale, Bolton.
MR. R. WATSON, late of Letton, as Gardener to R. J. COLMAN, Esq., Crown Point, Norwich, entering his duties August 1.
MR. J. KILDING, who has been Foreman for five years under Mr. LEACH at Albury Park, as Gardener to Lady MARY HOLLAND, Kneesworth Hall, Royston, Herts.

ANSWERS TO CORRESPONDENTS.

ACALYPHA LEAVES: *W. J.* The warts on the under surface of the leaves are most probably due to the irritation caused by the bites of an extremely minute insect—a mite. Pull off and burn the affected leaves, and apply Tobacco-water freely to the lower surface of the remaining leaves as far as you can do so.

ALSTROEMERIAS: *Barnham Nurseries.* The Alstroemerias seen in the market vary a little in colour, some are much deeper in shade than the ordinary *A. aurantiaca*; they are bunched in about eight to twelve stems to each bunch. There is not a big trade for them, all hardy flowers are abundant at the present time, and trade for them is very uncertain.

ANTS IN ORCHID-HOUSE: *M. L.* We have frequently answered a similar question. Kindly refer to our issue for July 1, p. 20, col. 1.

BEET: *L. F. F.* The fault is not with the soil or manures, but with the variety. You have probably what is known as a green-leaved Beet, but the roots may be as blood-red as any other. In the variety known as Cheltenham Green Top, for instance, the contrast in colour between the root and the foliage is extreme. If you want a Beet for ornamental purposes, Victoria is one of the best.

BEGONIAS: *Derbyshire.* The soil appears unsuitable.

BOOKS: *Rosarian.* There are plenty of modern books on Roses, but none give many plans of the nature you require. You had better obtain *The Rose Garden*, by the late William Paul, from our Publishing Department, price 11s. 2d., with plain woodcuts; or 21s. 8d. with coloured plates, post-free. This work is the best of those published on the Rose, and contains a number of plans for the formation of Rose gardens.

COUNTY COUNCIL PARKS: *A New Reader.* Apply to Colonel Sexby, General Superintendent of the London County Council Parks, at his office, 11, Regent Street, London, W. We cannot express an opinion upon the length of time you would have to wait for an appointment, but provided your application is entertained, any delay would be occasioned by the lack of a suitable vacancy.

DUTIES OF AN ENGLISH FORESTER: *Perplexed.* The nominal duties of an English forester are such as those mentioned by you, and there is no reason why your experience in South Africa should not qualify you for a post in England, provided you can acquire the necessary experience in the practical details which are more or less peculiar to this country, such as fencing, sale of timber and other produce, and other matters which have only local application to forestry practice. But you will probably find that the class of appointment you are desirous of obtaining is limited to a few large estates in England and Scotland, and when vacancies occur they are usually filled by men who have spent the best part of their lives on similar estates in a subordinate position, or as assistant-foresters or foremen. Even on such estates it is often the custom to combine the duties of a forester with those of other departments, and the forester is often a sort of handy-man who is expected to do any work which comes in his way, and to occupy a position which is occasionally trying to an educated man. Whether you would be willing to occupy such a position in return for a salary varying from £70 to £150 per annum, you must decide for yourself, but unless you have exceptionally good fortune or can command a good deal of influence amongst estate-owners and their agents, your only chance of obtaining such a post would be by working under an experienced forester for two or three years, and thus joining the class from which forestry appointments are filled. Probably the Colonies offer the best field for a man in your position and with your experience, and appointments in them are occasionally made through the Colonial Office, to which you might apply.

EMPLOYMENT AT KEW: *H. Davies.* See reply published in this column in our last issue. Write to the Curator of the Royal Gardens for a form of application.

FAILING PLANTS: *H. Boyd, Blackburn.* Too much water is the principal cause of the trouble. The plants are quite free from any injury caused by insects or fungi.

FERNS: *A. H. P.* The fronds appear to have been taken from an old, worn-out stunted plant. It is better to bring on young stock than to keep old plants. Steep the fronds in tobacco-water mixed with a little soft-soap.

FIGS: *W. J.* The fruits appear to have no disease, and the decay is therefore caused by lack of sufficient ventilation at a time when the atmosphere is very moist. Do not syringe the fruits at this stage, and if any of the leaves are disfigured, as if by disease, you may send them for our inspection.

FUNGUS WITH GRASS: *P. B. & Sons.* The fungus sent is an imperfect state of Polyporus (*Fomes*) *lucidus*.

FUCHSIA: *De St.* It is impossible to guess what species or variety of Fuchsia you may have cultivated about the year 1835, because there were already at that date, and even ten years earlier, at least half a dozen species in cultivation, to say nothing of varieties raised in gardens. Probably it may have been the one which was then known as *coccinea*.

INSECT: *A. G.* The insect (?) arrived in a putrid condition.

"MALMAISON" CARNATIONS: *Juvenis.* The name is an abbreviation of *Souvenir de la Malmaison*, which in English would mean "In memory of the Malmaison." Malmaison was the name of a very celebrated palace at Versailles, near Paris, where the Empress Josephine lived, and the Carnation may have been named in memory of that palace, but of this we are not certain. Regarding the history of this type of Carnation, Mr. Brotherton states in *The Book of the Carnation* that the original plant was raised from seed by M. Laine, a Frenchman, in 1857. Mr. David Thomson cultivated the plant at Archerfield in 1864, having received the stock from Mr. William Young, of Edinburgh. The variety Lady Middleton is stated to have appeared at Luffness, in East Lothian, in the year 1870, and the pink Malmaison a few years later (1875) in a garden near Musselburgh. Since that date, Mr. Martin R. Smith and other raisers in England and on the Continent have succeeded in obtaining numerous varieties of this type by cross-fertilisation.

MELONS: *W. F. O.* The fruit has cracked owing to the plant having been afforded too much water at the roots. In order to get good Melons of high flavour, it is necessary to decrease gradually the amount of water afforded to the roots, and also the degree of moisture in the atmosphere as soon as the fruits have attained to their full size. Some growers may push this practice to the extreme, and by the time the fruits are ripe the plants die from drought. We do not advise this, but at the same time slightly drier conditions are necessary in order to develop flavour and to prevent the fruits from cracking.—*H. C. D.* There is nothing in the fruits themselves to explain why they have fallen from the plant, and you have furnished no particulars.

MELON SEEDS: *G. G.* We have frequently seen the seeds of Melons and similar fruits germinating while still within the fruit. The conditions are so favourable for such germination that we wonder it does not occur more frequently.

ORANGE RUST: *H. A. E.* Burn the leaves and spray the plants with the Bordeaux-mixture.

ORNAMENTAL FOLIAGE PLANTS: *W. H. S.* Unless the schedule states that Ferns are excluded, we should expect them to be admitted in a class for ornamental foliage plants. We may point out, however, that at many exhibitions there are separate classes for Ferns, and in such cases the schedule generally excludes Ferns from the class for six ornamental foliage plants.

NAMES OF PLANTS: *J. F.* *Staphylea pinnata*, Bladder Nut.—*T. B. B.* *Quercus coccinea*, *Pyrus terminalis*.—*H. K. G.* 1, *Taxodium distichum*; 2, *Hypericum androsaemum*; 3, *Cupressus Lawsonia* variety; 4, *Lysimachia nummularia*; 5, *Thuja orientalis*; 6, *Juniperus chinensis*. *G. F. S.* *Brounus erectus*.—*No sender's name, but apparently from Easing-stoke.* 14, *Spiraea hypericifolia*; 15, *Leycesteria formosa*; 16, *Dentzia crenata*; 17, *Spiraea callosa*.—*W. B. G.* *Portulaca Gilliesii*.—*B.* *Catalpa bignonioides*.—*G. P.* *Calycanthus occidentalis*, The hybrid *Dianthus* is interesting.—*P. L. H.* *Cypripedium Godefroyi*.—*F. L. 1.* *Epipactis latifolia*; 2, *Pyrus salicifolia*; 3, *Pyrus* not recognised; 4, *Crataegus tanacetifolia*; 5, *Quercus coccinea*; 6, *Fagus sylvatica* var. *heterophylla*—the cut-leaved Beech.—*F. E.* *Anerley.* *Medicago scutellata*.—*G. F. & Co.* *Astrantia minor*.—*Ted.* *Fuchsia fulgens*; any of the larger nurserymen.—*F. T.* 1, *Adiantum pedatum*; 2, *Nipholobolus lingua*; 3, *Lastrea filix-mas*; 4, *L. decomposita*; 5, *L. serra*; 6, *Pteris scaberula*.—*A. B.*, *Hereford.* 1, *Spiraea callosa*; 2, *S. Douglasi*; 3, *Leycesteria formosa*; 4, *Rhus Cotinus*; 5, *Lysimachia clethroides*; 6, *Aconitum Lycoctonum*.—*W. U.* *Spiraea Douglasi*; for name of beetle see next week's issue.

PEACHES: *E. L.* The cause cannot be determined from the over-ripe fruits sent. It is certainly not due to any fungus.

PEACH LEAVES: *L. F.* The brown patches and subsequent holes in the leaves are not due to the soil, but to what is termed the "shot hole fungus" (*Cercospora circumscissa*). The best preventive means consist in spraying the trees with an ammoniacal solution of copper carbonate just when the leaves are expanding early in the season, and repeating the operation at intervals. You should not use the Bordeaux-mixture upon Peaches, as it causes injury to the leaves and the shoots, even when the mixture is diluted.

PRESERVING PEAS: *T. S.* To bottle green Peas, shell the Peas, put them into dry wide-mouthed bottles, and shake them together so that they may lie in as little space as possible; cork the bottles closely, and seal the corks. Bury the bottles in the driest part of the garden, and take them up as they are wanted. They ought to keep good for some months. Or try this recipe. Choose Peas which are large and fully grown, though not old. Put them into perfectly dry, wide-mouthed bottles, shake them down, cork securely, and cover the corks with bladder. Tie a wisp of hay round the lower part of the bottles to prevent their knocking against each other in the pan, put them side by side in a large saucepan, and pour into it as much cold water as will reach to their necks. Put the saucepan on the fire, and let the bottles remain standing in the water for two hours after it has reached the boiling point, then take them off, but do not remove the bottles until the water is cold. Seal the corks, and store in a cool, dry place.

ROSES: *Hoyleake.* Watch in the evening to see if there is not some insect at work.

TOMATOS: *H. R. H.* and *H. R.* The black spot is due to a fungus, and has been repeatedly figured in these pages. Burn the affected plants, and spray the healthy ones with weak Bordeaux-mixture or liver-of-sulphur, $\frac{1}{2}$ oz. to a gallon of water. Procure a copy of the *Calendar of Garden Operations* from our Publishing Department, price 7½d. post free. You will find full particulars and illustration in that little book.

COMMUNICATIONS RECEIVED.—Fruit Reports from 300 correspondents.—*R. W. G.*—Angelo Pucci, Florence—Verschuur & Zonen, Haps, Holland—*W. W.*—*J. M. H.*—*H. H.*—Countess of I.—*S. W. F.*—*J. B.*—Berliu—*R. L. C.*—*W. G. S.*—*V. N. G.* & Co.—*H. R.*—*Port Elizabeth*—*H.* & Son—*T. S.*—*W. E. G.*—*R. H. B.*—*E. H. W.*—*F. C.*—*A. H.*—*C. E. W.*—*P. M. T.*—*C. B. C.*—*T. W. C.*—*De St.*—An Old Reader—*W. E. G.*—*W. G. S.*—*T. A.*—*R. W. S.*—*A. A. P.* (too late for this issue)—*E. T. C.*—*G. W. L.*—Luther Burbank, California—*C. A. P.*—*J. J. W.*—*C. T. D.*—*J. Bain*—*T. W. C.*—*One in Doubt*—*B. S. W.* & Son—*J. S. B.*—*W. P. R.*—*J. C.*—*A. Bowden*.—*S. A.*—*F. J.*—*A. C. S.*—*H. M.*—*J. M.*—*New Zealand*—*E. M.*—*J. J. D.*—*J.*—*France*—*C. J. F.*—*J. T.*—*Dormans*—*W. E.*—*T. E. H.*—*C. A. P.*—*T. N.*—*A. S.*—*P. C. C.*—*F. W. D.*

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Gardeners' Chronicle

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CONTENTS.

Apiary, the 109	Orchid seedlings and the action of fungi ... 101
Bruges, horticultural exhibition at ... 117	Peach, the, as a stock for Plum-trees ... 112
Brussels, horticultural meetings at ... 110	Pear-midge, the ... 113
Cattleya amethystoglossa 105	Phenological observations for 1904... .. 111
Colonial notes—	Plants, new or noteworthy—
Mistletoes in New Zealand 175	Aloe Chabaudii 102
Rainfall at Cape Town ... 105	Stanhopea Wolteriana 102
Colonial fruit shows... .. 110	Potatos in 1904... .. 111
Cowan, Mr. Bernard... .. 112	Rosegardeu at Luscombe 107
Elm, falling of limbs of, in summer ... 119	Rosehill, Falmouth ... 1.3
Ferus, British, wild sports of 116	Salads and salad-making 104
Forestry—	Silver-leaf disease, the Societies—
The Locust-tree ... 105	Bath and District Gardeners' ... 112
Fruit crops, remarks on the condition of the 106	Cardiff and County Horticultural ... 116
Fruit, effects of manures on 111	Cardiff Gardeners' ... 111
Kew notes 106	Midland Carnation and Picotee ... 118
Market gardening at Evesham 101	Royal Botanic ... 112, 117
Mushroom-culture ... 123	Royal Horticultural ... 1.3
"Mutants" and hybrids 110	Scottish Horticultural 110
Nicotiana Sanderae ... 112	Southwood, Bickley ... 107
Obituary—	Sweet Peas, exhibiting ... 112
Dewar, Mr. 118	Trillium, seeds of ... 112
Errera, Prof. 118	Week's work, the ... 108, 109

ILLUSTRATIONS.

Aloe Chabaudii 102
Carnation Helen Countess of Radnor 113
Cattleya amethystoglossa 105
Gooseberry plant trained as an oblique cordon ... 116
Rosehill Falmouth 113
Spiraea Aitchisoni 104
Stanhopea Wolteriana 102
View in the gardens of Luscombe, S. Devon ... 107
View of an ornamental pond in the gardens at Southwood, Bickley (Supplementary Illustration)

MARKET GARDENING AT EVESHAM.

FEW centres of horticultural industry present so many features of interest as that comprised in the general term, "the Vale of Evesham." Picturesque, varied and beautiful scenery, highly developed intensive cultivation, a busy colony of workers, with fertile soil yielding to tenants and owners an ample return, constitute a pleasing and instructive study.

The river Avon takes a long curving course through Evesham, and winds some fifteen miles to Pershore, with high banks and hills on either side, a large proportion of which is occupied with fruit-plantations. Thousands of acres upon these slopes with varied aspects have the lines of trees running almost from the water-level to 100 feet or more above it. Plums largely predominate, and at flowering time these banks of snowy blossom afford a most beautiful spectacle, which attracts numbers of visitors from the large manufacturing towns. This spring the display was most profuse; in fact trees could not bear a greater number of flowers, but now some could not have a smaller number of fruits—rather a striking descent from the poetic ideal to prosaic reality. But such risks and vicissitudes are part of the horticulturist's lot, and the Evesham growers have learned by experience to make provision against possible losses. Few rely upon fruit alone, and every available space under the trees to within a few inches of the stems is occupied with a crop of some kind during the greater part of the year.

Throughout the winter and early spring cabbages and Lettuces fill up a large pro-

portion of the space. Radishes and spring Onions form important crops, which come off the land before the trees are in leaf, followed by Asparagus, Peas, and Broad, dwarf, or Runner Beans, with Vegetable Marrows. The Asparagus is, of course, a permanent crop, but the beds are commonly taken between the lines of trees, and often very close to them. Where the slope of the land is convenient and the aspect is good, particularly near Greenhill, which rises above the Great Western station on the Worcester and Alcester roads, the trees are planted closely in lines 20 or 30 yards apart, the spaces between, having a southerly slope, are devoted to vegetable or flower crops, or occasionally to Strawberries. A continual close intercropping is followed, and it is astonishing what large quantities of produce are obtained from comparatively small areas of land. The soil is naturally fertile, and well repays cultivation. A large part of the fruit-land cropped in market-garden methods is forked or dug entirely by hand, and it must have had this treatment for many years. Indeed, the Abbey gardens, that are now let as allotments in small plots (the rent of which is from £40 to £50 per acre), have been under cultivation for hundreds of years, from the day when Evesham Abbey was one of the most flourishing establishments of its kind.

Manure of organic origin is scarce and costly in the district, but artificials of various kinds are extensively used, together with fish and other manures. The application however which is most valued in the district for Asparagus especially, but also for other crops, is soot, of which heavy dressings are employed, and the supply of this substance is quite an important trade in the neighbourhood. Though of low manurial value as regards its percentage of ammonia, there is no question that it produces some marked effects, and if one might feel a prejudice against it theoretically, experience proves that it is by no means to be despised, as the physical action on the heavy land is conspicuous.

One point as regards the Plum-trees cannot fail to strike the observer, and that is the close planting adopted; numbers can be seen of considerable size not more than 10 feet apart, and many are within 6 feet of each other in the lines. It seems regrettable, and likely to shorten the profitable period of the tree's life very materially, while thinning is scarcely practicable when the trees have reached full size. Careful examination of many plantations shows, however, that this crowded planting has at least one important advantage from the fruit-growers' point of view, namely, the reduction of growth and the consequent promotion of early fertility. In all the stronger soils around Evesham young Plum-trees make an astonishing growth. I have seen shoots over 6 feet long of the current season's growth, and some that were pruned this year to about 18 inches length have on each shoot four or five growths averaging nearly 4 feet in length already. It is obvious that while a tree is quickly formed in this way, it is rather opposed to fruit-bearing, and the Evesham growers, like others, have found that close planting corrects the tendency to excessive growth, and no doubt the constant cultivation around the trees has an effect in the same

direction. Certainly, in the crowded plantations every branch and shoot is in bearing condition, and very little superfluous growth is produced. Still, some have gone to the extreme, and undue crowding leads to other troubles; for instance, an invasion of insect pests is more disastrous and difficult to deal with in these dense plantations. It is scarcely probable also that the trees are so lasting, though when a cultivator is concerned to obtain immediate returns for a living, it is not likely he will overlook that for a possible advantage ten years hence.

Taking it altogether, the cultivation in the Evesham district compares favourably with that in any market gardening centre known to me, and in my opinion the general system is the right one, namely, a combination of vegetable-growing with fruit. In a good season the fruit crops come as a substantial addition to the resources, but if by the closest intercropping and the best cultivation, a grower can manage to pay expenses and keep himself on his intermediate produce, he is in a sound financial position, in a measure independent of bad seasons. At least he has not the reason to fear a total collapse, as may occur when he has out-door fruit alone to rely upon.

For a small population the proportion of growers who have raised themselves from humble beginnings to easy circumstances is considerable. But such results have not been secured without hard and continuous work, not only for the man but often for the wife, together with the sons and daughters as they reach an age to be useful. It has not been a case of sitting down and waiting for the Plums to fall into their mouths. During the busy season Evesham workers are about between 3 and 4 A.M., and many work until late in the evening. This is solid toil which few town-dwellers could endure for a week, and whatever results have been secured have been well earned. Perhaps the chief mistake committed is that of taking too much land before the workers are in a position to employ sufficient labour to keep it in the right condition. Many plots range from 3 to 10 acres in extent, and occasionally one man may hold several plots widely scattered around the town, two or three miles apart. This necessitates much loss of time in travelling backwards and forwards, and some of the plots which may not be in a productive state are partially neglected while the crops are being obtained elsewhere. On the heavy soils the land quickly becomes foul, and when once in arrears with cleaning work it is very difficult to overtake it again; besides much future mischief is provided by the innumerable seeds produced.

Allotments that are not occupied with fruit or Asparagus are eagerly sought because the grower knows that by stocking the land with either crop he is ensuring a safe investment for his labour and expenditure in addition to the produce he actually raises. The "Evesham custom" has been strongly recommended by the Board of Agriculture Departmental Committee for adoption in some modified form, as the law of the land provides a simple means of dealing with the difficult question of compensation. The majority of the small holders are yearly tenants, and might therefore have their rents raised continually unless there is some agreement on the

matter. But for all crops on the land the tenant when leaving his holding obtains compensation from the incoming tenant, unless the landowner wishes to take possession himself, when he would have to pay the requisite compensation by valuation. The landlord also has the right of refusing a proposed new tenant; but it is only in extreme cases that this is exercised. The arrangement seems to work very well, and plots sometimes change hands at valuations ranging from £20 to £100 per acre, the latter being only secured for the best fruit-land, well cropped and cultivated. *R. Lewis Castle.*

whose garden it flowered, and to whom I owe the opportunity of describing it. This new species is allied to *A. striata*, Haworth, and is best placed in the section *Saponariae*, though through its sub-stipitate perianth it shows possibly some relations with the section *Grandes* of Mr. A. Berger. *S. Schönland, Albany Museum, Grahamstown, June 24, 1905.*

STANHOPEA WOLTERIANA, *Kranzl., n. hybr., artef., S. MARTIANA ♂ × S. TIGRINA ♀* (see fig. 35).

We cannot better describe this new hybrid than by stating that it is like *Stanhopea tigrina* with the colours of *S. oculata* var. *crocea*, or of *S. devoniensis*. The dorsal sepal is ovate-oblong, the

more or less regular lines; the petals and the base of the lip have larger and rather deeper coloured blotches; the horns of the blade (the so-called epichilium) of the lip are spotted in the same manner; the back of the column is greenish. The fully-expanded flowers when measured across are between 5 and 6 inches broad; the lip is 2 inches long. The horns at their greatest divergence are 2 inches apart, the deeply three-pointed blade or epichil is $1\frac{1}{2}$ inch long and broad. The perfume of the fresh flower is very strong, but it seems to be not so overpowering as that of *S. tigrina* when in all the full splendour of its freshly-opened flowers.

The plant was raised by Mr. Paul Wolter, of Magdeburg. The sowing was made just four years ago, and the seedlings are now producing their first flowers. The first spike I received had three flowers, the lateral ones diverging at right angles, the axil and the ovaries densely covered by sheaths and bracts. Four years seems to be the usual age at which *Stanhopea* seedlings



FIG. 34.—ALOE CHABAUDII: FLOWERS RED.

NEW OR NOTEWORTHY PLANTS.

ALOE CHABAUDII, SCHÖNLAND, N. SP.*

THIS apparently very distinct new species was collected by Mr. J. M. Brown some five or six years ago when on a hunting trip to the Zambesi. Its exact locality is unknown. It was given by him to Mr. John A. Chabaud, of Port Elizabeth, a well-known enthusiastic amateur gardener, in

* *Aloe Chabaudii*, *Schönland, n. sp.*—Acaulescent. Leaves eighteen to twenty-four, forming an irregular rosette; up to 19 inches long and 6 inches broad near the base, about $\frac{3}{4}$ inch thick, ovate-lanceolate, unspotted, somewhat glaucous; upper surface indistinctly striate, nearly flat, except near the apex, where it is channelled; lower surface slightly convex; margin with a narrow lacy border; prickles $\frac{1}{2}$ inch long or even smaller, at first flesh-coloured, brown in older leaves, straight or (especially in the upper portion of the leaf) curved forward, about $\frac{1}{2}$ inch apart, interspaces straight. Inflorescence a loose panicle with squarrose ascending branches 24 to 30 inches in height, about 18 inches in diameter; racemes lax, floriferous portion 6 to

lateral ones are obliquely ovate and somewhat falcate; the petals much narrower, linear, waved at the edges and curled backwards; the lip has exactly the form of that of *S. tigrina*, but is perhaps somewhat smaller; the column has the characteristic broad wings of *S. tigrina* in the middle of its length; the foot is wingless, but there are two small wings at the top that are wanting in *S. tigrina*. The ground-colour is dull straw-yellow or pale-orange; the sepals have obscure wine-red blotches and spots in

8 inches long; bracts deltoid acuminate, membranous, lowest about $\frac{1}{2}$ inch long, upper gradually smaller; pedicels spreading, lowest $\frac{1}{4}$ inch long, upper only slightly smaller; perianth $1\frac{1}{4}$ inch long, slightly curved, distinctly obconical at the base, swollen round the ovary, with three decided oblong indentations above it (in a line with the inner segments); outer segments pale brick-red with nearly white wings near the apex, inner with red median line and pale wings, which are yellowish at the apex; tube of corolla nearly two-thirds its length; filaments yellow, slightly exceeding the perianth in length, anthers pale terra-cotta; ovary broadly oblong, green; style yellow, not exerted; stigma very small, capitate.

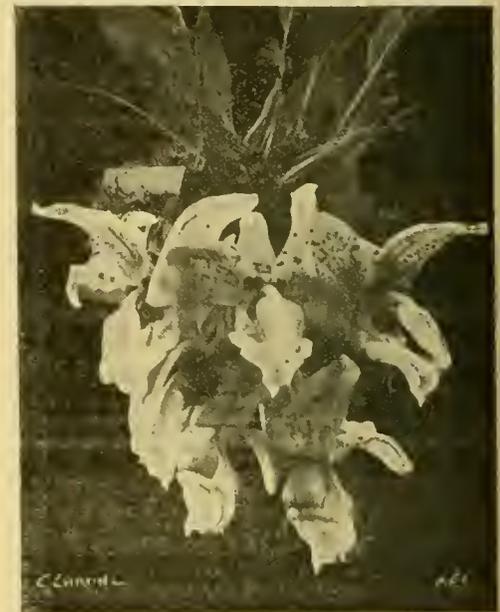


FIG. 35.—STANHOPEA WOLTERIANA X.

bloom. The first hybrid of this genus, *S. Spindleriana*, *Kranzlin* (*S. tigrina* × *oculata*), also flowered after that time.

Stanhopeas generally speaking are not in favour in England, though it is hard to understand why they should not have their place in amateur collections. To cultivate they are the easiest of all Orchids, as they require neither special treatment nor a great amount of heat. They keep their bright, gay-looking foliage all the year round, and a dozen baskets of these plants hanging in a greenhouse in summer-time, or on the branches of trees in a garden, producing their drooping spikes of fantastic flowers, have a pleasant effect, and give us some idea of the treasures of the (western) Garden of the Sun. Sixty years ago the English gardening world must have had other tastes, the volumes of the *Botanical Magazine* and *Botanical Register* being full of plates representing *Stanhopeas* and their varieties, and from the remarks made in the text we learn that those plants were then highly appreciated. Many of the garden and botanical worthies of this period are immortalised by a *Stanhopea*.

Certainly *Stanhopeas* "do not pay," nor do the Ivory Orchids (the Eborilungues of botanists), and professional gardeners will certainly decline to grow them; but fortunately there are still some places in this world not devoted to the *auri sacra fames*, and for these and their owners such plants are well suited. *F. Kranzlin, Berlin.*

ROSEHILL, FALMOUTH.

GARDENS situated on the southern shore of Cornwall are exceptionally favoured in the climatic conditions which they enjoy, so much so that, in visiting some of these sheltered retreats, one might almost imagine that they were as exempt from the rigours of winter as were the fabled "Fortunate Isles," in such vigorous health are the rare and tender shrubs and plants, denizens of all portions of the globe, that find sanctuary there.

The garden at Rosehill, the residence of Mr. Howard Fox, though not extensive, is very charming and replete with interest, for the planting has been tastefully carried out, and the fine collection of tender subjects that it contains leaves nothing to be desired on the score of health. The view from the front of the house is very pretty, the eye passing over the gently-sloping lawn, through a vista of trees, Cordylines, Bamboos, and Phormiums, to catch a glimpse of the sea's blue horizon-line in the distance.

Among the trees and shrubs I have noted the following:—*Abutilon vitifolium*, white variety, the finest specimen that I know of, 20 feet in height and as much in diameter; *Acacia armata*, *A. dealbata*, *A. lophantha*, rare in the open-air (it is 12 feet high and flowers through the winter); *Acacia longifolia*, bearing seed freely; *A. melanoxylon*, 30 feet in height; *A. verticillata*, *Olearia (Aster) argophylla*, with Musk-scented leaves, over 20 feet in height; *Berberis Bealei*, a bush of *Beronia megastigma*, 4 feet 7 inches high, that was in flower in the first week of last April; *Cerrea viminalis*, the handsome Peruvian *Cantua dependens*, 6 feet in height, as a bush in front of a wall; a large shrub of *Coronilla glauca* that flowers all the winter; *C. viminalis*, also a large bush; *Cordyline australis* in quantity, the largest being an immense specimen, with numerous heads and with a trunk circumference of 5 feet 5 inches at 1 foot from the ground. This is about 20 feet in height, and often perfects ten or more flower-spikes. The only example that will probably compare with this is one at Enys, forty-five years from seed, which has a girth of just under 6 feet. *Cytisus racemosus*, 12 feet high, generally blooms through the winter, as does *Cestrum (Habrothamnus) elegans*. *Datura sanguinea*, 10 feet in height and 18 feet through, often bears flowers as late as February, as does *D. flava*, 8 feet in height. *Desfontainia spinosa*, 7 feet high, blooms profusely, and bears seed. There are also present *Edwardsia (Sophora) microphylla*, *Embothrium coccineum*, which in a young state had curiously cut foliage; *Eugenia apiculata*, *E. Ugni*, *Eupatorium micranthum*, better known as *E. Weinmannianum*; *Eucalyptus cornuta*, which has borne seed; *Grevillea rosmarinifolia*, 8 feet across; *G. robusta*, in good health; *Leptospermum baccatum*, *Melia Azedarach*, 7 feet in height; *Myoporum laetum*, an Australian tree with lanceolate leaves dotted with countless transparent spots, bearing small, white, purple-spotted flowers, seeding freely here, height 15 feet; *Mitraria coccinea*, as a bush, 5 feet across; *Olearia ilicifolia*, *O. stellulata*, 8 feet high and 10 feet through; *Piptanthus nepalensis*, which here bears seeds; *Paliurus aculeatus* (the Calvary Thorn), *Pavia macrostachya*, *Phytolacca icosaandra*, *Pinus Webbiana*, *Pittosporum eugenoides*, *P. tenuifolium*, forming a hedge; *P. Tobira*, 20 feet in height, that often flowers through the entire winter; *Podocarpus andina*, *Ribes speciosum*, *Schinus molle* (Pepper tree), 9 feet high; *Skimunia japonica*, 6 feet in height and 8 feet in diameter, flowering and fruiting profusely; a great bush of *Solanum crispum*, the New Zealand *S. aviculare*, which has been out four winters unprotected, and bears purple flowers

2 inches across, followed by large, yellow, egg-shaped fruits, 7 feet 1 inch in height, and 7 feet 8 inches through; *Sparmannia africana*, almost a tree, flowering all the winter, and the rare *Taxodium pendulum*, also known as *T. distichum microphyllum*, and as *Glyptostrobos pendulus*. Another seldom-seen shrub that flowers well at Rosehill is *Viburnum rugosum*, from the Canary Islands. *Arundo donax* grows marvellously, some of the canes being fully 20 feet in height. *Asparagus Sprengeri*, *A. deflexus*, and *A. tenuissimus* are perfectly happy in the open ground, as is *Begonia*

Great bushes of *Fatsia japonica* spread their deeply-cut foliage over the lawns; Tree-Ferns, *Woodwardia radicans* and *Lomaria magellanica* show luxuriant growth, while the great arching leaves of the *Musa*; have a noble effect. *M. Ensete* presents a splendid appearance in the autumn, and for the last two years *M. japonica* has flowered and fruited. Of the latter species there are now four fine specimens about 10 feet in height. *Melianthus major* is 12 feet in height, and a bush of *Salvia leucantha* 5 feet high, while a mass of *Senecio Petasites*, fifty years of age, is



FIG. 36.—ROSEHILL, FALMOUTH.

metallica. Numbers of Bamboos are grown, all of which are in vigorous health. I was informed by Mr. W. Jenkins, the head gardener, that *Phyllostachys fastuosa* had in two weeks made 5 feet 9 inches of growth. *Clematis balearica* or *calycina*, and *C. cirrhosa*, two species often confounded, are growing on the same arched trellis, where the differences in their flowers and foliage can be easily noted. *C. montana* has ascended fully 30 feet into a tall *Cupressus macrocarpa*, and *C. Jackmani* has taken possession of an old Apple tree. Of *Crinum*s a clump of *C. Moorei* is 8 yards in circumference, and the flower-heads exceed 5 feet in height. A few years ago *Furcraea longæva* perfected a towering spike of inflorescence.

about 12 feet in height, and *S. Heritieri* and *S. grandifolius* are also grown. Hybrid *Hippeastrums* do well in the open, and a large bed of *Hedychium Gardnerianum* often perfects fifty flower-spikes in September. *Marica californica* increases from self-sown seed, and fancy *Pelargoniums* grow and flower freely. *Hypericum uralum* is 7 feet in height, and a great plant of *Sempervivum holochrysum* from Tenerife, with thirty heads of foliage, measures 5 feet by 4 feet. Three years ago I saw this plant in bloom, when the flower stems were 42 inches in height, and the golden flower-heads were 15 inches in length, and 43 inches in circumference. *Semele (Ruscus)*

androgyna, from Madeira, grows well, flowers and fruits. *Tacsonia mollissima* makes rampant growth over a portion of the house; *Trachelospermum* (*Rhyncospermum*) jasminoides flowers freely well into latest autumn, and *Rhodochiton volubile* proves perennial. On a sloping bank Persian *Cyclamens* are at home, and produce their scented blossoms in the spring, while at the same date another portion of the slope is white with countless flowers of *Triteleia uniflora*. In the first week of April the Citrons on the open wall were bearing full-sized fruits and flowers. At Rosehill the Mistletoe has found a rather uncommon host in a Mountain Ash. *S. W. Fitzherbert.*

ORCHID NOTES AND GLEANINGS.

ORCHID SEEDLINGS.

WE have already alluded to the curious interaction observed between certain fungi and certain Orchids, and we now add some further particulars taken from a report of M. Noel Bernard in the *Journal de la Société Nationale d'Horticulture*, May, 1905:—

I used, says M. Bernard, glass tubes closed with a wad of dry cotton, in which I placed a small piece of absorbent cotton soaked in nutritive liquid, and I sterilised these tubes in such a way as to kill all germs of mould or microbes. I sowed the seeds on a piece of damp cotton; for this purpose entire capsules not yet open were necessary, and the seeds were taken with every reasonable precaution not to sow mould or microbes of any sort with them. I was easily able to keep the seeds under these conditions for six or seven months without any mould developing. The Orchid seeds under these circumstances did not germinate at all, even in tubes placed in a greenhouse and in full light. As a rule the seeds swelled a little and turned green during the first few weeks, and then remained stationary. I have, for instance, some *Phalenopsis* seed which has been in this state for three and a half months. The small embryos that turned green did not exceed a millimetre (about $\frac{1}{5}$ inch), and they died some months later without further development.

To induce germination a fungus must be introduced into the tube; a species of mould formed of long white filaments, which I cultivated in a separate tube. As soon as the seeds come in contact with the threads of this fungus they begin to germinate. This is seen by comparing the above-described *Phalenopsis* seed with a second sown with the fungus at the same time; the young plants are in perfect condition and showing already the size of Peas.

In our hot-houses the circumstances are identical. If there is none of the fungus in the seed-pans the seeds do not germinate, and when seeds do germinate it is owing to the collaboration of the fungi. In looking at the little plants through the microscope, the filaments of the fungus are seen inside them. In introducing suitable fungi into seed-pans, as was done with the tubes, a certain and regular germination is secured, as M. Magne has found and reported.

Now, what is the particular fungus that is required? Is the same one suitable for all Orchids, or a special one for each? This question I have decided. I consider that the same description of fungus may cause many Orchids of different kinds to germinate. The *Cypripedium* fungus is also of use in the case of *Cattleya*, *Lælia*, and *Bletia*—that is to say, for Orchids whose germination is, as is well known, comparatively easily induced, and which are not very particular in their choice of a fungus.

But those Orchids which germinate with difficulty have special requirements. Thus, *Phalenopsis* will not germinate with the *Cypripedium* fungus, nor with that of the *Cattleya*, nor with

that of the *Odontoglossum*. They will only germinate with the *Phalenopsis* fungus; but this last-named is also suitable for the *Vanda*. Such is also the case even with the *Lælias*, for instance, which will germinate with one or the other of these fungi with more and with less success. Taking two young seedlings of *Lælia*, one germinated with the *Phalenopsis* fungus, the other with the *Cypripedium* fungus, and although both are of the same age, the former is seen to be more advanced than the latter.

Thus, in order to ensure success it is not sufficient to supply any fungus at random, but a special variety may be sometimes required for each species of Orchid.

At present the fungi are available which are requisite for the germination of species of *Cattleya*, *Lælia*, *Cypripedium*, *Phalenopsis*, and *Vanda*; it may also be said of *Odontoglossum*, as the fungus for this has also been discovered, but during the last six months I have not succeeded in procuring a fruit to make the experiment, the result of which I consider to be certain.

But before being certain as to all instances long and varied experiments are necessary.

For these experiments collaboration is necessary, and this M. Bernard solicits. M. Bernard does not tell us what the particular fungus is in the several cases he mentions. Probably he has not cultivated it up to the fruiting stage.

SALADS AND SALAD-MAKING.

CONTENTED should be the amateur living in the country who can go into his garden and cull the materials for his salads these warm summer days. In doing this it is advisable for him to choose the early morning hours, whilst all vegetation is at the coolest and dew-laden, in the case of Lettuces pulling the plants up and placing the roots till wanted in a shallow vessel of water in a cool cellar or pantry. And the various herbs may be likewise gathered, inserting the butt-end of the shoots in water.

The consumption of salads has enormously increased in modern times in England, not alone of "salted things," as of Lettuces, Radishes, Cresses, Celery, Onions, Beetroot, Chicory, Endive, and Cucumbers, but of the more elaborate "dressed" salads. Among Europeans the French, the German speaking nations, Italians, Bohemians, and Hungarians are gourmards in the matter of salads and adepts in their concoction, but too much addicted to the use of garlic as an ingredient in them to suit English tastes. A favourite salad with the Germans in the cold season is made with *Celeriac*, or Turnip-rooted Celery, which in that country of severe winters takes the place of the blanched Celery of our gardens. The tubers, which grow and develop on the surface of the soil and are moulded-up, are taken up late in the month of September, and after pulling off the larger leaves and leaving merely a rosette of heart-leaves, are embedded in sloping banks of earth formed in cellars, the rosette not being covered with earth, but left, so as to make a slight amount of growth.

Before being eaten the tubers are thoroughly cleansed from soil, the root-fibres cut off, immersed in a saucepan filled with cold water, and, like Beetroot, they are boiled till tender throughout, and then laid aside on a strainer to get cold. When required for use as a salad, the tubers are carefully peeled and cut into slices about $\frac{1}{4}$ -inch thickness before being placed in the bowl along with, perhaps, sliced Beetroots and cold Potatos. As with ourselves, Lettuces of the small Cabbage varieties, some of which are curiously spotted with crimson, are those most commonly consumed, the Roman (as the Cos varieties are called) not finding much favour, although they

have their uses in the kitchen, being stewed in a little strong soup with an accompaniment of shelled Peas, or the whole pods of the *sans parchemin* varieties, and the necessary condiments. Cabbage Lettuces, served simply with olive oil and white wine vinegar, are found on the table in most households and restaurants, and are eaten with either hot or cold meats.

In French households of the better class one does not find, perhaps, so much Garlic employed as a flavouring agent in salads as in Italy and Central Europe; nor is *Celeriac* so much in favour. Watercress and Radishes are abundantly employed, but not in mixed salads; and Endive, both mossy and the smooth-leaved Batavian varieties, are greatly liked, also Chicory similarly blanched by growing it in warmth in darkness. The so-called French Breakfast Radishes in all varieties are great favourites with our neighbours across the Channel, and are to be obtained during the greater part of the year. Blanched Celery is largely grown in those parts of the country enjoying mild winters, forming a considerable article of export to those countries which are too cold in winter to allow of its being grown. The French, like their neighbours across the Rhine, consume certain varieties of Potatos possessing a waxy consistency that allows of slicing without crumbling in the process. We have a few which can be thus employed—viz., the Walnut-leaved, Myatt's Ashleaf and the common Ashleaf, and the Fir-cone, a long, thin, blue-skinned tuber, now rarely met with in our gardens, which is of no value except as a salad Potato, or as a botanical specimen demonstrating the bud-like character of the tuber. There are various sweet herbs which no sensible maker of salads can possibly dispense with, and of these I will now mention the more important in common use abroad and in our own country—viz., Tarragon, a hardy, tall-growing perennial plant of easy culture in most soils, the young leaves good for mixing with green salads; Corn-salad, of which three or four sowings may be made in the summer, and which needs no blanching; various Cresses, as the Normandy or curled; the seed-leaves of Mustard and common Cress; young Onion plants when but 6 to 8 inches in height, sown at various times; the young leaves of garden Sorrel, and Lettuce, useful as a salad ingredient or as a garnish. Garlic, previously mentioned as being commonly used on the Continent, should never be employed excepting as a flavouring, rubbing the "cloves" of the bulbs in a little oil round the sides and bottom of the bowl, afterwards extracting any pieces that may have become detached in the process.

Cucumbers and Tomatos should not be omitted from the list, the latter having become a great favourite as compounds of a salad, either by themselves or mixed with other things, the Currant and Cherry-fruited varieties being especially nice.

A rule to be generally followed in preparing leafy salads is never to make use of a knife when the finger and thumb will answer the purpose of dividing the leaves into small pieces. Never, if it can be avoided, let leafy salads be left soaking in water, nor allow them to get wilted by exposure to the air. Strong vinegar should be diluted with warm water to an agreeable strength; it will mix better with the oil than when used cold. Salt should be sparingly used, and added to the salad at the last moment.

The best kind of Pepper for salads is the coarsely-ground black, which affords a fine zest to a salad, and is not so apt to cause choking as the finely-ground white Pepper. The oil should be the best Lucca; and, as the last word, the contents of the bowl should be thoroughly incorporated by a vigorous stirring with a wooden spoon or fork. *F. M.*

COLONIAL NOTES.

RAINFALL NEAR CAPE TOWN.

It may interest some readers of the *Gardeners' Chronicle* to know that the rainfall here for the month of June was as much as 23.20 inches. *Jas. Taylor, Head Gardener to A. Ohlsson, Esq., Montebello, Newlands, near Cape Town.*

MISLETOS IN NEW ZEALAND.

Thinking that readers of the *Gardeners' Chronicle* may be interested in the subject, I send you an account of some of our Missetos (*Loranthus*), notably one that grows readily on many sorts of trees in this central part of North Island. It forms large bunches of foliage and shoots on the limbs of the foster-parent, the shoots being covered with crimson flowers about the size and shape of those of a Myrtle. It is very conspicuous when in flower. Imagine a huge bunch hanging in the centre of a lot of other foliage covered with the crimson flowers! The berries are scarlet, viscid, and the leaves are rather broader than those of the English variety. Another sort has greenish-yellow flowers and berries. It is very hardy, growing on many varieties of native trees; but I wish to draw attention to its having adapted itself to European fruit-trees, including the Plum, Pear, &c., also to the pseudo-Acacia. I have seen it in the South Island orchards as well as here. There are many sorts of Misseto which are natives of this country of which you will probably receive descriptions later [Many thanks]. We have a Poplar-tree here that was erected in honour of King Edward VII.'s accession to the throne. It was cut and erected as a flagstaff about 50 feet high, and to our great surprise it started and grew, and is now well feathered with shoots—truly a loyal tree, and probably the biggest readers ever heard of which made roots as would a cutting of *Pelargonium*. *Joseph Mayo, Tokaanu, Lake Taupo, New Zealand.*

FORESTRY.

THE LOCUST TREE.

MAY I just say that my letter on this subject had reference exclusively to growing the Locust tree in Britain as a crop, and had nothing to do with German woods or coal mines. Can Mr. Booth answer my questions on that head? As to the Douglas Fir, no one expects a greater future for the tree than I do, but "at present," as I said, timber dealers regard it as a Spruce. As sold standing I should like to know how much more Mr. McCorquodale got per foot for his Douglas (after felling, hauling, and all expenses were deducted) than good Spruce was fetching at the time. I put this question when the article appeared in the *Perth Constitutional*, but got no answer. The price of the timber standing in the wood is my price, not the delivery price. The comparative dimensions given by Mr. Booth of Larch and Douglas are no doubt correct. Lately sections of beautiful Douglas forty years old were shown in the forestry section, Park Royal, as big as Larch at 100 years, as the two examples from Lord Powis's estate, I think, showed.

Some of the most ugly and mis-shapen trees in the London squares and suburbs at present are Locust trees—what timber merchants would call "brutes." *J. Simpson.*

— There can be no doubt that the Locust tree (*Robinia*) grows equally well in France, Britain and in Germany. And all that has been said in my different letters about the wood applies as well to British-grown woods and to British coal mines as to our German forests.

Ugly and ill-formed specimens of the Locust tree, such as are to be seen in the London squares

and suburbs, and which timber merchants call "brutes," may be found also on the continent. We see everywhere "brutes" of Pines, Firs, Oak, Beech, &c., without condemning the species on that account. So it is with the Locust tree. If I had 1,000 acres of this tree in England, and the English timber merchants combined to discredit the value of the wood and not to buy it, I could very likely not make any use of it, but in the absence of such an unexpected opposition my

CATTLEYA AMETHYSTOGLOSSA.

This pretty *Cattleya* is frequently seen in gardens bearing the name *C. guttata* Prinzii, the error having been made by Reichenbach in *Bonplandia*, iv., p. 327, and adopted by some authorities. There is no doubt however that it is a distinct species, and one of the most beautiful of its section. It is a native of Bahia, and its fine wax-like flowers have the sepals and petals vary-

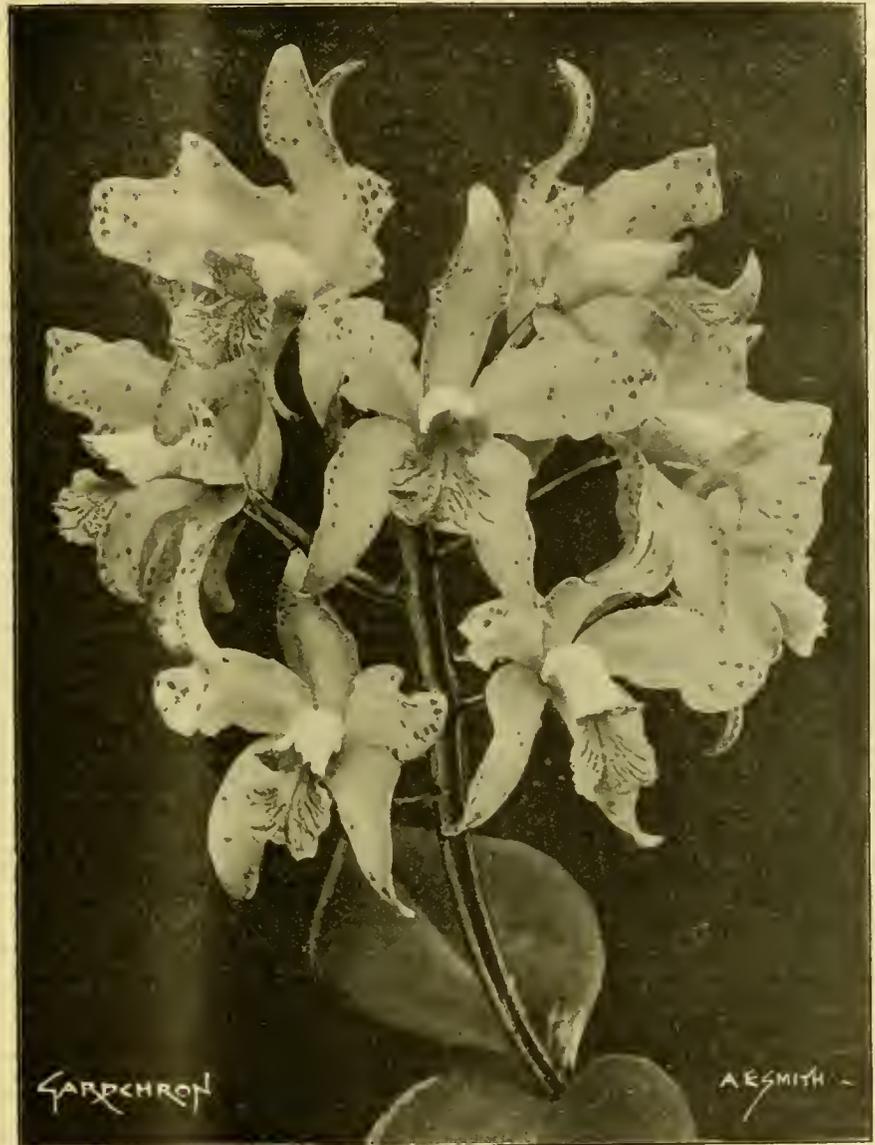


FIG. 37.—CATTLEYA AMETHYSTOGLOSSA.

answer as to German and French-grown wood of this tree is equally applicable to English-grown wood.

As to Mr. McCorquodale's thinnings of the Douglas, Mr. Simpson overlooks that when Larch and Douglas fetched 1s. per foot the Douglas Fir was only half the age of the Larch and stronger, and contained more than double the number of cubic feet that the latter did. The thinnings brought this price at a public sale, not standing in the wood; the price was delivery price. The prejudices of the timber merchants must be overcome; but here is the trouble—we want to sell wood which is unknown to them. *John Booth, 39, Mozartstrasse, Gross-Lichterfelde, Berlin.*

ing from yellowish-white to light rose spotted with purple, the labellum, which bears numerous raised lines, being of a rich amethyst-purple.

Cattleya amethystoglossa is of very easy culture in the intermediate-house, provided a distinct dry season of rest be given.

PLANT PORTRAITS.

PYRUS MALUS NIEDZWETZKYANA.—*Bulletin d'Arboriculture, &c., July.*

PEROWSKYA ATRIPLICIFOLIA, André, in *Revue Horticole*, July 16. A western Himalayan shrub of the Labiate family, with grey lanceolate leaves and small blue flowers in spikes, as in some *Sativas*. Useful for summer bedding.

REMARKS ON THE CONDITION OF THE FRUIT CROPS.

(See Tables and General Summary, ante, pp. 81-87.)

O, SCOTLAND, N.

ORKNEYS.—The poor appearance of the fruit crops this year is due to frost towards the end of May. At the beginning of the season there was every sign of an excellent crop of all kinds of fruit. *Thos. MacDonald, Balfour Castle Gardens.*

SUTHERLANDSHIRE.—Gooseberries have done better than was expected, as the frost and snow showers early in April when the bushes were in bloom threatened at the time to spoil the crop. There was a moderate amount of bloom on Apple trees, and no frost interfered with the setting, but they set badly nevertheless, and the crop is very much below average. The soil is of sandy loam, and is of good depth. *J. Melville, Dunrobin Castle Gardens, Golspie.*

I, SCOTLAND, E.

ABERDEENSHIRE.—There was plenty of blossom on Apple trees, but the crop is poor, and several of the trees have none. All sorts of small fruits are good crops, except Gooseberries. Black Currants and Raspberries are very abundant. The soil is a medium loam on a hard pan subsoil. *Jas. Grant, Rothienorman Gardens.*

— The prospects of good hardy fruit crops were very promising in early spring, when every tree bore a mass of bloom. But the late frost and the long-continued drought have ruined them. All the fruit-trees are infested with insects. Caterpillars have done much damage to Gooseberry bushes. All crops are sorely in need of rain. The soil is stiff and heavy and rests upon clay. *John Brown, Delgaty Castle Gardens, Turriff.*

BANFESHIRE.—The fruit crop gave every appearance of being abundant. Blossom was plentiful on Apple, Pear, Plum, and Cherry-trees, but during the flowering stage the weather was very cold and there were cutting winds, in consequence of which the crops are very thin, especially the finer varieties of Plums on walls. Victoria Plums on standard trees are satisfactory. Pears are under average. Apples are a good half crop. Cherries are fairly good, especially Morellos. Rain is wanted badly. *J. Fraser Smith, Cullen Gardens.*

CLACKMANNANSHIRE.—The Apple blossom was destroyed by rain. The soil here is irregular, being partly stiff and partly light. *A. Blackwood, Academy Gardens, Dollar.*

FORFARSHIRE.—The fruit crops in the gardens here are moderate. Apples promised well when in flower, but the flowers set irregularly, and the crop is not an average one. Plums are mostly grown on walls, and have required a good deal of thinning, the set being abundant. Small fruits are an average crop, but owing to the very dry summer Strawberries are below average. *W. McDowall, Brechin Castle Gardens.*

HADDINGTONSHIRE.—Apples are almost a failure, the blossom having been distorted to a very large extent, and scarcely any set. Other crops are fairly good, but none is superabundant, though Strawberries, Gooseberries, and Raspberries, since the rain, have swelled up to very large crops. Our rainfall in 1905 up to July 14 was just over 6 inches. It is not improbable that other causes than cold are responsible for the failure of the Apple crop (p. 81). Here, for instance, we escaped the severe frosts that were common when the Apple blossom was mostly cut. Yet with the exception of 1880 the crop is the smallest I can remember. It was quite clear to me at the time of blossoming that the chance of a crop was

small indeed, and a visitor who came on purpose to see the Apples flourishing was quite sceptical when I pointed out the slight chance there was of a set. Much of the blossom was contorted in the petals, many of which too were incomplete, and quantities of the blooms were devoid of ovaries and stigmas, while the anthers in many instances were aborted and incapable of producing pollen. As to why this condition existed, I think the abnormally dry summer, autumn, and winter of 1904 were the sole cause. Ground that was trenched 2 feet deep in October was absolutely dust-dry. That these conditions remained till long after the flowering season of Apples is certain from the abnormally low rainfall, and the ground was still so dry after the fall of an inch early in July that the soil about some Evergreen Oaks I tried to transplant was found, all except a few inches on the surface of the soil, to be so extremely dry that the attempt to lift them had to be given up. I think, therefore, that the failure of Apples, at least in some instances, is due, if not solely, at least to a very large extent, to the exceptionally severe drought, which elderly people have been comparing with the year 1826, of which they heard accounts from an earlier generation. Why Strawberries, Gooseberries, and other small crops have been a success may be attributed to the roots getting the full benefit of any rains that fell. It is rather curious that the Apples that are bearing here are not late but early-flowering sorts, and though Peaches and Apricots were hard frozen a sufficient number escaped to produce a good crop of these. *R. P. Brotherton, Tynninghame Gardens, Preston-kirk.*

— Small fruits in this district are again heavy crops and of first-rate quality. There was a profusion of blossom on all other fruit-trees, but the quantity of fruit that set is far below the average. Insect pests were very numerous early in the season, and did great damage to Apple and Pear-trees in cases where no measures were taken to destroy the pests. *William Galloway, Gosford Gardens, Longniddry.*

MIDLOTHIAN.—The fruit-crop is very disappointing. All kinds of fruit-trees showed a great abundance of blossom, and during the flowering period the weather was very dry, with constant east winds and very cold nights, resulting in many of the trees not setting any fruit. Only early varieties of Apples and Pears have a crop. There is a moderate crop of Victoria Plums. All small fruits are good crops, and after an unusual drought the rain came in time to save them. The soil is light, and the subsoil gravel. *James Whytock, Dalkeith Palace Gardens, Edinburgh.*

PEEBLESHIRE.—Apples are a failure here this season owing to spring frosts. The blossoms were destroyed even before they opened. Plums are scarce through the same cause. We have fine crops of Cherries, Strawberries, Raspberries, Gooseberries, and all small fruits, and as the bushes are all young and healthy they are of good quality. The soil here is light, good, and deep, with a gravel sub-soil. *W. Young, Stobo Castle Gardens.*

PERTSHIRE.—The spring frosts spoiled a great amount of blossom on Apple and Pear-trees in this district, the appearance being exceptionally fine at the time of flowering. Small fruits have suffered from want of rain. The soil in this district being of a heavy loam has withstood the drought well. *J. Farquharson, Kinfauns Castle Gardens.*

— Insect pests of all sorts have been unusually bad this season. *James Ewing, Castle Menzies Gardens, Aberfeldy.*

6, SCOTLAND, W.

ARGYLLESHIRE.—Apples and Pears are a poor crop. There was a superabundance of fine

blossom, but at the time of flowering we had cutting winds. Strawberries and small fruits are very abundant and of first-rate quality. The soil is a light sandy loam. *D. S. Melville, Pottallock Gardens, Lochgilphead.*

AYRSHIRE.—The fruit crops are all under average, and in some gardens they are a total failure. Black Currant mite has destroyed all the crop of this fruit in this garden. This is the driest summer we have had for many years, and insect pests of all kinds have been very destructive to fruit crops. *W. Priest, Eglinton Gardens, Kilwinning.*

DUMFRIESSHIRE.—Apples and Pears this year are a very thin crop in our district. Early in the season fruit trees with us looked exceedingly well, but a cold "snap" did terrible damage on the mornings of May 18, 19, 20, 21, and 22, when in the gardens here we registered 7°, 8°, 11°, 10°, and 6° of frost respectively, followed by cold, damp evenings, with slight frosts in the mornings. This continued till June 1, but since that date we have had very warm, dry weather, with an unusual amount of bright sunshine. We have Strawberries, Raspberries, Currants, and Gooseberries of first-class quality, although in no individual case is the crop a heavy one. *John Mackinnon, Terregles Gardens, Dumfries.*

— Strawberries are an excellent crop and of good flavour. The rain came just in time to save the crop. We apply heavy mulchings with rough stable manure, which suits Strawberries in our light soil, it also keeps the fruit clean after being washed with rain; we put it on early in spring. In our experience results are better from digging between the rows with a four-pronged fork, instead of with a spade in autumn. Apple trees flowered profusely and expectations were high, but 6° and 7° of frost on May 23 and 24 ruined the crop. Apples are almost a total failure, there being only a few fruits on wall trees. The soil is a light sandy loam. *Jas. MacDonald, Dryfeholm Gardens, Lockerbie.*

KIRKCUDBRIGHTSHIRE.—I have no the least doubt but the Apple crop would have been a good one but for the severe frost we had on May 23, when all the trees were in blossom. *N. Macfayden, Glenlie Gardens, New Galloway.*

RENFREWSHIRE.—There was a fair promise of blossom at first, March being mild though wet April was cold and sunless, with sharp frosts, which thinned Gooseberries and Currants considerably. The month of May until May 23 was remarkable for withering winds and frosty nights. *Jno. Methven, Blythwood Gardens.*

WIGTOWNSHIRE.—Bush-fruits and Strawberries are heavy crops, and in size and quality they are equal to former years. Apples, Pears, Plums, and Cherries are light crops, owing to the long-continued east winds and frosts during May. The soil is a moderately deep friable loam; the situation is low and well sheltered. *James Day, Galloway House Gardens.*

2, ENGLAND, N.E.

DURHAM.—Apples, Pears and Plums are under average owing to the cold winds from the sea causing the fruits to drop soon after setting. Black Currants are scarce, which is due to the blight of last year, which caused the leaves to fall in July. Strawberries are poor owing to the very dry season. The soil is a dry limestone. *R. Draper, Seaham Hall Gardens, Seaham Harbour.*

— The fruit crops this year on the whole are considerably below the average, owing chiefly to the severe frosts in the early part of April. We have a strong clay soil, and the want of rain in this district cut short the Strawberry crops. *Jas. Noble, Woodburn Gardens, Darlington.*

— With the exception of Strawberries and Gooseberries, all other hardy fruits are much

under average. Our garden stands high and is somewhat exposed, consequently the trees suffered very much from north and east winds, which prevailed more or less all spring, particularly during the blossoming period. The long-continued low night temperatures and frosts, lasting till the end of May, caused the destruction of what promised to be a fair average crop. *J. Machar, Snell House, Howden-le-Wear.*

YORKSHIRE.—The fruit crops are unsatisfactory, Apples, Pears, and Plums are very poor. There was very little blossom on Apple trees; some varieties of Pears on walls are good, but all fruit trees are suffering much from the long drought. Strawberries are very good on young plantations in some situations. Fruit trees were damaged by the severe frosts in May, Potatoes also were damaged by the frost. The soil varies much. The subsoil is chalk on the hills and clay in the valleys. The fruit crops on the hills are dried up. The Loganberry seems to stand the dry weather better than anything, there is an excellent crop of fruits, which are in great demand for tart and jam making. Apricots and Plums in a glass shed are carrying good crops of fruit, and show what is required to grow satisfactory crops of these fruits—a warm situation with good soil. *Bailey Wadds, Birdsall Gardens, York.*

— With the single exception of Strawberries the fruit crops are very light hereabouts. This remark is particularly applicable to stone fruits. Apples are a very thin crop; Lord Suffield, Keswick Codlin, and the old Yorkshire Greening are the only varieties that have any fruit on worth mentioning. Of Pears, Comte de Lamy, Louise Bonne of Jersey, Jargonelle, Summer Franc Réal, and Olivier de Serres have thin crops. *H. J. Clayton, Grimston Park Gardens, Tadcaster.*

(To be continued.)

KEW NOTES.

ALLAMANDA.—This genus is well represented by many profusely-flowered specimens in various houses at the present time. The largest and best plant is that of *Allamanda Schottii* var. *Hendersoni*, flowering on the roof of the Palm-house, and which may be seen best from the gallery. It is planted in one of the beds and trained up a pillar on to the roof. It is never dry at the roots, nor ever quite denuded of its foliage. In the early spring the branches are shortened, but not pruned hard back. Under such conditions it produces enormous growths, some of which are probably from 40 to 50 feet from the root-stock. From April until November the plant produces a great profusion of flowers, such as is never equalled when grown in a pot. The flowers are large and yellow, with brown markings in the throat. *A. Williamsi* is also in bloom in the same house, where it grows and flowers very freely, covering a large area of the roof; the blossoms are about two-thirds the size of *A. Schottii*, and much the same in colour. On the stage at the south end of the Palm-house is a specimen of the bushy *A. cathartica*, which is the smallest-flowered species grown at Kew. The flowers are about the size of those of a small *Gloxinia*, light yellow in colour, with rounded segments. *A. neriifolia* is a closely allied species, deep in colour, rather larger in the flower, and has acute segments. This species is represented in the Mexican-house by a bushy plant about 3 feet in height. Several plants of *A. grandiflora* are making a fine display in the stove. Although the flowers are smaller than those of the *A. Schottii* type, the beautiful bright, clear yellow of the blossoms fully compensate for what they lack in size. *A. violacea* is also to be seen in the same house, having flowers about the size of *A. Williamsi*, but of a violet-purple colour, being very distinct from all the other members of the genus, and one which

should be more widely known and cultivated. *A. Schottii* var. *magnifica* is a fine form, with very large yellow flowers, but unmarked in the throat. It is flowering in the Begonia-house. *W. H.*

ROSE-GARDEN AT LUSCOMBE.

THE illustration at fig. 38 represents the Rose and rock-gardens at the residence of Peter Hoare, Esq., Luscombe, near Dawlish, in South Devon. The beds are planted with the choicest varieties of Tea and hybrid Tea Roses. Surrounding the beds there are rambling Roses trained on chains, where such varieties as Turner's Crimson Rambler, Queen Alexandra, Dundee Rambler, Euphrosyne (a very pretty miniature pink Rose), Perle des Jardins, Pink Gloire de Dijon, and Agara, make a very pretty effect.

On the rockery, which may be seen in the illustration, many somewhat tender species of plants are cultivated successfully. *Coronilla glauca* and

SOUTHWOOD, BICKLEY.

[SEE SUPPLEMENTARY ILLUSTRATION.]

THE village of Bickley, in Kent, is on the south-eastern fringe of London's vast suburbs, for hereabouts the great city becomes merged with the cornfields and the woodlands until the country nature of the district holds full sway, and the fruit plantations, for which Kent is so justly famous, become numerous. As the radius from the metropolis extends, so does the area available for large and beautiful dwellings; and Bickley may truly be said to consist of a collection of charming homesteads, comprising large and delightfully-arranged gardens and grounds.

Of such a one is Southwood, the residence of A. E. Baddow, Esq., with its ten acres of gardens and grounds, with flower-beds and borders, conservatories, pergolas, rock-gardens, and ornamental water, the last-named of which forms the subject of our Supplementary Illustration. For the

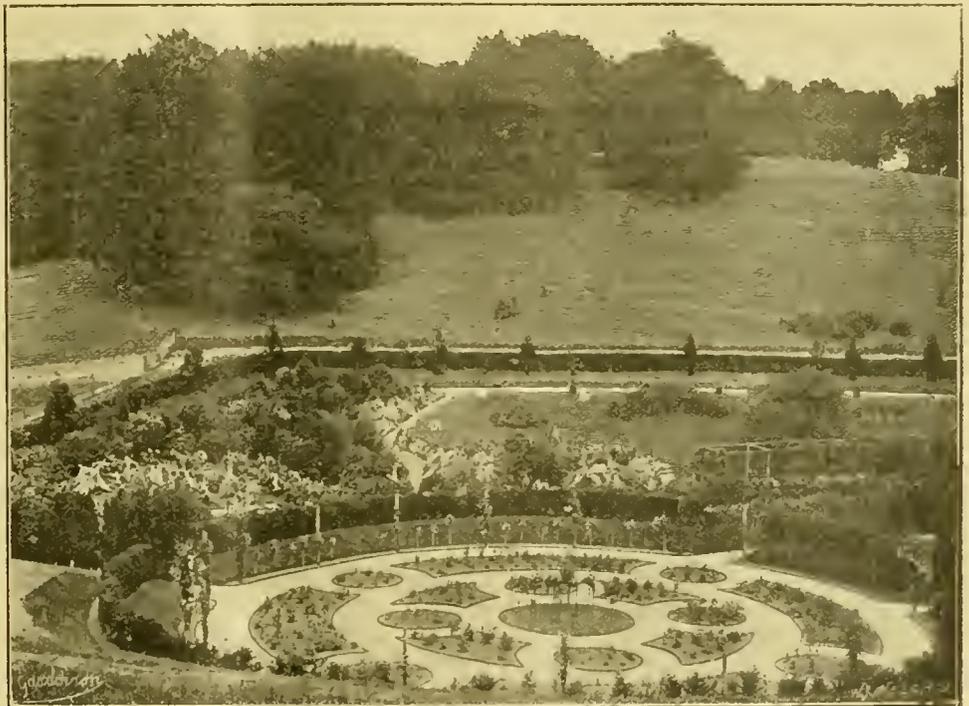


FIG. 38.—VIEW IN THE GARDENS AT LUSCOMBE, S. DEVON.

Cytisus fragrans are hardy during winter. *Clianthus puniceus* makes a fine show from the beginning of April until the end of June, and is likewise hardy. *Fabiana imbricata*, *Olearia stellulata*, *Lupinus arboreus*, and numerous other flowering shrubs and rock plants have made good specimens here.

Luscombe Castle is situated in one of the most beautiful localities in Devon, and from the Rose-garden a very lovely view of the sea is obtainable. We are indebted for our illustration to the head gardener at Luscombe, Mr. R. Seaborne.

NICOTIN—POISON.—At Reigate recently a seedsman was summoned for infringing the law requiring the word "Poison" to be placed on vessels containing certain dangerous substances. In the present instance the quantity of nicotin proved to be contained in a bottle of XL-All liquid was sufficient to cause the death of at least seventy-five persons, but there was no label indicating that it was a poison, and other requirements of the law had not been complied with. A fine of £3 and costs was imposed, or in default fourteen days. We believe that the word "Poison" is now affixed to the bottles.

photograph whence this was taken we are indebted to Messrs. Pulham & Son. The dwelling is a large modern house, commanding a view of the gardens and grounds from an elevated terrace, which has been made the most of to accommodate flower-beds and borders, set off here and there with such subjects as Roses, ornamental Conifers, and flowering shrubs. The house may be said to literally stand in the garden, for the flower-beds and borders encroach to the very walls, up which climbing and trailing plants, such as Roses, Wistarias, *Ceanothus thyrsiflorus*, *Spiræas*, &c., have been trained.

A large winter-garden forms an adjunct to the residence, and from which it is entered. This structure forms a cool and pleasing retreat, and has been laid out in the manner of a rock-garden or fernery; indeed it largely partakes of the latter character, for Ferns abound on every side, and from the way in which they luxuriate seem quite at home. Ferns do not entirely occupy the structure, but share it with such things as *Camellias*, *Phormium tenax*, *Gloire de Dijon* Roses, *Ficus repens*, *Clianthus puniceus*, *Clematis*, &c. One specimen of *Ficus repens* was extremely interesting. It had accommodated

itself on a plant (now dead), probably a Myrtle, and when several feet high had assumed the arborescent form, and was fruiting freely, the strong upper growths being so unlike the graceful climbing sprays that it was difficult to recognise them as belonging to one and the same plant. A fountain and water-pool add further charms to this place, and in the area covered by the spray of the water mosses and Liverworts grow undisturbed, furnishing the rockwork with a pleasing carpet of greenery. To the right of this structure is an admirably constructed rockery, which even at this season is bright with many plants in flower. The rock-garden terminates in a water-pool—quite a wild spot, given over to the numerous British aquatic and bog plants that have established themselves in its vicinity, together with others that have been planted, such as Bamboos, *Osmunda regalis*, *Equisetums*, *Iris*, *Spiræas*, *Astrantia major*, *Myosotis palustris*, and many others. In the pool itself was a batch of the common Water-Lily flowering grandly.

Passing by beds of Roses and an arcade of these same flowers, the walk is interrupted by a stream that is crossed by stepping-stones. The water flows from a dripping-well, and trickles down past hardy Ferns, which have taken advantage of every crevice and ledge in which to ramify, and nowhere could they succeed better. This stream supplies the ornamental pond seen in our picture, which is a delightful piece of artificial water. The bridge spans the pond at about its centre, so that the lake is really of much greater area than would be imagined from the view we give. *Wichuraiana* Roses are interlaced between the rustic wood-work of the bridge, the view from which is excellent. A small island finds a place in the water at the background of our picture; this is planted with Yew-trees and Pampas-grass, several clumps of which are also planted around the pond.

The banks of the pond are bright with *Iris*, species of *Lysimachia*, Brambles, *Yuccas*, Bamboos, *Phloxes*, and numerous alpine and rock-plants, which have been planted wherever opportunity has afforded. There are also clumps of *Nymphaea alba*, the hardy Water-Lily, in the margin of the water itself. Additional charm is added to the surroundings by beds of *Azaleas*, and trees and shrubs with ornamental foliage, such as *Acer Negundo* and the golden-coloured species. We admired the healthy appearance of *Bambusa Simoni aurea* and the well-developed colour of its handsome foliage.

Passing the well-kept lawn, in one side of which a series of flower-beds in the form of a star has been cut, one arrives at a shrubbery that contains some remarkably fine examples of Holly trees. Sufficient space has been allowed to permit the inclusion of herbaceous plants in the foreground of the border, which at the time of our visit was bright with the many flowers in season. Herbaceous flowers are grown around the borders of the fruit and vegetable garden, which also includes an extensive border of Roses, that furnishes cut flowers for decorative purposes in the mansion. The fruit trees, unfortunately, are almost bare of fruit, a feature we fear only too common in gardens this year. Plum-trees were carrying satisfactory crops, their blossom having escaped injury from the disastrous late frosts; but with this exception there will be little fruit to harvest.

There are several good glasshouse, vineries, Peach-houses, conservatory, stove, &c. The plant-houses are filled with such subjects as are useful for decorative purposes in the residence or for furnishing cut flowers. One may truly say there is a little of almost everything, including *Orchids* and *Nepenthes*. A batch of *Gloxinias* reflected credit on the gardener, Mr. E. Quantrell, who has been charged with the care of these grounds and gardens for the past ten years.

The Week's Work.

FRUITS UNDER GLASS.

By F. JORDAN, Gardener to Dr. CORBET, Impney Hall Gardens, Droitwich.

Peaches.—Continue to syringe daily all trees that have been cleared of fruit, giving them an occasional syringing with Quassia-extract or some other approved insecticide. Apply to all trees that appear to require it the same generous treatment with liquid-manure and other stimulants after the fruits are gathered as before. Do not be guided by the surface-soil appearing wet, which may be caused by the syringing, but examine the soil near the roots, and if it is dry apply water in quantity. Houses containing trees with fruits that are ripe, or approaching to that stage, should be ventilated rather more freely. Direct syringing of the fruits should be discontinued, but the stems of the trees, the surface of the walls, and other available spaces should be damped at least twice daily. Trees which are now swelling up heavy crops of fruit will require applications of liquid-manure and other stimulants, although the borders are well mulched with rotten manure. It is much better to feed the trees liberally at this stage, even if they are making too much growth, than to starve the fruits, because the roots can be easily lifted in the autumn and pruned if necessary. See that the fruits are fully exposed to the sun by keeping the leaves drawn aside, for highly-coloured fruits are so much superior to others. As soon as the fruit has been gathered remove all the shoots that are not required for furnishing the trees, and lose no time before syringing them vigorously with water, ventilating the house to the fullest extent.

Houses containing Later-ripening Trees.—Pinch the laterals, tie down and regulate the shoots as they advance in growth, and allow plenty of space between them to permit of full development. Remove altogether any gross shoots which interfere with the proper extension of the trees. If syringing is vigorously carried out and the borders are well mulched and kept supplied with nourishment, red-spider will not make much headway. Follow the directions given in the preceding paragraph as to syringing and feeding the trees, and exposing the fruits when they approach to maturity. See that young trees are well syringed and supplied with water; also examine any ties which may be too tight, or they will cause "gumming" in the stems at a later season.

Shading.—Many gardeners have a strong objection to shading fruits. It is, however, much better to lightly shade Melon and Cucumbers (in some districts) from the midday sun when it is as hot as it has been recently. This will help to keep the foliage clean and healthy, when better fruits may be expected from the plants than would be the case if the leaves were scorched. It may be advisable to shade other fruits with a thin coat of limewash or with $\frac{1}{2}$ -inch netting if the foliage has become thin from any cause whatever.

PLANTS UNDER GLASS.

By A. BULLOCK, Gardener to E. J. WYTHES, Esq., Copped Hall, Epping, Essex.

Pclargoniums.—As these plants pass out of flower, let them be removed to a position in the open garden where the sun's rays will reach them and ripen the wood thoroughly previous to their being pruned. Sufficient water only should be afforded them to prevent the foliage dying off too quickly. Cuttings may be taken when the wood is in a moderately hard condition.

Primulas.—The earliest batch of these from seeds should be ready now for potting into 6-inch pots. Let the compost to be employed for the purpose consist of two parts loam, one part rotten leaf-soil, and an equal proportion of silver-sand. Good drainage by means of broken crocks, charcoal or clinkers is very essential to success. The plants after being potted should be stood in a cold frame as near to the light as possible. Keep the atmosphere of the frame rather close for a few days, and shade the plants, but afterwards a free circulation of air should be

permitted, and during warm nights the lights may be removed entirely, allowing the dew to fall on the plants.

Primula kewensis ×.—The earliest propagated plants are making much headway, and a weak application of sheep-manure water should be given them. Allow a free circulation of air among the plants. Plants propagated later should be ready now for being potted on.

Cinerarias.—Let the plants raised from a late sowing be repotted when they are ready, employing a similar compost to that advised for *Primulas*.

Poinsettias.—No time should be lost in getting the later-struck cuttings potted into 5-inch pots. Those that have been potted for some time and are rooting freely should be afforded more air, and must be kept in a position near to the glass to prevent them becoming drawn or weakly.

Mignonette.—Make another sowing to follow the earlier sowing, which should be ready now for repotting into larger pots.

Humea elegans.—Pot up the seedlings into small 60-size pots from the seed-pans as soon as they are large enough, and place them on shelves near the light in a warm, moist atmosphere.

Carnations H. J. Cutbush, Cecilia, and Lady Mini.—For effective grouping in a corridor or conservatory the three varieties mentioned are of the best, and they are easily cultivated. For providing plants to flower next June and July, let those now passing out of bloom be layered as advised in a previous Calendar, and when they have made roots pot the plants up into 60-size pots, shifting them again into 6-inch pots when they are ready for these.

THE KITCHEN GARDEN.

By W. FIFE, Gardener to Lady WANTAGE, Lockinge Park, Wantage.

Winter Spinach.—When Spinach for winter use is sown very early the plants generally develop too quickly, with the result that flower-stems are formed. To have this vegetable in good condition during the winter and early spring months, sow seeds from the beginning of August to the end of September upon soil well prepared previously, and if the situation is sheltered for the latest crop all the better. Sow the seeds in drills 2 inches deep and 18 or 20 inches apart, and apply water to the soil before sowing the seeds. Occasional sprinklings of soot will help to keep wire-worms from destroying the roots. The prickly Spinach is the one generally sown for winter use, but with the summer or round-seeded variety equally good results may be obtained. I was asked the other day when Spinach was fit for use, the enquirer's crop being then running to seed. When the leaves are large enough nothing is gained by allowing them to remain on the plants. Young leaves are much superior to older ones. The practice of picking a leaf here and there is not so good as making a clean sweep of all leaves that are fit for use. The succeeding crop will then follow in that order.

Seakale is practically in use for six months out of the twelve, and for that reason is deserving of marked attention. The task of producing good, medium-sized crowns is simple when propagation is effected by cuttings. Let the surface-soil be hoed frequently amongst the plants. Apply occasional dustings of soot, and afford a good supply of water.

Coleworts for Autumn and Winter use should now be planted, and even if the weather is dry the work must not be delayed. On the day before planting is done, however, the ground should be well saturated with water. Allow a distance of 15 inches between the lines and 12 inches from plant to plant.

Peas.—Without a good supply of water upon the vine and at the roots some difficulty will be experienced in keeping up the supply. We have just completed staking our latest crops, which look remarkably well, due in a great measure to the "revolving sprayer," which is kept at work during the night to provide a very fine spray upon the plants and their surroundings.

THE HARDY FRUIT GARDEN.

By W. H. CLARKE, Gardener to Sir WILLIAM PLOWDEN, Aston Rowant House, Oxon.

Standard Apple-trees.—Examine the trees, and if there are any on which the fruits are too numerous, thin out the clusters. Do not allow a crop to remain on young trees that will weigh down the branches, causing them to break or split off. This can be prevented by removing the fruits from the extremities of the branches, or by affording support to those kinds which habitually fruit on the ends of the shoots. Early varieties of Apples, such as Irish Peach, Mr. Gladstone, Beauty of Bath, &c., should not be allowed to become too ripe before gathering, otherwise the flavour will be impaired. By keeping the fruits in a cool fruit-room for two or three days the flavour will improve. A few of the American varieties are much improved in flavour by being grown on a wall. Washington, King of Tompkins County, Northern Spy, Melon Apple may be counted among them. Remove all shoots that cross each other in standard trees, and any others that are unduly taking the lead should be stopped. Securely fasten all trees to prevent the westerly winds and equinoctial gales from swaying them about. Let trees which have been chafed by rubbing against their stakes be treated on the affected parts as a preventive against American Blight attacking such wounds.

Ornamental Crabs, such as John Downie, Mammoth, Siberian and Transcendent, so useful for making jellies, may have the fruits lightly thinned where the crop is too heavy. These Crabs are liable to overcrop themselves.

Hardy Vines growing on Walls.—Stop the laterals at one leaf and the leading shoots at two leaves beyond the bunch of fruit. Shoots that are intended to cover bare spaces should be stopped when they are 4 feet in length. Expose the fruit to full sunlight and thin the bunches moderately to get increased size in the berries. If mildew is noticed promptly syringe the Vines, on two evenings each week until the pest has been checked, with sulphide of potassium, at the rate of $\frac{1}{2}$ -oz. to each gallon of soft water, afterwards syringing the Vines with clear water.

Quinces and Mulberries should be thinned early. The size and flavour of the fruits may be much improved by applications of manurial stimulants to the roots.

Stirring the Surface-Soil.—Let the surface-soil in all fruit plantations be stirred periodically. Although this work does not compensate for lack of watering, yet if time cannot be spared for applying water, frequent hoeings will do much good.

THE ORCHID HOUSES.

By W. H. YOUNG, Orchid Grower to Sir FREDERICK WIGAN, Bart., Clare Lawn, East Sheen, S.W.

Sobralias are usually stigmatised as worthless on account of the fleeting character of their blooms. But this fault, if fault it be, is compensated for by each flowering reed producing four or five blooms in succession, thus providing us with fresh flowers instead of one of diminishing beauty. Most species may be grown together in an intermediate compartment that is not heavily shaded, but is rather freely ventilated during the late summer and early autumn months. A few selected species and hybrids will produce a succession of flowers from March until October, commencing with the various forms of *S. macrantha*, of which the lovely pure white *S. m. Kienastiana* or *alba* is the gem, followed by *S. x Veitchii*, *S. leucoxantha*, *S. xantholeuca*, *S. Wiganii*, *S. Wilsoni*, *S. Lucasiana*, *S. pulcherrima*, and others. When potting these plants it is desirable to afford them large-sized receptacles, so that further shifting will not be needed for a number of seasons. Specimens that have become inconveniently large may now be turned out and cut into sections with a spade or edging-iron, it being useless to attempt to separate or disentangle the mass of thick, fleshy roots. Place them in the desired receptacles to the proper level, with crocks beneath and around to about half their depth, filling in to near the rim with a compost consisting of one-fourth part of good fibrous loam, one-fourth part of sphagnum-moss, and two-fourths of good lumpy peat, with a liberal sprinkling of coarse silver-sand and

small crocks added. Should any dry coddling be at hand, a very little dusted into the compost will prove beneficial. Water should be applied sparingly until new roots are visible in the compost, but absolute dryness must be avoided. Undisturbed plants will need a generous supply of water throughout the summer and autumn months, with an occasional weak dose of liquid farmyard manure. The old reeds which have flowered may in many instances be cut quite away to allow the young developing growths greater freedom, and to admit light and air into the centre of large specimens. To prevent thrips and red-spider, spray the under sides of the foliage once or twice a day whenever the weather is favourable, and occasionally spray them with a solution of some approved insecticide. If sponging be done, the young growths must be carefully handled, for if the terminal leaf be dislocated the growth will not flower.

Cattleya Bowringiana.—This useful autumn-flowering species is rapidly developing its growths, and great care is needed to prevent an accumulation of water in the sheathing-bracts. The plants should occupy a part of the Cattleya-house where most heat is obtainable, together with free ventilation, and a good light. Until a new series of roots appear the base should only be kept just moist; and if any potting is needed, it should be done immediately the new roots are seen. This *Cattleya*, and the many beautiful hybrids of which it is a parent, thrive exceedingly in a compost with which decaying Oak-leaves are incorporated. The receptacles should be furnished with drainage material to nearly half their depth, and the surface of the potting compost may be finished off with chopped sphagnum-moss, or peat and moss as in the ordinary way. Care must be taken to prevent the new material getting too wet. It may be kept in a suitable state for some time by judicious sprays and dampings amongst the pots, with a thorough watering now and again when the whole has become moderately dry. During the resting period few *Cattleyas* will keep in condition for so long a time without water as do the members of this group.

THE FLOWER GARDEN.

By W. A. MILLER, Gardener to Lord HENRY C. BENTINCK, M.P., Underley Hall, Westmoreland.

Meconopsis Wallichii flowers at this time, and requires an abundance of water, as the plants thrive in a compost of gritty loam and peat in a damp and shady position which is sheltered from strong winds.

Mertensia virginica and other varieties are also good plants for cultivation in sheltered corners in peaty soil.

Cornus mas elegantissima is an excellent plant for cultivation in large rockeries. Its creamy-white foliage tinged with red colour is improved by grafting it on to the green-leaved variety.

Herbaceous Border.—Cut away old flower stems of *Delphiniums*, *Inula Hookeri*, *Papaver pilosum*, &c. Afford a rich top-dressing to the plants to encourage them to make new growth that will flower later. *Dicentras*, *Eremuri*, *Paeonias*, *Veratrum*, &c. will be dying down, and if bare spaces occur let them be filled up with *Paris Daisies*, *Salvias*, &c., that have been grown on in pots for this purpose.

Verbenas.—Commence to propagate a stock of plants to be kept through the winter and supply cuttings next season. It is preferable to provide a good batch of stock plants, and thus have a liberal supply of cuttings on several occasions, than to be "nibbling" at a few stock plants for weeks. The aim of the propagator should be to get the cuttings rooted as soon as possible to prevent their being "drawn." Let a compost consisting of leaf-mould, fine loam, and sand be put into a frame and made firm, adding a layer of sand on the surface. Select fresh shoots as cuttings from the base of the plant. Cut just under the third joint, remove the two lower leaves, and insert the cuttings firmly. Afford water afterwards, and apply shade when necessary. If given careful treatment the cuttings will make roots before there is much top-growth. When the roots are about an inch long pot the little plants singly, or if a large quantity is required dibble them into pots or pans a little distance apart, using a compost of loam, well-

decayed manure from a Mushroom bed, and a sprinkling of sand. Afford slight shade on bright days until the plants are established, then ventilate freely and use no shade. Pinch the shoots occasionally, and do not let the plants flower, they will then be good specimens when they are put into their winter quarters at the end of September.

Propagating other Plants.—*Koniga variegata*, *K. maritima minima*, *Mesembryanthemum cordifolium* var. and other kinds, *Iresines*, &c., can be rooted in pans, boxes, &c., in a frame with a close atmosphere, but when they have rooted gradually inure them to the light. They will stand through the winter in the same pans, &c. *Lobelias*, *Heliotropes*, &c., that were potted some time since should not be allowed to flower.

Annuals and Biennials.—Where these are used for spring-bedding some ground should at once be prepared for sowing seeds of the favourite varieties. The beginning of August is a suitable date for sowing, or a little later will be satisfactory in warm districts. Sow the seeds thinly in drills and transplant the seedlings or thin them early so that the plants will become stout and hard before winter sets in.

Hydrangea Hortensis is a valuable plant for furnishing vases, tubs, &c., and can now be propagated by inserting the partially ripened points of shoots in 4-inch pots containing a sandy compost. Place them in a frame upon a mild hot-bed, shade them on sunny days until rooted, and gradually harden them off, taking care to get the plants thoroughly ripened before winter.

Sedum spectabile may be easily increased by division and by cuttings. The variegated form is very decorative.

Sedum pulchellum is a dwarf evergreen species well worthy of a good position.

Epilobium Fleischeri is a useful late summer-flowering plant for cultivation on a wall or rockery. It may be increased by seeds or by cuttings. *E. abyssinicum* is a good tall plant for the border.

THE APIARY.

By CULORIS.

"Robbing" and its Causes.—During the past few weeks I have had occasion to visit a number of cottagers and others who keep bees, and have been much struck by the careless manner in which pieces of comb, containing in some cases sealed honey, and in others only a small quantity of honey, are treated. Bees seem to take a great delight in obtaining honey in such an easy manner, because to secure in a natural manner a sufficient load to take home a bee must visit 80 to 120 flowers. To do this in an average season it must be absent from the hive from forty to fifty minutes. Can there be any wonder then, that when an opportunity arises of obtaining a load in a few minutes, that the insect takes full advantage of the easy mode and discards the legitimate methods? Having emptied the combs lying about the hives, the bees seem as though they lose their mental balance and become confirmed thieves, entering the hives of their weaker brethren. Those most likely to suffer are such as are queenless from some cause or other. These bees are possibly older, therefore weaker, and less able to defend their stores; also they seem to be indifferent to what the robbers are doing. The rogues push by the bees on guard and rush out, to be caught occasionally. Then a struggle ensues upon the alighting-board, and the robber and several of the defenders of the colony roll off the alighting-board to the ground, where the struggle continues until the thief either escapes or is killed. Later in the season robbing is caused by spilling syrup in the neighbourhood of the hives, and by placing on the feeders during the day, evening being the best time for this kind of work.

How to discover the Hive from which the Robbers come.—Flour the bees as they leave the hive or hives which are being robbed, and then notice where they enter.

How to stop it after it has commenced.—Unite all queenless stocks to nuclei, if they are weak from some other cause than queenlessness, then unite two or more weak colonies, and in both cases close the entrances so that only one bee can get in or out at a time.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Letters for Publication, as well as specimens and plants for naming, should be addressed to the EDITOR, 41, Wellington Street, Covent Garden, London. Communications should be written on ONE SIDE ONLY OF THE PAPER, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

Special Notice to Correspondents.—The Editor does not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editor does not hold himself responsible for any opinions expressed by his correspondents.

Illustrations.—The Editor will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens, or of remarkable plants, flowers, trees, &c.; but he cannot be responsible for loss or injury.

Local News.—Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

Newspapers.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

APPOINTMENTS FOR THE ENSUING WEEK.

		Bank Holiday.
		Basingstoke Horticultural Society's Exhibition.
MONDAY,	AUG. 7	Dudley Horticultural Society's Exhibition.
		Seaham Harbour Horticultural Exhibition.
		Ramsey Horticultural Show (2 days).
TUESDAY,	AUG. 8	Flower Show in Abbey Park Leicester.
WEDNESDAY,	AUG. 9	Exmouth Horticultural Society's Show.
THURSDAY,	AUG. 10	Royal Botanic Society (Anniversary Meeting).

SALE FOR THE WEEK.

FRIDAY NEXT—

Importation of *Cattleyas gigas* and *aurea* received direct, also imported and Established Orchids from various sources, at 67 and 68, Cheapside, E.C., by Protheroe & Morris, at 12.30 o'clock.

(For further particulars see our Advertisement columns.)

AVERAGE TEMPERATURE for the ensuing week, deduced from observations of Forty-three Years at Chiswick—62.3°.

ACTUAL TEMPERATURES:—

LONDON.—Wednesday, Aug. 2 (6 P.M.): Max. 74°; Min. 54°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—Thursday, Aug. 3 (10 A.M.): Bar., 27.7; Temp., 61°. Weather—Continuous rain.

PROVINCES.—Wednesday, Aug. 2 (6 P.M.): Max. 65°; Bournemouth; Min. 56°. N. of Ireland.

"Mutants" and Hybrids.

DR. T. MACDOUGAL, under the auspices of the Carnegie Institution at Washington, and with the assistance of Messrs. A. M. VAIL, G. H. SHULL, and J. K. SMALL, has published a paper on this subject which will be highly valued by those naturalists desirous of seeing in their own language the records of the evidence furnished by DE VRIES and others as to the existence and nature of the so-called "mutants." Instead of looking on the origination of species as a very gradual and a very slow process, DE VRIES, as we noted in a recent review of his lectures, shows that in some cases it occurs suddenly, without gradational or transitional forms, much in the same way as sports or bud-variations do. The absence of "missing links" is on this view a matter of no importance. Moreover, this phenomenon is stated to occur only at one particular period of the life of a species, and is not universal, but confined to certain forms.

The species may exist for years without any material change, and then all of a sudden the plant may enter upon a period of "mutation," new forms being developed in the manner already indicated. Why, how, and under what conditions this sudden change occurs is not explained. Still there seems to be no doubt of the facts, whatever be their correct interpretation. Their existence helps to explain the extraordinary degree of variation observable, say in our common Brambles and Hawkweeds, no less than in our Ferns. If these variations be proved to be constant and reproduced from seed or spore, it will become necessary to treat them as "species," and to give them names accordingly, for between permanent variations and species no line can be drawn.

Heretofore botanists have been content to frame their conceptions of "species" from comparative observations of the living plant in the field, or of herbarium specimens. Obviously, when observation can be supplemented by cultivation and practical experiment, a much closer approximation to the truth is likely to be gained. This experimental cultivation has been carried on by DE VRIES, and his experiments are now being repeated under other conditions by other observers. The first object of the American writers above-mentioned was to ascertain exactly what *E. Lamarckiana* really is, what is its history, whence did it come? From the statements here made it would seem that *E. Lamarckiana* is the same plant as that previously called *grandiflora* by PURSH in 1814, and by BARTON in 1821. In 1862 the plant was figured in the *Floral Magazine* by Rev. H. H. D'OMBRAIN, who states that it was introduced to our gardens by Messrs. CARTER, of Holborn. These gentlemen submitted flowers to Dr. LINDLEY, who is stated to have identified it as *E. Lamarckiana* (presumably of Seringe in DE CANDOLLE'S *Prodromus*, vol. iii.). In the *Index Kewensis* the plant so named is referred to *E. biennis* as a synonym. *E. grandiflora* of Solander in Aiton's *Hortus Kewensis* is similarly referred to *E. biennis*. So that according to usual practice *E. Lamarckiana* would be considered as synonymous with *E. grandiflora*, and as a variety of *E. biennis*.

The large-flowered form, though common in cultivation, was little known in a wild state. The interest of DE VRIES' experiments led to a diligent search in various parts of America, and at length the plant was found near Taensa on the Alabama river, a locality whence specimens were sent to FOTHERGILL by BARTRAM in 1773 or thereabouts, and by him submitted to SOLANDER.

The re-discovered plant was grown in the experimental plots in the New York Botanic Garden, together with other nearly allied forms and with artificially produced hybrids. "Mutants" also appeared among these plants. The paper before us is occupied with the record of the numerous observations and experiments made. The details are too numerous and too technical for us to do more than allude to them. The interesting fact for the gardener to note is the value of cultural evidence in determining the existence and limitation of species, and in estimating the possibilities of hybridisation.

THE SCOTTISH HORTICULTURAL ASSOCIATION.—Some fifty of the members had their annual trip on July 29, when the gardens of the Earl of HADDINGTON, K.T., Tynninghame, were visited. Mr. McHATTIE (President), Mr. LONEY (Secretary), MESSRS. TODD, FORTUNE, SCARLETT, KIDD, GRIEVE, WHYTOCK, MACFARLANE, SINCLAIR, and many other representative men in nursery, market gardening, florist, and private gardening, were present, and inspected with pleasure the fine timber, including a grand *Fraxinus Ornus*, with very large specimen *Garrya*, Strawberry-trees, *Nandina*, Hop-tree [*Ostrya*?], and many flowering shrubs not at all common. The Apple-covered walk and the original Tynninghame Muscat were other objects of interest, while an ancient Mulberry-tree bore testimony to the mildness of the climate. Roses were practically over, Carnations in pots being the chief feature among flowers, with the usual lines of Sweet Peas, quantities of bedding plants, and in numerous borders a large selection of the best hardy plants.

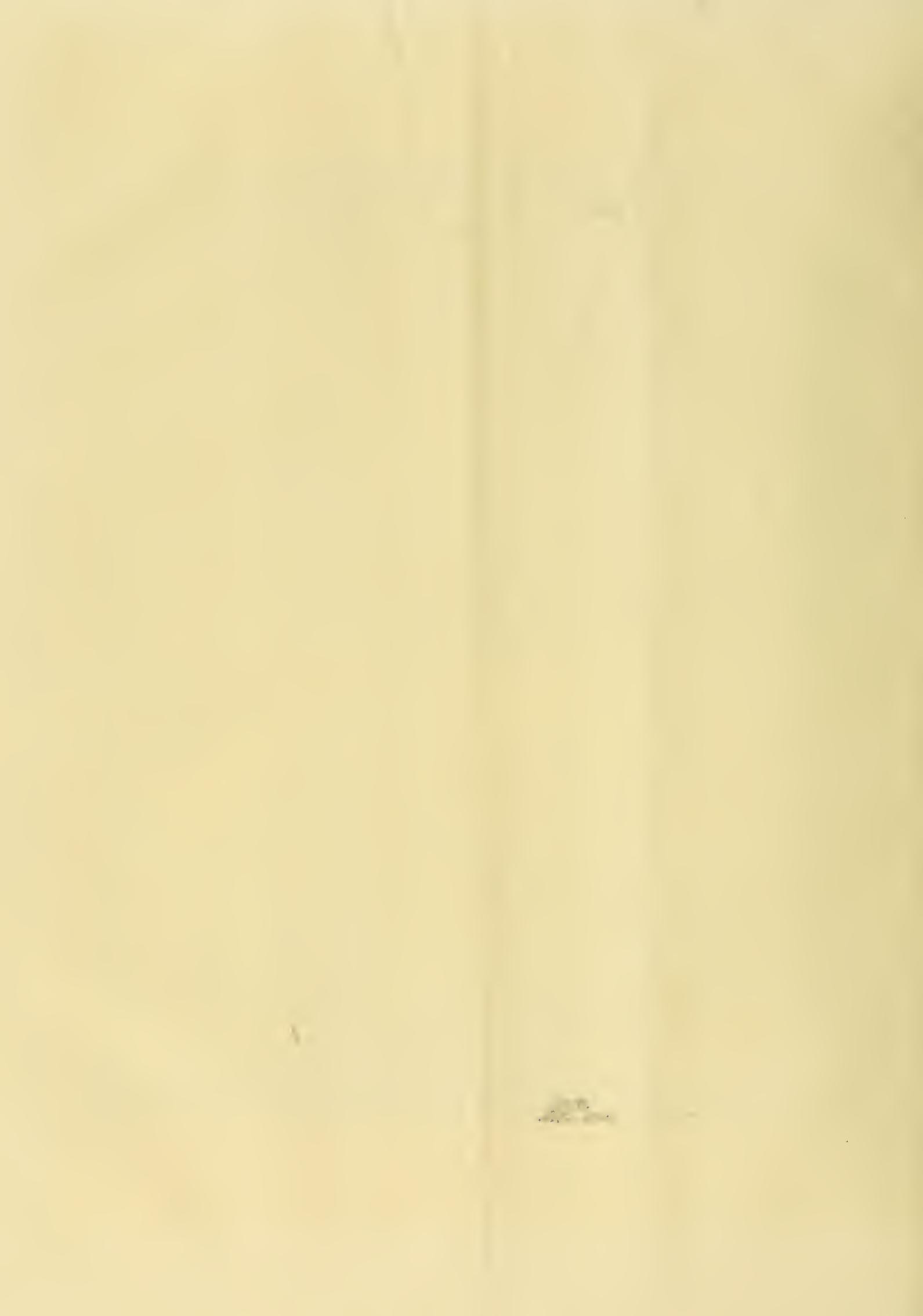
FOUR SHOWS OF COLONIAL FRUITS.—The Council of the Royal Horticultural Society, on the suggestion from the official representatives of several of our Colonies, have decided to hold four exhibitions of Colonial fruits and vegetable products, lasting two days each, on December 5 and 6, 1905, and March 22 and 23, June 6 and 7, and December 4 and 5, 1906. The object in fixing these dates is to suit as far as possible the season which is most likely to find the produce of Canada, British Columbia, and the West Indies; of India and the Cape; and of Australia, Tasmania, and New Zealand, in the greatest perfection in London. Opportunity is afforded for each Colony to make collective exhibits in addition to the exhibits of individual firms. The Agents General and other authorities are rendering every assistance, and we trust that both growers and shippers will do their best to send in exhibits worthy of our Colonies, and to show what can be produced for the home markets. No entrance fee or charge for space is made, and tabling is also provided free of expense. If desired any produce may be consigned direct to the Society, and it will be stored in the cellars at Vincent Square and staged by the Society's officials, but the Secretary cannot undertake to repack and return any exhibits. Medals and other prizes are offered by the Council in each of the many classes, which include Apples, Pears, Pineapples, Mangos, Grapes, Oranges, Limes, and other citrus fruits, Peaches and Nectarines, Plums, Melons, Tomatos, Nuts, Yams, and various tubers, and other Colonial fruits and vegetables. There are also classes for preserved fruits and vegetables, whether dried, bottled, tinned, jellied, or otherwise treated. The schedule and other particulars may now be had of the Secretary, Royal Horticultural Society, Vincent Square, Westminster, S.W.

HORTICULTURAL MEETINGS AT BRUSSELS.—

The Royal Linnean Society of Brussels (*Société Royale Linnéenne*) has made arrangements to hold horticultural meetings monthly in the State Botanic Garden of Brussels. Amateurs and nurserymen are cordially invited to attend these meetings and to promote their success by their assistance. These meetings are organised on the same general principles as those held in London and Ghent. The members of the Committee for 1905 are M. DE MIDDELEER (Chairman); Messrs. VERNIEUWE (Secretary of the Society), CLAES, DRAPS, MARCHANDISE, PEETERS, STEPMAN, DE WILDEMAN (Botanist), GOOSSENS (Artist), GENTIL (Secretary). The first meeting will be held on Sunday, August 20. Plants, flowers, fruit or vegetables must be arranged before 10 A.M. The jury will begin their work at 10 A.M. The public will be admitted at 11 A.M. The following



VIEW OF AN ORNAMENTAL POND IN THE GARDENS AT SOUTHWOOD, BICKLEY, KENT, THE RESIDENCE OF A. E. BEDDOW, ESQ.



Awards will be made as follows:—(1) Diploma of Honour for all novelties of exceptional merit shown for the first time at the Society's meeting. (2) Certificates and Honorable Mentions for novelties, good cultivation, or successful flowering. The Certificates will be awarded either by (1) the majority of the Committee; (2) unanimously; (3) by acclamation, or (4) with the "félicitations" of the jury. Amateurs and nurserymen unable to exhibit their produce themselves can send their plants, carriage paid, to M. L. GENTIL, Curator, Botanic Garden, Brussels. They will be sent back to their owner by the Committee. Meetings will be held in the autumn on Sept. 17, November 19, and December 17, 1905.

"THE BRITISH MOSS-FLORA."—The last part of this important work has now been published. It includes Family XXI.—Neckeraceæ II., and the supplement and index. We congratulate Dr. BRAITHWAITE on the successful conclusion of his long task, and on the patience and ability with which he has produced a standard work on these British Cryptogams. It need scarcely be added that the plates in the present part are as accurately and beautifully produced as those in former issues of the publication. MESSRS. LOVELL REEVE & Co. are the publishers.

CARDIFF GARDENERS' ASSOCIATION.—The ninth annual outing of the Association will take place (writes Mr. JNO. JULIAN, hon. secretary) on Monday, August 14, 1905, to the King's Acre Nurseries, Hereford, by the invitation of T. SETON, Esq., Managing Director. The train will leave the Great Western Station, Cardiff, at 8 A.M., returning from Hereford at 8.45 P.M. (saloons provided). It has also been arranged that after luncheon brakes will be in readiness to convey the party over a six-miles' drive to Holme Lacy (by kind permission of the Right Hon. the Earl of CHESTERFIELD), to view the historic and extensive pleasure grounds, &c.

"THE HORTICULTURAL DIRECTORY."—We are asked to state that the editor of the *Horticultural Directory*, 12, Mitre Court Chambers, Fleet Street, London, would esteem it a favour on the part of all head gardeners who have changed their addresses since October last, if they will send him a notice of their new address. Nurserymen, seedsmen, and florists who have changed either their address or title are likewise requested to notify the editor.

THE SILVER-LEAF DISEASE.—We had recently an opportunity of seeing the results of some inoculation experiments made by Professor PERCEVAL, of Reading. By a process very similar to budding, the Professor inserts a small fragment of mycelium of the fungus known as *Stereum*, or a portion of the leaf affected with the discolouration into the bark of Plum trees. After a time, varying according to the season at which the operation is performed and the place at which the insertion is made, the silvery appearance shows itself where before all was green. The appearance, as we showed long ago, is due to the detachment or raising of the epidermal layer from the subjacent tissue. The mysterious part of the business is that no fungus threads are to be found in the leaves, and so the conjecture is that the disturbance is caused by some ferment or "enzyme," secreted by the fungus, which creeps up the stem from the wound. It is evident that much remains to be done to clear up the matter, and it is equally obvious that Professor PERCEVAL is the man to do it. It is worthy of note that the disease is, so far as our experience goes, confined to the Drupaceous division of Rosaceæ, and that it occurs under glass as well as in the open-air. The only remedy we can suggest at present is to cut away the affected branches entirely and induce the tree to make new growth, in the hope (rather a forlorn one) that that new growth will remain healthy.

SWEET PEAS.—Messrs. J. K. KING & Sons, Coggeshall and Reading, write to say that their Sweet Peas were not exhibited at the Chelsea show in Bruce flower-holders, as was stated at the time, but in holders designed by one of their employés, and made on their own premises.

PHENOLOGICAL OBSERVATIONS FOR 1904.—Mr. EDWARD MAWLEY has recently published the results of phenological observations made in the various districts of Great Britain during 1904. The reports increase in value in proportion to their number. The desired result is to observe the connection between climatic variations and changes with the habits of plants. The exact effect of heat and cold, drought and moisture, and other climatal variations at different seasons upon agricultural and horticultural crops is not merely important in itself, but if observed for a sufficient length of time should be of assistance in forecasting the weather, and, in consequence, the probable effects that will ensue. The winter of 1903–04 was, on the whole, a cold one, with a paucity of sunshine. Seldom, according to Mr. MAWLEY, has there been a winter so unfavourable to the agriculturist. Flowers were checked in the gardens, and planting in many places was rendered impossible. The succeeding spring was colder and less sunny than usual, consequently, growth was delayed. No great extremes were, however, experienced, so that no lasting damage was done. The summer was generally sunny, and the hay crop good. A drought and cold nights in July and August interfered with all plants and garden crops, and summer-flowering plants were late. The autumn was generally favourable. On the whole the year may be considered as being of an average nature as regards the weather. These reports cannot be made very definite, as they are gathered over a wide area, but the general facts remain uncontested. Extremes of all kinds exercise corresponding effects on vegetation, though these results are often not evident for some considerable time. Mr. MAWLEY publishes useful tables showing the areas under observation and the plants noted.

POTATOS IN 1904.—According to the *Returns* of the Board of Agriculture for 1904, the total production of Potatoes has only three times previously been exceeded, the greatest crop on record—3,743,203 tons—having been returned in 1884. England and Scotland both had in 1904 a yield per acre largely above average, the former by 6 cwt., the latter by almost 30 cwt., while an average of over 7 tons per acre, as was secured in Scotland, has never previously been noted in any of the three divisions of Great Britain. Wales was not so fortunate, the 4.84 tons per acre there returned representing about 12 cwt. less than the mean. Lincolnshire, the chief Potato-growing county, had a deficit of one-third of a ton per acre. In Scotland, one county only, Dumbarton, fell slightly below the normal. Banff and Kinross had almost 3½ tons above the average, while Bute, Caithness, Fife, and Forfar were all more than 2 tons to the good. The largest yield recorded in any single county was 9.45 tons on the small area in Clackmannan, while Banff also secured over 9 tons to the acre.

A "COUNTRY IN TOWN" MOVEMENT.—A Conference to promote the projected exhibition next year of London-grown flowers, fruit, and vegetables was held in the "One-and-All" club-room of the Agricultural and Horticultural Association, Long Acre. There was a large attendance of representatives of Societies and Institutions and of friends of the movement from the Metropolitan districts, as well as from Manchester, Birmingham, &c. The Hon. H. A. STANHOPE presided. Mrs. BARNETT gave interesting details of the projected garden suburb at Hampstead, where houses with garden surroundings are proposed to be built to suit all

classes of people, bringing rich and poor into the relationship of neighbours. Mr. E. O. GREENING read a paper on a "Country in Town Movement," giving information of developments in the United States and at home. The following resolution was moved by Mr. T. HORSFALL, of Manchester, seconded by Mrs. T. CHAMBERLAIN, of the Women's Agricultural and Horticultural International Union, and unanimously carried:—

"That this Conference approves the proposal to organise for 1906 an exhibition of flowers, fruit, and vegetables, grown in London and its suburbs, having separate sections for congested areas and the nearer and outlying suburbs. That the exhibition should include models, plans, and pictures, demonstrating the practicability of garden suburbs, the utilisation of vacant town spaces, and the floral adornment of London and other great cities."

A second resolution was moved by Mr. FRED ROGERS, and seconded by Miss LATTER, of the Invicta (L.C.C.) Infant School Gardens:—

"That this Conference expresses its sympathy with the project for a Hampstead Garden Suburb, and its determination to assist as far as possible in the realisation of the object."

On the motion of Mr. T. WHITEHOUSE, of Birmingham, seconded by Mr. T. BUDGET MEAKIN, it was agreed to reappoint the Council, executive, and officials, who have carried the work to its present stage, giving them power to add to their number.

EFFECT OF MANURES ON FRUIT.—M. ORIVE, reporting at the Paris Horticultural Congress in May last upon a series of experiments made under the auspices of the "Commission des Engrais," organised five years ago by the Société Nationale d'Horticulture de France, mentioned several details of scientific importance. The most noticeable result of the trials is the proof that plant-foods containing phosphates and potash produced a fruit that kept more perfectly than did fruits borne on trees in trial-grounds that did not receive similar foods.

GERMAN DENDROLOGICAL SOCIETY.—Under the presidency of FRITZ, Count of Schwerin, a very attractive programme has been arranged for the fourteenth annual Congress of the German Dendrological Society (Deutsche Dendrologische Gesellschaft). The meetings are to be held at Constance, from August 7 to 11. Papers are to be read on interesting and rare Conifers, Bamboos, Magnolias, and Roses that are hardy in Germany; on the history of the plantation of the island of Mainau, and on the results of the Nomenclature Congress of Vienna. Excursions are planned to some of the most beautiful parks and gardens of the neighbourhood, to the Empress EUGÉNIE's Castle of Arenenberg, the island of Mainau, Bregenz, and Lindau. Several itineraries are suggested for the homeward route, according to the locality in which reside the visitors to the Congress.

THE ROYAL METEOROLOGICAL SOCIETY.—The Council of the Royal Meteorological Society are desirous of advancing the general knowledge of meteorology, and of promoting an intelligent public interest in the science. They think that these ends can be most readily attained by means of lectures delivered in connection with scientific societies and institutions in various parts of the country. The Council have now appointed a lecturer, who is prepared to deliver lectures on meteorological subjects, e.g., How to Observe the Weather; Weather Forecasting; Climate; Rain-fall; Thunderstorms; Meteorology in relation to Agriculture, Health, &c. The lectures will be illustrated by lantern-slides from the large collection in the possession of the Society. Societies and institutions wishing such lectures will be expected to pay a moderate fee, and to defray travelling expenses. The Council are willing to arrange for exhibiting at the gatherings of local scientific societies, institutions, or schools, a

collection of photographs, drawings, diagrams, and charts illustrating meteorological phenomena, and of various patterns of instruments used for meteorological observations. They would also, if desired, lend and fit up a complete climatological station for exhibition, showing the necessary instruments in position and ready for use. The cost of transit and the expenses of a member of the staff in fitting up and superintending the exhibit would be borne by the society or institution inviting the co-operation of the Royal Meteorological Society. The Council are further prepared to lend sets of lantern-slides illustrating meteorological phenomena and instruments at a charge of 1s. per dozen and cost of carriage (minimum amount 3s.). Further information can be obtained from the Assistant Secretary, Royal Meteorological Society, 70, Victoria Street, S.W. Messrs. FRANCIS CAMPBELL BAYARD and HUGH ROBERT MILL are the Secretaries.

IF I HAD BUT ONE PEAR, WHICH SHOULD IT BE?—M. BALLET answers this question in the *Bulletins d'Arboriculture* by selecting Durondeau as the most generally suitable Pear. We do not think this Pear would be rated so high in this country.

ROYAL BOTANIC SOCIETY.—At the annual meeting to be held August 10, Mr. J. S. RUBINSTEIN will propose resolutions (1) Advocating a revision of the old bye-laws so as to secure for the Fellows a real voice in nominating and electing the members of the Council and the right to move resolutions at Fellows' meetings; (2) Deprecating the proposal to increase the Fellows' subscriptions; (3) Advocating the adoption of a policy calculated to attract new Fellows, and secure a substantial income from the admission money paid by the public, and with this view recommending that musical promenades be given next season on every Monday, Wednesday, and Saturday, the days the Gardens are open to the public, and (4) Urging the appointment of a Committee of Fellows to confer with the Council as to the best methods of improving the condition of the Society.

GARDENERS' OUTING.—The members of the Bath Gardeners' Society, or to print the very cumbersome title, "Bath and District Gardeners' Self-help and Debating Society," had their first annual outing on July 27 to Messrs. SUTTON & SONS' nurseries, Reading. The Society is a new one, but already includes 180 members, and the party that journeyed to Reading numbered 130. A most enjoyable day was spent, and in addition to inspecting Messrs. SUTTON's trial-grounds, &c., a visit was made to the gardens belonging to the Reading University College.

PUBLICATIONS RECEIVED.—*Bulletin of the Department of Agriculture, Jamaica*, July. Contents: Sugar cane, Soils of Jamaica, Tobacco of Jamaica, Banana Suckers, Cassava Trials, Culture of Central American Rubber.—*Bulletin of Miscellaneous Information, Botanical Department, Trinidad*, July. Contents: Notes on Experimental Plots, a Double Cacao Pod, Introduction of Cacao from Venezuela, &c.—*The Queensland Agricultural Journal*, June. Contents: Potato-scab in parts of Australia and New Zealand, Contributions to the Flora of Queensland, by F. M. Bailey: Tropical Industries, Forestry, and Notes on Stock Farming.—*The Agricultural Journal of the Cape of Good Hope*, July. Leading features: The Agricultural Union of Cape Colony, Extra-tropical Forestry, Experiments with Measles, and United Vine and Fruit-growers' Congress.—*Proceedings of the Academy of Natural Sciences of Philadelphia*, Volume XVII., part I, January to March, 1905, includes some papers on Invertebrate Cretaceous Fossils, and other subjects connected with zoology.—From the New York Agricultural Experiment Station, Geneva, N.Y., we have received the following Bulletins: No. 252, January, *Sulphur Washes for Orchard Treatment*; No. 254, *Potato-spraying Experiments in 1904*; No. 255, Part I, *Plant-Food Constituents used by bearing Fruit-Trees*; and Part II, *Tabulated Analyses showing amounts of Plant-food Constituents in Fruits, Vegetables, &c.*; and No. 257, *Effect of certain Arsenites on Potato-foliage*.—*Agricultural Bulletin of the Straits and Federated Malay States*, Edited by H. N. Ridley. The contents are chiefly devoted to subjects connected with the Rubber industry.

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his Correspondents.)

THE PEACH AS A STOCK FOR THE PLUM.—I have just read one of the latest books from amongst the many modern ones on South Africa. The author, referring to the Cape and sundry fruit farms formed within its great extent, says Plum trees are not found to answer in the matter of fruitfulness when grown in the ordinary way, but that they are successful and fruit well when worked upon Peach stocks. This, by comparison with our home practice, is reversing the order of things. Has any reader of the *Gardeners' Chronicle* had experience with the Plum worked or budded on to the Peach? It may be the Peach proves a dwarfing stock for the Plum, after the manner of the Quince for Pears and the Paradise or Duncin stocks for Apples. W. Earley.

TRILLIUM SEED (see p. 96).—Your correspondent, Mr. O. O. Wrigley, should soak the seeds of Trillium in soft water, and add to it a lump of camphor about the size of a large nut, afterwards sowing the seeds in well-drained shallow boxes of sandy peat made firm. Afford a good watering through a fine rose before sowing the seeds, which should be placed on the surface at 1 inch apart each way, covering them afterwards lightly with fine soil which has been passed through a $\frac{3}{8}$ -inch sieve, and place a sheet of glass over each box. Let the boxes be put in a cold frame and be shaded from bright sunshine. The seed will then germinate, provided it has been properly ripened. When seedlings appear the glass must be turned each morning to dispel moisture. R. B. Tilley, Roath, Cardiff.

—It may be well to state that not a few Liliaceous plants are slow to germinate even when perfectly good seeds are sown. It is so with certain species of Lilies, and is often the case with Anthericum. Indeed, perfectly good seed, fully ripe when sown, and practically sown as gathered from the opening capsules on the plant, have all laid dormant for two years, but subsequently appeared as thickly as spring Onions, which the seedlings somewhat resemble in the early stages. In more than one instance I should have discarded the seed-pans but for the knowledge I possessed as to the quality of the seed. In the case of the Trillium I should now strongly suspect that the bulk of the seed was mere chaff, and in future I would advise your correspondent to practise artificial pollination, if this has not been done, in the hope of securing a much greater percentage of fertile seeds. Not infrequently seeds sown as soon as ripe will remain dormant longer than seeds of the same parcel not sown for some months later—a very curious and interesting fact. Sometimes in the Lily tribe the seeds vegetate, and no leaf-growth appears till the second year. In other species, as *L. giganteum*, germination is quick in the case of good seeds, and growth long continued. In the Daffodil (*Amaryllidaceae*), the season above ground in the first year of the seedling is usually very short, and is mentioned here as a sort of proof that the few seedling Trilliums spoken of by Mr. Wrigley have merely gone to rest in the ordinary way. E. H. Jenkins, Hampton Hill.

MR. BERNARD COWAN.—Mr. Bernard Cowan has just completed twenty-five years of service as Superintendent of the Westoe and Harton Cemeteries, South Shields. One of the first things that he turned his attention to on his appointment, was the re-modelling of Westoe Cemetery, and its present condition shows how judiciously he went about the work in selecting trees and shrubs suitable for the soil and climate of the district. Eventually, when it became necessary to take in more ground, the Harton Cemetery was formed, and the duties of laying it out devolved upon Mr. Cowan. His ideas from the first were to allow the eyes to rest upon flowers, trees, and shrubs, rather than on tombstones, and in this he has been eminently successful; so much so that in walking along the spacious paths one is reminded more of a public park than of a cemetery, as only occasionally are glimpses of tombstones seen. Mr. Cowan is one of the most popular of Northern horticulturists. He took an active and foremost part in the formation of the South Shields Chrysanthemum

Society, and has discharged the duties of honorary secretary since 1882. For some time he held an appointment as horticultural lecturer under the Durham County Council, and he occasionally contributes to the Press. He is senior Vice-president of the Royal English Arboricultural Society, and frequently contributes papers at the Society's meetings. B.

NICOTIANA SANDERÆ.—I have read with interest the article, in your issue of July 22, by your generally accurate correspondent, "J. O'B.," but in the note on the above-named plant he has made a mistake by claiming for it the property of keeping open during sunshine. I have had the plant under my own observation planted in the open in the locality of Worthing, and can say without fear of contradiction that this variety presents as sorry a spectacle, while the sun shines on it, as does *N. affinis*. E. B.

EXHIBITING SWEET PEAS.—The incident of the Sweet Pea disqualification ought not to be let pass without attention being called to the unhappily too common practice of judges disqualifying for very slight reasons. There seems to have been no option permitted in the instances in question, though an easy way out of the difficulty would have been to quietly remove a spray from the vase with over-numbers and said nothing further about it. Only the other day at a good show at Dunfermline, in a class the first prize for which was ten guineas, one of the competitors deviated slightly from the schedule. The attention of an official was drawn to the matter, and he promptly said, "You have power to disqualify." It was so clearly the result of an oversight, however, that he was requested either to put the matter right himself or to find the exhibitor and get him to do so, which he did, thus meeting the requirements of the case without penalising a man for a slight slip. Several years ago Mr. Haldane, K.C., M.P., gave a special prize, to be competed for by working men at Haddington, for a collection of so many sorts of vegetables. The best collection was found to contain a dish too many—if I remember rightly, a brace of Cucumbers being laid on another dish. On being referred to, I said it was an instance of forgetfulness to remove the Cucumbers, which proved to be the case, but disqualification followed. In a little show I have to do with, not a year passes but some one or other transgresses in quantity, but we never disqualify; the extra is lifted out, if not before the judges go round, then when they discover the mistake. There are, of course, instances when it is impossible not to disqualify, as when a different variety from that asked for in the schedule (as happens sometimes with Apples and Pears) be staged; but that is different altogether from a case where, say, a dish of the correct variety is staged containing one more than the number, the obvious inference being that in comparing the fruits the exhibitor has forgotten to lift the worst. Reverting to the question of Sweet Peas, it is clear that much ignorance prevails as to what an exhibitor ought to strive for. At a recent show of what a competent authority has described as the best exhibition of Sweet Peas ever held in Scotland, it was quite curious to see the remarkable differences in many of the lots. A fresh and altogether fine lot was shown with stems that had been shortened, and in one class the majority was set up in the same way, the exhibitor seemingly ignoring the fact that length of stem increases the value of a spray. There was, too, the exhibitor who sought to lengthen the stems by setting up the flowers with portions of the haulm, a fair reason for disqualification surely. A few placed themselves out of the running by setting up a limited number of one or two sorts, but the great majority—although the judges were not called upon to count the flowers—clearly staged a fair number of each. The winning lots achieved victory by length and strength of stem, by equality in the size of the blooms, by clearness and depth of colours, and by the number of flowers on each spray, in one case three and four blooms being the usual number. The number of first-rate varieties now existing that produce three and four blooms on each spray should lead to a recognised rule in judging to pass over those with two and sometimes only one spray. R. P. Brotherston. [If a number is

SOCIETIES.

THE ROYAL HORTICULTURAL.

AUGUST 1.—The usual fortnightly meeting of the Committees was held on Tuesday last, in the Hall in Vincent Square, Westminster. There was not so large a display as usual, but there was sufficient to

make a good show, and the exhibits included many interesting novelties. That autumn is approaching was illustrated by the collections of Gladioli and Hollyhocks, and even by Cactus Dahlias; the last-named, however, did not appear to excite such attention as they will command later on.

The attendance of visitors was unusually small, and

given in the schedule it should be absolutely respected by exhibitors and judges, for in all competitions the conditions should be well defined and unalterable after publication. In such cases a special award should be recommended, and the committee might consider if the schedule could not be made less exacting in future. Ed.]

THE PEAR-MIDGE (see article and illustration in our issue for May 20, 1905, p. 315).—I am one of the unfortunate gardeners who has suffered from the depredations of this most destructive insect. I am also one of those who has faith. I do not think that the Pear is to be a fruit of the past in consequence of the appearance of this destructive pest, and my faith is considerably strengthened after reading Mr. Saunders's advice in your issue of the 15th ult., except that Mr. Saunders asks us to trench the soil under the trees. Of course I need scarcely tell Mr. Saunders that to trench soil about the roots of fruit-trees spells ruin. But I also syringe or spray the trees several times during the winter with a strong solution of Quassia-extract and sulphate of potassium. Another most valuable insecticide as well as a fungicide, is liquid ammonia and sulphate of copper. But to those who are contemplating its use for the first time let me say, Be careful; it is a dangerous mixture. The danger lies in its preparation, as the fumes given off as the ammonia is poured on to the sulphate of copper are most destructive to animal and vegetable life. The copper sulphate should be smashed to a fine powder, and placed in a glazed earthenware vessel of some sort, and the ammonia poured on it. First cover the vessel with a thick bag or canvas to prevent the fumes escaping. Lift one side of the canvas up only sufficiently to pour the liquid on to the copper; this should be done quickly, the canvas being promptly fastened down over the vessel to prevent any escape of the fumes. It should be made in the proportion of 3 lb. of copper sulphate to 3 quarts of liquid ammonia. This may be diluted to 2 gallons by mixing more water after it has cooled. As the mixture of these two chemicals generates great heat I never allow any assistant to prepare it. After it has become cold, place it in a stone jar and cork tightly. Use a wooden stopper; tin or iron vessels are of no use, as this strong acid would burn through them in a short time. One of the objects in its use on the trees is to kill all moss and other vegetation, which it will do if used at the rate of 2 or 3 oz. to the gallon of water and sprayed into the trees several times during the winter. I feel sure also that if the Quassia-extract is used freely during the winter and before the trees open their flowers, and again after the petals begin to fall it will have good results. But it should be employed several times in order that all loose bark and the surface-soil may become distasteful to the insects. Of course I gather every fruit that has fallen from the trees at once. T. A.

I quite agree with your correspondent, "T. A.," that it would be most undesirable to interfere with the roots of the trees if it were possible to avoid doing so, but in the case of a bad attack by this pest it might be of more importance to destroy the insect than to save the roots which are near the surface. It would have been better to have said, If the surface soil can be turned down so as to bury the chrysalides from 9 inches to 1 foot in depth without much injury to the roots. I may say that in a recent article by a very competent naturalist on this insect which I consulted before writing what I did, it is stated, "Finally, as far as my experience goes the most successful remedy is to trench deeply the ground beneath the trees in the winter." It would certainly be useful to trench the ground beyond the area occupied by the roots, as some of the chrysalides will in all probability be found there. As this insect passes the winter underground in the chrysalis state, spraying the trees during that season cannot lessen the risk of an attack the next spring by the Pear-midge, however beneficial it may be in other respects. Geo. S. Saunders. [Gardeners will probably find it best to take away as much of the surface-soil as can be removed without seriously injuring the roots of the trees, and to sterilise the soil by burning. Then apply a top-dressing of fresh material. Ed.]



COUNTESS
OF
RADNOR

GARDNER

J.G.S.

FIG. 39.—BORDER CARNATION HELEN, COUNTESS OF RADNOR: FLOWERS NATURAL SIZE; COLOUR RICH CRIMSON.

The variety was awarded an Award of Merit when shown by Mr. J. Douglas at a meeting of the Royal Horticultural Society on July 4. (See p. 24.)

this was the first occasion that the holiday season has influenced these meetings to such an extent.

The ORCHID COMMITTEE recommended awards, including one Award of Merit, and three Botanical Certificates.

The FLORAL COMMITTEE recommended ten Awards of Merit to plants of which short descriptions are given below.

The FRUIT AND VEGETABLE COMMITTEE made no award to a novelty, but among the medals bestowed was one of gold to Messrs. JAS. VEITCH & SONS for Gooseberries, and a "Hogg" Medal to Lord SALISBURY'S gardener, Mr. Norman, for a choice collection of fruit.

In the afternoon twenty-four new Fellows were elected, and Mr. C. T. DRUERY delivered a lecture on the subject of "Wild Sports of British Ferns."

Floral Committee.

Present: H. B. May, Esq. (in the Chair); and Messrs. W. Howe, Chas. T. Druery, J. T. Bennett-Poe, G. Reuthe, H. J. Jones, W. Bain, Chas. Dixon, Chas. Jeffries, Chas. E. Pearson, Chas. E. Shea, W. P. Thomson, W. Cuthbertson, E. H. Jenkins, W. J. James, J. W. Barr, J. F. McLeod, J. Jennings, C. R. Fielder, and R. Hooper Pearson.

Messrs. W. BULL & SONS, King's Road, Chelsea, exhibited a group of Caladiums, most of the varieties being different from those with which we are familiar. Some of the best were General, Tocantins, Japura, Adamastor, Icarus, and Guarapuava.

Messrs. W. PAUL & SON, Waltham Cross Nurseries, Herts, exhibited sprays of ornamental shrubs, some of which were in flower. A very fine Tamarix named "Odessana" was included, and others were Golden Oaks, Prunus Pissardi, Spiraea canadensis, Podocytisus caramanica, Pavia macrostachya, &c. Some good herbaceous Phloxes were shown, also several new Roses, including Gottfried Keller, a very free-flowering hybrid Briar, having characteristics of the Tea Rose: the flowers were semi-double, 4 or 5 inches across, of pale-rose colour with yellow centre. Another new Rose was the H. T. Earl of Warwick, a large flower of reddish-rose colour with shading of salmon (Silver Banksian Medal).

A collection of Selaginellas from Mr. H. B. MAY, Dysons Road Nursery, Upper Edmonton, represented a great deal of variety in these peculiarly interesting plants, of which there were fifty species and varieties exhibited. Mr. MAY had also a group of well-grown Bouvardias in flower of very choice varieties, and strongly-grown, profusely-flowered plants of Ixora Dixiana, an excellent variety (Silver Flora Medal).

Mr. L. R. RUSSELL exhibited a group of Codieums (Crotons), as small plants suitable for vases, but they had been recently repotted into larger pots than would be convenient for table decoration.

Flowers of tuberous-rooted Begonias were shown in glasses by Messrs. B. R. DAVIS & SONS, Yeovil Nurseries, Somersetshire. Double and single flowers of a number of varieties of a good strain were arranged in a very pretty manner.

Begonias of the tuberous-rooted section, and in which there were evident characteristics of B. Worthiana, were shown by Messrs. A. CHARLTON & SON, Eridge Road, Tunbridge Wells, but they were not so showy as the best of modern strains of Begonia.

Messrs. JOHN LAING & SONS, Forest Hill Nurseries, London, S.E., arranged a very pretty group of ornamental stove foliage plants on the floor of the hall. Among these plants was a new variety of Caladium of considerable beauty, and named Col. John Hay.

Messrs. JAS. VEITCH & SONS, Exotic Nurseries, King's Road, Chelsea, had a group in which some of their Chinese and other novelties were displayed, most of which have been fully described and some illustrated in these pages. Such are Senecio elvornum, Buddleia variabilis Veitchiana, whilst a new variety is described under "Awards." There were also fine flower-heads of Sambucus canadensis, and the lovely white flowers of Eucryphia pinnatifolia were well shown; also Inula racemosa, a new species, and Astilbe Davidii, &c. Messrs. VEITCH had also a group of tender plants on one of the tables. Among these were Exacum macranthum in capital condition, Begonia "Washington," a tuberous-rooted variety of dwarf habit, and having scarlet double flowers, such as would make a good "bedder." Several Kalanchoes were in flower, also other interesting plants, including Cyrtoceras multiflorum (reflexum), an Asclepiadaceous plant. An exhibit of cut flowers from "annuals" came from the same firm (Silver-gilt Flora Medal).

Messrs. WEBB & BRAND, Saffron Walden, Essex, reminded visitors that in their nurseries at least double-flowered Hollyhocks can still be cultivated with success. They exhibited a very large number of blooms in a somewhat stiff manner on boards, and behind these were arranged the stems cut from plants with the flowers upon them. The prettiest variety appeared to be one named Miss Lizzie King, of lemon-yellow colour (Silver Flora Medal).

Messrs. HUGH LOW & Co., Bush Hill Park Nurseries, Enfield, exhibited Buddleia variabilis Veitchiana, also a group of well-coloured Codieums (Crotons)

Messrs. H. CANNELL & SONS, Swanley, Kent, made a very large exhibit of hardy flowers, inclusive of perennial herbaceous species and annuals. Godetia Duchess of Albany, with large white flowers, was attractive; and there were numerous other varieties of Godetia. A very large-flowered strain of Salpiglossis, Browallia speciosa major, Antirrhinum, Centaureas, Clarkias, China Asters, Nemesias, and a red variety of the large-flowered Lavatera trimestris were shown among a very large number of other species. Messrs. CANNELL also showed semi-double and double varieties of zonal Pelargoniums, arranged



FIG. 40.—SPIRÆA AITCHISONI: FLOWERS PURE WHITE, LEAVES DARK GREEN, SHINING ABOVE.

An upper leaf and upper portion of inflorescence: natural size. A flower and a fruit enlarged. Recommended an Award of Merit at the Royal Horticultural Society's Meeting on Tuesday last. (See p. 115.)

and other stove foliage plants, and Asparagus medio-lobes myrtifolia (Silver Banksian Medal).

Mr. JAS. DOUGLAS, Edenside Nurseries, Bookham, again exhibited flowers of a number of varieties of border Carnations. One named Mrs. Shenton, of very large size and of salmon-buff colour, was prominent.

Carnations were shown well by W. A. WATTS, Esq., Bronwylla, St. Asaph. The varieties all belonged to the border section, and the flowers were cut with very long stems and exhibited in tall, cylindrical glasses. Several seedlings were shown, but these were not of superior merit (Silver Banksian Medal).

pretily in glass vases, and relieved with fronds of Adiantum Ferns. One of the most noteworthy of these was named Le Colosse, for though the flowers were only very slightly double, they were of large size and brilliant scarlet in colour. Ville de Poitiers is more carmine in colour, but very large in size. Of true pink varieties Mrs. Lawrence, Mme. Gabrielle de Rovira, and M. Anatole Roscleur were very good. Champ de Neige was the only pure white flower shown. (Silver Flora Medal).

Messrs. JOHN PEED & SONS, Roupell Park Nurseries, West Norwood, exhibited plants in pots and cut

flowers of Gloxinias, which, as arranged, produced a pretty effect.

Mr. AMOS PERRY, Winchmore Hill Nurseries, included amongst hardy flowers a number of herbaceous Phlox, *Asclepias tuberosa*, and other species, but the most interesting feature in the exhibit was the large collection of varieties of Nymphaeas, of which flowers were shown (Silver Flora Medal).

Mr. MAURICE PRICHARD, Christchurch Nurseries, Hants, exhibited a group of choice hardy flowers. Gladiolus of the Lemoine strain were very fine, also herbaceous Phlox, &c. (Silver Flora Medal).

Mr. E. POTTE, Cranbrook, also exhibited hardy flowers in which herbaceous Phloxes and Pentstemons, &c., formed the leading features.

The best exhibit of herbaceous Phlox was that from Messrs. GUNN & SONS, Olton, near Birmingham. The flowers were of superb varieties, had been well grown and were shown effectively.

PERCY WATERER, Esq., Fawkham, Kent, also made a capital exhibit of herbaceous Phloxes, staging smaller bunches of a large number of the best varieties (Silver Flora Medal).

Messrs. R. SMITH & Co., Worcester, staged some very nice hardy flowers, including those of several varieties of Nymphaea.

Messrs. KELWAY & SON, Langport Nurseries, Somersetshire, exhibited one of their magnificent displays of Gladioli. The flowers showed extraordinarily good cultivation, and the varieties were of the highest merit. One of them is mentioned under "Awards" (Silver-gilt Flora Medal).

Messrs. J. CHEAL & SONS, Crawley, exhibited Cactus and single-flowered Dahlias, which will doubtless be seen in better form at a later date.

Messrs. THOS. S. WARE, Ltd., Feltham, had a very showy exhibit of hardy flowers, amongst which the best of those now in season were included. Chrysanthemum maximum King Edward VII. and Lathyrus latifolius "White Pearl" were given special prominence in tall Bamboo stands (Silver Banksian Medal).

Mr. GEO. REUTHE, the Fox Hill Hardy Plant Nursery, Keston, had several good varieties of herbaceous Phlox, flowering sprays of Berberidopsis corallina, and a purple Liatris under the name of *L. montana*, described as coming from the mountains of California.

Messrs. BARR & SONS, King Street, Covent Garden, showed herbaceous Phloxes, Gladiolus, Scabiosa lutea gigantea, Nymphaea flowers, Liatris spicata (a capital border plant), and other hardy flowers in season.

Awards.

Spiraea Aitchisoni.—Very handsome flowering sprays of this exceedingly ornamental species were shown by Sir TREVOR LAWRENCE, Bart. (gr., Mr. Bain), and Mr. MAURICE PRICHARD. The species was named by Mr. Botting Hemsley, after the plant had flowered at Kew in 1889, and Mr. Nicholson, then Curator of the Royal Gardens, had drawn attention to the obvious differences in the plant from *S. Lindleyana*, of which *S. Aitchisoni* had been considered to be a variety. Mr. Hemsley first discovered the plant when assisting the late Dr. J. E. T. Aitchison to classify the dried specimens the Doctor made in the Kuram Valley, Afghanistan, in 1879. An illustration of the species and a full description by Mr. Hemsley was published in the *Gardeners' Chronicle*, October 6, 1900, p. 255. We now reproduce the illustration (fig. 40, p. 115), and for further particulars our readers may refer to the issue just mentioned (Award of Merit).

Berberis vulgaris foliis purpureis macrophylla [?].—This is the best purple-leaved variety of the common Berberis that we have seen, the leaves being of extra large size and of deep colour. Shown by Messrs. PAUL & SON, Cheshunt (Award of Merit). The Committee should not lend its sanction to such names; a name should be a name, not a description.

Buddleia variabilis magnifica.—Those who are familiar with the new *Buddleia* known as *B. variabilis Veitchiana* may easily imagine what *magnifica* is like, when we have described the flowers as being several shades deeper than *Veitchii*, therefore of rich reddish-lilac colour. This newer variety as shown is also more robust and has larger flowers. Shown by Messrs. JAS. VEITCH & SONS (Award of Merit).

Campanula "White Star".—A very pretty free-flowering variety of *C. carpatia* was shown under this name by Mr. M. PRICHARD, Christchurch. The flowers were 2½ inches across, white or of the very palest mauve colour, except a ring round the centre. The habit of the plant was very dwarf, and the flowers about 9 inches high (Award of Merit).

Carnation "Roy Morris".—This is a bright rosy-crimson self-coloured *Carnation* nearly 3 inches in diameter, and possessing a non-splitting calyx. Some of the petals are fringed, and the small petals in the centre of the flowers somewhat detract from their fine appearance. Shown by H. W. G. MORRIS, Chipping Norton (Award of Merit).

Centaurea. Messrs. JARMAN & CO., Chard, Somersetshire, exhibited flowers of an unusually fine strain of *Centaurea*. The flowers were 3 inches in diameter, of refined form, and in colour the shades of yellow and purple were exceedingly pretty, in addition to some which were white. An Award of Merit was awarded for the strain.

Gladiolus "Lady Inchiquin".—A very lovely variety of charming pink colour with a little orange-yellow shading on the lower segments. The flowers are of very large size. Shown by Messrs. KELWAY & SON (Award of Merit).

Hemerocallis "Dr. Regel".—A free flowering variety with unusually deep orange-coloured flowers. Shown by Mr. M. PRICHARD (Award of Merit).

Montbretia Promethens.—This is the largest variety of this popular bulbous plant that we have seen. The plants as shown were more than 3 feet high, and the inflorescence was very much branched and bore numerous flowers. Each flower measured 3½ inches across, and was of rich orange colour with markings of deep red near the centre. Shown by Major PETRE, Westwick House, Norwich (gr., Mr. Geo. Davidson) (Award of Merit).

Sambucus canadensis.—This is an old species of Elder, commonly grown in the variety with golden-coloured leaves, but is not so well known as it deserves to be. Its branched cymes of white flowers make a prodigious "head" of bloom, and the flowers have an agreeable perfume. The leaves are pinnate or sub-pinnate, and the plants are said to grow 6 feet in height or more. Shown by Sir TREVOR LAWRENCE, Bart., and Messrs. JAS. VEITCH & SONS (Award of Merit).

Orchid Committee.

Present: J. Gurney Fowler, Esq., in the Chair; and Messrs. Jas. O'Brien (Hon. Sec.), De B. Crawshaw, F. Wellesley, N. C. Cookson, J. Colman, G. F. Moore, H. T. Pitt, R. G. Thwaites, J. Douglas, T. W. Bond, W. H. Young, W. H. White, J. W. Odell, W. Boxall, H. A. Tracy, H. Little, H. J. Veitch, F. W. Ashton, and H. Ballantine.

Messrs. CHARLESWORTH & Co., Heaton, Bradford, staged the only group, but one of great merit, for which a Silver gilt Flora Medal was awarded. A feature in the group consisted of some good hybrid *Odontoglossums*, raised by Messrs. CHARLESWORTH, and among which the several forms of *O. x Rolfea* exhibited great variety. Two plants named "Heaton variety" had clear white ground colour in the flowers and violet-purple markings; two others had a greenish ground colour and lighter markings, while a third form had the white and purple flowers suffused with rose. Other hybrid *Odontoglossums* were Harryano-triumphans, with bright yellow flowers richly marked with purple; *Othello*, and *crispo-Harryanum*. The hybrid *Cattleyas* comprised *C. x Caduceus* (*Schofieldiana* × *Gaskelliana*), *C. x Wavriniana* (*Schofieldiana* × *Warsewiczii*), both showy flowers; several good *C. x F. W. Wigau*, *C. x Vulcan*, *C. x Fabia*, *C. x Fernand Denis*, and *C. x Germania*, the best of which, var. *magnifica*, secured an Award of Merit. The best of the *Laelio-Cattleyas* was the richly-coloured *L.-C. x callistoglossa splendens*, and there were other interesting and pretty plants, &c.

Sir TREVOR LAWRENCE, Bart., Burford, Dorset (gr., Mr. W. H. White), showed a very handsome specimen of the elegant little *Platyclinis filiformis* with 109 of its pendulous racemes of yellow flowers (Cultural Commendation). Also *Epidendrum ochraceum*, the pretty little *Theodorea gomesioides* (*Gomesia Theodorea*), a very distinct, dwarf-growing *Orchid* with ascending spikes of ten to twenty flowers, each half-an-inch across, and of the true *Gomesia* shape, though differing in colour and in the arrangement of the inflorescence. Sepals and petals yellowish, with purplish-red markings at the base; lip whitish (described and figured in the *Flora Brasiliensis*, fasc. 128 (1905), col. 250, tab. 55). There were also shown a good pan of *Nephelaphyllum pulchrum* and two others (see Awards).

F. W. MOORE, Esq., Glasnevin, Dublin, sent *Colax triptera*, which is a pretty species with green sepals and petals, the latter having small blackish markings,

and white labellum with rose disc. Nearest to *C. Puydti*.

H. S. GOODSON, Esq., Fairlawn, Putney (gr., Mr. Day), sent *Cattleya Gaskelliana* "Mrs. Goodson." A delicate bluish-white variety with citron-yellow disc.

GURNEY WILSON, Esq., Haywards Heath, sent a large form of *Cattleya Harrisonae* with broadly-developed and crisped lip approaching *C. O'Brieniana*.

Messrs. HUGH LOW & Co, Enfield, showed a fine large-flowered *Odontoglossum Pescatorei*, the one flower on which had clusters of violet-purple spots on the lip and lower sepals; also *Laelia* × *Iona*, *Cattleya* × *Mary Gratrix*, and a singular little *Angraecum*.

Mr. OTTO BEYRODT, Marienfelde, Berlin, showed *Phalenopsis Rimestadtiana*.

Messrs. JAS. VEITCH & SONS, Chelsea, showed the fine *Cypripedium* × *Jas. H. Veitch* (*Curtisii* × *Stenei platytenium*), with petals as in *C. x Morgania*, but broader and more densely spotted.

J. FORSTER ALCOCK, Esq., Northchurch, sent *Cypripedium "Gloriana"*, a hybrid of unrecorded parentage, with finely-formed, cream-white flowers tinged and veined with purple.

FRANCIS WELLESLEY, Esq., Westfield, Woking (gr., Mr. Hopkins), showed *Cypripedium* × *Miss M. Sillem* (*niveum* × *Godefroyae*), a charming flower, an improvement on *C. niveum*. Flowers pure white, uniformly dotted with purple except the margins and lower halves of the petals. Also *Laelio-Cattleya* × *Wellsiana magnifica*, for which he had previously secured an Award of Merit. Flowers bright rose with a dark rose-purple feather on the petals and a rich crimson labellum.

R. G. THWAITES, Esq., Streatham Hill (gr., Mr. Black), sent *Cattleya* × *Atalanta ignescens*, very brightly coloured and of good form.

W. A. BILNEY, Esq., Fir Grange, Weybridge (gr., Mr. Whitlock), showed *Cattleya* × *Hardyana* "Gwendolen," a variety which, while adhering closely to the disposition of the colouring in *C. Warsewiczii*, gave unmistakable evidence of *C. Dowiana aurea* in the perfume and also in the intensely dark claret-crimson of the front of the labellum.

J. GURNEY FOWLER, Esq., Glebelands, South Woodford (gr., Mr. Davis), placed on the table a two-flowered inflorescence of the unsurpassed *Laelia* × *Edward VII.*, which gained the highest honours, and formed one of the coloured illustrations in our Coronation Number (June 21, 1902). The flower was slightly lighter than on its first flowering, white tinged with lilac, the immense white rose-fronted, fringed labellum being a grand-feature. With it was a fine inflorescence of a very fine *L.-C. callistoglossa*.

AWARD OF MERIT.

Cattleya × *Germania magnifica* (*granulosa Schofieldiana* × *Hardyana*), from Messrs. CHARLESWORTH & Co., Bradford.—One of the best forms of this favourite hybrid, the flowers being large and well-formed; cream-white beautifully tinged and veined with purple; lip veined ruby-red.

BOTANICAL CERTIFICATES.

Promeneva (Zygopetalum) Rollissoni, from Messrs. CHARLESWORTH & Co.—A pretty, old but rare and free-flowering species with whitish-yellow flowers, with a few purple markings on the petals and base of lip.

Dendrobium ciliatum arvense, from Sir TREVOR LAWRENCE, Bart. (gr., Mr. W. H. White).—A dwarf Indian species which in this variety has white flowers with a purple base to the singularly fringed lip.

Grobya galcuba, from Sir TREVOR LAWRENCE, Bart.—A pretty species with whitish flowers spotted with purple, each an inch across, and with the upper segments disposed like a helmet; lateral sepals deflexed, yellow at the base.

Fruit and Vegetable Committee.

Present: Geo. Bunyard, Esq., Chairman; and Messrs. S. Mortimer, Alex. Dean, Geo. Kelf, H. Parr, H. Markham, F. Q. Lane, J. Willard, J. Melndoe, C. Foster, Owen Thomas, G. Wythes, A. H. Pearson, J. A. Pettigrew (Boston, U.S.A.), G. Norman, and J. Cheal.

A collection of excellent fruits was shown by Lord SALISBURY, Hatfield House, Hatfield, Herts (gr., Mr. Geo. Norman). There were forty good fruits of *Erluge Nectarine*, two dozen fruits of *Bellegarde Peach*, and an equal number of the variety *Barrington*, a dish of *Brown Turkey Figs*, half a dozen medium-sized fruits of "Hatfield" Melon, a dish of "Florence" Cherry, dishes of *Langley Beauty* and *Crown* Bob Gooseberries, and six good bunches of *Madresfield Court Grapes*, that perhaps were scarcely perfect in regard to finish (Hogg Medal).

Messrs. JAS. VEITCH & SONS were awarded a Gold Medal for a truly magnificent display of Gooseberries, of which there were fruits of 100 varieties, shown in round baskets. Behind these there were plants in pots, trained as cordons and in other shapes (see fig. 41), which had been lifted from the open ground. The crops on these young trees were quite astonishing, and all the berries were very fine. No new varieties were shown

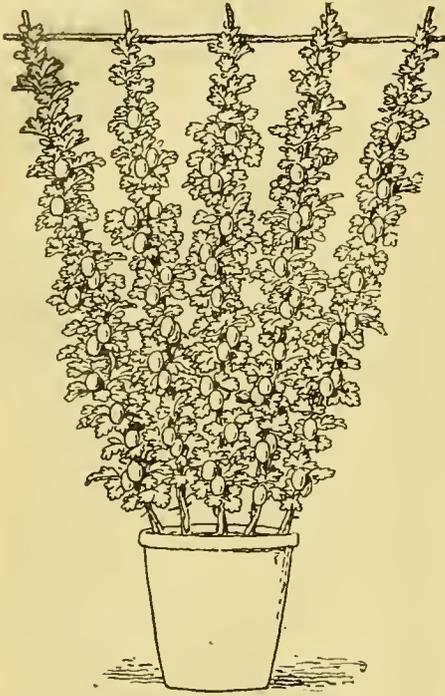


FIG. 41.—OBLIQUE CORDON GOOSEBERRY, such as was shown by Messrs. Jas. Veitch & Sons, Ltd., on Tuesday last.

than Langley Gage, Langley Beauty, and Golden Gem, all of which are of first-rate quality.

Messrs. DOBBIE & Co., Rothesay, N.B., exhibited a collection of about thirty-eight varieties of Potatoes. The tubers were mature, and good specimens, with clean, bright-looking skins. Such early varieties were included as Sharpe's Victor, Ashleaf, Beauty of Hebron, &c. (Silver Knightian Medal).

Messrs. RIVERS & SON, Sawbridgeworth, were awarded a Silver-gilt Banksian Medal for a group of pot trees of their new Peach, Peregrine, freely cropped with handsome fruits of rich flavour.

A seedling Melon named Lilley Brook was shown by H. O. LORD, Esq., Lilley Brook, Charlton Kings, Gloucestershire. Several very large fruits were staged, but they had little flavour, and the Committee suggested that smaller fruits should be shown on a future occasion, when the flavour may be better.

The Lecture.

WILD SPORTS OF BRITISH FERNS.

At the meeting of Tuesday, August 1, Mr. CHAS. T. DRUERY, V.M.H., F.L.S., gave a lecture, illustrated with lantern-slides, on "Wild Sports of British Ferns," his object being to demonstrate the absurdity of the general application by botanists, up to a comparatively recent date, of the term "garden varieties" to all abnormal types, regardless of the fact that the bulk of these types, in the case at any rate of British Ferns, were absolutely wild sports, entirely independent of garden cultivation. His aim was also to show that cultivation is by no means the main factor, if indeed it be a factor at all, in inducing sports of this distinct class, since all the types have originated spontaneously as wild plants, and all that the cultivator has been able to do has been to emphasise these types by selection from the seedlings if they vary, as they frequently do. The peculiar richness of the British Isles in wild Fern sports he evidenced by citing the latest list, which catalogues about 1,200 distinct forms as found wild among our comparatively few species, some forty in all, many of which vary but little and some not at all. He also combated the theory that sudden and wide varia-

tion of this kind was in any way due to changed conditions of environment, since they are mostly found on hill and mountain-sides, in glens and similar places, where the same conditions have prevailed from time immemorial, while they are furthermore generally intermingled, both as regards roots and fronds, with perfectly normal plants, not modified in the least. Mr. Druery then alluded to the fact that many most interesting discoveries had lately been made, including one by Professor Farmer, that certain abnormal reproductive Fern-cells were closely akin in their mode of development to those of cancerous growths in man, a fact which may afford a clue to the true nature of that dreadful disease. The first slide shown represented, in the form of a diagram, the various life-cycles of Ferns as depicted by Professor F. O. Bower, the normal roundabout process of reproduction through the spore being short-circuited, as it were, in apparently all possible ways; whilst the subsequent discovery of Dr. Lang that the Fern prothallus may bear spores, adds another of Nature's short cuts. Some forty forms of Ferns, representing ten species, were then shown on the screen, depicting first a number of wild sports, which were described seriatim, followed by a few of the beautiful results of selective cultivation, and concluding with a view of the lecturer's fernery, in which a number of the *élite* were grown under glass with charming effect.

The fact that these wild sports transmit their peculiarities as a rule to their progeny by spores was also adduced as strengthening Professor Hugo de Vries' theory of "mutation," by which he claims that such sports in plants generally have probably played an important *role* in the evolution of species.

CARDIFF AND COUNTY HORTICULTURAL.

JULY 26, 27.—The seventeenth annual show held by this Society took place on the above dates in the Sophia Gardens, Cardiff. Last year's show was a record one for entries, but there were still more this year. The stereotyped expression one hears so often at such times about the exhibition "being the best ever held here" was upon everybody's lips, and was probably more exact in its application than is usually the case, for apart from the large number of entries, the general excellence of the exhibits was of a very high order. The outstanding features of the show were the groups of plants arranged for effect, together with Roses, Sweet Peas, and herbaceous plants. Stove and greenhouse plants generally have never been of late years much in evidence at Cardiff, but they were less so at this time than previously. The fruit was very disappointing, and was quite the weakest point of the whole show.

A new departure, and one deserving of every encouragement, was taken by the Society this year by endeavouring to make the show of educational value to the children of the town. School-children to the number of 4,000 visited the exhibition on the morning of the second day, and after being conducted through the various tents, assembled around a bandstand to hear a lecture upon "What may be done in the Garden by the Young," delivered by Mr. W. Iggulden, of Frome. It was a matter of impossibility for all to hear the lecturer, but those who did must certainly have gathered some useful ideas regarding the management of their own small gardens.

PLANTS.

The competition in the classes for groups was very keen, and so meritorious were the various arrangements of plants that the judges had some little difficulty in awarding the different prizes.

For a group of miscellaneous plants, arranged for effect in a space of 150 square feet, Messrs. J. CYPHER & SONS, Cheltenham, were placed 1st with a very tastefully arranged and well-balanced lot of plants. The centre plant used was a tall *Kentia Fosteriana*, rising considerably above the highest plants at each of the four corners. Among the flowering plants used to give colour and variety to it were *Lilium*, *Odontoglossum*, *Miltonia*, and *Chironia*; while among other foliage plants were several graceful *Bamboos*, *Palms*, and *Dracenas*. The 2nd prize was awarded to Messrs. PHELPS & Co., Cardiff. *Gloxinia*, *Odontoglossum*, and *Schizanthus* were the predominating flowering plants, the last-named plant, associated as it was with *Odontoglossum*, appeared exceedingly like an *Orchidaceous* flower in general outline, and might easily have been mistaken for one. Lady HILL, Cardiff, was placed 3rd in this competition; and Col. WALLIS, Newport, was awarded an extra prize in the same class.

Mrs. EVAN LEWIS, Llandaff, carried off the 1st prize for a group of miscellaneous plants arranged for effect in a space of 50 square feet. *Humeas*, *Nicotiana Sandera*, and *Campanula pyramidalis* were the prominent features of this collection. The 2nd prize

was awarded to W. N. LAWES, Esq., Trowbridge, *Nicotiana Sandera* (associated with variegated *Abutilons* and *Cocos Weddelliana*) again taking a prominent place in this group. C. WALDRON, Esq., was successful in securing the 1st place for a group 25 square feet in area, which owed its beauty principally to such hardy plants as *Coreopsis*, *Clarkias*, *Montbretias*, and *Lobelias*.

The MARQUIS OF BUTE (gt., Mr. H. Farmer) put up a very large, brightly-coloured group, consisting of *Crotons*, *Dracenas*, and other ornamental foliage plants, which added considerably to the appearance of the collections, but was not for competition.

Messrs. J. VEITCH & SONS, LTD., King's Road, Chelsea, also exhibited a collection of choice stove plants, among which were noted several varieties of the newer *Crotons*, *Dracena Goldieana*, *Nepenthes Masteriana* ×, *N. Tiveyi* ×, *Maranta Sanderiana*, and *Ixora Fraseri*. For this exhibit the firm was awarded a Gold Medal.

CUT FLOWERS.

Notwithstanding the lateness of the season, there was very great competition in the various Rose classes. As might be expected, the individual blooms set up in the boxes were not nearly so attractive as the collections of Rose blooms arranged for effect. In the former case many of the blooms could be seen with damaged outer petals or unshapely centres, none of which defects was noticeable when the Roses were bunched together.

For twelve distinct kinds of Roses, three blooms of each, Mr. J. CROSSLING, Penarth, took 1st place, the blooms of Victor Hugo, Fisher Holmes and Kaiserin A. Victoria being the brightest on the board. Messrs. S. TRESSEDER & SON, Cardiff, were placed 2nd, two of their best blooms being Frau Karl Druschki and J. S. Mill.

Mr. GEO. PRINCE, Longworth, was awarded 1st prize for twelve distinct varieties of Teas or Noisettes, three blooms of each. In this lot *Maréchal Niel*, E. V. Hermanos and *Comtesse de Nadaillac* were the best. The 2nd honour was taken by the KING'S ACRE NURSERIES, Ltd., who showed among other blooms very good specimens of *Medea*, *Catherine Mermet*, and *White Maman Cochet*.

In the class for twenty-four blooms of distinct varieties, Messrs. J. JEFFERIES won the 1st prize, the most noteworthy blooms being *Declair*, A. K. Williams, and *Maréchal Niel*. Messrs. S. TRESSEDER & SON were 2nd, showing excellent blooms of *Duke of Albany* and *Her Majesty*.

Mr. GEO. PRINCE took the premier place for twelve blooms of any one variety other than a Tea or Noisette; the Rose shown was *Bessie Brown*.

White Maman Cochet, exhibited by Mr. GEO. PRINCE, was the variety which took the 1st place in the class for twelve blooms of one variety of Tea.

Mr. J. CROSSLING was awarded the Royal Horticultural Society's Silver Medal for having the best exhibit in the foregoing classes.

In the competitions restricted to amateurs and gentlemen's gardeners, R. F. HORBS, Esq., Worcester, took the 1st prize for twelve blooms, distinct varieties; and CONWAY JONES, Esq., Gloucester, won the 1st prize for twelve Tea Roses.

A Silver Cup and a 1st prize were awarded to Mr. GEO. PRINCE for a collection of Roses arranged for effect in a space of 6 feet by 3 feet. This stand of Roses contained a magnificent lot of blooms, among which were noticed *Maman Cochet*, *Papillon*, *Mrs. Treseder*, *Prince de Balzana*, and *Dorothy Perkins*. Mr. J. MATTOCK was placed 2nd with a group very little inferior to the first, including among other varieties *Irish Glory*, *Souvenir de Catherine Guillot*, *Madame Pernet Ducher*, *Lady Roberts*, and *Dorothy Perkins*.

CARNATIONS and PICOTEES again added their quota this year to the beauty of the floral display. With a collection arranged for effect, occupying a space of 6 feet by 3 feet, Mr. W. TRESSEDER was able to carry off the 1st prize and a piece of Silver Plate, offered by a firm of local jewellers. Some of the best varieties shown were *Volunteer*, *Purity*, *Lord Roberts*, and *Mrs. Nicolson*.

A good display of SWEET PEAS was made in a tent almost exclusively set aside to this beautiful and popular annual. Mr. T. JONES, of Ruabon, was fortunate enough to be able to clear everything before him in the various Sweet Pea classes. His exhibits were uniformly good, and comprised such varieties as *Black Knight*, *Miss Willmott*, E. Lewis, *Lady Grizel Hamilton* and *Dorothy Eckford*.

A Gold Medal was awarded to Mr. H. ECKFORD for a collection (not for competition) of Sweet Peas. *Admiral Togo*, *Queen Alexandra*, and *Agnes Eckford* were among the novelties exhibited on this stand.

The groups of HARDY FLOWERS in the open classes were of such excellent quality that it was a matter for regret that the Committee had placed them in such an unsuitable position in the tent. Indeed, one collection was so shaded and pressed down by a large shrub outside the tent that it was almost impossible to appreciate its full value.

An interesting discussion arose among the judges when this class came under their review, and one of

the best exhibits came very near being disqualified on account of its having blooms of *Romneya Coulteri* included in it. The schedule stated that no flowers of any tree or shrubby plant was to be allowed in this class. It is an exceedingly delicate point to decide whether *Romneya Coulteri* comes within the category of shrubby plants or not, for although it figures in the *Key Hand-List of Trees and Shrubs*, it also takes its place among the plants enumerated in the *Key Hand-List of Herbaceous Plants*; while in Nicholson's Dictionary it is called an herbaceous plant. The consensus of opinion, however, was that *Romneya Coulteri* is a shrubby plant, but as its admission among herbaceous plants had never been previously questioned, it was agreed to let it pass for this time.

Messrs. H. & W. EVANS, Llanishen, were placed 1st with their collection of hardy flowers occupying a space of 15 by 3 feet. *Astilbes* (among them *A. Davidiana*) were much in evidence, as well as *Globe Flowers*, *Delphiniums*, *Rudbeckias*, *Verbascums*, and *Eryngiums*. Mr. W. TRESEDER staged a similar lot of lovely flowers, hardly inferior to the exhibit which gained the 1st prize, and was awarded the 2nd prize.

In the amateurs' and gentlemen's gardeners' divisions, S. ROBINSON, Esq., obtained a Silver Cup and 1st prize for twelve bunches of hardy flowers; and a Bronze Medal was awarded to J. COREY, Esq., Cardiff, for a similar collection.

FRUIT AND VEGETABLES.

The exhibits of Grapes were neither numerous nor good, being of quite second-rate quality.

Two pot Vines (*Black Hambro*) trained in the form of an arch were staged by the Marquis of BUTE, for which a Gold Medal was awarded by the Society.

One of the most frequent accusations made against flower shows is that quality is too frequently sacrificed to size and appearance upon the exhibition table. That there are exceptions to this rule was very evident at Cardiff, for one of the largest, cleanest and brightest-looking Melons in the show was placed 2nd to a small poorly-coloured and miserable-looking fruit. The judges in this instance apparently decided very appropriately by their sense of taste rather than by their sense of sight.

Bienheim Orange, shown by Lady MOREL, Penarth, took 1st place among the scarlet-fleshed varieties, and *Victory of Bristol*, shown by the Marquis of BUTE, was placed 2nd. Dr. LYNN THOMAS, Cardiff, was 1st with a green-fleshed variety, while the Marquis of BUTE with *The Duchess* was again 2nd.

Fine examples of hardy fruits were shown by the KING'S ACRE NURSERY COMPANY, LTD. Gooseberry bushes laden with ripe fruit, growing in pots, formed a rather novel portion of their exhibit. A Gold Medal was awarded.

Vegetables were moderately well represented, taking into consideration the extremely dry season just experienced. Lord ALDENHAM, of Elstree; Mrs. JENNER, Lord ABERDARE, and Mr. SHEWRING, of Llandaff, were the principal prize-winners in the classes for vegetables.

TRADE EXHIBITS.

In addition to the Gold Medals previously mentioned as awarded to a number of exhibits, the following firms were also the recipients of a similar mark of appreciation:—Messrs. SUTTON & SONS for a collection of Melons and Tomatoes; Messrs. BLACKMORE & LANGDON for Begonias in pots; and Messrs. J. JEFFERIES for a group of coniferous trees and shrubs.

For collections of herbaceous and perennial plants the following firms were awarded Silver Medals:—Messrs. PRICHARD, of Christchurch; ISAAC HOUSE & SONS, Westbury; and J. C. WHEELER & SONS, Gloucester. Messrs. J. WATERER & SONS, Bagshot, were also granted a Silver Medal for a collection of retarded Azaleas. W. W. P.

ROYAL BOTANIC.

JULY 28.—A meeting of the Fellows of the Royal Botanic Society was held on the above date in the Society's gardens at Regent's Park, Mr. C. Brinsley Marlay presiding. Mr. J. S. Rubinstein said he wished to propose that a committee of Fellows be appointed to consider the position and to confer with the Council as to the best methods of improving the present condition of the Society. The Chairman ruled that no Fellow had, under the present constitution of the Society, any power to propose such a resolution. The Fellows, however, might appoint a committee to make suggestions to the Council. Mr. Rubinstein urged that a conference such as he suggested would be beneficial to the Society. They were in debt to the extent of £28,000, and the only way to get out of their difficulties was for the Council to take the Fellows into their confidence. He maintained that the Fellows were averse from the raising of their annual subscription to three guineas. Mr. Pembroke S. Stephens said that he and the other members of the Council would welcome any practical suggestions from the Fellows, and he advised Mr. Rubinstein and his friends to request the Council to receive and fully consider any definite proposa-

for improving the attractions of the gardens and for increasing the revenue of the Society. That would be better than publishing mere criticisms in the public Press. Mr. Rubinstein said that for fifteen years he had made suggestions without avail, and any improvements that had been brought about had been through the influence of the Press. Mr. J. Coode Adams said that but for the ruling of the Chairman he would have seconded Mr. Rubinstein's proposal. The by-laws of the Society were archaic, and it was an anachronism—nay, monstrous—that the Society should be conducted as it was. The Council had attempted to burke discussion, and were out of touch with the Fellows. Mr. Stephens said that the Fellows had it in their power to make the Society the most democratic institution in London. The Chairman denied that the Society was in the desperate condition that had been asserted. The Society, in his opinion, was never in a more flourishing condition, and if the Fellows raised their subscriptions there would be no difficulty. Dr. Coode Adams promised to propose in the Council that a sub-committee be appointed to revise the by-laws, and Mr. W. H. Sands said he would support the proposal. Mr. Rubinstein then placed on the table a list of gentlemen who, he suggested, should confer with the Council. *The Times*.

HORTICULTURAL EXHIBITION AT BRUGES.

JULY 30—AUGUST 15.—The present year being the seventy-fifth anniversary of the Independence of Belgium, the Government voted large sums of money to each provincial capital in order that an exhibition of the most important industries of the respective provinces should be held. Horticulture being a special feature of Bruges, the capital of West Flanders, it was decided to hold a national horticultural exhibition, and to invite an international jury to judge the exhibits. Although only a comparatively short time elapsed between the decision being made to hold the show and the opening of the exhibition, the organising committee and the exhibitors are to be congratulated upon the result, for the exhibition was of a very comprehensive and inclusive character, and in the specialities of the neighbourhood unsurpassed. The King of Belgium, himself a devoted patron of horticulture, honoured the exhibition with his presence on Sunday afternoon, and declared it open to the public. The jury and others were invited to meet His Majesty.

On entering the park-like enclosure one was impressed with the good effect produced by the noble groups of Bay trees, the chief speciality of Bruges, where hundreds of thousands are grown for home use and exportation.

On either side of the chief walk there were towering pyramids from Messrs. SANDER & SONS, and in the distance the 50-year-old standards from Mr. VINCKE DUJARDIN. Beyond were large decorative groups of such plants as *Dracenas* of the australis type, hard-wooded plants, the less tender species of Palms, *Conifere*, *Bamboos*, &c. All these exhibits were attractive on account of their excellence, and notably an extra fine group of "Plantes d'Orangerie," such as *Polygala*, *Metrosideros*, *Neelines*, &c., put together by Messrs. SANDER & SONS.

In front of the main building were beds of large and bright tuberous-rooted Begonias of the "Lafayettes" and similar bedding forms, amongst which we were much impressed with one called B. "Indépendance."

Before entering the structure devoted to greenhouse subjects we looked back upon a view of great historical interest and beauty, the ancient town of Bruges, with its many towers. The façade of the exhibition building, although simply constructed of laths, suggested strength as well as beauty. We were impressed by the ample and noble proportions of this temporary structure, provided for a short-lived exhibition. It had plenty of light, ample space, and was cool and comfortable. The walls were artistically draped, and the floor consisted of soft yielding sand. The conditions afforded a pleasing contrast to our stuffy, dusty, canvas built show places at home. The majority of the exhibits were laid out in beds, with side and central stages for the Orchids, Begonias, Gloxinias, &c.

Immediately in front was a group of three separate exhibits of the graceful and charming *Phoenix Roebelini*; from the side we looked over the dwarf groups of *Aspidistras*, *Kentias*, &c., to the back of the hall, on to a wonderful bank of Palms of extraordinary size, quality, and variety. Messrs. SANDER & SONS took the lead in classes for large specimens, as well as in those for smaller commercial plants.

The SOCIÉTÉ "FLANDRIA," M. DUMORI DE MENTEN, also showed splendid groups and specimens. Among the latter we noticed a grand plant of *Encenphalartos Altensteinii*; this, together with the vividly golden-coloured *Pandanus Sanderi*, and *Kentia Fosteriana "Leopoldii,"* from Messrs. SANDER & SONS, made a magnificent feature at this side of the hall. There was a very fine group from the same firm, consisting of a collection of new and rare stove and greenhouse plants, conspicuous amongst them being *Croton F. K. Sander*, a golden-leaved form; *Cycas Micholitzii*,

Pandanus Wavriniana, *Iguanura Curtissii*, &c., *Nepenthes Masteriana*, *Anthurium crystallinum*, *Asparagus myriocladus*. Anthuriums of the *Scherzerianum* type were represented by very fine forms from DE BOSSCHÈRE, of Antwerp; *Dracenas* from DRAPS DOM, of Brussels; flowering Bromeliaceous plants from LÉON POELMANN, of Mont St. Amand; *Gloxinias* from VAN HOUTTE; a new *Dracena* hybrid from *D. cannaefolia*; and *D. lineata* from DE NOYETTE, of Ledeburg, named *intermedia*, which is likely to prove a useful decorative plant, were noteworthy features.

Messrs. SANDER's large double-flowering tuberous Begonias formed a bank of blooms equal to anything seen at our English shows.

The STATE SCHOOL OF HORTICULTURE, Ghent, had an instructive exhibit of plants showing special adaptations for climbing, protection, &c.

Conspicuously bright amongst the numerous Palms, &c., was a group of the new hybrid *Nicotianas* raised by Messrs. SANDER & SONS.

We now come to a feature of the show which appealed specially to the writer's sympathies, viz., the Orchids, of which there was a very large and comprehensive display. There were many classes for individual specimens, collections, and groups of the popular species, as well as several groups of choice things of a non-competitive character. A large £10 Gold Medal was awarded to M. Ch. VUYLSTEKE, of Loochristi-les-Gand, for choice hybrid *Odontoglossums*. Included were a very fine *O. Lawrenceanum*, handsome *O. ardentissimum*, *O. bellatum*, *O. Rolfeae*, a lovely flower named *O. exaltum*, having pale yellow segments, paler centrally, with a lip suggestive of *O. Harryano-crispum* origin; *O. amabile*, and *O. percutum*, in which the sepals and petals are white, spotted pale brown, like a good *O. crispum*, and having a broad, flat lip, white at the apex, a many-toothed crest, spotted disc, and delicately spotted margin.

Mr. LAMBEAU, of Brussels, secured a Gold Medal for a choice selection of *Cattleyas*, *Lælio-Cattleyas*, *Vandas*, *Miltonias*, &c., chief amongst which were plants of *C. x atalanta*, *C. x St. Gilles* (very fine), *C. gigas superba* (a noble form), *C. x Wavriniana*, *C. guttata*, *C. F. W. Wigan*, &c.; L.-C. Admiral Dewey, L.-C. Miss Measures, and others; *Miltonia vexillaria superba*, M. *Cogniauxii* with nineteen flowers, *Cypripedium Wiertzianum*, *C. A. de Lairesse*, *C. Frau Ida Brandt*, &c.

Lower in the scale of merit was placed Mr. DIE-DRICHS, who also exhibited good plants—*Lælio-Cattleya* Admiral Dewey, L.-C. F. W. Wigan and *eximia*, *Cattleya Parthenia* Prince of Wales, *C. Wavriniana*, *Lycaste Skinneri* alba, &c.

Messrs. SANDER & SONS' non-competitive group, which was bracketed with the last-mentioned exhibit, contained a fine selection of *Cattleya gigas*, *Cypripedium Curtissii*, *C. praestans*, *C. glaucophyllum*, *Miltonias*, *Odontoglossums*, and many other good and popular kinds.

Coming to the competitive classes, the first to claim our notice was the group set up by Messrs. SANDER & SONS, which by many who had seen their efforts on former occasions, at home and abroad, was declared to be the most charming group ever staged. The background and side-wings were outlined with noble Palms and Tree-Ferns, twining and rambling over which were numerous spikes of *Oacidium macranthum*. The body of the group was filled in with glowing *Cattleyas gigas*, *Mendeli*, *Mossia*, *C. Mossie albo-cerulea*, *C. M. Reineckiana excelsa*, a glorious form, with very broad segments and deeply coloured lip; and *C. Rex*, now very rare. Centrally were placed good plants of *Cypripedium A. de Lairesse*, *C. "Lord Derby,"* *C. Parishii* (seldom seen); *C. insigne Sandere*, flowering out of season, was admired, also a grand plant of *C. Rolfeae superbum*. *Miltonias* of the *vexillaria* section were well represented by grand forms, such as *M. v. The Bride* (a pure white form), *M. v. gigantea*, *M. v. Chelseense*, *M. x Bleuana*, &c. Gracefully disposed amongst the bulk were plants of *Oncidium pulvinatum*, *O. Carthaginense roseum*, *O. Gardnerianum*, *Vanda cœrulea*, *Phalenopsis Rimestadtiana* *Dendrobium*, *Phalenopsis*, &c. Rare things, such as *Acineta Humboldtii*, *Catasetum Bungeothii*, *Acropera Loddigesii*, *Lycaste leucantha*, and others were also noticed placed to advantage amongst the many showy kinds. At one end was staged a gigantic specimen plant of *Brassia verrucosa* carrying thirty spikes of its spidery blooms, which was specially selected as worthy of an extra award. Near at hand was a good plant of the white form of *Masdevallia Harryana*. Messrs. SANDER & SONS gained the 1st prize for the above group "par acclamation," and with congratulations of the jury on their excellent style of arrangement.

In the class for fifty exotic Orchids, M. VINCKE DUJARDIN, of Bruges, was placed 1st with a good selection of *Cattleyas gigas*, *Gaskelliana*, and *Mendeli*, *Cypripedium insigne Sandere*, *C. callosum Sandere*, *C. Charles Canham*, *Oncidium carthaginense*, *O. leucocheilum*, *O. divaricatum*, *O. Forbesii*, *Vanda cœrulea*, *Phalenopsis Rimestadtiana*, *Miltonia Bleuana*, and a fine *M. vexillaria* named "Proserpine," of the *radiata* section. The same exhibitor secured the 1st prize for twenty-five Orchids, in which a good plant of *Odontoglossum Uro-Skinneri* was conspicuous.

In the class for a collection of twenty-five Lælias and Cattleyas, Messrs. SANDER & SONS were the successful exhibitors. The selection contained very fine plants and varieties of L.-C. callistoglossa, L.-C. Britannia (L.-C. Canhamiana x C. gigas), L.-C. eximia, L. x Helen, Cattleya Rex, now very rare, C. Mossiae Reineckiana, C. x Atalanta, with a spike of about a score of flowers, and others of more or less merit. M. VINCKE DUJARDIN was a good 2nd, with grand plants of C. gigas, C. Gaskelliana, C. Mendeli, C. x Vulcan (a pretty white hybrid between C. Gaskelliana alba x intermedia), C. x Wavriniana, L. x Helen, L.-C. Martinetti, L.-C. Henry Greenwood, L.-C. callistoglossa, and other showy kinds.

In a class for Vandaceous subjects Mr. DE VINCKE DUJARDIN was the only group staged, making a very pleasing display, with numerous examples of Vanda suavis, V. cœrulea, V. teres, Phalenopsis Rimestadtiana, and a good form of P. violacea.

In the class for fifty Odontoglossums Messrs. SANDER & SONS were an easy 1st, with numerous forms of O. crispum, O. Pescatorci, O. luteo-purpureum, O. Wilkeanum, O. Uro-Skinneri, O. cristatellum, a grand open-lipped form of O. Harryanum, and a magnificent plant and variety of O. x Rolfeae. Mr. VINCKE DUJARDIN secured the 2nd prize with O. crispum, &c.

In a class for ten Lælias and Cattleyas Mr. VINCKE DUJARDIN was again the only exhibitor, and secured the 1st prize.

In the class for twenty-five Cypripediums Messrs. SANDER & SONS were the only exhibitors, and were unanimously awarded the 1st prize. Amongst the number the best were C. Sanderiano-Curtisii, C. Harrisianum Baron Schröder's var., C. barbato-Rothschildianum, C. Phebe, C. niveo-callosum, and a very distinct variety of C. bellatulum, with white segments delicately spotted with pale rose-lilac.

For a single specimen of Cypripedium, Messrs. SANDER & SONS were 1st with a large plant of C. Harrisianum, Baron Schröder's variety, bearing over fifty flowers.

In a class for a single specimen of a Phalenopsis M. VINCKE DUJARDIN was 1st with a magnificent example of P. Rimestadtiana, having two spikes carrying four dozen flowers; Messrs. SANDER being 2nd with a plant of the same variety.

Anæctochilus were also provided for, Messrs. SANDER securing a 1st prize for a nice pan of A. setaceus.

Great praise is due to the committee of management for the thorough and efficient manner in which the show was so successfully carried through, and for the cordial hospitality they extended to the jury, the English representatives of which were Mr. W. Watson, of Kew; Mr. Segar, of Messrs. Wills & Segar, South Kensington; Mr. Icton, of Putney; and Mr. W. H. Young, the writer of our weekly Orchid Calendar.

MIDLAND CARNATION AND PICOTEE.

AUGUST 2, 3.—The fifteenth annual exhibition of the Midland Carnation and Picotee Society was held in the hall of the Birmingham Botanical and Horticultural Society, at their beautiful gardens at Edgbaston, on Wednesday and Thursday, August 2 and 3. It is hardly possible to imagine a better place for an exhibition of this kind. As usual in Birmingham, the blooms staged were of very high quality; and a great feature of the show was the magnificent display of "undressed" flowers—i.e., they were shown as grown and with natural foliage, the classes for which are even more numerous at this exhibition than those for "dressed" flowers. The schedule therefore has attractions for the old florist, whose heart always delights in flowers when exhibited in their neat paper collars, and also for those who favour the more modern and more effective style of staging the beautiful Carnation. The arrangements of the show were admirably carried out by Mr. T. Humphreys, the Curator of the Botanical Gardens, who has recently accepted the office of Hon. Secretary to the Society.

Selfs.—In the class for twelve selfs, dissimilar, Mr. W. H. PARTON, Hollywood, led with a very fine stand, containing splendid specimens of W. H. Parton (a deep maroon premier self), Daffodil (a grand yellow), Etna (scarlet), and Ensign (blush-white). Mr. R. C. CARTWRIGHT, of King's Norton, was 2nd with good flowers, among which were Daffodil, W. H. Parton, and Bride-groom, the last a fine pink.

Yellow-ground Picotees were well shown, and the chief honours went to Mr. A. W. JONES, of Stechford, who had good specimens of Peri (premier heavy-edged yellow-ground Picotee), Coquette, and Mrs. Walter Heriot. He was closely followed by Mr. W. H. PARTON, whose stand contained fine flowers of Mrs. Walter Heriot, Pilgrim, and Mrs. Durant.

The "Fancies" made a bold display, Mr. R. C. CARTWRIGHT leading with a very level stand, prominent in which were Ivo Sebright (which won the premier for the best fancy in the show), Hameo, and Royal

George. Mr. PARTON was a close 2nd, showing good flowers of Voltaire, Merlin, and Hameo.

White-ground Picotees.—Mr. PARTON's stand of white-ground Picotees contained notable flowers, such as Mrs. Openshaw (premier heavy-edged white-ground Picotee), John Smith, Fortrose, and Lucy. Mr. CARTWRIGHT'S 2nd prize stand contained the premier light-edged Picotee "Evelyn Cartwright," a new variety, raised by himself, for which a First-class Certificate of the Society was awarded. It is a grand addition to this section.

In the class for twelve bizarres or flakes, Mr. PARTON again led with a beautifully bright lot of flowers, notable specimens being Master Fred (premier bizarre), Gordon Lewis (premier flake), Admiral Curzon, and J. D. Hextall. Mr. CARTWRIGHT again ran him a close 2nd.

UNDRESSED FLOWERS.

In the class for undressed flowers which were most attractively staged, the honours in the chief class, viz., that for twelve distinct varieties of selfs, yellow-ground Picotees, or fancies were divided between Messrs. CARTWRIGHT and PARTON, who were classed as equal 1sts. The exhibits consisted of grand flowers, magnificently put up.

The class for twelve undressed self flowers was hotly contested, Mr. CARTWRIGHT leading with capital specimens; and Mr. PARTON winning 2nd prize.

Mr. CARTWRIGHT won another 1st prize for twelve undressed "fancies" or yellow-grounds. Mr. JONES was a very good 2nd.

In the smaller classes for six blooms some very fine flowers was staged. The Rev. C. A. GOTTWALTZ, of Droitwich, was champion in this section, winning the Silver Medal given by the Birmingham Botanical and Horticultural Society.

The most successful exhibitor in the classes scheduled for small amateur growers who do not grow more than 300 plants was Mr. J. D. WILLIAMS, of Smethwick.

A magnificent bouquet of Carnations obtained a 1st prize for Messrs. FELTON & SONS, of Hanover Square, London; and the 1st prize for a spray of Carnations was obtained by Mrs. W. H. PARTON. A much contested class for buttonholes of Carnations was won by Mr. W. L. DEEDMAN, of Edgbaston.

THE CHAMPIONS.

Mr. W. H. PARTON won sixteen 1st, nineteen 2nd, four premier, and three special prizes, as well as the Silver Champion Medal offered by the Birmingham Botanical and Horticultural Society, for the greatest number of points in the largest classes, and a Silver Medal offered by the Midland Carnation and Picotee Society, for the greatest number of points in the classes for single blooms.

Mr. R. C. CARTWRIGHT, of King's Norton, was a close competitor, securing sixteen 1st, fourteen 2nd, and two premier prizes. He also received a First-class Certificate for a light red-edged Picotee named Miss Evelyn Cartwright, a refined flower of great substance, considered to be the finest acquisition to this section for some years; and a First-class Certificate for Carnation "Cassandra," a superb purple self flower.

HONORARY EXHIBITS.

Silver-gilt Medals were awarded to Messrs. GUNN & SONS, Olton, for a magnificent display of hardy herbaceous flowers, herbaceous Phloxes being especially good; also to Messrs. BAKERS, of Codsall and Wolverhampton, for an attractive display of Roses and hardy flowers; and to Messrs. HEWITT & Co., the well-known Solihull Nurserymen, for a grand display of foliage and flowering plants, &c.

Messrs. BICK BROS., of Olton, obtained the only large Silver Medal awarded, for a grand display of alpinas; and small Silver Medals were awarded to Mr. W. SYDENHAM, Tamworth, for hardy flowers; Mr. S. MORTIMER, Farnham, for a pretty display of Dahlias; Mr. A. F. DUTTON, for a group of tree Carnations, which were greatly admired; Mr. AMOS PERRY, of Winchmore Hill, near London, who had a nice display of Nymphæas; Mr. VINCENT SLADE, Taunton, who staged Zonal Pelargoniums; and Mr. J. H. WHITE, Worcester, for a capital lot of hardy flowers. P.

Obituary.

PROFESSOR ERRERA.—It is with great concern that we have to record the sudden death, on the 1st inst., at Uccle, of Dr. Leo Errera, the Professor of Botany in the University of Brussels. The loss of such a man is a serious calamity for Belgian botany.

MR. DEWAR.—We have only now learnt of the death, in New York, on May 7, of Mr. Dewar, formerly of the Royal Gardens, Kew, and latterly Curator of the Botanic Gardens, Glasgow.

TREES AND SHRUBS.

ESCALLONIA PULVERULENTA.

This Chilean Escallonia is very rarely met with in cultivation, as it is more tender than the majority of the species, and even in very sheltered positions is often damaged in severe weather. It is now in flower. Its terminal racemes are about 6 inches in length and 3 inches in circumference, and the small blossoms composing the spike are pure white. The leaves are oval in shape, from 3 to 4 inches in length, and 1½ inch in breadth. In a young state they are very viscous, but lose this character as they become older. In the gardens at Greenway, on the river Dart, there is a good specimen about 7 feet in height. S. W. Fit-herbert.

HERBACEOUS FLOWERING PLANTS.

HELIOPSIS SCABRA SUPERBA.

This Heliopsis is an improved form of H. scabra, the orange colour being two shades deeper even than that of the variety H. s. B. Ladhams, which is generally admitted to be a far superior plant to H. Pitcheri. To the late Rev. Wolley Dod we owe this improvement in a desirable genus of August-flowering perennials, which, although allied to Helianthus, open their blossoms freely a month earlier than that plant; they are useful for cutting, as the foliage can be utilised along with the flowers. E. M.

MARKETS.

COVENT GARDEN, August 2.

[We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Wednesday, by the kindness of several of the principal salesmen, who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the way in which they are packed, the supply in the market, and the demand, and they may fluctuate, not only from day to day, but often several times in one day. Ed.]

Cut Foliage, &c.: Average Wholesale Prices.

	s. d.	s. d.		s. d.	s. d.
Asparagus plu-			Grasses, hardy, p.		
mosus, long			dozen bunches	2	0-4 0
trails, each ...	0	4-0 6	Ivy-leaves, bronze	1	6-2 0
— medium,			— long trails,		
— bunch ...	0	9-1 0	per bundle ...	1	0-2 0
— short-sprays			— short green,		
per bunch ...	1	0-2 6	doz. bunches	1	0-1 6
— Sprengerii ...	0	6-1 0	Moss, per gross...	5	0-6 0
— tenuissimus ...	9	0-12 0	Myrtle, per dozen		
Adiantum cune-			bunches...	3	0-5 0
atum, per dozen			Smilax, p. dozen		
bunches...	4	0-6 0	trails ...	4	0-6 0
Cycas leaves,			Hardy foliage		
each ...	1	6-2 0	(various), per		
Fern, English, p.			dozen bunches	3	0-4 0
dozen bunches	1	0-2 0			

Vegetables: Average Wholesale Prices.

	s. d.	s. d.		s. d.	s. d.
Artichokes, Globe,			Mushrooms (house)		
per dozen ...	1	6-2 0	per lb. ...	0	19-1 3
Beans, English,			— Buttons, lb.	1	0-1 6
Scarlet Run-			Onions, Egyptian,		
ners, per half			per cwt. ...	3	9-4 0
bushel ...	1	6-1 9	— Spring, p. doz.		
— Broad, p. bush.	0	6-0 8	bunches ...	2	6-3 0
— per bag ...	3	0-4 0	— Valencia, case	4	6-5 0
Beetroot, per doz.			Parsley, per doz.		
bunches ...	2	6-3 0	bunches...	1	6-2 0
Cabbages, p. tally	3	0-4 0	Peas, per bag ...	3	6-6 6
Carrots, new, doz.			— English, bush.	2	0-3 0
bunches ...	1	6-2 6	— shelved, quart	0	6-10 0
— ½ cwt. bag ...	2	6-3 0	Radishes, p. doz.		
Cauliflowers, doz.	1	0-2 6	bunches ...	0	8-1 3
Celery, French, p.			Sorrel, half bush.	1	0
dozen heads	2	6-3 6	Spinach, bush. ...	1	0-2 0
Cucumbers, doz.	2	0-3 6	Tomatoes, English,		
per flat ...	5	6-8 0	p. lb. ...	0	3½-0 4½
— Dutch, p. box	3	0	— seconds, p. lb.	0	2-0 3
Endive, per doz.	1	9-2 0	— Jersey, p. lb.	0	2½-0 3
Horseradish, per			— Valencia, per		
dozen bundles	8	0-10 0	package ...	8	0-12 0
Mint, per dozen...	1	0-2 0	Turnips, new, doz.		
Leeks, 12 bundles	2	0-3 6	bun. ...	1	6-3 6
Lettuces, Cabbage,			Vegetable Marrows,		
per dozen ...	0	6-0 10	per tally ...	1	6-2 0
— English, Cos,			Watercress, per		
per score ...	1	0-1 6	doz. bunches.	0	4-0 6

Plants in Pots, &c.: Average Wholesale Prices.

s. d. s. d.		s. d. s. d.	
Aralia Sieboldi, p. dozen ...	4 0-9 0	Ficus elastica, p. doz. ...	9 0-12 0
Araucaria excelsa, per dozen ...	18 0-30 0	— repens, per dozen ...	4 0-8 0
Aspidistras, green, per doz. ...	24 0-36 0	— Heliotropes, per doz. ...	3 0-4 0
— variegated, per doz. ...	30 0-42 0	Hydrangea Hortensia, per doz. ...	8 0-12 0
Asparagus plumosus nanus, per doz. ...	12 0-18 0	— paniculata, ...	12 0-30 0
— Sprengeri, per dozen ...	6 0-9 0	Kalosanthes, per dozen ...	9 0-12 0
— tenuissimus, per doz. ...	6 0-12 0	Kentia Belmoreana, per doz. ...	12 0-18 0
Begonias, tuberous, per doz. ...	4 0-6 0	— Fosteriana, p. doz. ...	12 0-21 0
Campanula isophylla, p. doz. ...	4 0-8 0	Lantanas, per dozen ...	9 0-12 0
— Mayi, per doz. ...	6 0-8 0	Latania borbonica, per doz. ...	12 0-18 0
— pyramidalis, ...	9 0-12 0	Lilium longiflorum, per doz. ...	9 0-12 0
Cannas, per doz. ...	5 0-6 0	Marguerites, white, per dozen ...	4 0-8 0
Chrysanthemum coronarium, double yellow, per dozen ...	8 0-8 0	— yellow ...	12 0-18 0
Coleus, per dozen ...	2 6 4 0	Pelargoniums, per doz., Show ...	9 0-12 0
Crotons, per doz. ...	12 0-30 0	— Ivy-leaved ...	4 0-6 0
Cocos Weddelliana, per doz. ...	12 0-30 0	— zonal ...	3 0-5 0
Cyperus alternifolius, per dozen ...	3 0-5 0	— scarlet do. ...	4 0-5 0
Dracenas, per dozen ...	9 0-24 0	Privet golden, per dozen ...	5 0-6 0
Eulalia japonica variegata, ...	12 0-18 0	Rhodanthe, per dozen ...	4 0-5 0
Euonymus, per dozen ...	4 0-9 0	Roses, H.P.'s, per dozen ...	9 0-18 0
Ferns, in thumbs, per 100 ...	8 0-12 0	— Dorothy Perkins, each ...	3 0-6 0
— in 48's, p. doz. ...	4 0-10 0	Selaginella, p. doz. ...	3 0-5 0
— in 32's, per dozen ...	10 0-18 0	Spiraea japonica, per doz. ...	4 0-9 0
Fuchsias, p. doz. ...	4 0-6 0	Verbena, Miss Willmott, per dozen ...	4 0-6 0
		— scarlet, per dozen ...	4 0-8 0

Cut Flowers, &c.: Average Wholesale Prices.

s. d. s. d.		s. d. s. d.	
Alströméria, per doz. bunches ...	2 0-3 0	Marguerites, white, p. doz. bunches ...	3 0-4 0
Asters, per dozen bunches ...	1 0-4 0	— yellow, per doz. bunches ...	2 0-3 0
Bouvardia, per doz. bunches ...	6 0-8 0	Mignonette, doz. bunches ...	2 0-4 0
Calla aethiopica, p. doz. blooms ...	3 0-4 0	Montbretias, doz. bunches ...	4 0-9 0
Carnations, per doz. blooms, best American vars. ...	1 6-3 0	Odonotoglossum crispum, pr. doz. blooms ...	2 0-2 8
— smaller do. ...	0 6-1 0	Pelargoniums, per dozen bunches: ...	
— Malmaisons ...	6 0-10 0	— Show ...	4 0-6 0
Chrysanthemums, per doz. blooms ...	2 6-3 0	— Zonal, double scarlet ...	4 0-8 0
— small blooms, per doz. bchs. ...	1 6-3 0	— salmon and pink ...	4 0-6 0
Coreopsis, p. doz. ...	2 0-3 0	Peppies, Iceland, doz. bunches ...	0 6-1 6
Eucharis grandiflora, per dozen blooms ...	1 0-2 0	Roses, 12 blooms, Niphetos ...	0 6-2 0
Gardenias, per doz. blooms ...	1 0 1 6	— Bridmaid ...	1 0-2 0
Gladiolus Colvillei, p. doz. bunches ...	1 0-2 0	— Kaiserin A. Victoria ...	2 0-4 0
— bronchleyensis, p. doz. spikes ...	1 6-3 0	— General Jacqueminot ...	0 6-1 0
Gypsophila, per dozen bunches ...	2 0-3 0	— C. Mermet ...	1 0-2 0
Iris, best English, per dozen ...	9 0-12 0	— Caroline Testout ...	1 6-3 0
Lilium candidum — auratum ...	0 6-1 0	— Liberty ...	1 6-3 0
— lafcifolium, rubrum and album ...	1 0-2 0	— Mad. Chatenay ...	2 0-4 0
— longiflorum ...	2 0-3 0	— Mrs. J. Laing ...	2 0-4 0
— tigrinum ...	1 6-2 0	— Sunrise ...	1 0-2 0
Lily of the Valley, p. doz. bchs. ...	6 0-9 0	Stephanotis, per doz. trusses ...	1 6-2 6
— extra quality ...	18 0	Sweet Peas, per doz. bunches ...	1 0-3 0
		Sweet Sultan, per doz. bunches ...	3 0-4 0
		Tuberose, per dozen blooms ...	0 3-0 6

Fruit: Average Wholesale Prices.

s. d. s. d.		s. d. s. d.	
Apples, Tasmanian, case 9 0-15 0		Grapes, Alicante, per lb. ...	1 0-1 8
Apricots, per box — French, p. half bushel ...	4 6-6 6	— Madresfield, lb. ...	2 0-3 0
Bananas, bunch — Jamaica ...	3 6-7 6	— Gros Maroc, lb. ...	1 6-2 0
— loose, per doz. ...	1 0-1 6	— Hambro, p. lb. ...	0 10-1 6
Cherries, white, p. half bushel ...	3 6-8 0	— Muscats, lb. ...	1 0-4 6
— black, p. half bushel ...	4 0-9 0	Lemons, Naples, per case ...	20 0-30 0
— Morello, per half bushel ...	6 6-8 6	Melons, each ...	1 6-3 0
Currants, Black, p. half bushel ...	5 0-6 6	— French, Rock — Valencia, per case ...	10 0-16 0
— Red, per half bushel ...	3 6-5 6	Mellow Pears, per dozen ...	4 0-4 6
Figs, per dozen ...	1 6-4 0	Nectarines, A. P. dozen ...	10 0-12 0
French Plums, p. half sieve ...	3 6-6 6	— B., per dozen ...	1 6-4 0
Gooseberries, per half bush. ripe ...	1 9-3 0	Oranges, Jamaica, per case ...	2 0 —
Grape-fruit, case ...	18 0-26 0	Peaches, A. doz. ...	8 0-12 0
		— B., per doz. ...	1 8-4 0
		Pines, each ...	2 0-4 6
		Raspberries, p. lb. ...	0 3-0 6
		— per cwt. ...	24 0-26 0

REMARKS.—English and foreign Tomatoes are cheaper, consequently large quantities are arriving daily, owing to the warm weather. English and Guernsey Melons are coming in fine condition, but owing to foreign sup-

plies are lower in price. Valencia Melons are a little firmer in price. Peaches and Nectarines are plentiful, and good fruit only is in demand. English Apples are arriving in very satisfactory quantities, and prices are very fair. Trade is declining a little owing to holiday week being near at hand.

GOVENT GARDEN FLOWER MARKET.

THE market is now very quiet indeed. It is only open on Tuesdays, Thursdays, and Saturdays for the sale of pot plants; on other mornings it is open from 7 to 9 A.M. for the sale of cut flowers only. The trade is over for the season, and even on market mornings most of the stands remain empty. Yet there are still some good plants. The supply of Pelargoniums holds out well, but the prices for them vary much. Campanulas are very good and sell fairly well: C. isophylla alba is the favourite; C. pyramidalis (both white and blue) is fine from several growers. A few good Fuchsias are seen, but they are not over plentiful. Marguerites are getting scarce. Mignonette is now over for the season. Verbenas continue to be over plentiful. There are still good plants of Hydrangea paniculata, and H. Hortensia is not quite finished, but the plants are not very good. Some good Bonvardias are coming in, but these are not much wanted until September. Coreopsis is very pretty, and Rhodantha is good. Heliotrope is also abundant. Foliage plants are plentiful, and prices vary but little. A good many hardy Evergreens are now seen. Hardy and greenhouse climbers are procurable. Among the latter are good plants of Plumbago capensis.

CUT FLOWERS.

Several growers are now sending Chrysanthemums from the open ground, but most of those seen are small and of rather rough appearance. Asters are over-plentiful, the large quantities imported from France spoil the trade for English growers. The supply of Sweet Peas is now getting short, and many of those seen are very poor. Montbretia is very pretty. It is now difficult to get really good Roses, but there are large quantities of small blooms. Lunums continue to be plentiful, but they vary in quality very much, the prices for best are low. Not many Callas are seen. Gladiolus bronchleyensis is very good, but much cheaper. "The Bride" is plentiful, but most of those seen have weak stems and small flowers. The smell of Lavender pervading the whole market reminds us that autumn is approaching.

The firm of T. A. Dickson, which has been so long established in the Centre Row, has removed to Albert Gate, and Mr. P. H. Garcia is taking the premises in the Centre Row. A. H., Wednesday, August 2.

FRUITS AND VEGETABLES.

The following are the latest wholesale prices to hand from the undernoted markets:—

LIVERPOOL.—Fruit: Apples, Lisbon, 6s. 9d. to 9s. per case; Grapes, Denia, 6s. 9d. to 10s. 6d. per barrel; Melons, Valencia, 9s. 6d. to 11s. 6d. per case; Lemons, Naples, 15s. to 22s. per box; Bananas, 5s. 6d. to 9s. 6d. per crate; Tomatoes, Valencia, 5s. 6d. to 9s. 6d. per case; Onions, Valencia, 3s. to 4s. per case.—Vegetables: Birkenhead prices were as follows:—Potatoes, new, 2d. and 3d. per 5 lb.; Peas, 10d. to 1s. 2d. per peck; Cucumbers, 2d. to 4d. each; Tomatoes, 2d. to 3d. per lb.; Gooseberries, 2d. to 3d. do.; Raspberries, 5d. do.; Currants, Red and White, 4d. do.; do. Black, 5d. to 8d. do.; Grapes, foreign, 6d. to 8d. do.; Cherries, 1d. to 2d. do.; Apples, 3d. to 6d. do.; Pears, 3d. to 4d. do.; Plums, 3d. to 6d. do.

EDINBURGH.—Grapes, English, 1s. 6d. per lb.; do. foreign, Denia, green, 8s. 6d. per barrel; do. black, 10s. 6d. to 12s. 6d.; Lemons, Palermo, 11s. to 23s. per box; Apples, Lisbon, 12s. 6d. per case; Nuts, Brazilian, 3s. to 3s. 6d. per bag; Cherries, English, 11s. to 12s. 6d. per half bushel; Bananas, 5s. 6d. to 10s. per bunch; Figs, 9s. per dozen; Walnuts, Italian, 6s. 3d. per stone; Tomatoes, Guernsey, 5s. 6d. to 6d. per lb.; Onions, Egyptian, 1s. per cwt.; do. Valencia 5s. 6d. to 6s. 6d. do.; Carrots, 4s. per dozen; Gooseberries, 3s. 9d. to 4s. 6d. per half bushel.

DUBLIN.—Cabbages, York, 6s. to 11s. per load; Cauliflowers, 2s. 6d. to 4s. per basket; Parsley, 4s. 6d. to 5s. per bag; Parsnips, 2s. 6d. per cwt.; Carrots, 10d. to 1s. 2d. per dozen; Turnips, white, 7d. to 10d. per bunch; Rhubarb, 1s. 6d. to 1s. 8d. per dozen; Thyme, 4d. to 5d. per bunch; Marrows, 1s. 6d. to 3s. per dozen; Cucumbers, 1s. 3d. to 2s. per dozen; Salad, 6d. to 10d.; do.; Young Onions (scallions), 2 1/2d. to 3 1/2d. per bunch; Potatoes, 4s. to 4s. 4d., best qualities, 4s. 6d. per cwt.

ENQUIRY.

THE FALLING OF LIMBS OF ELM IN SUMMER.—I am anxious to learn from readers of the *Gardeners' Chronicle* whether in any case a limb that is perfectly alive and sound has ever been known to fall. The danger of large Elms from the falling of limbs is well known, but according to my experience the limbs that fall are partially dead, though the wood may be sound so far as rot is concerned. The timber is simply dry and brittle, while a sufficiency of living wood remains for the supply of sap to foliage. The presence of this wood may often be indicated by dead twigs, but I am anxious to know whether a fallen limb has ever been found perfectly alive, when there would be no dead twigs or small branches? R. I. L.

THE WEATHER.

METEOROLOGICAL OBSERVATIONS taken in the Royal Horticultural Society's Gardens at Wisley, Surrey. Height above sea-level 150 feet. The following are the "mean" readings for the week ending July 29, 1905.

1905.	TEMPERATURE OF THE AIR.				TEMPERATURE ON GRASS.			RAINFALL.	SUNSHINE.	
	At 9 A.M.		DAY.	NIGHT.	LOWEST TEMPERATURE ON GRASS.	At 1-foot deep.	At 2-foot deep.			At 4-foot deep.
	Dry Bulb.	Wet Bulb.								
JULY 23 TO JULY 29.	deg.	deg.	deg.	deg.				deg.	deg.		deg.	ins.	hr. min.
MEANS	66	62	75	53	53	68	66	62	Tot 0'22	5 40

THE WEATHER IN WEST HERTS.

The Seventh Warm Week in Succession.—The past week was not so warm as the three previous weeks. On the warmest day the temperature in the thermometer screen only rose to 75°, and on the coldest night the exposed thermometer fell to within 5° of the freezing point. On the other hand, on one day, July 31, the heat in the sun was very exceptional; in fact, only once before in July has the black bulb radiation thermometer registered so high a reading, viz., 143°. Owing to the last two nights having been cold for the time of year the ground is not now as warm as it has recently been, but is still 2° warmer at 2 feet deep, and 1° warmer at 1 foot deep, than is seasonable. Rain fell on two days, but to the total depth of only about 1/2 of an inch. On the former of these days the rain was falling during a short thunderstorm for four minutes at the mean rate of nearly 1 1/2 inch an hour. These rains, coming as they did after a fortnight of dry weather, did not affect the percolation-gauges. For nearly three weeks there has been no measurable percolation through the bare soil gauge, but every day a few drops still trickle through it during the twenty-four hours. The sun shone on an average for six and a half hours a day, which is rather more than the mean duration for the end of July. The wind was moderately high on two days, but calms prevailed during the rest of the week. The mean amount of moisture in the air at 3 P.M. was about 5 per cent. less than a seasonable quantity for that hour.

JULY.

Exceptionally Warm, Dry, Calm and Sunny.—This was with one exception (1900) the warmest July of which I have here any record. There were no cold days, and but three cold nights. The nights were, however, as a rule more exceptionally warm than the days. On the two warmest days the temperature in the thermometer screen rose to 81°, which is rather a low extreme maximum for July. On the coldest night the exposed thermometer fell to within 7° of the freezing point—rather a high extreme minimum for July. Several of the nights were singularly warm. In fact on one night the thermometer on the grass did not fall lower than 61°—making it the warmest night but one I have yet recorded here at any period of the year. This was the driest July for seven years. Rain fell on ten days, but to the total depth of only an inch, which is less than half the average quantity for July. More than half the total rainfall was deposited on one day early in the month during thunderstorms. There was no measurable percolation through the bare soil gauge after the 14th. The sun shone on an average for 7 1/2 hours a day—or for 1 1/2 hour a day longer than is usual in July. This was a calm month indeed, only once before in July have I recorded so low a mean velocity, and in no hour did the mean rate of movement exceed 13 miles—direction west. The mean amount of moisture in the air at 3 o'clock in the afternoon was 1 per cent. below a seasonable quantity. E. M., Berkhamsted, August 2, 1905.

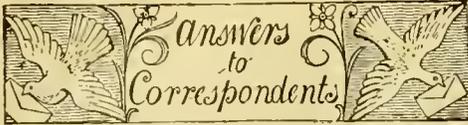
[For actual temperature and condition of barometer at time of going to Press, see p. 110.]

GARDENING APPOINTMENTS.

MR. THOMAS GREGORY, for the past three and a half years in the Gardens at Taplow Court, Sheffield, as Gardener to the Metropolitan Asylums Board at Caterham Asylum, Surrey.

MR. A. KETT, for the past thirteen years Gardener to J. CHRISTIE, Esq., Framingham Manor, as Gardener to F. PENN, Esq., Cawston Manor, Norwich.

MR. WALTER HOWARTH, Gardener for two and a half years at Eldersley Lauder, Red Hill, as Gardener to W. NOAKES, Esq., Selsdon Park, near Croydon.



AMMONIACAL SOLUTION OF COPPER CARBONATE: L. F. The proportions should be water, 16 gallons; carbonate of copper, 1 oz.; carbonate of ammonia, 5 oz. Mix the carbonate of copper and the carbonate of ammonia, and dissolve them in about a quart of hot water. When thoroughly dissolved add 16 gallons of cold water. You may syringe the trees with this liquid at the present time if you wish, provided there are no fruits to ripen. We advise that the root-pruning of the Pear-trees be done in October, rather than at an earlier date.

APPLE FIVE-CROWNED PIPPIN: R. E. B. This is another name for London Pippin, a very late-keeping variety, and if you ask for the variety under the latter name the nurseryman will probably be able to obtain it for you. Though described in Hogg's *Fruit Manual* as an excellent culinary Apple, and serviceable also for dessert, London Pippin is not commonly planted at the present time; and it is noteworthy that in the Apple-census we made last year by the help of our readers in all parts of the kingdom the variety was not mentioned at all.

BEDFORDSHIRE SEED COMPANY: J. G. H. The announcement was made as a matter of news only. We cannot undertake to forward applications for shares in this or similar undertakings nor to have anything to do with such transactions. Besides, had you read the paragraph carefully you would have seen that there is no initial public issue of shares.

BEGONIA: Norfolk. Tobacco-water is the remedy. You can dip the plants, or spray the liquid on the underside of the leaves, whichever method you find to be most convenient.

BEGONIAS: J. G. The plants seem to have rotted at the collar, probably from stagnant moisture, excess of heat, and defective ventilation.

CARNATIONS: T. E. H. A fungus, a species of Puccinia, has attacked the anthers of your plant. Burn the affected flowers.

CEANOETHUS: E. S. The shoots you send are smothered with a scale insect. Cut the plant right back in autumn and burn the prunings. That is your best chance.

CHRYSANTHEMUMS: W. G. M. and R. J. B. The leaves are affected with a fungus, probably the early stage of the rust fungus. Remove such leaves and burn them.

GRAPES: F. W. D. and W. B. The trouble is caused by the Grape-rot fungus, *Gloeosporium laticolor*. Mr. Massee recommends dredging with flowers-of-sulphur on the shoots and leaves, repeating at intervals of ten days if the disease continues to spread. A small quantity of quicklime should be mixed with the sulphur on the second application, and the quantity of lime should be increased on each successive application until the proportions of lime and sulphur are nearly equal, but always keeping just a little more sulphur than lime. It has been found of service thoroughly to wet the branches with a solution of sulphate of iron when the Vine is resting. Remove the diseased leaves and fruits and burn them without delay.

INSECTS: W. A., and Armitage Bros. The small beetles are those of *Phratora vitellinae*, a widespread enemy of the Willow and Poplar. The grubs or larvae are equally destructive to foliage; they measure about half an inch in length when full-grown, are of a pale dirty-yellow colour, with a black head and various black markings on the body. One of the best methods of reducing the numbers of this pest is to shake off the insects into a vessel containing a small quantity of paraffin oil. This plan, when steadily carried on, has met with marked success. Paris-green (Poison), at the rate of 1 ounce to 20 gallons of water, may be used with safety on certain foliage; but if used, it would be as well to experiment as to

desirable strength. As old bark-covered posts are favourable resorts for the beetles in winter, a few of these might be put down as traps.

JOURNEYMEN IN IRELAND: One in Doubt. There is no uniformity in the wages obtained by journeymen in Ireland any more than is the case in England, but generally they are, we believe, a trifle lower in Ireland. The matter of expenses incurred by going from one situation to take up another is one for arrangement between the interested parties. In ordinary circumstances the employer pays, if he has reason to think the candidate will continue in his employ for a reasonable period. The third-class fare from London to Dublin is 29s. 6d., or third-class railway ticket and saloon on steamer 32s. 6d. You will have to advertise for the situation you seek, or write to some of the Irish nurserymen. If you are a member of the British Gardeners' Association, perhaps they could help you.

LEAVES FOR THE MAKING OF LEAF-MOULD: Ardilea. The leaves would decay but slowly if packed in the pits as you describe, because so little air, and therefore little oxygen, would reach the bulk of them. But what purpose is it you expect to serve by adopting such a means of storing leaves? Unless you wish them to supply a little warmth in the house during their slow fermentation, we advise you to throw the leaves together in an out-of-the-way place in the open, or among high shrubs, and to turn them occasionally to expedite the process of decay. If you wish to put them into the pits, and would like them to decay quickly and thus afford heat, mix with the leaves a quantity of fresh droppings from the stable.

MELON: Anxious. You have the spot disease (*Cercospora melonis*) very badly. Burn the affected plants. See p. 96 of our last issue. The fault is not yours.

MUSHROOM CULTURE: A. T. B. A rain-resisting shed 60 feet long, having flow-and-return hot-water-pipes, should make an ideal place for Mushroom-culture at any season, and the dimensions of the proposed wooden trays would answer well, but they should not be placed over the hot-water-pipes, the drying influence of which would be unfavourable to the growth of Mushrooms, especially as these pipes have also to supply a stove temperature. Most sheds having earthen floors, we recommend you to form the beds on the floor, with only the side-boards to keep the material in place. The material most suitable for the making of Mushroom-beds is good stable-manure from well-fed horses. Collect the manure when it is possible to do so, and place it together, turning it over at intervals of a day or two to allow the accumulating heat and moisture to escape. In forming the beds, the manure having been so prepared for the purpose should be placed in layers from one end of the bed to the other, and made firm by being well trodden or rammed down. Do not have the manure in an excessively dry condition, but in an intermediate stage between wet and dry. When the temperature of the bed has declined to 80° preferably, or a few degrees lower rather than above this degree, the spawn may be inserted. Before doing this operation take every care to ascertain that the spawn is of superior quality and fresh. It is usually supplied in the form of bricks or cakes measuring 6 inches long by 4 inches wide, and the cakes are from 1 to 2 inches thick. Let each of these cakes be broken into six equal pieces, and insert the pieces at about 6 inches apart all over the bed, pressing them firmly just below the level of the material. Having made sure that the heat will not rise above the degree mentioned, the bed may be covered with rich maiden loam 2 inches deep, which should be applied in a moist condition, and pressed until firm. A moderately moist atmosphere should be maintained at a temperature of 60° to 65°. Darkness is not essential to the growth of Mushrooms, but a light covering of mats or canvas assists in keeping the soil damp. In a period varying from six to eight weeks it may be expected that Mushrooms will be in a condition for gathering.

NAMES OF FRUITS: Correspondent (no name). The Nectarine fruits were smashed in post owing to imperfect packing. The Asparagus appears to be *A. myriocladus*.—F. E. T. We are unable to name your fruit.

NAMES OF PLANTS: C. D. *Aconitum lycoctonum*.—F. S. 1, *Juniperus recurva*; 2, probably *Photinia serrulata*; 3, *Rhamnus Alaternus*; 4, *Phyllirea angustifolia*; 5, *Nyssa biflora*; 6, *Osmanthus ilicifolius*. Thank you for sending such good specimens. Would that other people were as considerate as you!—T. H. *Lilium chalcodonicum*.—W. B. 1, *Ruscus racemosus*; 2, *Scelopendrium vulgare*, Hart's-tongue Fern.—J. S. Orach, *Atriplex hortensis*, grown on the Continent for Spinach. It is not a *Celosia*, but belongs to a different Order.—J. B. B. The Fern No. 1 is an exotic *Lastrea*, probably *L. lepida*.

PEA: H. One of the varieties without inner skin to the pod, called by the French *Pois sans parchemin*.

PEAS: Old Subscriber. Thrips; try syringing with Quassia-water.

POTATOS: T. D. C. We have seen similar instances before. Obviously the conditions were not favourable, but how or why we do not know. After a prolonged rest they would probably do well next season. The eyes or sprouts have not developed.

PRIVET: A. S. We find no fungus, and without knowing the circumstances we cannot say what has killed your Privet on one side of the path only. Do the plants receive sufficient water?

ROSE: P. C. C. The Rose is too tender for outdoor cultivation in your locality. It is not affected with disease.

ROSE NIPHETOS: J. B. "What can we say about it?" A great deal more than we have space to afford. The Rose is prolific, the centre of the Rose having lengthened into a shoot bearing other Rose-buds, leaves, &c. A curious but by no means unique case.

SWEET PEAS: T. N. Union of two flower-spikes not uncommon, but why it happens we cannot tell.

TREATMENT OF LAND: F. W. C. Your idea of sowing Vetches on your land is a good one; if the Vetches fail sow field Mustard, because you evidently require an abundance of humus matter for the successful growth of vegetables on such a loose and stony soil. The Vetches can be sown in September, using the winter variety, putting in 3 bushels per acre. Before digging the ground sow broadcast a manurial mixture of 3 cwt. superphosphate, not less than 27 per cent. soluble phosphate, and 2 cwt. kainit per acre. In the after preparation of the land this will get well incorporated with the soil, and the seed can be drilled or sown broadcast immediately, and raked or harrowed in. The green crop may be dug into the soil in early spring, after which give a dressing of 2 cwt. bone-meal and 1½ cwt. sulphate of ammonia per acre; this will be better for your soil than nitrate of soda, as a general rule, although a little nitrate of soda, 1 ounce to a gallon of water, may be used with advantage for after-waterings of such succulent crops as Cabbage, Spinach, Lettuce, Turnips, &c. Animal liquid-manure, with which may be mixed a little soot, would be found of great value if applied during the growing season of the crops.

VINE BORDER: Ardilea. The reason advanced for making the border sufficiently large for a year or so, and adding fresh compost as more room for the roots becomes necessary, is a perfectly sound one. We advise you to adopt this method, which is widely practised among the best Vine cultivators.

YEW HEDGE: R. E. B. There is very little chance that the children will be poisoned.

COMMUNICATIONS RECEIVED.—Q.—Constant Reader—G. Nottage—G. M.—R. H. B.—A. Berger—C. C. G.—R. L. C.—H. J. C.—W. W.—H. H. P.—Harrison Weir—W. E. G.—G. G.—Paris—K. & Sons—J. O'B.—J. Edwards (next week)—A. & B., Ltd.—R. N.—J. Clayton—Clement F.—A. B., Italy—F. J.—W. F.—W. A. M.—R. H. S.—W. H. D.—Chloris—W. H. P.—T. H.—S. A.—A. C. S.—H. M.—H. W. W.—Vitis—A. C. F. Japonica.



THE

Gardeners' Chronicle

No. 972.—SATURDAY, August 12, 1905.

CONTENTS.

Alpines at Nithbank House, Dumfries ... 125	New Zealand International Exhibition ... 131
Books, notices of—	Obituary—
A Book about Salads ... 131	Tooley, A. ... 133
Flora Brasiliensis ... 124	Orchid notes and gleanings ... 123
Gerarde's Herbal ... 130	Peach stocks for Plum's Petworth Park, Sussex ... 134
Publications received ... 129	Plant notes—
Cactus, a fungus disease of ... 125	Argemone grandiflora ... 127
Campanula michauxioides ... 130	Crassula coccinea ... 127
Chioa, plant collecting in ... 124	Plauts, new or noteworthy—
Chrysanthemum maximum ... 135	Brachysielma Barbera ... 132
Clematis indivisa ... 135	Pinus Pinccana ... 122
Colonial notes—	Red Currants ... 131
The Water-Hyacinth in Queensland ... 127	Romneya Coulteri ... 135
Co-operative flower show at the Crystal Palace ... 130	Rose classification ... 128
Dimorphotheca aurantiaca ... 127	Shrubs and trees, rare, at Mount Edgcumbe Societies—
Elm trees falling ... 134	Royal Botanic ... 131
Espalier-trained fruit trees ... 134	Royal Horticultural (Scientific Committee) ... 137
Flowers, sweet-smelling ... 130	Stock "Beauty of Nice" ... 134
Forestry—	Sweet Peas, exhibiting ... 135
The Locust-tree ... 126	Syringa villosa var. pubescens ... 123
Fruit-canning ... 126	Timber trees, exotic ... 131
Fruit crops, remarks on the ... 131, 136	Trent Park, New Barnet ... 132
Fruit cultivation in South Devon ... 122	Week's work, the—
Fruiting trees and plant-food ... 131	Flower garden, the ... 128
Kew notes ... 132	Fruits under glass ... 129
Missouri Botanical Garden ... 131	Hardy fruit garden ... 129
	Kitchen garden, the ... 129
	Orchid houses, the ... 128
	Plants under glass ... 129
	Yokohama, a note from ... 128

ILLUSTRATIONS.

Cactus scab, the ... 125	Campanula michauxioides (Supplementary Illustration)
Clematis indivisa growing in the Temperate-house at Kew ... 135	Dimorphotheca aurantiaca ... 127
Pinus Pinccana ... 122	Syringa villosa var. pubescens ... 123
View of the Gardens and Residence at Trent Park, New Barnet ... 133	

RARE SHRUBS AND TREES AT MOUNT EDGCUMBE.

ABOUT a mile and a half from the mansion of Mount Edgcumbe is a spot called the "Terrace Garden," which is replete with interest to those whose especial bent lies in the direction of sub-tropical plants, for here may be seen many rare and tender shrubs and trees growing in vigorous health in the open air. This garden is about 250 feet above the sea-level, and is situated on a steep slope overlooking the western end of Plymouth Breakwater, and facing the English Channel. Below, by the water's edge, is a fort, invisible from the garden, which is well sheltered by Ilexes and other trees.

Among the shrubs and trees present were varieties of greenhouse Abutilons, grown as bushes, which at the end of July were bearing flowers of many colours; a good collection of Acacias, including *A. dealbata*, *A. floribunda* (retinoides), *A. melanoxydon*, *A. longifolia*, *A. ovata*, and *A. affinis*, which is held at Kew to be a variety of *A. dealbata*, but which is very distinct, as it flowers four months later, and its blossoms are of pale sulphur colour instead of golden-yellow. Some of these Acacias were fully 40 feet in height. *Araucaria Bidwilli*, 12 feet high, was remarkably healthy,

and *A. excelsa*, the Norfolk Island Pine, was 15 feet in height. The sweet-scented *Boronia megastigma* is doing well; a large specimen of *Callistemon salignus* was bearing its red bottle-brushes; *Candollea tetrandra* was spangled with bright yellow blooms and two great bushes of *Clethra arborea* were set with numberless budding flower-sprays. *Citrus trifoliata* (*Egle sepiaria*) and *Convolvulus Cneorum* were noted; and of the *Correas* the scarlet-flowered *C. cardinalis*, the handsomest of the family, 4 feet through, as well as *C. bicolor* and *C. virescens*. Two bushes of the yellow-flowered *Corokia buddleoides* were about 7 feet in height. *Diosma gracilis*, *Drimys Winteri* and *Edwardsia* (*Sophora*) *microphylla* were evidently happy, and of the pretty little *Eriostemons*, seldom seen in the open, *E. nerifolium*, *E. pulchellum*, and *E. linearifolium* were in perfect condition. Several *Eucalypti* were present, some of which were in flower. *Grevillea robusta* was about 5 feet through; *Helichrysum antennarium*, a shrubby tree about 10 feet in height, had just gone out of flower, as had *Illicium floridanum*; and of *Lagerstromia indica*, rare in gardens, there was a good specimen about 5 feet in height and as much in diameter. *Laurus Camphora* was 8 feet high, and the largest bush of *Lavatera assurgentifolia* was quite 7 feet in height and 5 feet through. This Mallow bears large handsome flowers of lavender-white tint, marked with deep blotches of maroon-purple in the interior. Several *Leptospermums* were of large size. *L. arachnoideum* was 12 feet in height and 14 feet through, *L. scoparium* somewhat taller, and *L. bullatum* equally fine.

A large Loquat (*Photinia japonica*) was observed, and I was informed that a specimen, which is since dead, bore fruit. This, as far as I know, is the only instance of the Loquat fruiting in the open in this country, though at Enys, in Cornwall, it often flowers. *Metrosideros robusta* was a small specimen; *Mitrasia coccinea*, hanging over a wall, was a gorgeous sight, being crowded with its scarlet, tubular blossoms; and the Australian *Myoporum laetum*, 15 feet in height, chiefly remarkable for its lanceolate leaves dotted with innumerable transparent spots, was bearing flowers and fruit. A great bush of *Myrtus uniflora* was blossoming well, and numerous self-sown seedlings were springing up around. A young Olive-tree was the picture of health; as were *Olea fragrans*, *Osteomeles anthyllidifolia* and *Polygala Dalmaisiana*. *Podocarpus andina* was 20 feet in height, and *Tricuspidaria dependens* and *Xanthoceras sorbifolia* were also represented.

Of plants grown against walls, *Acacia glaucescens* was 10 feet in height, *Brachysema Drummondii* was looking well, and *Bougainvillea glabra*, grown against a split Larch fence, 5 feet high, and particularly healthy. *Calceolaria Burbidgei*, 8 feet in height, was flowering, and was also grown in bush form, but *Cassia corymbosa* had not yet expanded its blossoms. *Cestrum* (*Habrothamnus*) *elegans* had made strong growth, and *Lasiandra* (*Pleroma*) *macrantha*, very vigorous, was 10 feet high. *Lonicera Hildebrandti* had not as yet flowered, but *Luculia gratissima* was said to expand blossoms in mild winters. *Mimulus* (*Diplacus*) *glutinosus* and its variety *coccineus* were in

full flower, as was *Pentstemon cordifolius*, which was bearing its red blossoms freely. *Plumbago capensis* was not in bloom, but *Trachelospermum jasminoides*, which covered the whole front of a large summer-house, was white with its fragrant flower-clusters. This plant has an extended period of bloom, for I have seen the same plant in flower in mid-October.

Of other plants *Agapanthus umbellatus* was blooming profusely, and *Alonsoa Warscewiczii* formed a brilliant spot of colour. The plant has passed the winter in the open unharmed. *Asparagus Sprengeri* was draping a wall with its feathery foliage, and *Echium densiflorum*, raised from seed sent from the Canary Isles, was in flower. On a steep, rocky slope about twenty plants of *Crassula coccinea* in full flower were associated with *Mesembryanthemums*, and presented a blaze of colour. Many *Crassulas* were in other stony banks, in company with *Opuntias* and *Lotus peliorhyncus*, which lives out through the winter. I was informed by Mr. Richards, the head gardener, that a large number of the best *Mesembryanthemums* had been received from Tresco Abbey Gardens, Isles of Scilly, where the finest collection in the British Isles is grown, so that in future years the terrace garden will present an even more brilliant spectacle. A fine specimen of *Cycas revoluta* has been in the open for several seasons, and large bushes of fancy *Pelargoniums* were flowering freely. *Iris* (*Morea*) *Robinsoniana* and *I. japonica* (*fimbriata*), were growing well, and I noticed several healthy plants of *Leonotis Leonurus*. *Primula obconica* that had been in the open through the entire winter was in flower, as was *Rehmannia angulata*, which appears likely to prove a hardy plant. *Clivia miniata* has been out for some seasons, and was evidently in good health. Besides the common Fan Palm (*Chamaerops*), *Phoenix canariensis* and *Cocos australis* are grown, as well as fine tree Ferns (*Dicksonia antarctica*) and giant *Camellias*.

The Cedars of Lebanon near the house were greatly injured by the memorable blizzard of March 11, 1891, which also levelled the finest of the Cork Oaks, but there are some about 50 feet in height still remaining. A Plane tree 80 feet in height, a Stone Pine, 50 feet, a Lucombe Oak, about 70 feet, and three enormous evergreen Oaks (*Quercus Ilex*), and a Holly, much shut in, which is apparently about 60 feet in height and over 7 feet in girth, are amongst the most noteworthy of the larger trees. *Embothrium coccineum* does well, as does *Abutilon vitifolium*, of which there are many specimens nearly 20 feet in height. Two trees of *Magnolia grandiflora*, whose drooping foliage swept the lawn, and which carried numerous expanded blossoms, are 20 feet high, as are examples of the Fan Palm, *Trachycarpus excelsus*.

In the Italian garden near the orangery a splendid collection of very well-grown and large Orange-trees in tub stands out through the summer. *S. W. Fitzherbert.*

HENRY ECKFORD TESTIMONIAL.—The contributions to this fund up to the evening of Saturday, August 5, amount to a little over £51, including 96½ shillings from the Florists' Exchange Fund. (W. ATLEE BURPEE, W. N. CRAIG, G. H. ROWDON, the Florists' Exchange.)

NEW OR NOTEWORTHY PLANTS.

PINUS PINCEANA.*

GORDON'S name for this Mexican species is nearly forgotten, owing probably to the defective type specimen at Kew, which consists of a single cone. Ghiesbreght's No. 34, however, to which

been identified and named. There are two sheets of leaves, and the cone is identical with the one at Kew. Palmer collected this Pine near Saltillo in the State of Coahuila. By some inadvertence the cone was associated with the leaves of another species, and to this combination Engelmann gave the name "latisquama." In the same locality, Carneros Pass, Mr. Pringle collected and distri-

At Carneros, P. Pinceana is a small tree not exceeding 20 feet, associated with P. cembroides Zucc., and now nearly exterminated. The few trees found were about two miles north-west of the station. George Russell Shaw, Boston, Mass.

FRUIT CULTIVATION IN SOUTH DEVON.

ABOUT the middle of June, in the finest weather of an English summer, I spent a few days along the South Devon coast, first amongst the beautiful seaside gardens and wooded slopes and heights of Torquay, the charms of which, as well as of those of its neighbours, Babbacombe and Paignton, are so well known that it is unnecessary to refer to them further than to say that the neighbouring country inland is amongst the most beautiful and characteristic of Devonshire scenery, and none, perhaps, more so than the village of Cockington, where the village smithy still exists, and the real "village blacksmith" still pursues his useful avocation amid all the surroundings which breathe the very air of an old-world place.

Within a stone's-throw of this quaint village and in the parish of Cockington itself, some 40 acres of land have been laid down under fruit culture, and constitute what is known as the South Devon Fruit Farm.

The term "farm" is fully borne out by the character of the grounds generally. The entrance is not marked by anything of an architectural significance, or of modern iron-work in the form of entrance gates, but a country cottage with an old-fashioned country garden, in which Roses assert their presence by their abundant blossoms filling the air with their sweet perfume, stands on one side of the entrance.

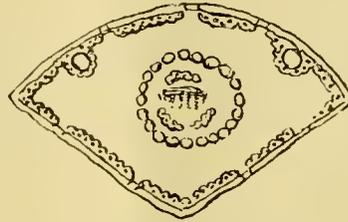
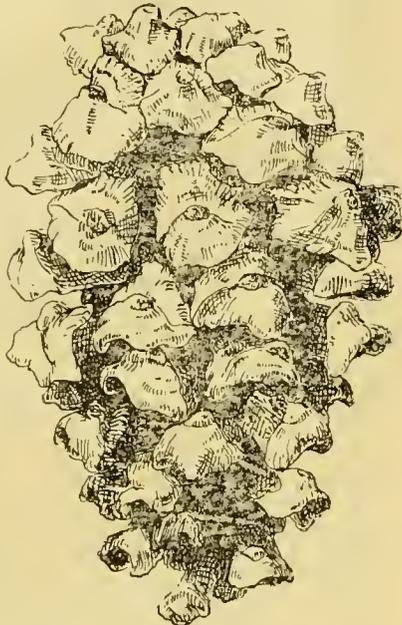
The other surroundings are those of the ordinary fruit and vegetable-garden cultures, except that everything is grown on an unusually large scale, the outdoor things being cultivated on a system of field culture, with the very best results in abundant crops and superior quality. It is, however, in the long and numerous ranges of glasshouses that the system of fruit-farming is best shown and fully realised. The houses are for the most part arranged in parallel lines. In one group each house measures 100 feet long, and is entirely occupied by Cucumbers and Tomatos. In another group the houses are double the length, and in these Grapes and Peaches are grown on a large scale.

In one Peach-house, 225 feet long by some 20 to 25 feet wide, the plants are trained on the espalier system across the house on strong iron and wire frames, the advantages of this being a perfect circulation of air between and through the plants, and the convenience with which the fruits can be gathered from either side.

I learned from Mr. Pender, the manager of this farm, to whose courtesy I am indebted for showing me round, that the whole of the produce, excepting the Peaches, is disposed of in the neighbourhood of Torquay, and that the Peaches, carefully packed in tray-like boxes which fit in one another so as to form convenient receptacles, are sent to the London market.

Some distance away from this rural spot, and located by the side of the line between Torre and Torquay, is situated another property belonging to the same company, known as the South Devon Rosery. As indicated by the name, Roses are here the chief objects of cultivation. They are to be seen in thousands, in every stage of growth and in every form and variety.

The closing in of the evening and the necessity for catching the train prevented my spending as much time as I should otherwise have liked to do in this garden of Roses. John R. Jackson.



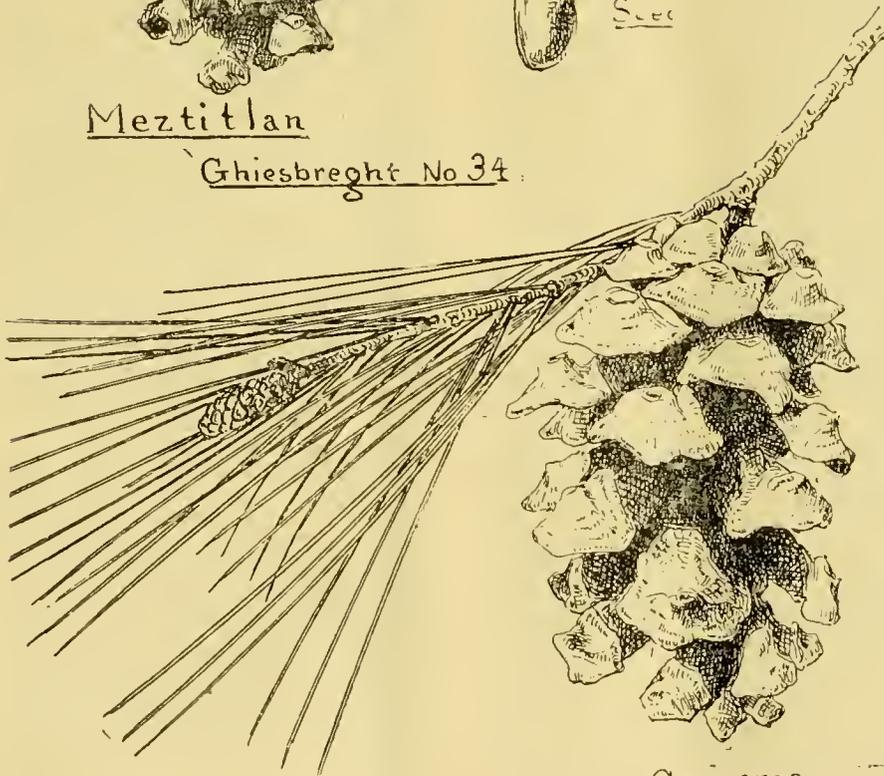
Leaf Section



Seed

Meztitlan

Ghiesbreght No 34



Carneros

Nov. 1904

G.S.

J. R. JACKSON

FIG. 42.—PINUS PINCEANA, SHOWING FOLIAGE, CONES, LEAF-SECTION AND SEED.

Gordon refers in his original description, is in the Mexican collection at Paris, but has never

* *Pinus Pinceana*, Gordon.—Leaves in fascicles of three, the basal sheath deciduous, 3 to 4 inches long, with entire margins; the fibro-vascular bundle single and accompanied with stereome cells; the resin ducts marginal, dorsal, usually two in number, and enclosed by the hypoderm. Cone subterminal, stalked, pendent, symmetrical, and 2½ to 3½ inches long; the scales, when dry, concavo-convex, and of a deep red or orange-red colour; the seed wingless, large, and edible. The branchlets are ash-gray, slender and drooping.

Ghiesbreght, No. 34, Ravine of Meztitlan, 1844. Kar-

buted specimens under Engelmann's name. Karwinski found it, and his specimen, in the Zuccarini collection at Munich, bears the name "cembroides."

winski, *Zucc. Herb.*, No. 409, "in imperio Mexicano," 1844. Ehrenberg, near Cuernavaca, later date, vide Gordon. Edward Palmer, No. 1299, near Saltillo, 1880. C. G. Pringle, No. 2293, Carneros Pass, 1889. G. R. Shaw, same locality, 1904.—*Pinus Pinceana*, Gordon's *Pinetum*, 1858, p. 204, and 1880, p. 280. *Carrière, Con.*, 1887, p. 401. Hemsley, *Biol. Cent. Am.*, iii., 1883, p. 189. *Pinus latisquama*, Engelmann in *Gard. Chron.*, xviii., 1882, p. 713, fig. 125, and xx., 1893, p. 730, exclusive of the leaves.

ORCHID NOTES AND GLEANINGS.

ONCIDIUM LIMMINGHEI.

FLOWERS of this rare and pretty little Orchid are sent by Mr. Haddon, gr. to J. Neale, Esq., Lynwood, Penarth, where many interesting species find a congenial home. The plant, which in its one-leaved pseudo-bulbs much resembles a miniature *Oncidium Papilie*, bears its flowers on short filiform peduncles. The flowers, which are over an inch across, have the upper sepal and petals red-brown edged with yellow, the lower one light yellow barred with red-brown, the rounded basal auricles of the lip yellow spotted with red, and the emarginate blade bright yellow with a few red spots. It is a charming little plant, and it thrives best grown on a bare block or teak-wood raft in a moist corner of the Cattleya-house. The pseudo-bulbs and leaves press in a singular manner against the block on which it is grown.

SOBRALIA VIOLACEA ALBA.

Sobralia violacea is one of the commonest of South American *Sobralias* in a wild state, and collectors have recorded the fact that notwithstanding the rose-purple colour of the bulk of the plants, white varieties and light-coloured forms are plentiful. They are occasionally imported, and find their way into gardens under the name *S. virginalis*. A good white form has flowered with C. J. Lucas, Esq., Warnham Court, Hersham (gr., Mr. Duncan). The flowers are rather smaller than those of *S. macrantha*, and white, the disc of the lip, over which runs several prominent raised lines, being of orange colour. The margin of the lip is undulate, and the flower very attractive. Like all other *Sobralias* the individual flowers do not last long, but there is a good succession from the same stems. Given a liberal supply of rain-water and sufficient head-room in an intermediate-house (not necessarily an Orchid-house), *Sobralias* are very easy to grow.

CATTELEYA MOSSIE "GLOIRE DE LA FRANCE."

A two-flowered inflorescence of this charming *Cattleya* of the *C. Mossie Reineckiana* type, and which is a French production, is sent by Francis Wellesley, Esq., Westfield, Woking (gr., Mr. Hopkins), shows it to be one of the very finest of its class. The flowers, which are of good form and substance, are over 6 inches across, the petals pure white with a rich orange-coloured band from the base of the lip and extending into the side lobes. The front of the lip is veined and spotted with bright purple. Distinguishing features are its clear whiteness, the bright tints of the orange and purple colours of the lip, the decided manner in which those colours are displayed, and the broad, clear white, frilled margin of the lip. *J. O'B.*

SYRINGA VILLOSA

VAR. PUBESCENS.*

This is a species native to Northern China, and, judging from the remarks of various authors, is subject to considerable variation. Our illustration (fig. 43) was drawn by Mr. Worthington Smith from a specimen exhibited in the spring of the present year at the Royal Horticultural Society by Messrs. Paul & Son, of Cheshunt. Professor Sargent, in *Garden and Forest*, vol. i., 1888, p. 521, describes *S. pubescens* as one of the most distinct and most floriferous of all the Lilacs, and literally covered in June with its short panicles of small, long-tubed flowers, which are pale rose coloured, and most deli-

ciously fragrant. It is a shrub 3 to 5 feet in height, perfectly hardy, and one of the most attractive and beautiful of new introductions to our shrubberies. In the same publication, ii. (1889), 309 (ex Bretschneider), it is spoken of as an ornamental plant of the first class, which has the merit of flowering late long after other Lilacs; and again in iii. (1890), p. 322, it is

with smaller flowers than those of *S. villosa*. The specimen exhibited scarcely justified these eulogies, whence we experience some doubt as to whether Messrs. Paul's plant is specifically the same as that alluded to by Professor Sargent. Bretschneider (*History of European Botanical Discoveries in China* (1898), p. 1057, is of opinion that *S. pubescens* is specifically distinct from

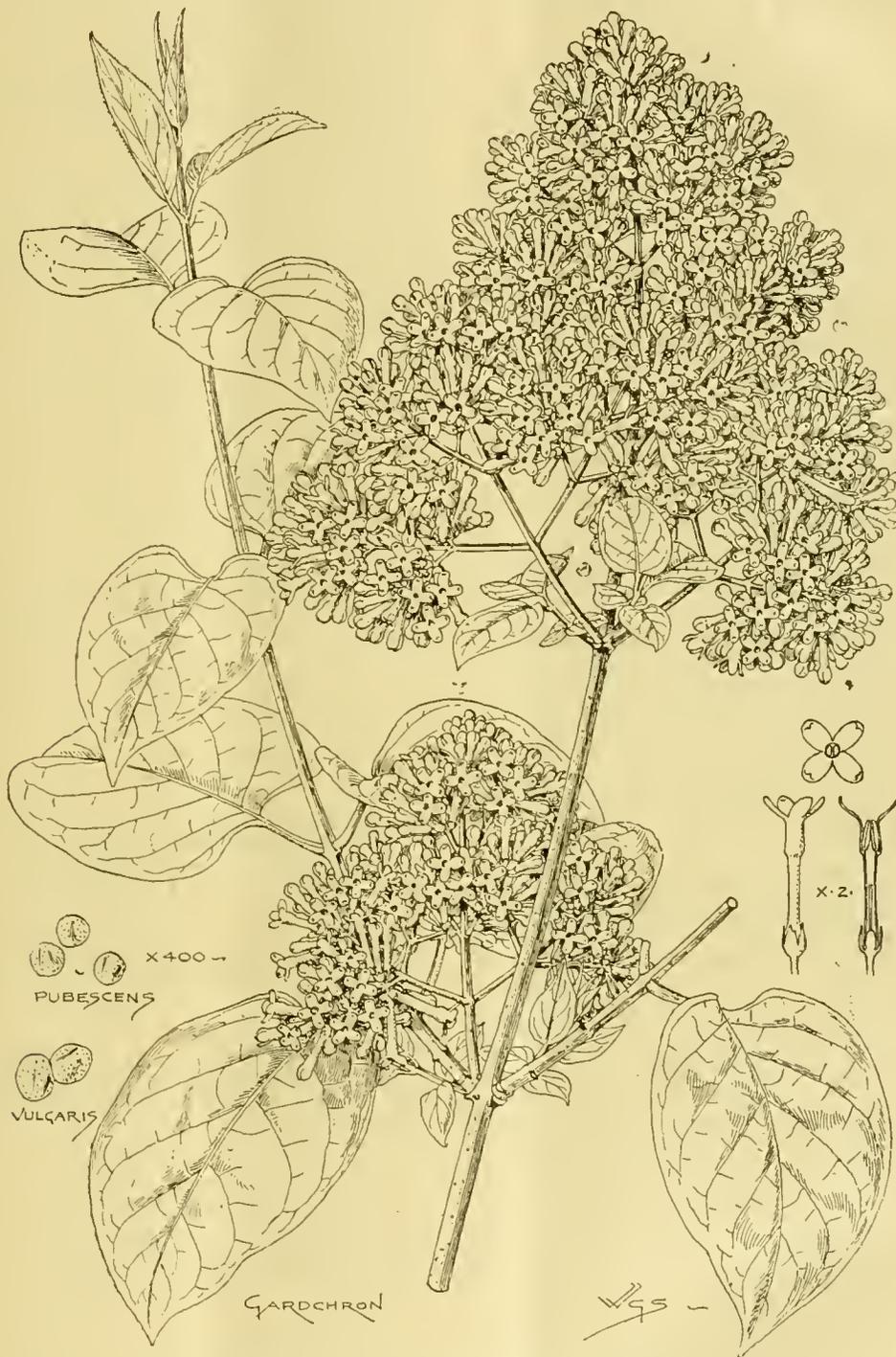


FIG. 43.—SYRINGA VILLOSA VAR. PUBESCENS. With floral details and pollen grains compared with those of *S. vulgaris*.

stated that the flowers appear early in June, and are of a rose or lilac colour, but when expanded, pale lilac or almost white. *S. pubescens*, *Garden and Flora* (1888) i. 414, and iii. (1890), 322, is described as having pretty pale lilac flowers produced in the middle of May, as in the mountains round Peking. In 1891 Professor Sargent speaks of *S. pubescens* as improving with age (*Garden and Forest*, iv. (1891), 262), and as being one of the most beautiful Lilacs in cultivation,

S. villosa in its smaller leaves, white beneath, pubescent on the midrib, and the capsules covered with warts; whilst in *S. villosa* the leaves are green and glabrous on both sides (the name being thus a misnomer), and the capsules smooth. Hooker's figure of *S. villosa* in the *Botanical Magazine* (1889), t. 7064, is referred to the small-leaved *S. pubescens*.

Rehder in Bailey's *Cyclopædia of American Horticulture* (1902, p. 1762), keeps up Vahl's species

* *Syringa villosa*, Vahl., *Enum.*, i. 38; D.C. *Prod.*, vii. (1844), p. 283; Hemsley, "Enum. Pl. China," *Journ. Linn. Soc.*, xxvi. (1889), p. 83; Bretschneider, *History of European Botanical Discoveries in China* (London, 1898), p. 1058. *Syringa pubescens*, Turczaninow in *Bull. Soc. Nat. Moscou* (1840), p. 73; Sargent in *Garden and Forest*, i. (1888), p. 415, c. ii.; Bretschneider, *loc. supra cit.*

(villosa), to which he refers as varieties *rosea*, *Cornu* *S. Bretschneideri*, *Lemoine*, *Revue Horticole* (1888), 492; *Garden and Forest*, i., 521; *Garden*, 39, p. 91; *Garten Flora*, 44, p. 500; and *S. Emodi*, an old inhabitant of our gardens.

Rehder also maintains *S. pubescens* of Turczaninow, which is the equivalent of *S. villosa* var. *ovalifolia*, D. C. In *S. villosa* the flower-panicles are said to proceed from terminal leafy branches, whilst in *S. pubescens* the inflorescence is lateral and leafless.

BOOK NOTICE.

FLORA BRASILIENSIS, Fasciculus cxxviii.

IN this part of the colossal *Flora Brasiliensis*, now nearing its completion, Mr. Alfred Cogniaux continues the enumeration of Brazilian Orchids of the genera *Quekettia*, *Trichopilia*, *Aspasia*, *Cochlioda*, *Dipteranthus*, *Zygostates*, *Ornithocephalus*, *Cryptarrhena*, *Chytroglossa*, *Phymatidium*, *Platyrrhiza*, *Sanderella*, *Gomezia*, *Odontoglossum*, *Brassia*, *Miltonia*, and *Oncidium*. The last-named constitutes one of the largest and showiest sections of Brazilian Orchids, eighty-one species being enumerated and described, many of which are favourites in British gardens, and most of them having flowered under cultivation at one time or other.

The names for which Lindley was responsible still remain in most cases unchanged, but a few departures from those in use in gardens should be noted. For example, *Oncidium Brunleesianum*, Rehb. f., illustrated in the *Gardeners Chronicle*, May 21, p. 673, is referred to *Oncidium echinatum*, Cogn. (*Baptistenia echinata*, Barb. Rodr.), as var. *Brunleesiana*. When the plant first flowered it attracted great attention, and it has always been very rare and desirable, but its exact locality was not known. It will be interesting to importers to note that *Oncidium echinatum* is recorded as from "Sierra da Tijuca, prov. Rio de Janeiro," and there is no doubt that the plant in cultivation as *O. Brunleesianum* came from that district.

Oncidium unicorn, Lindley, the singular little species bearing a branched inflorescence of yellow-and-brown flowers each with a long curved horn projecting from the centre of the labellum, is figured and described as *Oncidium longicornu*, Mutel.

Many of the species enumerated, not known in gardens, are of great interest botanically, but nothing new appears sufficiently showy to tempt those who affect showy Orchids, such as *Cattleya*, *Lælia* and *Odontoglossum*, the last-named now favourite genus being represented only by three species, viz.—*O. nævium*, Lindley; *O. præstans*, Rehb. f., and *O. epidendroides*, Kunth. The first-named elegant little species is not common, the second very rare, and *O. epidendroides* is probably not in cultivation. An interesting article from the late F. C. Lehmann on this plant appeared in the *Gardeners' Chronicle*, March 12, 1898, in which he remarks, "It may seem more than curious that this, the first-discovered species of *Odontoglossum*, the one upon which the genus was founded by Kunth, should not have been found again, in spite of more than a hundred species of the same genus having been discovered and introduced into cultivation since it was discovered by A. v. Humboldt and Aimé Boupland in the warmer region near the ancient town of Yaen de Bracamores."

Monsieur Cogniaux has done the work entrusted to him in his usual painstaking and accurate manner, and the illustrations, especially in the analyses of the flowers, are excellent, the minute details of structure which are of such importance in comparing seemingly allied species being most carefully rendered.

LEAVES FROM MY CHINESE NOTE-BOOK.

(Continued from p. 94.)

May 10.—With a salute of three guns from our returning life-boat we continued our journey. We passed several villages and many large farmhouses nestling in groves of *Pistacia*, *Cypress*, *Bamboos*, and *Banyans*. The tops of the hills are often clad with a few scattered *Pines*. The quantity of trees to-day, as compared with the country passed through hitherto, would incline one to write "the country is well wooded." But this would be wrong, for woods, strictly speaking, there are none, the nearest approach being small thickets of *Scrub Oak*, which sometimes cover half an acre of ground. *Aleurites cordata* is excessively common.

At 2 P.M. we crossed the Hutan rapid, one of the worst in the high-water season. Just below the Hutan is a tiny hamlet called Peh-Shui-Che, where a stream of clear water comes tumbling down a rocky slope. This stream is crossed by a bridge, the *fac-simile* of those we are all familiar with in the "willow-pattern" porcelain. The scene was a very pretty one. We moored for the night at the village of Yang-Tu.

Since entering Szechuan, one of the most striking features has been the increase in number of the *Banyan* (*Ficus infectoria*). It is now possibly the commonest tree. Usually its height does not exceed 30 or 40 feet, but the spread of its branches is enormous. This tree usually shelters some little wayside shrine. In Hupeh, *Xylosma racemosa* is the tree thus favoured.

May 11.—This was a dull, quiet and uneventful day. At 1.45 P.M. we reached Wu-ling, a village noted for its mats and tracking-lines. We purchased fifteen new mats and six tracking-lines. The mats are made of a framework of interlaced split *Bamboos*, stuffed with *Bamboo* leaves and leaves of *Sedges* and coarse grasses.

The country to-day was similar to that of yesterday, only possibly there were more trees. In places the moist grassy banks of the river were one mass of *Gentian* flowers. The whole plant did not exceed 4 inches in height, and made a lovely picture. *Salix variegata*, *Lysimachia* sp., and *Rubus corchorifolius* were the other fresh plants to-day. Two fresh trees, *Albizia Lebbek* and *Photinia serrulata*, were common. The trunks and branches of many trees were covered with *Polypodium adnascens*, and looked very fine.

The only new crop noticed was *Cotton*, and this in very small patches. *Seri-culture* continues very much *en évidence*. *Gold-washing* was in full swing in many places.

May 12.—We experienced much difficulty to-day from shallows and reefs jutting far out towards the middle of the river. We passed Shi-Pao-Che with its picturesque pagoda at 7.30 A.M., and the village of Kuan-ki at 4 P.M. We tied up for the night immediately below a huge reef some eight miles from the city of Chung. I added a few fresh plants, including—*Senecio Oldhamianus*, *Marlea platanifolia*, *Polypodium angustatum*, *Rubus chrosepalus*, *Aspidium falcatum*, *Calystegia sepium*, *Nephrrodium setigerum*, and *Scium Aizoon* var.

The commonest shrub was *Coriaria nepalensis*. *Acanthopanax ricinifolium* was a common tree. In places the banks were one mass of blue *Gentians*, in others nothing but yellow *Lysimachia*. The "Pa-tou" tree was very abundant. The tints of its foliage forcibly reminded me of the autumn hue of *Sapium sebiferum*. The people were busy transplanting *Rice*, and many fields were already finished. In places *Broad Beans* were being planted amidst the unripened *Wheat*.

May 13.—Another very hot day with practically no wind. At 4 P.M. the thermometer registered 99° F. in the shade of my cabin. At 10.30 A.M. we passed the town of Chung. This is a busy-looking place on the left bank of the

river, charmingly situated amongst trees on the side of a low hill.

Reefs continue a source of trouble and danger. At 1.30 P.M. we passed a place called Jah-Pa-Tan, where the river was nothing but a shoal of reefs.

Groves of *Bamboos* were the feature of to-day's journey, giving the country quite a tropical appearance. *Pines* and *Cypress* were also abundant. About 5 P.M. I went for a short walk and gathered a very pretty little terrestrial *Orchid* (*Spiranthes australis*). The flowers are arranged spirally. The lip is white, the rest of the flower rosy-pink. It is very fragrant. The people were busy transplanting the *Rice* plants and harvesting the crops of *Pulse* and *Wheat*. *Melons*, *Gourds*, and other *Cucurbits* were common to-day. The leaves are smeared with wood-ashes to keep away slugs.

May 14.—We were favoured with a fair wind for a considerable time to-day, and made good progress. We passed Yang-tu-Ki at 9 o'clock. This is a small village, the trade of which consists of opium and coarse porcelain. Kao-ki was reached at 4 P.M. This is a small hamlet on the right bank; its white houses nestling amongst trees on the slope of the hill look very pretty. The houses hereabouts are for the most part well-built, and the general aspect of the country and the appearance of the people fully bear out what travellers have written about this favoured province. One thing that struck me was the enormous size of the graves. These tombs are built of stone, with huge tablets in front extolling the virtues of the departed. The houses in the vicinity of these tombs are often very dilapidated, shewing that if the occupants are relatives of the deceased their fortunes must have met with a severe reverse.

The quantity of stone bridges is another feature of Szechuan. The veriest dyke has its bridge, all of which are well-built and kept in thorough repair. Ornate widows' memorial arches (*Pai-lou*) are also very common. All these things go to inform the traveller that he is in a rich and prosperous province, probably the richest of the eighteen provinces of China.

I noted that enormous quantities of *Opium* were grown hereabouts. The people were busy pulling up the old plants, the *Opium* having been collected and the seeds ripe. All the leaves had been stripped from the plant some time previously, and a secondary crop of *Maize* or *Beans* planted amongst them.

The hills are here steep and rocky, and nearly every foot of ground is under cultivation. *Aleurites cordata* is by no means so common as hitherto. It likes the steeper and more rugged hills, and it suits the Chinese to grow it there.

To-day I noted several trees of *Ligustrum lucidum*, a tree that has been scarce since leaving Ichang. *Banyan*, *Pistacia*, and *Cypress* continue the common trees. *Lysimachia ophelioides* and a species of *Salvia* were the only new plants to-day. The *Lysimachia* certainly looks at first sight more like a yellow-flowered *Swertia* than anything else. The *Salvia* is probably only a variety of the polymorphic *S. japonica*. The flowers are white, the leaves simple and (or) pinnate, red beneath. *Bamboos* continue very plentiful.

To-day has been hotter than ever; at 4 P.M. it was 92° F. in the shade.

May 15.—We were off Feng-Tu at 11 A.M. This is a small place built on a narrow strip of flat ground and backed by steep hills. Good local tea is procurable here, and most of the "Peh Mu" timber used for boat-building at Wan is shipped from here. Below Feng-Tu the hills are gentle, and all highly cultivated and bare of trees; above, the river-banks are wild and rocky, and the *Aleurites* and "Pa-tou" tree again very common. On the left bank, some distance above Feng-Tu, is a head of a colossal

Buddha carved from the solid rock. We moored for the night at San-tu, ten miles above Feng-Tu.

The feature of the cultivated vegetation was the abundance of Opium, with Maize and Beans (*Glycine*) planted to take its place. Huge Banyans with small shrines beneath them, large graves and well-built houses were the rule. *Trachospermum jasminoides* in full flower draping rocks and the trunks of the Banyans was very conspicuous.

Of new plants I noted *Mallotus* sp., *Cornus paucinervis*, *Lysimachia candida*, *Lygodium scandens*, *Clematis recta* var. *mandschurica*, and a species of *Sedum*. *Lysimachia opheloides* was very common in places.

May 16.—A few fresh plants were added to the list to-day—viz., *Sophora flavescens*, *Premna ligustroides*, *Ammania rotundifolia*, *Mallotus barbatus*, *Sedum* sp., and a curious variety of Wheat. The Wheat is cultivated, and attracted my attention by the peculiar horn-like appendage to the outer glume. It is quite normal, though I at first thought the ears were monstrous. The Chinese term it "beardless" Wheat. Opium continues the common crop. Below the city of Wan a little Opium is grown; from Wan to the city of Chung it gradually increases in quantity; above Chung by leaps and bounds, until at Feng-Tu it becomes almost the only spring crop. From Feng-Tu to Kiang-tsin it continues to be so.

The area over which Opium is the predominating spring crop amounts to about 250 miles. All the land—the foreshore and terraced hillsides—is devoted to this crop. In these parts Opium occupies the ground for six or seven months during winter and early spring. It is sown in drills in October or the beginning of November; the Opium is collected in April, and by the middle of May the ground is cleared of this crop. It is an exceedingly profitable crop, although it needs heavy manuring. It is earthed-up in the same manner as we do Potatoes, and in April secondary crops are planted on either side of the ridge, Maize, *Glycine hispida*, and Phaseolus Mungo being the favourite crops thus planted. After the Opium plants are pulled up the ground is levelled, and a mulch of manure given the secondary crops at the same moment. Occasionally "Broad Beans" are planted between the rows, and ripen with the Opium. Wheat and (or) Broad Beans are planted around the patches of Opium to serve as a shelter from wind.

The Chinese discriminate six qualities of Opium, the plants furnishing which are distinguishable by the colour of their flowers, viz.:—First quality, pure white flower; this is the earliest to mature, and is the most widely grown. Second quality, a bizarre with a central band of bluish-purple flanked with rich magenta; petals deeply incised. Third quality, white with broad flanks and apical margin of salmon-pink or magenta. Fourth quality, dark-scarlet with central band of bluish-purple to within a fifth of the apex of the petals. Fifth quality, dark bluish-purple. Sixth quality, lilac suffused with purple—a very washy colour, and considered very poor in quality indeed.

Every patch is carefully "rogued," and kept true to colour. The plants average 3 to 4 feet in height, and are remarkably even. The drier the land and the more fully exposed to the sun the finer the crop.

No crop is so gorgeous and attractive. As far as the eyes can range on every side nothing but myriads of Poppies. What a panorama of beauty!

If we except the petals and stamens, no part of the Opium plant is wasted. The oil, expressed from the seeds after heating, is used for culinary and illuminating purposes. The leaves of the plant serve as food for pigs. The old plants are either used for fuel, manure, or are burnt and soda, used for washing purposes, prepared from the ashes.

May 17.—We reached Fu-chau about 10 A.M. This is a good-sized town on the right bank of

the Yang-tsze, immediately above the point where the Kien-kiang joins it. The Kien-kiang rises in the heart of the wild province of Kuichou, and is navigable for small craft up to the city of Szé-nan, a fifteen days' journey. Fu-chau is the great *entrepôt* for Szechuan Opium, being situated right in the heart of the Opium district. It is shipped down-river from here under the native customs, and is lost to the Imperial Maritime Customs. When Wan is opened this will be altered, and a proper check kept of this produce. Silk is another important item of Fu-chau's trade. I collected several fresh plants, viz.—

Lysimachia capillipes, *Rosa* sp., *Pieris* sp., *Broussonetia Kämpferi*, *Stephanandra chinensis*, *Nandina domestica*, *Pteris semipinnata*, *Adiantum Edgeworthii*, *Clerodendron foetidum*, *Phyllostachys nigra*, and *Vicia cracca*.

The *Phyllostachys nigra* was in flower. I noted that only the flowering culms die. *Lysimachia capillipes* is a very distinct species, and is a perennial, not an annual, as stated in the *Index Floræ Sinensis*. *Cyrtandra*, not in flower, were common on the limestone cliffs, and in places the hills were a mass of yellow flowers of *Hypericum sinense*. I also noted an occasional tree of *Canarium album* cultivated.

The country is all highly cultivated and the hill-side was alive with people tilling the soil or sowing, reaping, or transplanting the various crops. E. H. W.

(To be continued.)

CACTUS SCAB.

A DISEASE caused by a parasitic fungus has long been known to cultivators of Cacti in this country, but up to the present the fungus has

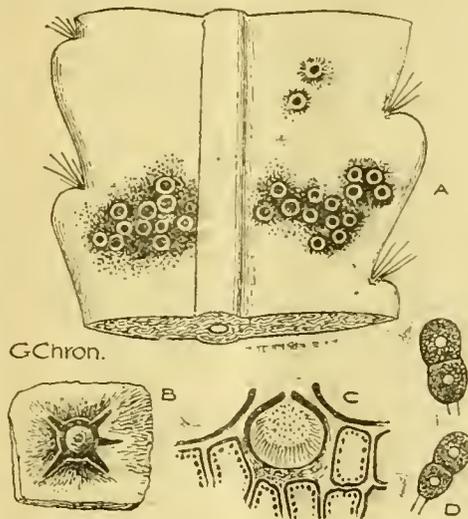


FIG. 44.—CACTUS SCAB, *DIPLODIA OPUNTIAE*.

A, Appearance of Cactus-scab, natural size; B, A single fruit of the fungus, seen from above, slightly magnified; C, section through a fungus fruit, slightly magnified; D, spores of the fungus, magnified 400 times.

not been observed in a perfect or fruiting condition; hence its identity remained in doubt. Quite recently, however, Mr. A. Worsley, Mandeville House, Isleworth, who has had the disease under observation for many years, collected the fungus in fruit growing on a *Phyllocactus*. This discovery proves the parasite to be *Diplodia Opuntiae* of Saccardo, first collected on *Opuntia nana*, in Northern Italy.

The injury caused by this fungus is sometimes severe, the black minute, wart-like outgrowths constituting the sterile portion of the fungus often covering a considerable area, the surrounding tissue becoming discoloured. The mycelium

is distinctly localised, and each scab is the outcome of an independent infection. As the *Diplodia* form of fruit is so rare, in all probability the dispersion of the pest depends mainly on the production of some minute secondary form of conidia not as yet observed. Geo. Masteë.

ALPINE GARDEN.

ALPINES AT NITHBANK HOUSE, DUMFRIES.

ONE of the most interesting collections of alpine flowers in Scotland is that of Mr. James Lotimer, Nithbank House, Dumfries, a collection which has long been known to those interested in such flowers as being one of the choicest, although not now the largest, in the North. It has been in existence for many years, and until lately, when failing health has prevented the owner from devoting to his flowers that personal attention so much needed by such plants, has contained practically every novelty of worth, and the best of the older plants. Recently, however, this cause has not only prevented the acquisition of many new flowers, but has also restricted the cultivation of some; alpine *Auriculas*, for instance, being now only cultivated in small numbers instead of largely, as at one time.

Particularly fine here is *Cyananthus lobatus*, of which some spreading masses, liberally decorated with the charming light blue flowers, appeal strongly to the admiration of the visitor. This plant does well here in various positions, perhaps the finest specimen being on a low rockery facing the south-west, but sheltered from the east by the higher slopes of the rockwork and by a good hedge behind.

Another special feature here is *Nierembergia rivularis*, a troublesome plant with many, largely on account of the avidity with which slugs devour it, and also because of the difficulty of securing in gardens the necessary amount of moisture this plant from the margin of the River Plate requires. The *Nierembergia* is not cultivated on the rockeries here, but in pans set inside zinc pails partially filled with water. The pans are stood upon inverted flower-pots, and the water is kept just at the height which will admit of the drainage of the pans being almost submerged. In winter the pans are taken out of the pails and placed on the ground, the *Nierembergia* being hardy under such conditions. The result of this treatment is that slugs are kept away and the necessary moisture is given. The plants are pictures of health and beauty, the pans being this July, as in former years, perfectly covered with the exquisite creamy-white flowers.

Another plant particularly well grown here is *Pratia angulata*, or *Lobelia littoralis*, which I have never seen finer except in the Royal Botanic Gardens, Edinburgh. At Nithbank this grows to a large size, and in whatever part of the garden it is planted it is certain to do well. It is very beautiful in such quantity, with its white flowers upon a dense carpet of green leaves hardly half an inch high. Here it does not require the semi-bog treatment that some find necessary.

Another troublesome plant in many places is *Polygonum sphaerostachyum*, which in the Dumfries district is generally a good grower, although it does not grow into large plants. It both grows and flowers freely at Nithbank.

Ramondias and *Haberleas* are well cultivated, although Mr. Lotimer's practice would not commend itself to those who like to grow their plants in the open. They are cultivated under handlights with whitened tops, by which means the necessary amount of shade is secured; while the plants are planted on the sides of a slight depression in the soil towards the centre of the portion covered by the handlight. The top of the

lights is occasionally removed, but is frequently placed diagonally across, for the admission of air. Although one does not consider this treatment absolutely necessary here, yet it must be said that Mr. Lotimer's results are excellent.

The garden is particularly rich in choice alpine Campanulas, and among these one may mention, as indicating some of those cultivated, such as the yellow and green-leaved C. G. F. Wilson, C. haylodgensis, C. pulla, C. valdensis, C. turbinata, C. Raineri, and C. pseudo-Raineri. These generally do well, and, with the taller forms, are very attractive when in bloom.

Androsaces are not so largely represented as at one time in the garden, the best being A. lanuginosa and the variety Leichtlinii, or oculata, of which there are very fine plants.

Those who like to see some of the best Saxifrages in large masses would admire the masses of S. sancta, one specimen in particular, which has been for a good many years without removal or division, being a large mass of healthy foliage, without any of the browning and decay of the centre of the plant so often seen. Others are equally good, and practically the best of the various sections are to be found, the collection being perhaps weakest in the encrusted forms. S. (Megasea) Stracheyi is a favourite for its early bloom and its free flowering.

Like a good many other Scottish growers, Mr. Locimer finds it necessary to cultivate the lovely Philesia buxifolia under a handlight, shaded from the sun, but planted in the border. Here this exquisite plant flourishes, its only fault being its tendency to bloom itself to death. The plants were very beautiful on the occasion of my recent visit, each bearing several of the long-tubed handsome scarlet flowers.

Primula species are well represented, together with the dwarf Veronicas, such as Allioni, corymbosa, and several others. Cypripedium spectabile, Orchis foliosa, the dwarf Scabiosas, Lithospermums, alpine and other species of Dianthus; Hypericums, Anthemis, hardy Erodiums and Geraniums, Iberis, and many other good alpines are practically all well cultivated. Many dwarf rockery shrubs are also grown, such as the dwarf Cotoneasters, Azaleas, St. John's Worts, and many more.

Within recent years a large number of named Rhododendrons have been planted, and these have done well this season; while a few of the finest Roses give a variety to the garden. Ferns are also well grown, and the borders contain some choice Liliiums, such as L. Humboldti and others not usually considered easy to grow. The border flowers are admirably chosen for the limited space available after satisfying the space needed for the other occupants of the garden, which has for long afforded an object-lesson of what can be done in the way of the cultivation of alpine and border flowers in this part of Scotland. S. Arnott.

FORESTRY.

THE LOCUST TREE.

I HAVE had letters from England since the questions on the usefulness of this tree appeared in the *Gardeners' Chronicle*, stating that the writer had come to realise "the value of the pseudo-Acacia by various experiments made on timber for estate purposes." This tree has also been the object of discussion in Forestry congresses held lately in Germany, declaring this tree to be most useful in many respects.

After reading the verdict of "A. P." in last *Gardeners' Chronicle*, I do not enter further into this matter, as "A. P." pretends to show "that the worthlessness as a forest tree is simply proved." But I venture to state, based upon the experiences made in England and on the Continent, that the reasons for its neglect are to be

found elsewhere, and are not the faults of the tree. On this most valuable tree I do not say anything more.

Another word to "A. P." about the Douglas Fir. My statement about the thinnings at Scone Palace, 1887, were given from letters I had from my friend Mr. McCorquodale, the contents of which were also published at that time. My statements were thus not misleading—they were based upon Mr. McCorquodale's. Anyone who knew him does not believe that he could have given false ones.

I cannot prevent English foresters depreciating the value of the Douglas Fir, as is done in the article of "A. P." To bring the great merits of this tree, however, forward (imported since nearly eighty years, 1828-29), I could not do better than refer to the last number of the *Gardeners' Chronicle* (p. 63), where Mr. J. Simpson tells us "that at the exhibition at Park Royal there was a section of Douglas Fir from Earl Powis's estate, forty years of age, varnished, showing the colour and annual rings, and indicating a stem about 24 inches in diameter; and beside this was a Larch section about 100 years old, as shown by the rings, of no greater bulk than the Douglas . . . the Douglas will produce about as much timber in forty years as the Larch will do in a hundred. . . . The heart of the Douglas was as red as mahogany." Could one state in higher terms the value of the Douglas Fir?

I have planted myself thirty years ago the Douglas Fir. I had one tree cut of exactly the same dimensions as Earl Powis's tree; 18 inches in thirty years corresponds with 24 inches in forty years; the heart also two-thirds red as mahogany. From this plantation I sent, years ago, thinnings to my late friend, Professor Dr. Robert Hartig, and after scientific investigation he declared the wood Larch-like, and gave the following classification:—

Larch I., Douglas II., Pine III., Spruce IV., Fir V. John Booth, 39, Mozartstrasse, Gross-Lichterfelde, Berlin, July 24, 1905.

THE LOCUST-TREE.

Like Mr. Simpson I feel that if I had 1,000 feet of Locust timber for sale, I should experience considerable trouble in finding a purchaser. Whatever the capabilities of the tree may be or the demand for its timber in Germany, it is simply its proved worthlessness generally as a forest tree in this country that is accountable for its neglect.

It is, however, to Mr. Booth's reference to the Douglas Fir that I have a word to say. From Mr. Booth's letter it is evident he has no practical knowledge of the conditions of British forestry, and although I do not quite agree with the low estimate Mr. Simpson places upon Douglas timber, I must say he is very much nearer the mark than he who would put him right. It is too early to say what the price of Douglas timber may be when fairly mature wood in considerable quantities can be placed on the market. Up to the present time it is only coarsely grown, immature trees that have been disposed of at irregular times, at much lower prices even than Mr. Simpson states. But I have been offered as much as 9d. per foot for clean, well-grown trees.

I have not the *Gardeners' Chronicle* of 1888 nor the *Perthshire Constitutional* of January 11, 1888, to refer to, but I am astounded to hear that such misleading statements as Mr. Booth quotes should have appeared in these papers.

In 1887 there were thinned out of Taymount Wood 680 Douglas Fir trees. These, if of the size given, viz., 27 cubic feet each, would give a total of 18,360 cubic feet, which at 1s. per foot would realise £918, an excellent result. The real facts of the case, however, were not so encouraging. The 680 trees were sold by auction for

£34, a very much less valuation than even Mr. Simpson would allow.

Mr. Booth's concluding remark would have been instructive had he given us his own opinion as to the causes affecting the prices of Spruce and Douglas timber, and his reasons for holding his opinions. A. P., Perth, July 17, 1905.

THE CANNING BUSINESS.*

To build and "operate" a canning business on large commercial basis belongs to the domain of the expert with ample capital; but fortunately there are means and methods by which any small farmer or enterprising individual, whether farmer or not, can very successfully build up a canning business for himself, provided he will go about it intelligently.

The outfit consists of a specially constructed galvanised-iron boiler, made to fit either a No. 7 or No. 8 cooking stove, a basket or carrier that fits inside the boiler, can-tongs, and soldering-irons. This is a very simple yet economical and accurate form of the "open process" method of canning.

The operation of the outfit is very simple and quickly learned, and the principle all the way through is the same as that followed in regular canning establishments.

In canning Tomatos the first step is to scald the fruit just sufficiently to loosen the skin, so that it can be slipped off. To do this we use a large iron kettle, commonly called a wash pot. The Tomatos are placed in a cheap tin vessel that has been punched full of small holes, and holds about one-third of a bushel. This is dipped into the boiling water and allowed to remain about one minute, or until the skin will slip readily. The fruit is then peeled, sliced, and filled directly into the empty cans. The cans must be well filled for good results. This finishes the first step. The filled cans are then passed to the second stage of the operation. The tops of the cans are wiped dry with a clean cloth, the cap placed on and soldered around the rim. The small hole or vent in the centre of the cap is left open. Then we are ready for the third step, that of exhausting—expelling the air out of the cans. This is accomplished by submerging the cans in the boiling water (in the boiler) about two-thirds of their length. They are held there until they come to a boil, or for Tomatos ten minutes. They are then removed, the small hole in the centre of the top closed with solder, and the cans are then completely submerged in the boiling water and boiled or processed twenty minutes, which is the fourth and last step in the operation.

Then, summed up, the different steps or stages of the complete operation are as follows:—(1) Scalding, peeling, and filling; (2) wiping and soldering the cans; (3) exhausting and tipping; (4) processing or cooking.

The scope of the work of home-canning is almost unlimited. The canner can be run almost constantly from May until November. Beginning in May with all kinds of berries (especially Strawberries and Blackberries), we go right on through the summer with vegetables and fruits, and during the fall with Sweet Potatos. A list of the leading fruits and vegetables that can be successfully put up are as follows: Fruits—Strawberries, Blackberries, Peaches, Plums, Pears, Apples, Figs; vegetables—Tomatos, Beans, Okra, Sweet Potatos. Peas and Corn cannot be very successfully canned on an outfit of this kind, as they require a higher pressure than the above, and for this purpose the closed kettle is necessary.

Undoubtedly the chief value of an outfit of this kind lies in the opportunity afforded of utilising the surplus that cannot be profitably

* Extracts from a paper by E. J. Watson in a Bulletin issued by Agricultural Experiment Station of the Louisiana State University.

shipped to market. With Tomatos and Peaches, and often with nearly all kinds of vegetables and fruits, the period wherein profitable shipments can be made comes to an end before the crop is exhausted. Therefore what remains need not be lost, but is turned into a nice profit by canning.

We also put up a quantity of Peaches plain, or in their own juice; these do not require any sugar, but simply clear water. This grade must be sold as pie Peaches, and the prices are about \$1.00 per dozen.

Pears are put up in the same way as the Peaches, at about the same cost. The prices for the finer grades are the same as for the Peaches.

We found that the Pears yielded a larger profit than the Peaches, other things being equal, as 1 bushel of Pears filled an average of twenty-four 3-lb. cans, and 1 bushel of Peaches only sixteen 3-lb. cans.

COLONIAL NOTES.

THE WATER HYACINTH IN QUEENSLAND (EICHHORNIA SPECIOSA).

DURING the three years ending in 1849, which I spent in the Royal Botanic Gardens, Regent's Park, London, I had in a tank in the Orchid-house several plants of the above species, but they never flowered. I little thought then that I should ever have the opportunity of seeing a mile or more of a lagoon, in places more than 200 yards wide, covered by it, and in flower all summer. I may say the plant blooms nearly all the year, but in summer it is in its glorious dress. I can never give a proper idea of the grandeur of the sight. Not only is the scene magnificent from its very magnitude, where every square yard may carry twenty flower-spikes, but when one of the flowers is examined in the hand then one sees the purity and delicacy of the colours—violet, purple, blue, and bright orange.

A few years ago it was introduced by some means into a pond close to one of the sugar mills on the side of the lagoon, and about two years later it found its way into the lagoon, and from the mill down to its outlet in the Pioneer river it is one mass, and it seems to me the species has a good chance of smothering the beautiful *Nymphaea grandiflora* which grew there abundantly, with many other aquatics, *Vallisneria spiralis* among them.

The "Hyacinth" has come to stay, and I have no doubt the other species will have to give way, but so far as a great aquatic display is concerned, the inhabitants have not much to complain about, except the consequent loss of variety. The lagoon was a favourite resort of many aquatic birds, black swan, geese, pelicans, a variety of the stork genus, ducks in thousands, with a host of smaller birds; but although there is still an open stream in the middle where the water is very deep, there is little doubt but that even this piece of clear water will be covered, then the birds may walk on the top, but it is not likely that will suit them. When I first took charge of this nursery there were several acres of the lagoon partially covered by a floating grass; the whole substance was not more than a foot thick, and the bottom portion was mud, and yet a number of cows and horses could walk about and graze on it, and I knew only one horse go through it. This accident gave me a good deal of trouble, for it was just in front of my house, which was on the bank, and I knew the horse must die and that we should be poisoned by the smell of its decaying carcass. There was nothing to be done but to cut a passage through the floating substance out to the clear opening with a hay-knife, and by the help of the boat the horse was dragged down till we got to a place where we could clear a track where he could walk out as soon as his feet touched the bottom. We wanted to see the clear water and the *Nymphaeas* and the birds, but our enjoyment was

short-lived, for *Anacharis alinastrum* very soon took its place.

Azolla rubra formed large patches as it was driven to lee by the wind, making the surface of the water a bright red, and it is still struggling for an existence among the Hyacinth. The Hyacinth would no doubt flower in English tanks [It does. Ed.] if it had all the sunshine that could be given it. Here, on December 21, our longest day, the plant had sunshine soon after 4 A.M., and it continued until nearly 6.41 P.M. At that time of the year the sun's direct rays vary from about 160° to 176° at midday. *D. Buchanan, Mackay, Queensland.*

PLANT NOTES.

CRASSULA COCCINEA IN THE OPEN.

In the month of July the gardens at Tresco Abbey, Isles of Scilly, glow with great masses of this brilliant South African plant in full flower. It is a favourite for conservatory decoration from its bright colour and its sweet scent. In the Isles of Scilly it is perfectly hardy, and I saw it three years ago doing well in a friend's garden in the neighbourhood of Penzance, where it is absolutely unprotected during the winter. After



FIG. 45.—DIMORPHOTHECA AURANTIACA: FLOWERS ORANGE-COLOURED.

DIMORPHOTHECA AURANTIACA.*

For the opportunity of illustrating this South African plant we are indebted to Mr. Gumbleton. It is a glabrous perennial, with linear-oblong thick leaves and solitary heads, like those of a Marigold, of very vivid orange colour. The bracts of the involucre are linear, acute entire, with a line of rough hairs along the centre.

Messrs. Barr & Sons, who introduced the plant, tell us that the flowers only expand in the sun, and are then very pretty, being of a glossy golden-salmon, with black central ring. The plant grew with them 9 inches high, and continued flowering for a long period.

* *Dimorphotheca aurantiaca*.—*D. C. Prod.* vi. (1837), p. 72, Klein, Namaqualand. *Calendula Tragus*, *Botanical Magazine*, t. 408; flowers yellow.

seeing it in that garden I procured a good plant and put it in the open, where it has passed through two winters without damage. It is now in full bloom, and is bearing thirty-seven flower-heads, the largest of which is about 5 inches across. It makes a vivid spot of colour in the garden, its bright hue being intensified by a plant of *Campanula pelviformis* growing close by, about a hundred of whose saucer-shaped, French-gray flowers are now expanded.

ARGEMONE GRANDIFLORA.

Considering its great beauty it is surprising that this plant is not more grown, but it is rarely met with in gardens. Its flowers are very much like those *Romneya Coulteri*, being white, with a central bunch of yellow stamens. They are, however, considerably smaller, being about

4 inches across, while a bloom of the *Romneya* that I measured this morning was 7 inches in diameter. The first flower of the *Argemone* expanded on June 23, and it will continue in bloom for a good four months. The flowers last little longer than a day, but are produced in such profusion that their fading is unnoticed. This morning I counted forty-one expanded blossoms on my plant. The *Argemone* is generally considered an annual, but my plant threw up strongly from the base this spring, and is now 4 feet in height and as much through. The grey-green, spiny leaves associate charmingly with the pure white flowers, and the plant makes a pretty picture for many weeks. *S.W. Fitzherbert, South Devon.*

THE ROSARY.

CLASSIFICATION OF ROSE SPECIES.

To the number of the *Journal of the Linnean Society* lately issued, Mr. Baker contributes a revised classification of Roses (1905). The catalogue now published includes the names of the species, varieties, and principal hybrids, but does not attempt to enumerate the innumerable garden-forms, and is intended to replace that given in our columns by Mr. Baker on August 15, 1885, p. 199, and reprinted in the *Journal of Botany* for the same year, p. 281.

The principal groups are enumerated in the following table, the total number of species admitted being sixty-eight, with numerous varieties and still more numerous hybrids.

ANALYTICAL KEY TO THE GROUPS.

Leaves simple, exstipulate ...	I. <i>Simplicifoliæ</i> . [1]
Leaves compound, stipulate.	
Styles united in a column which is protruded beyond the disk ...	II. <i>Systylæ</i> . [10]
Styles free, not much protruded.	
Stipules free, deciduous...	III. <i>Banksianæ</i> . [3]
Stipules adnate to the petiole.	
DIACANTHÆ.	
Prickles often in stipular pairs.	
Fruit persistently hairy. Bracts crowded, deeply incised ...	IV. <i>Bracteatæ</i> . [2]
Fruit glabrous.	
Hip green, with a thick skin ...	V. <i>Microphyllæ</i> . [1]
Hip red, with a thin skin ...	VI. <i>Cinnamomeæ</i> . [21]
HETERACANTHÆ.	
Prickles scattered, very unequal.	
Larger prickles long, slender, straight...	VII. <i>Spinosissimæ</i> . [8]
Larger prickles hooked, stout ...	VIII. <i>Gallicanæ</i> . [2]
HOMOCANTHÆ.	
Prickles scattered, uniform.	
Leaves glabrous or slightly hairy ...	IX. <i>Caninæ</i> . [8]
Leaves very hairy ...	X. <i>Villosæ</i> . [5]
Leaves very glandular beneath ...	XI. <i>Rubiginosæ</i> . [8]

The figures in the brackets following the names of the groups [8] indicate the number of primary species they contain.

FOREIGN CORRESPONDENCE.

YOKOHAMA.

MR. REGINALD J. FARRER, author of the *Garden of Asia*, when travelling in Japan three years ago, visited the Nikko mountains early in May. He wrote to me from there glowing descriptions of the hills, and of the spring-time flowers, but his unbounded admiration he reserved for the mountain Azalea, which he said if he had its naming should be called Azalea "gloria." This year all vegetation was late, so that it was not until the end of May that I found the Azaleas blossoming in all their glory. They grow in masses,

along the last part of the road leading from Nikko to Lake Chuzenji (4,373 feet above the sea-level), and the colours range from the most delicate white and light pink to a dark pinkish-purple. The bushes are 20 to 30 feet high, and are certainly very old. They grow as undergrowth under large trees and between stones, and it is rather difficult to get plants that will continue to thrive.

Years ago we brought down many of these bushes, planting them in our garden here, where all but one succumbed to the damp, hot climate of Yokohama. Owing to Mr. Farrer's inducements, however, I have now made arrangements to collect some again direct from the mountains, keeping them there until the shipping season arrives. Thus I hope to be able to satisfy Mr. Farrer's wish of introducing these Azaleas into England.

Higher up, at Lake Yumote (5,000 feet), the *Rhododendrons* (*R. Metternichii*) showed their blossoms. The blossoms are a delicate pink, exceedingly beautiful, but, like the Azaleas, good specimens are difficult to obtain. *Glauclidium-palmatum* (Jap. nom. Shirane Aoi) was also flowering in Yumote—a lovely blue blossom, which should be grown in every alpine garden.

Another jewel of the Nikko range I discovered at a small garden in Nikko, namely, a tiny *Cypripedium* (*C. debile*), of which I sent you a pencil sketch, natural size, by the last mail. The flowers are not larger than a Pea, and hang from a two-leaved stem about 2 inches long. I have instructed the man to gather more of these for me, and I shall send them to Kew and to Mr. Farrer, and hope that they may succeed in cultivating them successfully, and in showing them in one of the Horticultural Society's meetings. *Alfred Unger.*

The Week's Work.

THE FLOWER GARDEN.

By W. A. MILLER, Gardener to LORD HENRY C. BENTINCK, M.P., Underley Hall, Westmoreland.

Zonal Pelargoniums.—The propagation of the varieties should be commenced by the middle of the present month. Where a large quantity is required, it will economise space and labour to use boxes about 20 by 15 by 3½ inches, with ample drainage holes. A box of this size will accommodate forty-eight cuttings. Put some rough material in the bottom, then press firmly in a mixture of sandy loam and leaf-mould. Over this spread a layer of sand, but leaving ½ inch of space at the top for convenience in watering. With a sharp knife make the cuttings 9 inches long, and dibble them in firmly without bruising them. Place the boxes in a sunny position on a trellis a few inches from the ground. Saturate the soil well; afterwards a moderate amount of moisture will be sufficient. Ivy-leaved and sweet-scented Pelargoniums can be treated in the same manner. Geld, silver and bronze-leaved varieties, also tricolor varieties, require more careful treatment, especially in cold and wet localities. It is safer to put the cuttings in pans or in 8-inch pots, and to place them in well-ventilated frames.

Violets.—Keep the foliage healthy and free from red-spider by syringing the plants vigorously two or three times a week. Use a reliable insecticide, such as "Spidaicide," if the pest is persistent. Some varieties, if allowed, would send out a quantity of runners. Keep them pinched off as they appear.

Borders of Herbaceous Plants, &c.—Anticipate the wants of tall-growing plants by affording them stakes in good time. Herbaceous Lobelias and Phloxes require an abundance of water. Any extra effort in this way will be well repaid by larger trusses and a longer flowering period.

Eucryphia pinnatifolia is a deciduous shrub with distinct Rose-like foliage of a deep glossy green colour. The flowers are 2½ to 3 inches in diameter, with pure white petals and numerous golden anthers. They are produced in July and

August. It makes a good wall-plant, thrives well in sandy peat, and requires sunshine and shelter from strong winds.

Abelia rupestris is a desirable wall-plant, flowering from August onwards; it has pale pink, tubular, sweet-scented flowers. A loamy soil suits the plant, and it can be increased by cuttings inserted at the present time.

Hibiscus syriacus (*Althea frutex*).—The many varieties of this ornamental autumn-flowering deciduous plant are useful for planting against walls and in warm corners. The plants will grow in ordinary garden soil.

Azara microphylla is a neat plant for walls, and will thrive as a standard in sheltered, dry positions.

Potentilla fruticosa is a native shrub with dark-green foliage, and produces numerous yellow flowers in August and onwards. It will grow in any situation.

THE ORCHID HOUSES.

By W. H. YOUNG, Orchid Grower to SIR FREDERICK WIGAN, Bart., Clare Lawn, East Sheen, S.W.

The *Mexican Lælias*, of which *L. anceps* and its varieties are the most important, should now be making sturdy progress, and in consequence must not suffer from lack of water at the base or moisture in the air. The daily treatment during fine weather should be as follows:—Increase the ventilation early in the day; afford water to those plants approaching to a dry condition soon after 9 o'clock A.M., and afterwards give them a good syringing. As the sun increases in power lower the blinds, which should be thin in texture or made of laths. About 3 o'clock P.M. remove the shading, give another good syringing, and close all the ventilators for about three hours, after which they may be opened again for the night. The extent to which they are left open must be determined by the force and direction of the wind or other conditions, but so long as the temperature outside does not fall much below 50° no harm should happen to the plants inside. During dull and wet weather considerable modification of the above treatment should be adopted, especially in the matter of spraying and watering. It is a noteworthy fact that plants of the *L. a. Sanderiana* section always produce floral scapes more freely from those growths which start late in the summer than from such as grow early in the season.

Lælia autumnalis and its variety *alba* are late-growing kinds that develop rapidly once they have started, but need to be kept dry until that time. When roots are appearing fresh peat and sphagnum-moss may be afforded, afterwards increasing the supply of water until the pseudo-bulbs are almost their full size, when the supply should be again decreased. The same remarks apply to *L. albida*, *L. Gouldii*, *L. furfuracea*, and *L. Eyermanniana*. *L. usajalis* has completed its bulbs, and will need full exposure to the sun and air, with daily syringings.

Miscellaneous.—Plants of *Cœlogyne cristata* should be afforded liberal supplies of water whenever the soil shows signs of drying. Old-established plants would derive benefit from occasional applications of weak liquid farmyard manure, or a solution obtained by placing a sack containing cow-dung in a tub of rain-water. Syringe the plants over twice a day whenever the weather is fine. *Pleiones* now completing their pseudo-bulbs may also be given an occasional application of manure-water. As the tips of the leaves decay, cut them off, or damage may be done to the healthy parts by contagion. The rooting medium should be afforded a moderate amount of water so long as the leaves remain; but when the new growths containing the floral scapes appear a very limited quantity will suffice. *Cœlogyne Schilleriana*, closely allied to the above, should, as soon as its tiny bulbs have developed, be removed from the warm-house to a lighter position in a *Cattleya*-house, keeping the plants well supplied with water so long as the leaves remain fresh. Like the *Pleiones*, this plant is deciduous. All *Vandas*, *Acrides*, *Angraecums*, *Saccolabiums*, &c., of a similar nature, will need a plentiful supply of water during the present month and in September, but spraying overhead should be omitted when the conditions are unfavourable to rapid evaporation. *Cattleya* and *Lælia*-*Cattleya* hybrids should

have their needs attended to as they attain to a suitable condition for potting, &c. They are so numerous and varied that it is impossible to do anything but generalise as to treatment. Such as L.-C. callistoglossa, L.-C. Henry Greenwood, L.-C. Dominiana, &c., however, which flower as soon as the growths are nearly completed, may be potted as soon as new roots are expected or have appeared, treating them carefully in the matter of water for some little time afterwards.

THE KITCHEN GARDEN.

By W. FYFE, Gardener to Lady WANTAGE, Lockinge Park, Wantage.

Onions.—To obtain plants to stand through the winter seeds should be sown from the middle to the end of August. The general result of too early sowing is that a good number of the plants run to seed, and may be considered worthless unless for immediate use. Suitable varieties for sowing in August are Giant Rocca, Giant White Tripoli and Ailsa Craig. Sandy soil that is well drained and manured will be found most suitable for Winter Onions. The drills should be drawn about 1 inch deep and 1 foot apart. When the plants appear above ground keep a sharp outlook for worms, which not unfrequently draw them down into the soil. Lime is the best remedy to use against this evil. Onions that were raised early, if intended for exhibition, should be freely supplied with water and occasional doses of liquid-manure. In order to secure perfect finish, a clear, bright, pale-straw-coloured skin, firm and solid round the neck, remove all brown or decaying skins as they appear, and see that the bulbs are not buried too deeply in the soil. Remove all decaying matter from underneath as well as on the top, so that light and air may pass freely under the bulbs, and thus secure that clean, fully-matured condition which adds so considerably to their appearance upon the exhibition table.

Turnips.—Continue to sow seeds for producing Turnips in quantity in autumn and early winter. Give daily attention to the young plants as soon as they appear, and where the lawn-sprinkler cannot be used to keep the fly from destroying the plants, dust them with wood-ashes early in the morning while the dew is upon them. Plants raised from earlier sowings will now be growing rapidly, and thinning should be done as soon as this is necessary. A variety having sweet tender white flesh is Early Snowball.

General Work.—Attention will now be required by all the newly-planted crops, such as Winter Greens, Endive, Lettuce, &c., and particularly late crops of Peas, which should be given soakings of water, also spray the plants with water as late in the day as possible. Hoeing and mulching the surface soil, with applications of water in addition, are the best means of prolonging the crops when the rainfall is short. Autocrat and Gladstone are the most reliable varieties.

FRUITS UNDER GLASS.

By F. JORDAN, Gardener to Dr. CORBET, Impney Hall Gardens, Droitwich.

Early Vines.—If the foliage of early Vines which were cleared of fruit in June is quite clean, less syringing will now be required, but it may be done occasionally after a hot day with advantage. The laterals having been allowed to grow a little may now be shortened to encourage the wood to ripen thoroughly. Examine the borders whether outside or inside, and if it is known that the drainage is in good condition, liberal applications of water may still be given. If, however, any of the borders are in an unsatisfactory condition, the sooner they are renewed the better, because the Vines will then have time to make fresh roots while the foliage is still healthy. The roots may only require to be lifted, in which case a portion of the old soil may be returned, with an addition of fresh compost to lay the roots in. It is often owing to insufficient waterings that the roots penetrate deeply in search of moisture, and they can only be brought to the surface again by lifting. Get a sufficient quantity of soil in readiness to complete the work; using a compost similar to that recommended in the Calendar for April 29, with a slight addition of Vine

manure according to the quality of the loam that is being used. Afford water to the border a few days previously, and when commencing the work get out a trench at the greatest distance from the Vines, gradually working out the old compost with a fork, and taking great care not to damage the roots, which must be tied up in bundles and kept moist until they are laid in the new soil. See that the drainage is in proper condition, placing new turves, grass side downwards, over the material to form the base, making each layer firm afterwards as the work proceeds until all is finished. Examine the roots, and remove all injured parts. Shorten some of the strongest, and spread them out evenly at different depths near to the surface. Shade the Vines, and syringe them frequently while the work is in progress. If the roots are growing outside and inside, and one of the borders is left undisturbed, no check to the Vines will be noticeable this season. Apply a good covering of rough litter to the border, in order to retain the warmth. Do not force the Vines severely next season, but give them time to recover.

Pot Vines.—The earliest plants which are intended for starting early in November will soon have completed their growth. Keep all laterals in check, and gradually reduce the supply of water at the roots as the Vines show signs of ripening. Stand the plants in a cool, fully-ventilated house, or place them against a south wall, securing the canes to supports to prevent them being damaged by winds. Prune the Vines as soon they are ready for the operation, and keep them cool and moderately dry until required for starting, or until there is frost.

PLANTS UNDER GLASS.

By A. BULLOCK, Gardener to E. J. WYTHES, Esq., Copped Hall, Epping, Essex.

Bulbs.—In order to obtain a useful supply of flowers for cutting from October onwards, it is necessary that a start be made in the present month with the earliest bulbs that are obtainable. Roman Hyacinths, Narcissus, Snowflake, Freesias, &c., which are the first to be had, should be potted as soon after they are received as possible, and when they have been given a good watering applied through a rosed watering-can, plunge the pots containing the Hyacinths and Narcissus in ashes, allowing them to remain there until the bulbs have made 1 inch of growth. Let the Freesias be stood in a cold frame, slightly covering the surface of the pots with sifted leaf-soil or Cocoanut-fibre, which should be removed as soon as growths begin to show through.

Lilium candidum, if given proper care and attention, will flower from February onwards either in pots or boxes. The bulbs should be procured now and potted up without delay, leaving sufficient room at the top of the pots for the application of a top-dressing at a later date. Stand the pots in a cool frame, and water the soil once. Towards the end of November many of the bulbs will be ready for starting into growth. At no time must hard forcing be resorted to. My practice is to place a batch in an early-startedinery, the conditions of which suit the bulbs admirably, and to let them remain there until the flower-buds are formed, when if necessary more heat is afforded to hasten the production of flowers. After flowering the plants should be hardened and planted out in the grounds.

Cyclamen.—Seeds should be sown at the present time, using as a compost finely-sifted potting soil in well-drained pots or pans. Let the pans be placed on a shelf near to the light, in a warm moist atmosphere, where they can be shaded from bright sunshine.

Other Seeds.—Seeds of *Browallia speciosa* major, *Lobelia tenuior*, *Schizanthus* in variety, &c., should also be sown for flowering in the early spring, raising the plants in moderate heat.

Begonia Gloire de Lorraine.—The plants earliest propagated are now in a condition to be given liquid manure at the roots. This should be afforded often and much diluted. For ordinary decorative purposes pots 6 inches in diameter are large enough. Continue to tie in the growths by slinging them to one centre stake, and do not allow the plants to be crowded toge-

ther. Remove the flowers as they appear until it is desired the plants should bloom.

General Remarks.—Let *Salvias*, *Bouvardias*, zonal *Pelargoniums*, &c., intended for autumn flowering, be given copious supplies of liquid manure, and a slight dusting of Clay's Fertiliser once a week. Pinch out the flower-buds of *Bouvardias* once more.

THE HARDY FRUIT GARDEN.

By W. H. CLARKE, Gardener to Sir WILLIAM PLOWDEN, Aston Rowant House, Oxon.

Raspberries.—Directly the fruit has been gathered, remove the old canes close down to the ground with a sharp knife, and if the young canes which are left for fruiting next season are too numerous, thin them out at the same time, so that they may have the benefit of a greater degree of sunshine and air. Five to eight canes are quite enough to leave, either for tying to trellises, for arching, or for other modes of training that may be adopted. If they are to be tied to upright stakes, three or four canes will be sufficient; but generally in this case the stools are planted closer together.

Autumn-fruiting Varieties.—The young canes of these should be well thinned out, and in some cases where growing very strong they throw out lateral growths, which should also be removed.

Strawberry-beds.—Any ground now occupied with plants that are not to be kept for further fruiting should be cleared, and it will be found quite suitable for producing good crops of Kales or Broccoli without further preparation. Ground intended for plants required to fruit next season, and which has not previously been prepared, should be commenced on at once, trenching the soil and working into it two layers of well-decayed farmyard manure. The rooted runners should be planted out by the middle of the present month if the best results are to be had next season. Alpine varieties will now be fruiting freely, and may advantageously be given a good soaking with water.

Examine *Cherry trees* from which the fruit has been gathered, and cleanse the foliage of black-fly. If pyramids are badly attacked at the extremities of the shoots, remove the extremities. Trained trees should have their branches neatly secured to the wall or fence. Carefully examine the trees and see that there are no ties which will cut the bark, and thus produce "gumming" and loss of the branch. Thoroughly saturate the soil about the roots with water if it is at all dry.

Currants.—The shoots of Red Currants should be topped where this has not been done already. If the fruit is required to hang long the removal of such "tops" will help to keep it clean, removing as it does the insects whose excrement adheres to the fruit.

Fruit stocks for budding, owing to the dry weather, are not in the best of condition for the process, and where it is found the bark does not part easily from the wood, a good soaking of water should be applied to the roots a day or two previous to "working" them. Select the buds from growing shoots, because difficulty is sometimes experienced in removing the wood from the bud if growth has ceased. Growths which are very sappy must be avoided also.

PUBLICATIONS RECEIVED.—*Annual Report on the Botanic Gardens, Singapore and Penang*, for 1904. By H. N. Ridley, Director of Gardens, Straits Settlements. The new building, for the Herbarium and Museum, was furnished as far as funds would permit, but more cases are much required. Many additional specimens were acquired. In the Economic Gardens experiments were made with fibre and rubber plants.—From the Imperial Department of Agriculture for the West Indies: *Report on the Experiment Station, Tortola, Virgin Islands*, 1904-5. Useful experiments were again carried on in the experiment plots with Sugar-cane, Onions, Cacao, Pineapples, Limes, Corn and Cotton. The peasants arc, fortunately, taking up the cultivation of Cotton.—Laves' Agricultural Trust. *The Rothamsted Experiments*. Plans and summary tables, arranged for reference in the fields, 1905. *The Analysis of the Soil by means of the Plant and calcium cyanide*. By A. D. Hall.—From the *Journal of Agricultural Science*, January, 1905 (Cambridge University Press). *On the Accumulation of Fertility by Land allowed to Run Wild*. By the same author, and published under the same conditions as the above-named pamphlet.—From the Agri-Horticultural Society of Madras: *Rules and Regulations of the Society, Price List of Flower and Vegetable Seeds, The Annual Meeting, March 31, 1905; Proceedings of the Society, January to March, 1905.*

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Letters for Publication, as well as specimens and plants for naming, should be addressed to the EDITOR, 41, Wellington Street, Covent Garden, London. Communications should be written on ONE SIDE ONLY OF THE PAPER, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

Special Notice to Correspondents.—The Editor does not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editor does not hold himself responsible for any opinions expressed by his correspondents.

Illustrations.—The Editor will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens, or of remarkable plants, flowers, trees, &c.; but he cannot be responsible for loss or injury.

Local News.—Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

Newspapers.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY, AUG. 15. { Royal Horticultural Society's
Committees Meet.
{ Harpenden Horticultural Show.
WEDNESDAY, AUG. 16. { Wilts Horticultural Society's
Show.
THURSDAY, AUG. 17. { Taunton Deane Horticultural
Society's Show.
SATURDAY, AUG. 19.—Sheffield Flower Show.

SALE.

WEDNESDAY, AUGUST 23.—
Dutch and other Flowering Bulbs at Stevens' Rooms.
(For further particulars see our Advertisement columns.)

AVERAGE TEMPERATURE for the ensuing week, deduced from observations of Forty-three Years at Chiswick—62°3'.

ACTUAL TEMPERATURES:—

LONDON.—Wednesday, Aug. 9 (6 P.M.): Max. 66°; Min. 56°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—Thursday, Aug. 10 (10 A.M.): Bar., 30°0'; Temp., 68°. Weather—Bright with pleasant breezes.

PROVINCES.—Wednesday, Aug. 9 (6 P.M.): Max. 63°; E. Coast of England; Min. 55°, W. Coast of Scotland.

Gardens of Sweet-smelling Flowers.

WHY do we not more often meet with a garden which is something more than a purely "show" garden—one filled with fragrant flowers and foliage, enclosed within shrubs and low-growing trees? Such a garden would find countless admirers, and the members of a family once possessing such a treasure would retain a recollection of its homely delights their whole life long.

We hold in remembrance an old-fashioned garden on a nobleman's estate that was planted on the lines here advocated. A long border, perhaps 150 yards in length, was divided into beds of 4 feet in width running from the front to the back of the border. These were each planted with one species. There were the shrubby Honey-suckle, *Lonicera xylosteum*; Violets, such as the Neapolitan; single and double flowered Carnations of the florists' varieties, clove-scented Pinks and Picotees, the true wire-edged sort, now less common than formerly. The larger-flowered *Mimulus*, prepared in large pots, were set out freshly every year, and possessed the true Musk odour; the small-flowered Musk being much more powerfully scented than the vaunted Harrison's variety, and therefore greatly valued, perfume in a Musk being of greater importance than size of bloom. *Polyanthus* with a delicious fragrance, Moss, Provins, and Centifolia Roses were also included. Tea-scented

Roses were at that time but little known, but there was Devoniensis, then just brought into commerce. Most of the best hybrid Perpetuals at that time were noted for their fragrance, as is not always the case with the later introductions. These were grown either in the beds or as "pillar" Roses at the margin of the border. Bulbs of various species found a place, and there were hundreds of the Pheasant's Eye or Poet's Narcissus, Jonquils, and Tazettas. What a show could now be made with the new hybrids, many of which are also fragrant.

Some beds were prepared annually for planting with Brompton and Ten Week Stocks, with Wallflowers of the dark brown-coloured single varieties, with *Martynia* fragrans, whose handsome *Gloxinia*-like purple flowers have sweet fragrance. There was always a bed or two set apart in May for *Salvia patens*, which bore a profusion of its lemon-scented, broad, blue flowers. *Hepatica triloba*, white and blue-flowered, was used as edging to some of the beds, and golden-leaved Thyme and *Thymus lanuginosus*, a very close-growing creeping species, to others. Masses of Bourcault and Ayrshire Rambling Roses, of the common Jasmine and of *Clematis Flammula*, with its balsamic aroma, grew on walls and the tall trellises adjacent. This old border would have been rendered still more delightful had it been faced with a similar one planted with shrubs having sweet-scented flowers or leaves. Of such may be enumerated Sweet Verbena (*Aloysia citriodora*), *Buddleia globosa*, tree Ivies, herbaceous *Pæonies*, some varieties of which are pleasantly fragrant; the Chaste bush (*Vitex Agnus-castus*), *Calycanthus floridus* (Carolina Allspice), Lilacs in variety, *Philadelphus coronarius*, and others; the baccate-fruited Crabs, Ghent Azaleas, most of which have a refreshing fragrance, especially when planted in masses together; *Daphne Mezereum*, *D. cneorum*, and Sweet Briars, of which we now have so many varieties, beautiful alike in blossom and in fruit.

There are several evergreens, some of which are sweet-scented, not the least important of which are the common Bay, *Laurelia aromatica*, if it could be procured; Lavender, *Daphne Blagayana*, *Mahonia Aquifolium* and other species of *Berberis*, *Eleagnus angustifolius* and *E. argenteus*.

In conclusion, it may be said that in addition to sweet-scented annuals, the scented-leaved varieties of Cape Pelargonium, *Heliotropes*, &c., could be fittingly introduced into such a garden for summer flowering; and the names of many other suitable fragrant plants will occur to those readers who are conversant with plants. At the present time too much attention is bestowed on form and colour and too little to fragrance.

CAMPANULA MICHAUXIOIDES (see Supplementary Illustration).—This species was originally described from specimens gathered on Cadmus mountain in Caria, and its botanical characteristics are fully set forth in Boissier's *Flora Orientalis*, v. (1875), p. 938. The lower leaves are like those of *C. alliariæfolia*, the flowers are nodding, about the same size as those of *C. rapunculoides*, with the lobes of the corolla spreading like the rays of a star, and ultimately reflexed as in *Michauxia campanuloides*. The root is fleshy, and might probably be used in the same way as "Rampions."

In the specimen at our disposal, the milky juice characteristic of the genus was specially abundant. Our illustration was made by Mr. Worthington Smith from specimens obligingly furnished by Mr. Goodwin, whose note on the plant is here subjoined:—

"This is an interesting biennial species from Asia Minor, which reached English gardens through the agency of Messrs. Haage & Schmidt, of Erfurt, who first distributed seed about three or four years ago. It has proved perfectly hardy with me, growing in an herbaceous border, and flowering from about the end of May till the end of June. The plant is of tall, slender growth; the flowers are a dull, pale blue, with the corolla cut down to the calyx-tube into slender segments. Its height (my tallest plant is over 5 feet) and the light way in which the flowers are disposed gives it rather a graceful appearance, but as a garden plant it perhaps needs improvement, as too few of its flowers are out at the same time. The Kew authorities inform me that it flowered with them for the first time last year. My plants have already ripened plenty of seed. Arthur R. Goodwin, *The Elms, Kidderminster.*"

ROYAL HORTICULTURAL SOCIETY.—The next meeting of the Society's Committees will take place on Tuesday next, August 15, when a lecture by Professor J. CRAIG, of Cornell University, on "Orchard Management" will be given. The lecture will be illustrated by lantern-slides.

The Council of the Royal Horticultural Society have decided to hold a trial of Tulips of all kinds at the Society's Gardens at Wisley during the season of 1906. The trial will be open to amateur and professional gardeners as well as to the trade. At least six bulbs of each variety entered must be sent. These must be duly named, and accompanied, when possible, by a short description of the origin of each variety, and a note of the class of the flower to which it is considered to belong. If by post, the bulbs should be addressed to the Superintendent, Royal Horticultural Society's Gardens, Wisley, Ripley, Surrey; or if sent by rail, the Superintendent, R.H.S. Gardens, Wisley, to Horsley station, L. & S.W. Ry., on or before November 1 next. The bulbs will be grown under exactly similar conditions, and will be inspected by members of the Narcissus and Tulip Committee, who will recommend awards to the Council.

GERARDE'S HERBAL.—Lovers of old garden literature will rejoice to hear that Messrs. METHUEN, the well-known London publishers, are contemplating the reproduction of a facsimile copy of JOHN GERARDE'S *Herball or Generall Historie of Plantes*, which was first published in 1597. The undertaking is subject to the necessary support being forthcoming, and the names of subscribers are required before the work can be embarked upon. Messrs. METHUEN, it will be remembered, recently issued a reproduction of JOHN PARKINSON'S *Pardisi in Sole*, which has been so well received that the few remaining copies are only to be procured at a much higher price than that at which it was first supplied to subscribers. GERARDE'S *Herbal* is a work of far greater bulk, and therefore more costly to produce, and if a sufficient list of subscribers can be obtained it will be issued to them at £3 3s. net, which price will be raised to £4 4s. on the day of publication.

CO-OPERATIVE FLOWER, FRUIT AND VEGETABLE SHOW AT THE CRYSTAL PALACE.—On Saturday, August 26, the Annual Co-operative Flower, Fruit, and Vegetable Show will be held at the Crystal Palace. The schedule is a comprehensive one, and a good show is expected. Apart from the general list of prizes offered by the Society, special prizes are being



CAMPANULA MICHAUXIOIDES; FLOWERS PALE BLUE: HEIGHT 5—6 FEET.:
AS GROWN BY ARTHUR R. GOODWIN, ESQ.

offered by Messrs. SUTTON & SONS, the Agricultural and Horticultural Association, and others. Entry forms may be obtained from the Secretary, Flower Show, 22, Red Lion Square, London, W.C. The Agricultural Organisation Society is this year for the first time presenting a handsome Certificate of Merit to all winners of 1st prizes.

THE ROYAL BOTANIC.—We are asked to publish the following statement:—Mr. C. BRINSLEY MARLAY presents his compliments and begs to enclose the principal points of the statement he made at the special meeting held on June 23 at the Royal Botanic Gardens in order to introduce a resolution raising the subscription to Fellows and members from 2 to 3 guineas annually. He does this in case he made any mistakes in conducting the proceedings, as his position was one of some difficulty, in order also that the much larger body of Fellows, who were not present, may comprehend the reason of the proposal. An estimate of the average expenditure of the Society for the last seven years is enclosed, which places the matter clearly before the Fellows. The simple reason that the Finance Committee appointed by the Council, and of which Mr. MARLAY was Chairman, asks unanimously for this rise is that the subscription which when the Society was first formed sixty-five years ago was amply sufficient, is so no longer. This is not owing to the necessity of increased outlay, so much as to the rise in wages, materials, rent and taxation.

1. Wages of gardeners have risen from 15s. in 1839 to 25s. in 1905.
2. Taxes from £17 14s. 4d. to £409.
3. Price of materials nearly doubled.
4. Rent from the first lease, 1839, to the one granted in 1901, £285 to £450.

In addition to the large increase here stated, the Finance Committee had to consider seriously the necessity of a sinking fund in order to meet interest on and redemption of the debentures, which amount to £28,500. Hitherto there has been no provision for this purpose, which is absolutely necessary if the finances of the Society are to be placed on a sound basis. The financial statement which accompanies these notes show that without allowing for any reserve fund the annual deficit on an average of seven years is £222. If a reserve fund is added, of £822. Of course the question arises whether so large a sum as £600 is necessary to be placed to the reserve fund. It was the opinion of the Finance Committee that it was necessary. The ultimate decision on this and on other points will rest with the Fellows. Mr. MARLAY would add that the cost of public parks and gardens in London is said to have more than doubled during the last few years. The cost of gardening in London, it must not be forgotten, is far more expensive than in the country. It is essential that plants under glass should be continually washed, and outside plants syringed whenever it is possible to do so. Even heavy rain does not remove dirt and soot. This washing is a heavy expense, and many nurserymen are leaving the near neighbourhood of London, or hiring country ground in addition to a London establishment. The opponents to any change in the rate of subscription may say that this would not be necessary if the Gardens were developed and made more attractive. But this development has been going on for some time, and it is difficult to see what can be done without altering completely the character of the Gardens, and still further diminishing the privileges of the Fellows who really keep up the Gardens. The Society was in reality far better off when the Fellows possessed exclusive rights, and the public was not admitted without difficulty. It is impossible to calculate on the success of any entertainment in the open air as a source of income. The two last summer shows, owing in

great measure to the weather, resulted in considerable financial loss, although they were admirably arranged. The visitors on Bank Holiday do little more than pay for a good band. In conclusion it must not be forgotten that amongst the 2,000 Fellows of the Society the tastes are different—some want quiet, some amusements, some sports, others a playing-ground for their children. It is the duty of the Council to consider these wishes, and to meet them where they can. The ultimate decision rests with the Fellows; it is for them to decide when the legal period expires during which the resolution is hung up for their consideration whether the subscription should be raised or not. Mr. MARLAY is sure they will consider the question from all points of view; and he may add that any suggestions any Fellow may make, any proposal for the maintenance and improvement of the Society, will be given every facility of discussion and very carefully considered. There is no question of insolvency. The gardens, the houses, and plants are in better condition than they have been for a long time, and possess admirable features for those who only require a garden in the centre of London where rest and quiet may be found, birds may be heard to sing, and where the flowers which will grow in London, and they are more numerous than is generally known, display their beauty and give forth their fragrance. Mr. MARLAY begs any communications arising from the proposal to raise the subscription should be sent to the Secretary at the Gardens, Regent's Park.

ROYAL BOTANIC SOCIETY OF LONDON.
AVERAGE OF INCOME AND EXPENDITURE BASED ON THE SEVEN YEARS 1898 TO 1904.

INCOME.		EXPENDITURE.	
ORDINARY.		ORDINARY.	
Subscriptions, &c. ...	£2769	Interest on Debentures, Rent, &c. ...	£1442
Donations ...	21	Garden Expenses, Fuel, &c. ...	1992
Rent of Club Rooms ...	1000	Office Expenses, Stationery, Meetings, &c. ...	331
(But reduced by Profits on "Extraordinary" see under.)	—£3790	Salaries, Record, &c., Scientific ...	788
			£4553
	£4553		£4553
EXTRAORDINARY.		EXTRAORDINARY.	
Exhibitions and Fetes ...	£288	Exhibitions and Fetes ...	£396
Garden Parties, &c. ...	844	Garden Parties, &c. ...	147
Public Admissions ...	108	Public Admissions ...	155
	£1240	Profit ...	541
	£1240		£1240
SUMMARY.		SUMMARY.	
Profit from Extraordinary Sources ...	£541	Deficit from Ordinary Sources ...	£763
Net Deficit if Reserve be created ...	822	Proposed Transfer to Reserve for Liquidation of Debentures ...	600
	£1363		£1363
		This item is provisional and intended to provide for the redemption of the Debenture Liability.	

MISSOURI BOTANICAL GARDEN.—The sixteenth Annual Report contains the report of the Director, Professor TRELEASE, on the working of the garden during the year 1904. The total number of persons who visited the gardens was 316,747, a number greatly exceeding that of any previous year. This increase was, of course, due to the large number of visitors to the St. Louis Exhibition—viz., 12,804,616—from which figures it is inferred that about one in ten of those who went to the exhibition also visited the garden. The authorities of Mill Hill School, near London, was educated, contributed a number of photographs illustrating the school. There were exhibited in connection with the portrait of the founder, and with various views in the gardens,

a full series of the publications illustrative of its progress during the fifteen years of its existence. Among the scientific papers which form the bulk of this volume is one by Mr. ALWIN BERGER, entitled a systematic revision of the genus *Cereus*. Mr. BERGER establishes no fewer than eighteen subgenera, but remarks that Cacti as well as other succulent plants can never be understood unless they can be studied from a large collection in a sub-tropical garden where they are grown in quantities in the open. From this point of view the author acknowledges his obligations to Sir THOMAS HANBURY. Twelve plates illustrate this useful monograph. Other memoirs are included, of which our limitations preclude further notice. We cannot, however, omit to mention the very remarkable paper on the dehiscence of anthers by apical pores in certain widely separate families, and on the co-relation between this peculiarity and the agency and geographical distribution of insects. A comparatively new field of observation and research is here opened out by Dr. J. A. HARRIS.

A BOOK ABOUT SALADS.—This little book by ALFRED BROADBENT, and published by him in Manchester, has a threefold object:—"To spread a knowledge of the beneficent properties possessed by roots and green vegetables; their preservation by appropriate methods of cookery, and to urge the need for more general cultivation in the home garden and elsewhere of many salad vegetables now so rarely grown." It is written from a rather one-sided point of view, and while agreeing that salads are wholesome we cannot follow the author in all his opinions. He might have given a much larger list of salad plants, broad-leaved Endive and several other favourites at home and abroad being omitted. It may be "extravagant" to throw away the water in which Onions or Cabbages have been boiled; but we think most people will find excellent reasons for not storing it.

PLANT-FOOD CONSTITUENTS USED BY BEARING FRUIT-TREES.—The New York Agricultural Experiment Station, in its Bulletin for April, 1905, publishes an elaborate report on this subject, from which we extract the following:—

The work was undertaken for the purpose of ascertaining the amount of nitrogen, phosphoric acid, potash, lime, and magnesia used in one growing season by bearing fruit-trees.

One to three standard varieties of each of the following kinds of fruit-trees were selected for the purpose: Apple, Peach, Pear, Plum, and Quince. The trees were typical representatives in the full vigour of bearing.

The fruit, leaves, and new growth of wood as represented by the tips of branches were carefully gathered, weighed, dried, and analysed in the case of each individual tree.

Tables are given showing the amount of each of the plant-food constituents in the different portions of each of the trees. The relations of the tabulated data presented are discussed in detail.

Peach-trees used the largest amounts of plant-food; Apple and Quince-trees, approximately alike in the results given, come second; while Pear and Plum-trees, which give results much alike, come third.

As to the relative proportions of plant-food constituents used, using 1 lb. of nitrogen as a basis for comparison, it was found that the different fruit-trees used very nearly the same relative proportions of the different plant-food constituents. The averages were as follows:—Nitrogen, 1 lb.; phosphoric acid, 0.27 lb.; potash, 1.14 lb.; lime, 1.35 lb.; magnesia, 0.45 lb.

THE NEW ZEALAND INTERNATIONAL EXHIBITION.—The Government of New Zealand has decided to hold during the summer of 1906-7 an International Exhibition at Christchurch, Canterbury, in which all the nations of the world are invited to participate. The object of the exhibition is educational, and it is intended to demonstrate the resources and possibilities of the colony as one of the world's food-producing factors, its vast mineral resources, and to draw attention to its unrivalled and varied scenery, thermal wonders, and also to the exceptional

opportunities offered to sportsmen. Further and especially it is desired to bring under the notice of the more industrial nations of the world the great field the colony of New Zealand offers as an outlet for enterprise, and for the use and consumption of all manner of up-to-date appliances, manufactures, &c. The scheme is a large as well as an important one. Applications for space, with full particulars, may be lodged with the Agent-General for New Zealand, Westminster Chambers, 13, Victoria Street, London, E.C.; or with the Secretary, New Zealand International Exhibition, Christchurch, New Zealand. Such applications should be made as soon as possible, and cannot be received after March, 1906.

NEW PLANTS FROM CHINA.—Messrs. JAMES VEITCH & SONS, of Chelsea, have published an illustrated list of new plants recently introduced from Central and Western China, and now ready for distribution. Several of these plants are of great interest and beauty, and many have been figured and described in the *Gardeners' Chronicle*, and we may add that with few exceptions all of them are hardy in Great Britain. Mr. Wilson's expeditions in search of novelties have abundantly disproved the notion that we had practically exhausted the supply of "new" plants.

KEW NOTES.

GESNERIA REGINÆ.—Several plants of this pretty and comparatively new species are now in flower in the Begonia-house. The habit of the plant is almost exactly that of a *Gloxinia*, both as regards its tuberous root and the foliage and flowers. The leaves are of a dark velvety green, the midrib and the main veins being silvery-white. They are about 8 inches in length and 5 inches in breadth, with a crenate margin. The flowers are very freely produced, being borne on a stem 4 inches high. They are a bluish-purple in colour, the corollatube being 2 inches in length and drooping, as in some *Gloxinias*.

It is a delightful plant, and may be easily propagated from leaves in the same manner as *Begonia Rex* is propagated. It requires stove treatment.

IXORA COCCINEA VAR. LUTEA.

A small batch of this distinct variety may be seen in the stove. It has been in cultivation since 1890, having been sent to Kew from the Botanical Gardens, Ceylon, in that year. It is rather more spreading in habit than the type; the apex of the leaf is more rounded, and the leaves are usually of a lighter green than those of the species. It is as free-flowered as any of the better known kinds. The inflorescences are from 4 to 6 inches in diameter, the individual flowers are rather more than 1 inch across and of good substance; the colour is a pale clear yellow. This is a beautiful variety, which is scarcely known in gardens, but one which should be more widely known and grown. *W. H.*

BRACHYSTELMA BARBERÆ.

Possibly for the first time in Europe, this remarkable South African plant may now be seen in flower at the Royal Botanic Gardens, Kew. In 1866 it was figured and described by Sir Joseph Hooker in the *Botanical Magazine* at t. 5607, from a drawing sent from South Africa by Mrs. Barber, but so far as known to me it has not been in cultivation before.

The plant has a large flat tuber, which produces a stem 2–3 inches high, bearing a few pairs of leaves, $\frac{3}{4}$ –3 inches long, $\frac{1}{2}$ –1 inch broad, varying from oblong to oblanceolate, acute or obtuse at the apex, tapering into the short petiole below, pubescent on both sides. The very curious flowers are very numerous, and arranged in a large globose cluster 3–4 inches in diameter

(formed of two opposite sessile umbels), surrounding and almost hiding the rest of the plant. Each flower has a short tube about $\frac{1}{2}$ inch long, marked inside with transverse, irregular purple-brown lines on a pale yellowish ground; the five lobes are narrowly linear or tail-like, spreading at the base, then ascending and incurved and united at the tips, forming a sort of elliptic cage $\frac{3}{4}$ –1 inch long and $\frac{3}{8}$ – $\frac{7}{8}$ inch in diameter, green outside and rich dark crimson-brown on the inner face, pubescent on both faces with hairs of the same respective colours.

The plant was originally discovered in the Transkei by Mrs. Barber, and has since been found in Tumbuland and the Transvaal. The odour of the flowers is carrion-like. *N. E. Brown*. [The tuber of this plant was collected by Mr. C. F. H. Monro in Rhodesia, who forwarded it to Kew amongst a collection of bulbous plants in May of this year.]

TRENT PARK.

ONLY a very few miles separate the Trent Park estate from the City of London, but the characteristics of the two places are as opposite as those of the poles. It is probable that many are unaware that within so short a distance as ten miles from "The Bank" there is a residence situated in such a spacious park that whether the visitor approaches it from this or that of the several lodges he must drive or walk one mile after passing the park gates before he can reach the dwelling-house. The present writer having recently had the opportunity to visit the place for the first time was as surprised as some of his readers may be at finding there similar conditions to those one has grown accustomed to associate only with residences in the more or less remote counties.

Trent Park is the residence of F. A. Bevan, Esq., a busy banker, who employs his leisure moments in philanthropic work, and in gardening. Chrysanthemum growers will doubtless remember his name in connection with the excellent exhibits of Japanese Chrysanthemum blooms that won first honours for Trent Park year after year at a time when Mr. John Leese had charge of these gardens. There is at the present time a collection of about 1,000 first-rate Chrysanthemums in pots, which show that these plants are still valued highly, though they may not constitute so predominant a feature in the garden as they did formerly.

The mention of these Chrysanthemums reminds us forcibly of the evidences the plants bore of injury sustained on Sunday, July 9, when a hail-storm of unusual fury visited the locality and broke many of the shoots, almost ruined the Apple and other hardy fruit crops, riddled many of the vegetables, and washed much of the gravel from the sloping paths and across parts of the lawn into the lake. A note on the effect of the same storm at Finchley and at Wrotham Park was published in our issue for July 15, p. 51. Many of our readers know only too well the extreme disappointment felt by the gardener when the results of his efforts suffer so severely from such an unpreventable cause at a season of the year when everything should be looking at its best! But we are digressing, for this note was intended to be an "impressionist" description of Trent Park gardens as it appeared during an exceedingly brief visit late on a July day, when the heat in the City was almost unendurable.

The drive from New Barnet station was very enjoyable and the scenery pleasant. On entering the park one could soon see that it possesses excellent timber, the trees appearing most prominently being of Beech, Oak, Lime, Hornbeam, Sycamore, and Holly. The ground is moderately undulating, and there is a double avenue of Lime-trees that is a distinct feature, although the trees have been pruned somewhat mysteriously at one period of their existence. We approached

the brick dwelling-house from the south side, being that shown in the illustration at fig. 46. There is no flower gardening on this side of the house at all, but the Oaks and Beech trees arrest the attention.

Passing round to the north side, the scene is quite a different one. There are terraces immediately in front of the house, and flights of seven stone steps leading therefrom. The ground slopes away rather steeply, and in front of the first wall, in place of a very steep slope of grass, four grass steps have been made recently. A considerable area in front of the terrace is enclosed by a low wall, which is relieved at frequent intervals with vases on the stone top. The centre of this enclosed area is of grass, and the flower garden is in the shape of borders under the wall on every side. These borders for the most part are planted with batches or groups of plants, or with plants forming a low ground cover, and taller ones interspersed among them. Such groups were of Saapdragons (*Antirrhinums*), *Verbena*, *Salvia splendens*, *Fuchsias* growing over a groundwork of dwarf *Lantanas*, *Lobelia cardinalis* over yellow-flowered *Violas*, *Salpiglossis*, *Pentstemons*, *Cannas*, *Stocks*, &c. These plants were not mixed, but were in groups adjoining each other, and sufficient of one sort as a rule for the eye to rest upon for the moment. It will be seen therefore that there is no formal bedding done at Trent Park. Near to these borders an oval or oblong bed was planted with *Verbena hybrida* "King of the Scarlets," the growths of which were pegged to the soil, and edged with *Gazanias*, while a few standard *Fuchsias* were flowering over the *Verbena*. This *Verbena* is very effective when so used, and at Trent Park another variety of *Verbena* is planted very largely. It is named F. A. Bevan, and when the flowers first open they are tinted with pink colour, passing afterwards to white. They are fragrant, and whether used as a pot plant or as a summer bedding plant, the variety, which was a seedling raised by the present head gardener, Mr. Henry Parr, is very much esteemed. An extensive stock of this plant has been raised. On this same side the dwelling-house is very prettily draped with climbing plants and creepers, such as *Roses*, *Ivies*, and *Ampelopsis*. Turner's *Crimson Rambler* is apparently 20 feet up, and grows and flowers very satisfactorily. Within the view from the terrace also could be seen several good specimens of *Yucca recurvifolia* in flower. Beyond the outer wall already mentioned the ground slopes sharply away down to the lake, a fine sheet of water covering an area of about 6 acres. The intervening lawn is planted with beds of flowering shrubs. The lake being at the base of the valley, the land rises on the other side just as sharply as on the dwelling-house side. Consequently the bank beyond the water can be seen very well from the terrace, and therefore steps have been taken to produce good effects there with flowering shrubs and other plants. At the top of the slope the view terminates in dense plantations, which should be opened out just a little in several places in order to add greater distance to the view.

We passed from the terrace to the south-east of the house, and in the direction of the lake, noting on our way a little rockery and water-garden with flourishing *Bamboos*, &c., screened in a manner that they come upon one with considerable suddenness.

At a point a little further on, the water from the upper to the lower lake falls over stones and makes pleasant music, a kindly seat close by offering a rest that the falling water may be listened to. But we had now reached the other side of the lake, and found there along the banks of the water a variety of ornamental plants, including yellow-stemmed and red-stemmed *Osiers*, golden *Elder*, double-flowered *Gorse*, *Pampas*

Grass, &c.; and higher up the bank beds of Kniphofias (Tritomas), Rhododendrons (Azaleas), and other things, all of which are effective as seen from the house. Further on towards the south-west corner a wild-garden or "dell" has been formed, with a stream running through it. This has been all done by the present gardener, and it affords a very pleasant addition to the garden's attractions. At the time of our visit the Roses were particularly beautiful, especially several polyantha varieties and Crimson Rambler. All

and transplanted every year not later than the middle of March, the ground being trenched and liberally manured each time. Apricot-trees on an outside wall facing to the west were already ripening a good crop of fruits. There are improvised fence-like supports covered with Roses in the kitchen-garden, and we were particularly attracted by a plant of the new variety (Rambler) Dorothy Perkins, which had been planted only two years, yet had covered a width equal to from 5 to 6 yards.

Malmaison, and "tree" or winter-flowering types (very fine), Codiaums, Caladiums, Cordylines, Coleus, Orchids, Azaleas, Lilliums, Hippeastrums (a large number), Gloire de Lorraine Begonia (cultivated very successfully), Clerodendron fallax, &c.

We should not omit to mention the Gooseberry plants trained just as Raspberry canes are trained, and the whole covered with netting to protect them from birds. Dessert Gooseberries grown in this manner are of the very best, and not only



FIG. 46.—VIEW OF TRENT PARK, NEW BARNET.

were supported with rough-looking wooden supports that answered the purpose very well, being less formal looking than would be welcome in the trimmer portions of the garden. The Nymphæas, Irises, Bulrushes, &c., were quite in keeping with the surroundings.

THE KITCHEN-GARDEN AND GLASSHOUSES.

There is a good kitchen-garden contained within walls, and the crops generally are in first-rate condition, apart from any injury caused by the storm. This garden is interesting and bright, for there are exceedingly good borders of herbaceous flowering plants on either side of the principal path and in other positions. In addition there is an unusually fine collection of Michaelmas Daisies (Asters), and a rich collection of some of the newest varieties of Cactus Dahlias, Pentstemons, &c. The Michaelmas Daisies are lifted

There are several good Peach-houses and vineries. One Peach-house containing three divisions, in which the variety Barrington was conspicuously good, is very noteworthy, because it would be next to impossible to see Peach trees in better condition than these, whether judged by the weight of crop, vigorous foliage, or well-trained trees.

In the vineries the variety Muscat of Alexandria is bearing long heavy bunches of fine berries, and young Vines planted last year have made unusually good growth. Melons are grown numerously and with much success. In a house 35 feet long by 8 feet high, the crop on one side alone amounted to 112 fruits, being one of the best crops we have ever seen.

There are numerous plant-houses and frames for raising fresh stock. The principal plants we noticed were Carnations of the Souvenir de la

will they hang for a long time in a ripe condition upon the plants, but they can be gathered with the utmost convenience.

The general condition of the gardens, indoors and out, is a credit to Mr. Parr, who has had charge of them for several years past.

Obituary.

A. TOOLEY.—Many gardeners who at one period or another were associated with the late D. T. Fish at Hardwicke Gardens, Bury St. Edmunds, will remember Mr. A. Tooley, who for upwards of forty years had been employed in those gardens. He was Mr. Fish's responsible man for some years, and was especially fond of Roses. Mr. Tooley died on July 19, after an illness which had lasted for four years.

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his Correspondents.)

EXOTIC TIMBER TREES.—Your valued contributor, Mr. Molyneux, mentions in his note on the behaviour of various timber trees planted at Swanmore Park within the past thirty years, the Scots Fir, the Corsican and Black Austrian Pines, besides the common Spruce, and rightly ascribes the non-success attending the planting of them to the hard unbroken clayey subsoil. Such a mishap, so expensive and disappointing, might have been averted had test-holes been dug at various points over the area to be planted, which would have disclosed the nature of the land. This practice is always advisable in the case of new forest planting. Such land as is described is sure to favour water-logging, and may not be cured by trenching, always an expensive job that is scarcely ever rewarded by sufficiently good prices obtained perhaps a century later. It is more advisable to make "grips," i.e., open drains deep enough to drain off the water in the land to a safe depth, say 4 feet, keeping these clear by a scoop such as is used in laying pipe drains. These grips may be made in heavy soils at 30 feet apart, and in the direction of the natural fall of the land. If the proprietor does not object to the cost, and chalk, greensand, or stone is cheaply available, a layer 1 foot in thickness may be laid at the bottom of the drains, and the soil returned to them, choosing the top spit to cover the materials. I should not hesitate thus to relieve land of excess of water even after the planting is done. In the case of approaching "stagheading" in Oaks, itself a sign of a water-logged state of the soil, it is one of the best things to do to avert this mishap. It is not in the least surprising that trees of *Thuia gigantea* at 30 feet in height, therefore about as many years old, should be found productive of wood extremely soft and of little weight, as it is a fact that hardly any coniferous tree has hard (heart-wood or other) at so early an age. An exception is found in *Juniperus virginiana*. *F. Moore.*

ESPALIER-TRAINED TREES AND SPRING FROSTS.—In most gardens, and more especially in windy seaside districts and those not surrounded by high walls or hedges, and thick shelter belts or close woods behind these, Apples and Pears suffer greatly from frosty winds in the spring, and from the equinoctial gales in the autumn; and standards, bushes, and pyramids suffer in about equal degree. The loss of fruit blossom and of fruit is much lessened if, instead of these forms, espaliers planted in lines a few feet distant from the paths be grown. The trellis may consist of strained solid or twisted wire, ungalvanised by preference, or oaken stakes, or hop-poles cut to 8 feet in length, the lower 1½ foot being charred and tarred. If wire be employed, the wires may be fixed at 1 foot apart horizontally, as also may the stakes, vertically. In the early spring, after pruning and tying are finished, boards of half to three-quarters of an inch in thickness may be secured above the trees, over which bast mats, frigi-domo, or even double fish netting may be thrown when frosts appear to threaten. The manipulation of the shoots in the season of growth, as well as any desired thinning of the fruits, are matters easy of performance on espaliers, making such trees of great use in any garden. *F. M.*

ESPALIER-TRAINED APPLE-TREES.—For convenience in attending to the trees, for appearance also, for full cropping, and for rich colouring of the fruit, espalier-trained trees have much to recommend them. In a Yorkshire garden but a few miles from the city, where I once spent two years, many specimens of leading varieties of this form of Apple training succeeded right well. In Major Petre's garden near Norwich I saw growing upon espalier-trained trees the finest coloured examples of *Mere de Ménage* Apple I ever saw; in size too they were remarkable. Mr. Davison told me he invariably had a full crop of good fruit from the same trees. There is one word of caution I would give to those who contemplate planting this class of tree. Do not attempt to keep the trees too dwarf. Trees not more than 3 feet

6 inches high do not admit of sufficient space for growth development; the trees are apt to make too much growth at the top at the expense of cropping. I know of many instances where the espalier-trained trees were planted near the edge of garden-paths and kept low for the sake of appearance; but in a few years the trees were extended in an upward direction, which spoilt their previous character. This was done for the sake of an extra fruit crop, of course irrespective of appearance. Five feet or 5 feet 6 inches is a suitable height to train the trees, not only for a full fruit crop, but for convenience and appearance as well. *E. M.*

THE PEACH AS A STOCK FOR THE PLUM.—Soils are so various in this country, from heavy red loam to close retentive marl, I am afraid, the Plum would not prove very satisfactory if it were dependent on the delicate roots of the Peach, besides which, I think, the injury to the stock would develop canker. Some years ago a friend of mine who had emigrated to the Colonies, informed me that the Peach was used there as a stock for Plums and for Peaches and Nectarines, but the conditions of the soil and the winters were more favourable than they are here. Only in the warmer and more favoured parts of our island where there is little stagnant moisture in the soil during the winter months would there be any chance of success, and even then, I am afraid, the somewhat tender roots of the Peach would perish unless they were protected. A dwarfing stock for Plums would certainly be welcomed by all fruit growers, and the stocks in question may be worthy of trial at the Wisley gardens. *W. H. Clarke, Aston Rowant Gardens, Oxon.*

THE FALLING OF ELM-LIMBS IN SUMMER (see p. 119).—An instance of this occurred here in a tree growing by the roadside, on the 30th of last month. A large bough, 1 foot in diameter, dropped without any warning, and with no wind whatever to assist the breaking. The limb snapped square across close to the trunk, and without any apparent reason, as the leaves are quite healthy and the branch devoid of dead twigs. I can only assume that it was the weight of the leaves that caused the fracture. *E. M., South Hants.*

RED CURRANTS.—*Vanitas vanitatum!* It is sad to learn how little we know, even of that of which experience should at least have taught us something, and it is often surprising what an extraordinary estimate some, happily few, individuals have of themselves. Critics would be more likely to be listened to if their pen were used somewhat less freely in depreciation of men and things. For my own part I believe it is the duty of everyone to give what knowledge he gains for the benefit of his fellow-men; and it is wholly and solely with this view that I write. It is now some sixty years since I was growing fruit for competition; previously I was often associated with those who were quite capable of teaching me. Some time afterwards I marketed much of my fruit at Covent Garden Market. Thus it is that I have been trained from time to time not only to test but to give my views as to the quality and worth of any new varieties that may be offered. I was led to grow the monster new Red Currant "Comet" by the representation of that most reliable nurseryman Mr. Amos Perry. Here is what he said, "This is the greatest acquisition for many years amongst fruits," &c., and he further adds that it is a remarkable fruit, and it had an Award of Merit of the Royal Horticultural Society. So I resolved to try it. But also I give the opinion of Messrs. Laxton: "For freedom and fruitfulness there is nothing to surpass this variety," and "altogether a sterling new variety." After growing Comet for three years I ventured in a much milder way to give my opinion as to its excellent qualities, as to what it proved in my peculiarly cold soil. This seems to have elicited the displeasure of my critic, for he asks that if it is worthy of note why Messrs. Veitch or Messrs. Bunyard do not catalogue it, and asserts that I had hastily jumped at the conclusion that it might be as Mr. Bunyard describes it, who says it is the same as

Fay's Prolific. As I have grown and discarded Fay's Prolific I at once say that I do not see any resemblance between them, nor am I in the least influenced by any such remarks. As to Star of the North, I may add that for many years I grew La Versailles as my main crop, and found it to be the most valuable, free-bearing, handsome variety; thus I feel qualified to controvert the assertion that they are one and the same. Of the Star of the North I have a number of bushes; I find it is an excellent bearer of long bunches of fruit, very early, and very sweet. Thus it is more attractive to birds than any other. I intend growing it as a first early, Comet as second, and the old Red Dutch as last. If I have another, which is doubtful, it will be La Versailles. The white sort of the latter is excellent. It is a matter of no importance to me what Mr. Bunyard has to say of Comet, for I have proved it myself; and further, as I was probably growing fruit before Mr. Bunyard was born, my opinion is entitled to some credit. Nor do I place undue reliance on what may be done at Wisley or elsewhere, for I am sufficiently old to know that what proves to be useful and good in one place may utterly fail in another. Had my critic said that Pears by their number of novelties were getting "mixed," I could have understood him, but with Currants the call for intervention is needless. In my remarks I jumped at no conclusion, but merely gave my views as to what the Currants were here, leaving entirely to others to plant any if they chose to do so. *Harrison Weir, F.R.H.S., Appledore, Kent.*

STOCK "BEAUTY OF NICE."—A few days ago I had the pleasure of inspecting 2 acres of this fine novelty in flower in the grounds of M. A. Adams, Esq., Gattens, Ockley, Essex. The plants are strong-growing, of good habit, and flower profusely. The individual flowers are very large, flesh-coloured, and sweetly scented. Mr. Adams obtained the seed of this excellent stock direct from Nice, in which place he saw it growing in all the gardens in and about the town, hence the name Beauty of Nice, and so far as Mr. Adams is able to judge he is the only one in England who grows it. The single-flowered plants, though lost sight of among the wealth of double flowers, are sufficient in number for seeding purposes, and their condition gives promise of a good seed harvest being secured both from the plants growing under glass and out-of-doors. In addition to the great number of Beauty of Nice Stock now in such grand flower at Gattens, there are large plantations of young plants both out-of-doors and under glass for continuing the floral display well into the winter. Mr. Adams flowered several thousand plants in some of his large glasshouses during the past few months. The plants are growing on benches 6 feet wide and 6 inches deep, running the entire length of the houses, three benches being in each house. *H. W. Ward, Rayleigh, Essex.*

THE FRUIT CROPS.—It was doubtless a coincidence that the annual reports as to the condition of the year's fruit crops, and the outline of the report of the Government Committee on the fruit-growing industry, should have been simultaneously published on the 29th ult. What a striking comment is presented by the fruit reports on the Committee's conclusions! Not all the Government Committees in the world can by reports remove the ill done to home fruit culture by the frosts of last spring. That they destroyed confidence in fruit production is but too evident. Rarely have we had a year where at once an abundant tree fruit crop was more due, in the cultivators' interests more needed, and of which there was at one period greater promise. How all these anticipations have been falsified, your reports on the year's fruit crop tells all too sadly. What is to be done to prevent similar calamities in the future? It must be remembered that in the general wreck of the crops the highest art in culture has suffered as much, and perhaps even more, than has the mere inferior or deficient art. The question of good or bad culture has really nothing to do with the results. The good and the bad have been taken equally, the former perhaps rather more. All the high culture in the world seems quite unable to affect climatic con-

ditions. May frosts as sharp as those of last May may come with appreciable regularity for generations, and as long as fruit-trees and fruit-bloom are what they are, the joint labours of Nature and men in obtaining a glorious bloom may be all in vain. It has been suggested by you that raisers of fruits should seek to create either a hardier or a later-blooming strain, that would offer no tender blossom to the biting frosts or blasts until all danger was past. This year we had our Plums and Pears in full bloom in April, the flowers had freely set, and fruit was abundantly formed ere the *coup de grâce* was given to it by the frosts of May. Apple-trees were in full bloom from the end of April till the end of May, but the

I have over 500 plants, and intend this autumn to plant over $\frac{1}{2}$ an acre, as I find this variety brings better prices than any other I grow. You will note the two rows of petals in it, also its habit, which is perfect in every way. The flowers are half as large again as those sent in a good season. I intend to call it C. m. "George Brooke." *George Brooke, Neville's Cross Nursery, Durham.* [The flowers were $3\frac{1}{2}$ inches in diameter. Ed.]

IS ROMNEYA COULTERI AN HERBACEOUS PLANT?—I note what your reporter says anent this plant as exhibited at the Cardiff Show as a hardy plant, but in a class from which shrubby plants and trees were excluded. With

more than fifty stems." The competition in all the Sweet Pea classes was exceedingly keen, as many as eighteen competitors taking part in some classes. It would be difficult to find a better display than there was under the unfettered conditions. The blooms were of high quality generally. Some few showed the effects of the weather, but most of them were bright and attractive, especially those from Mr. Thomas Jones, Ruabon. Under such conditions the judges had but to consider quality and arrangement, as well as nomenclature, of course. They were able to leave the arrangement of the flowers in the vases as they found them. The magnificent display of this popular flower nearly filled one huge tent. *E. Molyneux.*



Photograph by C. P. Raffill.

FIG. 47.—CLEMATIS INDIVISA, AS IT FLOWERED IN THE TEMPERATE HOUSE, ROYAL GARDENS, KEW.

gravest harm was not done to them until the mornings of May 22 and 23. Evidently to save fruit-tree bloom from such dangers only trees that opened their flowers in June might be expected to be safe from injury. Trees flowering so late could hardly even in the best of seasons mature fruit crops thoroughly during our all too short summers. But the possibility of ever getting so late blooming trees or varieties seems to be almost Utopian. Practically of all the varieties of tree fruits raised during the past 200 years, there seems to have been no appreciable tendency to produce specially late blooms. Even the oft-mentioned Court Pendu Plat Apple is no more fruitful this year than is any other variety. When the proposed Fruit Conference is held at Vincent Square, Westminster, in October next, it is hoped that no time will be wasted in talking customary fruit platitudes, but rather that its energies will be directed to the consideration of that crucial subject, "How to preserve our fruit-trees from injurious climatic conditions." *A. D.*

CHRYSANTHEMUM MAXIMUM.—I send you some flowers of a seedling Marguerite which I raised three years ago, but the flowers are not nearly so good this year owing to the drought.

me *Romneya Coulterii* does not die down to the ground. In Norfolk, in Lord Battersea's garden at Overstrand, there are bushes of it 6 feet high and as much through. In Devon I have seen it even larger, forming a full bush. Under such conditions, how should such a plant be classified? Another plant which has given similar trouble ere this is *Phygellus capensis*, which in some seasons does not come under the strict definition of a herbaceous plant, hence many judges have hesitated to disqualify or to accept it. *H.*

EXHIBITING SWEET PEAS.—As emphasising what I advocated a short time since in the *Gardeners' Chronicle* (see p. 52) about limiting the number of sprays in a bunch, the action taken by the Committee at the late Cardiff show is a good illustration. I recommended the Committee to ask for a certain number of bunches, and to allow exhibitors to stage as many sprays in each bunch as they chose, provided they are shown in the Society's vases. At Cardiff there are six classes for Sweet Peas in bunches; in five of them there is no limit to the number of sprays. In Mr. Sydenham's class there is a limit, but there the regulations are quite of an elastic nature. He says: "Not less than thirty nor

CLEMATIS INDIVISA.

We have illustrated the beauty and floriferousness of this tender *Clematis* on previous occasions, but Mr. Raffill's photograph (reproduced at fig. 47), showing a plant as it appeared in the spring of the present year in the temperate-house, Royal Gardens, Kew, is so charming, that we feel sure our readers will welcome it. There is little reason for us to say much about the plant, it being so well known as an excellent species for training on chains or on the rafters in a greenhouse, where it usually produces an abundant display of flowers in spring. It is not subject to many pests, but if the atmosphere of the house is somewhat damp for a considerable period and there is insufficient ventilation, the leaves are liable to become disfigured with mildew, and it is then necessary to apply flowers-of-sulphur. All who have not got this species and who possess suitable means for its cultivation, may be recommended to procure a plant.

REMARKS ON THE CONDITION OF
THE FRUIT CROPS.

(See Tables and General Summary, ante, pp. 81-87.)

(Continued from p. 117.)

3, ENGLAND, E.

CAMBRIDGESHIRE.—The severe frosts during the latter part of May practically ruined the fruit crop in this district. On May 26 we registered 10° of frost. Previous to that there was every indication of a good fruit year. *R. Alderman, Babraham Hall Gardens, Cambridge.*

ESSEX.—On the whole the fruit crop has been satisfactory. Young Apple-trees planted three and four years ago are yielding well, and promise to be very good. The crop of Pears is not so good as it promised to be when the trees were in bloom. The late frosts were probably responsible for the fruit dropping badly. Strawberries have been our worst crop; mildew attacking them soon after setting has caused many to rot. Our soil is cold and heavy, and the subsoil stiff clay. *A. Bullock, Copped Hall Gardens, Epping.*

— Once more May frosts have destroyed the promise of a fair crop of Apples, Plums and Pears for the year 1905, the crops of these fruits are almost nil. Gooseberries, Currants, Raspberries and Strawberries have been good average crops. The soil here is a light sandy loam resting mostly on a bed of clay—a fruit-tree growing soil in every sense of the word. *H. W. Ward, Lime House Nursery, Rayleigh.*

HUNTINGDONSHIRE.—Here on this black fen soil we have fair crops of most fruits except Black Currants, which are this year a complete failure. Stone fruits are excellent both in quantity and quality. Red and White Currants, also Raspberries, are very good, while Strawberries have been very good and plentiful. *F. W. Seabrook, Ramsey Abbey, Gardens.*

LINCOLNSHIRE.—In this district Apples and Pears are very scarce. Plums are an average crop, Victoria being the best variety. Cherries are average and of excellent colour. Peaches and Nectarines are very good. Apricots are up to average, and the fruits are of satisfactory size and good colour. Gooseberries, Red, White and Black Currants are good. Raspberries and Loganberries are very good, especially the variety Superlative. The soil is a strong clay subsoil, which accounts for good results in spite of the dry weather. *F. J. Fleming, Wellsby Old Hall Gardens, Grimsby.*

— All fruit trees blossomed abundantly, and appeared very promising until May 23, when the thermometer on the outside of a Stevenson screen fell to 25°, and on the grass to 19°; fortunately the sun shone very early or the effects generally would have been much worse. Pear-trees had what appeared to be a heavy crop, but the trees in the open quickly dropped their fruits. On wall-trees we have a good crop, but the Pear midge (*Diplosis pyrivora*) has again thinned them severely. Plums were also set before the frost occurred and there was a good crop, but large numbers fell after the frost. Apples were for the most part in full flower, and very few have escaped; it will be almost as poor a crop here as in 1903. Those which have survived are chiefly on the tops of tall standards and our latest-blooming variety Bess Pool. Bush trees have scarcely a fruit left upon them. Strawberries had very few flowers open when the frost came, and we have an abundant crop; other small fruits are also abundant. *W. H. Divers, Belvoir Castle Gardens, Grantham.*

NORFOLK.—Most of the fruit-crops in this district are very poor, the failure being due to the very severe late spring frosts, and to a dry and generally unkind spring. The soil for the most part is of a very sandy and porous nature,

and the absence of rain and genial spring weather kept all growth very backward and weak. Possibly some part of the failure might be attributed to lack of vitality in the trees consequent upon general overcropping in 1904. As trees cannot recuperate so quickly on these soils as on those of a more fertile nature, unquestionably we ought to thin severely in a season of heavy crops, and where labour permits there is no excuse for not doing so. At the time of flowering nearly all trees showed promise of heavy crops. I have only seen moderately good crops in one or two places. Probably the frosts were not so severe in those places. *E. C. Parslow, Shadwell Court Gardens, Thetford.*

— In this district we suffered a great deal from the effects of late frosts. The early blossoms of "Early Laxton" and other Strawberries were all cut off by the frosts of May 22 and 23, which caused great damage to all kinds of small fruits. We are badly in want of rain. *J. W. Bradbrook, Kettingham Park Gardens, Wymondham.*

SUFFOLK.—Fruit-trees of all sorts were very promising in the early part of March, but towards the end of the month and in April and May cold east winds set in and caused great destruction. Peaches on walls suffered very much with "blister," owing to the cold winds, but notwithstanding have set, and are swelling an average crop of good fruits. Apples and Cherries are our worst crops in this district; some orchards have not a single fruit in them. Orchards all round this district are very old, and show signs of want of proper cultivation. Large fields of Strawberries and small fruits are planted in a well-sheltered valley in this district about 3 miles from the sea, and this year Strawberries have produced good crops. They are owned by small holders, and for want of proper railway facilities there is no outlet for the fruit, except to the seaside towns by hawking, so prices for good fruit are kept very low. Our soil is mixed, and rests on a gravel subsoil. *T. Simpson, Henham Hall Gardens, Wangford.*

4, MIDLAND COUNTIES.

BEDFORDSHIRE.—With a few exceptions the Apple and Plum crops in this district are a failure. There was but little bloom on Apple trees, due I think to the trees having exhausted themselves by carrying heavy crops last year. Pears gave every promise of being a good crop, but were severely thinned by the Pear midge. All bush fruits have produced record crops. The soil here is a very heavy loam with a gaulty subsoil. *H. Nimmo, Cranfield Court Gardens, Woburn Sands.*

— The soil here is sandy and gravelly, and most fruit-trees grow very fast when first planted, but fail as they get old owing to canker and American blight, caused, I think, by the manure and digging of the soil rendered necessary by the vegetables. *H. W. Nutt, Flitwick.*

— There was an abundant show of bloom on Pears and Apples, but the keen east winds and the severe frost on May 20 quite spoiled the fruit prospects in regard to trees growing in the open orchard. It is only on the wall-trees and in sheltered parts of the garden that the crops have escaped. Sweet Cherries are only a light crop on outside walls. The Loganberry is doing well here, and promises to be a useful addition for tarts and jam-making. The soil here is of a heavy nature, with subsoil of clay impregnated with iron. *T. W. Birkinshaw, Hatley Park Gardens, Sandy.*

— The fruit-blossoms suffered very much injury during the night of May 23, when our thermometer, placed 4 feet from the ground, registered 5° of frost. Before that date the Apple, Plum, and Strawberry crops were

very promising. The soil is a nice sandy loam on a subsoil of chalk and clay. *Geo. Mackinlay, Wrest Park Gardens, Amptill.*

BUCKINGHAMSHIRE.—The frosts experienced during May did immense injury to the fruit-crops on all sides. Apples are an average crop; Pears and Plums are very thin; Cherries are average, but owing to the wet weather we experienced in June many of the fruits of the sweet varieties split. Peaches and Nectarines are good, and the trees are clean. Figs promise to be a good crop. Strawberries have been abundant and of good flavour. Gooseberries and Black and Red Currants are an average crop, and the quality of the fruit is all that could be desired. *John Fleming, Wexham Park Gardens, Slough.*

— It is a most difficult matter to form anything like an accurate estimate of the fruit crops in this part of the county. The outlook during the early spring months was most favourable for hardy fruits, but the disastrous frosts at the end of May ruined the crops in low-lying districts. Especially was this the case in the Thames valley. In the immediate neighbourhood of these gardens, which have an altitude of about 270 ft. above the sea-level, there are some excellent crops of hardy fruit. Apples are very good on the Paradise stock where due attention was paid to thinning the fruits last season. Bush fruits are excellent, but Pears are very scanty. The Pear-midge effected more damage than the frosts. Plums are very good. Strawberries have been of poor flavour. *Chas. Page, Dropmore Gardens.*

— The fruit crops in this district are very irregular. There was a wealth of blossom, and every prospect of a good fruit season. The frosts of May 22 and 23, followed by easterly winds, and the long, continuous drought in May and at the beginning of June, were destructive. Apples are an average crop, and the varieties Lord Suffield, Ecklinville Seedling, Bramley's Seedling, and Adam's Pearmain are very good. Plums on trained trees are moderately good; Kirke's, Monarch, Reine Claude de Bavay, and Jefferson's are the best. Apricots are an average crop; the varieties Moorpark and Kaisha are good. Cherries on standard trees and on trees trained against walls have been abundant. Strawberries have been exceptionally good and of excellent quality. Red and Black Currants, Gooseberries, and Raspberries are plentiful. The soil here is very light and gravelly, on a subsoil of gravel and chalk. *G. W. Smith, The Gardens, Danesfield, Marlow.*

— The Apple crop is very irregular, and much under the average. Pears are a total failure. Although this district is noted for its stone fruits, this season Damsons, Prunes, and all kinds of Plums are failures, owing to late frosts. In some orchards the trees are badly infested with blight. Crops of small bush fruit are, on the whole, good. The early Strawberry bloom suffered by the frosts, and the crop has been fairly good, but the fruit undersized. What with the late cold spring and a wet, heavy soil, we are experiencing one of the poorest fruit years for many seasons past. *W. Hedley Warren, Aston Clinton Gardens, Tring.*

CHESHIRE.—The fruit crop, so far as Apples, Pears, and stone fruits are concerned, are rather disappointing, for after a most promising show of blossom the fruit failed to set, and even where it did set the fruit dropped. I attribute this to the abnormal crops of last year leaving the trees weak, as the weather was not at all unfavourable in this district. The soil is of light texture, but free from gravel. *Peter Wilkinson, Walton Lea Gardens, Warrington.*

— Most kinds of fruit trees blossomed profusely, but the crops are poor, excepting Morello Cherries, Currants, Gooseberries, and Straw-

berries. Of Strawberries the variety Fillbasket, which thrives well on our light sandy soil, has been specially good. The Loganberry has done well also, and at the time of writing looks quite picturesque with its abundance of large bold fruits. Pears, Apples, and Plums have been quite a failure. *E. Slater, Norton Priory Gardens, Runcorn.*

DERBYSHIRE.—A splendid set of fruit all round was spoiled by long-continued drought and north and north-east winds. The early promise was never better. Of Plums and Damsons there are practically none. Gooseberries are very good indeed. Morello Cherries are a very heavy crop throughout the neighbourhood. Peach and Nectarine trees suffered badly from the cold winds. On the hill there were no spring frosts severe enough to kill fruits and blossoms, but cold winds for weeks in succession were too much for the young fruits of Apples, Pears, and Plums. The soil here is heavy and poor. *J. C. Tallack, Shipley Hall Gardens, Derby.*

— The Apple crop here this season is rather a light one; the trees bloomed well and gave promise of a good crop, but the severe frosts we experienced towards the end of May were disastrous. Pears on walls are a good crop and are doing well. Plums are under the average but good. Cherries are a moderate crop. Small fruits such as Gooseberries, Raspberries, and Red Currants are plentiful and good. Strawberries were an average crop, though the fruit on the older plantations were rather small. The nature of the soil is light and stony, and requires much water and mulching during dry weather. *Jas. Tully, Osmaston Manor Gardens.*

HERTFORDSHIRE.—The fruit crops here generally are small. Of Apples and Plums there are scarcely any. Peaches are much under average. Strawberries, too, are under. There are satisfactory crops of Pears, Cherries, small fruits and nuts. The prospects early in the season were promising. There was a good show of bloom, but it did not set well through the unfavourable weather, and many that did set were destroyed by the severe frost on May 23. *Geo. Norman, Hatfield House Gardens.*

— The fruit crops in this neighbourhood are again disappointing, particularly as the bloom was exceptionally abundant. It suffered, however, much damage from the very unseasonable weather during the month of May. In a year of disappointments, the condition of the fruit crops is perhaps the greatest. *Arthur Dye, Tring Park Gardens, Tring.*

— The frost and unfavourable conditions of the weather here from May 20 and a week afterwards proved very disastrous to our fruit crops. The soil here is gravelly, resting on clay and chalk, the latter being found at a depth varying from 6 inches to 15 feet. Crops have in consequence suffered from drought. *W. Whitelaw, Batch Wood, St. Albans.*

LEICESTERSHIRE.—The Apples in this district are a complete failure, the only tree we have with a full crop is one of the variety "Lord Grosvenor." Pears on the walls are good in quality, but much under the average in quantity. Plums grown on a west aspect in the kitchen garden are a moderate crop. Plums on standard trees in orchards were severely damaged by the frosts; The Czar and Rivers' Early Prolific are bearing a full crop; Pond's Seedling and Prince Englebert are the only other varieties with a "sprinkling" of fruit. Peaches and Apricots, particularly the latter, are clean and good. Of small fruits, Raspberries are a full crop. Gooseberries, Red and Black Currants are much below the average. Strawberries were the worst crop we have ever had, there was only the tail end of the crop left to ripen. *Givon's Late*

Prolific is the only variety which escaped the frosts; to this variety too much praise cannot be given for its productiveness and quality. *Daniel Roberts, Prestwold Hall Gardens, Loughborough.*

NOTTINGHAMSHIRE.—Apple and Pear crops suffered severely through late frosts. Late Pears escaped and are bearing well. Black Currants completely failed through same cause. Trees of all kinds are clean and healthy. *James Gibson, Welbeck Gardens, Worksop.*

— There was a splendid show of blossom on all fruit trees, but they suffered badly from late frosts and cold north-easterly winds. The soil here is very light. We have suffered badly for want of rain until the recent rains set things up again. Fruit trees are all looking very healthy. *A. W. Culloch, Newstead Hall Gardens.*

OXFORDSHIRE.—The disastrous frosts in May and June did great damage to the fruit-crops along the vale at the base of the Chiltern Hills, and only where efficient protection was given was the crop partially saved. On the summit of these hills for a distance of 2 miles the fruit-crops are abundant. Cherries are an abundant crop, and fine clean fruit; many varieties of Plums likewise, Green Gage, a variety extensively grown, being the one failure. Apples likewise are swelling up good crops; while Gooseberries and Currants, both black and white, are an immense crop. *W. H. Clarke, Aston Rowant Gardens, Wallingford.*

— All bush fruits have done well, also Strawberries and Raspberries; but one dull, showery week when Strawberries were turning colour caused some damage to the fruit. Apple, Pear, and Plum-trees were a mass of bloom, but had no chance of forming fruit with the long spell of cold weather that prevailed, followed by a sharp frost on May 22. The soil here in South Oxford is poor, being very stony, over a subsoil chiefly of gravel or chalk. *A. J. Long, Wyfold Court Gardens, South Oxford.*

SHROPSHIRE.—As might have been expected after the abundant yield of last year, Apples are below average, and falling through the drought. Lord Suffield, Cox's Orange Pippin, Ribston Pippin, Tom Put, and Christie's Pippin are our best crops. Pears bloomed well, but suffered by frost, and are not at all good. Plums, Damsons, and other stone fruit are very patchy; in some districts there are none, and in others only a partial crop. Small fruits are a fair average crop. The soil here is generally of a light and porous nature on gravelly subsoil. *A. S. Kemp, Broadway, Shifnal.*

— The Apple and Pear crops appeared very promising in the early spring, but the blossom did not set well, and most of it fell. I was not surprised at this, owing to the heavy crops borne last year. I am afraid there will be many empty cider barrels, but we must preserve them, and live in hope. *Thomas Canning, Aldenham Park Gardens.*

STAFFORDSHIRE.—We had a splendid promise of all kinds of fruit up to May 22 and 23, when we had 8° and 10° of frost, which killed all the bloom. Bush fruit stood fairly well, as there was plenty of foliage. *C. A. Bayford, Shugborough Gardens, Stafford.*

— Hardy fruit crops in this district are in most instances much below the average, small fruits, such as Currants and Raspberries, being the only exceptions. A continuation of dull weather, with E.N.E. winds while the Pears and Plums were blooming, the scarcity of pollen and the absence of bees, I think account for the failure of these fruits; while the sharp frosts on the mornings of May 22 and 23, when the Apple trees were in full bloom, practically destroyed the Apple crop and killed the early

blossoms of the Strawberries. Our soil is very stiff, with a cold, clayey subsoil. Our rainfall for six months ending June 30 was only 8.45 inches. *Geo. Woodgate, Rolleston Hall Gardens, Burton-on-Trent.*

— The fruit crops generally are well up to the average. We suffered slightly from the frosts of May 21 and 22, which affected the early Strawberry blooms, also those of Pears. Of small fruits there is a quantity of Red and White Currants and Raspberries, but Black Currants are not so good. There is a fair crop of stone fruits, especially Plums, which appear to be swelling away well. *E. Gilman, Ingestre Hall Gardens, Stafford.*

— The Apple, Pear, and Plum trees were very full of bloom, but owing to late spring frost, Pear and Plum blossom did not set well. Apples set moderately well. The most prolific varieties in this district are Keswick, Lord Grosvenor, Lane's Prince Albert, and Beebench, a local variety, which the residents about here value highly. Strawberries and Raspberries are very heavy crops, but the fruits are rather small in size owing to dry weather. Black Currants suffer in the same way. *John Wallis, Woore.*

WARWICKSHIRE.—Had I filled up the tabulated form according to the circumstances of my own fruit crops I should have written four "no crops," and not as I did write, viz., four "unders." But on driving round this neighbourhood I find there is a sprinkling of Apples, Pears, and some Walnuts, and some Plums; these are to be found on trees which were situate well above the zone of the cold wave of May 21 and 22, which wrought so much mischief in this district. Therefore as a district reporter I thought by writing "under" I should give the better and more truthful representation of our fruit position; neither could I add "good, bad, or indifferent." We are still suffering from drought, and it would be rather hazardous to say which way these few fruits that are left will finish up. This year's experience following so soon on the heels of preceding years' disasters is further proof, if that were needed, of the fickleness of our climate, preventing us from ever anticipating any great success from the culture of either the Apple or the Pear in this country. On one side of my property we have the lower red sandstone and marl; on the other sandstone and red marl; but singularly I am between the two, with white sandstone, red marl and waterstones, the surface of which is a healthy brown loam, which will grow anything provided spring frosts would but keep away. *W. Miller, Berkswell.*

(To be continued.)

PETWORTH PARK, SUSSEX.

THIS fine old place, the seat of the Earl of Leonfield, possesses one of the largest parks in England, with a fine herd of deer, and some of the most extensive gardens and grounds. It is of the gardens I am now writing. In large places like Petworth everything must be produced in vast quantities to meet the requirements of the establishment, and credit is due to Mr. Edward Pull, the head gardener, for the excellent order and high standard at which these gardens are kept, many improvements having taken place during the years he has had charge. The old glass-houses have nearly all been pulled down and new and modern ones built, whilst new fruit-rooms and a fine packing-shed are amongst late additions to the place.

The Vines have been planted by Mr. Pull, and are all bearing fine crops of fruit; whilst Peach-trees are also carrying excellent crops. These gardens possess one of the oldest, if not the oldest, Fig-tree in the country, and it occupies one whole house. Melons were represented at the time of my visit by two houses of fine fruit;

as also were Cucumbers. One large house is devoted to Palms and suitable plants for house decoration, whilst two other houses are filled with Orchids, chiefly Cattleyas. *Calanthe Veitchii* and hybrids are extensively grown, there being nearly 200 fine specimens, which will render a good account of themselves when the autumn parties take place. *Chrysanthemums* are grown in vast quantities for supplying flowers for cutting purposes. Strawberries are forced to the extent of 2,000 plants, Royal Sovereign being the favourite variety.

Tree Carnations are well grown, some 400 fine plants being noticed. Amongst other subjects grown in large batches at Petworth are *Poinsettias*, zonal *Pelargoniums* for flowering in winter, *Begonia Gloire de Lorraine*, *B. Gloire de Sceaux*, and a fine batch of *Schizanthus wisetonensis* was particularly noticeable.

The kitchen-garden, which is divided into sections by walls, is very extensive, and the walls are covered with an up-to-date collection of hardy fruit-trees, perfect examples of good training. All crops looked promising, and abundant supplies of vegetables were to be seen in different stages of growth. The pleasure-grounds are extensive, and possess some of the giants of the country in the way of ornamental trees; the old Cork-tree, *Quercus Suber*, is certainly one of the oldest of its kind on these islands. Flower gardening is carried out extensively, and thousands of *Pelargoniums*, *Heliotropes*, *Calceolarias*, *Verbenas*, &c., are required annually for this purpose.

There is also a Cranberry-bed, not usually seen in gardens, and Mr. Pull informed me that the plants always bear heavy crops, and are much appreciated. *A. C. Smith, Lydhurst.*

SOCIETIES.

THE ROYAL HORTICULTURAL Scientific Committee.

AUGUST 1.—Present: Dr. M. T. Masters, F.R.S. (in the Chair), Rev. W. Wilks, Professor Boulger, Messrs. Douglas, Saunders, Massee, Drury, Worsdell, Holmes, Worsley, Sutton, Odell, and Chittenden (Hon. Secretary).

Mites on Furze.—Mr. SAUNDERS said: "The mites on Furze sent by Mr. Holmes, which were found so abundantly at Malvern, are one of the many species of *Tetranychus*, or red-spider, and are probably *T. lintearius*, as this species has been found to spin webs over Gorse bushes in the way described by Mr. Holmes."

Disease on Mulberry Leaves.—Dr. COOKE reported: "The spots on Mulberry leaves are strongly suggestive of *Cercospora moricola*, Cooke (see *Journal of the Royal Horticultural Society*, p. 30, pl. xii., fig. 29), but no hyphae or conidia could be found."

Eggs of Moths on Flowers.—Miss ALDAM, of Warmworth, Doncaster, sent flowers of *Pelargonium* on which masses of eggs had been deposited. Mr. SAUNDERS reported: "The eggs are those of a moth belonging to the family *Noctuidae*, and are very probably those of the common *Y. moth* (*Plusia gamma*), but the eggs of several members of this family are so much alike that I cannot say for certain. It is unusual for moths to lay their eggs on flowers, as the latter usually wither before the eggs are hatched; but many moths lay large numbers of eggs together on the leaves or stems of plants."

Insects on Apple-trees.—Mr. SAUNDERS also reported on insects from Apple-trees sent by the Countess of LEITRIM. "The only creatures which were in any way injurious were the caterpillars of the vapour-moth and the frog-hopper; the spiders and the long-legged 'Harvest-men' are not only harmless but beneficial in gardens, as they prey on other insects. The caterpillars of the vapour-moth (*Orgyia antiqua*) feed on a large variety of shrubs and trees. The caterpillars being hairy are not so easily killed by spraying as many are, but their food may be made distasteful or poisonous to them by spraying with paraffin emulsion or 'Paris-green.' The latter substance is poisonous, and it should not be employed within a month of the fruit being used for food. The

caterpillars should, if possible, be picked off by hand. The frog-hopper belongs to the family *Cercopidae*. I should not imagine that they are in such abundance as to be of any real injury to the trees. The 'Harvest-men' are curious-looking creatures, having such small bodies and long legs. They belong to a family (the *Phalangidae*) which are classed between the spiders proper and the scorpions. They are perfectly harmless to plants and human beings, and feed on aphides and other small insects. The small spiders which spin webs are also very useful in killing various small winged insects."

Fungus on roots of trees.—Mrs. Ashton, of Robertsbridge, Sussex, on digging up two Peach trees which suffered from silver leaf, found their roots were covered with fungus. A fungus also appeared on the floor of a tool-house which backed against the orchard-house where the Peach tree grew. Dr. COOKE wrote: "Probably the fungus under the tool-house and that on the tree roots is the same. It is evident there is a large amount of fungus in the soil, proceeding probably from dead roots or decaying wood. No trees can thrive with this in the soil. If possible a deep trench should be dug between the tool-house floor and the orchard-house to cut the connection, and lime should be used freely. The soil should be well dug up about the fruit trees, and the source of the root fungus found. Anyhow, the soil must be cleared of the white fungus mycelium, or all the trees will ultimately be killed. The soil must be well drained, as the fungus thrives best in stagnant water. In France it has been found effective to expose and powder the roots of trees which are attacked liberally with powdered sulphur. Thorough and severe steps taken at once may save much future trouble and expense."

Pears Cracked and Scabbed.—Dr. BONAVIA sent Pears from a young tree of Conference, which were badly cracked owing to the attacks of the fungus *Fusicladium pirinum* (see *Journal of the Royal Horticultural Society*, xviii. (1903), 14).

Lilium giganteum Rotting.—A shoot of *Lilium giganteum* which had rotted off completely near the point when about 18 inches high, was received from Mansfield. It was thought that in all probability this was due to the presence of excessive moisture.

Interesting Orchids.—Mr. F. W. MOORE sent from Glasnevin two species of *Megaclinium* having a curious flattened rachis on which the flowers were borne in two rows, one along the middle of each of the flat faces. From Sir TREVOR LAWRENCE came specimens of *Nephelaphyllum pulchrum*, a native of Java, which has been long in cultivation, but is rarely seen, and of *Theodorea gomezoides*, a native of Brazil.

Longevity of Seeds.—As an illustration of this point, Mr. WILKS stated that for the past twenty-six years a garden rubbish-heap had stood in a small wood near his house, and during that time only Stinging Nettles had grown upon it. The Stinging Nettles had this year been uprooted and the heap levelled, and now wherever the soil had been placed large numbers of Opium Poppies, *Papaver somniferum*, had sprung up, together with one plant of Borage. The only explanation possible was that the Poppy seeds had remained dormant for the past twenty-six years. Mr. DRURY remarked that a similar thing had occurred when some soil had been taken from under a house which had been built quite 100 years. Wherever the soil was spread, there the Poppies sprung up. Other members related similar occurrences, in each case *Papaver somniferum* being the plant that appeared. Mr. HOLMES mentioned an instance where *Hyoscyamus niger* grew under similar circumstances.

Harvest Bugs.—Mr. WILKS asked how harvest bugs might be combated. It was recommended to bathe the affected parts with salt water. Ammonia kills the bugs, while lard or grease alleviates the pain for a time.

Sports of Pteris aquilina.—Mr. DRURY showed photographs of fronds of *Pteris aquilina* gathered at Pitlochry. The fronds were very congested, crested at the ends, and somewhat crispate. The plant from which they were taken was growing in very stony ground.

British Plants.—Mr. HOLMES showed a prolific specimen of the common Toad Rush, *Juncus bufonius*, and some plants of *Matricaria discoidea*, an introduced plant.

Yellow-flowered Potato.—Mr. SUTTON showed a portion of a Potato-plant bearing yellow or orange-coloured flowers, with the following notes: "As you

are aware, the flowers of Potato-plants are either white or some shade of lilac or purple, and until last year I do not think that an orange-coloured Potato-flower had been seen or recorded. The history of the plant from which the accompanying specimen was taken is as follows:—When inspecting a 20-acre field of the Up-to-Date Potatoes last year in Lincolnshire we noticed an orange-coloured flower, which in the distance appeared to be a yellow Nettle, but on closer examination it proved to be a Potato flower. So far as we could possibly tell the plant was quite typical of the Up-to-Date variety, except in the colour of the flower. The whole field was carefully examined, and no other yellow or orange-coloured flower could be found. When the crop was lifted the tubers seemed to resemble the Up-to-Date Potato in all respects. Last spring we planted nine of the tubers taken from these plants, and in every case the plants have produced orange-coloured flowers, and the foliage in all respects resembles that of the Up-to-Date Potato. The normal colour of the Up-to-Date flower is of a rather dark lilac shade." The petals were thickened along the edge, and were in some cases becoming staminioid, bearing pollen on the margins.

Ornithogalum Ecklonis, &c.—Mr. WORSLEY remarked that the foliage of the plant shown by him at the last meeting differed from that of the plant as cultivated at Kew in having a pale green stripe running down the middle of the upper surface of the leaf. Mr. WORSLEY also showed some sprays of *Tropaeolum pentaphyllum* in full flower, gathered from a plant 9 feet high, grown at Isleworth. He remarked that as the flowers fade they turn green. He also showed specimens of a semi-double *Canna*, and drew attention to the fact that bees were seen paying considerable attention to the leaves of *Wistaria*, which had on the under surface a considerable amount of a sticky fluid. There were numbers of aphides on these leaves.

MARKETS.

COVENT GARDEN, August 9.

Cut Foliage, &c.: Average Wholesale Prices:

	s.d.	s.d.		s.d.	s.d.
Asparagus plu-			Grasses, hardy, p.		
mosus, long			dozen bunches	2 0	4 0
trails, each ...	0 4	0 6	Ivy-leaves, bronze	1 6	2 0
— medium,			— long trails,		
bunch ...	0 9	1 0	per bundle ...	1 0	2 0
— short sprays			— short green,		
per bunch ...	1 0	2 6	doz. bunches	1 0	1 6
— Sprengeri ...	0 6	1 0	Moss, per groas...	5 0	6 0
— tenuissimus...	9 0	12 0	Myrtle, per dozen		
Adiantum cuneatum,			bunches...	3 0	5 0
per dozen			Smilax, p. dozen		
bunches...	4 0	6 0	trails ...	4 0	6 0
Cycas leaves,			Hardy foliage		
each ...	1 6	2 0	(various), per		
Fern, English, p.			dozen bunches	3 0	4 0
dozen bunches	1 0	2 0			

Cut Flowers, &c.: Average Wholesale Prices.

	s.d.	s.d.		s.d.	s.d.
Alströméria, per			Marguerites, yellow,		
doz. bunches ...	2 0	3 0	doz. bunch	2 0	3 0
Asters, per dozen			Mignonnette, doz.		
bunches ...	1 0	4 0	bunches ...	2 0	4 0
Bouvardia, per			Montbretias, doz.		
doz. bunches	6 0	8 0	bunches ...	3 0	6 0
Calla æthiopica,			Odon toglossum		
p. doz. blooms	3 0	4 0	crispum, pr. dz.		
Carnations, per			blooms ...	2 0	2 6
doz. blooms,			Pelargoniums,		
best American			per dozen		
vara ...	1 6	3 0	bunches:		
— smaller do. ...	0 6	1 0	— Show ...	4 0	6 0
— Malmesons ...	6 0	10 0	— Zonal, double		
Chrysanthemums,			scarlet ...	4 0	8 0
per doz. blooms	2 6	3 0	— salmon and		
— small blooms,			pink ...	4 0	6 0
per doz. bells.	1 6	3 0	Poppies, Iceland,		
Coreopsis, p. doz.	2 0	3 0	doz. bunches	0 6	1 6
Eucharisa grandiflora,			Roses, 12 blooms,		
per dozen			— Niphetos ...	0 6	2 0
blooms ...	1 0	2 0	— Bridesmaid ...	1 0	2 0
Gardenias, per dz			— Kalseria A.		
blooms ...	1 0	1 6	— Victoria ...	1 6	2 0
Gladiolus Col-			— General Jac-		
villiel, p. doz.			quemiot ...	0 6	1 0
bunches ...	0 9	1 0	— C. Mermet ...	1 0	2 0
— bronchylepis			— Caroline Test-		
p. doz. spikes	0 9	1 0	out ...	1 6	3 0
Gypsophila, per			— Liberty ...	1 6	3 0
dozen bunches	2 0	3 0	— Mad. Chatenay	2 0	4 0
Lilium candidum			— Mrs. J. Laing ...	1 6	2 0
— auratum ...	1 6	2 6	— Sunrise ...	1 0	2 0
— lancifolium,			Stephanotis, per		
rubrum and			doz. trusses...	1 6	2 6
album ...	1 0	2 0	Sweet Peas, per		
— longiflorum...	2 0	3 0	doz. bunches	1 0	3 0
— tigrinum ...	1 6	2 0	Sweet Sultan, per		
Lily of the Valley,			doz. bunches	3 0	4 0
p. doz. bnchs.	6 0	9 0	— Tuberosa, per		
— extra quality	18 0	—	dozen blooms	0 3	0 6
Marguerites, white,			— on stems, per		
p. doz. bnchs.	3 0	4 0	bunch...	0 6	1 0

Vegetables: Average Wholesale Prices.

s. d. s. d.	s. d. s. d.
Artichokes, Green, per dozen ...	1 6-2 0
Beans, English, Scarlet Runners, per half bushel ...	0 10-1 0
— Broad, p. bush.	0 6-1 0
Beetroot, per doz. bunches ...	2 0-3 0
Cabbages, p. tally	2 8-3 6
Carrots, new, doz. bunches ...	1 9-2 0
— 1/2 cwt. bag, washed ...	2 0-3 0
Cauliflowers, doz.	1 6-2 0
Celery, French, p. dozen heads ...	2 6-3 0
Cucumbers, doz. — per flat ...	1 6-3 6
— Dutch, p. box	5 0-6 0
Endive, per doz.	1 9-2 0
Horseradish, per dozen bundles ...	8 0-10 0
— foreign, per doz. baskets ...	8 0-10 0
Leeks, 12 bundles	1 0-2 0
Lettuces, Cabbage, per dozen ...	0 6-1 6
— English, Cos, per score ...	0 9-1 6
Mushrooms (house) per lb. ...	0 6-1 0
— Battons, lb.	0 10-1 0
Mustard and Cress, per doz. pun ...	0 1-1 3
Onions, Egyptian, per cwt. ...	3 6-4 0
— Spring, p. doz. bunches ...	2 6-3 0
— Valencia, case	4 6-5 0
Parsley, per doz. bunches ...	1 6-2 0
Peas, per bag ...	5 0-6 6
— English, bush.	2 0-3 0
— shelled, quart	0 6-1 0
Radishes, p. doz. bunches ...	0 8-1 3
Sorrel, half bush.	1 0
Spinach, bush.	1 0-2 0
Tomatoes, English, p. lb. ...	0 3
— seconds, p. lb.	0 2 1/2
— Jersey, p. lb.	0 2 1/2-0 3
— Valencia, per package ...	6 0-12 6
Turnips, new, doz. bun. ...	1 6-3 0
Vegetable Marrows, per tally ...	1 6-3 0
Watercress, per doz. bunches ...	0 4-0 6

Plants in Pots, &c.: Average Wholesale Prices.

s. d. s. d.	s. d. s. d.
Aralia Sieboldi, p. dozen ...	4 0-9 0
Araucaria excelsa, per dozen ...	18 0-30 0
Aspidistras, green, per doz. ...	21 0-30 0
— variegated, per doz. ...	30 0-42 0
Asparagus plumosus nanus, per doz. ...	9 0-12 0
— Sprengeri, per dozen ...	6 0-9 0
— tenuissimus, per doz. ...	6 0-12 0
Begonias, tuberous, per doz. ...	3 0-4 0
Campanula isophylla, p. doz. ...	4 0-8 0
— Mayi, per doz. ...	6 0-8 0
— pyramidalis ...	9 0-12 0
Cannas, per doz. ...	5 0-6 0
Chrysanthemum coronarium, double yellow, per dozen ...	6 0-8 0
Coleus, per dozen	2 6-4 0
Crotons, per doz.	12 0-30 0
Cocos Weddelliana, per doz. ...	12 0-30 0
Cyperus alternifolius, per dozen ...	3 0-5 0
Dracenas, per dozen ...	9 0-24 0
Eulalia japonica variegata ...	12 0-18 0
Euonymus, per dozen ...	4 0-9 0
Ferns, in thumbs, per 100 ...	8 0-12 0
— in 48's, p. doz.	4 0-10 0
— in 32's, per dozen ...	10 0-18 0
Fuchsias, p. doz.	3 0-5 0
Ficus elastica, p. doz. ...	9 0-12 0
— repens, per dozen ...	4 0-8 0
Heliotropes, per dozen ...	2 6-3 0
Hydrangea Hortensia, per dz. ...	8 0-12 0
— paniculata ...	12 0-30 0
Kentia Belmoreana, per doz. ...	12 0-18 0
— Fosteriana, p. doz. ...	12 0-21 0
Lantanas, per dozen ...	9 0-12 0
Latania borbonica, per doz. ...	12 0-18 0
Lilium longiflorum, per doz. ...	9 0-12 0
Marguerites, white, per dozen ...	4 0-8 0
— yellow ...	9 0-12 0
Pelargoniums, per doz. Show ...	9 0-12 0
— Ivy-leaved ...	4 0-6 0
— zonal ...	3 0-5 0
— scarlet do. ...	3 0-4 0
Privet, golden, per dozen ...	5 0-6 0
Rhodanthe, per dozen ...	3 0-4 0
Roses, H.P.'s, per dozen ...	9 0-18 0
— Dorothy Perkins, each ...	3 0-6 0
Selaginella, p. doz.	3 0-5 0
Spiraea japonica, per doz. ...	4 0-9 0
Verbena, Miss Willmott, per dozen ...	4 0-6 0
— scarlet, per dozen ...	4 0-6 0

Fruit: Average Wholesale Prices.

s. d. s. d.	s. d. s. d.
Apples, Tasmanian, case	8 0-14 0
Apricots, per box	0 10-1 0
— French, p. half bushel ...	6 0-7 0
Bananas, bunch	6 0-12 0
— Giants, bunch	12 0-15 0
— Jamaica ...	3 0-6 0
— loose, per doz.	1 0-1 6
Cherries, Dutch, p. half bushel ...	6 6-7 6
— Morello, per half bushel ...	7 0-9 6
Currants, Black, p. half bushel ...	5 0-6 0
— Red, per half bushel ...	3 6-5 0
Figs, per dozen ...	1 6-4 0
French Plums, p. half sieve ...	3 6-5 0
Gooseberries, per half bush. ripe ...	2 0-2 6
Grape-fruit, case	20 0-26 0
Grapes, Alicante, per lb. ...	1 0-1 6
— Madresfield, lb.	2 0-2 6
Grapes, Gros Maroc, p. lb.	1 6-2 0
— Hambro, p. lb.	0 10-1 6
— Muscats, lb. ...	1 0-4 6
— Denia, white, per barrel ...	5 6-8 0
— black, per barrel ...	8 0-11 0
— Lisbon, case	5 0-8 0
Lemons, Naples, per case ...	20 0-30 0
Melons, each ...	1 0-2 6
— French, Rock	2 6-3 0
— Valencia, per case ...	10 0-16 0
Melon Pears, per dozen ...	4 0-4 6
Nectarines, A., p. dozen ...	8 0-15 0
— B., per dozen	1 0-4 0
Oranges, Jamaica, per case ...	17 0-24 6
Peaches, A., doz.	8 0-12 0
— B., per doz. ...	1 6-6 0
Pines, each ...	2 0-4 6
Raspberries, p. lb.	0 5-1 0

REMARKS.—Tomatoes have fallen considerably in price, owing to the arrival of large quantities, both foreign and English. Ripe Bananas will be scarcer towards the end of this week, owing to the majority of stuff arriving green. Cucumbers are a very bad trade indeed, owing to the large arrivals of Dutch crates. Nectarines are very plentiful of the small size, but best stuff is worth a good price; the same with Peaches. The "Claret" Bananas are expected to arrive shortly, nothing certain as to quantity or time of arrival. English Apples are fairly good, quantities are increasing daily. Trade generally very quiet. *E. H. Rides, Covent Garden.*

COVENT GARDEN FLOWER MARKET.

TRADE during the past week has been duller than at any period of the year, many growers are not sending anything, and those who do find it difficult to sell what they have. In flowering plants *Lilium lancifolium rubrum* is considerably overdone, and there is little trade for other *Liliums*. *Verbenas* and *Heliotrope* are also considerably in excess of the demand. *Zonal Pelargoniums* continue over-plentiful, and there are still some very good show and Ivy-leaved varieties. *Marguerites* are not so plentiful. Some moderately good *Fuchsias* are still seen, but most of the plants are not of the first quality. *Campanulas* are still over-plentiful; *Cannas* do not last well. *Ferns* are not so numerous just now as several growers are not sending consignments, but the supplies are fully equal to all demands. Small *Ferns* sell fairly well, but there is very little trade for the larger plants. Some very good *Codiaeums* (*Crotons*) are seen. There is a little demand for these for country trade. *Aspidistras* are more plentiful, and they are a little cheaper, but as the plants do not suffer much injury if they are left over, they are never cleared out very cheaply. A good many hardy shrubs are now coming in, but there will be very little trade for any pot plants until the middle of September.

CUT FLOWERS.

Supplies are over plentiful. *Roses* are generally very inferior in quality, but some of the blooms are good. *Carnations* are good; it is the American varieties that are the most useful. We now get good blooms of these all the year through. The flowers may not be quite so large just now, but they have long stiff stems, and are useful. Our very best border varieties do not compare favourably with these for the reason that they do not stand erect so well. *Chrysanthemums* are more numerous, but the best quality blooms still keep up in price. *Asters* and *Liliums* are over-plentiful. Some good *Montbretias* are seen. *Lily of the Valley*, *Gardenias*, *Tuberoses*, and *Stephanotis* continue to be plentiful. Some good *Orchids* are seen, and though not over-abundant, they are equal to all demands. *Chrysanthemum leucanthemum* and some of the improved varieties of the "Shasta" *Daisies* are plentiful. *Gladioli* are seen all round the market, and are sold very cheaply. All kinds of ornamental foliage is plentiful, and at closing time this morning much remained unsold. *A. H., Wednesday, August 9.*

FRUITS AND VEGETABLES.

The following are the latest wholesale prices to hand from the undernoted markets:—

LIVERPOOL.—Vegetables: Potatoes, 2s. 9d. to 5s. per cwt.; Turnips, 6d. to 8d. per dozen bundles; Swedes, 3s. to 3s. 3d. per cwt.; Carrots, 6d. to 8d. per dozen bunches; Cucumbers, 1s. 9d. to 3s. per dozen; Onions, foreign, 1s. 6d. to 3s. per bag; Parsley, 6d. to 9d. per dozen bunches; Lettuces, 6d. to 8d. per hamper; Beans, 1s. 6d. to 2s. do.; Kidney, 5d. to 10d. per peck; Scarlet Runners, 8d. to 10d. do.—Fruit: Lemons, 11s. to 25s. per package; Oranges, 9s. to 15s. do.; Melons, 10s. to 15s. do.; Apples, Oporto, 7s. to 9s. do.; Grapes, Almeria, 5s. to 9s. do.; Bananas, Canary, 7s. to 9s. 6d. do.

EDINBURGH.—Grapes, English, 1s. 6d. per lb.; do. foreign, Denia, green, 8s. 6d. per barrel; do. black, 10s. 6d. to 12s. 6d. do.; Lemons, 28s. per case; Apples, Lisbon, 12s. 6d. per case; Nuts, Brazilian, 35s. to 35s. 6d. per bag; Melons, 11s. to 15s. per case; Bananas, 5s. 6d. to 10s. per bunch; Figs, 9s. per dozen; Tomatoes, Scotch, 5d. to 8d. per lb.; do. Guernsey, 4d. to 5d. do.; Onions, Egyptian, 4s. per cwt.; do. Valencia, 5s. 6d. to 6s. 6d. per box; Carrots, 1s. per dozen; Gooseberries, 3s. 9d. to 4s. 6d. per half sieve.

DUBLIN.—Cabbages, 7s. to 17s. per load; Cauliflowers, 2s. to 2s. 6d. per basket; Parsley, 2s. 6d. to 7s. per bag; Parsnips, 10d. to 1s. per dozen; Turnips, white, 4d. to 10d. per bunch; Scallions (young Onions), 4d. to 4½d. per bundle; Salad 6d. to 1s. per dozen; Thyme, 4d. to 5d. per bunch; Carrots, 7d. to 8d. per dozen; Potatoes, 4s. 6d. to 4s. 8d. per cwt. and 5s. for top lots.

GARDENING APPOINTMENTS.

- MR. A. SHAKELTON, late Gardener to Miss DUNCOMBE, Hadow House, Uckfield, Sussex, and formerly at The Grange, Nawton, York, as Gardener to Lieut.-Col. GUNDRY, Grange, Honiton, Devon.
- MR. GEORGE NELSON, for the past six years Gardener to the late R. E. LL. RICHARDS, Esq., Caer-y-nwch, Dolgelly, North Wales, as Gardener to Viscount NEWPORT, Castle Bromwich Hall, near Birmingham.
- MR. IRWIN HUGHES, late in the gardens at Waddesdon Manor, and previously Foreman at Birt Castle, as Gardener to Sir EDWARD W. BLACKETT, Bart., Matten Hall, Corbridge-on-Tyne.
- MR. ARTHUR HOARE, late Gardener to General BERESFORD, Rugby Lodge, Rugby, as Gardener to R. L. BARCLAY, Esq., Frogmore Lodge, St. Albans.
- MR. F. WICKENS, late Inside Foreman at Franks Hall, Farningham, Kent, as Gardener to Sir HCRACE MARSHALL, The Chimney, Streatham, S.W.

THE WEATHER.

METEOROLOGICAL OBSERVATIONS taken in the Royal Horticultural Society's Gardens at Wisley, Surrey. Height above sea-level 150 feet. The following are the "mean" readings for the week ending August 5, 1905.

1905.	TEMPERATURE OF THE AIR.				TEMPERATURE ON GRASS.			TEMPERATURE OF THE SOIL AT 9 A.M.		RAINFALL.	BUNSHINE.
	At 9 A.M.	DAY.	WET Bulb.	NIIGHT.	LOWEST	At 1-foot deep.	At 2-foot deep.	At 4-foot deep.			
JULY 30 TO AUGUST 5.	Dry Bulb.	Wet Bulb.	Highest.	Lowest.	LOWEST	At 1-foot deep.	At 2-foot deep.	At 4-foot deep.	INS.	HR.	MIN.
MEANS	62	57	70	54	49	65	65	63	Tot 0.56	7	56

GENERAL OBSERVATIONS.

THE FOLLOWING SUMMARY RECORD of the weather throughout the British Islands, for the week ending August 5, is furnished from the Meteorological Office:— "The weather was at first fine and dry over England, but showery in Ireland and Scotland. After Tuesday rain extended from the westward over the entire kingdom, and for the remainder of the week the weather was exceedingly unsettled, with heavy rain in the western and northern districts. Thunder was heard at a few isolated stations in England and Ireland on Tuesday, and thunderstorms occurred over Lancashire and North Wales on Thursday, in several parts of Scotland on Friday, and in the East and South-east of England on Saturday.

"The temperature differed but little from the normal. Over the country generally it was slightly below the normal, but in Scotland, E., and Ireland, S., it agreed precisely with the average, while in England, N.E. and E., and the Channel Islands there was a trifling excess. The highest readings, which occurred at times varying greatly in the different localities, ranged from 77° in England, S., and 75° in England, E., and the Midland Counties, to 67° in Ireland, N., and to 64° in Scotland, N. The lowest readings, which also occurred on various dates, ranged from 37° in England, S.W. (at Llangammar, Wells), and 40° in the Midland Counties and England, S., to 46° in England, N.E., and to 55° in the Channel Islands.

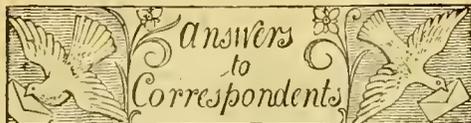
"The rainfall was in excess of the mean in most districts, but was either equal to or slightly less than the mean in England, N.E. and E. Between the 2nd and 4th heavy local falls were reported at many places in the west and north.

"The bright sunshine exceeded the mean in all districts excepting England, S., and the Channel Islands; in Ireland and in England, N.E., the excess was large. The percentage of the possible duration ranged from 49 in England, N.E., and 46 in England, E., and the Channel Islands, to 39 in Scotland, E., and England, N.W., and to only 25 in Scotland, N."

THE WEATHER IN WEST HERTS.

One very cold night.—During the past week there occurred but one unseasonably warm day, and even then the temperature in the thermometer-screen did not exceed 72°. On the other hand all the nights but one proved warm. On the one cold night, however, the thermometer exposed on the lawn fell to within 6° of the freezing-point—a very low reading for so early in the month. Both at 2 feet and 1 foot deep the ground is at the present time slightly warmer than is reasonable. Some rain fell on four days of the week, but the total measurement was not much more than half-an-inch. These rains have not been sufficient to affect even the bare soil percolation gauge, through which no measurable quantity has passed for nearly a month, although each day a few drops still continue to trickle through it during the twenty-four hours. The sun shone on an average for nearly six hours a day, or for about ten minutes a day less than a reasonable duration. On two days moderately high winds were recorded, the highest mean velocity for any hour reaching 16 miles on each of those days—direction south; but during the rest of the week calms and light airs prevailed. The mean amount of moisture in the air at 3 o'clock in the afternoon was as much as 8 per cent. in excess of the average quantity for that hour at the beginning of August. *E. M., Berkhamsted, August 9, 1905.*

[For actual temperature and condition of barometer at time of going to Press, see p. 133.]



BEAN: *J. T.* The Bean you send is that named and figured in the English edition of Vilmorin's *Vegetable Garden* as the Grey Zebra Runner Kidney Bean. It has also been called Luna and American. It is not considered suitable to our climate.

BEGONIA: *H. J. M.* The leaves are attacked with a minute insect, called the Begonia-mite. Dip the shoots in tobacco-water.

BEGONIAS: *Loughborough.* You do not say whether all your plants or only some show the variegated foliage. It is, of course, the result of the absence of the green colouring matter (chlorophyll), but why this has happened we do not know.

BOOKS ON TREES, &c.: *A. B. C.* You will find what you want in Schlich's *Manual of Forestry*, vol. i. (Bradbury, Agnew & Co.). We are not sure, but we think the volumes can be had separately. The *Uses of Plants*, by G. S. Boulger (Roper & Drowley, Ludgate Hill), or *Commercial Botany of the Nineteenth Century*, by J. R. Jackson (Cassell & Co.), contain some of the information you require. You might also consult the *Guide to the Museums of Economic Botany*, to be had on application to the Curator of the Royal Gardens, Kew, at a low price.

CARNATION: *H. C.* Evidently the work of some insect. We cannot say which one. Keep a sharp look-out, especially at night.—*A. C. L.* A good border Carnation, but it is impossible for us to name it. You might send it to a Carnation specialist. It may be an unnamed seedling.

CUCUMBER LEAVES: *S. F.* A bad case of Melon and Cucumber "spot." The best methods of treatment have been given in recent issues, and its cure by means of sulphur was described by Mr. H. W. Ward on p. 96.

FIG-LEAF: *Mac.* The leaf is very badly infested with red-spider, and this pest has caused the discolouration. It is unfortunate that you have to cultivate Fig trees in a vinery, and at the warmer end, because they require very copious syringings at all times, except just when the Figs are ripening. They are very liable to attacks of red-spider, which good cultivators try to prevent by pruning the trees in such a manner that they will not become crowded with growths; also by refraining from using more fire-heat than is necessary, by applying as much ventilation as the condition of the weather permits, by copiously syringing the trees twice each day when the sun is bright, and the fruits are not actually ripening, and by maintaining a considerable degree of moisture in the atmosphere by night as well as by day.

FRUIT-TREES IN POTS: *J. F.* The Apple, Pear, and Plum trees would succeed in pots or tubs of the size you mention (20 inches in diameter and 13 inches deep), providing that they are given suitable treatment. You must bear in mind, however, that fruit trees when grown in this manner require very much more attention and skilled treatment than they would need if cultivated in the open ground. If you are an amateur with little or no experience in the matter, you had better procure a copy of *Fruit Trees in Pots*, by Josh. Brace, from our Publishing Department, price 5s. 3d. post-free. We suppose you have no garden suitable for the trees? If you have there is little purpose to be served by having them in pots unless you intend to cultivate the trees for some period of the year at least in a glass-house. We have only space to state further that your trees for pot culture should be worked upon dwarfing stocks, such as the Paradise Quince, &c, and if you do not know how to prune the trees get some competent person to give you a practical lesson in the work. Your tubs or pots must be well drained.

FUCHSIA PLUGS: *C. A. P.* Probably some error in watering is the reason for the flowers falling prematurely.

GRAPES: *Vitis.* The remedy consists in keeping the conditions of the house, such as the degree, atmospheric temperature, and moisture as uniform as possible, and in supplying the roots with a proper degree of moisture, that they may not suffer from drought at one time and excess of water at another. Growth will then be continuous and normal.

HONEY: *W. D.* You should advertise for what you want. It is of no interest to our readers to print such questions in the Editorial columns.

MELON-ROOT: *Aston T.* A bad case of eelworms at the root. Burn the plants, turn out the soil, and supply fresh soil that has been baked or otherwise sterilised. Your order has been handed to the Publisher.

NAMES OF FRUITS: *W. B.* We think the Grape is a moderate sample of the variety Gros Colmar, but owing to the berries being much under ripe and to the fact that they were crushed during transit through improper packing it is not possible to be certain.—*G. Nottage.* Peach, Crimson Galande.—*J. E.* Plum, Early Favourite, raised by Mr. Rivers at the same time as Early Rivers.

NAMES OF PLANTS: *J. C. & S.* *Salvia Horminum.*—*Japonica.* *Cattleya granulosa* and *Oncidium prae-textum.*—*Mac.* *Begonia* "President Carnot."—*W. T., Gloucester.* *Dendrobium crystallinum.* It is often collected with *D. Bensonae*, and in the short-bulbed form is not easy to distinguish from it when not in flower, though usually the pseudo-bulbs are much longer and more slender than those of *D. Bensonae*. The flowers had withered, but the peculiar anther-cap renders identification easy.—*Swenstone.* 1, *Trachelium cœruleum*; 2, *Lysimachia*; we found no Carnation.—*Shrub.* 1, *Thuya nootkatensis*; 2, *Pyrus Aria*, White Beam; 3, *Cupressus Lawsoniana* variety; 4, *Leucothoe spinulosa*. We do not think the tying-up of the shrubs you mention had anything to do with their death. A certain proportion might be expected to suffer from transplanting.—*Croydonian.* Your plant is an *Ornithogalum* of some sort, but the material you send is not sufficient for us to identify the species. Why address the publisher on such a matter?

A. Y. L. The blue flower is not an Orchid, it is *Ophiopogon Jaburan*. The Orchids next week.—*W. D.* You have tied scraps of thin paper round the specimens, which scraps are difficult to remove, and are soaked with moisture from the plants—worse than all, you have not numbered them. The white flower is *Lysimachia clethroides*, the small blue flower is *Anchusa italica*, the large blue flower is *Gentiana asclepiadea*; then there is a *Valerian*, and the pale lilac flower with hairy leaves is *Phacelia tanacetifolia*.—*H. W. G.* So far as we can tell, the leaf is that of *Ailanthus glandulosa*.—*F. C.* *Rhus typhina*.—*T. M. N., Cape Colony.* 1, *Lastrea trichodes* of gardens; 2, *Asplenium dimorphum*; 3, *A. bulbiferum bifforme*; 4, *Adiantum Waltoni*; 5, *A. cuneatum mundulum*; 6, *A. cuneatum elegans*; 7, *A. cuneatum* variety.

ONIONS: *D. R. D.* The bulbs are affected with the Onion-mildew (*Peronospora Schleideni*). Use a free application of flowers-of-sulphur, and do not cultivate Onions on the same ground again for several years to come.

PEACH: *A. B. R.* The splitting of the stone is difficult to account for. In the first place the stone is not properly formed, then fungus has got in, and the fruit has fallen. Some adverse condition during the stoning period has caused the mischief, but what we cannot say.

PEAS: *An Old Reader.* The Peas are attacked by the Pea-mildew, *Erysiphe Martii*. Spray the plants twice a week with a solution of potassium sulphide, 2 oz. dissolved in 3 gallons of water. Some varieties are much more susceptible than others to attacks of this disease.

OWNERSHIP OF STOCK IN A NURSERY: *One in Doubt.* If the gardener or foreman brought the original stock to the nursery, and made no arrangement with his employer by which such stock should remain his own or partly his own

property, then the employer would be able to claim it, notwithstanding that the man had propagated and increased the stock without receiving orders from his master, and without his master's knowledge. The reason is that, although the original stock was never purchased by the master, it has been maintained and increased in the master's time and with his materials, and presumably by labour for which the master has had to pay. A servant should make an arrangement with his employer before doing such work.

PEACHES: *A. B. D.* You do not say at what stage of growth the fruits fall? We suspect that the two trees you describe as fruiting badly are growing too vigorously, and the cutting back of the growths with a knife will only make matters worse. If you believe them to be making shoots that are abnormally strong let the trees be lifted in October, and the roots be pruned a little.

PEARS: *T. H. S.* The so-called Pear-"fruit" is really a swelling of the flower-stalk, the true fruit being the core, which is embedded in the fleshy stalk. In your case the core is not formed. Such instances are not uncommon, and have often been illustrated in the *Gardeners' Chronicle*. If you were a cute American you would "boom" them as specimens of a coreless Pear. We do not advise you to do this, as we expect the enterprise would not pay! They are botanical curiosities only.

PREPARING GRASS-LAND FOR ONIONS. *Constant Reader.* Apply powdered lime at the rate of 20 cwt. per acre before the grass is disturbed, and when rain is expected; it will then get well washed into the haunts of vermin of all kinds, of which it is a good preventive and cure. It is also an important fertiliser, combining with other chemical elements in the soil and rendering them available food for plants. The folding and feeding of sheep is a simple and effective way of enriching the soil, and should be followed by deep cultivation, of which trenching is the best means, adding plenty of farmyard manure, and burying it at least 6 inches deep. This should be done if possible two months before the time of sowing the seeds. The influence of the weather will then sweeten and mellow the soil. To produce bulbs of the best appearance and longest keeping qualities, seeds sown in the spring are better than autumn-sown seeds. If they are sown during February in boxes placed in an atmosphere of an intermediate temperature, and the seedlings afterwards transplanted, a considerable advantage is gained. Soot is an excellent manure for Onions at any season, and nitrate of soda may be applied with advantage when the bulbs are forming; but care must be exercised in its use, about 1½ lb. to 50 square yards may be applied with safety. See also note under "The Kitchen Garden," on p. 129.

TOMATO: *Lec.* From your letter we gather that the plants have been afforded soil that is too rich in manures, or that you have applied liquid or artificial manures in excess of the requirements of the plants. You are perfectly right in supposing that the cutting away of great sappy leaves is extravagant, for it is sheer waste of the energies of the plants. At the same time, if your plants have made such enormous leaves and these are shading the fruits more than is good for them, you may shorten the leaves by pinching the ends from them. Another time let the plants be put into porous soil of only moderate richness, and make the soil very firm about the roots, which will cause growth to be made more slowly, and less long-jointed. Do not afford manures of any kind until the plants have set some fruits, but afterwards the requirements of the crop will prevent the plants becoming unduly gross. Procure a copy of *Tomato-culture for Amateurs*, by B. C. Ravenscroft, price 1s. 2d. post-free, from our Publishing Department.

COMMUNICATIONS RECEIVED.—*A. H.*—*J. H.*—*S. W. F.*—*W. B. S.*—*E. Spiotta*, Genoa—*G. M.*, Naumburg-u-S.—*C. M.*—*G. W. H.*—*H. H.*—*Felix*—*A. D.*—*C. T. D.*—*W. J. W.*—*A. Y. L.*—*W. D.*—*A. M.*—*D. R.*

THE

Gardeners' Chronicle

No. 973.—SATURDAY, August 19, 1905.

CONTENTS.

Apple Five - Crown Pippin	155	Nicotianas, hybrid ...	151
Books, notices of—		Oak trees at Stuttgart	154
Botanical Magazine	151	Obituary—	
British Trees...	150	Keith (Rev.) W. ...	158
Flora and Sylva ...	151	Orchid disease, a new	153
Flore de France ...	151	Over-sea supplies ...	151
The Estate Nursery	151	Phloxes at Cardiff	151
Battersea Park ...	152	Flower Show... ..	154
Burnham Beeches ...	141	Planta, new or noteworthy—	
Campanulas of the carpathica group ...	145	Cycas Micholitzii ...	142
China, plant-collecting in ...	146	Potato trials ...	150
Chrysanthemum show in Paris ...	151	Queensland State Nursery at Cairns ...	150
Conifers, blue ...	147	Red Currants ...	154
Covent Garden Market, changes in ...	151	Rosary, the ...	145
Daphne, the species of Douglas Fir at Scone, the ...	152	Schizanthus, the cultivation of ...	155
Eremurus, a hybrid ...	151	Seed harvest, the ...	141
Eucryphia pinnatifolia ...	154	Societies—	
Exhibiting Sweet Peas	151	Gardeners' Debating	158
Fern-pest, a new ...	154	Newbury Horticultural ...	158
Forestry—		Ramsay Horticultural ...	158
The Locust Tree ...	155	Royal Botanic ...	150
Fruit crops, remarks on the ...	155	Royal Horticultural	156
Fruit-growing in British Columbia ...	151	Royal Horticultural of Ireland ...	158
Fruit-tree budding ...	144	United Hort. Benefit and Provident ...	158
Grafting the Carrotion upon the Saponaria.	150	Week's work, the—	
Horticulture, endowment for ...	144	Apiary, the ...	149
Kew notes ...	146	Flower garden, the	148

ILLUSTRATIONS.

Campanula carpathica "White Star"	145
Crate for the transit of honey	146
Cycas Micholitzii	142, 143
Daphne Mezereum album, a flowering spray of ...	153
Orchid-leaf fungus, Hemileia americana	153
Schizanthus flowering in Endcliffe Grauge Gardens, Sheffield	155
View in the State Nursery at Cairns, Queensland (Supplementary Illustration)	

BURNHAM BEECHES.

IN September, 1737, Thomas Gray, the poet, who, by the way, became at a later date a painstaking student of Linnaean botany, wrote to his friend Horace Walpole from his uncle's house at Burnham, where he was spending part of his vacation. "I have," he says, "at the distance of half a mile through a green lane, a forest (the vulgar call it a common) all my own—at least as good as so, for I spy no human thing in it but myself. It is a little chaos of mountains and precipices; mountains, it is true, that do not ascend much above the clouds, nor are the declivities quite so amazing as Dover cliff, but just such hills as people who love their necks as well as I do may venture to climb, and crags that give the eye as much pleasure as if they were more dangerous. Both vale and hill are covered with most venerable Beeches and other very reverend vegetables that, like most other ancient people, are always dreaming out their old stories to the winds. . . . The timorous hare and sportive squirrel gambol around me, like Adam in Paradise before he had an Eve; but I think he did not use to read Virgil, as I commonly do there."

The beauty-spot which the poet thus discovered to the world has many interesting associations. We read of an abbey founded at Burnham in the thirteenth century by Richard, Earl of Cornwall, the brother of Henry III., who only just missed becoming Emperor; but we are not aware of any vestige of monastic buildings now remaining. In the reign of Elizabeth the

Abbey lands were held on lease by Paul Wentworth, whose name was destined a little later to play a prominent part in English history; whilst it was during the tenancy of Lord Grenville, First Lord of the Treasury, some two centuries later, that the world-famed Pinetum was commenced in the adjoining domain of Dropmore. It was to East Burnham Cottage that Richard Brinsley Sheridan brought his beautiful bride, who had been Miss Linley; and in 1838 this house was bought by George Grote. Here he planned and mainly wrote his *History of Greece*, building with the profits the house he named History Hut, in which its completion was celebrated at Christmas, 1855, by the brewing of a bowl of punch; and here the historian was visited by Hallam, Cornwall Lewis, De Tocqueville, Bunsen, and others. In these days it is the residence of one as famous in horticulture as Grote in literature.

It is, however, for its natural beauties, and not for its associations, that we value Burnham Beeches to-day; and it was as a little oasis of pristine forest charm in the midst of a commonplace neighbourhood, and at no great distance from the metropolis, that the Corporation of London purchased 374 acres of it in 1879 for £6,000. Assuredly it was money well spent, and the public are much indebted to Mr. Francis George Heath, who persuaded the City to make the purchase, and has added to our obligation to him by preparing a valuable guide-book to this forest in miniature. The pollarded Beeches—the work, it is said, of Cromwell's soldiers—20 feet or more in girth at 3 feet from the ground, excel in their picturesque distortion the finest specimens of High Beech or Monk's Wood in Epping Forest; while the lawn by which they stand recalls the glories of the New Forest. Silent pools of dark water present beauties which none of the ponds of Epping can rival; the silver stems of slender Birches are reflected in their surfaces; fine tapering Hollies border a wide stretch of open heath; and with doubtful fitness the bloom of many Rhododendrons, planted before the Corporation took possession, mingle with sombre Yews in the denser groves of young Beech and Oak. A view of these picturesque trees was given in our number for April 9, 1904.

Traversed, no doubt, by too many roads with unnecessarily conspicuous sign-posts, this peaceful remnant of ancient woodland is sufficiently remote from railways and the busy haunts of men to retain much of the attraction that endeared it to Gray. B.

SOME RESULTS OF THE SEED HARVEST.

THE seed harvest season has been one of the most favourable in late years. On light lands the crops have been rushed owing to the drought, and there has been a danger of Broad Beans being affected by the smother-fly, but on the whole they seem to promise well.

Peas.—As has been the case in recent years, garden Peas will form an interesting item. Early varieties, now generally harvested, are disappointing in England, and the yield is light. The New Zealand crops of the early dwarf sorts are also below the average, but as these are not so much grown as formerly there will probably be enough. In some of the districts in Germany some of the crops of early Peas were almost entirely destroyed by hail when ready to harvest. At the moment

of writing the later varieties show a great shortage on account of the continued drought, the blight having attacked the late pods. There is evidence also of damage in the way of worm-eaten Peas, so that Pea-picking will be again a serious item of expense. Early buyers will be the most fortunate.

Beans.—Broad and long-pod promise well and should be plentiful, but it is not too late for the blight to appear. Runner Beans now in bloom promise well, but in Germany the acreage is very small indeed. Dwarf French Beans promise well, and should be reasonable in price.

Cabbages.—Cabbages are yielding well, but as the supply of the fancy sorts, such as Ellam's and Wheeler's, is practically exhausted, there will be ample room for all that will be saved. Cattle Cabbage is plentiful, and there is seed of last-year in most warehouses. French crops of Cabbage are very small, but there was a heavy yield last year, sufficient perhaps for two seasons. The Dutch growers also had good crops, but generally speaking the Continental varieties are not such as affect the English trade.

1,000-Headed Kale, so much in demand for feeding purposes, is of a much smaller acreage than usual this season.

Broccoli.—These are chiefly grown in Essex. All the crops have done well, and there is likely to be a good supply of seeds of most sorts.

Savoy Cabbages.—That popular variety Green Curled promises to be short in yield, and prices are a little advanced. Other sorts promise an average crop, as do all the Kales. Prices will remain at about the usual level.

Onions.—This will be the most interesting crop this season, and seeds are expected to realise very high prices. One main and perhaps principal reason for this scarcity is that the bulbs last season were worth so much money that instead of being planted for seed they were sold on the market. Added to the short acreage of home-grown seed, hailstorms have done enormous damage to the crops in Germany, and in California there is not more than two-thirds of the usual acreage. Altogether things look very unsatisfactory indeed, and as there is no seed in stock some growers anticipate that the cheaper sorts, such as White Spanish, will be worth as much as 5s. per lb. before the season is over.

Leeks.—After two or three years of plentiful harvests the seed crop promises to be very short, and the yield is already being bought up.

Radish.—The promise of the crops is found to vary considerably in the leading producing districts. In some parts of Germany the yield promises to be very good, but the crops in Anjou up to the present are disappointing. English crops of Radish require rain.

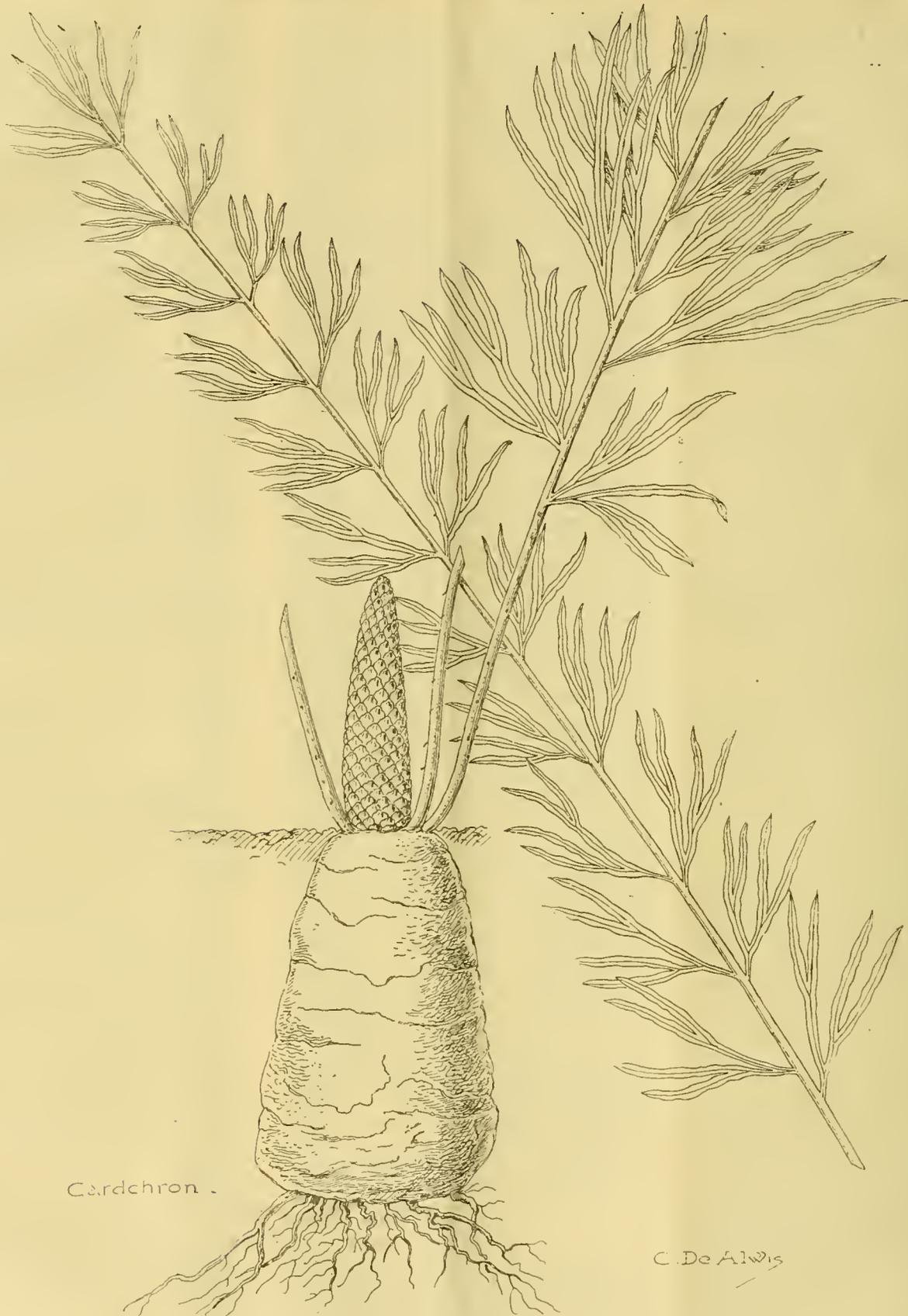
Cress.—This promises fairly well, and there should be good samples if the present weather continues.

Carrot.—The yield in Germany is expected to be very short, but there are highly promising crops in the south of France, while they are fair in Anjou, and are better nearer Paris. White Belgian Carrot will probably bear an advance in price.

Lettuce.—Both the Cos and Cabbage varieties promise excellent yields, and the harvest should be again a plentiful one.

Parsley.—Home crops promise an excellent yield, but less seed than usual is likely to be forthcoming from the Continent.

Summary.—On the whole, the crops promise a fair supply. Onions and Leeks will be the scarcest articles, Peas are generally worm-eaten, and the crops short. A great deal depends, however, on the actual damage done by the exceedingly heavy hailstorms in the seed-growing districts of Germany. Pisum.



Cardchron.

C. De Alwis

FIG. 48.—CYCAS MICHOLITZII, *Dyer*: ENTIRE PLANT.
Male plant with cone, showing also subterranean caudex and a leaf. (*Much reduced.*)

NEW OR NOTEWORTHY PLANTS.

CYCAS MICHOLITZII, DYER.*

I AM afraid the pressure of other work has compelled me to defer too long the formal de-

* *Cycas Micholitzii*, sp. n. Caudex subterraneus, $1\frac{1}{2}$ ped. longus $1\frac{1}{2}$ poll. crassus. Folia pauca, ad 10 ped. longa, basi ad $\frac{1}{4}$ ped. aculeis armata, pinnulis 8 poll. longis, fere 2 dichotomis, segmentis $\frac{1}{2}$ poll. latis.

scription of a new and very remarkable species of *Cycas* which Mr. F. Sander has placed in my hands.

We owe this interesting discovery to Mr. W. Micholitz, Messrs. Sander & Sons' collector, who had the good fortune to find the plant in Annam.

Strobilus mas (juvenilis) ad 6 poll. longus, squamis atheriferis brevissime acuminatis. Carpophylli lamina terminalis obovato-rhombæa superne profunde pectinata 3-lacera, Annam. Legit C. Micholitz. W. T. Thisleton-Dyer.

Complete material for its study came last year into the possession of my friend Mr. Ridley, the accomplished and enthusiastic Director of the Botanic Gardens, Singapore. The new species is so unlike any other *Cycas* in its foliage that it is scarcely a matter of surprise that Mr. Ridley proposed to make it the type of a new genus. In this however, for reasons to be presently explained, I found myself unable to concur; and Mr. Ridley, learning that I was interested in it



FIG. 49.—CYCAS MICHOLITZII, Dyer: DETAILS OF FOLIAGE AND MALE CONE.

A—Male cone (probably immature).

B—Lower surface of scale of male cone, showing anthers.

C—Upper surface of scale of male cone, showing anthers.

D—Carpophyll with immature fruits.

E—Pinnules half natural size.

very kindly placed all his material at my disposal. I am further indebted to him for the drawings by the artist attached to his staff, which are here reproduced.

A glance at these will show that the striking and remarkable feature of the new species is the

repeated dichotomy of the leaf-pinnules. If we except the Australian *Bowenia*, which in its "loosely bipinnate" foliage stands alone in the order, we might have affirmed till within the last quarter of a century that pinnate or pinnatifid leaves were uniformly characteristic of the

Cycadeæ. This conclusion was, however, rudely dissipated when the late Charles Moore published, in 1883, his description of *Macrozamia heteromera*, which has, unlike the rest of the genus, the pinnules once or even twice dichotomous.

One was scarcely, however, prepared for any-

thing of the same kind in the genus *Cycas*, which is widely distributed from Africa to Polynesia with numerous species, more or less well defined, but all having simply pinnate leaves. The first exception was a plant from Kwangsi, collected by Mr. H. B. Morse, which I described in the *Index Floræ Sinensis* (*Journal of the Linnean Society*, vol. xxvi., pp. 559, 560) as *Cycas Rumphii* var. *bifida*. In this the pinnules were simply bifid to the base. In the absence of any material of the reproductive organs, I regarded it, and I think most probably wrongly, as a mere variety of *C. Rumphii*. I was encouraged in this view by Miquel's figure of *Cycas inermis* (*Annal. Bot. Ind.*, ii., t. iii.), in which the lower pinnules of the leaf are represented as bifid. As Kwangsi and Annam are contiguous, it is by no means improbable that Morse's and Micholitz's plants may turn out to be the same. In that case the affinity of the former would be wholly remote from *C. Rumphii*, to which I referred it.

Cycas Micholitzii, as I propose to name the new species, belongs to the small group which is confined to an area extending from Nepal to Cochin China, in which the margins of the carpophylls are pectinate or comb-like. It differs from both the other species, *C. pectinata* and *C. siamensis*, in having a very short or obsolete acumen to the antheriferous scales, instead of the long and slender one which they possess.

According to the description of Micholitz, *C. Micholitzii* has a subterranean caudex or stem. Both *C. pectinata* and *C. siamensis* develop a trunk which may be 6 feet or more. *W. T. Thiselton-Dyer*.

FRUIT-TREE BUDDING.

BUDDING is more generally practised than grafting when propagating new varieties of fruit-trees because it entails less labour and produces equally good results, and furthermore enables more trees to be raised from a given shoot; for to be successful with grafting two or more eyes are necessary to form a graft.

Budding is generally practised during the months of July and August, the proper condition of the stock being the first consideration. This state obtains when the stock is growing freely, and when the bark is in such a condition that it is easily separated to allow of the insertion of the bud. If the stock is in a stunted condition and has already finished growing, it will be of little use to try and insert a bud under such conditions, so tightly does the bark adhere to the wood. Where this is found to be the case it is best to give the stock a good soaking of water. This operation can easily be performed with a limited number of plants; but in places where, as in nurseries, large quantities of trees are budded, the watering becomes a serious item; but I have nevertheless seen it carried out with success, and it has well repaid the trouble and expense taken. In some instances stocks will be found whose bark will not "run"—a term used when the bark does not separate freely from the wood. Such stocks should be left until the spring, and then grafted.

Usually the first subject ready for budding is the Cherry, followed by Apricots and Plums. The wood of the Peach and Nectarine is not in a suitable condition until late in the season, consequently these trees should be left until the last, the Pear and Apple preceding them. In selecting shoots from which the buds are to be taken, be careful that they are neither too hard and dry nor too soft and sappy. Generally speaking, a shoot which is just finishing its growth will be found to be in the right condition, that is, it should feel firm and stiff when bent between the finger and the thumb. Spindly, willowy shoots are useless, and medium-sized ones should be selected in preference to those of coarse growth. Weakly, ill-developed shoots whose buds

are not plump and prominent must likewise be rejected as unsuitable. Buds for the purpose are much better cut from trees growing in the open rather than from those growing against walls or under glass. This particularly applies to Peaches and Nectarines.

In commencing the operation of budding it is very necessary that the shoots should be freshly cut, and it is a bad practice to immerse them in water for too long a period, for by so doing the inner bark becomes discoloured, and the buds are consequently rendered useless. Buds that have travelled some distance and have become shrivelled may have their plumpness restored by laying them in damp moss. Young stocks varying from a $\frac{1}{4}$ to $\frac{1}{2}$ an inch in diameter are the best for budding purposes; old and aged shoots should be grafted. The scion from which the buds are to be taken should approach as near to the size of the stock as possible, and as the sizes of the latter will vary when a quantity have to be operated on, the diameter of the bud can easily be varied to suit the individual case by the manner in which it is removed from the scion. When the stock is made ready by removing any side growths that are in the way of the operator, a cross cut should be made one-third round the stock, and then a longitudinal cut $1\frac{1}{2}$ inch in length at right angles to the first, the two forming a letter T. The flat end of the budding-knife should be inserted between these cuts, and the rind lightly and carefully raised ready for receiving the bud. The leaves should be removed from the shoot containing the buds to be inserted, with the exception of about $\frac{3}{4}$ inch of the leaf-stalk. The shoot should be held with the growing point downwards, and the bud carefully removed with a sharp knife, severing the wood and bark with the included bud for about 2 inches. The wood should next be removed, a proceeding that requires great care. To do this expeditiously the bud should be held by the shield between the finger and thumb of the left hand, and the wood extracted with the forefinger and thumb of the right hand. When the wood is removed the bud is ready for inserting into the stock.

The process of tying-in the bud is an important item, and should be commenced at the lower part of the incision, leaving a sufficient piece of raffia to fasten at the top. It is important that the bud be securely bound below the shield, and again close down to the bud, so that the eye may be lightly pressed on to the wood of the stock. In from ten days to a fortnight it will be seen if the budding has been successful. Much depends upon the nature of the stock used as to what height from the ground-level the budding should be performed.

CHERRIES can be successfully budded on the Cherry-stock at any required height, and for standard trees much time can be saved by budding at the necessary height up the stock. The dwarfing stocks for Cherries is the Mahaleb, and this should be budded close down to the ground-level. Cordon-trained trees succeed admirably on this stock, and pyramids make neat, compact and fruitful trees.

APRICOTS are generally budded on Plum-stocks, one known as the Brussels stock suiting most varieties. If standard trees are required, the Brussels-stock is used as the stem, the budding being executed at the required height. By budding the Brussels-stock on to the Mussel Plum the stem grows much faster, and is also cleaner in growth and freer from knots than if grown on its own roots. The Myrobalan Plum will also answer as a stock for the Apricot, but I do not regard the growth from this stock as being so free, and furthermore I am of the opinion from my experience that trees grafted on the Myrobalan are more liable to canker, and die through the hard nature of the stock being imparted to the Apricot.

APPLES.—Various stocks are used and various results are obtained in working the Apple. It is a matter of vital importance that the grower should have some knowledge as to the kind of stock his trees are growing upon. There are but two kinds of stocks on which the Apple can be said to do well, one being the Crab stock, which is suitable for all forms of trees where quick growth is needed, and the other is the paradise stock, of which two or three forms are now in commerce, including the English broad-leaved variety, which is the best. This stock should be budded low down, so that the union of the stock and the scion, often an ugly formation, may be hidden below the surface of the soil, where it often develops roots, to the additional benefit of the tree.

PEAR trees are budded on the common Pear, its most natural stock, and upon the Quince stock, for dwarfing and early fruiting purposes. There are a few kinds of Pears which will not grow successfully when budded directly on the Quince, but require budding on to another variety, which will succeed on the Quince. The Quince stock is more adapted for budding than for grafting, and in common with all the dwarfing stocks should be worked low down the stem. Weak-growing kinds required as standards are obtained by budding a strong-growing variety such as Pitmaston Duchess on to the Pear stock, and when the necessary height of stem has been attained, the required variety is budded at the desired place.

PLUMS.—For budding the Plum several kinds of stocks are used, but to be successful an intimate knowledge must be gained of the different varieties that are suited to the various stocks. Many stocks are obtained from suckers. The stock suiting most varieties is the common Mussel, which produces few suckers, and is propagated chiefly from root cuttings, as also is the Brussels-stock. The Myrobalan Plum is used with good results by some nurserymen as stock for Damsons, but it should be worked late in the season when the sap is not excessive.

PEACHES AND NECTARINES.—To be successful in budding the Peach and the Nectarine much attention and study are needed. Stocks as nearly allied in constitution to the variety to be worked must be used. Feeble growth, unfruitfulness, and premature death are some of the failures attributable to unsuitable stocks. Up to the present time no universal stock for these fruits has been discovered, but nurserymen of repute test for themselves the suitability of the stock which they use, zealously guarding the secret of their success. The character of the trees and of the fruits are somewhat changed by the use of various stocks. Up to the present time the broad and shining-leaved Mussel Plum is used, as is also the Brussels for some few kinds, while some varieties succeed only on the Brompton stock. In selecting buds of Peaches and Nectarines those with single leaves should be neglected, as should those with too prominent triple leaves. *W. H. Clarke, Aston Rowant Gardens, Oxon.*

ENDOWMENT OF HORTICULTURE.—Property to the total value of £338,026 14s. 7d., including net personalty £315,029 0s. 1d., has been left by Mr. JOHN INNES, J.P., of Manor House, Mostyn Road, Merton, Chairman of the City of London Real Property Co., Ltd., and Merton Park Estates Co., Ltd., who died on August 8, 1904, aged seventy-five. The testator left the Manor House and the residue of his property upon various trusts for a horticultural college or public museum and recreation grounds. This or a similar paragraph has been "going the rounds" for some time, but nothing definite is known about the statements therein made in quarters where knowledge might be anticipated.

CAMPANULAS OF THE CARPATICA GROUP.

THE genus *Campanula* is very rich in beautiful species, and there are a few good garden-raised forms also. It is somewhat surprising how little has been accomplished by the hybridist in producing important novelties in this group. Of late, however, more than one good variety has been seen

confined to the rockery, where they should be planted in free, rather open colonies or groups in their distinctive shades of colour. All the forms are readily increased by division of the root-tufts in spring, and this may be done in quite a free manner, a large tuft readily yielding a score of young plants. These small divisions are best potted for a time, to be subsequently planted in permanent positions. All the kinds grow quite

flower and style of branching. Usual height 18 inches.

C. c. pelviformis represents a distinct type; the flowers at first are nearly saucer-shaped, but eventually assume a flattened form. They are lilac or pale blue in colour, the stems freely branched; this is a very showy plant in those instances where it succeeds. In some gardens the plant does not do well, and generally the variety is less robust than the other members of the group.

C. c. Isabel.—This handsome form belongs to the pelviform section, as is evidenced by the flowers, of which so fine a lot was displayed recently at one of the Royal Horticultural Society's meetings. The flowers are 2 inches across, of deep violet-blue colour, and profusely borne on short peduncles. This is an ideal garden plant, and quite an acquisition. A bed of this kind constitutes a feature in any garden. Height 15 inches.

C. c. turbinata is a very dwarf plant not more than 4 inches high, with large purple-blue flowers produced above a cushion of greyish leaves. It is a most desirable rock plant. There are many inferior varieties sold for this plant, but the true kind is obtainable in the best nurseries.

C. c. Riverslea is another meritorious kind with deep blue flowers.

C. c. Hendersoni.—I believe nothing definite is known concerning the origin of this distinct form, but it has been assumed to have originated from *turbinata* crossed with *pyramidalis*, and the shortly pyramidal panicles of slightly drooping blossoms and spreading tufted habit are just what one might expect from the intercrossing of such widely different types. The plant is not a good grower generally, but in certain localities and soils it makes a fine bush and flowers freely.

C. c. White Star (see fig. 50).—I believe this excellent white variety and the variety *Isabel* were seedlings from *C. c. Riverslea*. If this is so it is interesting to note that *Isabel* partakes of the pelviform character in the flowers, a feature quite absent in the above-named kind, which is like *C. c. turbinata* in habit and compactness. Apart from this, it is not too much to say that "White Star" is the finest thing among the white Carpathian bell-flowers yet seen. The flowers are 2 inches across, white, with a blue ring encircling the ovary at the base of the corolla internally. This is a really fine plant, height as at present known 6 or 8 inches. "White Star" and *Isabel* were raised by Mr. M. Prichard, of Christchurch, and the twain are worthy additions to the group and are really first-class summer-flowering perennials. *E. H. Jenkins, Hampton Hill.*



FIG. 50.—*CAMPANULA CARPATICA* "WHITE STAR."

in excellent condition at the Royal Horticultural Hall, Vincent Square. The various kinds are all easy of cultivation, and worthy of being included in any choice selection of hardy perennials. Those most nearly allied to the species *carpatica* are by their taller growth and free flowering habit well adapted to border cultivation; nor will these same kinds be out of place in the well-kept, well-planted rockery. Those forms more closely resembling the turbinata section would by reason of their dwarfness be best

well in deep, well-drained soils, and the majority succeed either in light or heavy soils. Provision should be made in the original planting, and more especially for the larger-growing varieties, for a tuft of growth that in the third year may reach 2 feet across.

The forms that assume these proportions are *C. carpatica* (type) with deep blue, broadly campanulate, erect flowers on freely-branching, leafy stems. *C. c. alba*, *C. c. pallida*, of which there are at least two forms, are alike in habit, forms of

THE ROSARY.

FRAU KARL DRUSCHKI—A QUESTION OF PRECEDENCE.

THERE can be no question as to the beauty of this Rose, a cross between *Merveille de Lyon* and *Caroline Testout*, but a doubt has arisen as to its proper name. It appears that it was exhibited at various places in Germany by its raiser, M. Peter Lambert, as *Schnee Königin* (Snow Queen), but at that time it was not in commerce. When M. Lambert offered it in trade he sent it out under the name of *Frau Karl Druschki*. The question is, which name should have precedence? Was the exhibition of the Rose without description or figure to be taken as sufficient publicity? If it was, then of course the first name ought to remain—particularly if the Rose was certificated, as it probably was. But the public cares little for rules of priority; it has got to know and appreciate the Rose as *Frau* (or *Madame*) *Karl Druschki*, and not all the congresses will be able to effect a change. It will be remembered that a

similar question arose with reference to "Mrs. W. J. Grant." This lovely Rose was exhibited and certificated and, we believe, he-medalled under this name. The stock was sold to a firm of American nurserymen, who considered that as they had purchased the Rose they had the right to name it as they chose, and thus the name Belle Siebrecht is attached to it in America. We need not enter upon the ethical question whether the purchasers were right or wrong in their procedure. Assuming for argument sake that they were within their right, we are equally within ours by adhering to the rule of priority of publication, and in our trade catalogues, and particularly in official publications, precedence should be given to the English rather than to the American lady. *M.*

— FRAU KARL DRUSCHKI is probably the finest white-flowered Hybrid Perpetual Rose in cultivation. It is a good grower and free flowerer, producing freely long, pointed buds and broad petals. Every Rose grower should include this grand Rose in his or her collection. It is a fine buttonhole Rose.

KAISERIN AUGUSTA VICTORIA.

This Hybrid Tea is a Rose that is not met with in private gardens as often as it undoubtedly deserves to be. Its large clusters of creamy-white blooms are deliciously scented, and when seen in good condition never fail to excite admiration. If planted at the foot of a wall or fence having a west or east aspect in stiff soil enriched with short manure, it will reward the grower with a fine lot of blooms during the summer and early autumn months. If larger flowers are desired, the clusters should be thinned out to one central bloom.

MRS. W. J. GRANT.

This excellent Hybrid Tea Rose produces with perfect freedom bright rosy-pink and beautifully formed flowers which are pointed in the bud stage, and admirably adapted for buttonholes and for the adornment of small vases in the drawing-room, &c. The plant, too, is a good and free grower, and does well in bush form the second and subsequent years from the bud stage. In addition to the decorative value of the three Roses mentioned above, they also carry weight in the exhibition stands. *H. W. Ward, Tayleigh.*

KEW NOTES.

VARIOUS PLANTS IN FLOWER.—Amongst the very numerous plants now flowering in the houses the following are a selection of the more interesting and beautiful. As there are but few Orchids in flower at this time of the year, those that are in bloom are especially interesting. This is so in the case of *Stanhopea tigrina* var. *superba*, a very handsome variety, and of which Kew possesses a fine specimen plant, carrying twelve expanded flowers at the present time. This plant during the past month has developed thirty-six fine flowers. *Catasetum* now blooming are *C. tabulare*, *C. Darwinianum*, *C. fimbriatum* (with three good flower-spikes), and *C. macrocarpum*. *Cyanocheilus chlorochilon* and *C. pentadactylon* are also in flower. *Habenaria leonensis* is a delightful small-flowered species with white flowers. *Bulbophyllum grandiflorum* is very fine just now, with nine of its large and extraordinary-looking brown flowers. *Angraecum caudatum* and *A. articulatum* are also worthy of note. *Phalænopsis cornu-cervi* is a pretty and rather rare species. *Warszewiczella cochlearis*, *Sobralia Sandersoniana*, *S. Veitchii*, *Lælio-Cattleya bletchleyensis* are all choice and beautiful Orchids now flowering at Kew. *Lycaste leucantha* is a distinct species, with green sepals and white petals.

In the Victoria-house *Odontadenia speciosa*, trained on the roof, is in fine condition at the

present time. *Mascarenhasia Curnowiana* is an old species, with Vinca-like blossoms of a bright red colour; it is now flowering in the stove.

In the Nepenthes-house are several profusely-flowered baskets of *Æschynanthus grandiflorus* and *Æ. speciosus*, both with large and beautiful red-and-yellow-coloured flowers. *Costus igneus* is also flowering in the same house. *Hæmanthus Nelsoni*, *H. carneus*, and *H. Katherinæ* are very bright in the Cape-house.

Amongst the numerous interesting plants flowering in the succulent-house, *Stapelia gigantea* is perhaps the most curious, with its large, stellate, hairy, evil-smelling flowers; *Dychia leptostachya* is a beautiful species with red flowers, borne on an erect spike 1½ foot in height; *Bougainvillea spectabilis* var. *lateritia* is a very sparsely-flowered variety with brick-red-coloured bracts; *Kalanchoë kewensis*, *Bomarea edulis*, and *Testudinaria elephantipes*, the "Elephant's Foot," are also in bloom. In the same house *Solanum Wendlandi* flowers wonderfully well; it has been a mass of bloom for the past two months.

In the Palm-house the very curious *Mucuna imbricata* is flowering, having large pendent spikes of nearly black flowers that somewhat resemble a bunch of black Grapes. Other climbers with a good show of flowers are *Bignonia purpurea*, *Thunbergia grandiflora alba*, *Passiflora quadrangulosa* and *P. cœrulea racemosa*. *Ardisia Oliveri*, which is the most showy species of the genus, is flowering on the side stage, as are also *Goethea strictiflora*, whose bright red flowers are crowded on the erect stems; *Gustavia gracillima*, which develops on the woody growths its large rose-coloured flowers, with a pleasant spicy odour; and *Mussaenda macrantha*, which has orange-red, star-like flowers, each with a pure white bract measuring 3 inches in length by 2 inches in breadth.

In the Lily-house, *Nymphæa gigantea* is very handsome. *Arauca grandiflora* is very beautiful, with its long festoons of large *Stephanotis*-like flowers. *Bougainvillea spectabilis* is flowering profusely, although generally it is very shy in flowering. Outside this house is a recess containing about a dozen plants of *Romneya trichocalyx*, which are flowering very freely indeed.

In the numerous recesses around the Palm-house are grown various tender bulbous and other plants, which receive no other protection during the winter than that afforded by the house itself. *Opuntias* flourish remarkably well in some of these bays, and during the past two months have produced a fine display of flowers. At the present time *Crinum Powellii rubrum* is the finest plant in flower in these recesses. The plant is carrying a large mass of foliage, and fifty scapes of flowers, some of which are 4½ feet high. *C. Powellii* var. *alba* is another beautiful variety now in flower. Other plants that are now at their best in these positions are *Roscoea purpurea*, *Cypella plumbea*, *Agapanthus umbellatus*, *Gladiolus dracocephalus*, and *Tigridia Pavonia* and its varieties.

On the wall of the Economic-house a fine old plant of *Capparis spinosa* is wreathed in its beautiful white flowers. The plant is pruned hard back every spring, a treatment afforded *Punica Granatum* var. *nana*, now flowering on the wall outside the *Sarracenia*-porch. *W. H.*

MACLUDRANIA HYBRIDA.—In a recent number of the *Revue Horticole*, M. ANDRÉ describes and figures an interesting bigeneric hybrid raised by himself from *Maclura aurantiaca* fertilised with the pollen of *Cudrania triloba*. The female parent was a spineless variety of *Maclura* (the Osage Orange), but the hybrids, now eight years old, are spiny, and have the habit of *Cudrania*. They have not as yet flowered.

LEAVES FROM MY CHINESE NOTE-BOOK.

(Continued from p. 125.)

May 18.—At 9.40 we passed the village of Shih-Kai-Tu, on the right bank. Just opposite here, on the left bank, are three curious shrines—two large and one small—excavated out of the rock. Some distance above Shih-Kai-Tu the river, having forced itself through a gorge, expands into lake-like dimensions. The place is called Hsin-Tu. We entered the gorge, which is about two miles long; the country assumed a wild and rugged appearance, and there was little cultivation carried on. Coal occurs here, and lime is burnt.

Several large Orange groves are conspicuous. Hereabouts *Phyllostachys mitis*, with its beautiful green feathery culms, enters largely into the composition of the flora. Scrub Oak and the Cypress clothe the hillsides, and the tops are capped with Pine trees.

We passed a pagoda and fine temple amidst trees, and moored our boat at the town of Chang-Shou. Pagodas form one of the chief architectural features, no town of importance being without one or more. They always crown some lofty eminence, and by warding off evil influences ensure good luck for the town. They are nearly always white and of many stories, seven or nine usually.

The only fresh plants to-day were *Sambucus javanicus*, *Melastoma candidum*, *Aralia spinosa*, and a species of *Rubus*. The *Rubus* is allied to *R. phœnicolasius*, from which it differs in having truncated apices to its trifoliate leaves, and yellow fruits. The fruits were ripe and of excellent flavour. *Lysimachia ophelioides* was very abundant to-day. *Boehmeria nivea* is cultivated in small patches. I noted some women removing the bark by hand. *Fatsia papyrifera* is also cultivated, but only in small quantities. Maize and Tobacco were the principal crops, the Opium which preceded these crops being all cleared away. Rice is grown in all places where irrigation is possible.

During the last two or three days the increase in the quantity of Tobacco grown was a very striking feature. This crop occupies the ground for eight or nine months. The seed is sown broadcast in small beds in November or December, and transplanted in drills about 6 inches apart in February or early March. As the plants grow they are earthed up in the same manner as is Opium. After they have made about ten large leaves, the tops are pinched out and all lateral growths carefully removed. The lowest leaves are removed and dried. The first cutting is made at the end of April or in May, the whole plant being cut down level with the ground. The plants spring up again, and a second cutting is made about a month afterwards. Occasionally a third cutting is made. Tobacco is rather a "hungry" crop to grow, but a well-paying one withal. The Tobacco plants are perfectly at home in the red basin of Szechuan, and the crops are extraordinarily luxuriant. The Chinese tend them with the greatest care, and could they cure the leaves as well as they cultivate the plant, their product would find a ready sale in Europe and elsewhere. On the mountains *Nicotiana rustica* takes the place of *N. tabacum*. The Chinese distinguish many varieties, and certain districts are noted for the quality of their tobacco.

May 19.—The walls around Chang-Shou enclose a very considerable area, only a portion of which is covered with houses. Indeed the town is disappointingly small. The river rose 10 feet in two days. The water is of a brick-red colour and soupy, the current very strong.

We reached the small but busy village of Lo-tsi at 4 P.M. This is another noted mart for mats and tracking-lines, and also for timber. The

timber is mostly "Peh-mu" (*Cupressus funebris*) and "Sha-mu" (*Cunninghamia sinensis*), used in boat-building, and is brought down from Mu-tung. Lo-tsi seems a cheap place for Cabbage—large Shan-tung Cabbages with firm hearts were 6 cash (about $\frac{3}{4}$ d.) each, the large white-ribbed Chinese Cabbage 5 cash each. We purchased a large stock—so large, in fact, that I am at a loss to know what they will do with them all.

Above Lo-tsi a shingle bank extends for over a mile. Near the end of this we saw a couple of human heads exposed in cages at the top of a pole. They originally belonged to a couple of men convicted of highway robbery with violence.

We moored for the night 6 miles below Mu-tung, where the river is strewn with huge rocks, and has a very dangerous appearance. The only fresh plants were *Commelina communis*, *Hypericum ascyron*, *Nepeta Everardi*, *Ilex Oldhami*, and *Viscum articulatum*.

The Mistleto (*Loranthus*) was growing on *Aleurites cordata*; hitherto I have only met with it on *Pterocarya stenoptera*. This may be a different species.

Oldham's Holly is not the least handsome of the genus. The flowers are rosy-purple, and very fragrant; the leaves smooth, shining, and soft in texture. It makes a tree 15 to 20 feet high, and is fairly common from Ichang westward in the immediate vicinity of the Yang-tszu.

May 20.—After our usual 5 o'clock start we reached Mu-tung at 8.30 A.M. Soon afterwards we crossed a lake-like expansion of the river, and entered a short gorge where coal is mined and lime burnt. Passing through more open and well nigh treeless country, we entered the Iron Gorge; this is only about a mile long, but wild and rocky, with no tracking-path. The sides of this gorge are covered with a dense growth of Scrub Oak.

Emerging from this gorge and crossing with difficulty another of those curious lake-like expansions, we reached the lower barrier of the Imperial Maritime Customs. I stayed the night here, and enjoyed for a few hours the companionship of a European. This man kept silkworms, several animal pets, and collected old cash, but he had little information to impart.

Sugar-cane, both red and white, was common to-day. I had noted it in several places the last two or three days. The red variety is cut in the early winter and buried beneath soil in the way we do Potato or root-crops, save that the canes are arranged more or less vertically. The white variety is evidently more hardy and is allowed to stand, being only cut as required.

Sorghum vulgare was cultivated. The Tobacco crop looked very promising, and in places the first cutting had been made. As a weed of cultivation *Carduus crispus* was common. I collected nothing fresh to-day, but noted two trees I have omitted to mention hitherto, viz., *Phellodendron amurense* and *Hovenia dulcis*.

May 21.—We left at 6 A.M., and reached the French Naval Station at 10.30 A.M. This is situated a couple of miles below the city of Chung-king, and on the opposite bank of the river. Having stayed to lunch with an old friend here I rejoined my boat at the Customs pontoon. The necessary business having been concluded and a permit granted, we crossed the river and moored just above the Tai-Ping-Mêng. Very glad was I that the first part of my long trip was accomplished with so few mishaps. My boat safely moored I hired a chair and visited my old friend, W. C. Haines-Watson, Esq., the present Acting-Commissioner of Customs here. It took half an hour to reach his quarters, the journey being through the city. We skirted the wall, through narrow, filthy side streets. The people were evidently quite used to foreigners and took no notice whatever of me. My friend greeted me warmly and invited me to stay with him during the time I remained in Chung-king. The

meeting of old friends in such out-of-the-way parts of the world can easily be imagined. I will only add that in an hour or so the fatigue, monotony, and dangers of the voyage were forgotten, and we were chatting about mutual friends and familiar scenes in the dear old homeland. E. H. Wilson.

BLUE CONIFERS.

THERE are several Conifers that have foliage of a glaucous hue, varying in intensity from the greyish-green of some of the *Cupressus* to the nearly Cambridge-blue of a well-coloured Blue Cedar. The amount of glaucousness varies considerably with the different species and varieties, and has no relation to their hardiness, though, as a rule, the higher and better the colour the slower is the growth of the plant. A glaucous variety of any Conifer is always slower of growth than the type when grown under the same conditions, though the hardiness or otherwise of both is equal. There is, however, no question as to the beauty of some of these glaucous Coniferae, more especially as this particular tint of foliage is not found to any great extent except in this Order. In other classes of trees and shrubs glaucousness is only found on the undersides of the leaves, rarely on the upper surface; but in the glaucous Conifers it is a characteristic of the whole plant. The following can be recommended as a good selection, and include practically all the better-coloured plants of the Order.

CUPRESSUS.

C. Lawsoniana var. argentea.—This somewhat resembles the type in habit, though the branches are longer and more slender. The foliage is of a bright silvery glaucous hue, which is of very effective appearance. It is also met with under the varietal name of *glaucous*, though sometimes this has a Latinised form of someone's name attached to it in addition.

C. L. var. Alumi.—This is an erect, fast-growing plant, with flattened, upright branches, and in a young state is not a very handsome plant. With age the growth thickens considerably and takes on a bright, glaucous tint, which is at its best in winter.

C. L. var. Smithii is a pillar-like plant, retaining the same diameter throughout to whatever height it grows. The branches are short and spreading, and gracefully pendent at the extremities. The foliage is of a bright greyish-green hue, and the plant can be recommended as one of the most distinct and desirable of the varieties of *C. Lawsoniana*.

These three plants should for preference be grown on moderately dry, light soil, where the growth, if slower, is more highly coloured than when they are situated on richer and damper ground. They are easily propagated from cuttings.

C. pisifera var. squarrosa (*Retinospora squarrosa* of gardens) is a dense-growing plant, with numerous spreading branches clothed with acicular leaves arranged in opposite and alternate pairs. The whole plant is of a light glaucous-green, approaching a silvery-whiteness in spring, and when well grown is one of the handsomest of the Conifers with Fern-like foliage. It requires a deep, cool, moist soil and an open situation, as it gets very thin and ragged on dry ground, and does not grow well in smoky districts. It is also propagated from cuttings.

JUNIPERUS.

J. excelsa var. stricta (*glaucous*).—This plant attains to a height of from 12 to 15 feet with age, and is of a pyramidal shape, with every branch symmetrically arranged in its proper place. The foliage is very fine in texture, and is covered with a greyish-blue tint, which, combined with

the handsome appearance of the plant, render it a suitable subject for the garden.

J. virginiana var. glauca (the Silver Juniper).—This is a fast-growing plant, though not quite so free as the type. When well grown it forms a handsome, upright specimen from 12 to 20 feet in height, with slender branches clothed with fine foliage of a silvery-blue colour, which is effective at all seasons. It requires watching in a young state to keep it to a single leader, and if the points of the side-shoots are cut out at the same time, the plant makes a denser growth, and is also less liable to be broken by snow. These Junipers will grow in almost any soil, but should have a position fully exposed to the sun, as they turn to an unhealthy greenish tint in the shade. They are propagated by grafting on stocks of *J. virginiana*.

ABIES.

Abies concolor var. violacea.—The varietal name of this plant is considered by some to apply to the colour of the cones, but in gardens it is used in connection with a glaucous form of *A. concolor*. The leaves are 2 inches or more in length, narrow, and apparently arranged in double rows. The colour is somewhat variable, but is usually of a pale glaucous-blue, increasing in intensity with age. A large plant of good colour forms one of the handsomest specimen Conifers.

A. nobilis var. glauca.—This name is applied to the more glaucous forms of the type, and when well coloured they are very handsome and ornamental. The leaves are crowded on the upper part of the stem and apparently two-ranked beneath, varying from $\frac{1}{2}$ to 1 inch in length. They are covered with a glaucous bloom. As these two species of *Abies* make large trees upwards of 80 feet in height, they should be planted in a deep soil, and also have plenty of room to develop. They are increased by seeds.

CEDRUS.

Cedrus atlantica var. glauca (the Blue Cedar) is a well-known and deservedly popular tree, and at the present time there are many fair-sized specimens in various parts of the country. In a young state it is a thin upright plant, with but few side-branches, but with age it develops into a handsome pyramidal tree of a bright glaucous-blue colour.

C. Deodara var. verticillata, glauca.—This is a form of the Deodar, with long, straight, regularly whorled branches, pendulous at the ends, and clothed with glaucous-blue foliage. It is slower of growth than the type, but will probably make a handsome tree when fully developed. It is comparatively new at present. Highly glaucous forms are sometimes found in batches of seedling *C. Deodara*, but these rarely grow to any size, and more often than not they die within a few years. Both these Cedars are propagated by grafting on stocks of the type species. The former comes true to a certain extent from seed, but up to the present the young plants have not been very satisfactory.

PICEA.

Picea ajanensis.—This is a species from Japan, and belonging to the flat-leaved section of the Spruce Firs, differs from the other Spruces in having flattened instead of four-angled leaves. The leaves of *P. ajanensis* are about an inch long, blunt at the tips, dark shining green beneath, and brightly glaucous above, contrary to what is usually the case. Strictly speaking it is not a glaucous Conifer, but the side shoots have a tendency to curve upwards, and display the light blue uppersides of the leaves, which is seen to advantage under a low winter sun. It is a slow but uniform grower, and delights in a deep, moist soil and a sunny situation. It is propagated by seeds. [The position of the leaves in this species, which has often given rise to

misapprehension, is fully described in the Linnean Society's *Journal*, vol. xviii., in a memoir on the Conifers of Japan. Ed.]

P. pungens var. *glauca* (*Abies Parryana glauca*).—This is a plant that is largely grown in English and continental nurseries, but in this country at least it is a considerably over-rated plant. The leaves are about $\frac{3}{4}$ of an inch long, rigid and sharp-pointed, and arranged all round the light brown stems. They are covered with a light blue, glaucous bloom, which on a well-coloured specimen is very fine, and shows to advantage on a lawn or against darker-coloured plants. It makes a good specimen up to about 8 feet or so in height, but after that it begins to lose its lower branches, and gradually dies out. It requires a deep, moist soil and plenty of room, when it makes a grand specimen for the time it keeps good. The practice of grafting this plant is a great mistake, as grafted plants never grow upright unless tied up to a stick, and even then they are usually unshapely. It can be raised fairly true from seed, and the poor-coloured seedlings weeded out.

THE DOUGLAS FIR.

Pseudotsuga Douglasi var. *glauca*.—This is a glaucous form of the Douglas Fir, but is a very slow-growing plant compared with the type. It makes a good ornamental tree, but is of no use to plant for timber, its rate of growth being too slow, and from its appearance it will never attain to any size sufficient for timber. It will grow almost anywhere, and is raised from seed.

TSUGA.

Tsuga Pattoniana var. *glauca* (*Abies Hookeriana*).—This is a slow-growing large bush or small tree of about 12 feet or a little more in height. In habit it forms a broadly-pyramidal specimen with many leaders if left unchecked, but if kept in shape it forms one of the handsomest of small specimen Conifers. The branches are irregular and comparatively stout; and the secondary branches appear as short spur-like growths at first, gradually lengthening with age, and producing other short growths at irregular intervals along their stems. The leaves are rather less than an inch in length, curving upwards, somewhat triangular in section, and brightly glaucous all over. They are arranged all round the stems, which are dark brown in colour, and covered with a woolly felt. The plant requires a deep, moist soil, and thrives best if some good leaf-mould or peat is given in addition. It is propagated by seeds, which produce plants variable to a certain extent in colour, but which are usually well-coloured. I have never seen it grafted, but it would probably do well if worked on *T. canadensis* or *T. Mertensiana*.

There are a few other glaucous Conifers that I have omitted, but they are either poor of growth or are tender in this country, and cannot therefore be recommended. The following Pines have foliage of a glaucous tint—viz., *Pinus sylvestris* (The Scotch Pine), *P. Cembra*, *P. excelsa*, *P. parviflora*, and *P. Strobus* (the Weymouth Pine). *J. C., Bagshot.*

The Week's Work.

THE FLOWER GARDEN.

By W. A. MILLER, Gardener to Lord HENRY C. BENTINCK, M.P., Underley Hall, Westmoreland.

Phlox suffruticosa and *decussata*.—Cuttings of these plants should now be propagated in cold frames, inserting them in a sandy compost with a layer of sand on the surface. Choose sturdy cuttings that are not flower-growth. Shade them from bright sunshine until they are rooted, when they should be allowed free ventilation on all favourable occasions. Amongst the late-flowering section the variety *Coquelicot* forms a good "front row" plant, the colour of its beautiful flowers being bright orange-scarlet. Another desirable variety is *The Mahdi*, the colour of its flowers being a good violet-blue. The dwarf varieties are very distinct, and of a neat habit with large heads of bloom. The following are a few good varieties with their colours of this section:—*Argon* (rich rose), *Iris* (bluish-violet), *The Queen* (white), *Mars* (rosy-salmon), *Aurora* (coral pink), *E. Lockray* (salmon).

Pentstemons.—The present is a good time to propagate these plants, selecting for the purpose side-growth without flower-spikes. Treat them in the same way as *Phloxes*. *P. Newbury Gem* is a dwarf-growing variety bearing a profusion of scarlet-crimson flowers all through the summer; *P. cœruleus*, *P. barbatus* *Torreyi*, *P. heterophyllus*, *P. humilis*, are useful species, the last-named being a dwarf-growing, rock-garden plant easy of culture.

Carnations.—Proceed with the layering of these plants in earnest. The border intended for the reception of these plants in the autumn should be prepared now, so that it will be in good condition when planting time arrives. Choose an open quarter, as Carnations resent shade and over-shadowing. If the site is protected from north and east winds it will be advantageous. The border should receive a good dressing of old hot-bed manure, a little mortar rubbish, a sprinkling of bone-meal, and as much virgin loam as possible. Trench the ground two "spits" deep, at the same time well mixing the component parts.

Roses.—Keep the growth free from mildew and other fungoid pests by an application of sulphur. Hoe and water the plants when required. Remove all old flowers and dead wood. Late-summer and early-autumn flowering *Roses* are a desirable class for planting in heds. The variety *Gruss an Teplitz* is our best variety, some trusses developing over fifty flower-buds. *Marquise de Salisbury* is another very free-flowering variety. Other desirable varieties are *Madame Lambard*, *Marie van Houtte*, *Souvenir de Président Carnot*, *Madame Pernet Ducher*, *Viscountess Folkestone*, *Corallina*, and *Exquisite*.

THE ORCHID HOUSES.

By W. H. YOUNG, Orchid Grower to Sir FREDERICK WIGAN, Bart., Clare Lawn, East Sheen, S.W.

Odontoglossum Rossii is an Orchid of such merit that it is surprising it is not more generally grown. It is amongst the first to be recommended for an amateur's greenhouse, as it will stand rather harsh treatment without much apparent injury. It needs very little artificial heat, and furnishes a good supply of long-enduring flowers, provided the plant's requirements as to growth and rest be closely observed. After having rested for several months, the new growths are now developing, and when these have attained to a length of about an inch, the necessary potting operations should be performed. *O. Rossii* grows and flowers well in pans provided with an inch or so of drainage, and a compost composed of a couple of inches of a mixture consisting of equal parts of peat and moss, a fifth part of decayed Oak-leaves, with a dash of sand added, and a surfacing to the whole of about half-an-inch of chopped moss. The base of the plants should be on a level with the rim of the pans, and the materials made moderately firm, with the moss placed well up to the growths, but not in the form of a mound. The pans should be suspended near the roof-glass of the *Odontoglossum*-house, where plenty of light and air is to be had. Plants that do not require repotting should have the old surface-moss removed and replaced by fresh, afterwards giving sufficient water to keep the whole body of material moist. Plants that have been repotted should be less liberally treated with water, a sprinkling once or twice a week until their roots have ramified in the new materials should suffice. As growth advances and the pseudo-bulbs commence to swell dryness at the roots must not be permitted, but, on the other hand, excessive saturation must be avoided. Weak floral scapes which may appear in the young growths should be removed.

Odontoglossum Cervantesii needs similar position, conditions, and treatment to the above, with the exception that small perforated pans, with drainage and a little peat and moss, are preferable, the latter suiting them better than the leaf-soil mixture. Much water only is needed when growth and root-action are most vigorous, the atmospheric moisture being almost sufficient at other times. New receptacles or fresh materials may be given soon after growth has commenced.

Odontoglossum Oerstedii grows best when planted in well-drained pans with a mixture of peat and moss, mounded well above the rim, so that prolonged saturation is almost impossible. Being of a tufted habit and of a sparsely-rooting nature, disturbance at the roots should only occur when absolutely necessary, an annual renewal of the surface materials being generally sufficient for their needs. Suspend the plants in a similar position to that advised for the above-mentioned species. Give water very sparingly, even when growing freely. When not in this condition absolute dryness is essential to success.

Odontoglossum aspersum and *Humeanum*, natural hybrids of this section, grow well either in pots or in pans, planted in leaf-mixture. They should not be far removed from the roof-glass, and must be kept well moistened when growing freely.

Odontoglossum nebulosum should be repotted or resurfaced when new roots are about to develop from the young growths. The plants grow well in leaf-mould mixture in pots that are provided with drainage to half their depth. The leaf mixture should be covered with chopped moss to the depth of half an inch. Stage the plants near to the glass in the highest part of the cool-house, and give water very sparingly at all times.

Odontoglossum Harryanum.—This distinct *Odontoglossum* usually blooms during August, and the flowers, which will remain in condition for a long period, must be removed soon after they have expanded, in order to prevent undue exhaustion of the plant. When the flowers are removed allow the plants a good rest by withholding water, and continue this treatment until shrivelling is imminent. The plants should occupy a central position in the house, where moisture and shade can be plentifully afforded, and thus obviate all injury from undue dryness.

THE KITCHEN GARDEN.

By W. FYFE, Gardener to Lady WANTAGE, Lockinge Park, Wantage.

Onions intended to be stored for winter and spring use must be firm and well ripened before storing. If they are taken up and exposed to the sun's heat for a few days by being well spread out with the roots toward the sun, and afterwards stored in a dry place from which damp and frost are excluded, there is little fear but that they will keep well, especially after the spell of bright sunshine we have recently been experiencing. If the plants have been raised from seed sown in boxes and afterwards transplanted, the bulbs will still be swelling freely (a clear illustration of the advantage gained by this practice). These should be examined, and any of the tops that are still erect should be bent down in order to assist the bulbs to swell and ripen. When storing the bulbs it is well to do so in three sizes, for it not infrequently happens that they are required in various sizes for culinary purposes.

Cabbages.—The practice of rotating the Onion crop with early Cabbages has something to recommend it, for the ground having been previously well prepared by deep cultivation and by liberal manuring at a season when the influence of the weather pulverises and sweetens the soil, it will be in excellent condition for the crop of Onions. But these two crops should not occupy the same ground for a longer period than two consecutive years if it can possibly be avoided. As a preventive against the enemies of the Cabbage family apply a dressing of lime to the soil a few days before planting, and at the time of planting some soot. Plant in drills 3 inches in depth and 18 inches apart, and 12 inches between the plants in the rows. As a variety for early work *Ellam's Early* is unsurpassable.

Potatos.—Second early varieties will now be quite ready for lifting, and this work should be done at once, for in the event of wet weather disease will rapidly attack them. The practice also of allowing *Potatos* intended for seed purposes to lie exposed to the weather when disease is at all noticeable should be guarded against, for newly-lifted tubers soon become affected with the disease.

PLANTS UNDER GLASS.

By A. BULLOCK, Gardener to E. J. WYTHES, Esq., Copped Hall, Epping, Essex.

Souvenir de la Malmaison Carnation.—Plants that were layered as advised early in July will now be well rooted, and should be lifted from the beds and potted before they commence growing; but before potting allow the young plants to remain for about a week detached from the old stocks. This is an important matter, and considerably reduces the check the plants would otherwise receive. In the meantime, prepare a suitable compost composed of two parts loam, one of leaf-soil, and one part of silver-sand, and well mix the whole together. The pots to be used, if new, should be well soaked in water and allowed to drain before being employed. Those that have previously been in use must be thoroughly cleansed and dried before being used again. Give plenty of drainage in the shape of broken crocks, and after potting stand the plants in a cool frame and keep the atmosphere close, and the glass shaded for a few days. The young plants readily adapt themselves to this treatment. As soon as they show signs of activity shading must be dispensed with and air freely admitted.

Caladiums.—As these plants show signs of resting let them be placed where they can receive the full benefit of air and light, at the same time gradually withhold water from the roots, but continue to apply diluted manure-water until the foliage begins to turn yellow.

Palms.—The present is a good time for potting or top-dressing these plants. A suitable compost consists of three parts good rich loam to one of leaf-soil, to which should be added a little broken charcoal and silver sand, while to each barrowload of compost a 4-inch potful of Clay's Fertiliser should be added. Keep the plants well syringed and shaded after potting, and apply water at the roots judiciously.

Chrysanthemums.—Daily attention must be given to the tying, &c., of the plants, as strong winds or birds alighting on them easily break the shoots.

Streptosolen Jamesoni.—Cuttings of this useful plant are now easily procured, and if they are now propagated will furnish good plants for another season. Providing a little bottom heat is given the cuttings root readily.

Fuchsias.—Plants intended to furnish a supply of autumn cuttings should be well ripened by this time, and must be placed in a warm, close house, and freely syringed overhead. Propagate the cuttings as soon as they can be obtained.

THE HARDY FRUIT GARDEN.

By W. H. CLARKE, Gardener to Sir WILLIAM FLOWDEN, Aston Rowant House, Oxon.

Apricots.—Now that these fruits are ripening they should receive the full effects of the sun's rays, and any leaves which intercept light and air from the fruit should be removed, as fruits ripened on the trees are much superior in flavour to those artificially ripened. Great care and attention are required to protect the fruits from the ravages of earwigs, woodlice, snails, &c. However diligent the cultivator may be some of the fruits are sure to be spoilt by these pests, which seem to have a special liking for Apricots. Earwigs can be captured in the hollow stems of dry Bean-stalks cut in lengths of about 6 inches, also in Bamboo-canes placed between the branches. The traps should be examined each morning, and the earwigs destroyed by emptying them into hot water. Wasps will further the damage commenced by the above-mentioned insects, but these can be warded off by covering the trees with hexagon wasp-proof netting. I am of the opinion that bottles of sweetened beer, treacle, &c., used as traps for these insects attract them to the trees. The best plan of dealing with these pests is to destroy them in their nests.

Figs.—Trees that have become crowded with excessive growth should have their branches well exposed to sunlight and air, for unless the wood is well matured fruit-buds will not form. Trees on which the Figs are swelling should be assisted by applications of manurial stimulants, and every

encouragement given them to perfect their fruits. As soon as the trees have been cleared of all fruits likely to ripen, they should have all exhausted and useless branches removed, leaving only a sufficient number of this season's shoots that are strong enough to produce fruit next year. Only in very favoured situations will Fig-trees produce two crops of fruit in a season, therefore any forming at the present time should be rubbed off. Nail all shoots close in to the walls, as the heat radiating from the bricks will serve to harden and ripen them. Shoots growing beyond their limited space should either be pinched back to the fifth or sixth leaf or be trained down to the next growing shoot beneath.

Morello Cherries are now ripening fast, and should not be allowed to hang until over-ripe, otherwise the quality and flavour will deteriorate; but as the fruits do not, as a rule, all ripen at the same time, the trees should be looked over frequently. All shoots should by now be tied to the trellis. Some growers do not tie them until after the fruit is gathered, but they cannot then be secured so perfectly or so quickly as when the tying is performed earlier.

FRUITS UNDER GLASS.

By F. JORDAN, Gardener to Dr. CORRET, Impney Hall Gardens, Droitwich.

Midseason Vines.—As soon as the Grapes are all removed from these Vines, thoroughly syringe the plants with clear water in order to destroy red spider, and to cleanse them from dust, &c. Give liberal treatment to all plants that are weakened from continuous heavy cropping, and encourage as much lateral growth as possible, with the exception that strong laterals should be removed from too vigorous-growing Vines. Ripe black Grapes that are desired to hang in a good condition for as long a period as possible should receive plenty of shade during hot sunshine, for which purpose nothing is better than a covering of their own foliage with a little extra extension of lateral growth arranged about the bunches; but should the foliage be too sparse for this purpose, netting should be placed over them, or light shading may be used, which should be removed in the evening. White Grapes require plenty of sunlight until they are thoroughly ripened, but even the more exposed bunches of these should have a sheet of tissue paper placed over them. Pay careful attention to watering, and keep the house cool and not in too dry a condition, maintaining a little heat in the pipes during dull or wet weather.

Late Vineries.—Endeavour to forward the Grapes in these houses as much as possible during the next few weeks now that all danger from scalding has passed. Ventilate the houses freely during the early part of the day, but not excessively, closing them early in the afternoon with plenty of sunheat and atmospheric moisture present, and at about 7 P.M. admit a little top and front ventilation to remain for the night. Houses situated in moist situations and on cold soils should receive a little artificial heat at night-time. Look to the bunches for the last time, and remove any crowded or seedless berries which have been overlooked. Pinch out all lateral growths and give generous feeding with liquid manure and other fertilisers until colouring is well advanced.

Melons.—These plants will now require more careful treatment with regard to watering and atmospheric moisture generally. Syringe the plants on bright days only, damping the paths, walls, and other available spaces only in dull and in wet weather. Keep the foliage in as healthy a condition as is possible, and avoid overcropping the plants with growth. See that the atmospheric moisture is reduced in those houses in which the fruits are ripening, where a free circulation of warm dry air must be permitted. Renew the linings of hot-beds in frames containing Melons in order to keep up the required temperature. Very little water will be necessary if the roots have penetrated into the moist fermenting material. All fruits must be fully exposed to sunlight; they should, moreover, be turned round occasionally to secure uniform growth.

THE APIARY.

By CHLOUIS.

Preparing Honey for Sale.—A well-prepared article of any description will always sell more readily than one which has had no care bestowed on it, although the latter may be of higher quality than the former. The eye of the consumer must be considered as well as his palate. Make honey look as attractive as possible, let every receptacle be scrupulously clean, and if the honey be of good quality it will command the highest market value.

Marketing Sections.—Sections should be graded into two, and often better into three divisions. Those of the highest grade should be: 1, the very best; 2, quite clear; 3, uniform in the sealing, including the cells next the wood; 4, light in colour. In examining the sections of a very good bee-keeper last year I saw three crates taken off one evening containing only four sections which did not fulfil every one of the foregoing conditions. They were sealed from the top to the bottom and from side to side, and were in no way travel-stained. Those of the second grade would fall a little behind the first in each of the four points named; and the third grade would fall a little lower again than the second. By dividing the sections in this manner the whole would command a much higher price than if they were offered for sale in a mixed state, and at the same time give greater satisfaction to the purchaser.

Crates for Sections.—Some years ago I had a conversation with a druggist who disposed of a large number of sections. The whole of them

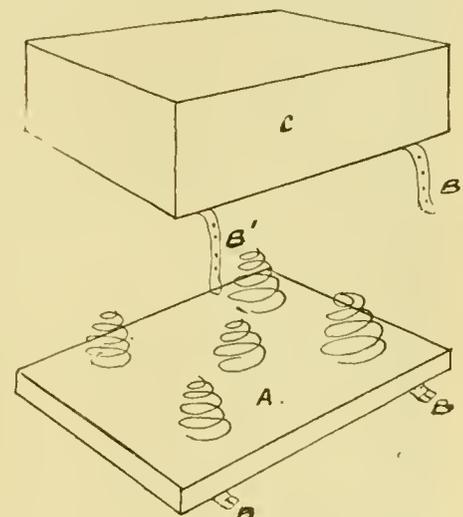


FIG. 51.—CRATE FOR DISPATCHING SECTIONS OF HONEY BY RAIL.

were sent by train a distance of 250 miles. During the whole period not a single section was damaged in transit. Naturally I was eager to learn how such excellent results had been secured. I found that they had been sent in crates of all descriptions, to which were fitted sofa springs cut in halves. The outside boxes were often old orange-crates. In the bottom of the outside box was fixed a board A, to which were fastened springs. On the long sides were fixed straps with buckles B. The sections were put in a lightly-made box, C, so that when the box was filled none of them could move. To this box were also fixed straps, B, so that it could be strapped tightly against the straps on the lower board, A. The lid, too, of the outer crate had springs fixed on it similar to those on A, but on the under side.

Extracted Honey.—It is a great mistake to mix honey which has been gathered from various sources. By adopting this method the fine aroma of each kind is lost. If the sale be local place the honey in clear glass jars, and on each fix a label giving the name of the apiary if desired as an advertisement, and also stating that honey granulates at a low temperature, but that it will resume its liquid state by placing the jar in a basin of hot water. When sending honey by rail it may be sent in tins specially prepared by the appliance manufacturers or in sweet tins hermetically soldered.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Letters for Publication, as well as specimens and plants for naming, should be addressed to the EDITOR, 41, Wellington Street, Covent Garden, London. Communications should be written on ONE SIDE ONLY OF THE PAPER, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

Special Notice to Correspondents.—The Editor does not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editor does not hold himself responsible for any opinions expressed by his correspondents.

Illustrations.—The Editor will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens, or of remarkable plants, flowers, trees, &c.; but he cannot be responsible for loss or injury.

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY, AUG. 22—Brighton Horticultural Society's Show (2 days).
 WEDNESDAY, AUG. 23—Shropshire Horticultural Society's Exhibition at Shrewsbury (3 days).
 Arundel, Littlehampton, and District Horticultural and Agricultural Show.
 THURSDAY, AUG. 24—Aberdeen Flower Show (3 days).

SALES FOR THE WEEK.

MONDAY NEXT—Great Trade Sale, Dutch Bulbs, 4,000 lots.
 WEDNESDAY NEXT—Great Trade Sale, Dutch Bulbs, 3,000 lots.
 THURSDAY NEXT—Great Trade Sale, Dutch Bulbs, 3,500 lots, at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 10 o'clock.
 FRIDAY NEXT—Choice Cypripediums, Cattleya, and Lelio-Cattleya Hybrids, Established and Imported Orchids, at 12.30; Liliun Harrisii and L. longiflorum and multiflorum received direct, Roman Hyacinths, Narcissus, &c., at 3 P.M., by Protheroe & Morris, at 67 & 68, Cheapside, E.C.
 (For further particulars see our Advertisement columns.)

AVERAGE TEMPERATURE for the ensuing week, deduced from observations of Forty-three Years at Chiswick—61.3°.

ACTUAL TEMPERATURES.—

LONDON.—Wednesday, Aug. 16 (6 P.M.): Max. 71°; Min. 57°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—Thursday, Aug. 17 (10 A.M.): Bar. 30.2; Temp., 72°. Weather—Bright and summer-like.

PROVINCES.—Wednesday, Aug. 16 (6 P.M.): Max. 68° W. Coast of England; Min. 57° N.E. Scotland.

Grafting the Carnation upon Saponaria.

The experiments made by M. GEORGES POIRAULT, of Antibes, have attracted so much attention among his fellow-countrymen that he has been asked to furnish further details of his methods. The object of the experiments was to ascertain whether by grafting Carnations on to the root-stock of Saponaria it would not be possible to render the Carnations immune to the fungous diseases which are so destructive.

In a recent number of *Le Jardin*, M. POIRAULT explains that it is better to use for this purpose plants two years old grown in pots. At the grafting season, which in the South is from December to February, the operation is effected. The graft is not made upon the stem, which at that season has died down, but upon the root-stock. Herbaceous grafting can be effected; in any case, it is better to use slightly hardened grafts. Cleft-grafting is available, but it is far better to employ the English method. The Saponaria is grown in pots, and the root-stock is turned out of the pot on to the potting-bench, grafted, and then replaced.

If Saponarias in pots are not available, it will prove quite as satisfactory to operate on plants in the open ground, which should be treated just as described. After grafting, the plants, covered with a bell-glass, are

put into a warm pit, where they remain for three or four weeks. Air is then given by raising the glass for a week, after which the cover can be removed. In the open ground the operation takes place in May. The plants are treated as Carnation-pipings.

In the experiments made at the Villa Thuret, so long under the management of our valued friend CHARLES NAUDIN, M. POIRAULT has not merely worked to produce flowers. His desire was to cultivate the Carnation on a disease-resisting stock, and further to see if the use of Saponaria would impart lasting immunity to the graft implanted on it.

In the South the Saponaria has the disadvantage of being late in coming into leaf, but this drawback is counterbalanced by the ease with which it can be forced.

The grafted Carnations flowered in December, and were over by January or February, a period corresponding with the resting season of the stock; they again bloomed at the end of February or March, when the Saponaria was divided. The Carnation-flowers were at every season as large and fine as those growing on their own roots. As to the immunity from disease M. POIRAULT has at present nothing to tell us.

QUEENSLAND.—Our Supplementary Illustration shows a view in the State Nursery, at Cairns, Queensland. The stately native Palms to the right are saddled with the terrible name Archontophoenix Alexandrae. Truth to say they look none the worse for it. The other Palm with drooping foliage is Cocos plumosa. To the left is a tree of Ficus elastica, and on the right one of Spathodea campanulata. In the foreground is Agave vivipara.

The *Brisbane Courier*, lately received, contains an article, with illustrations, which show what sort of work a Colonial botanist has to do, and what meagre remuneration is allotted for the possession of that most valuable asset—brains. From the article before us we gather that the labours of Mr. F. MANSON BAILEY are more highly appreciated in the Old Country than they are in the Colony, and this in spite of the fact that Mr. BAILEY has known how to turn his knowledge to practical account. Here we naturally value his scientific attainments and productions as being of cosmopolitan importance. But on the spot his fellow-colonists not unnaturally take greater interest in questions of practical moment, such as the identification and utilisation of grasses and other forage plants, the recognition of the various trees, and the development of the magnificent resources of the colony in the matter of timber, gums, resins, dyes, and other products. Mr. BAILEY had practical experience as a farmer and fruit-grower, both in New Zealand and South Australia before going to Queensland, and is therefore familiar with the requirements of the cultivator.

"The flora of Australia," says our contemporary, "has been the loving study of a keen and intelligent mind through many decades—a mind which has watched the life of Australian plants, especially those of Queensland, in good and bad seasons, on mountain, in valley, scrub, and forest, the plains of the interior, and the broken country of the coast, the personal study of a practical mind, coupled with an intimate knowledge of the writings of forerunners and contemporaries, and with keen insight into economic values."

In England we find Mr. BAILEY'S *Queensland Flora* most serviceable for the identification of plants from that tropical colony, the more so as, unlike other colonial Floras, it is illustrated.

THE TRIALS UNCERTAIN BY THE NATIONAL POTATO SOCIETY.—Potato trials of considerable interest are being conducted in various parts of the country, and may be inspected by members and others interested. The following are the counties, and intending visitors are advised in each case to communicate beforehand with the gentlemen supervising the trials, whose names and addresses are appended:

Berkshire.—Professor PERCIVAL and Mr. C. FOSTER, University College, Reading.

Surrey.—Mr. A. DEAN, 62, Richmond Road, Kingston-on-Thames

Warwickshire.—Mr. H. DUNKIN, Coventry Road, Warwick.

Somersetshire.—Mr. J. ETTLE, Stanley Grove Road, Weston-super-Mare.

Oxfordshire.—Mr. S. HEATON, Hill View Road, Oxford.

Northumberland.—Professor GILCHRIST, College of Science, Newcastle-on-Tyne.

Shropshire.—Mr. G. T. MALTHOUSE, Harper Adams College, Newport, Salop.

Cheshire.—Mr. W. NEILD, The College, Holmes Chapel.

Yorkshire.—Mr. T. REDINGTON, Agricultural College, Leeds.

Staffordshire.—Mr. J. C. RUSHTON, County Education Offices, Stafford.

Worcestershire.—Mr. J. UDALE, Ombersley Road, Droitwich.

Valuable trials are also being conducted at Burgoyne's Farm, Impington, near Cambridge (Histon station), by the Agricultural Department of Cambridge University, and may be inspected by members. The farm superintendent is Mr. H. HENSHAW. Messrs. POAD & SONS, York, and WM. DEAL, Kelvedon, Essex, are conducting trials of planting at different distances.

ROYAL BOTANIC SOCIETY.—The annual meeting of the Fellows of the Royal Botanic Society was held on Thursday, August 10, in the Society's gardens at Regent's Park, Mr. C. BRINSLEY MARLAY presiding. In proposing the adoption of the sixty-sixth annual report, the Chairman referred to the fact that by a vigorous issue of pamphlets, &c., an attack had been made upon the gardens and their administration. He said that he had seen the Society in its decline and in its prosperity, which he believed was rising at the present moment. The Council had wisely declined to give up the scientific part of the Society's work, and the gardens were never in a better condition than they were now. Much useful work had been done, and many societies had availed themselves of the opportunity of meeting in the gardens during the year. It was proposed that the annual subscription of the Fellows should be raised, as this increase would meet their difficulties. He hoped to announce at a meeting on November 27 that the Fellows had agreed to this. During the months of June and July 72,000 persons had visited the gardens, which spoke well for their popularity. The report having been adopted, Mr. J. S. RUBINSTEIN said that he desired to propose a resolution that the statutes and by-laws required revision, to secure rights for the Fellows and making certain recommendations. He expressed an opinion that the subscriptions should not be raised, but that a Committee of Fellows should be appointed to consider the position and confer with the Council. The Chairman said that the Council had decided that Mr. RUBINSTEIN'S letter and recommendations should be read, but that the resolutions be not submitted or voted upon, having regard to their nature as affecting the charter and lease of the Society. The Duke of TECK was re-elected President; Mr. G. J. MARJORIBANKS, Treasurer, and eight Fellows were elected on the Council.

"BRITISH TREES."—The second part of this publication, prepared by Mr. REX VICAT COLE, has been issued by HUTCHINSON & Co. It deals with the Beech and the wild Plum or Sloe, and is marked by the same excellences as those on which we commented on a former occasion, the chief of which is fidelity to nature.



VIEW IN THE STATE NURSERY, CAIRNS, QUEENSLAND.

"BOTANICAL MAGAZINE."—The August number contains coloured illustrations of the following plants:—

Mecynopsis integrifolia, Franchet, t. 8027.—The noble Tibetan Poppy, introduced by Mr. Wilson to the Veitchian nurseries. See *Gardeners' Chronicle* (1904), vol. ii., p. 240, with Supplement.

Tetralthea thymifolia, Smith, t. 8028.—A pretty, greenhouse, hardwooded shrub from East Australia, with wiry stems, small ovate, hirsute, verticillate leaves, and rosy-lilac flowers.

Impatiens Holstii, Engler, t. 8029.—See *Gardeners' Chronicle*, 1905, p. 14, with illustration. Differs from *I. Sultanii* in its broader leaves and reddish-coloured flowers.

Plectranthus crassus, N. E. Brown, t. 8030.—See *Gardeners' Chronicle* (1904), i., p. 21.

Odonoglossum ramulosum, Lindley, t. 8031.—A Columbian species, with a loose, branching panicle and numerous small, yellow flowers; the segments marked with dark-brown blotches.

A FRENCH "COUNTRY LIFE."—The publication is announced by MM. HACHETTE ET CIE, of a Revue entitled *La Vie à la Campagne*, which is admittedly inspired by the English periodical *Country Life*. The new paper is to deal with such subjects as its title suggests, and to be of interest to landowners, farmers, agriculturists, horticulturists, and sportsmen, professional and amateur. Illustrations are to accompany letter-press, which is to deal with all rural toils and pleasures.

HYBRID EREMURUS.—A hybrid has been obtained at Verrières by Monsieur PHILIPPE DE VILMORIN between *E. Bungei* and *E. Bungei* reciprocally crossed. The newcomer has been named *E. Isabellinus* ×, and is remarkable for the colour of the flowers (yellow with a rosy flush). The flowers also are intermediate in size between those of the parents. The plants are more robust than their parents, as often happens in hybrids. A Certificate of Merit was awarded to this novelty by the National Horticultural Society of France on July 13 last.

COVENT GARDEN.—Frequenters of the Central Avenue will note the removal of Messrs. DICKSON & Co., the florists, who had been at the south-west corner of the avenue for many years, and who for a long period supplied our market reports so far as flowers are concerned. Messrs. DICKSON have removed to the West End, and their premises are to be occupied in future by Mr. GARCIA, the select quality of whose flowers and the elegance of whose wreaths and bouquets, as shown in his old premises, must have struck every passer-by.

CHRYSANTHEMUM SHOW IN PARIS.—We have received the regulations and schedule of the Chrysanthemum and Fruit Show to be held at Cours-la-Reine (Paris), from November 4 to 12, by the Société Nationale d'Horticulture de France. In addition to Chrysanthemums, Cyclamen, Carnations, Lilacs, Asters, and general collections of flowering and foliage plants, Orchids and floral arrangements, such as bouquets and sprays, may be entered. Fruit, ornamental trees, vegetables, and works of art more or less representative of plants, flowers, or fruit are available, and there is a special section for machinery. Various awards are offered in the horticultural sections. Intending exhibitors should make immediate application to M. le Président, Rue de Grenelle, 84, Paris.

THE FLORA OF FRANCE.—The third volume of the Abbé COSTE'S *Flore de France* is approaching completion. The last-issued part contains the Lilies, Irises, and Orchids (in part). The description of each species is accompanied by a small woodcut illustration. The work is published by KLINCKSIECK, of Paris, and may be had of Messrs. WILLIAMS & NORWICH.

OVERSEA SUPPLIES: JULY.—The Bank Holiday interfered with the publication of the *Trade and Navigation Returns* for July, but the figures issued made ample amends for the delay; for once again the record has been broken; both imports and exports have gone up with a bound. The IMPORTS for the month are valued at some £44,741,838; this, compared with the total for July, 1900, £40,956,601, shows a "plus" equal to £3,785,237. The increase is mainly in food supplies and raw material for manufacturers. The Wheat and flour supplies from the United States and Canada are on a diminutive scale, owing probably to the Colony being engaged in feeding the Republic; the "foreigner" made up for all deficiencies, and the British miller reaped an advantage. The EXPORT totals make up £27,821,051, against £24,783,552—a difference in favour of the past month of £3,037,499, and this gain is made up of increments in the staple industries—another excellent feature. Respecting fruit and vegetable imports, the following summary table will be found of interest:—

IMPORTS—JULY.	1904.	1905.	Difference.
Fruits, raw—			
Apples	38,413	24,589	—13,824
Apricots and Peaches	19,182	35,405	+16,223
Cherries	74,892	61,340	—13,452
Currants	105,529	76,663	—28,866
Gooseberries	6,274	3,712	—2,562
Grapes	35,196	28,358	—6,838
Pears	49,357	22,813	—26,544
Plums	236,704	138,994	—97,710
Strawberries	4,331	2,975	—1,356
Vegetables, raw—			
Onions ... ..bush.	56,257	59,303	+3,046
Potatos ... ..ewt.	235,109	217,615	—17,494
Tomatos	158,400	122,153	—36,247
Gross total, including varieties of fruits and vegetables not enumerated in this Table	1,443,599	1,204,694	—238,905

It will interest all who have connections with the Far East to learn that our latest "acquisition" in China, Wei-hai-wei, is about to enter the field as a fruit-producing colony on a large scale. It has all the soil and climatal advantages of Chefoo in the same province, and a large variety of fruit-trees have been ordered from home. The Botanical Superintendent at Hong-kong will, it is stated, have the guiding hand in this new venture, which promises to become a principal feeder to the Shanghai market. Our Normandy friends are reported to be suffering from a very short harvest of cider Apples and table fruits; some of the coarser varieties of fruit make a better show. It may be worth noting that the over-sea supplies for the past month furnish a total of £72,562,889.

THE ESTATE NURSERY.—Most landowners are to some extent aware of the value of a small home-nursery, but few realise the greatness of the advantages which may accrue on any estate, large or small, from the setting apart of a sufficient area for the propagation and rearing of forest-trees and hedge plants, and of a similar provision for a trial-ground, fruit-plot or experiment station. Proprietors are as a class too much addicted to rely on the experience of other people, gained it may be under different conditions and with only indirect reference to the requirements of particular cases. To such persons we commend Mr. SIMPSON'S little treatise bearing the title at the head of this notice. The book may be had from the Country Gentlemen's Association, 2, Waterloo Place, Pall Mall. It deals with the formation of the nursery, the acquisition of seed, the methods of sowing and transplanting, and the general management of

the nursery. These are details in which the advice of the gardener might profitably be sought, and indeed when there is a good understanding between gardener and forester, the gardener might well be entrusted with the management of the seed and seed-beds, and the details of layering. In any case forester or gardener will find numerous practical hints clearly presented in Mr. SIMPSON'S little book.

"FLORA AND SYLVA."—The July number of this attractive publication contains a valuable article on the Pampas grasses (*Cortaderia*), by Dr. STAFF. Five species are described—*C. argentea*, *C. araucana*, *C. speciosa*, *C. rudiuscula*, and *C. Quila*. The "Pampas" grass, it appears, is not characteristic of the Pampas, but occurs in S. Brazil and Paraguay, and in the Argentine. Vast plantations of it have been made in California, where at Sta. Barbara in 1889 the crop was estimated at 1,000,000 plumes. Mr. GUMBLETON adds a note relating to *C. Quila*, the most beautiful of the genus, but unfortunately tender. The name *Cortaderia* perpetuates the native name "Cortaderia," by which the Pampas grass and its allies are known in S. America. A translation in abstract, from M. LEMOINE'S *Monograph on Deutzia*, is of permanent value.

HYBRID NICOTIANAS.—The appearance of the wonderful hybrid *Nicotianas* raised by Messrs. SANDER & SONS between *N. Forgeti* and *N. affinis*, and known as *N. Sanderæ* ×, has stimulated others to make further essays in the same direction. Thus we find that Messrs. CAYEUX ET LECLERC, of Paris, have obtained a Certificate of Merit from the National Horticultural Society of France for a hybrid raised from *N. affinis* by pollen of *N. Sanderæ*. The flowers are described as "enormous," varying in colour from white to rose, lilac, and reddish-violet. The plant is described as very vigorous, and the flowers very fragrant.

FRUIT - GROWING IN BRITISH COLUMBIA.—We heard something of this recently at the Royal Horticultural Society, and now we find, in the *Canadian Horticulturist*, that the province is progressing very rapidly in the matter of fruit-growing. Our contemporary attributes this advance to the fact that many of the fruit-growers have gone into this province "totally unacquainted with fruit-growing, having, however, considerable capital. These men are not loaded down with a quarter of a century of prejudice, but come to their work fresh and willing to imbibe the latest and best from books and from their most successful competitors in the business. This will account for the fact that, on the average, the methods of British Columbia are infinitely ahead of those of the average fruit-grower in Eastern Canada." A quarter of a century of prejudice would seem very moderate in the Old Country, but by way of compensation we may set down centuries of experience. It is for the coming generation to adjust the balance.

PLANT PORTRAITS.

ACACIA PODYALIFOLIA, A. CUNNINGHAM.—Phyllodes ovate acute; flowers in glabular heads arranged in loose racemes. *Gartenflora*, August.

ZYGONISIA ROSEANA.—The result of a bigenerie from *Aganisia lepidia* crossed with the pollen of *Zygopetalum maxillare*. *Flora and Sylva*, July.

DAFFODILS Lord Kitchener, Dewdrop, Fawn, and Sunbeam. *Flora and Sylva*, July.

ANDROMEDA SPECIOSA.—*Revue de l'Horticulture Belge*, August.

ROSE SOLEIL D'OR.—A cross between Persian Yellow and Antoine Ducher. It has the vigorous habit of the former, with the "perpetual" blooming tendencies of the H.P. Flowers full yellow. *Revue de l'Horticulture Belge*, August.

DIANTHUS "WARLEY."—*Garden*, August 5. A seedling raised by Miss Willmott from *Cyclops*, with brilliant crimson flowers.

BATTERSEA PARK.

THE outlying parts of south-western London enjoy in their parks and open spaces a more enviable position as compared with any other, excepting, perhaps, those districts abutting on the breezy northern heights, from which, however, the advantage of a great river in the vicinity is missing. There are the great commons of Wimbledon, Wandsworth, and Clapham, situated at considerable height above the Thames, and open to every wind that blows, and so far but little marred by the landscape gardener. Wimbledon Common is practically in the same natural state that it has been in for hundreds of years, and the others contain but few marks of the improver's hands, if we omit the levelling of the turf and clearing away of the too-abundant Gorse and Brambles.

The park at Battersea differs from the above-mentioned commons in that it is almost entirely the work of the landscape gardener. It is not yet fifty years since it was laid out as we see it, although to most persons, judging from the size of the timber-trees with which its avenues and larger effects are produced, it must seem to be much older. Much of it is "made ground," the site being low-lying and marshy, and at high tides it was, at one time, subject to flooding. This has been averted by throwing up a wide embankment on the river-front, and facing it with rough masonry—the first step in the reclamation of the land. It is owing to the dampness of the soil, to its situation, and to its depth, that trees, shrubs, and herbaceous perennial plants grow with so much vigour. The severest droughts seem to have but small effect on vegetation here.

A visit paid in the present month revealed all the best features of the park; the trees presenting their liveliest tints of green peculiar to each, and the beds and borders of flowering plants were in great beauty, whilst the up-keep of lawns, walks, roads, &c., left nothing to be desired. The area seems to fall naturally into four fairly distinct sections; there is the river frontage, consisting of what is now a fine avenue of Oriental Planes and stretches of rather roughly-kept lawn; then the broad carriage road with a path for pedestrians on the side furthest from the river, beyond which stretch shrubberies bordered with flowering plants, separate parterres of bedding or foliage plants; and shrubberies that contain many striking examples of flowering trees and evergreens. Beyond this portion and the lake are immense lawns devoted to games and promenading; there also is a fine avenue of Elms backed by close plantations of common shrubs—mostly evergreens; and beyond this avenue are other lawns, smaller than those first named; and still further afield is the sub-tropical garden, the great attraction of the park; and the lake, around which many of the finest and choicest trees and shrubs of the park are to be found.

The south side of the park has many fine views of the lake and surrounding bosquets and plantations, and is adorned with numerous specimens of exotic trees and shrubs planted singly or standing in the foregrounds of the shrubberies bordering the lake, while others stand singly on the smooth turf that runs on the south side of a broad road intended for pedestrians only. This road leads in a devious line to the main south-eastern entrance in the Queen's Road.

The visitor entering by this gate and walking in a south-westerly direction will note first a large oblong bed, 30 yards long and 10 wide, planted with single-flowered Hollyhocks in great variety and standing about 2 yards apart, the intervening spaces being filled with show, fancy, and Cactus Dahlias, and vigorous bush Roses, clumps of Phloxes of the decussata section, Pentstemons, and Gladiolus brenchleyensis. The margin of this immense flower-bed is planted with oblong groups of scarlet and pink Pelargoniums, East Lothian

Stocks, white Marguerites, and variegated Pelargoniums forming the edging. There are flanking borders to this bed, similarly treated as regards the materials employed.

Among the trees observed along this road may be mentioned *Koeleruteria paniculata*, possessing numerous panicles of bloom; many fine *Cratægus*, including *C. Aronia*, *C. coccinea*, *C. Crus-galli*, *C. orientalis*, and varieties of *C. oxyacantha*; Tamarisks in variety, well furnished with their pink inflorescences; *Cotoneaster frigida* in fruit; *Pyrus Sorbus*, several species of *Taxus*, and the Stagshorn Sumach. Interspersed are beds of *Cannas* with red or green leaves. There is observed on one side of the road running eastwards from the Albert Road entrance a sunken panel-garden, the beds being planted in pairs, with *Heliotrope* mixed with pink *Fuchsias*, and bordered with *Begonia floribunda*. Two other beds are planted with *Fuchsias*, two with red-flowered *Cannas* and scarlet *Pelargoniums*, with blue-flowered *Lobelia*; two with green-leaved *Cannas*, one having pink and the other scarlet flowers; while the centre bed is filled with *Abutilon Thompsoni* and *Perilla nankinensis* mixed indiscriminately. Next follows a line of a pink-flowered *Nosegay Pelargonium*, and finally an edging of blue *Lobelia*. The entire panel had a margin of beds of *Pelargonium* in variety. Small *Dracænas*, Bamboos, and scarlet *Pelargoniums* are dotted about on the turf, the effect being not quite satisfactory.

Hereabouts were noticed some splendid pyramidal Hollies and a *Gymnocladus canadensis*, the latter much crowded by other and commoner things. Facing this tree and across the road one notices a *Catalpa syringifolia* 30 feet high and proportionately broad. The border of shrubs for many yards is planted, in the front, with *Anemone japonica*, *Calceolaria floribunda*, &c., and edged with *Poa trivialis variegata*. In this part much use is made of species of *Helianthus* with single flowers. Further along this road the border of the shrubbery is furnished with double-flowered Hollyhocks of good quality, beautiful Phloxes in variety, dwarf-growing *Helianthus*, and yellow-and-purple *Violas*.

There are a few good beds observed around the refreshment-house—viz., two with double-flowered *Fuchsias*, and bordered with a broad band of *Thunbergia aurantiaca*, the latter flowering remarkably well. Other beds are planted with *Pelargoniums*, and a border running round the rear of the beds is filled with groups of *Pentstemons*, *Marguerites*, zonal and Ivy-leaved *Pelargoniums*; golden-leaved *Privet* is employed in standard form to break the monotony of the flat surface.

THE LAKE-SIDE AND SUB-TROPICAL GARDEN.

In the approach to this from the east, some capital specimen Hollies may be noticed, and variegated Hollies of small sizes planted in groups with wide glades of grass between. Planted on the margin of the water in various places, *Eulalia japonica zebrina*, *Gunnera scabra*, *Arundinaria Simoni*, *Arundo conspicua*, *Bambusa palmata*; *Iris* of sorts, *Polygonum*, *Fatsia Sieboldi*, *Cortaderia argentea*, several *Vitis*, including *V. Coignetia*, and *Aristolochia Siphon* are employed to break the smoothness of the banks in places.

The usual arrangement of plants in pots, viz., Ferns, Palms, Cycads, *Philodendron pertusum* (*Monstera*), under tall *Poplars*, is still carried out, and the various plants seem more healthy than in former years. One grassy mound is planted with *Livistona borbonica*, at several yards apart.

A bed in the subtropical part, 30 feet long, is exceedingly choice; it is planted with *Solanum jasminoides*, the specimens being 6 feet in height, with a groundwork consisting of a rose-coloured Ivy-leaved *Pelargonium*, to which there is an edging of *Sedum tabuleforme*, *Lobelia*, variegated *Pelargonium*, and *Heliotrope*. It almost seems as if edging-plants generally are too

redundant, and in this case certainly it is so. It is an instance of not seeing the wood because of the trees.

There are also beds filled with some dwarf growing *Cannas* having flowers of vivid colours, with East Lothian Stocks and zonal *Pelargoniums*. Near by, as a foil to all this bright colouring, is a round bed planted with *Chrysanthemum maximum* (single white flowers), underneath which is a pale-leaved *Pelargonium*, on which no flowers are allowed to remain, and masses of pale purple *Violas*, with a variety of *Begonia floribunda* and *Arabis alba* as edging plants in separate lines.

A bed forming a telling combination of plants and colouring is filled with *Fuchsias* of one red variety, *Abutilon Sellowianum marmoratum*, and white-flowered Stocks. Alongside of this is a bed filled with a bronzy-leaved *Canna*, 3 feet high; having an inner edging of *Centaurea candidissima*, and an outer one of Golden *Fleece Fuchsia*, with the shoots pegged to the soil so as to form a flat band, a barbarism perhaps, but yet effective.

There are beds consisting of tall *Fuchsias*, including *F. fulgens*, *Hibiscus Rosa sinensis*, *Plumbago capensis*, *Cassia corymbosa*, &c.; *Grevillea rosmarinifolia* and *Dracæna australis* with *Harrison's Musk* as a carpet; of *Lantana Drap d'Or* and pink and white *Begonias*, with standards of *Acacia lophantha*, and one of *Solanum robustum*, 3 to 4 feet high, associated with red-flowered *Fuchsias* and white-flowered Stocks, forms a striking bed. The finest bed in the garden faces this last, and consists chiefly of standard plants of *Plumbago*, standing on an undergrowth of blue and yellow *Violas*, of *Coleus*, *Heliotropes*, *Abutilon Thompsoni*, with outer lines of *Iresine* and *Pelargoniums*. The next bed to this, one filled with an imposing-looking foliage plant (*Polymnia*), and planted at the sides with purple and white-flowered *Phloxes*, forms a grand sight, the latter plants being at their best, and this year they are as fine as possible.

A large bed of succulents contains many good plants, especially *Agaves*. Hereabouts are more *Fuchsias*, some alone, others associated with *Plumbago capensis* and other plants. Good use is made of *Palms* in tubs, these being arranged on the south side of a line of tall *Poplars*, so that they have full sunshine and are yet sheltered from cool winds. There are some capital masses of Bamboos in this part of the garden.

Mr. Rogers, the new Superintendent, is deserving of much commendation for the admirable manner in which he is managing the park. F. M.

THE SPECIES OF DAPHNE.

THE catalogue of M. Maurice de Vilmorin (*Fruticetum Vilmorianum*) contains a list of species of *Daphne* which seems to me to be very complete. For more than twenty years I have collected specimens of this genus, but I have never in any public or private garden found so complete a collection as that here mentioned.

They are plants of slow growth, difficult to increase and liable to injury from transplantation. In moving the Alpine garden we lost all our old plants in spite of the care that was taken not to injure the roots. As to increasing them, grafting is the easiest method, on *D. laureola* for species with evergreen, and on *D. Mezereum* for those with caducous leaves. Budding is however to be preferred as giving sturdier and more vigorous plants. This is effected in August or September under a bell-glass; it is sometimes six months before the callus forms and a year before rootlets emerge.

From a cultivator's standpoint the genus *Daphne* is divisible into two sections:—First, those that succeed in the open-ground; and second, saxatile or rock species. Among the former are:—

BORDER SPECIES.

D. altaica, Pallas, from Altaic Siberia and Chinese Soongaria. Leaves caducous, lanceolate-oblong; flowers white, in clusters two to five, in

small, terminal bonquets, slightly scented; the fruit is a fleshy-red berry.

D. caucasica, Pallas, from the Caucasus, Taurus, and mountain forests of the Ukraine. Differs from the preceding by its longer, sessile, and glaucous leaves that are obtuse and mucronate, and by its larger, greenish-white flowers in fascicles of two to twenty; the calyx is hoary. It is a shrub about 3 feet high. It is also known as *salicifolia* and *euphorbioides*.

D. Sophiae, Kalenitz, grows in wooded regions of the Ural, and differs from *D. altaica* in its leaves, glaucous below, obovate-oblong, mucronate, narrow at the base. The pointed lobes of the calyx are three times shorter than the tube (half the length in *altaica*). It differs also in its slender filiform branches and in its larger corolla. Berries minium, red. It is a rare plant that survives the severe cold in the Linnæa garden in the Pennine Alps, and it flowers abundantly, but ripens its fruits in the shade only.

D. Mezereum, L., from the mountains of Europe and temperate and Northern Asia. Many varieties are cultivated; the Kew Index mentions one

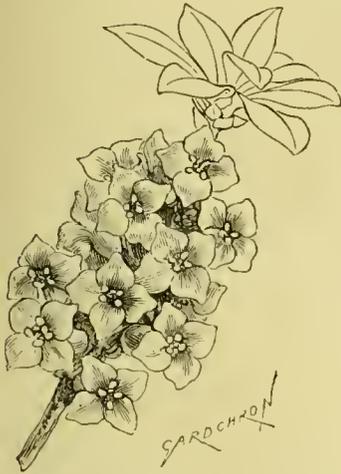


FIG. 52.—FLOWERING SPRAY OF DAPHNE MEZEREUM ALBUM.

with white and one with double flowers, both distributed in gardens; and a third, *grandiflora*, which I do not know, unless it be the same as *alpina*, which I consider as a single form found among the mountains, which reverts to the original in cultivation.

D. Genkwa, Siebold et Zuccarini.—Grown in gardens in Japan, whence it was introduced from China. A curious species, like Lilac in its trusses of mauve blooms, and forming a shrub 3 to 6 feet high, with numerous fine and clustering branches; leaves small, oval-lanceolate, opposite, and with a silky velvety lustre underneath. This is a rare and tender plant, needing a porous non-chalky soil, a partly shaded position, and no damp. The frosts of last January killed all our old plants, and left only the younger ones grafted the previous year.

D. Fortunei, Lindley, from China.—I have not received the plant under this name. An illustration of the species (*D. odora*, *sinensis*, and *Cneorum*) appears in the *Flore des Serres de Van Houtte*, 3, t. 208; flowers lilac, clustered in threes and fours in small lateral subsessile heads; leaves oval-oblong, nearly sessile. The six species enumerated have caducous foliage and bare stems in winter.

D. odora, Thunberg (*D. japonica*), from Japan.—A dwarf shrub, with thick, fleshy branches; thick leaves that seem persistent, green, very glabrous, oval-oblong, pointed; flowers fairly large, pale rose or lilac-white, clustered five to twelve, falling readily, and very odoriferous.

Grown in gardens in Upper Italy, and especially round Lakes Maggiore and Como, where it forms large bushes rarely more than 3 feet high. At Geneva it is frozen in cold winters, but survives if well protected by Fir branches. It prefers whole or partial shade, and flowers in March and April. There is also a pretty variety with leaves bordered with yellow and white.

D. sinensis, Lamarek (*D. indica*, hort.), from the mountains of China.—A shrub growing to 6 or 7 feet, with dark brown branches bearing on the upper parts oval-oblong, glabrous and shining persistent leaves; flowers violet-rose, numerous, in thick terminal clusters, very fragrant. March to May. It does not survive our winters, and requires a cool-house or the conservatory. *D. Delphini*, or *Dauphini* of French horticulture, is apparently the same, as I have always received it under that name, or as *indica* or *sinensis*.

D. japonica, Siebold and Zuccarini.—A Japanese species akin to *D. odora*, but differing in its leaves, narrowed at the base, sub-sessile; in its greenish flowers, borne on a pendulous, pubescent peduncle. I have not grown it, but it is enumerated in the *Fruticetum*.

D. Mazeli, Carrière.—A Japanese species akin to *D. odora*, differing by its flowers, borne on short lateral stems. It flowers in winter.

D. yezoensis, Maximowicz (in *Regel's Gartenflora*, 1866, p. 34).—Not known to me. Grown at Les Barres by M. Maurice de Vilmorin, and is probably near to *japonica*. It is a Japanese species.

D. laureola, L., grows on the wooded, calcareous mountains of central, western, and southern Europe, and in Great Britain. It is a plant of handsome appearance, Laurel-like foliage, with yellowish-green flowers, slightly scented, to which succeed shining black berries. It is grown in woods with good effect.

D. Philippi (*D. pailkesiensis*, Phil.).—From the Pyrenees, differing from *D. laureola* by its bracts, which are larger and longer than the flowers; by its more leafy stems, more bushy, almost trailing habit, and by its smaller, more pointed leaves, with a marked dorsal veining. The flowers are smaller than those of *D. laureola*. Henry Correvon, *Floraire*, (Geneva).

(To be continued.)

A NEW ORCHID DISEASE.*

Just about fifty years ago the late Rev. M. J. Berkeley established in this journal the genus *Hemileia*, which included one species, *H. vastatrix*, the too well-known "Coffee-leaf disease," a parasite that has devastated plantations wherever the cultivation of Coffee has been attempted in the Old World. Two or three other species of *Hemileia* have since been discovered, all parasitic on plants belonging to the Coffee family—*Rubiaceæ*—and all from tropical or sub-tropical regions of the Old World.

Quite recently, however, a fungus parasitic on *Oncidium Cavendishianum*, imported from Guatemala, proved to be a species of *Hemileia* not previously recorded, and a second specimen of the same fungus has also been sent for determination, growing on the leaf of an *Oncidium* that had been growing in this country for some time. The fungus forms bright orange, powdery-looking patches of variable size on the under-surface of the leaf; corresponding areas on the upper surface of the leaf are of a sickly yellowish-green colour. There is never any advantage gained by acting the part of an alarmist; nevertheless, remember-

* *Hemileia americana*, Massee (sp. nov.).—Maculis epiphyllis pallide virescentibus; soris hypophyllis minutis globosis aurantiaco-luteis; uredosporis subglobosis verrucosis 20–25 μ pedicella crasso septato elongato hyalino fultis; teleutosporis obovatis verrucosis apice papilla obtusa ornatiss 30 x 22–25 μ .

ing the terrible havoc caused by the *Hemileia* parasitic on Coffee, it is just as well that cultivators of Orchids should be cognisant of the fact that a very close ally of the Coffee disease has established itself on Orchids in this country. Prompt destruction of every leaf showing the symptoms indicated above should prevent the pest from spreading and assuming the proportions of an irresistible epidemic.

In describing the genus *Hemileia*, Berkeley attached some importance to the arrangement of the markings present on the surface of the

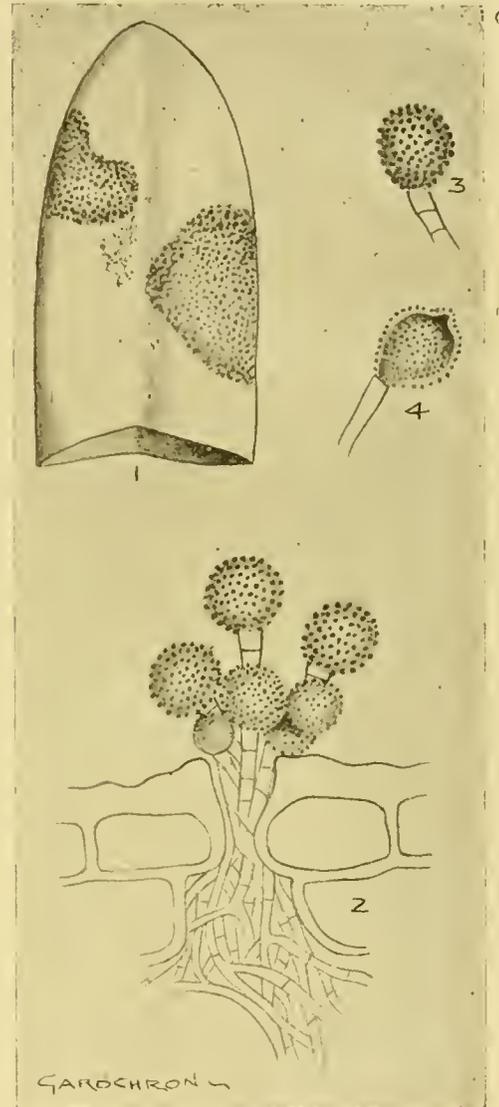


FIG. 53.—HEMILEIA ON ORCHID LEAF.

1. Fungus on leaf; natural size.
2. Section showing hyphae and threads passing through a stoma and producing uredospores; mag. 400.
3. Uredospore; mag. 400.
4. Teleutospore; mag. 400.

uredospores. In *H. vastatrix* the head of spores is densely crowded, and the surface of spores in contact with each other is smooth, whereas the free portions of the surface are coarsely warted, hence the generic name [half-smooth]. This character however, as might have been expected, has not proved to be constant, as the species under consideration has the spores evenly warted all over.

The most pronounced characters of the genus are (1) the protrusion of the spore-bearing threads or hyphae through the stomata only, hence the spores are arranged in small clusters on the surface of the leaf, and not produced in dense clusters that burst through the epidermis of the leaf, as in allied genera; (2) the suckers or haustoria are not

specialised, thickened bodies, as in *Puccinia*, &c., but long slender hyphae, as in *Peronospora parasitica*; (3) the teleutospore is one-celled, with an apical germ spore as in *Uromyces*. Germination as in *Puccinia*. The teleutospores are produced in small numbers after most of the uredospores have been dispersed, and originate from the same spawn or mycelium as the latter. *George Massee.*

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his Correspondents.)

A NEW FERN PEST.—Mr. S. T. Wright has sent me from Wisley specimens of Fern-fronds attacked by a pest which has hitherto not come under my notice. I recently sent you a note describing how rising Fern-fronds, chiefly of Lady Ferns, were punctured near the uncoiling tip by an insect which laid eggs, which developed into maggots, these then eating their way down the main rachis to the caudex, and, as I presumed, burying themselves in the soil, to appear the next season either as flies or beetles, the perfect form of the insect being then unknown to me. When fully grown these maggots are of a pale bluish tint. Mr. Wright's examples differ from this in the fact that the fronds sent are fully-matured as uninjured ones, but then a few inches up from the caudex the Fern-rachis shows a round hole about the twelfth of an inch in diameter, from which exudes a white froth resembling that of the immature cuckoo-spit. On splitting the rachis, one and sometimes two creamy-white maggots are found at a short distance below the perforation; and though these are larger and fatter than those previously described as having devoured the whole of the rachis-core, but little of the core is eaten, the inference being that they live on the sap, the froth being their exuviae. The specimens sent are also *Athyria*; but while the presence of the maggots described by me in the first place involves at the outset the perishing of the frond-tip from the point where the eggs were laid, and the subsequent destruction of the rest of the frond as the maggots descend; in those sent by Mr. Wright the frond retains its verdure to a large extent, and is, as I have said, attacked near the base instead of near its apex. Furthermore, this occurs much later in the season, when the fronds are mature, instead of when they are rising. It therefore seems clear that two distinct insects are concerned, of neither of which the life-history seems to be known. The difficulty in both cases is that the severance of the fronds concerned means the destruction of the maggot, due to food deprivation, and hence living plants are required in order to follow out the life-history, and determine the nature of the fly or beetle which lays the eggs. In my own case I have never seen this, though many fronds are destroyed each season. It is to be hoped that some entomologist will take the matter up, in which case both Mr. Wright and myself would be happy to facilitate research by supplying material. *Chos. T. Druery, V.M.H., F.L.S.*

THE DOUGLAS FIR AT SCONE.—"A. P." should know most on this subject, but if his statements this week are correct, they are a puzzling contradiction of the original statements in the *Perth Constitutional*, which were copied into either the *Gardeners' Chronicle* or *Garden* and never contradicted. I write from memory, but I believe correctly, when I say that it was stated, on Mr. McCorquodale's authority, that the Douglas Firs in question were planted, tended, felled, and finally sold by him at 1s. per foot, which must have produced a sum far in excess of "A. P.'s" figure of £34. As "A. P." has not seen the original article in the Dundee paper, may I suggest that he has probably made some mistake. From what I have seen and read of the Taimont wood, I understand that the Douglas Firs were originally planted 12 feet apart, or 302 to the acre (not 202, as stated by Schlich—by mistake), and were filled in with Larch and Spruce to some 4 feet over all. The Douglas have never been regularly thinned I understand, but the Larch and Spruce were cut out, as they

were being smothered, and from what I saw of them they were not worth more, I should think, than £34. Are these the trees "A. P." speaks of, and has he confounded them with the Douglas? If not, then the original account was very misleading, though vouched for at the time and written with the full knowledge of all concerned. As to Mr. Booth's statements, I fear he writes from very loose data, as, for example, when he states (p. 105) that the trees were sold by auction at delivery price. Who ever heard of trees being sold at delivery price when the auctioneer did not know where they were going to? The delivery price is what the consumer pays when the trees are delivered in his yard after the auctioneer's price has been paid. Were Mr. McCorquodale's trees got from another plantation than the Taimont? *J. Simpson.*

RED CURRANTS.—On p. 96 of the *Gardeners' Chronicle*, "A. D.," in writing of these fruits, mentions the variety Comet as being identical with Fay's Prolific, and gives as his authority Messrs. Bunyard. If Messrs. Bunyard have found it to be so, I have not. We have Fay's Prolific obtained from Messrs. Veitch, and the variety Comet bought from Messrs. Laxton, and it would require a lively imagination to describe them as the same variety. The Bedford firm state in their catalogue that it was given an Award of Merit by the Royal Horticultural Society, and it appears to deserve it, but if it is the same as Fay's Prolific, why was this done? Comet with me is the most prolific and earliest fruiter among Red Currants that I am acquainted with. The bunches are more like bunches of Grapes, while two-year-old bushes fruit freely, which I have not found other varieties do. *T. H. Slade.*

OAK-TREES AT STUTTGART.—In answer to a correspondent who applied to us for information on this subject, Mr. Pfützer obligingly writes:—"We have enormous forests of Oak-trees in the vicinity of Stuttgart. The Oak-trees are mixed with some Beech-trees. Our Oaks, *Quercus Robur*, are growing very nicely, much taller than they do in England. They are growing about 20 to 30 yards high; some giants are even taller. We had and have still trees here in Württemberg stated to be 700 to 800 years of age, and these trees have a stem girth of from 8 to 10 yards. The common trees of 10 to 20 yards in height are about 2 to 4 yards in circumference, and the branches near the ground are smaller, so that the form of the tree appears tall, save in some exceptions." *W. Pfützer, Stuttgart.*

EXHIBITING SWEET PEAS.—In my experience as a competitor, official, and judge, I find that nearly all show schedules are quite explicit and definite in their rules [!]; I have also found that all exhibitors are not quite so absent-minded as Mr. B. supposes. All rules are made for a purpose, and that is to put all exhibitors on the same footing, so that one may not have an undue advantage over another. No doubt some rules may be rather stringent, and in stating a definite number of sprays or spikes in a stand, I think the Society makes a mistake; a rule having a fixed number is not elastic enough, and generally leads to ill-feeling, if not to a loss of entries. In a Society of which I am an office-bearer, the rule regarding Sweet Peas is stated as follows:—"So many vases, distinct varieties, not exceeding thirty spikes in a vase. This permits of any number less than thirty, but any more, even one spike, should disqualify. The exhibitor who puts in less than the number allowed is handicapping himself to that extent; and the exhibitor who puts in more, in my experience, generally does so to improve his stand, on the off-chance of not being detected. I hold that when an exhibitor has staged his exhibit, neither an official nor a judge has any right to alter it in any way. How are they to know that a deviation from rule is an oversight? What right have they to say this should come out, and that remain? The exhibitor should know what he means, and no one else has a right to alter his meaning. I remember a show wherein was a class for a collection of six kinds of fruit. A competitor had bunches of black and white Grapes, and five other fruits. The judges, before judging, drew the attention of an official

to it, and he removed one dish, but unfortunately it happened to be the strongest dish in the collection. Rules are not made to be broken, but to be acted up to, and any one who breaks a rule, either through ignorance or intention, should suffer. Those who conform should be protected. This principle runs through all laws. I heartily agree with the Editor in his opinion that where an exhibit is especially good, but does not exactly conform to the rule applying to it, a special award should be given it. I must also differ from "Mr. B." in his remarks that a rule should be made to pass over those with "two and sometimes only one bloom on a spray." He would like three, and if possible four. So should I if I could get them good. But my experience is that generally four blooms on a spray are not good, and I would rather have two good ones than four bad ones. It is far better to leave it open. Exhibitors will never put in two if they can get three or four that are good, but you will limit the competition and keep out some of the very best blooms if you adopt a restrictive policy. I regret to differ from such a good judge as "Mr. B.," but I believe he will, after consideration, concede that to carry out his ideas, however well-intentioned, would lead to endless trouble. *Celt.*

STAGING CARNATIONS AND PICOTEES.—Respecting my note which appeared on p. 96, in reference to this subject, I quite recently saw a commendable exhibit of staging the blooms in bunches. The schedule reads thus:—"For the best six bunches of Carnations or Picotees, distinct, not fewer than three blooms to form a bunch." Four exhibitors competed, and the 1st prize collection contained all exhibition blooms of named varieties arranged in vases on long stems, and with a plentiful supply of their own foliage. Nothing could have had a prettier decorative effect; the blooms were handsome, even from a florist's point of view, and could be distinctly seen and appreciated. In future I shall hope to see more competitors in such classes. The way to increase them is to offer more prizes. *E. M.*

EUCRYPHIA PINNATIFOLIA.—This handsome shrub is now in full beauty, and makes a fine and bold show; it has rose-like foliage and large white flowers. I believe it was introduced by Messrs. Veitch from Chili, where it grows among the rocks at the foot of the Cordilleras. The specimen in flower here is about 9 feet 6 inches in height, and is a mass of bloom. The flowers, which spring from the axils of the upper leaves, are about 2½ inches in diameter, each with four pure white spreading petals and numerous stamens, with long filaments terminating in bright yellow anthers. *W. A. Cook, Leonardslee Gardens.* [It was illustrated in the *Gardeners' Chronicle*, August 22, 1891, p. 217. Ed.]

PHLOXES AT CARDIFF SHOW.—Quite the finest display of herbaceous Phloxes in a cut state that I have ever seen was one at the late Cardiff show, arranged by Messrs. Isaac House & Son, The Nurseries, Westbury-on-Trym, Bristol. At the time I thought such a display was of a highly educational character, and deserved a special note, which I now make as a guide to intending planters of this showy, useful, and easily-grown herbaceous plant. There is no doubt the finest selection of sorts can be made from a display of this character much more accurately than from the ordinary trade catalogue, as here it is a question of choosing the colours and forms most admired. Messrs. House grow 20,000 plants in 200 varieties, therefore they have a magnificent opportunity for selection and comparison. On this occasion they staged 100 varieties, of which the following I selected as being desirable:—White Phloxes always command attention, as apart from their beauty they are so useful in floral work; *Fiancée*, *Albatre*, *Mathilde Seroa*, *Sylphide*, and *Esme* are the best varieties of bright rose colour to rosy-salmon included; *Archibald Forbes*, *Comète*, *Le Siècle*, *Miss Pemberton* (especially fine), and *Mrs. Arthur Baker*. Of pink and rose-coloured flowers there were *Béranger*, *Feodora*, and *John Forbes*. The best of the deep blue and violet-coloured sorts were *Emanuel de Rouge*, *Iris*, and *Eclairer*, which is still one of the best of early-flowering Phloxes. The best scarlet and orange-scarlet coloured

varieties were Brilliant, Coquelicot, Etna, John Fraser, Liberté. Mounet Sully is an improved Coquelicot; Suffrage, Tom Welsh, Embarrassment, Roger Marx, very fine; Aurora Borealis, and Adonis. The following flowers were white with a crimson centre:—Jean Jerbaud, extremely showy; and Henry Murger. Of pale blue and mauve colours there were Espérance, Acropole, Crépuscule, Dervische, Lamartine, and Pharaon. The varieties James Farquhar and Madame Neera are of silver-grey colour. Of crimson-purple to deep crimson colours, Ferdinand Cortes, Lord Kelvin, and Walter Wright, a new rich purple flower of excellent form, were the best. *E. Molyneux.*

rich orange-yellow. I will send you a photograph. Apples in England, Ireland, and Scotland are like the old-fashioned Tulips and Daffodils of twenty years since in requiring a thorough overhauling. There are some fine old Apples in this country, superior to any coming from England; I am working them all up again, as I did with the Tulips. *Wm. Baylor Harland, Cork.*

THE CULTIVATION OF SCHIZANTHUS.

For the illustration of Schizanthus (fig. 54) we are indebted to Mr. G. W. Harbron, of Endcliffe

in height, using six stakes to a plant, placing one in the centre and five round the outside of the pot. The compost used for the first and second pottings is composed of good fibrous loam and leaf-mould in the proportion of half each, with sharp sand and charcoal dust. For the final potting I use three parts old Chrysanthemum-soil to one of leaf-mould, with some sharp sand and a good dressing of charcoal dust, the Chrysanthemum-soil being, I find, sufficiently rich without requiring manure. When the pots are filled with roots I feed well with manure-water. The plants require very careful watering, for should the soil become too wet they damp off very quickly. The varieties I grow are as follows:—*S. pinnatus*, *S. p. candidissimus*, *S. p. roseus compactus*, *S. grandiflorus oculatus*, *S. papilionaceus pyramidalis*, *S. grandiflorus pyramidalis compactus*, *S. Grahami carmineus*. *G. W. Harbron, The Gardens, Endcliffe Grange, Sheffield.*"

FORESTRY.

THE LOCUST TREE.

"A. P.," in your issue of August 12, makes the broad statement that it is the proved worthlessness of the timber of this tree as a forest tree in this country that is accountable for its neglect. If "A. P." would give some statistics and details to prove his statement I should be much obliged. Meanwhile, our position here is as follows:—Lurch-disease has made such strides in the last two years that plantations of Larch twenty years old and more, which were perfectly healthy two years ago, are this year dying by hundreds. Smoke and caterpillars are killing the Oaks. Spanish Chestnut is so far doing well, and is the only tree left of first-class timber for rough estate purposes, such as fencing, &c.

Our attention was turned to some Locust trees planted in 1862, which had to be cut down. They were about 40 feet high, and contained 19 feet 6 inches of timber below the first branch, in spite of being badly grown, and nearly as broad as high. We made posts for park fencing out of the timber, and the head woodman said the wood was harder than Oak.

There are millions of colliery props sold every year in this country. Mr. Booth says that abroad props made from the Locust tree are more valuable than those made of Oak; it would be interesting to hear "A. P.'s" experience in this direction with the timber of this tree which he considers to be quite worthless. *Basil Levett, Wychnor, Co. Staffs.*

REMARKS ON THE CONDITION OF THE FRUIT CROPS.

(See Tables and General Summary, ante, pp. 81-87.)
(Continued from p. 137.)

5, SOUTHERN COUNTIES.

BERKSHIRE.—The Apple crop in this locality is generally much below the average, and that of Pears, although the trees developed plenty of bloom, is also below an average crop. Small fruits are abundant. Strawberries were a good crop, for although the earliest-produced trusses of flowers were cut off by frost, the rains benefited the later ones, which furnished a good crop of fruit. Apple-trees have suffered much from American blight. *J. Howard, Benham Park Gardens, Newbury.*

— The general fruit prospects in this neighbourhood up to May 20 were all that could be desired, Apples, which may be considered the principal fruit crop, looking up to that time remarkably well; but after that date 7°, 10°, and 11° of frost appearing caused them to be a complete failure. The same may be said with regard to Plums, except those growing upon walls; but

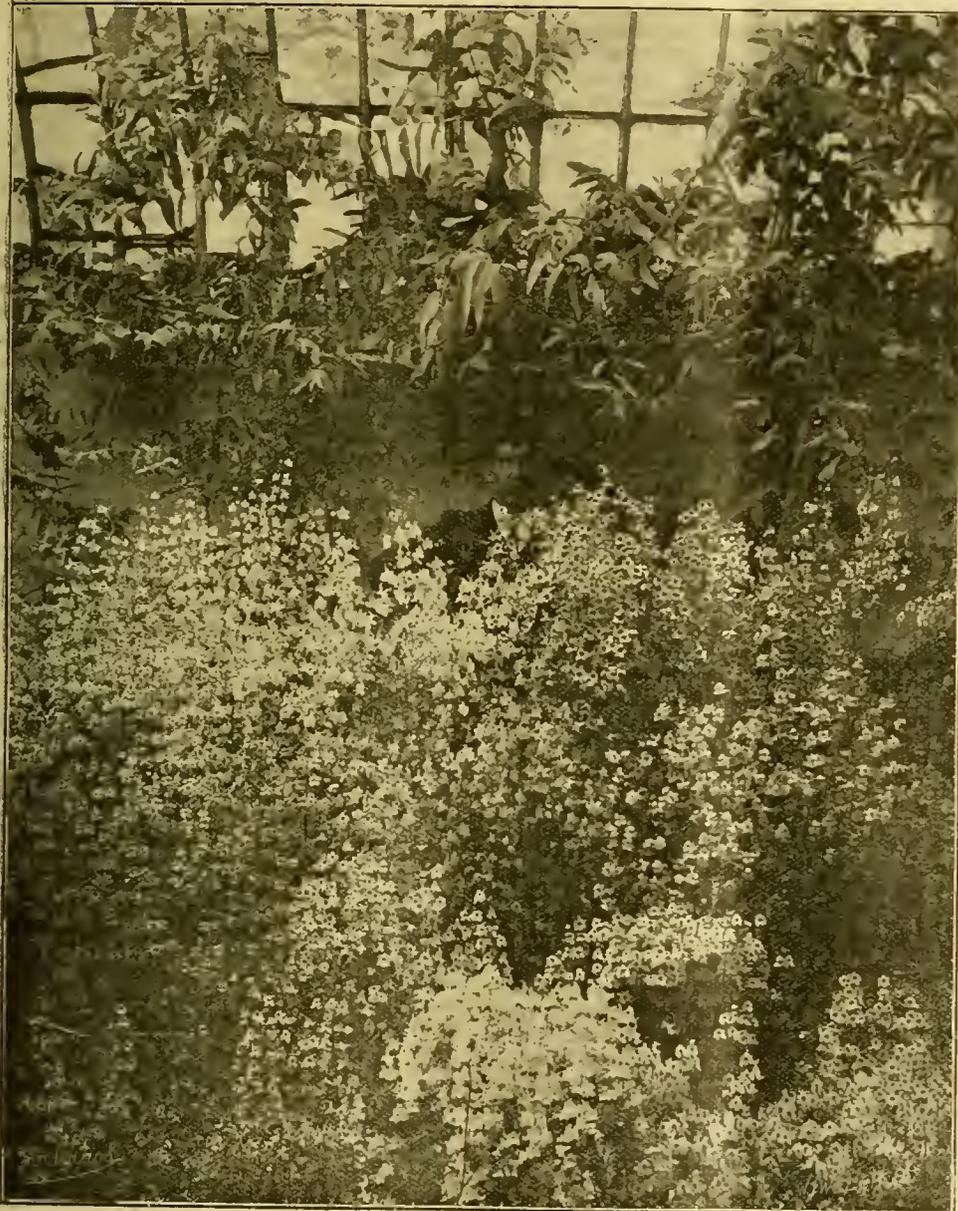


FIG. 54.—SCHIZANTHUS IN THE GARDEN OF C. W. KAYSER, ESQ.

APPLE FIVE-CROWN PIPPIN.—With reference to a note recently published in the *Gardeners' Chronicle*, I was indeed surprised not to have seen this magnificent Apple put at the top of the list as a table fruit. There is a tree here at Ard Cairn planted about fifteen years, and if there is one Apple on the tree there are 1,000. It is superior to any Ribston in substance and quality, and we had it in excellent condition until May 10 this year. About February it is superb. The tree came to me originally from Herefordshire; the name got lost in transit, and therefore I sent specimens of the fruit to the chief nurseries in England, when it was variously named Holland-bury, Gravenstein, Winter Queening, Tom Putt, &c. Its colours vary highly here, and the flesh is of a

Grange Gardens, Sheffield, who sends us the following particulars as to his method of growing the plants:—

"The seed is sown in the second week in August, and the seedlings when large enough to handle are pricked off singly into thumb-pots, and again later into 5-inch pots. The final potting takes place about the middle of February. I use pots ranging from 7 to 11 inches in diameter, according to the vigour of the varieties. I grow them in a temperature of 55°, and at about the end of March they are placed in a conservatory in a group, and allowed to grow together. As to training, I employ stakes ranging from 3 to 6 feet

Peaches and Apricots are above the average. Bush fruit, including Strawberries, are both plentiful and good. *William Fyfe, Lockinge Gardens, Wantage.*

— The soil here varies very much, and includes gravel, clay, and chalk, the subsoil being principally clay. The fruit crops in this garden and in those in the vicinity are rather unsatisfactory this year. The crops of Apples are very sparse, and the same may be said of Pears. Plums, on the contrary, are an immense crop, the trees breaking down with the great quantity of fruit. Gooseberries and Currants have also splendid crops. Strawberries were most unsatisfactory, the finest and best fruits being spoiled by the rains during the latter part of June, from which cause more than half the crop rotted on the ground. *James Coombes, Engtefield Gardens, Reading.*

— The fruit crops in this district were quite spoiled by the severe frosts at the end of May. Plums and Pears trained on walls are the more satisfactory, but even these are far from good. Strawberries have been most disappointing, the variety Laxton being by far the best, both in amount of crop and in quality. Laxton's "The Latest" is a first-class late variety, the fruits being large, well coloured, and of splendid flavour. Givon's Late is also worthy of mention, the fruits being large, firm, and of excellent quality. *Wm. Pope, Highclere Gardens, Newbury.*

DORSETSHIRE.—The Apple prospect in orchards is bad, and complaints are general hereabouts of the few fruits that have developed dropping largely. Bush-trained trees in the kitchen-garden, which received attention last season with regard to thinning the crop and were given copious waterings, are again bearing a good average crop; but still the fruit up to the present time is not nearly so healthy in appearance as it was last season. Pear trees with few exceptions, notably Marie Louise, Pitmaston Duchess, and Maréchal de la Cour, are bearing good average crops, and are fairly healthy. Among Plums, Early Prolific, Victoria, and Pond's Seedling are carrying moderate crops, but the choicer dessert kinds are deficient in this respect. Sweet Cherries have been excellent, but Morellos are not so good. Peaches and Nectarines are an average crop, and the trees have recovered wonderfully from a bad attack of "blister" in the spring. The crop of Apricots is again poor. Bush fruits have good crops, while the Raspberry crop is also satisfactory. Flavour in the Strawberries was affected by the excessive heat the third week in June; but late kinds, and especially "Climax," have been more than usually good. *T. Turton, Castle Gardens, Sherborne.*

— The promise of a good fruit season was shattered by the appearance of frost, cold winds, and fog during the latter part of May. The blossom was very clean, and was in some cases fertilised, but the fruits turned black and fell off. The above conditions did not affect the bush fruits, but Plum-trees suffered terribly. Pears also were badly affected, but the variety Doyenné du Comice stood the adverse conditions well. Among Apples the varieties Gloria Mundi, Lord Grosvenor and Duchess of Oldenburgh escaped much injury. The soil in this district is sandy loam, with a subsoil of ironstone. *H. Kempshall, Abbotsbury Castle Gardens, Dorchester.*

— The fruit-crops here would be greatly improved by rain, as the soil is very dry. Most fruit-trees are suffering from a severe attack of blight. Our soil is very chalky and of a dry nature. *Thos. Denny, Down House Gardens, Blandford.*

— The fruit crops are under the average amount in this locality, although all the trees flowered and set their fruits well, but keen, frosty

winds throughout April and during the early part of May caused Pears and Plums to drop wholesale. Apricots, Morello Cherries, and Peaches are carrying fair crops. Plums are but half a crop; while Pears are also sparse. Some varieties of Apples on standard trees in orchards are heavily cropped, but bushes and espaliers are carrying thin crops, although what fruit there is is of good size. Small bush fruits are abundant and of good quality. Strawberries were a light crop and were soon over. Fig-trees are carrying fair crops, especially the variety Brown Turkey. *Ben Campbell, Kingston House Gardens, Dorchester.*

— The fruit crop in our immediate neighbourhood is under the average, owing to the appearance of late frosts. Strawberries in some gardens were a complete failure, whilst in others there was an average crop. Apples suffered greatly, but there is a moderate amount of Pears and Plums. Peaches growing outside suffered much from "blister." Apricots do badly with us; the trees are continually dying. Small fruits—Currants, Gooseberries, and Raspberries—are an average crop. The soil here is heavy clay. *Alfred Coleman, Motcombe, Shaftesbury.*

HAMPSHIRE.—Our fruit-crops are under the average amount all through. Early varieties of Strawberries escaped injury, but Strawberries did not last long in fruit, the late frost damaging the main crop. Gooseberries, Red and Black Currants, and Raspberries are all very good. Damsons are also a good crop, but Plums are very bad. I never saw such a quantity of Filberts and Cobnuts, the trees being laden. The Apple-crop is thin, many fruits having dropped at midseason. Bush-trees that were thinned last season are cropping moderately well. *Arthur Lee, Palace House Gardens, Beaulieu, Brockenhurst.*

— The soil here is a strong loam overlying a heavy tenacious subsoil with chalk below. Apples are an average crop, the trees looking remarkably well, and the fruit swelling rapidly. Such sterling varieties as Cox's Orange Pippin, Allington Pippin, Worcester Pearmain, Lord Grosvenor, Stirling Castle, Branley's Seedling, and Norfolk Beauty, all promise well. Damsons are especially a heavy crop, also wall Cherries. Gooseberries and Currants are heavily laden with good fruit. Strawberries have done remarkably well, especially the varieties Leader, Royal Sovereign, and Sir J. Paxton. *Edwin Motyneux, Swanmore Park, Bishops Waltham.*

— The prospect early in the spring gave promise of a good fruit year, but on the nights of May 21, 22, we experienced disastrous frosts. Apple-trees, notwithstanding their heavy crops last season, gave promise of plenty of fruit again this year; but the hope has not been realised. Strawberries were a mass of blossom, but it was almost all destroyed; while Raspberries and Pears shared the same fate. Currants, both Black and Red, are carrying good crops of fine fruit. Gooseberries, although half the fruit dropped from the frost, are carrying an average crop of fine clean berries. Apricots are a good average crop, as are also Cherries. Our best crop is Plums. The soil is stiff on a clay subsoil, and the situation low, consequently we suffer greatly when late frost appears. *A. G. Nichols, Strathfieldsaye Gardens, Mortimer R.S.O.*

— The soil here is, on the whole, of rather poor quality, with a gravelly clay subsoil. Fruit-trees of all kinds blossomed well, but the sharp frosts in May destroyed the Apple, Plum, and Pear crops in the open. Small fruits did not suffer quite so badly, although the first-formed flowers of Strawberries and Raspberries were largely destroyed. *J. Wasley, Sherfield Manor Gardens, Basingstoke.*

— The fruit crops in this district are about the average, with the exception of Apples and

Pears, which looked very promising until May 23, when we experienced 7° of frost, while in some places as much as 10° were registered, which completely ruined the blossom. Varieties are no exception this time. Plums were well set before the frost came, as were also Peaches. The earliest-formed trusses of Strawberries were destroyed, but there were nevertheless good crops of this fruit, and the same may be said of other small fruits. *J. Bowerman, Hackwood Park Gardens, Basingstoke.*

— But little blossom appeared on our Apple and Pear-trees this season, but what did develop set well. The soil here is a strong loam. *Noah Kneller, Malshanger Park Gardens, Basingstoke.*

(To be continued.)

SOCIETIES.

THE ROYAL HORTICULTURAL.

AUGUST 15.—Although there was much that was interesting at the usual fortnightly meeting of this Society, held in their Hall in Vincent Square, Westminster, on this date, the number of exhibits was below the average, and the attendance meagre. This was to be expected, now that the holiday season is in full swing; nevertheless there were good groups of plants, flowers, and fruit presented, and the Committees found plenty to do in adjudicating upon novelties. Each recommended awards—the ORCHID COMMITTEE one First-class Certificate, the FLORAL COMMITTEE one First-class Certificate and five Awards of Merit, and the FRUIT AND VEGETABLE COMMITTEE several Awards of Merit to produce that had been found worthy after trial in the Society's Gardens at Wisley.

A prominent feature was the display of about 200 choice varieties of Gladioli, staged by Messrs. KELWAY & SONS; another was the excellent exhibit from the gardens of Miss ADAMSON, Regent's Park, who sent a collection of fruit, and another of plants. Many good groups of herbaceous flowers were also displayed.

A paper by Professor H. J. Webber, of the United States Department of Agriculture, was read on the "Progress of Horticulture in the United States," in which he treated of refrigeration, new varieties, hybridisation, methods of culture, and diseases and their remedies.

Floral Committee.

Present: W. Marshall, Esq. (in the Chair), and Messrs. Chas. T. Drury, H. B. May, Geo. Nicholson, John Green, Wm. Cuthbertson, Chas. Dixon, J. T. Bennett-Poë, W. P. Thomson, E. H. Jenkins, W. J. James, James Walker, Herbert Cuthush, John Jennings, Chas. Blick, Wm. Howe, R. C. Notcutt, and E. T. Cook.

Messrs. JAS. VEITCH & SONS, Ltd, King's Road, Chelsea, displayed a batch of the new *Buddleia variabilis* var. *Veitchiana*, and an improved form labelled *B. v. magnifica* (see Awards). The pyramidal spikes of lavender-coloured flowers of these plants made a pleasing show, and were produced in plenty. A row of the coarse-growing *Senecio clivorum*, with baskets of *Ericas* in variety, *Menziesia polifolia atro-purpurea* and small plants of Bamboos in pots completed the group. On an adjacent table Messrs. VEITCH had a batch of *Gloxinias*, and a number of plants of the beautiful blue-flowered *Exacum macranthum*. The *Gloxinias* are worthy of note, for although it is not more than six months since they were sown, they were carrying excellent flowers of large substance, the selection of colours being most noteworthy and representing a most desirable strain (Silver Flora Medal).

Mr. Geo. Kelf, gr. to Miss ADAMSON, South Villa, Regent's Park, is to be congratulated on his excellent group of stove and greenhouse plants displayed on the floor of the Hall. It was arranged in the form of a bank with an undulating foreground. The background was composed of tall Palms, with *Liliums*, *Agapanthus umbellatus*, and *Campanula pyramidalis* at intervals, while *Caladiums*, *Codiaeums* (*Crotons*), *Dieffenbachias*, *Dracenas*, with here and there a taller member, such as *Pandanus Veitchii*, pillar-trained plants of *Cissus discolor*, and *Cocus Weddeliana* formed the main

features, the whole being finished with a suitable edging of *Isolepis gracilis* and *Panicum plicatum* (Silver-gilt Flora Medal).

Messrs. KELWAY & SONS, Langport, Somerset, the well-known Gladiolus specialists, filled the concert platform with a magnificent collection of these flowers, embracing about 200 of the choicest kinds in cultivation. In addition to the better-known varieties, there were a number of new seedlings, two of which received awards. Other quite new kinds are Baron Komura, a large fringed flower of salmon-pink shade; Admiral Caillard, an unique plum-coloured flower; and Terra Nova, with beautiful flesh-coloured petals, the lower one being tinged with yellow (Silver-gilt Flora Medal).

Messrs. H. CANNELL & SONS, Swanley, Kent, put up a showy group of bedding and border flowers, including Asters, Antirrhinums, Salpiglossis, Delphiniums, *Calliopsis tinctoria*, *Lavatera trimestris*, *Centaurea moschata*, *Scabiosa grandiflora*, and others. The Asters were a remarkably fine lot, while a basket of Antirrhinums named Defiance was splendid in effect, the colour being a rich orange-red, with a lighter throat to the flower. Dwarf forms of *Nemesia strumosa* found a place in the collection, and on the floor opposite was a group of the graceful foliage plant *Kochia scoparia*, set off by dark-foliaged Cannas and sprays of Bamboos at the background (Silver Flora Medal).

Messrs. WM. ARTINDALE & SON, Nether Green Nurseries, Ranmoor, Sheffield, showed a grand collection of herbaceous flowers, Phloxes, Gladioli, Pentstemons, Coreopsis, Heleniums, Harpaliums, Scabiosas, and a host of other seasonable flowers, all in the best possible condition. A stand of *Violas* occupied the centre of the display, these being staged in a less formal manner than they are usually shown. Some good border Carnations also found a place in this collection (Silver Flora Medal).

Mr. AMOS PERRY, Winchmore Hill, London, N., put up a large group of hardy flowers, all showing excellence of culture, and embracing most of the best subjects now in season. *Bravoa geminiflora* was noticed in flower, also fruiting sprays of *Rubus sorbifolius*. Other interesting plants were *Cedronella cana*, *Buddleia variabilis*, *Rudbeckia fulgida variabilis*, and *Asclepias cinerea* (Silver Banksian Medal).

Messrs. BARR & SONS, King Street, Covent Garden, London, displayed a number of herbaceous flowers, including many of the best now in season. Some spikes of Gladioli occupied the centre of the group. Several good hybrid forms of *Lobelia cardinalis* × *syphilitica* were noticed.

Messrs. GUNN & SONS, Brookfield Nurseries, Olton, showed seventy varieties of herbaceous Phloxes.

Mr. R. E. SANDERS, Halton Gardens, Tring, showed two variegated-leaved forms of *Phlox decussata*. One labelled Comte de Jarnol was of a silver-leaved type, the other was a golden form, and labelled President Kruger.

The waning of the season was evidenced by several displays of Dahlias. Messrs. JOHN STREDWICK & SON, Silverhill Park, St. Leonards, staged ten new varieties of Cactus-shaped flowers, two of which will be found described under Awards. Among the others, Twilight is a good medium-sized flower with well-shaped petals, the centre ones of which are of a lemon-yellow colour, the older being a very delicate blush-rose. Primrose is a good yellow-coloured flower.

Mr. S. MORTIMER, Rowledge, Farnham, Surrey, showed an excellent collection of Dahlias, having both the Cactus and the show type of flowers. All the latter and some of the former were displayed on exhibition boxes on either side of a central group that was composed wholly of Cactus varieties. Several new unnamed seedlings were included, many of great promise. One of the "show" type, somewhat after the style of Mrs. Langtry, appealed to us; it is a flower of large substance and of excellent colour. Pink Perfection and Alice (light scarlet) are other good varieties (Silver Banksian Medal).

Mr. H. SHOESMITH, Westfield, Woking, brought four new varieties of Cactus Dahlias, the best being a scarlet-coloured variety named W. Collins.

Messrs. HUGH LOW & CO., Bush Hill Park, Enfield, put up a batch of *Chironia ixifera* (see Awards) and pans of *Saxifraga sarmentosa tricolor superba* with well-developed foliage.

Messrs. WM. BULL & SONS, King's Road, Chelsea, displayed a basket of *Hydrangea nivalis*, a variegated-leaved form that received an Award of Merit in September of last year; and a new variety of *Agapanthus* from the Orange River Colony named *A. globosus*, which we shall refer to again.

Messrs. GEO. BUNYARD & CO., Maidstone, presented a hybrid *Eryngium* of slender habit named *E. × Bunyardi*, the parents being *E. Oliverianum × E. Bourgati*.

Mr. J. WHITTON, Superintendent of Parks, Glasgow, showed flowers of the white *Vallota*, figured in the *Gardeners' Chronicle*, August 27, 1904, p. 150.

Lord ROTHSCHILD, Tring Park (gr., Mr. Dye), showed *Nymphaea pulcherrima* Tring Park variety, and *N. zanzibarensis rosea*.

A flowering spray of *Oxera pulchella* was displayed by Lady PLOWDEN, Aston Rowant House, Oxon. A full-page illustration of this plant was given on p. 209 of our issue for February 18, 1888.

Messrs. WATKINS & SIMPSON, 12, Tavistock Street, Covent Garden, London, displayed vases containing the beautiful blush-tinted Sweet Pea Gladys Unwin.

Mr. J. EDWARDS, 103, Kempe Road, Kensal Green, W., showed pot plants of a dwarf *Tropaeolum* named Salmon Beauty.

Awards.

Buddleia variabilis magnifica.—This plant was fully described in our issue of the 5th inst. when it received an Award of Merit. The Committee on the present occasion advanced the award to a First-class Certificate. It may be interesting to record that this variety was selected from wild plants in their natural habitat. Shown by Messrs. JAS. VEITCH & SONS.

Gladiolus French Fleet.—The flowers are not over large, but are remarkable on account of the two lower petals of the inner whorl being blotched with dark maroon, the other petals being salmon-coloured. The individual flowers are of a distinct hooded shape (Award of Merit).

G. Peace Envoy.—A large creamy-white-coloured flower, the younger flowers having a lemon-yellow tint, which they lose when fully expanded. The lower petal of the inner whorl has violet markings on a sulphur-coloured ground. A most handsome variety (Award of Merit). Both the above were shown by Messrs. KELWAY & SONS.

Chironia ixifera.—A greenhouse evergreen plant with fine Carnation-like growth terminating in loose cymes of pleasing star-shaped flowers of rosy-pink colour, with prominent yellow stamens. It is of free-flowering habit, and as shown in 48-size pots about 12 to 18 inches in height. A desirable subject for the greenhouse or conservatory staging (Award of Merit). Shown by Messrs. HUGH LOW & CO.

Dahlia (Cactus) T. A. Havemeyer.—A large flower of light crimson colour, with long, quilled petals pleasingly incurved (Award of Merit).

D. (Cactus) William Marshall.—A good-formed flower, with yellow centre shading to cinnamon colour in the older petals, and resembling in many respects the variety J. B. Riding, but lighter in shade (Award of Merit). Both the above were shown by Messrs. STREDWICK & SON.

Orchid Committee.

Present: Harry J. Veitch, Esq., in the Chair; and Messrs. Jas. O'Brien (Hon. Sec.), H. Little, W. Boxall, G. F. Moore, F. W. Ashton, H. Ballantine, H. T. Pitt, H. A. Tracy, J. Douglas, and De B. Crawshaw.

Major G. L. HOLFORD, C.I.E., C.V.O., Westonbirt, Tetbury (gr., Mr. Alexander), showed the only group staged, and one which creditably represented the Orchid interests in all points, whether in the matter of good culture or fine quality of the species and varieties staged. The central plant was an enormous specimen of *Laelio-Cattleya × elegans*, with eighteen flower-spikes, bearing together one hundred and five fine rose- and -purple flowers, and which secured a Lindley Medal for high cultivation. Another form, *L.-C. × elegans* "King Edward," had large rose-purple flowers, with broad crimson-purple lips. Another pretty form of *L.-C. × elegans* had four spikes, two of them with ten flowers each, and all were in superb condition. As novelties the best were two dissimilar varieties of *Laelio-Cattleya × Berthe Fournier* Westonbirt variety (*L.-C. × elegans × C. Dowiana aurea*), raised at Westonbirt. Both are of a rich rose-purple tint with labellums of a glowing ruby-purple, with gold-coloured lines at the base. One had the side lobes of the labellum extended at the sides, the other more folded over the column, and with the edges wavy. *Laelio-Cattleya × callistoglossa* varieties, *L.-C. × blethleyensis*, *Lelia crispa*, and the fine Westonbirt variety; *Cattleya × mollis*, *C. × Germania magnifica*,

two good specimens of *Cypripedium × Lord Derby*, *C. × A. de Lairesse*, *C. × Maudie*, *C. × Chapmani magnificum*, *Odontoglossum × Harryanum*, several good *O. Uro-Skinneri*, and other good Orchids were also included in the group, for which a Silver-gilt Flora Medal was awarded.

J. GURNEY FOWLER, Esq., Glebelands, South Woodford (gr., Mr. J. Davis), showed a magnificent plant of *Laelio-Cattleya × elegans Turneri*, with fine strong spikes of twenty-three flowers. The sepals and petals are light rose-purple, the front of the lip and tips of the side lobes dark reddish-purple (Cultural Commendation). Mr. GURNEY FOWLER also showed another form of *L.-C. × elegans*, a pretty form of *Cattleya × Wavriniana* named Fowler's variety, with cream-white sepals and petals tinged with purple, and glowing purple labellum, the base of the front lobe bearing yellow markings on each side indicative of *C. granulosa*, which with *C. Warscewiczii* produced it. Also *Cattleya × Elvina* (*Triana × Schilleriana*).

FRANCIS WELLESLEY, Esq., Westfield, Woking (gr., Mr. Hopkins), showed *Cypripedium × Mrs. Herbert Druce*, a very pretty pure white flower densely spotted with purple; *Cattleya Eldorado magnifica*, a charming form with pale rose-pink flowers with deep orange throat, and very fragrant; and *Cattleya × Atalanta* Westfield variety (*Leopoldi × Warscewiczii*), differing widely from the original, and bearing a general resemblance to a fine form of *Laelio-Cattleya × elegans* in its rich, deep purple labellum.

Messrs. JAS. VEITCH & SONS, Chelsea, showed a fine example of *Cypripedium × Jas. H. Veitch* (*Stonoi platytanium × Curtisii*), and *C. × Numa* var. *nigra* (*Stonoi platytanium × Lawrenceanum*), an improvement on the original form in the nearly black markings of the petals and lines on the whitish ground of the dorsal sepal.

F. M. BURTON, Esq., Highfield, Gainsborough, sent a hybrid *Cypripedium* resembling *C. × Bryan*.

Messrs. HUGH LOW & CO., Enfield, showed *Phalænopsis violacea* Low's variety, several pretty forms of *Odontoglossum Pescatorei* with purple-marked labellums, and some cut Orchids.

Awards.

FIRST-CLASS CERTIFICATE.

Laelio-Cattleya × Berthe Fournier Westonbirt variety, from Major G. L. HOLFORD, C.I.E., C.V.O., Westonbirt, Tetbury (*L.-C. × elegans × C. Dowiana aurea*).—Raised at Westonbirt, and a great advance on any previously shown, both in form and colour. Sepals and petals rich rose-purple in colour; labellum of a glowing ruby-purple with gold lines at the base, and beautifully-crimped margin.

Fruit Committee.

Present: G. Bunyard, Esq. (Chairman); and Messrs. W. Bates, S. Mortimer, A. Dean, W. Pope, G. Kelf, H. J. Wright, H. Markham, H. Parr, F. Q. Lane, J. Jacques, D. Thomas, A. H. Pearson, and J. Cheal.

Mr. G. KELF, The Gardens, South Villa, Regent's Park, staged a first-rate collection of fruit, specially marked as being grown within 2 miles of Charing Cross. The collection included Grapes, six bunches of Black Hamburg, three of Alnwick Seedling, and six of Buckland Sweetwater, all of good quality; also Peaches, fine Barrington, Princess of Wales, Bellegarde, and the Nectarine; second crop Turkey Figs, Dr. Jules Guyot Pears, Golden Gage, Kirkes, Emperor, and Early Transparent Plums, several Melons, and at one end of the table a fine pot tree of Emperor, and at the other end another of Coe's Golden Drop Plums (Hogg Medal).

Messrs. G. BUNYARD & CO., the Old Nurseries, Maidstone, sent a collection of thirty dishes and baskets of Apples in distinct varieties. Of kitchen varieties, Early Victoria, Pott's Seedling, Ecklinville, Domino, Golden Spire, James Welch, Stirling Castle, Lord Grosvenor, Grenadier, and Lord Suffield were all excellent. Dessert varieties were represented by White Transparent, Cardinal, Lady Sudeley, Beauty of Bath—these three being finely coloured; also Red Quarrenden, Ben's Red, Jas. Grieve, Irish Peach, and others. The collection created the impression that Apples will be seen in fine form in October (Silver-gilt Knightian Medal).

A box of the old and esteemed Peach *Violette Hative*, sent by Mr. R. MONTFORD, of East Sheen, and grown on a tree, the stock stem of which had once been so severely injured that it almost died, received a Silver Knightian Medal as evidence of excellent culture.

Mr. A. HUCKFIELD, Pershore, sent a purplish, round, seedling Plum, of but little merit.

Mr. J. B. COLVILL, of Sidmouth, had picked fruits and clusters of a Raspberry named Red Diamond; the variety seemed to be a good fruiter, the berries being of a good size and of a deep colour. It was not regarded by the Committee as superior to varieties already in commerce.

Mr. D. POWER, The Gardens, Wroxton Abbey, Banbury, sent three Cucumbers named Power's Supreme. The fruits much resembled those from a good stock of the variety Rochford's Market.

Consequent on the inspection, by a deputation from the Committee, at Wisley Gardens on the 8th inst. of a trial of Tomatos of 120 varieties, and another of early and second-early Potatos, several of these fruits received Awards, which see.

Mr. A. VINSON, Belvedere, Kent, sent through Messrs. DOBBIE & SONS examples of the Potatos Factor and Tyne Kidney, of remarkable robustness, as grown by him over 160 acres. The specimens were in luxuriant health. The tuber crop is already a heavy one.

Mr. T. A. SCARLETT, the well-known Edinburgh Potato-grower, brought very large and somewhat deep-eyed examples of the new Dalmeny Radium, also a dish of Southern Star, a long, smooth, handsome kidney, and Russet Queen, a pretty, smooth, round variety. Mr. Scarlett also showed single roots of these varieties, that of Southern Star being remarkably good.

Awards.

FIRST-CLASS CERTIFICATE.

Peach "Violette Hâtive."—This well-known and old variety was shown by Mr. M. MOUNTFORD, and in recognition of its great merit and in consideration of its never having received an Award, it was granted a First-class Certificate.

AWARDS OF MERIT.

Tomatos.

Princess of Wales.—SUTTON & SONS.

Holmes' Supreme.—BARR & SONS, HURST & SONS.

Norfolk Hero.—G. W. MILLER, Wisbech.

Fillbasket.—LANTON BROS.

New Dwarf Red.—JAS. VEITCH & SONS.

Satisfaction.—SUTTON & SONS.

Yellow ChERRY.—JAS. VEITCH & SONS. Small but specially commended for flavour.

Potatos.

Rouge Royal.—DOBBIE & CO. A "coloured" kidney variety.

British Queen.—J. F. WILLIAMSON, Mallow.

Epiquire.—SUTTON & SONS.

Harbinger.—SUTTON & SONS, and BARR & SONS.

Ideal.—LANTON BROS., and G. CARTER, Cottenham.

May Queen.—SUTTON & SONS, and HURST & SONS.

Peas

The BCU, The Scotsman. Both of these are of medium height, the haulm attaining about 4 feet in length. Both had heavy crops of pods, which were long, tapering, and well filled with Peas. Both from Messrs. BELL & BIEBERSTEDT, Leith.

NEWBURY HORTICULTURAL.

AUGUST 7.—The fifty-seventh annual show of the above Society was held in the beautiful grounds of Goldwell Park on the above date, and from a horticultural point of view was a great success, though unfortunately the weather was stormy. The show is managed by a good working Committee, and the Mayor for the year is President, ably supported by the Corporation, the result being that Newbury show is a red-letter day, and largely patronised. There were nearly a thousand entries this year, the weakest classes being those for large specimen plants; and hardy fruit was less abundant than usual; but cut flowers and other exhibits well made up the deficiency.

Open Classes.—These are always a feature at this show, and usually the same exhibitors each year have a stiff fight for the honours. Mr. C. ROSS, of Welford Park, the well-known raiser of hardy fruit, was 1st with fine specimens for six stove and greenhouse foliage plants, having medium-sized but beautifully-coloured plants. Mr. J. HOWARD, gr. to Lady SUTTON, was a close 2nd.

For six plants in flower, Mr. T. SURMAN, gr. to H. M. BEST, Esq., Donnington Grove, was 1st with well-flowered plants, having good *Clerodendrons* and *Allamanda*.

In the class for ten exotic Ferns, Mr. HOWARD was an easy 1st; Mr. LOCK, Tile Barn Garden, 2nd.

Messrs. SURMAN & JOHNSON had the best *Coleus*, and Mr. SURMAN had grand specimen *Fuchsias*; Mr. JOHNSON the best specimen plant in bloom, and Mr. C. ROSS the best foliage plant.

The class for the best model conservatory arrangement was keenly contested, Mr. C. ROSS was 1st with splendid material admirably arranged; Mr. J. HOWARD being a close 2nd, and Mr. CLARK 3rd with smaller plants but of good quality.

Roses.—These flowers were scarcely up to the usual standard at these shows, owing no doubt to the recent hot weather and storms. Messrs. COOLING & SON, Bath, had twenty-four very good blooms in the class for that number, and were an easy 1st. Lady SUTTON was placed 2nd with smaller blooms. For smaller collections, Messrs. MEAD, COX, and SMITH were the leading exhibitors in the order named.

Cut Flowers.—The class for twenty-four bunches of cut blooms was well contested, the 1st prize lot being excellent. These came from Mr. C. SURMAN, gr. to W. G. FELLOWS, Esq. Mr. H. SMITH was 2nd; and Mr. P. RANDALL, 3rd. Of Carnations, Messrs. FILEWOOD, COX, and TRANTOR had the best blooms. Mr. J. R. TRANTOR, Henley, had splendid *Dahlias*. Miss B. FROST was 1st for a bridal bouquet with splendidly arranged flowers.

Table Decorations.—The classes for these were well contested, but drapery and coloured material were used too freely. Mrs. C. STRADLING was 1st with an arrangement composed of pink and mauve Sweet Peas.

Fruit.—For a collection of six dishes, to include a Pineapple, Mr. J. HOWARD secured the 1st place, having excellent Grapes and Peaches. The same exhibitor was 1st in the class for the best Pineapple. The best Black Hamburg Grapes came from Mr. T. SURMAN. For any other black variety, Messrs. LOCK and SURMAN were the successful exhibitors. Of Muscats, Mr. J. HOWARD had good bunches; and Mr. J. LRES the best example of any other white Grapes. Mr. ROSS easily led in the class for dessert Apples; while Mr. HOWARD staged the best culinary Apples.

Vegetables were a great feature, and occupied much space; the cottagers' exhibits alone formed a show in themselves. For twelve distinct kinds of vegetables, Mr. H. KEEP, Aldermaston, was an easy first; closely followed by Messrs. SURMAN and HOWARD, who took 2nd and 3rd places respectively. The cottagers' exhibits were excellent, being clean and of better quality than is often seen.

RAMSEY HORTICULTURAL.

ANNUAL SHOW.

AUGUST 7.—The thirteenth annual show in connection with the Ramsey Horticultural Society took place in the Abbey Park, by kind permission of Lord de Ramsey, on the above date, and was fairly well attended. There was a record number of entries, and the quality of the exhibits has never been excelled. As usual, the Roses and Sweet Peas made a grand show, and attracted considerable attention. Some excellent Carnations were also displayed. The table decoration class attracted more competitors than usual, and the work was exceedingly good. The vegetable and fruit sections were well patronised, and the show of Apples in particular was worthy of note. Messrs. J. E. PERKINS, Huntingdon, and BRADLEY and BROWN showed collections not for competition.

ROYAL HORTICULTURAL OF IRELAND.

AUGUST 9.—The autumn flower show of the Royal Horticultural Society of Ireland took place on the above date at St. Helen's, Booterstown, the beautiful residence of Sir John Nutting, Bt., D.L. While the numbers of entries and the quality of the exhibits showed a considerable advance over those of previous years, the weather unfortunately precluded a very large attendance.

The fruit, especially the Grapes, was very fine, there being more entries, and the quality of the specimens better than for some years past. The show of Roses was excellent, while the Sweet Pea section, and especially the exhibit of Mr. HENRY J. R. DIGGES was said to be the finest which experienced judges had ever seen.

The *Begonias* were also a remarkably fine collection, and Lord CLONBROCK carried off the most coveted prize in this class.

The exhibits by the members of the trade were marked features in the show; Messrs. DREMMOND & SON showed a very fine stand of cut flowers; Messrs. HOGG & ROBERTSON received a Gold Medal for *Gladioli*, *Montbretias*, Sweet Peas, &c.; whilst DICKSONS, Chester, had similar exhibitions, and Messrs. ECKFORD showed a fine stand of Sweet Peas.

The display of *Begonias*, *Gladioli*, &c., by Messrs. HARTLAND, of Cork, attracted much attention.

Messrs. RENNICK & Co. had a nice stand of shrubs, and Messrs. WATSON & SON showed some beautiful Carnations and Roses. There was also a fine exhibit of plants and flowers by Messrs. RAMSAY, Ballsbridge.

Another feature in the exhibition was the fruit grown in pots shown by Mr. S. ANKETELL JONES, J.P., Gowran, Co. Kilkenny.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT.

AUGUST 14.—The monthly Committee meeting of this Society was held at the Royal Horticultural Hall, Vincent Square, Westminster, on the evening of the above date, Mr. Chas. H. Curtis in the chair. Five new members were elected. The amount paid for sickness during the past five weeks was £30 3s., nine members being on the Sick Fund at the present time, five of whom are now on half-pay.

GARDENERS' DEBATING SOCIETIES.

READING AND DISTRICT GARDENERS.—During the past month two very pleasant meetings of the above Association have been held. The first was an evening gathering, when about 100 members, by the kind permission of Mr. and Mrs. Friedlander, paid a visit to the gardens and grounds of Whiteknights Park, Mr. Bright, the head gardener, has been a warm supporter of the Association from its commencement. The houses were first inspected. Peaches and Nectarine-trees grown in small boxes were carrying splendid crops of fruit of large size and of good colour. The kitchen-garden contained good crops of vegetables. A feature of the terrace-gardens was four boxes containing Sweet Williams. The Secretary conveyed to Mr. and Mrs. Friedlander, who met the party in the grounds, the thanks of the members present for their kindness in throwing open the gardens for inspection. The second event was the annual outing, which proved to be one of the most successful of the many held by the Association. The party, 116 in all, proceeded to Blenheim, his Grace the Duke of Marlborough having kindly given permission for the Palace gardens to be thrown open for the members' inspection. The party, under the guidance of Mr. Garrett, the head gardener, proceeded to the Palace, where special facilities had been granted for the members to look through the state apartments. The gardens and ornamental grounds were next visited, the Italian garden attracting much attention. The walk by the lake through the "American garden" and through the shady glades leading to the kitchen-garden and glass-houses was greatly enjoyed. The crops of vegetables and fruit were in excellent condition, whilst the Carnations were the feature of the flowers under glass. The party arrived home at 8 o'clock, one and all having spent a most enjoyable day, thanks to the hospitality of the President, and to the arrangements made by Mr. Garrett.

EGHAM AND DISTRICT GARDENERS.—At the last monthly meeting of this Society, Mr. W. Swan in the chair, Mr. G. Lingwood gave a short paper on the "Tuberous Begonia," explaining in detail the best methods of raising this lovely plant from seed and from tubers. He also gave some useful information as to the best soil for growing them in beds, &c. At the same meeting Mr. Wheeler read two short papers on the "Calceolarias and Cyclamen." A hearty vote of thanks was accorded to the reader of these instructive papers. Among other exhibits at the meeting, the President, W. G. Regan, Esq. (gr., Mr. Lingwood), contributed a group of *Kex Begonias*, arranged with Maidenhair Fern. Mr. Worstoid also brought a group of foliage and flowering plants.

Obituary.

REV. W. KEITH.—The death of this gentleman causes another gap in the ranks of the older mycologists, whose work was done in the latter half of the 19th century, under the influence of the writings of Fries and Berkeley. With the last-named Dr. Keith had much active correspondence, whilst with the views of the former on the Hymenomycetes no one was more conversant. Living in the far North, where the flora corresponds to a large extent with that of Sweden, Dr. Keith threw himself with his characteristic energy into the study of the Pine-loving species, and especially of the *Cortinarii*. Of these no British mycologist that it has been my privilege to meet ever possessed so accurate and extensive a knowledge of their naked-eye characters and habit of growth. *Charles B. Plowright.*

CATALOGUES RECEIVED.

BULBS.
LITTLE & BALLANTYNE, Carlisle.
COOPER, TABER & Co., Ltd., 91 and 92, Southwark St., London, S.E. (Wholesale List).
F. C. EDWARDS, 12 to 15, Warehouse Hill, Call Lane, Leeds.
W. BULL & SONS, King's Road, Chelsea, London.
J. R. PEARSON & SONS, Chilwell Nurseries, (Lowdown) Notts.
JOHN DOWNIE, 75 and 77, Sandwick Place, Edinburgh.
DICKSON & ROBINSON, Cathedral Street, Manchester—Bulbs and Roses.
JAS. VEITCH & SONS, LTD., Chelsea—New Plants, Bulbs, Strawberries, Trees and Shrubs, &c.
FOREIGN
We have received from the Argotti Botanic Gardens, Floriana, Malta, a Seed Catalogue for 1905-6. Many interesting plants are offered for exchange or for sale.
F. H. KRELLAGE & SON, Haarlem, Holland—Bulbs.
HAAGE & SCHMIDT, Erfurt, Germany—Plants.



METEOROLOGICAL OBSERVATIONS taken in the Royal Horticultural Society's Gardens at Wisley, Surrey. Height above sea-level 150 feet. The following are the "mean" readings for the week ending August 12, 1905.

1905.	TEMPERATURE OF THE AIR.				TEMPERATURE ON GRASS.			TEMPERATURE OF THE SOIL AT 9 A.M.			RAINFALL.	SUNSHINE.
	At 9 A.M.	DAY.	NIGHT.	LOWEST	At 1-foot deep.	At 2-feet deep.	At 4-feet deep.	ins.	hr.	min.		
AUGUST 6 TO AUGUST 12.	Dry Bulb.	Wet Bulb.	Highest.	Lowest.	Lowest	At 1-foot deep.	At 2-feet deep.	At 4-feet deep.				
	deg.	deg.	deg.	deg.	deg.	deg.	deg.	deg.	ins.	hr.	min.	
MEANS	61	57	63	54	47	63	61	62	0.10	6	35	

GENERAL OBSERVATIONS.

THE FOLLOWING SUMMARY RECORD of the weather throughout the British Islands, for the week ending August 12, is furnished from the Meteorological Office:—

"The weather during this period was of a rather unsettled type generally, but fairer in the south and east than elsewhere. Thunderstorms were experienced some time during the earlier half of the week in many places in the Midland Counties and N. and N.E. of England, and also at some Scotch stations, and on Wednesday or Thursday in the east and south of Ireland.

"The temperature was 1° or 2° below the mean over the kingdom generally, but just equal to it in England, E. The highest of the maxima were recorded on somewhat variable dates, and ranged from 78° in England, S., and 75° in the Midland Counties, to 69° in Scotland, E., England, N.W., and the Channel Islands, and to 67° in Scotland, W. The lowest of the minima occurred, as a general rule, on the 6th. In Scotland, E., England, N.E., and N.W., the thermometer fell to 38°, but elsewhere the minima varied from 41° in Scotland, W., and Ireland, N., to 44° in England, E. and S.W., and Ireland, S., and to 55° in the Channel Islands.

"The rainfall exceeded the mean in Scotland, N., and Ireland, N., but was less in the other districts.

"The bright sunshine differed little from the normal, being slightly above it in some districts, and a few hours below it in others. The percentage of the possible duration ranged from 49 in the Channel Islands, and 45 in England, S., to 29 in Ireland, S., 21 in Scotland, N., and to 23 in Ireland, N."

THE WEATHER IN WEST HERTS.

Very Dry and Sunny.—The first four days of the past week proved cool for the time of year, but on each of the last three days the temperature in the thermometer screen exceeded 71°. All the nights but one, however, have been unseasonably cold, and on the coldest night the exposed thermometer registered a reading within 8° of the freezing point. At 2 feet deep the ground is now of about average warmth, but at 1 foot deep it is about 1° warmer than is seasonable. Very light showers of rain fell on each of the first two days of the week, but since then the weather has been perfectly dry. It is now nearly five weeks since any measurable quantity of rain-water came through the bare soil percolation gauge, but a few drops still continue each day to trickle through it during the twenty-four hours. The sun shone on an average for seven hours a day, which is about an hour a day in excess of a seasonable duration. Calms and light airs prevailed throughout the week, and for the last two days the direction has been some easterly point of the compass. The mean amount of moisture in the air at 3 P.M. was about 6 per cent. in defect of a seasonable quantity for that hour in the middle of August. E. M., Berkhamsted, August 16, 1905.

[For actual temperature and condition of barometer at time of going to Press, see p. 150.]

MARKETS.

COVENT GARDEN, August 16.

[We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Wednesday, by the kindness of several of the principal salesmen, who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the way in which they are packed, the supply in the market, and the demand, and they may fluctuate, not only from day to day, but often several times in one day. ED.]

Cut Foliage, &c.: Average Wholesale Prices.

Asparagus plumosus, long trails, each ...	0 4-0 9	Grasses, hardy, p. doz. bunches ...	2 0-4 0
— medium, bunch ...	0 9-1 0	Ivy-leaves, bronze — long trails, per bundle ...	1 0-2 0
— short sprays per bunch ...	0 9-1 8	— abort green, doz. bunches ...	1 0-1 8
— Sprengeri ...	0 8-1 0	Moss, per gross ...	5 0-6 0
— tenuissimus ...	0 6-0 9	Myrtle, per dozen bunches ...	2 0-4 0
Adiantum cuneatum, per dozen bunches ...	4 0-6 0	Smilax, p. dozen trails ...	4 0-6 0
Cycas leaves, each ...	1 6-2 0	Hardy foliage (various), per dozen bunches ...	3 0-4 0
Fern, English, p. dozen bunches ...	1 0-2 0		

Cut Flowers, &c.: Average Wholesale Prices.

Alströméria, per doz. bunches ...	2 0-3 0	Marguerites, yellow, doz. bunch ...	2 0-3 0
Asters, per dozen bunches ...	1 0-4 0	Mignonette, doz. bunches ...	2 0-4 0
Bouvardia, per doz. bunches ...	6 0-8 0	Montbretias, doz. bunches ...	3 0-6 0
Calla æthiopica, p. doz. blooms ...	3 0-4 0	Odonoglossum crispum, pr. doz. blooms ...	2 0-2 8
Carnations, per doz. blooms, best American vars. ...	1 6-3 0	Pelargoniums, doz. bunches: — Show ...	4 0-6 0
— smaller do. ...	0 6-1 0	— Zonal, double scarlet ...	4 0-8 0
— Malmaisons ...	6 0-10 0	— salmon and pink ...	4 0-6 0
Chrysanthemums, per doz. blooms, small blooms, per doz. bchs. ...	1 6-3 0	Poppies, Iceland, doz. bunches ...	0 6-1 8
Coreopsis, p. doz. ...	2 0-3 0	Roses, 12 blooms, Niphetos ...	0 6-2 0
Eucharis grandiflora, per dozen blooms ...	1 0-2 0	— Bridesmaid ...	1 0-2 0
Gardonia, per doz. blooms ...	1 0-1 6	— Kaiserin A. Victoria ...	1 6-2 0
Gladiolus Colvillei, p. doz. bunches ...	0 9-1 0	— General Jacqueminot ...	0 6-1 0
— brechenleyensis p. doz. spikes ...	0 6-0 9	— C. Mermet ...	1 0-2 0
Gypsophila, per dozen bunches ...	2 0-3 0	— Caroline Testout ...	1 6-3 0
Lilium candidum — auratum ...	0 6-1 0	— Liberty ...	1 6-3 0
— laeifolium, rubrum and album ...	1 0-2 0	— Mad. Chateaufort ...	2 0-4 0
— longiflorum ...	2 0-3 0	— Mrs. J. Laing ...	1 6-2 0
— tigrinum ...	1 6-2 0	— Sunrise ...	1 0-2 0
Lily of the Valley, p. doz. bchs. ...	6 0-9 0	Stafice, doz. bnn. ...	3 0-4 0
— extra quality ...	1 8 0 —	Stephanotis, per doz. trusses ...	1 6-2 8
Marguerites, white, p. doz. bchs. ...	2 0-3 0	Sweet Peas, per doz. bunches ...	1 0-3 0
		Sweet Sultan, per doz. bunches ...	3 0-4 0
		Tuberose, per dozen blooms ...	0 2-0 6
		— on stems, per bunch ...	0 6-1 0

Plants in Pots, &c.: Average Wholesale Prices.

Aralia Sieboldi, p. dozen ...	4 0-9 0	Ferns, in thumb, per 100 ...	6 0-12 0
Araucaria excelsa, per dozen ...	1 8 0-30 0	— in 4 5's, p. doz. ...	4 0-10 0
Aspidistras, green, per doz. ...	2 1 0-30 0	— in 3 2's, p. doz. ...	10 0-18 0
— variegated, per doz. ...	30 0-42 0	Fuchsias, p. doz. ...	3 0-5 0
Asparagus plumosus nanus, per doz. ...	9 0-12 0	Ficus elastica, p. doz. ...	9 0-12 0
— Sprengeri, per dozen ...	6 0-9 0	— repens, per dozen ...	4 0-6 0
— tenuissimus per doz. ...	6 0-12 0	Heliotropes, per dozen ...	2 6-3 0
Begonias, tuberous, per doz. ...	3 0-4 0	Hydrangea paniculata, p. doz. ...	9 0-24 0
Campanula isophylla, per dozen ...	4 0-8 0	Kentia Belmoreana, per doz. ...	12 0-18 0
— Mayi, per doz. ...	6 0-8 0	— Fosteriana, p. doz. ...	12 0-21 0
— pyramidalis ...	9 0-12 0	Latania borbonica, per doz. ...	9 0-18 0
Cannas, per doz. ...	5 0-6 0	Lilium longiflorum, per doz. ...	9 0-12 0
Chrysanthemum coronarium, double yellow, per dozen ...	6 0-8 0	Marguerites, white, per dozen ...	4 0-8 0
Coleus, per dozen ...	2 6 4 0	— Ivy-leaved ...	4 0-6 0
Crotons, per doz. ...	12 0-30 0	— zonal ...	3 0-5 0
Cocos Weddelliana, per doz. ...	12 0-30 0	— scarlet do. ...	3 0-4 0
Cyperus alternifolius, per doz. ...	3 0-5 0	Privet, golden, per dozen ...	5 0-6 0
Dracenas, per dozen ...	9 0-24 0	Rhodanthe, per dozen ...	3 0-4 0
Eulalia japonica variegata ...	12 0-18 0	Selaginella, p. doz. ...	3 0-5 0
Etoungias, per dozen ...	4 0-9 0	Spiraea japonica, per doz. ...	4 0-9 0
		Verbena, Miss Willmott, per dozen ...	4 0-6 0
		— scarlet, per dozen ...	4 0-6 0

Vegetables: Average Wholesale Prices.

Artichokes, Green, per dozen ...	1 6-2 0	Mushrooms, half bushel ...	2 6-3 6
Beans, English, Scarlet Runners, bushel ...	1 6-2 0	— Buttons, lb. ...	10 10-1 0
— French, per half bushel ...	1 0-1 6	Mustard and Cress, per doz. pun. ...	0 10-1 3
Beetroot, bushel ...	1 6-2 0	Onions, Egyptian, per cwt. ...	3 6-4 0
Cabbages, p. tally ...	4 0-6 0	— Spring, p. doz. bunches ...	2 6-3 0
Carrots, new, doz. bunches ...	1 9-2 0	— Valencia, case ...	4 6-5 0
— cwt., unwashed ...	2 6-3 0	— Dutch, bag ...	3 0-3 6
— ½ cwt. bag, washed ...	1 9-2 0	Parsley, 12 bunchs. ...	1 6-2 0
Cauliflowers, doz. ...	1 6-2 0	Peas, per bag ...	9 0-10 0
Celery, French, p. dozen heads ...	2 6-3 0	— English, bush. ...	4 0-5 0
Cucumbers, doz. ...	1 6-2 6	— shelled, quart ...	0 6-1 0
— per flat ...	4 0-5 0	Radishes, p. doz. bunches ...	0 8-1 0
— Dutch, p. box ...	1 6-2 0	Sorrel, half bush. ...	1 0 —
Endive, per doz. ...	1 0 —	Spinach, bush. ...	1 0-1 6
Horseradish, foreign, 12 bnds. ...	10 0-12 0	Tomatos, English, p. lb. ...	0 3-0 3 ½
Mint, per dozen ...	2 0-3 0	— seconds, p. lb. ...	0 2-0 2 ½
Leeks, 12 bundles ...	2 0-3 6	— Jersey, p. lb. ...	0 3-0 3 ½
Lettuces, Cabbage, per dozen ...	0 8-1 0	— Lisbon, case ...	5 0-7 0
— English, Cos, per score ...	1 6 —	Turnips, new, doz. bun. ...	1 6-2 6
Mushrooms (house) per lb. ...	0 6-1 0	— French crates ...	1 6-2 6
		— bags ...	3 6 —
		Vegetable Marrows, per tally ...	2 0-2 6
		Watercress, per doz. bunches ...	0 4-0 6

Fruit: Average Wholesale Prices.

Apples, Quarrendens, ½ bushel ...	4 0-5 6	Lemons, Naples, per case ...	20 0-30 0
— Worcester Pearmain, half bushel ...	3 0-4 6	— Messina, case ...	12 0-25 0
— Ecklioville Seedling, per bushel ...	4 0-5 0	Melons, each ...	1 0-2 6
— Keswick Codling, p. bushel ...	2 6-3 0	— French, Rock ...	2 0-2 6
— Lord Derby, per bushel ...	5 0 —	— Valencia, per case ...	9 0-13 0
Bananas, bunch ...	6 0-12 0	Melon Pears, per dozen ...	4 0-4
— Giants, bunch ...	12 0-15 0	Nectarines, A., p. dozen ...	8 0-15 0
— Jamaica ...	3 0-6 0	— B., per dozen ...	1 0-4 0
— loose, per doz. ...	1 0-1 6	Nuts, Cobnuts, lb. ...	0 6 —
Cherries, Morello, per lb. ...	0 7-0 8	— Filberts, p. lb. ...	0 4 —
Figs, per dozen ...	1 6-4 0	Oranges, Jamaica, per case ...	17 0-24 6
French Plums, p. half sieve ...	2 0-5 0	Peaches, A., doz. ...	8 0-12 0
— per lb. ...	1 0-1 6	— B., per doz. ...	1 6-6 0
Grapes, Alicante, per lb. ...	1 0-1 6	Pears, Lammas, p. half bushel ...	3 6 —
— Madresfield, lb. ...	2 0-2 6	— Cara Rosa, per half bushel ...	3 9-4 0
Grapes, Gros Maroc, p. lb. ...	1 6-2 0	— Chalk, p. half half bushel ...	2 6-3 0
— Muscats, lb. ...	1 0-5 6	— French Williams, crate ...	6 0-9 0
— Sweetwater, p. case ...	8 0-10 0	— boxes (48) ...	3 0 —
— Decia, white, per barrel ...	8 0 —	Pines, each ...	2 0-4 6
— black, per barrel ...	4 6-6 6	Plums, English, half-bushel ...	3 0 —
— Lisbon, case ...	5 0-8 0	— Czars ...	3 0 —
		— Diamonds ...	3 0-3 6
		— Egg ...	2 0-2 6
		— Victorias ...	3 6-4 0

REMARKS.—Prices for Tomatos have an upward tendency, but this will not continue. Some good samples are to be seen from Jersey; in fact the Tomatos from this Island, are this year of excellent quality; still, there is not quite the demand for them as there is for English, as they lack flavour. A few of the Claret Bananas have arrived, but they did not travel well, arriving in a very unsaleable condition, and generally over-ripe. The average price for these fruits is from 5s. to 7s. per bunch. Some good fruit is arriving from California, chiefly Plums and Pears, the quality being excellent. The former are making from 6s. to 8s. per case, and the Pears from 5s. to 8s. per case, which prices are considered moderately cheap. Trade generally rather quiet.

COVENT GARDEN FLOWER MARKET.

TRADE continues very quiet; a few things are required for country orders, but most of the plants are sold to costers for barrow trade, and this means very low prices. It is scarcely safe to quote prices for the guidance of provincial buyers. A salesman informed me this morning that material ordered realised fair prices, but the residue had to be sold for any price that was bid for it. It is rather interesting to note the offers made by some of the costers. Sometimes they get things their own way, but it not infrequently happens that they disgust the salesmen, and are told to take their money where they may do better. Among flowering plants Verbenas are still conspicuous, also Zonal and show Pelargoniums. Marguerites are of very good quality. Bouvardias are seen from several growers. Chinese Asters in pots are good. There are now large quantities that have been taken from the ground with the first flowers expanded; these are sold at very low prices. Rhodanthe is good. Lilliums, especially the lancifolium rubrum, are overplentiful, and realise scarcely sufficient to pay for the cost of bulbs and pots. A few very good Fuchsias are still seen. Heliotrope in well-flowered plants is plentiful. Campanulas are of good quality. Some good Cannas are also seen; but the flowers of these do not remain in condition for any length of time. There are already seen Chrysanthemums in pots, but these are not of best quality. Zinnias and Coreopsis are still obtainable. Some Dahlias flowering in pots are seen;

also Tomatoes and Egg-plants in pots with ripe fruits, the latter with two or three good fruits on each. Among Ferns, Palms, and other foliage-plants there is little variation; the supplies are more than equal to all demands. Hardy climbers, Conifers and other hardy shrubs are plentiful and good.

CUT FLOWERS.

There is little to record in cut flowers just now, except that there must be much waste. Lilliums are very good, and still over-plentiful. Sweet Peas are also fairly good, but with short stems. The quality of Roses varies very much; there are some good blooms, but many are of very indifferent quality. Carnations also vary much, both in prices and in quality. Asters, both English-grown and imported ones, are very good. The immense quantities arriving from France spoil the trade for English produce. Gladiolus are over-plentiful, but very few really good spikes are seen, and the flowers are usually very small. Quantities of hardy flowers come into the market. The Statice, in white, yellow, and blue colours, have been very plentiful. *Gypsophila elegans* is still seen, but most buyers prefer *G. paniculata*; some of the double variety of this species is now seen. I find that most growers who bought this found it a good investment. Gardenias, Stephanotis, Tuberoses, and Eucharis are procurable at low prices. All kinds of cut foliage is plentiful. Oak sprays with red-bronze-tinted leaves are pretty. Up to last week we were getting the Galax leaves in good colour, but there will be no more for some time. Asparagus and Smilax in long trails are very good. All other seasonable foliage is over plentiful. *A. H., Wednesday, August 16.*

FRUITS AND VEGETABLES.

The following are the latest wholesale prices to hand from the undernoted markets:—

LIVERPOOL.—Wholesale: Potatoes, 2s. 6d. to 3s. 10d per cwt.; Kidneys, 3s. 6d. to 4s. 6d. do.; Turnips, 4d. to 8d. per dozen bundles; Swedes, 3s. to 3s. 6d. per cwt.; Carrots, 6d. to 8d. per dozen bunches; Onions, foreign, 1s. 6d. to 3s. per bag; Parsley, 4d. to 6d. per dozen bunches; Lettuces, 6d. to 10d. per dozen; Cucumbers, 1s. 9d. to 2s. 6d. per dozen; Cabbages, 6d. to 1s. 3d. do.; Peas, 5s. to 6s. per hamper; Beans, 2s. to 2s. 3d. do.; Kidneys, 1s. to 1s. 6d. per peck; Scarlet Runners, 1s. to 1s. 6d. do.—Retail: Potatoes, 10d. per peck; Green Peas, 6d. to 9d. do.; Cucumbers, 2d. each; Tomatoes, 1½d. to 6d. per lb.; Grapes, foreign, 6d. do.; Apples, 2d. do.; Pears, 3d. do.; Plums, 4d. do.; Mushrooms, 1s. do.

DUBLIN.—Cabbages, York, 10s. to 18s. 9d. per load; Carrots, 1s. to 1s. 2d. per dozen; Turnips, white, 6d. to 8d. per bunch; Rhubarb, 8d. to 10d. per 12 bundles; Salad, 3d. to 4d. per dozen; Onions, Tripoli, 4d. to 6d. per bundle; Mushrooms, 6d. to 3s. 6d. per float; Potatoes, 3s. to 3s. 2d. per cwt., top prices for best 3s. 6d. per cwt.

EDINBURGH.—Grapes, English, 1s. 6d. per lb.; do. Almeria, 1s. 6d. to 12s. 6d. per barrel; Lemons, Palermo, 15s. 6d. to 25s. per case; Apples, American, 18s. 6d. to 21s. per barrel; Barcelona Nuts, 36s. to 38s. 6d. per bag; Melons, 11s. to 15s. per case; Bananas, 5s. 6d. to 10s. per bunch; Figs, 9s. per dozen; Pears, French, 2s. 6d. to 7s. 6d. per box; Green Gages, 5s. 6d. to 6s. 6d. per half-bushel; Plums, French, 4s. to 6s. 6d. per bushel; Walnuts, Italian, 6s. 3d. per stone; Tomatoes, Guernsey, 4d. to 5d. per lb.; Onions, Valencia, 5s. 6d. to 6s. 6d. per box; Carrots, 3s. 6d. per bag.

REPORTS ON COLONIAL BOTANIC GARDENS AND FARMS.—We have received the *Annual Reports on the Botanic Station, Tobago, 1904-5*. The Gardens are in good condition, the nurseries maintained and extended, and many new plants are available. The Botanic Station reports are satisfactory, in spite of the extreme dryness of the season. Sir Daniel Morris, who paid official visits to the Station, comments most favourably upon its condition.—*Reports on the Botanic Station, Agricultural School and Land Settlement Scheme, St. Vincent, 1904-5*. The condition of the Garden is satisfactory; useful work has been done in re-arranging the collections of varieties of Bananas and Pineapples. "The proud position obtained by St. Vincent Cotton-growers of producing the highest-priced Cotton in the Empire should be a matter for congratulation to all concerned."—*Report on the Botanic Gardens of British Guiana and their Work, 1904-5*.—The Gardens were kept in good condition in spite of drought from August to December. The Herbarium has been got into good order. The complete Flora of British Guiana has yet been published, as owing to the large area and difficulty of access to certain parts of it it is doubtful if more than three-fourths or even two-thirds of the indigenous species have yet been collected.—*Reports on Experimental Farms, Ottawa*. The general results of farmwork throughout the Dominion have been fairly satisfactory. Drought and the severe winter caused much damage. Increasing interest is taken by farmers in the work and reports of the farms. Tests were made in connection with cross-bred Apples, the vitality of seed-grain, and with fertilisers. The horticulturist reports favourably on the result of Apples imported to England and Ireland, and on the growth of Potatoes during the year. The botanist mentions good work done in the herbarium and experiments in reclaiming sand-hills.—*Central Experimental Farm, Ottawa, Canada, Bulletin, No. 49, The Potato and its Culture*, with lists of varieties found most useful, by W. T. Macoun; Bulletin No. 50, *The Milling and Chemical Value of the Grades of Wheat in the Manitoba Inspection Division Crop of 1904, Part I*, by Chas. E. Saunders, Ph.D.; Part II, by Frank T. Shultz.

GARDENING APPOINTMENTS.

MR. F. CLARKE, many years in the Gardens at Henham Hall, Wangford, Suffolk, as Head Gardener to CALVER MASON, Esq., Broadwater House, Ipswich. He entered upon the appointment at the end of July.

MR. CHAS. TERRY, for the last eight years Head Gardener to E. T. HORLEY, Esq., has been appointed to manage the St. Neots Nursery for Messrs. PERKINS & SONS, Northampton and Ilfording.

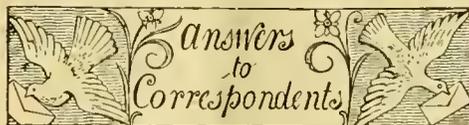
MR. W. ABRAHAMS, for the last five years as General Foreman at Papworth Hall Gardens, has been appointed to succeed Mr. TERRY in that capacity.

MR. H. J. SKITT has been appointed Head Gardener to Sir CHARLES WELBY, Bart. C.B., M.P., Denton Manor, Grantham, in succession to Mr. J. MALBY (who has relinquished the post of Gardener, and will in future act as Steward). Mr. SKITT's services date from September 1.

MR. GEORGE SMITH, for the past two years as Foreman and Head Gardener at Westhope Manor, Craven Arms, Salop, as Gardener to F. COOKSON, Esq., The Old Palace, Chippenham, Wiltshire.

ENQUIRY.

A READER of the *Gardeners' Chronicle* would be glad of information concerning the Strawberry called the Giant Middlesex variety. *F. D.*



BELLADONNA LILIES: *C. E. L.* It is quite natural for the bulbs to take a rest. They will probably flower again next year, or it may be not till the year after. The foliage is probably also dying off naturally. Very little moisture will be required till the leaves begin to grow in spring.

BOOKS: *C. P. & Co.* We know of no such book, but we believe one is in preparation.

BOOKS ON MANURES: *R. B. Manures and the Principles of Manuring*, by C. M. Aikman. Price 6s. 10d.; and *Manures for Special Garden Crops*, by A. B. Griffiths. Price 2s. 3d. Both are obtainable (post-free) from our Publishing Department.

CAMPBELL'S SULPHUR VAPORISER: *J. E.* This was highly spoken of by one of our correspondents, who narrated his experience lately in the *Gardeners' Chronicle*.

CARNATION: *J. McL.* The flowers are affected with a smut fungus. Destroy the plant at once. The *Dianthus Heddewigii* is also affected with some fungus; see our issue for next week.

CARNATIONS: *R. K.* Nothing particular.

CHRYSANTHEMUMS: *G. W. P.* The proper manner of "taking the bud," as it is termed by growers, differs so much that each variety needs special treatment in this respect. The trade growers in their catalogues indicate the best time and manner of stopping and timing Chrysanthemums, and you will do well to write for one of their lists. An article on the subject will be found in the *Calendar of Garden Operations*, 7½d. post-free, from our Publishing Department.

CLIMBING ROSES SUITABLE FOR A GREENHOUSE: *B. V.* The Tea-scented Roses and their hybrids embrace many beautiful varieties adaptable for training to a greenhouse roof. Even though you desire only white or rose-coloured varieties you will find an ample selection at your disposal, including (white) *White Maréchal Niel*, *Valentine Altermann*, *Madame Jules Gravereaux*, *Madame Jules Siegfried*, *Climbing Niphetos*; (reds or crimson) *Ards Pillar*, *Francis Crousse*, *Madame Berard*, *Madame Marie Lavallé*, *Reine Marie Henriette*, *Reine Olga*.

FALMOUTH: *M. B.* A complete list of plants grown in Devonshire and Cornwall would be much too lengthy for us to give. You will find numerous references in our back numbers.

FRUIT-DRYING: *J. P.* For your purpose the best plan would be to dry them in a baker's oven on a tray, removing them at times to see how the drying is proceeding. Far better is the process of bottling fruits, which can be performed by placing the bottles containing the fruits in a deep fish-kettle of water, and when the water

is brought to the boiling-point, securely corking the bottles. Outfits, with bottles, &c., for the purpose, can be had for a reasonable cost. Another good plan is to bake the Plums, &c., in a stone jar, cover over, and then bury the jar in the garden until required.

GRAPES: *W. J. S.* The variety is Golden Ham-burgh, which somewhat resembles Buckland Sweetwater, but is of better flavour.

GYMNOSPORANGIUM: *B. V.* There is no known remedy short of destroying the Juniper or the Pear trees, or both. Burn as many of the affected shoots as you can.

HORTICULTURAL HALL: *J. C.* Too late for insertion this week; but why not make your complaint at headquarters?

LAWNS: *Felix.* Any manure containing nitrogen, such as well-rotted manure or nitrate of soda, will by encouraging the grasses kill the weeds. A drop of sulphuric acid dropped from a glass rod on to the heart of the weed will kill it, but be careful how you handle the acid as it is very corrosive. As to the Ivy, we think you will do well to consult some of the larger nurserymen, who will give you the information you require better than we could do.

NAMES OF PLANTS: *H. E., Suffolk.* *Trachelium coeruleum.*—*D. R.* We cannot undertake to name varieties of Roses. Send to a Rose-grower who has opportunities of comparison with his named plants.—*Pancreaticum.* *Asclepias curassavica* and *Pancreaticum macrostephanum.*—*A. Y. L.* 1, *Dendrobium Draconis*; 2, *Oncidium prætextum*—*W. D.* Omitted from last week. *Hemigraphis colorata.*—*F. E. A.* 1, *Zephyranthes candida*; 2, *Yucca filamentosa*; 3, *Cupressus nootkatensis* (*Thuopsis borealis* of gardens); 4, *Thuja plicata*, true, also known as *gigantea* and *Lobbi*; 5, *Leycesteria formosa*; 6, *Spiraea Douglasi.*—*T. R.* 1, *Sedum Telephium* var.; 2, *Abelia triflora*; 3, *Griselinia littoralis.*—*J. L.* *Carduus Marianus*, The Virgin's Thistle.—*C., Atrincham.* 1 and 2, both forms of *Kochia scoparia.* One is the seedling stage. We do not think there are two species. *W. M.* 1 and 2 next week; 3, *Hoya carnosia*; 4, *Ruscus racemosus.*—*W. E. B.* *Saponaria officinalis.*—*H. J. B.* *Rhus Cotinus*, the Wig plant.—*W. S.* 1, *Solidago virga aurea*; 2, *Hieracium subaudium*; 3, *Hieracium Spondylium*; 4, *Atriplex patula.*

PEONIES: *J. F.* We suspect the trouble is at the root. There is no separate work in English, but, of course, the subject is alluded to in most of the text-books.

PEARS DEFORMED: *R. W. R.* Pears such as you send have often been figured in our columns. They are swollen and distorted branches, with no true fruit or core in them. If you were a cute Yankee you would advertise them as coreless Pears!

POTATO LEAVES: *A. M.* The leaves bear no trace of fungus disease, but their appearance is compatible with that caused by extreme sun-heat following a period of drought.

POTATOS: *W. J. W.* The tubers have developed supertuberation, but what induces this abnormality we are at a loss to understand.

PUBLIC GARDENS: *B. R. E. R.* You must watch the advertising columns, or advertise yourself.

TOMATOS: *G. E.* The fruits are affected with a fungus, *Cladosporium lycopersicum.* You will find an illustration of this disease, with remedial measures, on pp. 45, 46, of the *Calendar of Garden Operations*, 7½d. post-free, from our Publishing Department.

VINE LEAVES: *G. T.* The leaves are studded with warts, which are caused by too stuffy an atmosphere and not sufficient ventilation. It is not unlikely there may be mites also, but we cannot find any.

COMMUNICATIONS RECEIVED.—E. H. W.—C. T. D.—B. V. Schloss Bechau—C. E. L.—Hogg & Robertson—Sir T. H.—T. W.—R. H. P.—R. L. H.—Felix—Celt—B. L.—G. W.—H. C.—J. E.—C. T.—C. P. & Co.—R. B.—G. W. H.—E. C.—C. T.—J. C.—W. W. C.—C. B.—P. W.—H. Bull & Sons—H. C.—E. K.—H. E.—W. J. W.—W. W.—H. W.—S. M., Cape Colony—J. C.—C. H. P.—J. C.—E. R.—W. W.

THE Gardeners' Chronicle

No. 974.—SATURDAY, August 26, 1905.

CONTENTS.

Agave, the genus ... 161	Melons 163
Berberidopsis coral- lina 166	Nursery notes— B. S. Williams & Son 163
Betteshanger House... 172	Obituary— Boston, Richard ... 175
Books, notices of— Flora Capensis ... 170	Dean, Richard ... 168
Publications received 170	Paris Autumn Show... 169
Botany, experimental. 170	Peach Peregrine ... 164
Burnham, monastic buildings at 175	Peutstemons at Jed- burgh 174
Campanula punctata... 169	Plants, new or note- worthy— Crassula columnaris 162
China, plant collecting in 174	Schizandra Henryi 162
Clerodendron tricho- tomum 166	Roses, Hybrid Tea ... 175
Colonial notes 170	Seeds, the germination of 174
Conifers, variegated... 161	Societies— Bishops Stortford Horticultural ... 176
Cypripedium Fairie- anum flowering at Kew 168	Royal Horticultural (Scientific Com- mittee), p. iv, Sup- plement.
Daphne, the species of Examinations in horti- culture... .. 169	Shropshire Horti- cultural, p. i. Sup- plement.
Fruit crops, remarks on the 164	Tomatos growing in fields 171
Fruit Enquiry, the Departmental ... 170	Wasps and fruits ... 175
Fungi, poisoning by... 175	Water-yielding plant, a Weed-killer, attempt to poison with ... 170
Gales, autumn 175	Week's work, the 166, 167
Grape Diamant Traube Horticulture, bequest to 170	
Lapagerias alba and rubra superba ... 166	

ILLUSTRATIONS.

Betteshanger House, Kent 172
Campanula punctata (Supplementary Illustration)
Crassula columnaris 162
Cypripedium Fairieanum 168
Daphne Blagayana 171
Dean, Richard, portrait of the late 169
Isosoma orchidearum, the Orchid grub 176
Map showing the route followed by Mr. E. H. Wilson in China (Supplementary Illustration)
Schizandra Henryi 162
View in the grounds at Betteshanger Park 173
Well, ornamental, in the Gardens at Betteshanger Park 173

THE GENUS AGAVE.

ONE of the chief advantages which a garden situated on the sheltered shore of the Mediterranean affords is the flowering of many plants which elsewhere must be kept under glass, where they rarely or perhaps never produce their flowers.

The flowering of an Agave is an event in any garden, but we have here every summer a number of these plants in bloom. Some species, as Agave Bouchei, A. micracantha, A. albicans, A. polyacantha, A. mitis, &c, flower every year, often producing several spikes. They all belong to the section "Littæa," and do not die off after they have flowered, but the main rosette divides into several others, which when large enough flower again and repeat this same process until in a few years a large bush is formed.

Agave Bouchei forms a short stem, whilst the others are really caespitose.

Agave striata striata is just showing its flower-spike, with its curious long, white scarioso, empty bracts. These empty bracts of the scape form an excellent specific character, to which I should like to draw the attention of botanists.

Agave polyacantha varies much in the shape of its leaves; young plants with a simple rosette have their leaves generally broader than those which the same plant produces after it begins to divide. Agave densiflora, Hooker (*Botanical Magazine*, t. 5,006), is synonymous with this. I contributed a short note and a photograph of this species to the *Monatsschrift für Kakteenkunde*.

Agave albicans is also about to flower again this year. Recently, when with Sir Thomas Hanbury and Professor Wm.

Trelease, I had occasion to visit the well-known gardens of Mr. L. Winter in Bordighera, I saw a great number of this species just about to flower. There were some with brown, and others with paler marginal prickles, and the former also had darker, almost brownish flowers, whilst the latter had paler greenish flowers. It is a very variable plant, and A. Celsii may possibly belong to it.

Another very interesting plant of the Littæa group was just in flower when its author, Professor Wm. Trelease, came to visit La Mortola. It is Agave Engelmanni. It is only a small plant, which was raised from seeds received years ago from the Missouri Botanic Gardens, St. Louis. It is a curious species, having the flowers in groups of four to six on very short branches. In this it agrees with A. multiflora, Todaro, to which it is closely allied; but still there is sufficient reason to keep the two species distinct. The leaves in Agave Engelmanni are broader and more spatulate; the perianth too differs essentially. I found our plant to agree well with the description and figures given by its distinguished author in the Third Annual Report of the Missouri Botanic Gardens (1892), 16 f., t. 55, 56.

Agave Henriquesii, Baker, is now in flower, and will ripen its seeds when these lines are in the press. It was described and figured by Mr. J. G. Baker in the *Gardeners' Chronicle*, 1887, i., p. 32, from material sent to him by Professor Henriques, Director of the Coimbra Botanic Gardens. We have repeatedly grown young plants from seeds received from Coimbra, but this is the first plant that has produced flower. Our plant is smaller than the one described by Mr. Baker. The leaves only reach a length of 50 cm., and are 10 cm. broad; they are thick, dark-green, and terminated by a spine 4 cm. in length. The scape, together with the inflorescence, is about 3 m. high. The flower is 5 cm. long, with a slender, subtrigonal ovary; the tube is short, and the outer segments of the perianth are linear-lanceolate, the inner narrower, linear; all about 22 mm. long. The stamens are somewhat unequal, those opposite the inner segments, the longest, measuring about 6 cm. from their base.

This year Agave Béguini, a hybrid raised by the Abbé Béguin at Brignoles, and presented by him to this garden, is also for the first time in flower. A description of it will be published later on.

MANFREDA.

Of the smaller Agaves, which are now separated from this genus by American botanists, but kept under the sub-genus Manfreda by Mr. Baker, there are or will shortly be in flower—Agave maculata, A. variegata and A. virginica. Whether a generic distinction in this case is justified or not I do not wish to decide, but in many other genera botanists would certainly not attempt it on the ground of such slight differences.

The Agaves of the sub-genera Manfreda and Littæa are but small plants if compared with most of those of the sub-genus Euagave. The last-named are in many cases gigantic and majestic plants, to which chiefly the name Agave, from the Greek ἄγανος = stately, was applied. Their enormous rosettes die off with the ripening of the seeds. Several specimens of the giant of the genus, Agave

Salmiana, of which there are a great number of varieties at La Mortola, are just about to flower. Their gigantic scape is terminated by a large panicle bearing many hundreds of pale yellow flowers. Our largest plants have leaves about 2.15 m. long. The plant is commonly cultivated in Mexico for making pulque, a drink much esteemed by the natives.

Very similar to it in flower, and nearly as big, is Agave ferox, which will also be shortly in bloom at La Mortola.

The following, also belonging to Euagave, will be in flower this summer: Agave Franzosini, A. americana, A. picta, A. mexicana, A. applanata, A. rigida, and A. sisalana.

Agave Franzosini, Baker, was first described in the *Gardeners' Chronicle*. It is a very distinct species, far exceeding the others in its elegance, and especially on account of its white or nearly greyish-blue leaves, which have a rough surface.

Agave americana is now found half wild all along the Mediterranean shores. There exist also variegated forms of it. A. picta, Salm., is generally considered to be such a variegated form. Even in Mr. Baker's *Handbook of Amaryllidaceous Plants* the same error occurs. But, as I pointed out some time ago in the *Gartenwelt*, A. picta is quite another species, and has nothing whatever to do with A. americana.

Agave picta, Salm., was originally introduced in its variegated form. This was figured in the *Botanical Magazine*, t. 3654, under the erroneous name of A. americana variegata. Prince Salm-Dyck, who only knew young variegated plants, recognised them at once as a different species, and gave its description with the above name in *Bonplandia*, vii. (1859), 88, where he writes that he had not seen the green type. Of course, nobody had seen it until these variegated plants flowered, and from their seeds were produced seedlings of the green type. Such was the case at La Mortola, where we have whole groups of such plants. When I first came across one of them it seemed to me as if I knew it already, and yet it looked so strange that I failed to recognise it at first. Agave americana has shorter and stiffer glaucous leaves, with a stout terminal spine, whilst Agave picta has the leaves longer, dark green, more bent, and often recurved, but always more elegant. The terminal spine, moreover, is longer and finer, similar to that of A. Salmiana. The panicle is also more elongated in Agave picta than in A. americana.

The flowering of so many Agaves may be due to the great heat of last summer. *Alwin Berger, La Mortola, June 21, 1905.*

[A large number of species was figured in our columns in the years 1871, 1872, 1877, 1882, and 1883. Ed.]

FAR EASTERN MAPLES.—Mr. JAMES H. VEITCH has reproduced in pamphlet form his paper from the *Journal of the Royal Horticultural Society* on Far Eastern Maples. The value of these plants is even now not sufficiently recognised, and those mentioned in the pages before us, and peculiar to China, Japan, and neighbouring countries, offer a wonderful variety of form, colour, and habit such as should suit the requirements or fancies of every grower. The illustrations accompanying the letterpress give some idea of the diversity of Maples in general form, and in shape and variegation of their leaves.

NEW OR NOTEWORTHY PLANTS.

SCHIZANDRA HENRYI, CLARKE.*

SCHIZANDRA is a small genus of little-known climbing shrubs which, combined with *Kadsura*, form a distinct tribe of Magnoliaceæ. This little

The species here illustrated (fig. 55) was introduced from Central China to the Veitchian nurseries by Mr. E. H. Wilson. It differs from other known species chiefly in the shape of its leaves and in the length and stoutness of its peduncles. The flowers are white, unisexual, and

this fleshy receptacle the mucilaginous berries are embedded. The whole fructification, Mr. Wilson tells us, is eaten by Chinese country-folk, who designate this plant the Tieh-ku-san.

This species is not uncommon on rocks in the mountains of Western Hupeh and Szechuan, at an altitude of between 2,000 and 5,000 feet. *S. grandiflora* also occurs in similar localities; whilst another species, *S. propinqua* var. *sinensis*, is very common in the Yang-tsze Valley up to 2,000 feet.

CRASSULA COLUMNARIS, L. fil.

This *Crassula* (fig. 56) belongs, with three other species, to the subgenus *Pyramidella*, of Harvey. One of these, *Crassula pyramidalis*, Linn. fil., is figured in *Botanical Magazine*, t. 7665. *C. multiiceps*, Haworth, was introduced to La Mortola in 1873 by Professor MacOwan, according to a pencil note found in the late Daniel Hanbury's



FIG. 55.—SCHIZANDRA HENRYI, Clarke: NEW HARDY SHRUB.



FIG. 56.—CRASSULA COLUMNARIS. (Enlarged.)

handwriting, but has been lost long ago, and is probably now not to be found in any garden. The fourth species, *C. semiorbicularis*, Ecklon and Zeyher, has, as far as I know, never been seen alive in Europe.

The *Pyramidella* *Crassulas* are among the oddest-looking Cape plants. This one, as Harvey says in *Flora Capensis*, ii., 358, exactly resembles one of the *Balanophoræ*. It has roundish, very obtuse leaves, closely packed in four rows along the short stems. The flowers are aggregated into a dense, capitate, and subglobose cyme. The calyx-lobes are free or nearly so, spatulate, and elegantly fringed with cartilaginous hairs. The petals are united at their base into an urceolate tube, and taper into long, linear (not lanceolate, as Harvey states), channelled points. The ovaries end in a short neck, with an oblique, somewhat capitate stigma. The little squamæ fixed behind each carpel at the bottom of the flower are—at least, in this and in *C. pyramidalis*—cordate-cuneate and stipitate, of a dull orange colour, in form similar but smaller than

tribe comprises about a dozen species, which, with the exception of *Schizandra coccinea*, a native of the Atlantic side of North America, are all confined to Eastern Asia.

* *Schizandra Henryi*, C. B. Clarke.—Scandens, foliis longe petiolatis ellipticis vel late ovatis utrinque acutatis; pedunculis petiolos superantibus. Henry in *Herb. Kew*, 1785, et 9193 b. Hupeh and Szechuan, Wilson!

borne in great profusion. The leaves are coriaceous, shining, with bright red petioles. In shape these leaves vary from elliptic, through broadly-ovate, to cordate-ovate-acuminate on one and the same individual. The twining stems are more or less triangular, each angle being prominently winged. After flowering the carpel-bearing column elongates very considerably and becomes fleshy; in

those of the little *Monanthes* of the Canaries and the Atlas mountains.

C. columnaris is from 1½ to 4 inches high; generally the stem is hardly visible, being hidden by the connate, thick, and roundish leaves, which are glaucous, finely punctate, and their sharp margins ciliated with short cartilaginous hairs. The upper surface is more or less concave, and plain green. It is a native of the western districts of Cape Colony, extending as far north as Little Namaqualand. La Mortola is indebted for this and many other interesting succulents to Dr. R. Marloth, of Cape Town, one of the most energetic and successful exploring botanists of South Africa.

In cultivation the *Crassulas* ought never to be allowed to become too dry, or they will wither and die away. But professional gardeners very often fail to cultivate plants which amateurs grow successfully; gardeners either believe that all succulents are plants of desert regions and can do without any care, or they fall into the other extreme and kill them by too much watering, especially in winter. *Alwin Berger, La Mortola, Ventimiglia, Italy.* [For an article on this plant see *Gardeners' Chronicle*, January 29, 1898, p. 66.]

NURSERY NOTES.

MESSRS. B. S. WILLIAMS & SON.

FOR many years the business founded by the late B. S. Williams, the father of the present proprietor, was successfully carried on at the Victoria and Paradise Nurseries, at Upper Holloway. Of late the builder has gradually encroached and hemmed in the areas under cultivation, shutting out light and air, and generally rendering the cultivation of all but the hardiest species of plants an impossible task.

In view of this state of things, the firm saw the necessity of removing their out-of-doors stock to Church End, Finchley, to a spot consisting of about twenty acres, at a distance of three-quarters of a mile from the railway station, and situated on the Hendon Road, where, amidst pastureland on every side, a nursery has been laid out on sloping ground facing south, the transfer having taken place six years ago. At about half a mile south is the site of the projected "Garden City." Here all kinds of plants can be made to succeed free from many of the evils connected with a town nursery. The land having been under grass for one hundred years or longer, affords ample plant food in the form of the decaying turf that will meet the needs of tree and shrub without manurial dressings for many years. The soil is an ideal one for the growth of fruit and forest trees, for herbaceous perennials, Conifers, Evergreens, and most sections of the Rose family.

At present but few glasshouses have been erected, but others will be built as occasions arise. The contents of the glasshouses observed on the occasion of a visit made lately, consisted of a fine lot of *Maréchal Niel*, *Corallina*, a climbing *China Rose*, and others cultivated in pots. One span-roofed house contained *Vitis purpurea*, for which there is a constant demand; *V. heterophylla variegata*, *Rubus laciniatus*, the fine deep pink-flowered *Pelargonium* (Ivy-leaf) *Mrs. Turner*. On one of the stages was a number of *Souvenir de la Malmaison* and fine border *Carnations* in pots, prepared for layering in pans; also a quantity of *Nicotiana Sanderiana* in pots. Another house contained plants of large size of *Hydrangea paniculata* having flower-heads of a very pure white colour in prodigious numbers. There were a few other houses full of plants, but at this season these contained nothing of much interest.

The main walk from the nursery entrance is bordered with choice Conifers and shrubs, mostly

evergreen, and showy hardy herbaceous perennial plants, all of which seem quite at home in the heavy loamy soil. Roses are found in quantity, distributed in "breaks" in various parts, and most varieties make strong growth, including most but not all of the Teas and Hybrid Teas. Some of these need winter protection, the valley in which the nursery lies being subject to late spring and early autumn frosts, and a low average temperature during the winter season. Very strong plants of *Crimson Rambler*, one year old from the bud, were of an average height of 10 feet. Excellent were the stands of *Mrs. John Laing*, *Jennie Dickson*, *Madame Gabrielle Luizette*, *Robert Duncan*, a very early bloomer, deep rose-pink in colour, and a full bloom; the climbing *W. J. Grant*, *Caroline Testout*, and *Cheshunt Hybrid*, the latter showing still plenty of blooms—good as a pillar or climbing variety. I noticed many "breaks" of bush Roses, but the exigencies of space forbid the mention of names.

Good breadths are planted with *Manetti Rose-stocks*, now ready for being budded.

That pretty *Rose Gruss an Teplitz* was observed in some quantity, and beautifully in flower.

The collection of *Phlox decussata* varieties was particularly noticeable for the number of striking colours it contained, as also that of *Pentstemons*, among the latter being *P. Newbury Gem* with flowers greatly resembling those of *P. Torreyi*, but possessing greater size; *P. James Day*, an extra fine flower; and *Niel McKinnon*. *Pyrethrum*, *Rudbeckias*, *Chrysanthemum lutescens* in variety, and *Kniphofias* (some eight varieties), *Dahlias* and shrubby *Chrysanthemums*, all capital plants; many sturdy plants of *Weigela* in variety, the beautiful *Berberis Thunbergi*, a profuse autumn flowerer, were observed in some quantity. *Golden-leaved Privet* (*Ligustrum ovalifolium aureum*) is a shrub for which there is a great demand locally, and of which large breaks were noted, trained both as bushes and standards.

FRUIT TREES.

Apples as bushes on the *Paradise* stock formed a noteworthy feature, the growth being clean, healthy and free from American blight, many of them fruiting heavily already. Large breadths of standard and pyramid-trained trees on the *Crab-stock* were excellent for orchard or garden planting, being free in growth, clean, and numbering eighty-seven varieties. Maiden trees receiving their first training were worthy of notice for their freedom of growth without too much exuberance.

Pear trees on wilding stocks for immediate planting, trained, standards and maidens, form a good lot, equalling in all points the preceding, as do those on the *Quince-stock*.

Peach and Nectarine trees grow in this fresh soil if anything too vigorously, but this will be corrected as time progresses and the soil gets somewhat poorer.

No *Apricots* were observed. *Plums* do grandly, developing clean, vigorous shoots, and consist chiefly of dwarf-trained examples in about a score of varieties.

MISCELLANEOUS PLANTS.

Prunus Lauro-Cerasus caucasica, *P. c. rotundifolia* and *P. c. latifolia* make a good show of stocky, compact planting material; also *Ribes* in variety, with vigorous growth. *Clematis* receive much attention, as do *Ivies*, of which many varieties are grown.

Among the varied Conifers observed were several choice species, as *Cupressus Lawsoniana Allumi*, with the habit of the type form, and leaves of a bluish tint; *Abies grandis*, *A. laiocarpa*, *A. nobilis*, *A. Nordmanniana*, and *A. concolor*. These were small specimens, of compact growth. Many *Poplars*, *Prunus Pissardi*, *Philadelphus*, *Oriental Plane*, *Euonymus*, *Deutzias* in variety, *Corylus Avellana purpurea* (purple

Hazel), *Cotoneaster frigida*, and *C. Simonsi* were noted, all of which are at home and good of their kind. A beautiful *Rhus*, apparently a variety of *glabra*, with pretty, finely-cut foliage, and with the young growth of shoots of a purplish tint, was noted. The *Lime* grows well in the stiff soil, and an excellent break of tall standard trees was a conspicuous feature.

It will be observed from the foregoing that excellent progress has been made by the firm, and that ordinary requirements can be efficiently met in most kinds of trees and shrubs, herbaceous perennials, &c. *F. M.*

MELONS.

THE present season appears to have been very favourable to the growth and production of good crops of highly-flavoured Melons; in fact we have rarely, if ever, had better results than we have had this season, the plants from the first growing strong and robust. The flowers were freely produced, and set well; the fruits swelled and finished splendidly. It has been my practice for some years past to grow four crops of these fruits annually—two successional crops in a house regulated in such a manner as to maintain the supply for as long a period as possible. My first crop is raised from seed sown in small pots at the end of January, the seedlings being planted-out about four weeks later on well-prepared beds composed of a suitable mixture of moderately heavy soil, which is made firm previous to and also after planting. For my last crop I usually sow the seed from the middle to the end of June—the young plants raised from this sowing (should the crop which they are intended to follow be not quite ripe, or still occupying the house) being shifted into larger-sized pots, and kept growing steadily until the house and borders intended for their reception are quite ready. By this time the plants will have attained a moderate size, and will quickly furnish the trellises on which they are trained. The crop of fruits produced from these plants usually ripens about the beginning of October, which in our case is considered late enough in the season.

My general practice differs very little from that of many successful Melon-growers, with probably this exception, that I favour cropping lightly—say from three to four fruits on each plant.

In training and growing Melons in houses gardeners who adopt the single stem system (a method I always follow) should never allow the plants to become overcrowded with useless shoots, and then severely prune and thin them at one time. Constant and frequent attention to this matter is most essential if good results are to be expected. Laterals should be thinned, leaving only enough to cover the trellises and produce the fruits as required.

When Melons are grown in small shallow borders and in a small quantity of soil, every attention must be paid to the watering, feeding, &c., dryness at the roots being most injurious to the plants' welfare. A top-dressing of rich, sweet loam should be given every ten days, and until the fruits have set and have reached a moderate size incorporate a sprinkling of some reliable artificial manure in each top dressing. It is marvellous what effect these repeated top-dressings have in keeping the roots and plants healthy and robust. When the fruits have reached about half their required size, I apply a mulching of well-decomposed manure, and this, with a few applications of weak manure liquid at intervals, are sufficient for their requirements. Some of the thin-skinned varieties have a tendency to split, but with care and attention to the root requirements and to the atmospheric conditions of the house, there need be no trouble in this respect. *H. Markham, Wrotham Park, Barnet.*

FRUIT REGISTER.

PEREGRINE PEACH.

We have rarely tasted a richer-flavoured Peach than this variety. It is one of Messrs. Rivers' introductions, and received a First-class Certificate in May last at the Royal Horticultural Society by a unanimous vote. It is a globular fruit, 3 inches in diameter, deeply lobed at both extremities, and of a very deep crimson colour. It belongs to the section with round glands to the leaf and with large flowers. Its descent is traced from Spenser (Nectarine), Albert Victor, and Prince of Wales.

Peregrine is stated by Messrs. Rivers to be a very reliable Peach, cropping well under all conditions; and the branches keep their foliage well, as was seen in the shapely specimens exhibited by Messrs. Rivers at one of the late meetings of the Royal Horticultural Society.

VARIEGATED CONIFERÆ.

In looking at an ordinary English garden in winter, we find that, with the exception of variegated Yew, Hollies, and Euonymus, the greater part of the colour is furnished by various Conifers, ranging from the glaucous blue of *Picea pungens* var. *glauca* to the brilliant gold of *Cupressus Lawsoniana* var. *lutea*. Variegation is sometimes a sign of weakness in a plant, and this is the case with some of the variegated Conifers; but the majority of them are quite as hardy and nearly as vigorous as the species to which they belong, though a few are rather fastidious as to soil and situation, which has sometimes led to their being condemned without sufficient reason. It is proposed in the following notes to mention either those which are easy to grow or which are of such merit as to warrant a little more care and attention being bestowed upon them.

CUPRESSUS.

C. macrocarpa var. *lutea*.—This is a plant of comparatively recent introduction, is fast-growing, and of a uniform bright yellow colour. It should have a sheltered, sunny situation, and a poor, rather dry soil. The shrub is fairly hardy, but requires shelter from high winds, as it grows almost too fast, and is liable to be damaged by gales. A good plan is to drive a spade in all round it annually for the first two or three years after planting, as this tends to check it somewhat, and also assists in the thickening of the stem.

Of *C. Lawsoniana* there are many coloured forms, but a good selection comprises *C. L.* var. *albo-spica*, a dense-growing, upright plant, with the ends of the shoots tipped with silvery-white; *C. L.* var. *lutea*, entirely bright golden-yellow in colour, and probably the best-coloured Conifer in cultivation; and *C. L.* var. *Westermanni*, which is variegated with yellow in addition to the bright golden colour of the younger wood. These three can be grown almost anywhere, but they are difficult subjects to transplant.

C. nootkatensis (*Thuyopsis borealis*) gives us vars. *albo-variegata* and *aureo-variegata*, with white and yellow variegation respectively. The former is of rapid growth, and should be planted on poor soil or it will tend to become green; while the latter should have good soil and every encouragement, as its rate of growth is rather slow. Both of these require watching in a small state to keep them to a single leader.

C. obtusa var. *filifera aurea*.—This is a bright, golden-coloured form of *C. o.* var. *filifera*, and is a singularly handsome plant with its long, thread-like branches. In a dwarf state it makes a suitable plant for the rockery, as it can be made to form a spreading bush by cutting out the leaders when they appear, but its best effect is seen when

grafted as a standard, the long, thread-like, golden shoots forming an umbrella-like top, and hanging down on either side.

C. o. var. *fil. variegata*.—This is mottled with creamy-white variegation, and makes a showy plant when it has attained a fair size.

C. o. var. *nana aurea*.—Probably no variegated Conifer is slower of growth than this, and certainly none is more showy when it has attained a fair size. On good ground and under favourable circumstances, it will reach a height of 6 feet in ten or twelve years, but its great beauty amply compensates for its slowness of growth. The branches are short and bluntly fan-shaped, each one perfect and in its place, and of a uniform intense golden-yellow colour, which attains its brightest tint during the winter months.

C. o. var. *tetragona aurea* resembles the above in its colour and rate of growth, but the branches are longer, and the foliage set much closer together. It is a handsome plant, and is rather more open in growth than the preceding.

C. pisifera var. *aurea* is a strong-growing plant tinted, though not very strongly, with yellow. It makes a large plant very quickly, and possesses the advantages of a fairly good colour and the ability to grow where some of the variegated Coniferæ will hardly live.

C. p. var. *plumosa argentea* is a slow-growing plant, very broad in proportion to its height, with feathery foliage tipped with creamy-white. It makes a good plant for tubs, or as a small specimen on terraces, &c.

C. p. var. *plumosa aurea* differs from the preceding in its stronger and more upright habit, and in its bright yellow colouring, which extends all over the branches, but which is usually most prominent on the sunny side. It was planted very extensively some years ago, but has lost favour entirely now, though it is worth planting where soil and situation are suitable for it.

C. p. var. *nana aureo-variegata*.—This is a dwarf, spreading plant about a foot or 18 inches by 3 feet or more in diameter, with dense-growing foliage marked with bright yellow. It is a good plant for the rockery, and will succeed in a comparatively dry place.

The above forms of *C. obtusa* and *C. pisifera* are more commonly met with under the term of *Retinospora*, and except where stated otherwise they require a cool, moist soil to grow in, as they usually become very thin and ragged on dry ground, even if it is fairly good. *J. C., Bagshot.*

(To be continued.)

REMARKS ON THE CONDITION OF THE FRUIT CROPS.

(See Tables and General Summary, ante, pp. 81-87.)

(Continued from p. 155.)

5, SOUTHERN COUNTIES.

KENT.—Fruit trees have made but little wood of late years, with the exception of those recently planted. We are well protected on the north and east, and this saved us from injury by the late frosts and cold winds. The abundant rains of last month [June] have helped us greatly. Our soil is a light loam overlying chalk. *E. Gilmore, Northbourne Abbey Gardens, Eastry.*

— There were good prospects for all kinds of fruits early in the season, but the late frosts and cold east winds almost ruined them; still, I have a moderate crop of most fruits. The soil is a good, deep brick-earth, which resists dry weather well. The garden is about 200 yards distant from the sea, with a south-easterly aspect. *F. Sparks, Walmer Place, Walmer.*

— The soil here is a sandy loam resting on gravel. Fruits of all kinds succeed with us.

Peaches and Nectarines do well on east walls. Apples, Pears, Plums, and Apricots are very few in quantity, but are of fairly good quality. Damsons are a very heavy crop. Cherries have been very good indeed, while Raspberries are exceptionally fine. *H. J. Knight, Preston Hall Gardens, Aylesford.*

— The heavy crop of Apples last year had undoubtedly much to do with the scarcity of blossom, and consequently little fruit this season. Pears generally flowered freely, but late frosts appeared, and ruined the crop. *Geo. Fennell, Bowden, Hadlow Road, Tonbridge.*

— Nearly all fruits are a failure with regard to quantity, but those that have developed are of exceptional quality, owing no doubt to the thinness of the crop. Cherries promised well, but they were ruined by the weather. Crops of all hard fruits are bad, with the exception of Damsons. *B. Champion, Mereworth.*

— Strawberries and Raspberries are the chief fruits grown in this district, and it was foreseen that the crops of Strawberries would be small in quantity after the destructive drought of last year, when they failed to build up their crowns. There was a scarcity of foliage all this spring. Trusses came weakly, and when the plants were in flower 9° of frost were experienced. Later, when the fruit began to colour, three days continuous rain caused the fruit to rot on the ground. Thus it is not surprising to find that Strawberries were a very short crop and of inferior quality. The varieties Royal Sovereign, Sir Joseph Paxton, and Veitch, are still grown for our main crops. Among newer varieties The Laxton and Trafalgar have been planted largely in fields, but they are not well spoken of. In gardens, Givon's Late Prolific is a great success. Raspberries are a splendid crop in fields. The soil varies from very hot gravel to good loam. *W. E. Humphreys, Blendon Hall Gardens, Bealey.*

— Our soil here is a heavy loam, with a subsoil of brick-earth. Pears as a rule succeed well with us, and last season the trees broke down with the weight of fruit they were carrying, but the only variety with an average crop this year is Clapp's Favourite. Small fruits were well with us; Strawberries fairly well. The Loganberry and American Blackberries do splendidly with us; we train them on trellises against the wall. The plants of Loganberries are carrying very heavy crops of splendid fruits. They should be more largely grown, as they are most useful for dessert and for cooking purposes. *W. Dixon, The Old House Gardens, Walmer.*

— Our gardens are situated on the southern slope of the lower greensand hills, the soil being a strong loam with many stones present. The height above sea-level rises from about 340 to 400 feet. Damson trees growing on the highest part of the gardens have scarcely any fruit; those about 30 feet lower down have rather less than an average crop. A neighbour whose orchard is situated directly below ours, at from 250 to 300 feet above sea-level, has quite an average crop. This is due to the interesting fact (as noted in my diary) that his Damson trees were on April 5 "almost white with bloom, while ours scarcely developed a single flower." The next four days, April 6 to 9, were the coldest experienced here since March 4, yet the trees with expanded blossoms appear to have suffered less than those with unexpanded flowers. I take daily thermometer observations by instruments which have been corrected at Kew Observatory. Apples are meagre in quantity everywhere in this district. The quality is indifferent, although the lowest temperature (shade) from April 20 to May 22 was 36°. Gooseberries are a heavy crop. *Alfred O. Walker, Ulcombe Place, near Maidstone.*

MIDDLESEX.—The fruit crops this year are the worst we have had for many years past. Two years ago there was a great failure among fruit, but it was not so general as this season. Many of our Apple trees are quite barren, few late kinds, such as Wellington and Lane's Prince Albert, and a very few early varieties are bearing crops. Plums on walls and elsewhere are a total failure, including 200 yards run of trained Plum trees on walls; Apricots are a very thin crop; Peaches and Nectarines, which rarely fail to produce good crops with us, are all bearing badly this season. Pears are almost a total failure, while Cherries are but half a crop. Small fruits are plentiful. The Strawberry crop was a good one, but we were obliged to protect our early blossoms from frost. Our soil is badly suited for fruit culture, being of a light nature and resting on gravel, it is also very dry. *Geo. Wythes, Syon House Gardens, Brentford, W.*

— Our crops of fruit promised well considering the season, but on July 9 two very severe thunderstorms were accompanied by hail of the size of small nuts, which practically destroyed the whole of the Peaches, Pears, and Apples. Such storms I cannot ever remember having personally witnessed, but it greatly reminded me of what I read of the storm that did so much damage at Barham Court a few years ago. *H. Markham, Wrotham Park Gardens, Barnet.*

— Pears are almost a failure, although the trees flowered well, but easterly winds followed the flowering period and prevailed for some days, and to this cause I attribute the failure more than to the frost. Cherries this year escaped injury and are excellent, although last season the crop of these fruits was spoiled by the winds. Apples are good, although the crop is not heavy. Bush fruits are extra good and clean. Our Strawberries escaped the frost that was so much complained of elsewhere. The soil is shallow, resting on gravel. *James Hudson, Gunnersbury House Gardens, Acton, W.*

— The fruit-crops in this district are, on the whole, a fair average, and but for the frosts on May 21 and 22 would have been fully up to those of last season. The trees are healthy and clean. Most of the soil about here is a clayey-loam. *W. Watson, Harefield Place Gardens, Uxbridge.*

— The fruit-crops in this district are all below the average. Plums vary greatly; in some places they are heavily cropped, whilst in other districts large tracks of Plum-trees are bare. The Apple-crop is the best, but that of Pears is very light everywhere. Our soil is a good holding loam on gravel. *W. Bates, Cross Deep Gardens, Twickenham.*

— There was every promise of a good fruit year during April and early May, the blossom on the Plum, Pear, and Apple trees being abundant; but the sharp frosts on the nights of May 22, 23, and 24 completely changed the outlook. We registered 7° of frost on May 22, which destroyed the early Strawberry bloom, and Apples, Pears, and Plums all suffered severely; while Runner Beans and Potatoes were cut down to the ground. Our soil here is light loam overlying the gravel. *James Hawkes, Osterley Park Gardens, Isleworth.*

SURREY.—The frost of May 23 totally destroyed our fruit crop. On the exposed thermometer we registered 10° of frost. *S. T. Wright, R.H.S. Gardens, Wisley, Ripley.*

— Some varieties of Apples, including Warner's King, are very fertile; others, such as Lane's Prince Albert, have not a fruit on the trees. *W. Wilks (Rev.), Shirley Vicarage, Croydon.*

— In this district the fruit crop is very disheartening after such a grand promise early in

the season. Even Apples developed a fair amount of blossom, but Apples, Pears, Apricots, and Peaches and Nectarines are all very much below the average. Dwarf standard Plum-trees are carrying a crop, but on trees trained on walls the crop is thin. Damsons are a heavy crop, and Cherries are very good in this respect. Strawberries were very good where they escaped the late frosts. Gooseberries and other small fruit are all satisfactory, with the exception of Black Currants. *C. W. Knowles, Bagshot Park Gardens, Bagshot.*

— The fruit crops in this neighbourhood in the early spring were most promising, but 10° of frost on May 22 proved disastrous, in consequence of which Plums, Apples and Pears suffered severely. Our soil being of a light sandy nature resting on a bed of pure sand, proves very trying for fruit trees in a dry season like the present. On our ground rain is required about every ten days in order to keep the soil in anything like a moist condition. Raspberries and Gooseberries have been very good, but Strawberries have been very poor, with the exception of Latest-of-All, which was very good up till July 18. *W. Honess, Cobham Park Gardens, Cobham.*

— All classes of fruit trees flowered splendidly this year, but what promised to be the finest crop for years was spoiled by the frosts which occurred on May 23 and 24, when a great part of the flowers and fruit of Apples, Pears, Plums, Damsons and Strawberries were completely destroyed. Apples are swelling exceptionally well. Trees of the varieties Lane's Prince Albert, Warner's King, Bess Pool, Tower of Glamis, Stirling Castle, Hornead's Pearmain and Mère de Ménage have fair crops; which also applies to such dessert varieties as Cox's Orange, King of Pippins and Ribston. Pears are almost a failure. Our soil is of a sandy, sterile nature, and dries quickly. *C. J. Salter, Woodhatch Lodge Gardens, Reigate.*

— Although the district of Kingston, Surrey, is largely on porous sand, stiff soils are found in places. The general fruit produce, so far as Apples, Pears, and Plums are concerned, is a very poor one, Pears, including common varieties that are usually free croppers, being exceedingly scarce. Here, as elsewhere, the frosts of May were the primary cause of the scarcity of fruit, and even where there did seem to be a fair set, the fall of fruit later was exceedingly great. In some cases Plums are plentiful, but such crops are the exception. *Alex. Dean, 62, Richmond Road, Kingston-on-Thames.*

— The fruit crops here are very light in numbers, with the two exceptions of Cherries and Apricots. Late frosts proved most disastrous. Apples are practically absent, while Pears are represented by a few mostly deformed fruits. Crops of Plums are under average, but the fruit promises to finish well. Peaches and Nectarines are much under the average. Apricots are an average crop, and judging by the present state of the trees should finish well. Small fruits are under the average, but some are very good in quality, especially the Loganberry and Raspberries. Strawberries are a very light crop, with the exception of late varieties, by far the best being Givon's Prolific. Walnut-trees suffered severely from the late frosts; a few trees on the hillside in sheltered positions are carrying a fair crop. Cob-nuts are plentiful. *Geo. Kent, Norbury Park Gardens, Dorking.*

— The soil in this district is of a light nature. With the exception of small fruits the fruit crops are much under the average in bulk. *W. C. Leach, Albury Park Gardens, Guildford.*

SUSSEX.—Owing to the late spring frosts the fruit crops are thin in bulk. Apples and Pears are under the average, but are of good quality. Among Apples, Keswick Codlin, The Queen, Yorkshire Beauty, and Bramley's Seedling (on espalier-trained trees) have good-sized fruits. On old orchard trees there is no fruit, but young trees are carrying a small quantity. Gooseberry-bushes have always a good crop here, which also applies to other bush fruit and Strawberries. Loganberries, American Blackberries, and Wineberries are very useful as a succession to Raspberries, which last-named have been very good. Our best Strawberries are Royal Sovereign, President, Fillbasket, Climax, and Waterloo, which are suited to our heavy soil. Crops on wall trees, such as Peaches, are very thin. Plums are about an average; all the Gage type do well with us. Apricots can only be grown under glass here. Figs on walls finish a good late crop, Brown Turkey being the best. The soil is too cold for Cherries without being prepared especially and drained. Morello do well, and are carrying a heavy crop. Cordon Pear-trees on arches and on walls are carrying under an average crop, but the fruits are of good quality. Potatoes in some places here have the blight, but up to the present we are free of this disease. Sharp's Victor, May Queen, Ashleaf, Royal Kidney, British Queen, Up-to-Date, and Factor are among our best varieties, while Evergood, Northern Star, and Discovery are a failure. *A. B. Wadds, Paddockhurst.*

— With the exception of Apples there was every prospect of a bountiful crop of fruit this year until the severe frosts in the early part of May, which gave almost everything a severe check, especially Black Currants. Damsons are very plentiful. Our soil is variable, from light sand to stiff clay, with a subsoil of sandstone, much impregnated with iron. *Alex. Reid, Possingworth Gardens, Cross-in-Hand.*

— The prospects of a good general crop of hardy fruits were never better than they were this year, but they were ruined owing to continued north-easterly winds and late frosts, which caused much of the blossom to drop prematurely. The soil here is light and thin, overlying chalk. *E. Burbury, Arundel Castle Gardens, Arundel.*

— The fruit crops in this district are about average in quantity, the fruits being of very good quality. The soil is a poor and hungry sandstone. *Wm. Brunsdon, Brumbletye Gardens, East Grinstead.*

— Owing to the very late frost of May 23, which registered 7°, Raspberries, Strawberries, Quinces, and most other fruits were greatly injured, two-thirds of the Strawberry-crop being frozen outright. *G. Griggs, Ashburnham Place Gardens, Battle.*

— Most varieties of Apple-trees here are sparsely cropped, no doubt owing to the very heavy crop of last season, as there was a scarcity of bloom. Pears are quite up to average in bulk, and of good quality, though many fruits have dropped. The show of blossom on these trees was remarkable, and generally resulted in a good set. Among the best croppers are Williams' Bon Chrétien, Beurré Diel, Duchesse d'Angoulême, Doyenne Boussoch, Josephine de Malines, Jargonelle, Bergamot d'Espéren, &c. Some early varieties, notably Beurré Giffard, Triomphe de Vienne, though abundantly flowered, have not a single fruit, even on walls. Plums are variable; the fruits still continue to drop, though what remain are of good size. The best crops are on trees of Cox's Emperor, Victoria, Czar, and Kirke's; Greengages are very thin. Cherries are very good, though much fruit fell

during the stoning period, and the large rainfall the last few weeks has caused the fruits to split on a large scale. Governor Wood, May Duke, &c., are carrying very heavy crops of fine quality. Gooseberries and Currants of all varieties are heavily cropped, the fruits being of good size and quality. Strawberries were very good, but beds in exposed situations suffered from the severe frosts in May, though sheltered ones escaped entirely. Among those varieties with heaviest crops may be mentioned Monarch, Auguste Nicaise, Latest-of-All, Waterloo, and Eleanor. The soil is a heavy loam, overlying stiff yellow clay. Chas. Jones, *Ole Hall Gardens, Burgess Hill.*

— The soil here is a stiff loam, bordering in some places on clay. The situation varies greatly, the ground being undulated. Where the soil is fertile Apples do fairly well, but most varieties suffer much from canker. Pears are an uncertain crop, the trees being liable to canker, especially the more tender kinds. Plums and Cherries as a rule do well, but Peaches and Nectarines are usually cut up by the late spring frosts. H. C. Prinscp, *Buxted Park Gardens, Uckfield.*

WILTSHIRE.—The prospects of good fruit crops in this district were exceedingly favourable until the frosts that occurred on April 22, 23, and 24, and again on May 22, 23, and 24, when the crops were ruined. The soil in this district is composed of friable, marly loam on chalk, and is very shallow in depth. The orchards generally are situated in low-lying, damp valleys, in which positions the frosts in the spring seasons are often more severe than on the surrounding hills. Thos. Challis, *Wilton House Gardens, Salisbury.*

— Owing to 10° of frost at the latter end of May, Apple and Strawberry blossom suffered terribly, and everything being extremely wet the damage was intensified. Our soil is somewhat heavy, of fairly good depth, on a stiff yellow clay subsoil. H. Gandy, *Longleat Gardens, Warminster.*

— The fruit crops in this district are decidedly under the average, and poor in quality. The frosts of May destroyed what promised to be a good fruit season. Strawberries especially suffered. The only fruit crops which have been at all satisfactory are Gooseberries and Currants. It is rather early to speak of the quality of Apples, &c. W., *Malmesbury.*

— Apples on espalier and pyramid trees are of good quality, the trees bearing freely; but orchard trees are, on the whole, sparsely cropped, and the fruit is of very poor quality. Pears are few in number, but Peaches and Nectarines are a good crop. All bush fruits are excellent. Strawberries have been under the average. The sharp frosts of May 22, 23, and 24, when we registered 8°, 10°, 9° on successive nights, ruined most of the fruit blossom. The soil of the district is mostly of a friable loam, with either a chalky or a gravelly subsoil. S. W. Tucker, *Longford Castle Gardens, Salisbury.*

(To be continued.)

PLANT NOTES.

CLERODENDRON TRICHOTOMUM.

This beautiful hardy Japanese shrub is at present very fine in these gardens, and is laden with its peculiarly scented blossoms. It thrives well in any good soil, but prefers one of sandy peat. For planting on the margin of a shrubbery it has no equal, as with a suitable background the large, dark green leaves of the plants, topped with the trusses of white flowers, make it particularly effective, and it will continue to flower well into September.

BERBERIDOPSIS CORALLINA

is also at present a charming sight, growing on a north wall. It is perfectly hardy with us, and is

covered with trusses of coral-like flowers. If planted against a house where it could be given plenty of room, the effect at this season of the year would be excellent. It thrives in a well-drained, peaty soil, and should be given copious supplies of water during the summer months. Grown in company with *Tropaeolum speciosum*, which is also laden with thousands of blossoms, it furnishes a grand sight.

LAPAGERIA ALBA AND L. RUBRA SUPERBA

are also hardy here, and have this season made growths 14 feet in length. They are planted against a north wall, and are now just commencing to flower. These same Lapagerias were in full blossom during last December, and are again looking very promising. They receive no protection whatever through the winter, but must be carefully watched during spring or slugs will destroy the young growths as fast as they develop. A. C. Smith, *Lydhurst Gardens, Haywards Heath, Sussex.*

The Week's Work.

THE FLOWER GARDEN.

By W. A. MILLER, Gardener to Lord HENRY C. BENTINCK, M.P., Underley Hall, Westmoreland.

Antirrhinums.—Cuttings of these may now be inserted.

Colchicums should be planted not later than August. They prefer a sandy soil and plenty of moisture, consequently they are adaptable for planting in the grass by the margins of streams, &c. *C. autumnale* and its varieties are largely grown. *C. speciosum* and *C. Sibthorpii* are good autumnal bloomers, and suitable for planting on the rockery.

Crocus speciosus is probably the best species of the autumn-flowering varieties, and does well on banks, &c.

Amaryllis Belladonna.—Bulbs that are planted in the borders in front of houses and in other dry situations will soon be showing flower-spikes, and should receive applications of weak manure water whenever the weather is at all dry.

Lilium speciosum, *L. Batemanni*, *L. Henryi* and varieties of *L. tigrinum* will be benefited by a mulching of well-decayed manure. They should also receive sufficient moisture at the roots. The same treatment if given to *Montbretias* will forward the development of the flower-spikes.

The Shrubbery.—*Clethra alnifolia* is a compact deciduous shrub, bearing at this season numerous spikes of fragrant white flowers. It thrives well in almost any position. The various species of *Ericas* are looking gay at the present time. They should receive suitable waterings whenever necessary. *Erica vagans alba* develops into a fine bush. *E. vulgaris* and its many varieties are all suitable as border plants. *Daboecia (Menziesia) polifolia* and the white variety are distinct shrubs, flowering for many weeks during the summer-time. They thrive well on banks and in sunny places if planted in sandy peat. They can be increased by layering and by cuttings inserted in a cool frame. Pampas Grass (*Cortaderia argentea*) is now rapidly growing. It requires plenty of water to perfect its graceful plumes. *Kniphofias* in shrubberies and in borders should also be given plenty of water.

The Rockery.—*Meconopsis cambrica* fl. pl., which grows well in shady places, continues flowering all through the summer-time. *Campanula turbinata Isabel* is a handsome variety of compact habit, freely producing flowers of a rich violet-blue. *C. garganica hirsuta*, *C. muralis*, *C. carpathica Riverslea Gem*, are other species in flower at the present time. *Dracocephalum speciosum* is a showy-looking plant with pinkish-blue flowers.

The Wild Garden.—There are many places in the wild-garden that are only suitable for plants of a persistent character. The New Zealand Burs (*Acæna*) are suitable for many aspects, as they rapidly cover a large area; this is particularly true of *Acæna sarmentosa*. A. Buchanani has very distinct foliage of a pea-green colour; A. pul-

chella and *A. inermis* have bronzy-grey foliage; the latter variety is useful for planting in the vicinity of steps, over which it can ramify. *Asarum europæum* is a hardy creeping plant; *Anthemistinctoria* furnishes a wealth of flowers even in the driest situations. *Arenaria balearica* is useful for clothing rocks, &c. *Cistus*es prefer a dry, sheltered bank. *Cotula squalida* has fern-like foliage, and grows rapidly in shady damp ground. *Crucianella stylosa* will thrive in poor places. *Epimediums* prefer a semi-shaded position. *Hypericum*, *Linarias* and *Lippia repens* are all suitable plants for the wild garden. *Petasites fragrans* is an excellent subject for naturalising in the roughest of places. *P. japonicus giganteus* develops very large leaves and does not require any particular soil. *Polygonum vacciniifolium* is a fine creeping alpine suitable for any situation, as are also *Stachys lanata* and *Symphandra Hoffmanni*. *Thymus Serpyllum* and its varieties delight in dry sunny places. They are excellent for planting round about steps.

PLANTS UNDER GLASS.

By A. BULLOCK, Gardener to E. J. WYTHES, Esq., Copped Hall, Epping, Essex.

Anthuriums.—Plants that have remained undisturbed for some time and that would now be benefited by repotting should receive attention at once, in order that they may become again established before their flowering period. Overpotting the plants must be strictly avoided. Unless they are in very vigorous health, the same sized pots should be used again, it being necessary only to furnish some good fresh compost, which must be carefully worked among the roots. See that the pots are thoroughly cleansed before use, and furnish clean drainage for about half the distance up the pot, using for the purpose broken crocks and charcoal in equal quantities. The compost should consist of lumps of good turfy-peat, sphagnum-moss, and charcoal, the whole being well mixed together. When potting endeavour to keep the crown of the plant well above the rim of the pot. At the same time work the compost carefully between the roots, and when this has been gently pressed with the fingers the plants should be secured with a stake in the centre. A layer of sphagnum-moss pressed on the soil completes the operation. Shade the newly-potted plants from the sun's rays, and give an occasional syringing of clear water overhead to keep the plants from flagging, but great care must be exercised that an excess of moisture at the roots be not allowed.

Poinsettias.—Sturdy plants from the earliest-struck cuttings will require to be gradually hardened and ripened to produce good bracts. The shading should be gradually removed, and finally dispensed with altogether. Allow a free circulation of air to pass between the plants. Liquid manure judiciously applied will be of great benefit, and once a week a light dusting of Clay's Fertiliser should be given. Later-struck cuttings will need to be kept in a somewhat closer atmosphere until they are well rooted, but they must not be allowed to become drawn or weakly.

Euphorbia jacquiniiflora.—These should enjoy the benefit of full exposure to the sun's rays as they show signs of maturing, but this must be effected gradually in order to avoid scorching. Give liquid manure regularly and often to the roots in a well-diluted form.

FRUITS UNDER GLASS.

By F. JORDAN, Gardener to Dr. CORBET, Impney Hall Gardens, Droitwich.

Pol Figs.—The wood of the earliest forced plants should now be well matured, and the trees in a fit condition for being placed out-of-doors in a sunny position. Less water at the roots must be given as the wood ripens, but syringe freely the trees on bright days until the leaves fall. Top-dress or pot any plants that require it as soon as the fruits are all removed. A suitable compost for the purpose consists of a mixture of good loam, wood-ashes, lime-rubble, and bone-meal. Later trees which are now developing their fruit should be liberally fed, and the house in which they are growing freely ventilated during the early part of the day, closing the

structure early in the afternoon, with abundance of atmospheric moisture present.

Planted trees will require careful attention as soon as they are cleared of fruit, in order that the young growths may properly mature. Remove any new fruits that develop, and also any useless shoots, in order to allow light and air to pass freely amongst the plants. Afford full ventilation to the house, and syringe the trees freely with clean water to eradicate red-spider. Reduce the supply of water at the roots in proportion as the wood shows signs of ripening.

Figs in Cool-houses.—Plants in full bearing need careful syringing and watering. The former should be done on bright mornings only, while the damping of the borders must be regulated by the state of the weather outside. Feed liberally as the fruits ripen. If the trees are not growing satisfactorily, and the borders are in a sour condition, lift the roots to within 2 feet of the stem, and replace the old soil with some good fresh compost, at the same time shortening the strong roots and spreading the fibrous ones nearer the surface. Thoroughly water and syringe the trees daily for a few weeks after this is done.

Strauberies.—Plants that were potted last month will now be growing freely, and should be allowed plenty of room for the full development of their foliage. Plants growing in small pots or that have filled their pots with roots may have a little weak liquid-manure water applied twice weekly. Care, however, must be exercised in the use of stimulants, or gross growths will be encouraged late in the season that will not mature. This especially applies to plants that were given a rich compost. Keep the pots clear of weeds, and remove all runners as soon as they appear, also any small crowns that are not required. Late runners which still require potting should be attended to at once, and afterwards placed in the shade for a few days until new growth commences, when they must be moved into the open and treated as advised in a previous Calendar.

THE KITCHEN GARDEN.

By W. FYFE, Gardener to Lady WANTAGE, Lockinge Park, Wantage.

Gathering Seeds.—Choose the earliest favourable opportunity for seed gathering, when it is ascertained that they are well matured, a bright clear day being the best for the purpose. Expose them fully to the sun until they are perfectly dry, while to retain their germinating power they must be stored very carefully.

Earthing Celery.—Fine weather should be chosen for this operation, when the soil is in good condition. See that there is no lack of water at the roots, and before earthing apply a suitable dressing of fine powdered lime round about the plants, the earliest of which will now be almost if not quite fully developed. Injury is oftentimes caused by too early earthing, the object of which is to keep the stems in perfect darkness. Use finely-broken soil for the purpose, and while the work is proceeding give occasional dustings of lime to destroy any insects hidden in the soil, as nothing is more objectionable than the marks of insects upon an otherwise perfectly developed leaf-stalk. Draw the soil equally round about the plant, otherwise a deformed growth will be the result.

Cauliflowers.—The number of "blind" plants in every variety of both the summer and the autumn kinds has far exceeded the average, teaching the necessity for keeping a good store of surplus plants in the seed-beds. A still better practice is to make small and frequent sowings to fill up the blanks. This danger may be checked if detected in time by sprinkling the crowns and leaves early in the morning with soot when they are damp with the dew. To ensure Cauliflowers for cutting by about May, make several sowings during September, and keep the plants stiff and sturdy by cool and open treatment. Equally good results can be secured by sowing the extra early varieties early in the year.

Mushrooms.—*Out-of-door Beds.*—September is a good time to collect horse-droppings for beds intended to produce Mushrooms during the spring months. The rank heat must be allowed to escape by frequently turning the manure.

The beds should have a fairly dry foundation, a position against a north wall being suitable. They should be made about 4 feet wide and 3 feet high, consolidated and spawned just below the surface when the heat has declined to 75° or 80°, and afterwards covered with a layer of soil 2 inches in depth. Make the surface firm and smooth with the spade when the soil is sufficiently moist to be pressed. The bed should be well thatched with clean straw at least 2 feet in thickness, over which strong garden netting should be securely pegged down to keep the straw in its place. Another kind of bed may be made similar in form to Potato pits, of the same height and width as the above. Flat beds may also be made out-of-doors with equal success, but to ward off heavy rains and snow it is necessary to have movable covers of felt, corrugated iron, or wood. When structures are provided for growing Mushrooms, the process of preparing and making the beds is the same as advised for out-of-door beds, except that it is not necessary to cover them with litter.

THE ORCHID HOUSES.

By W. H. YOUNG, Orchid Grower to Sir FREDERICK WIGAN, Bart., Clare Lawn, East Sheen, S.W.

Odontoglossum crispum.—Much has been written at various times on the best method of cultivating this Orchid. Localities, the general environment, description and situation of the houses, differ in so many ways, that oftentimes where the supposedly correct details are carried out failure results from one or many causes that are entirely beyond the grower's control. A friendly tree may in some instances be the secret of success, casting its cooling shade upon the house at a time when shade is most needed. A high wall may have its advantages in the summer time, but may prove a stumbling-block to success in winter. One grower favours a structure fully exposed, another advocates one in an open position for the dull months, while still another prefers a situation on the north side of a wall during the summer season, and yet a grower, by adopting any one of the above conditions, may fail, because other necessary features are absent. Many amateurs are severely handicapped in growing these plants by being compelled to grow them in a mixed collection of Orchids, and in striving to do the whole well some are sure to fail. Undoubtedly local influences have a very great bearing on the cultivation of this plant, the skill and experience of the grower being of little avail if these are unfavourable. Next to locality, a suitable structure is a very necessary adjunct. Personally I favour a low span-roofed house situated in the open and facing east and west, so that each part has an equal opportunity of receiving sunlight during the dull season. It should be amply provided with pipes for heating purposes, and be furnished with suitable ventilators in the walls and on either side of the roof, so that they can be used according to the direction of the wind. The floor should be bare of tiles, &c., a layer of coal-ashes being the most suitable material for the purpose. The stages should be of the "double-deck" pattern, that is a lower one covered with ashes or shingle, and an open trellis-work one 4 to 6 inches above. The lower one should admit of the water draining away, and be so constructed that heat and air may circulate upwards. Tanks for the storage of rain-water should be built crossways at the ends of the house. The shading arrangements should be fixed well above the glass and out of the way of the roof ventilators. The chief points to be secured are a light structure sheltered from the north and east winds, but open to all the available sunshine in winter; the means of maintaining a moist atmosphere with free and ample ventilation, and a large supply of piping so that heat may be steadily evolved.

Potting materials for *Odontoglossum crispum.*—Great diversity of opinion also exists on this subject, but in my opinion good results can be obtained from most of the usual means employed, provided other conditions are favourable. The treatment must be in accordance with the materials employed, and must be persistently and consistently pursued throughout the year. It has become evident from the use of leaf-soil that if a return be made again to peat and moss,

a greater depth of material should be afforded than formerly, when the pots were almost filled with crocks. The use of Fern-rhizomes for drainage purposes has proved very satisfactory with many growers, but so far as my personal experience goes it has been practically a failure. I hope to deal further with this subject in next week's issue.

THE HARDY FRUIT GARDEN.

By W. H. CLARKE, Gardener to Sir WILLIAM PLOWDEN, Aston Rowant House, Oxon.

Protecting Fruit from Birds.—Immediately fruit begins to change colour and the first stage of ripening commences they are pounced upon by birds, to obviate which protection by fish-netting becomes necessary. Blackbirds are the chief depredators just now, although later on starlings will soon devour all the fruit in an orchard if not scared off by powder and shot. Blue-tits, although great insect-devourers, damage much fruit by making a small hole just by the stalk, causing the fruit to fall.

Pears.—The earliest varieties will soon be ripening, the first to mature being Doyenné d'Été, which is very fertile when double grafted on the Quince stock. Citron des Carmes ripens next. It is a valuable early French dessert variety of good flavour. Jargonelle, Beacon, and Beurré Giffard will all ripen during the present month. Jargonelle should be gathered before it is fully ripened, otherwise the true flavour will be lost. Protection will be necessary to ward off birds which have a special liking for these fruits. They usually injure the choicest fruits by pecking them near the stalks, which allows an opening for wasps and flies to further the damage. The only perfect method of protecting Pears is to envelop them in muslin bags. A free use must also be made of the gun to scare these robbers, taking care the shots do not enter the branches of the trees, as the injury caused to the shoots invariably results in canker. Mid-season and late kinds should have every attention given them. In those districts where the crop is satisfactory the present warm summer should produce fruit of excellent quality. Trees growing on the Quince stock, which naturally require a moist soil, should be well supplied with water at the roots. The size and quality of the fruit will depend greatly on the attention the plants receive with regard to manual feeding and artificial stimulants at the present time. Trees growing in light soils will be much benefited by a mulching of manure and a heavy watering once a week. Young shoots which were pinched back earlier in the season will have made a secondary growth. These should be again pinched back to two leaves.

Planting Strawberries.—Where the ground has been manured and dug as previously advised and the plants are in readiness, planting may be commenced without delay, as by early planting a crop is secured next season. A succession of fruit can be obtained by planting early varieties in a warm south border, the main crop varieties in the open garden quarters, and the later kinds in north, east, or west borders. Much depends on the nature of the soil whether it should be firmed. Soils of a retentive and water-holding nature will only need the soil firmed about the roots of the plants, while light soils will be benefited by being consolidated all over. Plants intended to occupy the ground for two seasons only should be planted closer together than those intended to remain for a longer time. In the former case 2 feet from row to row and 18 inches between the plants will suffice, but in the latter case the distance should be 2 feet 6 inches and 2 feet respectively. Varieties of weaker growth may be planted closer. Before proceeding with the planting see that the plants are well saturated with water. Do not cover the crowns when planting, but place the "balls" sufficiently deep that the plants will not get dried through by the sun and wind. Should dry weather prevail after planting, frequent waterings must be given. Much assistance is afforded the plants by a mulching of either hotbed manure, long litter, or even mown grass. Any "runners" or flower-stems which develop must be rigorously removed, and every encouragement given the plants to perfect their crowns for next year's fruiting.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Letters for Publication, as well as specimens and plants for naming, should be addressed to the EDITOR, 41, Wellington Street, Covent Garden, London. Communications should be WRITTEN ON ONE SIDE ONLY OF THE PAPER, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

Special Notice to Correspondents.—The Editor does no undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editor does not hold himself responsible for any opinions expressed by his correspondents.

Illustrations.—The Editor will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens, or of remarkable plants, flowers, trees, &c.; but he cannot be responsible for loss or injury.

Local News.—Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

APPOINTMENTS FOR THE ENSUING WEEK.

SATURDAY, AUG. 26—Hawick Flower Show.

TUESDAY, AUG. 29 { Royal Horticultural Society's
Committees Mect.

WEDNESDAY, AUG. 30—Bath Floral Fête (2 days).

SALES FOR THE WEEK.

MONDAY AND WEDNESDAY NEXT—
Sale of Dutch Bulbs at Stevens's Rooms.

MONDAY TO FRIDAY NEXT—
Dutch Bulbs in large variety, at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 10.30 o'clock.
(For further particulars see our Advertisement columns.)

AVERAGE TEMPERATURE for the ensuing week, deduced from observations of Forty-three Years at Chiswick—60° 2'.

ACTUAL TEMPERATURES:—

LONDON.—Wednesday, Aug. 23 (6 P.M.): Max. 66°;
Min. 52°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—Thursday, Aug. 24 (10 A.M.): Bar., 30.1; Temp., 65°. Weather—Bright and fresh.

PROVINCES.—Wednesday, Aug. 23 (6 P.M.): Max. 62°; Cornwall; Min. 55°, N. Ireland.

again, a wide field is opened to the *Cypripedium* hybridist, who will no doubt in a few years produce further charming results.

On April 25 of this year two plants were received at Kew from the Botanical Gardens, Calcutta, and which were believed to be *C. Fairieanum*. It was necessary to see the flowers before the species could be absolutely determined. This has now been accomplished by the production of blooms on the specimens which were the first to reach this country after its rediscovery (see fig. 57).

The plant now flowering is one with five growths and two flowers. The second and larger plant is developing five blooms. In general appearance it resembles a small-leaved *C. insigne*, the largest leaf being



FIG. 57.—*CYPRIPEDIUM FAIRIEANUM*.
Sketched at Kew by Miss Smith, August 22, 1905.

7 inches in length and 1 inch in breadth. The slender, hairy scape is 10 inches in height; the prominent and charming dorsal sepal is $1\frac{3}{4}$ inch in length by $1\frac{1}{4}$ inch in breadth, having a white ground beautifully veined with violet-purple, with brownish-green veins near the centre, and whitish hairs around the margin. The petals have the characteristic droop and upward curve at the tips; they are $1\frac{1}{2}$ inch in length, and have a white ground colour streaked with purple and yellow; the upper margin is much undulated and covered with prominent purple hairs. The pouch is rather small, greenish-brown in colour, veined with brownish-red, and covered with short hairs. The ovary is $1\frac{1}{2}$ inch in length, very slender, and densely covered with dark purple hairs.

As imported plants of *C. Fairieanum* are now in many collections, it will be useful to record the treatment afforded the Kew

plants, under which they have become established and grown with all the vigour of *C. insigne*. On arrival the plants were placed in pans, the old roots being covered with potsherds to within an inch of the top of the pan. They were then placed in a shady, moist corner of the stove, in a night temperature of 65°, and a day temperature of 75°. Here they soon developed strong healthy roots from the base of the growths, and commenced to push new leaves and new growths. When fairly well rooted the pans were filled up with a mixture in equal parts of fibry yellow loam, peat, moss, and Oak-leaves. They rooted freely into this mixture, and made good growths, showing the buds on July 1, the flower expanding on August 16. An intermediate temperature is one most likely to suit this species best.

It is figured in the *Botanical Magazine*, t. 5024, from specimens from Mr. REID, of Burnham, Somersetshire; and also in WILLIAMS' *Orchid Album*, vol. 2, t. 70. It was originally described by Dr. LINDLEY in our columns, 1857, p. 740.

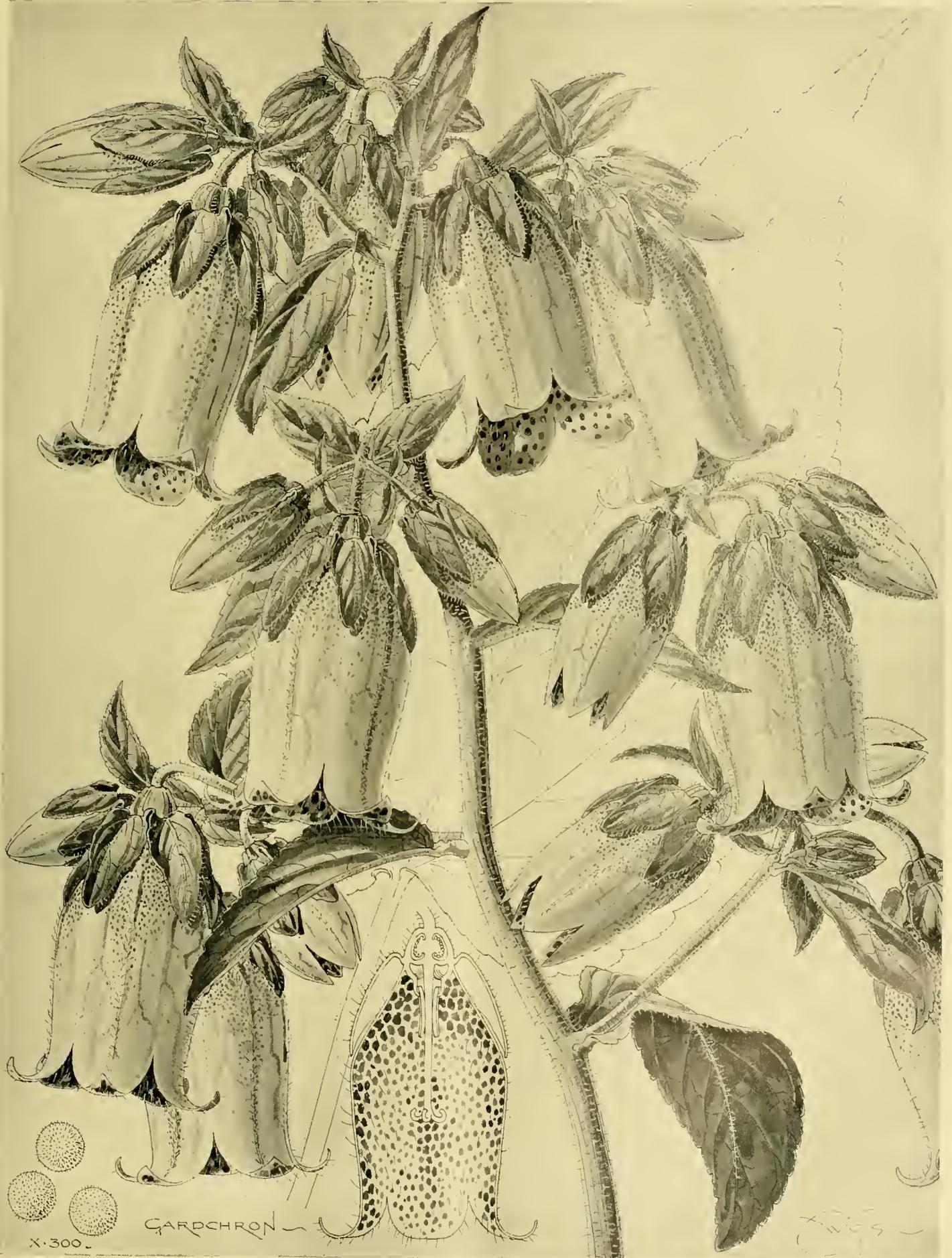
It is not only a sad thing, Richard Dean, but one difficult to realise, when one who has been specially active for something like fifty years is taken from us. Nevertheless, those who lately saw the attenuated frame and enfeebled condition of RICHARD DEAN must have felt that the end was near, and now that it has come they must, with all their regrets, feel a sense of relief that the labourer is at rest. For labourer he was to the very last! His energy and spirit, though subdued, could not be quenched while life remained, and it is but a very short time since he was present at the Floral Committee of the Royal Horticultural Society, and only a week or two ago he was present as a judge at the Wolverhampton and Boston Shows, though in a sad state of physical debility.

It has been said of RICHARD DEAN that he was a born secretary, and few indeed have been the societies, the associations, and the flower shows within the metropolitan area, and even beyond it, with which RICHARD DEAN has not been connected. His mastery of detail, powers of organisation, and indefatigable industry were invaluable to such societies. Was a new one to be formed, an old one reorganised, a complicated and involved procedure to be simplified and made straight, it was RICHARD DEAN who was naturally appealed to to do what was necessary. To the last he remained the Secretary of the National Chrysanthemum Society, and the popularity and success of that body are due very largely to his efforts. There has indeed been scarcely a horticultural "movement" of any kind during the last forty or fifty years in which RICHARD DEAN has not taken an active and generally a prominent part.

Our own knowledge of him dates from 1866, when he was appointed Assistant Secretary to the International Horticultural Exhibition held in that year. The executive details preparatory to that great gathering were for many months largely entrusted to him, and towards the last we well remember the night and day work that fell to his share. Two or three only remain of those who carried that memorable meeting to its triumphant success. As to its results we need only say that the Gar-

Cypripedium Fairieanum. WE have now the pleasure of recording the fact that a vigorous plant of this famous species is in flower at Kew. The plant has for a long time defied all attempts to rediscover its native haunts, notwithstanding the fact that the first few specimens were generally believed to have been imported from Assam.

As almost all orchidists are aware, the original plants were purchased at Messrs. STEVENS'S Sale Rooms in 1857. Mr. FAIRIE, of Liverpool, was one amongst several buyers who obtained examples that were included in a collection of Orchids from Assam. He was fortunate enough to flower his plant first, and it was subsequently named after him. Since that time the stock under cultivation in this country had gradually dwindled down until only the small specimen in the collection of Sir TREVOR LAWRENCE was left. How such a state of affairs could possibly have happened is rather difficult to understand, seeing the vigour that the Kew plants exhibit; but the employment of too much heat in its culture is the generally accepted theory, though the extensive employment of the plant for the production of hybrids may possibly have had something to do with its almost total disappearance. The distinct dorsal sepal and the curious drooping and curved petals, which the hybridist has linked with the best characters of other species, have been reproduced in a race of wonderfully beautiful hybrids, which are far more handsome than *C. Fairieanum* itself. Now that we have this type to work with



CAMPANULA PUNCTATA, HARDY PERENNIAL, FLOWERS PALE ROSE WITH DEEPER-COLOURED SPOTS.
HORT. BEAMISH.

deners' Benevolent Institution benefited substantially, and that the Lindley Library and the Scientific Committee represent the direct and permanent outcome of the labours in which RICHARD DEAN took so large a part. But he was much more than an executive officer. His knowledge of various branches of horticulture was great; his perceptive and critical faculty so highly developed that his services as judge were in requisition all over the country. He was a member of the Floral Committee of the Royal Horticultural Society from its inception to the present time almost without interruption, whilst he had a general, all-round knowledge of plants and their culture. He had a special acquaintance with what are termed florists' flowers. The mantle of the old florists had fallen upon him. He was, if not quite, yet nearly the last representative of the old school to whom the "properties" of Auriculas, of Tulips, of Carnations, and other "florists' flowers" were as dogmas to be revered and acted up to, in spite of the teachings of evolution, the canons of art, or the "higher criticism" generally, to say nothing of the banter of the profane. And yet, whilst he held to the old with a loving faith, he was far-sighted enough to accord respect to the new, and, whilst retaining his own opinions, to recognise that truth has many facets, and beauty many aspects. This led him to be much more tolerant of the tastes and opinions of others than were some of his predecessors.

Our readers and ourselves have been under great obligations to RICHARD DEAN as a correspondent and reporter during more than four decades. It will be difficult to replace him, and we do but voice the feeling of the multitude of his fellow-workers when we express our deep sense of the loss we have sustained and of our sympathy with those whom he has left behind.

RICHARD DEAN was born on February 1, 1830, at Page's Nursery, Southampton, where his father was foreman for many years. RICHARD was the third of four brothers—WILLIAM, who died a few years since at Birmingham; JAMES, who died in 1856 at Slough; then himself, and ALEXANDER, who is still alive. In boyhood he was initiated into practical horticulture in various local gardens, and specially when he entered the Royal Nursery, Slough, under that famous florist CHARLES TURNER. WILLIAM DEAN was at that time a Superintendent there. RICHARD remained in that nursery for several years. There it was that he gained his first ideas in relation to florists' flowers, which made him to be so great an authority in that department of horticulture. Later he served for some years in the then well-known wholesale seed house of BECK, HENDERSON, & CHILD, and was also for some time with ARTHUR DICKSON & SON, of Chester. In these houses he was enabled to obtain a wide knowledge of seeds and the seed trade, not easily to be obtained. Later on, some forty years since, he became a trader himself, dealing in seeds, florists' flowers, and hardy plants generally, as well as Potatoes, and occupied land for such purposes at Bedfont, Middlesex, as well as at Hounslow. On the death of JOHN EDWARDS he became the Honorary Secretary of the National Floricultural Society, which was ultimately merged into the Floral Committee of the Royal Horticultural Society, of which Committee he was, we believe, the oldest member. That he should be selected as one of the first to receive the Victoria Medal of Honour was natural. In bygone years he was for a long time

Secretary to the Ealing Horticultural Society. With Mr. ALBERT CHANCELLOR, he for several years managed the shows of the Richmond Horticultural Society in its palmy days. He also, under the late Rev. WILLIAM ROGERS, managed the City flower shows, and being a first-rate organiser his services were in wide request for similar duties. So tenacious was he of the responsibilities attached to these requirements that but recently, when physically almost incapable, he journeyed all the way to Wolverhampton to fulfil an engagement. His sole mental pain on his sick bed was the realisation that he had judged his last, and that the work he loved so well was done for ever. His connection as Assistant Secretary with the famous but now almost forgotten International Exhibition of 1866, which proved to be such a great success, is little known to the present generation. His long connection as Secretary with the National Chrysanthemum Society, which he succeeded in steering, with the aid



THE LATE RICHARD DEAN.

of firm friends, successfully through stormy seas into smooth waters, is well known and appreciated. He was one of the foundation members of the Royal Gardeners' Orphan Fund, of the Sweet Pea Bicentenary Celebration, a Secretary of the Hail-Storm Relief Fund, of the Postal Reform Committee, and we know not what beside. Some details of his life-work were given by himself on the occasion of the presentation to him of a substantial testimonial in 1902, and were recorded in our columns on February 8 of that year. It may be the lot of others to live longer, but to few men has it been given to put more work into life than he did. He leaves a widow and four children—two sons, the eldest in South America and the youngest at home, both married; and two daughters at home. The funeral will take place in the Ealing Cemetery on Saturday, August 26, at 5 P.M.

CAMPANULA PUNCTATA * (see Supplementary Illustration).—This is an old inhabitant of our gardens, but is rarely met with, while its merits as an herbaceous perennial are so marked that we are glad to have an opportunity of figuring it. Our illustration was drawn by Mr. WORTHINGTON SMITH from a specimen kindly forwarded from Glouthaune, co. Cork, by Mr. R. H. BEAMISH. It is a somewhat

* *Campanula punctata*, Lamarek. *Encycl.*, 1, 556; *Bot. Mag.*, t. 1793; Hemsley, *Journ. Linn. Soc.*, xxvi., p. 7.

coarse-looking perennial some 2 feet high with large, stalked, hairy, cordate-ovate, acuminate-serrulate leaves; the upper leaves are sessile. Its beauty consists in its pendulous, bell-shaped flowers, each about 2 inches long, white or rose-coloured externally, hairy, and with purplish spots on the inner surface, so that it bears some resemblance to a *Gloxinia*. The pollen-grains, as observed by Mr. SMITH, are globose and pilosulous. The plant is a native of Siberia, and occurs in China, Corea, and also in Japan, whence Mr. BEAMISH obtained his plants. The colour of the corolla varies, being in some cases white or violet; whilst in Mr. BEAMISH's specimens, as before remarked, the flowers are of a delicate rose colour. These variations have caused botanists to consider some of them as distinct species; for instance, LINDLEY, in the *Journal of the Royal Horticultural Society*, i. (1846), p. 232, describes a plant sent home by FORTUNE from China as *C. nobilis*.† More recent students, such as HEMSLEY, in the *Journal of the Linnean Society*, xxvi., p. 9 (1889), place *nobilis* under *C. punctata*.

EXAMINATION IN HORTICULTURE.—The Council of the Royal Horticultural Society has consented to hold a special examination for gardeners employed in the London and other City and Public Parks and Gardens, on Thursday, January 11, 1906, at their Hall in Vincent Square, Westminster. The examination, which will be partly written and partly *viva voce*, will occupy three hours for the written portion, and about twenty minutes for each candidate *viva voce*. Candidates must send in their names at least ten days before the examination takes place to the Secretary, Royal Horticultural Society's Office, Vincent Square, Westminster, S.W., together with an entrance fee of 5s., to defray in part the expenses of the examination.

PARIS AUTUMN SHOW.—As announced in our last issue, the National Horticultural Society of France is now making preparations to hold its autumn show, which will be devoted to Chrysanthemums, fruit, fruit-trees, flowering plants and vegetables, and will be held from November 4 next to the 12th, both inclusive. The site will be the same as that of the late spring show, viz., the large greenhouses on the Cours la Reine. The schedule contains a very large number of classes, and the exhibition promises to be of great extent. In all there are 160 classes, to which works of art, gold, silver-gilt, and silver medals are allotted in considerable numbers. The exhibition is thoroughly international. Artists and the various trades connected with horticulture are also invited to exhibit. In conjunction with this show the French National Chrysanthemum Society will hold its annual Conference, at which papers will be read on various subjects relating to the flower. Of these, a few titles may be given, viz.—"The Use of Chrysanthemums in the Decoration of Gardens and Apartments," "Best means to prevent Damping of the Blooms," "Results of using the 'Repertoire des Couleurs' in describing Chrysanthemums" (a notice of this interesting publication appeared in the *Gardeners' Chronicle* for May 20 last), "Best Composts for Pot Culture," "Packing Blooms," &c. The Jury will be an international one. Chrysanthemum novelties will be especially judged by a committee of nine, three being members of the National Horticultural Society, three being members of the French National Chrysanthemum Society, and the remaining three being foreigners. On November 6 the Pomological Society of France will hold its forty-sixth session under the auspices of the National Horticultural Society, and in view of the great interest of this show we may

† *C. nobilis*, Lindley, ut supra, and in *Botanical Register* (1846), t. 65; *Flore des Serres*, t. 247 et 563; *Revue Horticole* (1845), p. 283.

reasonably expect a very large attendance of visitors. Further particulars can be obtained of the Secretary, 84, Rue de Grenelle, Paris.

"**FLORA CAPENSIS.**"—Another part of this publication has been issued, containing the remainder of the genus *Erica*, by Messrs. GUTHRIE and BOLUS. The species enumerated amount up to 469, together with a large number of imperfectly known species and supposed hybrids. In the earliest volumes of the *Gardeners' Chronicle* (1843) a large number of so-called species were described, many of which were really hybrids, obtained in ROLLISSON'S nursery. Such was the prejudice against hybrids in those days that the new forms were described as introduced species. Mr. N. E. BROWN is responsible for the monographs of several of the smaller genera of the Order.

EXPERIMENTAL BOTANY.—Such extravagant statements have been made in the American Press as to Mr. BURBANK'S doings, that his reputation, which we know to be well merited, is in danger of being injured by injudicious or ill-informed reporters. It is therefore with great pleasure that we read that Dr. HUGO DE VRIES has recently published in Amsterdam his impressions of the Far West, under the title of *Naar California*. The chapter which deals with his visit to LUTHER BURBANK, the famous plant-breeder of Santa Rosa, has been translated and published in the *Popular Science Monthly*. The visit to BURBANK is of unusual interest, inasmuch as DE VRIES was accompanied by two other scientists of world-wide distinction, in whose statements the fullest confidence may be placed. The best way of approaching the study of the variations of plants and their causes is by hybridising, and BURBANK'S farm is the greatest centre in the world for crossings on a scale that can only be described as gigantic. For one of his hybrids he may start as many as 50,000 or 60,000 seedlings. For instance, in the case of a hybrid Raspberry and Blackberry with large berries and big bunches, 65,000 seedlings were cultivated until in full bearing. A few dozens were selected, and then the rest, fruit and all, were consumed to ashes—an *auto-da-fé* which is depicted in one of the BURBANK catalogues; a great loss from a scientific point of view. After the selection of three good varieties, a batch of 15,000 Roses was burned. After fifty of the best of a set of Lily-bulbs were selected, the remaining half-million were destroyed. These figures will give an idea of the scale of the BURBANK experiments. It is well to record that the expenses of this great work are paid for the next decade by funds from the Carnegie Institution.

A WATER-YIELDING PLANT IN THE THANA FORESTS—In a paper read before the Bombay Natural History Society, Mr. G. M. RYAN spoke of the water-yielding plants in the Thana Forests. He says of one of them that "*Calycopteris floribunda* (Nat. Ord. Combretaceæ), called Ukshi in Thana, is one of the most interesting shrubs of the district." In some parts of India it grows as a diffuse, dense shrub; in other places it is scandent; in Thana both forms of it are found. It is very ornamental and bears pale golden flowers. The scandent habit appears to be most natural to it, but is checked by yearly attention. When a climber, the Ukshi "ascends the bole of the tree in a characteristic manner, climbing from left to right. Having established itself in the forest in some spot not far from a tree, it extends its leading shoot till it reaches the branch of an adjacent one. It proceeds to embrace the bole at first in several loose coils, and then to stretch its leader out as if in search of a further exterior support, failing to find which it returns to the original bole and forms three or four constricting coils round it, continuing to adopt the left-to-right habit. Re-

leasing its grasp again, it succeeds by a series of wide curves or swoops in reaching the illuminated heights of the crown of the tree. Here it commences to form a network of branches spreading across the crown, and perhaps overhanging it, until at length some of the branches are suspended in graceful festoons. A tree thus invaded naturally is unable to expand, and eventually dies, but the climber itself does not stop its course." Its lower branches root, and it also reproduces itself by root-suckers. Occasionally a branch will coil tightly round one of the older scandent shoots. The Ukshi stems sometimes attain to a girth of 2½ feet, and resemble ropes loosely stretched between the ground and tree tops, and between trees, and form swings and ladders for the monkeys. The smaller twigs are utilised for native tooth-brushes. "The most interesting characteristic of the plant is its faculty of storing in its climbing stems a liquid resembling water which is commonly drunk by the wild tribes."

THE NATIONAL FEDERATION OF FRUIT AND POTATO TRADES' ASSOCIATION has forwarded to the President of the Board of Agriculture and Fisheries the following memorial:—"We the Fruit and Potato Trades' Associations throughout the United Kingdom, numerous members of the trades affected, and many others, do hereby beg

- (1) to express (a) our appreciation of the action of the Board of Agriculture in causing an enquiry to be made into the Fruit industry of Great Britain, and (b) our anxiety to assist in obtaining practical legislative and other results from the recommendations of the departmental committee which has conducted such enquiry.
- (2) To strongly confirm (a) the importance of quick transit and reasonable rates on the railways of the country, and (b) our belief that, in providing for the latter a more simple and uniform system and a more practical classification are very desirable, and indeed urgently necessary.
- (3) To state that in our experience the protection of traders against the result of the combined action of railway companies has become a vital question in the interests of our trade.
- (4) To offer our services to ensure that the effect of the Report of the Departmental Committee shall be such as to enable Parliament to recognise the great and increasing importance of the fruit and Potato-growing industry, and to pass the requisite statutory enactments; and
- (5) Whilst again expressing our appreciation of what has been done by the Board of Agriculture, to hope that the action of the Board may cause the necessities and requirements of these trades, affecting as they do the whole country, to be better understood, to the advantage not only of the trades and the railway companies, but to the whole population.

THE COMMON SEAL of the National Federation of Fruit and Potato Trades' Associations incorporated for itself and the numerous associations and individuals whom it represents throughout the United Kingdom, hereto affixed in the presence of—

A. ROGER ACKERLEY, GEO. COLEMAN,
Members of the Executive Committee.
EDWARD W. GARDNER, Secretary to the Federation."

BEQUEST TO HORTICULTURE.—According to the *Wimbledon Herald* the late Mr. JOHN INNES, of Merton, has left his house, the Manor Farm, Merton, with eleven acres of ground, to his trustees, upon the following trusts: As to his said house and two acres of ground upon trust to establish thereon a school of horticulture or such other technical or industrial institution as the law will allow to give technical instruction in the principles of the science and art of horticulture and the necessary physical and mental training incidental thereto; to erect suitable buildings and furnish them, and to provide workshops, tools, plant, scientific apparatus, libraries, reading rooms, lecture and drill halls, a swimming bath, and gymnasium. If this may not be legally carried out, then to establish in these buildings a public museum for the exhibition of collections of

paintings or similar works of art, objects of natural history, or of mechanical or philosophic inventions. To lay out land for a park, in which they are to make suitable provision for the practice of cricket, football, lawn tennis, croquet, bowls, the practice of archery, the meeting and drilling of Volunteers, or other military bodies, and for the holding of athletic sports. And further to erect in a suitable position in the said park a pavilion or glass hall, suitable for the giving of musical or other entertainments, and for the practise of indoor amusements, and to transfer the said land, buildings, equipment, &c., to the Charity Commissioners, the local authority, or some other suitable public body. After allowing for the payment of the various legacies to friends and relatives, and reckoning the capital values of the several annuities, the amount available under Mr. INNES' will for the above and other uses would appear to be nearly £200,000.

WEED-KILLER.—A domestic servant was lately charged with unlawfully and maliciously administering or causing to be administered to her mistress and nine other persons a noxious thing known as a weed-killer, and thereby endangering their lives and inflicting upon them grievous bodily harm. Professor SMITH said he had analysed the liquids sent to him, and he found that there was in most of them eighty per cent. of arsenical matter. The so-called "weed-killer" was full of arsenic. It was in a very poisonous form, and its solubility was great.

COLONIAL NOTES.

CAPE OF GOOD HOPE.

I SENT lately a few notes on the Insect Pest Bill, and discussed the question how far it is practicable to clear the insect pests from this land of "sunshine." There is no frost or snow along the coast and a short distance inland. As we have no winter and as this is a warm climate insects spread very rapidly. The Government officials think if they can get the nurseries clean that all will be well; but if clean plants be sent to infected localities, how long will they remain clean?

Among the plants and fruits-trees the importation of which is prohibited into Cape Colony are Apricots, Almonds, Peaches, Nectarines, and Plums—in fact, all stone-fruit trees are prohibited, which means that all stocks for grafting must be raised from seed grown in the country.

Arancarias are not allowed to be imported; they are subject to a scale named *Eriococcus arancarie*; it is a rather large white insect found underneath the leaves. I have never seen it in England, though it is found in America. All the Coniferae are prohibited, but the seed may be imported. Any one importing Grape-vines is liable to a very heavy fine. Ampelopsis and all plants of the order Vitaceæ are also prohibited.

There are many plants in this colony at the present time that would not have been here if they had not been smuggled through by lovers of flowers. All imported plants have to be examined by a Government official, and each plant-case has to be opened in his presence. If he thinks that they are not clean, then he has them fumigated with the vapour produced by pouring sulphuric acid on to cyanide of potassium.

The Natal Government entomologist recommends 2½ oz. of cyanide, 2½ oz. sulphuric acid, and 5 oz. water, the plants to be fumigated for forty-five minutes, that is for 435 cubic feet of space. That is far too strong for Kentias and several other Palms. *Dracenas* and many Ferns will not stand it. When plants have been packed in cases for three weeks and had plenty of sea air, many of them are not in good condition to be fumigated or await the Government official's convenience. Every plant has to be fumigated before it can be sent from this colony into the Transvaal. If the authorities go on at the present rate the nursery trade will have to "close down." *Horticulturist*.

THE SPECIES OF DAPHNE.

(Concluded from p. 153.)

D. pontica, L.—From the Caucasus and mountains of the Euxine. A pretty bushy plant, with ascending or often trailing branches, somewhat like *D. laureola*, but distinguishable by its habit, its wide leaves elliptic-oval, and its yellowish-green flowers, long in the peduncle, gathered in clusters furnished with green, conspicuous bracts. Rare in cultivation [not in England]. It requires partial shade and a calcareous soil. It is quite hardy at Geneva.

D. Gnidium, L.—A fine Mediterranean shrub, 3 to 4 feet high, erect and stiff, with upright branches, furnished above with leaves that are opposite, glaucous, and persistent, in appearance resembling those of *Veronica Traversii*. This was my first impression when in the neighbourhood of St. Raphael I saw these curiously-upright shrubs in the Pine and Oak woods. The flowers are greenish and inconspicuous, but the peculiar foliage makes the plant ornamental for growing in woods. It is scarcely hardy at Geneva, but would certainly be so south of London.

D. glomerata, Lamarck.—This comes from the mountains and alps of the East, especially the Caucasus. It is a small trailing shrub, with dense branches, coriaceous, persistent, oblong-spatulate, obtuse leaves; the flowers are clear rose, in clusters of four to ten, in small, dense heads, accompanied by membranous bracts. It is very rare in cultivation, and seems to be grown with difficulty; it likes partial sunshine.

D. Houtteana, Lindley and Paxton, is akin to *D. Mezereum*, and is considered as a hybrid between this and *D. laureola*. I have never grown it, but it is in the Barres collection.

SPECIES FOR THE ROCK-GARDEN.

Such are the species which will grow in the open borders; as to those for rockeries their number is fewer. There is the most beautiful type of the genus, *D. Cneorum*, L., growing in limestone mountains in Central and Southern Europe. It is a most beautiful and valuable species, found also on the sunny rocks of the Jura, blooming from May to July. In our gardens it succeeds in the heaviest and firmest soils in full sunshine, and blooms from March to May. It grows into large clumps 10 to 12 feet across, and covered with clear carmine-red flowers borne on slender stems with leaves that are persistent, coriaceous, spatulate, and glaucous. The species is deliciously fragrant. There is a variety "major," with fine flowers; another with white-edged leaves; a third "Compacta," and not in cultivation, a form with pure white flowers, which one of the staff of our *Jardin d'Acclimatation* discovered in the Vaudois Jura, which we grafted and increased, but have since lost. We hope to regain it. As to *D. Cneorum* var. *Verloti*, from the Dauphiny Alps, this differs from the type by its pointed linear-elliptic leaves, indented at the top with a mucro, while the leaf of *Cneorum* is linear, oval, rounded at the top without a mucro.

D. striata.—This comes from the Eastern and Lombardy Alps and the Carpathians. It differs from *Cneorum* in its thicker, shorter branches, its narrower leaves, and its glabrous calyx.

D. petraea, from the Alps of Austrian Tyrol and the Dolomites.—It is the smallest *Daphne*, and one of the rarest and most interesting. It forms a tiny, much-branched shrub, with spatulate, linear, dark-green, shiny, persistent leaves; flowers in fascicles of three to five, sessile, clear rose. This plant requires sunshine and calcareous rock. I found it last year on Monte Summano, exposed to the hottest sun on the dolomite rocks with hardly any soil. It forces its roots into the living rock and so finds needful freshness and nourishment.

D. alpina, L.—Grows on calcareous rocks among the Alps, Apennines and Pyrenees. A dwarf, much-branched shrub, the stems bending sharply and dividing; leaves caduceous, glaucous, small; flowers white, fragrant, arranged in small heads at the tops of the branches; berries vermilion-red. It requires full sunshine and a calcareous rock, but is easily cultivated.

D. Blagayana (fig. 58).—From the Styrian Alps and Transylvania. A trailing shrub with spreading branches stretching over the ground; leaves large, oblong-lanceolate, coriaceous, glaucous; flowers large, creamy-white, very fragrant, in large trusses produced in March and April. This plant needs shade and the shelter of a rock, and to spread its branches over the moss and stones.

D. burifolia, Vahl.—From the mountains of Trans-Caucasia and Armenia. A small dwarf shrub with short thick branches; leaves oboval-oblong, very obtuse, whitish beneath and shining green beneath; flowers white, from three to six, in heads, fragrant. I received it once from the garden of the Belvedere in Vienna, but have since lost it.

D. pseudo-Mezereum, Gray.—I must not omit to mention this species from Japan. It originated from *Mezereum*, and the Botanic Garden of Tokyo distributed seeds for several years. It has not yet flowered, to my knowledge, in Europe—at least, not at Barres nor at Kew.

This list includes twenty-seven types of *Daphne*, and five or six varieties, including all that are, so far as I know, in cultivation. There are more than forty different species and twenty varieties known and published. It would be interesting to introduce them into cultivation, as might be done by such firms as those of Veitch and Vilmorin. *Henry Correvon, Floraire, Geneva.*

MARKET GARDENING.

FIELD TOMATOS.

So far the present season has been an ideal one for Tomatos planted out-of-doors, and the plants growing in the open are, as might be



FIG. 58.—DAPHNE BLAGAYANA: FLOWERS CREAMY-WHITE, FRAGRANT.

D. oleoides.—Akin to the preceding species, and from the mountains of southern Europe, from Spain to the East. It is a small shrub with glaucous leaves, larger than those of *D. buxifolia*; flowers greenish-white, fragrant, succeeded by bright red berries. It must be grown on rocks and in full sunshine. The variety *jasminea* from Corsica and the islands of the Mediterranean is distinct, owing to its more pendent flowers.

D. collina comes from the southern Apennines and eastern mountains. It is a pretty little shrub, with oblong-lanceolate leaves, white and hairy underneath, glabrous above; flowers rose-coloured in heads of five to eight, very fragrant. A plant for shady rocks and sheltered nooks. In Geneva it does not survive severe winters.

D. Fionina is a hybrid between *D. collina* and *odora*, which I obtained from Kirkstall, but it did not bear our winters. It is a sturdy plant, and I will try it again at the Floraire Garden.

D. neopolitana × is a hybrid between *Cneorum* and *collina*, which I never saw, but which M. Vilmorin cultivates.

expected, vigorous, clean, and heavily laden with large clusters of good sized fruit, which only requires a few hours' good, steady rain to swell them. The foliage should be kept thinned, that is, the compound leaves should be cut back to two leaflets. All the lateral growths must also be removed in order to allow the clusters of fruit to receive the full benefit of light and sunshine. As soon as the fruits begin to colour they should be gathered, and graded into two or three sizes. The largest fruits should be packed in paper-lined peck baskets, 12 lb. in each basket; following in the same way with the second and third sizes. The label attached to each peck should indicate the quality of the fruit which it contains—first, second, or third, as the case may be.

As to varieties, I find *Comet*, for field as well as for indoor culture, a good grower and a prodigious cropper, the fruit being of a good shape and of a fine colour when ripe. A new variety, *Tamworth Castle*, promises to eclipse even *Comet* and other well-known varieties in fruitfulness, smoothness, and perfect form of the fruits. *H. W. Ward.*

BETTESHANGER HOUSE.

THE village of Betteshanger, near Sandwich, in Kent, is situated in the heart of a purely agricultural district, miles away from any large town, and is one of those delightful old-fashioned places which forms a connecting-link with the past. It is the home of Lord Northbourne, who is the principal landowner in the district, and who derives his title from the neighbouring village of Northbourne. Here stood King Egbert's palace—sufficient testimony of the antiquity and former importance of the place. Betteshanger House is a beautiful Elizabethan mansion (see fig. 59), standing in a well-wooded park and surrounded by charming pleasure-grounds and gardens. The park is approached by a long carriage-drive, the

occupied by summer bedding plants, all looking in the height of perfection, and reflecting credit on the gardener, Mr. J. Selway.

At the end of the frame-yard, nearer the mansion, an excellent conservatory has been erected recently to take the place of one that formerly stood on the lawn quite near to the house. The new structure was quite filled with such showy greenhouse subjects as *Cinerarias*, *Schizanthus obtusus* (remarkably fine), *S. wisetoniensis*, *Astilbes* (*Spiræas*), *Arums*, *Pelargoniums*, &c, relieved with suitable greenery. Leaving this portion of the garden and entering on to the lawn a beautiful sight presents itself to the view. In front stands the old mansion, that was restored in 1851, bearing on its walls *Roses* and other

Yew hedges, with *Maples*, ornamental *Conifers* and beds of *Roses*, *Azaleas*, flowering trees, such as *Pyrus Malus floribunda*, and a number of other charming subjects.

The beds of *Tulips*, *Narcissi*, and other bulbous plants, with *Pansies*, patches of *Arabis*, *Aubrietias*, *Vinca major*, and a host of other beautiful spring-flowering plants that are succeeded later by the summer occupants of the beds make this a most picturesque spot. Beautiful as is this portion of the grounds, the gardens furnish another equally delightful spot in the shape of an alpine garden. This has been formed on the side of a rising knoll, and the patches of colours of the many occupants are observable from a distance, but it is on a closer inspection that one becomes



FIG. 59.—BETTESHANGER HOUSE, KENT.

banks on both sides of which are planted with *Hypericum calycinum* and *Petasites fragrans*, both of which luxuriate and mingle with wild *Roses* and other native flowers. The land on either side of this roadway is well wooded, and extensive plantations of *Larch*-trees growing in the close canopy system furnish evidence of the importance attached to forestry. This is further evidenced by the timber-yard just inside the park entrance, where the wood grown on the estate is cut up into requisite lengths by suitable machinery. A path to the left of the drive leads to the frame-yard, which is bounded by the potting-sheds, tool-houses, bothies, &c. The smart appearance of these necessary garden adjuncts leads one to expect something good in the general upkeep of the gardens, and in this expectation one is not disappointed. The rows of frames were, at the time of our visit,

beautiful climbers, and made still more picturesque by numbers of terraces, arches, and vases, some of the latter being antique specimens of some old-time artist's skill. It will also be noticed that our illustration shows several large specimen plants of *Myrtles* in square *Oak* tubs.

Looking away from the mansion and across the lawn the park stretches before the view, and of which we present an illustration in fig. 61. When we mention that over thirty acres of pleasure-grounds and gardens are included, irrespective of the park, some idea may be gained of the beauty of the place. The village church (fig. 61) is included in the estate, and a private approach to this edifice leads one through a delightful portion of the grounds. The walk passes by a series of terraces cut in the grass, past innumerable flower-beds, and round the old well shown in fig. 60, and is bordered by pergolas, clipped

charmed with the spot. A path leads through miniature dells, and over mounds where abutting stones and jutting rock-work are draped with masses of *Aubrietias*, *Saxifragas*, *Alyssum*, *Phlox lilacina*, *Lithospermum prostratum*, *Antennaria balearica*, *A. tomentosa*, *Arabis*, and other suitable subjects. A batch of *Tiarella cordifolia* was flowering grandly, as was also *Saxifraga Wallacei*, while the higher back-ground was furnished with taller-growing species, such as *Berberis Darwini*, various forms of *Cytisus præcox*, *C. p. lilacina*, and *C. p. var. lutea* (with lovely, soft, yellow-coloured flowers), *Daphnes*, ornamental *Conifers*, *Azaleas*, &c. A natural pond finds a place at the foot of the rockery, and this is overhung with *Sweet Briar*, *Honeysuckles*, and the *Bitter-Sweet*.

Leaving the rock garden and crossing the lawn past clumps of shrubs, some of which are shown in fig. 61, and beneath the shade of noble *Copper*

Beeches some well-designed scroll flower-beds and Roses in abundance may be observed. A grass drive from the lawn terminates in a tennis court, in the shape of a semi-circle, surrounded by shrubberies and flower borders. Shrubs succeed admirably at Betteshanger; *Arbutus Unedo* does well, as do also Magnolias, Aralias, Lilacs, *Berberis* in numerous species, *Laurus nobilis*, and other equally handsome plants.

The fruit and kitchen-gardens occupy a well-sheltered position, being surrounded by high walls on which are trained fruit-trees, but, like the majority of fruit-trees this season, there is but little fruit. Included in this part of the garden are the glasshouses, of which there is an admirable lean-to range, embracing Peach-houses, viney, plant-houses, &c., and several useful warm pits for propagating, &c. The viney at the time of our visit was about to be replanted with fresh Vines.

Before we concluded our visit we were conducted to a portion of the grounds that was interesting. It has recently been converted into a fruit and vegetable-garden, and is on a slope at a lower level than the surrounding land. A series of channels conducts the sewage from the estate over the land, and feeds the various trees, vegetables, &c., past which it flows. Fresh channels are dug at intervals, so that the ground becomes enriched and watered by this means. We were informed that excellent results were obtained on this land, although we suspect that in time the land may become soured from excess of organic acids.

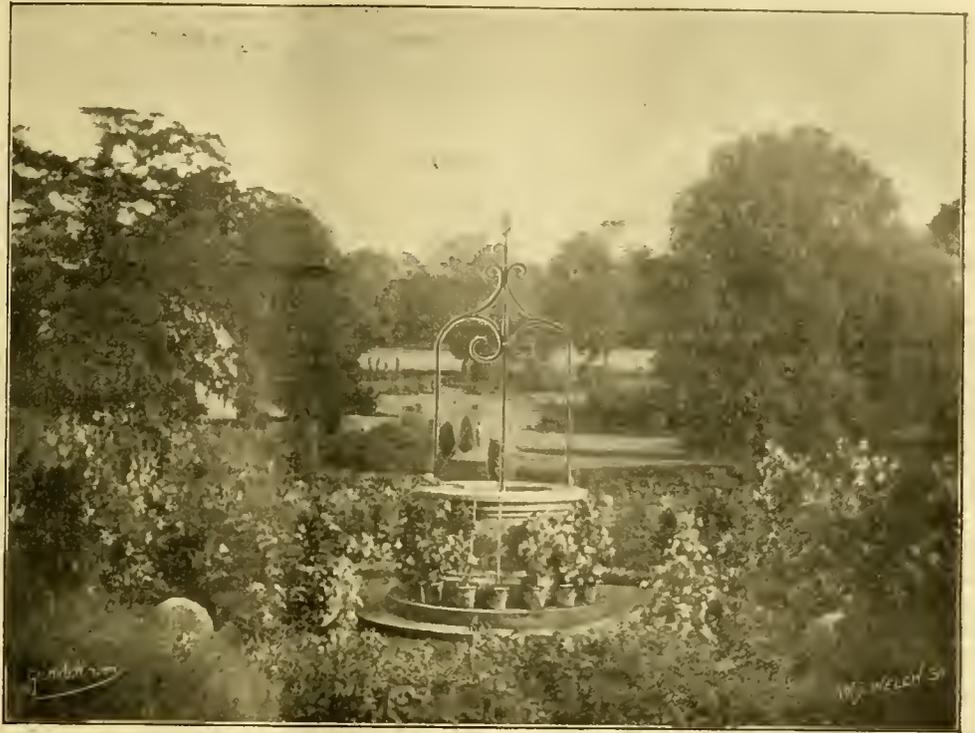


FIG. 60.—ORNAMENTAL WELL IN THE FLOWER GARDEN, BETTESHANGER PARK.



FIG. 61.—VIEW IN THE GROUNDS AT BETTESHANGER PARK.

LEAVES FROM MY CHINESE NOTE-BOOK.

[SEE SUPPLEMENTARY MAP.]

(Continued from p. 147.)

III.—KIATING-FU.

THIS is a large and prosperous city in the west part of the Province of Szechuan, some 1,800 miles inland from Shanghai. It is prettily situated at the point where the Tung and Min rivers unite, in long. 104° E., lat. 29° 34' N., and is 1,070 feet above the sea-level. It is said to contain 35,000 inhabitants. Commercially it is a very important trade centre. All goods from down river are transhipped here, those for the west being placed on rafts, which ascend the main tributary of the Tung, the Ya river, as far as Yachan-Fu. Transversely, goods from the west are transhipped from the rafts and placed on boats. It is also the centre of a very large silk industry, and holds a monopoly of the white wax trade in this part of China. The city itself is built on a flattish, more or less triangular piece of ground, the Tung forming one side, and the Min the base of the triangle. It is surrounded by low hills, many of which are nicely wooded, chiefly with Pines. Facing the south-east angle of the city, and on the opposite bank of the Min river, are two hills about 350 feet high with red sandstone precipices sheer to the water's edge. The tops and farther sides of these hills are densely clad with trees and shrubs, amongst which nestle several temples and two pagodas. Facing the embouchure of the Tung river, in a recess, is a colossal figure of a seated Buddha fully 350 feet high. The head and lower portion of the legs are the only parts distinctly visible, the body itself being hidden by brushwood (*Eriophorum comosum*), and several grasses cover the crown of the head, and above the eyes and mouth, like eyebrows and moustache respectively, giving a ludicrous appearance to the whole head. The sides of the recess are covered with sculptured designs.

Long ago, Kiating was evidently the centre of an ancient race of cave-dwellers, which the Chinese term Mantzu. (The word "Mantzu" simply means "savage," and is used loosely to designate all the aboriginal inhabitants in these parts.) The rocks hereabouts are of red sandstone, and contain hundreds and thousands of caves. These caves are more or less rectangular chambers, about 6 feet high, varying in length and breadth. Sometimes they are divided into several such chambers. These caves were excavated by no rude hands, who have left behind no other trace of themselves. Many of the caves are in inaccessible parts of the cliffs, while others are now below the level of the river. Whether they were the ordinary dwelling-places of the race or were places of refuge one cannot say. To anyone interested I would refer to the admirable account given by Baber in the Royal Geographical Society's *Journal*, Supplementary Paper, part I., vol. i.

The climate of Kiating is very enervating, being very damp, and with but little sunshine. June, July, and August are very hot months, with much rain. For days together the thermometer does not fall below 90° F., and often stands as high as 105° F. in the shade. September and October are very wet, sunless months. November is the nicest month of the whole year, and one can usually reckon on twenty fine and more or less sunny days. December, January, and February are raw and cold; the thermometer does not fall below the freezing-point, but sleet and white frost are not unknown. In March the temperature fluctuates very much. April and May, showery and warm, leading up to the summer-heat of June. Wheat is harvested in early May. Under such climatic conditions one is prepared for the sub-tropical nature of the flora that obtains. But, the paucity of temperate plants

and the number of shrubs characteristic of Hongkong and Southern China generally are much greater than might be supposed. The wooded hills are mostly clad with *Pinus Massoniana* and *Cunninghamia sinensis* in smaller numbers, those denuded of trees with scrub Oak and dense jungle of *Gleichenia dichotoma*. Others, again, are covered with coarse grass with many bushes of *Melastoma candida*, *Gardenia florida*, many species of *Rose*, *Cratægus Pyracantha*, and clumps of *Arundo madagascariensis*. The bottom-lands are given over to Rice-culture, and the clearings on the side and tops of the hills to sweet Potatoes during the summer season, and to Wheat, Pulse, and "Rape" during the winter months.

Alder (*Alnus nepalensis*), *Pterocarya stenoptera*, and *Hedychium coronarium* clothe the sides of the ditches and streamlets. Pollarded trees of *Fraxinus chinensis*, on which insect white-wax is deposited, are not uncommon around the sides of the Rice-fields. And for feeding silk-worms enormous numbers of Mulberry and trees of *Cudrania triloba* are cultivated. Fine clumps of the Bamboo (*Phyllostachys mitis*) are met with on all sides. On the sandy reaches of the river countless clumps of the lovely grass *Mischanthus sinensis* occur.

Ficus infectoria is very common, usually sheltering a tiny wayside shrine. This is the "Huang Kuo" tree of the Chinese, and one of the commonest trees in Szechuan. Around the temples and courtyards of large houses are many trees of *Cupressus funebris* and *Machilus nan mu*. This last is a handsome evergreen tree, very symmetrical in growth, with straight trunk, altogether one of the handsomest members of the Laurineæ. It and the Cypress are two of the most valuable timber trees in China.

Quercus aliena is a common tree, though seldom allowed to grow to any size. This, together with the Aloe and the Pine, are the principal sources of firewood in this neighbourhood. Most of the scrub Oak belongs to this species. The wood of the Pine is largely used for making matches at Chungking. Another common tree on the hill is *Gordonia anomala*. This is a small Ternstroemiaceous tree, with large white *Camellia*-like flowers. It blooms during the months of October and November, and is then a conspicuous object on the hillside.

Other more or less common trees are:—

Ailanthus glandulosa, *Sapinda Mukorossi*, *Stereulia platanifolia*, *Acanthopanax riciniifolium*, *Broussonetia papyrifera*, *Marlea begoniifolia*, *Paulownia imperialis*, *Melia Azedarach*, *Sapium sebiferum*, *Celtis sinensis*, *Platycarya strobilacea*, *Gleditschia sinensis*, *Cedrela sinensis*, *Pistacia sinensis*, *Rhus hypoleuca*, *R. senialata*, *Ligustrum lucidum*, *Engelhardtia* sp., *Betula alnoides* var. *pyrifolia*, *Castanea sativa*, *Cornus macrophylla*, and around habitations, *Ginkgo biloba*, *Diospyros Kaki*, *Olea fragrans*, *Trachycarpus excelsus*, and the Walnut. A curious evergreen tree (*Symplocos* sp.) is very common, and *Hovenia dulcis* also occurs.

In the autumn the *Rhus hypoleuca* forms lovely patches of colour on the hill-side. Chinese Olives (*Canarium album*) are commonly cultivated, and a few Litchis (*Nephelium Litchi*) are also grown.

Amongst the commonest shrubs here must be placed *Melastoma candida*, *Gardenia florida*, and *Mussaenda pubescens*. The first-named forms a bush 3 to 5 feet high, and is nearly always in flower. In colour the flowers vary from white to deep rose. In the distance it simulates a Rose-bush very closely. *Mussaenda pubescens*, with its thousands of white bracts, is likewise a perpetual bloomer. The *Gardenia* is even more common on the hills here than it is in Hongkong. From the capsule, called "Huang-tzu" (yellow seed), the Chinese extract a yellow paint-dye. They are also used medicinally as a rubefacient. E. H. W.

[With the present issue we give a map prepared by Mrs. Wilson showing the route followed by her husband. ED.]

(To be continued.)

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his Correspondents.)

THE GERMINATION OF SEEDS.—I am greatly obliged to "H." for his answer to my query on p. 71, where he advances several reasons for the non-germination of seeds, a list of which I gave. The one reason that the seed is old and dead is probably the right one. It is curious that the only packet of seed (*Clivia nobilis*) procured from a firm of repute has germinated, while all the others procured from some one else have practically failed, with the exception of the Aloe, which I was warned might not germinate. A certain measure of blame may be due to myself, but certainly not all. As an instance in point I may quote a recent experience. I obtained a packet of seed of *Eucalyptus citriodora*—none germinated. To test further I procured another packet, still none germinated. Then I got a third packet from the same source, when all germinated. Is it likely that the sower was in fault for the first two failures? Take another case. I sowed some *Mignonette* under similar conditions to some seed I had in my possession, which was obtained a season or two before from one of the world-famous houses. I thought it might be useless, but at any rate I tried it. What was my surprise to find that the seed I thought was old developed into sturdy little plants, whereas the seed supposed to be new was an absolute failure. I suppose it is true of seed as of all else, that the more one pays for it the better it is; and while some prolific seeders, such as *Tropæolums*, can be sold at a minimum figure, the rarer kinds cannot be obtained good except at much cost. The loss of money is not the most disappointing feature in the case, but the loss of time. It would be a great help if the leading seed raisers would draw up a germinating table of seeds of the plants and flowers grown in England. It would not only be a help to amateurs, but a check against the quantity of rubbish on the market to-day. T. R. P.

PENTSTEMONS, ETC., AT JEDBURGH.—

I have on previous occasions noted the excellence of the Pentstemons grown by Mr. Charles Irvine, nurseryman, Jedburgh, who is the founder of a new race of giant Pentstemons, and a visit to his nursery the other day revealed a fine collection of hybrid flowers. Prominent among them was the variety Mrs. Irvine. The flower is of a rosy-pink colour with a purple blotch, and a white throat slightly feathered. This flower is very large, and in it is developed the *Gloxinia* form, so much desired in the Pentstemon. The variety *Siddie* is one of the most perfect flowers in cultivation, being of a bright rose tint, with a pure white throat. Another labelled Sir Henry Irving possesses a bold flower of carmine-rose colour with a bronze blotch in the throat. Another worthy of mention is John Bell, which develops a lovely pencilled throat. The Duchess of Cornwall has a most elegant appearance, being of a light coral colour, with a throat also of white. The above are some of the newest varieties. Provost Hunter has flowers of large size, many of the blooms being 2½ inches across. I have mentioned only a selection, but the entire collection shows an almost unequalled brilliancy of colour, and they are also conspicuous for size and form of bloom, another feature being the closeness and compactness of the spike. Among the seedlings of this year are many showing great promise. On leaving the Pentstemons a lovely collection of *Phloxes* was noticed, most of them being of Mr. Irvine's own raising. I observed many excellent forms which have not yet been placed upon the market. They are all of medium height, and show immense spikes of flowers. The variety *Phyllis* is of a bright magenta colour with a purple eye; and *Beauty*, true to its name, is of a light heliotrope colour, with a white centre. The Duchess of Fife is a charming flower of rosy-lilac striped with white, with a pleasing white eye. Probably one of the finest *Phloxes* in cultivation is the variety Queen Alexandra. It develops flowers of the most perfect form, the individual bloom being large, which is an attractive feature, and it produces a magnificent truss. Many of the older varieties hold

their position, and among these Etna was prominent. Mr. Irvine's nursery has the further distinction of being the home of the white Delphinium. About four years since he perfected this flower, and it has found its way, not only throughout these isles, but largely over the Continent of Europe. Although the Delphiniums were past their best, there was ample evidence that the show had been equal to that of former years. I noticed the white Delphinium growing in considerable quantity. In the production of this new variety Mr. Irvine, who is an expert in the hybridising art, has been particularly successful. The nursery also contains a number of luxuriantly-growing Carnations. *J. W.*

POISONING BY AMANITA PHALLOIDES.—A fatal case of poisoning from eating fungi occurred in King's Lynn recently. A man gathered some specimens, had them cooked, and these were eaten by himself and his family. The fungi were *Amanita phalloides*. About the greater part of a pound was consumed. On August 8 symptoms first appeared in the youngest child, aged two years, about midnight. The mother was shortly after taken ill, and by 3 A.M. all the members of the family were in a serious condition, with the usual symptoms, diarrhoea, vomiting, and excruciating abdominal pains. The youngest child died on the 11th at 8 A.M., and the mother on the 12th at 11 P.M. Another child, aged seven, was removed to the hospital, and is considered to be out of danger, although her case gave considerable anxiety to her medical attendant. The father is convalescent. This is the third case of fungus poisoning followed by fatal results which has occurred in King's Lynn during the past twenty-five years. In all three instances the fungus was *Amanita phalloides*, eaten in mistake for the common Mushroom, and in all three cases I was able to prove its identity by gathering further specimens from the place in which the original fungi were gathered, and submitting them to persons interested. *Charles B. Plouright, M.D., King's Lynn.*

BURNHAM.—You say, "We are not aware of any vestige of monastic buildings now existing." The great dovecot of Dorney Court Farm and some walls formed part of Burnham Abbey when Paul Wentworth held it of the Crown, and, though his brother and colleague in the leadership of the Puritans in Parliament was in the Tower he had the Duke of Norfolk at Burnham in his keeping. Elizabeth could trust the Puritans against the partisans of Mary. I may note that "The Great Trees" were exempted from the Crown grant to Paul Wentworth. *Charles W. Dilke.*

AUTUMN GALES.—The serious damage to shipping by the destructive south-westerly gale which raged over this part of Devon on the 3rd and 4th of this month has been noticed by the Press, but the havoc amongst trees and shrubs, and indeed amongst outdoor plants generally, seems to have been overlooked or not recorded. The force of the gale was, perhaps, more acutely felt in this immediate neighbourhood than in any other district. In my own garden, Fuchsias, scarlet Pelargoniums, Roses, and other decorative plants had their leaves dried and curled as if by the action of severe frost. Runner Beans and Vegetable Marrows suffered in the same way. Even the Laurustinus and the Snowberry (*Symphoricarpus racemosus*) appeared dried up, the latter especially so. Everywhere facing the sea at Exmouth the gale was severely felt. The young trees along the Esplanade, planted at the edge of the path, have the appearance at the present time of being quite dead. Nor are the standard trees alone affected. Against the fronts of the houses facing the sea, shrubs, climbing plants and flowering plants are all spoilt for the remainder of the season. The common Virginian-Creeper and its ally, *Ampelopsis Veitchii*, are withered beyond recovery till another season; the leaves of the latter in almost every case are withered and brown, while the edges of the leaves of the former are curled and dry as if burnt by fire. Even the common Ivy where much exposed presents a similar appearance. Thorn trees and hedges are brown, and the leaves are falling so fast as to

cover the ground in many places. A large piece of the foreshore has recently been reclaimed, levelled, and planted with shrubs and flowering plants, all of which were making good growth, and forming an additional attraction to the place under the name of the Beach Garden. The gale came as a great misfortune for this newly-planted ground, which, being so exposed and so close to the sea, received the full force of the storm, and a thick deposit of sand on some of the beds has been the result, almost burying many of the plants. The spray from the sea probably assisted greatly in the work of destruction. The variegated *Euonymus*, which thrives so well and is planted so extensively all round the Devon coast, appears to have defied the gale better than any other plant, its healthy, glossy leaves being in no way injured. *John R. Jackson, Claremont, Lympstone, Devon.*

—A gale of extraordinary severity for the time of the year swept over this part of the West Riding of Yorks. on Friday night and Saturday, the 18th and 19th inst. It is deplorable to relate that vast quantities of Apples, Pears and Plums were blown off the trees. Vegetables of various kinds suffered greatly. Autumn Giant Cauliflowers, &c., were in many instances completely twisted off. Branches were broken off trees, and one or two had the boles snapped in two near the base. Chrysanthemums also suffered greatly. I may add that Apples and the commoner kinds of Pears promised a better crop than was anticipated. It would be interesting to know if this gale was universal over the United Kingdom. Many flower shows suffered greatly in consequence. *J. Snell, Newall Carr, Olley.*

GRAPE "DIAMANT TRAUBE."—When I first became acquainted with the late Mr. Barron's work on *Vines and Vine Culture*, I visited the old garden at Chiswick and inspected the numerous varieties that were then cultivated there. In the old orchard-house, which was in a dilapidated condition, I noticed a little-known Grape named Diamant Traube. It is described by Dr. Hogg in his *Fruit Manual*, and by Mr. Barron in his *Vines and Vine Culture*. I obtained some "eyes," and grew them into fruiting condition in pots. In September, 1889, I exhibited a basket of Diamant Traube Grapes at a meeting of the Royal Horticultural Society, and it was then awarded a First-class Certificate, which I understood was given by the unanimous vote of the Fruit Committee. I sent some canes of the variety to very distinguished quarters, but no one appears to have been successful with it; and like many other delicious Grapes, it has given place to the showy and almost flavourless varieties that have gained the favour of the public by their noble appearance. I have found this Grape especially valuable for invalids, as it is very thin-skinned, juicy, and delicate in flavour. I was agreeably surprised upon a recent occasion to see finer examples of this Grape than I have ever grown or seen exhibited. I recommended the variety to a gentleman whose residence, White Lodge, occupies a charming position on the borders of Streatham Common, but his gardener was not successful in Grape-growing. Another gardener has been appointed, and during the last year or two he has had the Vine in such excellent condition that it is bearing sixteen bunches of perfectly-finished Grapes of the finest quality, and large in berry and bunch. It is far superior to either Buckland Sweetwater or Foster's Seedling, both in texture and in flavour, and ripens earlier than either of these varieties. The Vine is planted in an inside border, with Gros Colmar, Gros Maroc, Black Hamburg, and Muscat of Alexandria, and all the Vines are fruiting well. In my opinion the Grapes, especially the "Diamant Traube," reflect the greatest credit upon the gardener, Mr. Thomas Fair, who has succeeded in showing what a valuable Grape "Diamant Traube" is when properly grown. *W. Roupell, Streatham Hill, S.W.*

WASPS ATTACKING FRUITS.—On p. 148 Mr. W. H. Clarke says that "bottles of sweetened beer treacle, &c., used as traps for these insects attract them to the trees." After several years' close observation I venture to differ from Mr. Clarke. This season, instead of hanging bottles con-

taining beer and sugar against the walls when the wasps first made their appearance, as has been my practice formerly, I had all the nests that could be found within half a mile radius destroyed. Notwithstanding this they came, and I was once more tempted to use bottles containing beer and sugar as traps. The bottles were emptied on the third day after use, and I found we had captured nearly a peck of wasps and flies. My opinion is that the wasps and flies (and in our case hornets too) find the fruits whether the traps are present or not, and if the traps are there so much the better, as they certainly are a counter-attraction for the wasps, flies, &c. Here we have upwards of 1,500 yards of wall fruits, which would cost much to cover with Hexagon wasp-proof netting as recommended by Mr. Clarke. I should much like to know the general opinion among gardeners on the above subject. *W. J. Snell, Wimpole Hall Gardens, Royston, Cumbs.*

THE ROSARY.

HYBRID TEAS.

MR. GEORGE PAUL, speaking at the Rose Congress held in Paris in May last, in allusion to the origin of hybrid Tea Roses that have been introduced since La France was "sent out," said that even before that Rose was introduced there were already plants in existence that had a similar origin. Mr. Paul himself introduced Cheshunt Hybrid, one of the first hybrid Teas. This was produced accidentally in a house where Prince Camille de Rohan was growing. Just below this plant was a Rose much resembling the Bengal Rose, and the result of the cross between the two flowers was the variety now known as Cheshunt Hybrid.

When the late Mr. Henry Bennett tried some experiments he obtained a fine series of hybrid perpetuals, among them Lady Mary Fitzwilliam. It is so difficult to distinguish between hybrid perpetuals and hybrid Teas that some day both groups will be classed together as under the general category of hybrids.

Mr. Paul expressed the hope that English, French, and American hybridisers would not neglect the fine group of hybrid perpetuals which were so valuable for fertilising hybrid Teas, as it would then be possible to obtain a series of hybrids which would bloom from spring to the end of November, as was already the case with some varieties of the Bengal Roses.

Obituary.

RICHARD BOSTON.—We learn with regret of the decease of this florist, who died at Burley, near Leeds, on the 16th inst., and was interred at Lawnswood Cemetery on the 18th. Deceased was sixty-three years of age. While not in the strict sense of the term a professional horticulturist, his life for many years had been in close touch with gardeners. For over thirty years he owned and personally conducted one of the largest fruiterer's businesses in the North of England, situate in Boar Lane, Leeds. He displayed indefatigable energy in advancing the claims of horticulture as an uplifting influence on the whole population in large towns and cities. As Chairman of the Parks and Open Spaces Committee he had for many years opportunities of carrying out his views in this matter. It is questionable if any other city in England is better supplied with parks and open spaces than is the city of his adoption. Mr. Boston was a native of the village of Kirkby Wiske, near Bedale, and a nephew of Mr. William Boston, nurseryman, of that place, who is, I believe, one of if not the oldest nurseryman in business in Yorkshire. *H. J. C.*

SOCIETIES.

BISHOPS STORTFORD HORTICULTURAL.

AUGUST 16.—The thirty-sixth annual Show of the above Society was held on the above date, by permission of John Barker, Esq., in the grounds of the Grange, and as regards entries and general excellence it eclipsed any previous year's efforts. There was in addition a record gate—over 10,000 persons paying for admission. The weather was favourable. The officials are deserving of much praise for their excellent management.

Open Classes.—There were twenty-one open classes, and these constituted a leading feature of the show. The premier class was that for groups of plants arranged for effect, not necessarily in a half circle, but with taste and for good effect. Placed in the centre of a large tent they formed objects of great attraction during the day. The 1st prize was won by a beautifully-arranged group of flowers and grasses staged by Mr. Harrison, gr. to Col. G. B. ARCHER HOUBLON, Hallingbury Place, Bishops Stortford. J. BARKER, Esq. (gr., Mr. Beech), was a close 2nd; Mr. C. GOLD, Stansted, 3rd.

For smaller groups, Messrs. WILBY, Mrs. TAYLOR, and Mr. W. HOLLAND were the winners.

In the class for foliage plants Mr. GOLD was a good 1st, with Col. A. HOUBLON, 2nd; while for six foliage and for six stove plants Mr. GOLD and Mr. J. BARKER were the winners.

The class for exotic Ferns was well contested, Messrs. GOLD, BARKER, and HARRISON winning in the order named.

Groups of tuberous Begonias are always a feature at this show, and this year they were of the usual high-class standard, the plants, though not large, being of splendid quality. Premier honours were taken by Mr. W. SMITH, who for many years has been a strong supporter of the Society. Mrs. TAYLOR was a good 2nd. The other Begonia classes were all strongly contested. Messrs. HARRISON and HOLLAND were 1st in each of two Gloxinia classes. Mr. BARKER was 1st for single zonal Pelargoniums, and also 1st for Coleus; Messrs. HOLLAND and CALVERT being 2nd and 3rd respectively. Messrs. BARKER and HARRISON led in the class for Fuchsias, while Messrs. JEFFERIES and GOLD had the best table plants. Mr. BARKER staged a splendid group of early Chrysanthemums, there being no other competitor.

Cut Flowers.—These occupied much space, and were generally of good quality. For twenty-four bunches of hardy, bulbous or perennial flowers Messrs. PAUL & SON, Chesnut, were an easy 1st with grand bunches, including some very fine Gladioli. Mr. W. GEE was 2nd; and Mr. H. C. PULHAM, Elsenham, 3rd. In the smaller class for twelve bunches of hardy flowers, Messrs. HARE, BARKER, and FORBES won in the order named. Mr. J. BARKER had the best stove and greenhouse cut flowers; while Messrs. HARRISON, BARKER, and Sir A. WILSON had the best Sweet Peas in a very strong competition. Roses were of indifferent quality. Mrs. TAYLOR and Mr. BARKER had the best stands in the larger class, and Messrs. FORBES and ABBOT in the smaller.

Table Decorations.—A large tent was allotted to ladies' classes, and there was no lack of exhibitors. There was less crowding of material than is often seen, but some tables were furnished with too many colours, and others with material the colour of which would be had by artificial light. The 1st prize display was an excellent one, and was put up by Miss G. P. BELL, Safron Walden, who used Orchids, Lily of the Valley, and Statice. Miss BLYTH, Stanstead, was a close 2nd. Miss M. J. CLAYDON, 3rd. Mrs. G. GOLD had the best decorated fire-place. Mrs. LIVESY and Miss HARWOOD had the best decorated baskets of flowers in the order named; and Miss BLYTH and Miss CLAYDON the best large decorated vases.

Fruit.—Excellent produce was seen in the classes for fruit, and there was a splendid competition. For the best collection of eight dishes some excellent exhibits were staged. Colonel A. HOUBLON was placed 1st, his collection including good Peaches, well-finished Grapes, a meritorious Melon, and Nectarines. Mr. J. BARKER was a close 2nd with fruit not quite ripened, but of good size and finish. The same exhibitors won in the same order for a basket of mixed fruit. Mr. A. JEFFERIES was a good 1st for Black Hamburg Grapes; Colonel A. HOUBLON being 2nd. In the class for any other black Grapes, Colonel A. HOUBLON won with fine examples of Madresfield Court. R. C. GOSLING, 2nd. Mr. J. BARKER was an easy 1st for white Grapes, with bunches of fine colour. 2nd, Colonel A. HOUBLON. The best Melons in two classes from Messrs. PEARSON and JEFFERIES.

Vegetables were both numerous and good. Mr. A. JEFFERIES had the best collection in the larger class, having Peas, Perfection Tomatoes (good), Cauliflowers, Ailsa Craig Onions and Syon House Potatoes. 2nd, Mr. BARKER. For a collection of six varieties, Messrs.

CALVERT and WATTS and Mrs. TAYLOR won in the order named.

Among the non-competitive exhibits Messrs. PAUL, Chesnut, staged hardy flowers; Mr. MORTIMER, Farnham, a very fine lot of Dahlias; Messrs. BURCH, Peterborough, Roses; Messrs. DOBBIE & Co., Rothersay, Potatoes; and Mr. A. PERRY, Winchmore Hill, N., hardy plants.

ENQUIRY.

BATS.—Can any reader inform Churchwarden how to rid a church of bats, with which it is much infested?

ANSWERS TO CORRESPONDENTS.

** EDITOR AND PUBLISHER.—Our Correspondents would obviate delay in obtaining answers to their communications, and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all communications relating to financial matters and to advertisements should be addressed to the PUBLISHER; and that all communications intended for publication, or referring to the Literary department, and all plants to be named, should be directed to the EDITOR. The two departments, Publishing and Editorial, are quite distinct, and much unnecessary delay and confusion arise when letters are misdirected.

APPLES: *Anxious.* The following varieties succeeded on clay land where it has been properly drained and the trees planted as near the surface as possible. *Dessert:* Beauty of Bath, Allington Pippin, James Grieve, Worcester Pearmain, Lady Derby, Summer Golden Pippin, Mr. Gladstone. *Culinary:* Bismarck, Bramley's Seedling, Newton Wonder, Grenadier, Royal Jubilee, Golden Noble, Gascoigne's Scarlet.

BEONIAS: *W. W.* There is no disease, but excessive growth, leading to the formation of the outgrowths. Try a little gentle starvation by keeping the plants drier.

CATTELYAS EATEN: *F. H.* The injury is caused by the grub of a fly, *Isosoma orchidearum* (fig. 62), which was first described in our

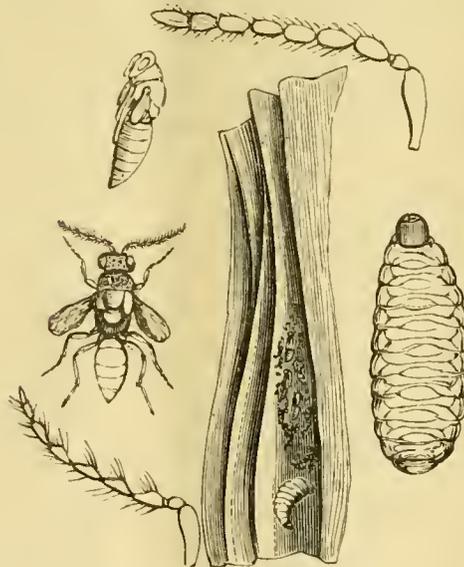


FIG. 62.—ISOSOMA ORCHIDEARUM, THE ORCHID GRUB.

columns, 1869, p. 1230). We fear you can do nothing but destroy the grub when you see evidences of its presence.

CARNATIONS: *J. B.* We do not undertake to name florists' flowers. Send them to some grower.

CARNATIONS: *J. McL.* No fungus or organic disease is present on the growth of *Dianthus Heddewigii*. Some local cause, only to be determined on the spot, has caused the mischief. The portion sent reveals nothing.

CUCUMBER DISEASED: *Roden.* The plant is badly attacked by eel-worm. Turn out the old soil and thoroughly sterilise it before using again. Do not cultivate Cucumbers in the same house for a season.

DAHLIA SOCIETY: *W. H. A.* The Secretary is Mr. Percy Tulloch, Sterndale, Hove, Brighton.

FLOWER SHOWS: *Correspondent.* Tastes and circumstances differ materially from year to year. We should cite the Temple, Shrewsbury, and Wolverhampton shows as in the first rank. This year the Edinburgh show will probably be the most important.

FRUIT AND VEGETABLES: *W. D.* In the absence of any precise stipulation you have no right to do as you propose or to claim compensation. The Figs are affected with a fungus (*Cercospora Boileana*, see *Gardeners' Chronicle*, July 7, 1900, p. 5). Burn the affected leaves. Spray with Bordeaux-mixture next year.

FRUIT FOR NAMING: *Correspondents sending Apples should do so when they are fully developed, in order that all their known characteristics may be present. Pears should be nearly or quite ripe.—R. M. L., Dublin.* Apple Stone's or Loddington Pippin.—*E. R.* Plums, 1, Early Blue; 2, Prince of Wales.

LIMES: *J. W. M.* Apply to Messrs. Draper & Co., Covent Garden Market.

LOAM: *J. C.* What you send seems well adapted for Chrysanthemums, indeed for anything.

NAMES OF PLANTS: *W. J. C.* *Eucomis punctata.*—*H. E. 1,* *Dracocephalum virginianum*; 2, *Helenium pumilum.*—*Case Brothers.* *Centaurea moschata*, a variety sent out, we believe, by one of the German houses.—*A. B. H.* The Lime is catalogued in the *Kew Hand-List* as *Tilia platyphyllos* var. *asplenifolia*. It is the *T. laciniata* of gardens. The *Thuya* is *T. orientalis* var. *pendula*, also called *T. filiformis.*—*Stream, Hampton.* 1, *Lythrum Salicaria*; 2, *Epilobium hirsutum*; 3, *Impatiens noli me tangere*; 4, *Scutellaria galericulata*—*G. P.* *Lycostera formosa.*—*H. C.* *Wicklow.* *Oncidium Schlimii.*—*W. M., Sussex.* 1, *Onychium lucidum*; 2, *Selaginella Wildenovii.*—*P. A. C.* 1, *Vitis* (not recognised); 2, *Colutea arborescens*, *Bladder-Sanna*; 3, *Cupressus pisifera*; 4, *Garrya elliptica*, male flowers; 5, *Pinus excelsa*; 6, *Abies Pinsapo.*—*J. C. W.* Why address the Publisher on such a matter? 1, *Linaria purpurea*; 2, *Hypericum Androsæmum*; 3, *Achillea Ptarmica*; 4, not a Fern, but a *Thalictrum* probably *T. minus*; 5, not a Fern, but a *Thalictrum*, probably *T. flavum*; 6, *Catananche cerulea.*—*Single W.* Yes, a large percentage of *Cytisus Andraeanus*, we believe, comes true from seed. 1, *Thuya plicata*, the *gigantea* or *Lobb* of gardens; 2, *Cephalotaxus pedunculata*; 3, *Juniperus virginiana.*—*An Old Subscriber.* *Cotoneaster frigida*; *Oncidium* next week.—*C. C., Ireland.* *Cattleya Leopoldi* and *Crassavola Perrinii.*—*M. C. T.* *Ceanothus americanus* var. *opaca.*

PLUM-LEAVES: *G. W. B.* Scorching from the sun when the leaves were wet, or possibly the effect of strong gales or lightning.

SEEDLING VIOLA: *J. W. M.* Yes, we think it very pretty, but we are quite unable to say whether there are any better of the same kind. Send to some specialist.

TOMATOS: *B. H.* The discoloured condition is not due to fungi, but to a weakened state of the plant, due perhaps to the absence of sufficient potash in the soil. Try an application of sulphate of potash—a small handful in a pailful of water.

VINES: *A. W.* Your Vines are affected with Browning, a mysterious disease, probably due to a fungus, but concerning which doctors still differ. Cut the affected canes away and burn them. It is very destructive, so that you must exercise every precaution in the matter of strict cleanliness, ventilation, &c.

VIOLAS: *C. A. B.* We find no fungus. The death of the roots and foliage may be due to drought.

COMMUNICATIONS RECEIVED.—*S. W. F.—C. W. D.—S. H. A. B. H.—Sir W. T. T. D.—Messrs. Rivers—D. W. (next week)—W. C. (next week)—A. W. (next week)—C. C. (next week)—A. B.—An Old Subscriber (next week)—W. J. C.—F. B., Bonn—E. D.—G. T.—W. H. A.—M. S.—W. B. H.—Messrs. Sander, Bruges.—G. H.—T. W.—L. G., Brussels.—J. H. W.—W. E. B., Grepada.—H. W.—J. A. R. (next week)—W. D. B.—D. B.—T. E. G.—H. C.*

(For Markets and Weather, see pp. x. and xii.)

SHROPSHIRE HORTICULTURAL.

EXHIBITION AT SHREWSBURY.

AUGUST 23 & 24.

"A Better Show than Ever."

THAT "nothing succeeds like success" has been demonstrated time and again by men and matters of most opposite character, and the Shrewsbury Show will continue to be an event of much importance, partly because it has succeeded so well in the past. But how has it obtained such an influential position in the world of horticulture? Inaugurated in 1875, when at the first exhibition a sum of only £200 was offered in prizes, the subsequent management of the Society by the Committees and Secretaries, Messrs. Adnitt and Naunton, has been so consistently successful that an unusual rate of progress has been maintained almost uninterruptedly to the present day. The annual exhibition is the most popular horticultural event in the provinces, and it is visited by more gardeners from all parts of the country than is any show which is held out of London.

There have been many and varied circumstances that have contributed to this fact, but there are three matters which are most important. In the first place, no one who has been to Shrewsbury has ever had reason to complain of discourtesy, exhibitors, judges, and the representatives of the Press are given every consideration that is possible, and this has created a widespread affection for the Shropshire society.

The Committee has also recognised fully that the one thing needful to obtain a grand competitive show is to offer prizes of substantial value, and higher than are offered elsewhere. But there is also a third contributory cause of success, and this is that the Committee has from time to time introduced new features to the shows that have enormously increased their interest. The last move in this direction was the institution of the Champion Grape Class several years ago, in which a Silver Challenge Cup of the value of 50 guineas is offered, in addition to the liberal money prizes. Since this class was established the best Grapes exhibited in England have been seen at Shrewsbury.

And this leads us to say that we are looking to the ingenuity of the Shropshire Committee to devise some further means of introducing novel effects in the exhibition that will serve to prevent the interest of the general public from waning, as well as that of exhibitors and gardeners. It may be that even in the arrangement of the plants and flowers something in this way could be done. The appearance of the great plant tent, for instance, already becomes somewhat monotonous from repetition, the general effect being much the same one year as another, although it has never been more beautiful than on this occasion, when the decorative plants were certainly better than we have previously seen them. We refer particularly to some of the plants exhibited in pots of not greater diameter than 10 inches.

For the rest there were few, if any, visitors to the show that would not describe it as the best yet held, good though previous ones have been. Fruit continues to be the most interesting part of the Shrewsbury show, and on this occasion it seemed to us of better quality than ever. This was certainly the case in the classes for collections of sixteen dishes and twelve dishes of fruit. Mr. Goodacre, Lord HARRINGTON's gardener, again won the 1st honours in the larger class, and also in the competition for the best table arranged as for dessert. His success year after year, and against the most formidable opponents, is wonderful. Interest was fully maintained in the Champion Grape class, and Mr. Shingler, Lord HASTINGS' gardener, again won the 1st prize, which includes the Silver Cup. This is the third occasion on which Grapes grown by Mr. Shingler have won this Cup, and under ordinary conditions, therefore, it would have become his property; but, in the view of the Society, Lord Hastings is the exhibitor, and the late Lord Hastings died after winning the Cup twice. Consequently the present peer

has only won it once, and has still but one share in its ownership. It may seem rather hard for the gardener, but the employer is rightly regarded as the exhibitor in all cases. Mr. Shingler, however, is entitled to all the honour possible for having won the Cup against all Britain three times, though for two employers.

Vegetables were of exceptional quality, and abundant.

In the cut flower classes the Dahlias were most prominent, and excellent exhibits of them were made. Then in quantity Sweet Peas were perhaps even more numerous.

Amongst the flowering plants, other than those in the large collections, mention may be made of the remarkable tuberous-rooted Begonias from Mr. DAVIS, Pershore, a farmer, who, having cultivated these plants for some years as a hobby, is now regarded as a cultivator of quite exceptional skill.

The weather on the first day was not good. In the morning rain fell heavily and continuously, but afterwards, at 10 o'clock, appearances improved; there was intermittent sunshine with occasional showers, which became more frequent and severe in the afternoon. All the same, with the experience of the drenching rain on the first day at last year's show fresh in our memory, we refrained from grumbling.

The entries exceeded those of last year by several hundreds. The income of the Society last year amounted to £4,554, the gate-money being £2,431.

FRUIT.

TABLE ARRANGED AS FOR DESSERT.

A class of this kind is nowhere better carried out than it is at Shrewsbury.

The conditions of the competition may be summarised as follows:—The tables measured 10 feet by 4 feet 6 inches, and were to be decorated with plants shown in pots not exceeding 5 inches in diameter, cut flowers (excluding Orchids), and cut foliage. Not more than fifteen dishes of fruit could be shown, and they were selected from the following list:—

	Maximum No. of Points for each dish.
2 vars. Apples 6 on each dish ...	7
2 " Apricots 9 " ...	6
2 " Cherries 50 " ...	5
2 " Figs 9 " ...	7
2 " Black Grapes 1 bunch, to dish (Pointed as in Champion Grape class.	7
2 " White Grapes 1 " ...	7
2 " Melons (single fruit not to be cut) ...	8
2 " Nectarines 6 on each dish ...	8
2 " Peaches 6 " ...	8
2 " Pears 6 " ...	7
1 " Plum 9 " ...	6
1 " Strawberry 40 " ...	6

For decoration the maximum number of points was as follows:—

Beauty of flower and foliage ...	8
Harmonious blending of colours ...	10
General arrangement for effect ...	10

The prizes offered were very liberal:—1st £15, 2nd £12, 3rd £8, and 4th £5. This year there were five competitors, and the 1st prize was won by the Earl of HARRINGTON (gr., Mr. J. H. Goodacre), whose exhibit gained 132 points. These were made up as follows:—

	No. of Dishes.	Points.
Apples ...	1	7
Figs ...	1	5
Grapes (White) ...	2	16½
Grapes (Black) ...	2	18
Melons ...	2	15½
Nectarines ...	2	13½
Peaches ...	2	14½
Pears ...	2	12½
Plums ...	1	5½
Beauty of flower and foliage ...		7
Blending of colour ...		8½
General arrangement for effect ...		8½

The maximum number of points was obtained for Ribston Pippin Apple, and one of the Melons. Souvenir du Congrès Pears were splendid, and all of the fruits very good. They included Bellegarde and Royal George Peaches, Transparent Gage Plums, Elruge and Pineapple Nectarines, Dr. Guyot as well as the Souvenir du Congrès Pears, Black

Hamburg, Muscat of Alexandria, and Madresfield Court Grapes, and wonderful Ribson Apples, in addition to Melons and Figs. The flowers used in decoration consisted of Montbretias and Francoas, relieved with trailing growths of Selaginellas. The 2nd prize was obtained by G. FARQUHAR, Esq., Eastnor Castle (gr., Mr. G. Mullins), whose number of points was 126; against 113 points obtained by T. CORRETT, Esq., Impney Hall, Droitwich (gr., Mr. F. Jordan), who was third; and 111½ points awarded to Lord BIDDULPH, Ledbury Park (gr., Mr. J. Dawes), who had the 4th prize.

COLLECTIONS OF FRUIT.

The collections of fruit arranged on one side of the centre tables in the large fruit-tent had a better effect than ever, and were of excellent quality.

Sixteen dishes, distinct. — Notwithstanding the exacting nature of this class there were five competitors. The 1st prize was gained by Lord HARRINGTON, whose exhibit was of extraordinary merit, especially from the point of view of weight, and in some cases finish and colour also. His Grapes were Black Hamburg, of good weight and richly coloured; Muscat of Alexandria, of enormous size in the bunch, but lacking colour and finish; Madresfield Grape (good), and Chasselas Napoleon, of very large size and good quality. He had also excellent, brilliantly coloured Elruge Nectarines, fine Royal George Peaches, large and intensely coloured fruits of Emperor Alexander Apple, Moor Park Apricot, Transparent Gage Plums, Negro Largo Figs, Souvenir du Congrès and Triomphe de Vienne Pears, Morello Cherries (extra good), the Strawberry-Raspberry, and two Melons. A very fine exhibit from T. CORRETT, Esq., obtained the 2nd prize. In this collection the Madresfield Court and Black Hamburg Grapes were very good, Dymond Peaches and Hems Kirk Apricots were excellent, Triomphe de Vienne Pear good, Pineapple Nectarine excellent, &c. 3rd, J. MARTIN WHITE, Esq., Balruddery (gr., Mr. R. Cairns); 4th, G. FARQUHAR, Esq.; and 5th, the Hon. E. L. WOOD, Temple Newsam, Leeds (gr., Mr. R. Dawes).

For decorations in this class T. CORRETT, Esq., won the 1st prize; G. FARQUHAR, Esq., 2nd prize; and Lord HARRINGTON the 3rd prize.

Twelve Dishes, distinct. — Pineapples were excluded from this class. There were three competitors, and the 1st prize was well won by Lord BIDDULPH, Ledbury Park (gr., Mr. Jas. Dawes). He had Black Hamburg, Gros Maroc, and Muscat of Alexandria Grapes, Diamond and Grosse Mignonne Peaches, Lord Napier and Humboldt Nectarines, Souvenir du Congrès Pears, Transparent Gage Plums, Brunswick Figs, Lady Sudeley Apple, and Hero of Lockinge Melon. The 2nd prize was won by Mrs. F. NEED, Great Malvern (gr. Mr. J. Jones); and 3rd by J. DRAKE, Esq., Market Rasen (gr. Mr. S. Bontoff). The prizes for decoration were in this class awarded in the same order as those for the fruit.

Nine Dishes, distinct. — In this competition for the smallest number of dishes, reserved to cultivators in the county of Salop, there were four very pretty and meritorious exhibits. The best collection was one from C. F. K. MAINWARING, Esq., Oteley, Ellesmere (gr. Mr. C. Wilkins); the Rev. T. M. BULKELEY OWEN won the 2nd prize, and Mrs. SWANN, Halston Hall (gr. Mr. C. Roberts), the 3rd prize, but this exhibitor had the 1st prize for the decorations used in the class.

SINGLE DISHES OF FRUIT.

Peaches were, as they always are at Shrewsbury, of the highest quality. There were sixteen exhibits of six fruits each, and the prizes were awarded as follows:—1st, for Bellegarde, as shown by G. F. BATES, Esq., Hereford (gr., Mr. R. Grindrod); 2nd, Royal George, from the Earl of HARRINGTON; and 3rd, Dymond, from J. W. FLEMING, Esq.

Nectarines displayed even more depth of colour than the Peaches. The 1st prize was awarded to six splendid fruits of Lord Napier, from Lord HARRINGTON; the 2nd prize to Humboldt, shown by the Hon. E. L. WOOD; and the 3rd to the variety Spencer, from J. DRAKES, Esq.; Downton, Rivers' Early and Pit-maston Orange were also exhibited in this class.

Apricots.—There were eleven dishes of Apricots, the fruits in some of them being remarkable for their large size and good colour.

Melons.—More variety is usually seen in the classes for Melons than in those for most other fruits. In the class for the best green-fleshed fruits, the fruits varied

very much in size especially. The 1st prize was awarded to an exceedingly small fruit of the variety Earl's Favourite, which had evidently been selected for its superior flavour. The 2nd and 3rd prizes also went to small fruits, thus showing that in Melons at least judges do not always give the 1st place to mere size. In a competition for the best scarlet-fleshed variety there were as many as twenty fruits shown, and the prizes were awarded as follows:—1st, R. H. KENYON, Esq., Pradoc, Oswestry; 2nd, W. J. LEGG, Esq., Madeley Market; and 3rd, Captain T. A. M. DICKIN, Loppington House, Shrewsbury. In the class for white-fleshed Melons there were fifteen fruits shown, the Hon. E. L. WOOD winning the 1st prize.

Plums.—The best Gage Plums were beautiful examples of Transparent Gage, and were shown by the Earl of HARRINGTON, and the best yellow Plums were Golden Drop, shown by the same exhibitor. Of purple or red-fruited Plums there were Prince Englebert, shown by the Rev. T. M. BULKELEY OWEN: the variety Kirke's, from the Earl of HARRINGTON, being 2nd.

LOCAL CLASSES.

There were classes for six dishes of fruit distinct, also for single dishes of Apples and Pears, shown by exhibitors in the county, and the exhibits seemed to indicate that the holding of the shows at Shrewsbury has an effect in encouraging good cultivation in the neighbourhood, as well as in distant parts. The 1st prize in the class for six dishes of fruit was won by Mrs. F. ALDERSON, Samson Hill.

Cherries were very fine, and of the nine dishes staged the best were of the variety Bigarreau Napoleon, shown by G. FARQUHAR, Esq.

CHAMPION GRAPE CLASS.

If there is one class at Shrewsbury that excites more general interest than any other it is this one, which was established in 1902. Each exhibit consists of twelve bunches of Grapes, in four or more distinct varieties, but not including more than four bunches of any one variety. In our opinion the Society has done well to make the maximum numbers of points obtainable for the different varieties correspond approximately to the degree of merit in the particular variety. Thus the maximum for Muscat of Alexandria was 11 points, for all other varieties of Muscat (black or white), and for Black Hamburg 10 points, and all other varieties of Grapes 9 points. The bunches were staged on boards in two tiers 2 feet 3 inches in width. The judges were instructed to regard superior cultivation and finish as of the greatest importance. The 1st prize consisted of a Silver Cup value 50 guineas, and £20 in cash; 2nd prize £16, 3rd £12, 4th £7 10s., 5th £5, and 6th £4. The Silver Cup has to be won three times by the same exhibitor before it becomes his property. In 1902 the winner was the late Lord HASTINGS (gr. Mr. W. Shingler); in 1903 Lord HARRINGTON (gr. Mr. J. H. Goodacre), and in 1904 Lord HASTINGS won it for the second time. When therefore the 1st prize was awarded Lord HASTINGS on Wednesday last, it was surmised by some that the Cup would become his property. This was not the case, however, because the present Lord HASTINGS has won it but once, and his late father won it twice. The Grapes shown by Lord HASTINGS on this occasion were as follows, with the number of points awarded to each bunch:—

FIRST PRIZE EXHIBIT.

Variety.	Maximum No. of Points.	Points awarded.
1. Madresfield Court ...	10	9½
2. Muscat of Alexandria ...	11	9½
3. Mrs. Pince ...	10	9½
4. " ...	10	9½
5. Muscat of Alexandria ...	11	9½
6. Madresfield Court ...	10	9½
7. Gros Maroc ...	9	8½
8. Alnwick Seedling ...	9	9
9. Muscat of Alexandria ...	11	10
10. " ...	11	9½
11. Madresfield Court ...	10	9½
12. Alnwick Seedling ...	9	9
		112½

It will be seen that the maximum number of points was awarded to each of the bunches of Alnwick Seedling, but to no other variety. The bunches, however, of Mrs. Pince, Madresfield Court and Muscat of Alexandria (excepting one bunch) were very heavy bunches,

and were almost perfect in colour and finish. The 2nd prize was won by the Earl of HARRINGTON, who showed the following varieties:—

SECOND PRIZE EXHIBIT.

Variety.	Maximum No. of Points.	Points Awarded.
1. Muscat of Alexandria ...	11	9
2. Madresfield Court ...	10	9½
3. Muscat of Alexandria ...	11	9
4. Black Hamburg ...	10	9
5. Muscat of Alexandria ...	11	9
6. Madresfield Court ...	10	9½
7. Madresfield Court ...	10	9½
8. Muscat Hamburg ...	10	8
9. Black Hamburg ...	10	9
10. Muscat of Alexandria ...	11	9½
11. Black Hamburg ...	10	9
12. Madresfield Court ...	10	9½
		109

In no case was the maximum number of points awarded to a bunch in this exhibit, yet the general quality was so high that the total number gained was only 3½ fewer than in the 1st prize exhibit. The 3rd prize was won by J. M. WHITE, Esq., Balruddery (gr. Mr. R. Cairns), who was awarded 95 points. 4th, G. FARQUHAR, Esq., Eastnor Castle (gr. Mr. G. Mullins), who obtained 90 points. 5th, the Hon. E. L. WOOD, Temple Newsam, Leeds (gr. Mr. R. Dawes), with 76 points.

Each collection was decorated with flowers or foliage plants (in pots not exceeding 5 inches in diameter), also cut flowers or foliage in glass or otherwise. The decorations were not considered when awarding the prizes for Grapes, but three additional prizes were given for the best decorated exhibits, and the 1st prize was awarded to J. DRAKES, Esq., Market Rasen (gr. Mr. S. Bontoff).

SPECIAL VARIETIES OF GRAPES.

Four Bunches, two Black and two White.—In this, the largest class in the ordinary Grape classes, there were eight competitors, and an excellent exhibit of Madresfield Court and Muscat of Alexandria, shown by W. MARSH, Esq., Bath (gr. Mr. W. Taylor), was awarded the 1st prize. The bunches of Muscat of Alexandria were of average form and colour, but were remarkable for the large-sized berries and considerable weight. J. WILLIS FLEMING, Esq., Chilworth Manor, Hants (gr. Mr. W. Mitchell), was 2nd; and Lord HARLEIGH, Brogyntyn (gr. Mr. T. Lambert), 3rd, with the same varieties.

Black Hamburg.—Of four exhibits in a class for two bunches, the best was from J. WILLIS FLEMING, Esq., who had heavy, well-shouldered bunches and highly-coloured berries, which would have been even better had the thinning been more severe. 2nd, C. F. K. MAINWARING, Esq., Oteley, Ellesmere (gr. Mr. C. Wilkins); and 3rd, Mr. W. A. COATES, Glan Conway. In a class for a single bunch of the same variety Mr. W. A. COATES won the 1st prize somewhat easily from seven other competitors, and mainly owing to the good size and colour of the berries.

Black Grapes (Muscat Varieties). There were few exhibits in this class. The variety Muscat Hamburg, as shown by the Rev. F. M. BULKELEY OWEN, Tedsmore Hall, West Felton, was placed 1st; Madresfield Court and Mrs. Pince, from J. BRINTON, Esq., Stourport (gr. Mr. W. H. Wilson), 2nd; and rather badly-coloured Muscat Hamburg, from E. A. YOUNG, Esq., Tan-y-Bryn (gr. Mr. A. Ruddock), 3rd.

Madresfield Court.—This was a good class, and excellent bunches from J. WILLIS FLEMING, Esq., were found for the 1st prize. They were not exactly a good pair, as one bunch lacked the handsome shoulders seen in the other, but both were of considerable weight, and in colour and size of berry left little to be desired. J. BRINTON, Esq., was 2nd; and the Earl of HARRINGTON, 3rd.

Black Alicante.—For this variety there were five competitors, but the 1st prize exhibit, from W. MARSH, Esq., were much the best, being very heavy and of intense colour. They would have been better, however, had the berries been of larger size. 2nd, Lord TREVON, Brynkinalt (gr. Mr. W. Davies); and 3rd, Col. C. FRANCE-HAYHURST, Middlewich (gr. Mr. A. H. Hall).

Any other Black Grape.—The variety Gros Maroc as shown by W. MARSH, Esq., was awarded the 1st prize, the bunches being very fine in weight, size of berry, and

in colour. Lord HASTINGS, Melton Constable (gr. Mr. Shingler), won the 2nd prize; and C. F. K. MAINWARING the 3rd, with the same variety. Alnwick Seedling appeared to be the only other variety exhibited in this class.

White Muscats.—The exhibits of Muscats of Alexandria were not specially remarkable. Of the six bunches shown, the best was from Col. C. H. FRANCE-HAYHURST; and the Earl of HARRINGTON had the best for 2nd prize. A very highly-coloured bunch from T. CORBET, Esq., Impney Hall, Droitwich (gr. Mr. F. Jordan), was too small to obtain the prizes, but the berries were the most tempting of any in the class. In the larger class for two bunches there were nine exhibits, and the quality was generally better. The 1st prize was won by W. MARSH, Esq., who had one short, thick bunch and one very long bunch, a had pair, but both heavy and having very large berries and satisfactory in colour. 2nd, Col. C. H. FRANCE-HAYHURST; and 3rd, Earl of HARRINGTON. In the 2nd and 3rd prize exhibits the berries were in a riper condition than were those in Mr. MARSH's exhibit.

White Grapes, any other variety.—A really excellent pair of bunches of Buckland Sweetwater obtained the 1st prize in this class. They were shown by H. A. ATTENBOROUGH, Esq., Daventry (gr. Mr. A. Child), and the berries were of wonderful size, while the peculiar transparent appearance so characteristic of the variety was splendidly developed. The same variety but in a much inferior condition, from Capt. HETWOOD-LONSDALE, Shavington Hall (gr. Mr. J. Mills) was placed 2nd; and Chasselas Napoleon, from J. CORBET, Esq., won the 3rd prize. There were only two bunches of Foster's Seedling shown, and they were of poor quality in comparison with the Buckland Sweetwater.

LOCAL CLASSES.

In the Grape classes, confined to cultivators in the county of Salop, very fine bunches of Madresfield Court won 1st prize for the Rev. T. M. BULKELEY OWEN, Tedsmore Hall; Lord HARLEIGH had a 1st prize for Alnwick Seedling, showing capitally finished bunches; Capt. IFFYWOOD-LONSDALE won the 1st prize for Muscat of Alexandria, and for Foster's Seedling in the class for any other white Grapes.

GROUPS OF PLANTS.

The groups of ornamental plants arranged for effect at provincial shows are of a type now well known to readers of this journal. Those at Shrewsbury this year, though possessing no new feature of importance, were quite entitled to be described as works of art. They were splendid examples of studied arrangement of plants varying equally in their form and colours. The first class was one for a group of miscellaneous plants in and out of bloom arranged in a space of 300 square feet. Messrs. J. CYPHER & SONS, Cheltenham, were awarded the 1st prize for an exhibit consisting of plants arranged in mounds and glades, but in which arches of cork, which have been somewhat overdone in these groups, were omitted. Some of the most effective flowering plants used were *Oncidiums* and other *Orchids*, *Kalanchoe*, *Lilium speciosum*, and *Pan-cratiums*. 2nd, G. H. KENDRICK, Esq., Edgbaston, Birmingham; and 3rd, Mr. J. VAUSE, Leamington.

In the following class the group was one of ornamental foliage plants, Palms, Ferns, &c., arranged on a space of 300 square feet. Flowers and plants in flower were excluded. The winners of the 1st prize were the LEAMINGTON NURSERYMEN & FLORISTS CO., Ltd., Leamington. The feature of this group was the brightly-coloured *Codiaeums*, and a very handsome plant of the variegated *Dracena* "Victoria." Messrs. J. CYPHER & CO., who were placed 2nd in this class, had a group of splendid plants, but one in which the colours were rich but lacked brightness. A few golden-coloured *Codiaeums* would have served to lighten the group, and it would then, in our opinion, have been equal to that which gained the 1st prize. 3rd, the Earl of CARNARVON (gr. Mr. T. Read). Extra prizes were also awarded to Messrs. W. SANDFORD & Co., Birmingham; and to G. H. KENDRICK, Esq., Edgbaston.

SPECIMEN PLANTS.

Fifteen Stove and Greenhouse Plants.—Messrs. JAS. CYPHER & SONS, Cheltenham, won the 1st prize in this class, with specimens that appeared of very large size even in the spacious and lofty marquee in which these exhibits are staged at Shrewsbury. The species were *Ixora Fraseri*, *Bougainvillea Cypheri*, *Statiche profusa*, *Stephanotis floribunda*, *Erica Everiana*, *Croton* (*Codiaeum*) *Victoria*, *Allamanda nobilis* (2), *Chironia*

ixifera, *Statice intermedia*, *Bougainvillea glabra* (3), *Erica oblata purpurea*, and *Kentia Fosteriana* (2). The 2nd prize in this class was won by Mr. W. VAUSE, who showed good specimens of the species usually exhibited in this class.

For Six Stove and Greenhouse Plants, not fewer than Four in Bloom.—1st, Messrs. J. CYPHER & SONS, Cheltenham, with wonderful examples of *Bougainvillea Cypheri*, *Allamanda nobilis*, *Erica Austriana*, *E. Eweriana*, *Isora Duffii*, and *Statice profusa*. 2nd, Mr. W. VAUSE, Leamington. 3rd, T. SUTTON TIMMIS, Esq., Allerton, Liverpool (gr., Mr. B. Cromwell).

With Six Foliage or Variegated Plants, T. SUTTON TIMMIS, Esq. (gr., Mr. B. Cromwell), was an easy 1st with three exceedingly well-grown *Codiaeums* and three Palms. 2nd, Messrs. J. CYPHER & SONS. 3rd, Mr. W. VAUSE.

Thirty Stove and Greenhouse Plants—The 1st prize exhibit in this class was one of the prettiest features of this nature we have observed for some time past; all the plants were so well grown and so bright in effect that they were unusually attractive. The plants could not be shown in pots of greater diameter than 10 inches, and it was very surprising that such specimens as were shown by T. SUTTON TIMMIS, Esq., Allerton, Liverpool (gr., Mr. B. Cromwell), could be produced in such pots. A plant of *Codiaeum (Croton) Chelsoni*, 9 feet high and 5 feet through, was probably the best *Codiaeum* ever exhibited in a 10-inch pot. The plant retained its leaves right down to the base, and was highly coloured. We can only mention a few of the most interesting species in this group—*Isora Duffii*, *gloriosa*, *superba*, *Chironia ixifera*, *Clerodendron fallax*, *Alocasia Sanderiana*, &c. Messrs. J. CYPHER & SONS were 2nd.

Some good *Coleus* were shown as pyramids, ranging from 4 to 6 feet in height, the best being a collection of four plants from Col. W. GORDON PATCHETT, Greenfields, Shrewsbury (gr., Mr. J. Swain).

Zonal *Pelargoniums* were not specially good generally, but some good plants were shown by Mr. R. TAYLOR, Abbey Foregate, Shrewsbury (gr., Mr. H. Cliff).

Exotic Ferns were best shown by T. SUTTON TIMMIS, Esq., Allerton, who had very large and good specimens of *Nephrolepis davallioides furcans*, *Davallia fijiensis plumosa*, *Goniophlebium subauriculatum*, and *Microlepia hirta cristata*.

Tuberous Begonias.—A group of tuberous *Begonias* covering a space of 15 feet by 4 feet. In this class Mr. F. DAVIS, Woolashill, Pershore, was 1st, with a collection of well-grown plants bearing unusually large flowers of perfect shape and substance. 2nd, Messrs. BLACKMORE & LANGDON, Twerton Hill Nurseries, Bath.

There were also classes for plants grown by cultivators residing in the county, and these included one for a group of miscellaneous plants arranged on a semi-circular space of 100 square feet. In this class the winner of the 1st prize was Mrs. SWANN, Halston Hall, Oswestry (gr., Mr. C. Roberts).

CUT FLOWERS

The 1st prize for a bride's bouquet was awarded to Mr. GARNER, Altrincham, whose flowers consisted principally of *Odontoglossums*. 2nd, Mr. W. TRESEDER, Cardiff.

The prettiest bouquet for the hand also came from Mr. GARNER. 2nd, Mr. W. TRESEDER. 3rd, Messrs. FELTON & SONS, Hanover Square, London.

In a class similar to the last-named, but in which Orchids were not admissible, Messrs. FELTON took premier position with pink *Carnations*. 2nd, Messrs. JENKINSON & SONS. 3rd, Mr. W. TRESEDER.

Messrs. FELTON were again 1st for a feather-weight bouquet. 2nd, O. ROBINSON, Esq., Alderly Edge (gr., Mr. J. Nixon).

Messrs. FELTON were awarded 1st prize for a shower bouquet composed of *Cactus Dahlias*, Mr. GARNER being 2nd, and Mr. W. TRESEDER 3rd.

1st and 2nd prizes went respectively to Messrs. FELTON & SON and Mr. W. TRESEDER for a floral harp. The 1st prize harp consisted principally of *Cypripediums*, *Cattleyas*, &c., over a groundwork of white *Asters*.

O. ROBINSON, Esq., Alderly Edge (gr. Mr. J. Nixon), secured the 1st position in the class for a floral wreath, Messrs. FELTON & SON coming 2nd. The 1st prize wreath was composed largely of *Stephanotis floribunda* and light-coloured *Cattleyas*. Messrs. FELTON, who were placed 2nd, used *Cattleyas* of rather dull colours and heavy.

A class for a stand of cut flowers for table decoration brought eleven exhibitors, and after a very keen struggle O. ROBINSON, Esq. (gr. Mr. J. Nixon), was placed 1st. The flowers employed were *Lilies of the Valley*, *Gloriosa superba*, and *Pancreatiums*, arranged on a rustic stand. 2nd, Miss M. MORGAN, St. Mary Street, Shrewsbury.

Messrs. FELTON took the lead for six button-hole bouquets and sprays for ladies. 2nd, O. ROBINSON, Esq. (gr., Mr. J. Nixon). 3rd, Messrs. M. JENKINSON & SON.

In a class for a basket of cut flowers for the drawing-room, five exhibits were placed before the judges, who gave the premier award to Messrs. FELTON with a delightful arrangement of *Oncidiums* and *Cattleyas*. 2nd, O. ROBINSON, Esq. (gr., Mr. J. Nixon). 3rd, The LEAMINGTON NURSERIES, Ltd., Bedford Street, Leamington.

Hand-basket of flowers (Orchids excluded). Messrs. FELTON again beat all competitors. 2nd, O. ROBINSON, Esq. (gr., Mr. J. Nixon).

The class for an arrangement of cut flowers suitable for a dinner-table covering a space of 4 feet by 4 feet was strongly contested, and great taste was displayed in the arrangement of the various exhibits. The 1st prize was eventually awarded to Miss M. MORGAN, Shrewsbury, who relied upon pink *Carnations* and *Lily-of-the-Valley* set in rustic stands. 2nd, Miss MARY ALLEN, Wrockwardine Wood. 3rd, Miss M. RUSSELL, Albrighton.

In a class devoted to Sweet Peas for dinner-table decoration, Mrs. NIXON, Alderly Edge, won the 1st prize, and Miss M. MORGAN, Shrewsbury, the 2nd prize.

Liberal prizes were offered by Mr. Robert Sydenham, Birmingham, for Sweet Peas to be shown on rustic table-stands. 1st, E. DEAKIN, Esq., Hay Hill. 2nd, W. H. BANKS, Esq., Kington.

Collection of perennials (Roses excluded). After a very close contest, Messrs. HARNNESS & SON, of Bedale, were placed 1st with a magnificent collection comprising bold bunches of large-flowered *Gladioli*, *Phloxes*, *Liliums*, *Veronicas*, *Campanulas*, &c. 2nd, Mr. M. PRICHARD, Christchurch, Hants. Here were to be seen excellent examples of *Gladiolus princeps*, *Coreopsis lanceolata major*, *Montbretia George Davison*, *Kniphofias*, *Campanula carpatia* "White Star," illustrated in our columns last week, but which appears to be very closely allied to a variety named Robert Parker, which has been in cultivation for several years. 3rd, Messrs. G. GIBSON & SON, Bedale.

Collection of *Cactus* or *Decorative Dahlias*.—1st, Messrs. KEYNES, WILLIAMS & CO., Salisbury, with an admirable arrangement of brightly-coloured *Cactus* varieties. 2nd, Mr. W. TRESEDER. 3rd, Messrs. W. B. ROWE & SON, Worcester.

In the class for mixed *Dahlias*, Messrs. M. CAMPBELL & SONS, High Blantyre, N.B., were 1st with clean, well-developed flowers representative of most of the various types. 2nd, Mr. W. TRESEDER. 3rd, Mr. M. V. SEALE.

Carnations as cut flowers were shown grandly, and in a class for a display arranged on a table space of 6 feet by 4 feet Mr. A. F. DUTTON, Iver, Bucks, won the 1st prize for a very fine lot of flowers in an exhibit similar to others that he has shown in London and elsewhere. The 2nd prize was awarded to Mr. W. A. WATTS, nurseryman, St. Asaph.

In a class from which members of the trade were excluded, a 1st prize was won by W. B. M. VERNON, Esq., Welch Frankton, for a display arranged on a table space of 4 feet by 4 feet.

Classes for Sweet Peas included some in which prizes were offered by Mr. Robert Sydenham, Birmingham; and Messrs. Jones & Son, Shrewsbury. Among the winners of 1st prizes in these classes were J. GIBSON, Esq., Duns, N.B.; and Mr. A. MALCOLM, Duns, N.B.

HONORARY EXHIBITS.

Messrs. DOBBIE & CO., Rothesay, Scotland, set up a very bright exhibit of *Cactus*, *Show*, and *Fancy Dahlias*, together with sixty varieties of *Pansies* on show-boards, sixty sprays of *Violas*, and sixty-six varieties of *Potatoes*.

Messrs. WALLACE & CO., Kilnfield Gardens, Colchester, had an excellent display of hardy plants, amongst which were excellent examples of *Montbretias* containing several very fine seedlings; also *Liliums*, *Phloxes*, hybrid *Tritomas*, *Senecio pulcher*, and choice *Nymphæas*.

Mr. ALBERT MYERS, Sutton Lane Nurseries, Shrewsbury, occupied about 150 square feet of table with a bright display of single and double zonal *Pelargoniums*, comprising plants in pots and cut flowers in

great variety, the whole being tastefully arranged with *Gypsophila* and *Eulalias*.

From Messrs. DICKSONS, Chester, came a collection of well-grown and highly-coloured *Codiaeums* and *Dracænas*. The same firm also arranged a most effective bank of hardy flowers, amongst which were meritorious examples of *Gladioli Jane Dieulafoy* and *Bondoin*, *Phloxes*, *Rudbeckias*, *Delphiniums*, and a grand centre-piece of *Crinum intermedium*.

One of the most interesting and effective arrangements of hardy flowers and *Dahlias* came from Messrs. BAKERS, Codsall, Wolverhampton. The hardy flowers included *Chrysanthemum maximum King Edward*, *Heuchera sanguinea grandiflora*, *Phloxes*, and *Carnations*. *Pompon*, *Show*, *Fancy* and *Cactus Dahlias* were represented by the leading varieties for garden decoration and exhibition purposes. Flowers of double and single zonal *Pelargoniums* were also included in this remarkably fine exhibit.

THE KING'S ACRE NURSERIES, Ltd., Hereford, staged a nice collection of hardy gathered fruit, also pot-trees of *Apples*, *Pears*, *Plums*, and *Figs*, laden with fruit. *Grapes* were represented by *Black Hamburg*, *Foster's Seedling*, and *Muscat of Alexandria*, bearing good sized bunches of nicely coloured berries.

Messrs. ISAAC HOUSE & SON, Coombe Nurseries, Westbury-on-Trym, Bristol, contributed an extensive collection of *Phloxes*, but unfortunately at the time our notes were taken the varieties were unnamed. The undermentioned varieties stood out prominently, *Coquelicot*, *Eugène Dauzanvilliers*, *Sylphide*, *Iris*, and *Walter Wright*, a deep purple flower similar to *Sesotris*.

By far the handsomest collections of *Phloxes* at Shrewsbury this year came from Messrs. GUNN & SONS, of Olton, Birmingham. Each variety was represented by an unusually large bunch of about thirty spikes. The best varieties were *Iris* (blue), *Eugène Danzanvilliers* (lilac), *Sylphide* (white), *Sheriff Ivory* (salmon, crimson centre), *Coquelicot* (very bright), *Adonis* (delicate salmon), *Henri Murger* (white, with a crimson centre).

VEGETABLES.

On no previous occasion here has there been such a remarkable competition in these classes, or such superb quality in the best collections. Not only were many of the leading growers (including Messrs. Beckett, Pope, Horspool, Ashton, Bastin, Leith and others) competing, but many quite new competitors were also there, a fact of great interest in relation to vegetable culture, as it is evident the old champions are not frightening the new-comers out of the field.

Messrs. Sutton and Sons' Prizes.—The very liberal prizes offered by this eminent firm brought sixteen competitors, the winner being Mr. W. L. Bastin, gr. to Sir A. HENDERSON, M.P., Faringdon, who worthily took the 1st place with very high-class products. His collection included fine *Celery*, *Leeks*, *Onions*, *Peas*, *Runner Beans*, *Potatoes*, *Tomatoes*, and *Cauliflowers*. Mr. H. FOLKES, gr. to J. KERR, Esq., Hemel Hempstead, was a very close 2nd. Mr. J. Dymock, gr. to G. D. FABER, Esq., Wallingford, was 3rd; and Mr. J. HUDSON, Leicester, 4th. There were in addition two other awards.

Messrs. Jas. Carter & Co's Prizes.—Very liberal prizes were also offered by this well-known London firm. Mr. E. BECKETT, gr. to Lord ALDENHAM, Elstree, was 1st with produce of his usual superb quality, having very fine *Tomatoes*, *Onions*, *Runner Beans*, *Peas*, *Cauliflowers*, *Potatoes* and other products. Mr. B. ASHTON, gr. to the Earl of LATHOM, Ormskirk, Lancashire, champion competitor, was a close 2nd; and A. DEAKIN, Esq., Haymills, was 3rd. There were three other prizes awarded in these classes.

Messrs. Webb & Sons' Prizes.—For the prizes offered by this well-known firm for a collection of vegetables, Mr. B. ASHTON was well 1st, having superb *Tomatoes*, *Potatoes*, *Runner Beans*, *Red Celery*, *Leeks*, *Cauliflowers* and other kinds. Mr. BASTIN followed closely, taking the 2nd place; and Mr. H. FOLKES was 3rd. There were other awards also.

In the class for twelve dishes in a collection, prizes offered by the Society, Mr. E. BECKETT was again 1st with splendid exhibits. Specially good were *Ailsa Craig Onions*, *New Telephone Peas*, *Potatoes*, *Tomatoes*, *Carrots*, *Runner Beans*, *Parsnips*, *Leeks*, *Celery*, and *Cauliflowers*. Mr. J. HUDSON, Leicester, was 2nd, having a smaller exhibit, but of good quality. Mr. F. J. BARRETT, Overton-on-Sea, 3rd.

Messrs. R. Smith & Son's Prizes for nine kinds of vegetables brought that famous Welsh grower, Mr.

R. A. HORSPOOL, Ruabon, to the front with very high-class exhibits, comprising superb Peas, Tomatos, Turnips, Onions, Leeks, Runner Beans, and Celery. Mr. B. ASHTON was 2nd; and Mr. E. Jones, gr. to the Misses HOWELL, Berrier, 3rd.

Mr. E. Murrell's Prizes.—In the class for these prizes R. C. TOWNSEND, Esq., Chalfont Park, Bucks, was 1st with excellent samples. Mr. T. H. PUGH, Newtown, was 2nd.

Mr. R. Sydenham's Classes.—This well-known Birmingham seedsman offered prizes in many classes, which resulted in splendid competition. In a class for a collection of eight kinds, Mr. W. POPE, gr. to the Earl of CARNARVON, Highclere Castle, Newbury, was a worthy 1st, having capital Onions, Potatos, Carrots, Runner Beans, Celery, Cauliflowers, Peas, &c. Mr. R. A. HORSPOOL came 2nd; and Mr. Leith, gr. to Col. R. MIDDLETON, was 3rd.

The following took the 1st prizes in some of Mr. Sydenham's other classes:—For three dishes of Potatos, Mr. W. POPE won, having Sir J. Llewellyn, The Factor, and Windsor Castle. For Leeks, Mr. J. F. BARRETT was 1st; for Celery, Mr. W. POPE, with Bibby's Defiance; for Turnips, Mr. R. A. HORSPOOL; for Tomatos, Mr. J. READ, Bresty; for Onions and Parsnips, Mr. BARRETT; for Carrots, Mr. POPE; for Califlowers, Mr. HORSPOOL; for dishes of Runner and Dwarf Beans, Mr. LEITH; for Peas, three dishes, Mr. HORSPOOL, who had The Gladstone, Autocrat, and Captain Cuttle.

Liberal point prizes were also offered by Mr. Sydenham, in six diverse amounts. Mr. HORSPOOL came 1st with 59 points; Mr. POPE next with 49; and Mr. LEITH 3rd with 42 points.

The Society's Single Dish Classes.—In most of these classes, some eighteen in number, competition was indeed remarkable, and the quality of the exhibits was exceptionally fine. Mr. W. POPE had the best Carrots; Mr. F. Clark, gr. to MARK FIRTH, Esq., Leicester, the best Parsnips; Mr. G. GUISE, Hadnall, the best Celery; the Rev. G. M. FURLEY, Sockleton, the best Cauliflowers; Mr. C. DEAKIN, the best Runner Beans, having a superb sample; Mr. W. POPE had the best Dwarf Beans; Captain DICKSON, of Wem, the finest Peas; Mr. BECKETT showed superb Cucumbers of the variety Ideal; Mr. B. ASHTON staged the best single dish of Potatos, having the variety Duke of York; and Mr. W. POPE the best three dishes of Potatos, having King Edward VII., Factor, and Windsor Castle.

There was, as usual, an immense number of exhibits in the cottager's tent, and wonderfully-fine competition resulted.

Of non-competing exhibits the most noticeable in vegetables was the collection of sixty dishes of handsome Potatos, set up by Messrs. DOBBIE & Co., and grown on their Seed Farm, Mark's Tey, Essex.

MEDALS AWARDED TO HONORARY EXHIBITS.

LARGE GOLD MEDALS

were awarded to Gunn & Sons, Olton, Birmingham; W. Cuthsall & Son, Highgate; H. Eckford, Wem, Salop; Hobbies, Ltd., Dereham; Dobbie & Co., Rothesay; Bakers, Old Hall Nurseries, Codsall, Wolverhampton; Albert Meyers, Shrewsbury; King's Acre Nurseries, Ltd., Hereford; E. Murrell, Shrewsbury.

SMALL GOLD MEDALS

were awarded to Robt. Bolton, Warton, Carnforth; Jones & Son, Shrewsbury; R. Wallace & Co., Colchester; Dicksons, Ltd., Chester; Pritchard & Sons, Shrewsbury.

SILVER-GILT MEDALS

were awarded to Thos. S. Ware, Ltd., Feltham; Hewitt & Co., Solihull, Birmingham; R. Smith & Co., Worcester; Clibrans, Altrincham; Amos Perry, Winchmore Hill, N.; W. Angus, Penicuik, N.E.; Jno. Derbyshire, Altrincham; Jarman & Co., Chard; John Robson, The Downs, Altrincham; Isaac House & Sons, Bristol; J. Forbes Hawick; B. Dobbs & Co., Wolverhampton; and J. Lambert, Powis Castle, Welshpool.

SILVER MEDALS

were awarded to B. R. Davis & Son, Yeovil; W. & J. Brown, Peterborough; Vincent Slade, Taunton; Pattison, Shrewsbury; Cheal & Sons, Crawley, Sussex; H. A. Watts, Broulyfa, St. Asaph; R. F. Felton, Hanover Square, London, W.; Geo. Prince, Longworth, Berks.

BRONZE MEDALS

were awarded to R. Anker, Addison Nursery, Kensington, W.; G. H. Towndrow, Malvern, Lincs.

AWARDS OF MERIT

were recommended to Amos Perry, Winchmore Hill, N., for Gaillardia "Sulphur Gem"; Hobbies, Ltd., Dereham, for Cactus Dahlias "Daydream" and "White Swan"; Cheal & Sons, Crawley, for Cactus Dahlia "T. F. H. Cook"; R. Wallace & Co., Colchester, for Montbretia Prometheus "Herewood"; Dobbie & Co., Rothesay, for Cactus Dahlias "Bute" and "Good Hope."

FIRST-CLASS CERTIFICATES

were awarded to R. Wallace & Co., Colchester, for Montbretia "Prometheus"; and to Mrs. Seale, Sevenoaks, for Cactus Dahlia "Mrs. Charles Scott."

* * * Notes on a few of the other miscellaneous exhibits must be deferred till our next issue.

THE ROYAL HORTICULTURAL Scientific Committee.

AUGUST 15.—Present: Dr. M. T. Masters, F.R.S. (in the Chair), Dr. M. C. Cooke, Messrs. Gussow, Saunders, Druery, Worsley, and Chittenden (Hon. Secretary).

Harvest Bugs.—Concerning these troublesome pests, Mr. J. S. TURNER writes: "There is nothing like common soap with which to combat harvest bugs. Just dip the soap in water, so as to make it only damp enough to rub, and rub it over the spots. The soda in the soap stops the irritation at once, and the thin film of soap stays the hole the insect has made, and finishes him. If the wrists, knees, and ankles, the parts most usually attacked, be rubbed with coal-tar soap, it will to a certain extent prevent the pest from attacking, but not entirely, and I know nothing that will." Mr. Wright recommends the use of Elliman's Embrocation."

Grubs in Ferns.—Fronde of a variety of the Lady Fern were sent from Wisley, infested with grubs. Mr. SAUNDERS reported: "The grubs infesting the stems of the Fern-fronds are those of one of the sawflies, but I have not been able to get their names. As far as a remedy is concerned, I can only suggest the obvious one of cutting off and burning the fronds."

Blotches on Rose Leaves.—Mr. T. S. DRAKE, of Hoddesdon, sent Rose leaves bearing black blotches caused by the attacks of the fungus *Actinonema rosea*, which is figured and described in the *Journal of the Royal Horticultural Society*, vol. 27, p. 42.

Leaves of Morello Cherry attacked.—Mr. FLINT sent leaves of Morello Cherry badly eaten by the grubs of the Pear-slug, upon which Mr. SAUNDERS undertook to report.

Melon Leaves Shrivelling.—A small Melon plant with shrivelling leaves was received from Lamberhurst. It was the general opinion that the recent transplanting had put the plant under considerably changed conditions, and through this the leaves had become injured.

Fasciated Agapanthus.—Dr. MASTERS showed a much twisted and fasciated stem of white Agapanthus from Mr. FITZHERBERT.

Lilium candidum plumose variety.—Dr. MASTERS showed a specimen of a plumose form of *Lilium candidum*. This curious form was figured by several of the old botanists, but was recently sent to him as a hybrid between the Madonna Lily and Hyacinthus candicans. Dr. MASTERS also showed a stem of *Lilium chalcedonicum* bearing a bulbil in place of a terminal bud instead of occupying the place of a lateral bud as is usual.

Figs Discaed.—Dr. COOKE reported that some Figs which he had examined were badly affected with the fungus *Botrytis cinerea*, which had formed quite a felt upon them.

Monstrous Cucumbers.—Mr. J. CROOK, F.R.H.S., of Forde Abbey, Chard, sent several examples of Cucumbers showing lateral proliferation. The outer rind of the Cucumbers had given rise to a large number of leaves, and in one case to a short stem bearing two other Cucumbers upon it, each of which bore leaves growing from their outer portions. Dr. MASTERS remarked that from a botanical point of view it is easy to understand these monstrosities, since the rind of the Cucumber is really a branch in which the true fruit of the Cucumber is embedded, but what actually induces the production of leaves or branches from the rind in any particular case is so far an unsolved problem. A similar malformation is figured in *Gardeners' Chronicle*, 34 (1903), p. 170.

Dichroism in Antirrhinum.—Mr. SAUNDERS showed a figure of a spike of *Antirrhinum*, in which one flower was of a deep pink colour, while the others were white, splashed with pink. All other flowers on the plant had been of the latter type.

Clematis with leaf-like Sepal.—Mr. SAUNDERS also showed a drawing of a *Clematis* flower in which one of the sepals was green and leaf-like, with the exception of a portion near one edge, which was of the normal colour.

Osmunda Fronds as Food.—Mr. DRUERY showed a specimen of the dried young fronds of *Osmunda regalis* which had been sent to him by the Yokohama Nursery Co. with the following note:—"The young, tender sprouts up to 12 inches or so in length are gathered in the mountains as they appear, and are then boiled and dried. The price is about 40s. per 100 lb. They make a convenient provision for the Army. Several tons are dealt with every year in Japan, where it is used for food. To prepare for eating, soak in water for about ten hours, changing the water several times, then boil. In Japan it is stewed with soy sauce and fish gravy, but any agreeable sauce may be tried with it. It is very tender, and we think you will find it eatable. As shown, the stalks were in the form of roundish, black sticks about 10 inches in length, somewhat flexible and rather tough, and having something of a tarry odour."

Various Amaryllideae.—Mr. WORSLEY showed specimens of the following:—

Zephyranthes candida var. *major*, a fine variety, but rather more tender than the type.

Zephyranthes rosea, a tender species, requiring almost a stove temperature, which produces seeds freely.

Leucojum (Acis) autumnale, a pretty little species, difficult to grow on account of the liking slugs have for it.

Hippeastrum brachyandrum flowers from plants raised from seed, somewhat improved upon the wild stock from Argentina.

Urceoharis Clibrani, first described and figured in these columns. A hybrid between *Urceolina aurea* and *Eucharis grandiflora*. The flower-buds before they open have a yellowish tinge, but afterwards become pure white. The plant never produces seed.

Habranthus advena.—Similar to the type, but with perianth segments about double the width. This flowered in three and a half years from seed.

Lycoris squamigera.—The flowers fade very quickly if exposed to the hot sun, but retain their colour for a considerable time if cut and brought indoors.

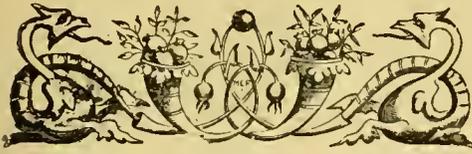
Tritonia rosea.—A pretty species grown from bulbs gathered in the hills above Graytown.

Hybrid Cannas.—Mr. WORSLEY also drew attention to the fact that the hybrids raised between *Canna flaccida* × *Canna* (garden form), known as Orchid-flowered Cannas, were always sterile, but that there was always a much larger number of ovules in the ovary than in that of the garden Cannas, a character which was also to be seen in *Canna flaccida*.

GARDENERS' DEBATING SOCIETIES.

CARDIFF GARDENERS.—The members of the above Association, to the number of over sixty, selected Hereford as the rendezvous for their ninth annual outing on Monday, August 14. The party started from Cardiff in saloon carriages soon after 8 o'clock, and after a capital run arrived at Hereford at 9.37. At King's Acre Nurseries the Cardiffians were received by Mr. M. Peake. The holiday-makers, splitting themselves up in parties of five or more, made a complete tour of the nurseries, which are among the oldest in the kingdom, being established as far back as 1785 by the late Mr. Cranston. The drive back to Hereford, via Mordiford, in the cool of the evening proved very enjoyable, and after an excellent tea the members wended their way to the Castle Green, where the artistic flower-beds were much admired. Mr. Wilson, the Corporation gardener, receiving well-deserved compliments. The party subsequently left for Cardiff by the 8.4 train, arriving there at 10.50. The Hon. Secretary was thanked for the very admirable way he had conducted the arrangements throughout. J. J.

CROYDON AND DISTRICT HORTICULTURAL.—This Society held its annual excursion on Wednesday, when, in ideal weather, a trip was made to the Royal Horticultural Society's gardens at Wisley. On arriving at Wisley the members partook of luncheon at the Hut Hotel. The members visited the Gardens, and inspected the many rare and unique plants, as also those of familiar habit. On the return journey tea was partaken of at the Bear Hotel, Esher. Croydon was reached about ten o'clock, each one expressing his full appreciation of the outing.



THE
Gardeners' Chronicle

No. 975.—SATURDAY, Sept. 2, 1905.

CONTENTS.

Annuals, rules for judging ... 185	Pasture land, the vegetation of ... 180
Bananas, varieties of ... 178	Plants grown in the absence of carbonic dioxide ... 186
Bulbophyllum Lobbianum, a remarkable plant of ... 184	Seed germination ... 186
Burnham Beeches, the pollarding of the ... 186	Shrewsbury, the recent show at ... 185, 191
Coniferae, variegated ... 179	Shrubs, half hardy ... 187
Dean, Richard, the late Eckford, Henry, presentation to ... 185	Societies—
Elvaston Castle Gardens ... 177	Brighton Horticultural ... 191
Errata, Professor Léo, the late ... 184	National Chrysanthemum ... 185
Fern hunting in Scotland ... 188	Royal Horticultural Shropshire Horticultural ... 185, 191
Forestry, Belgian ... 181	Société Royale Liégeoise de Bruxelles ... 191
Fruit crops, remarks on the condition of the ... 188	Trees and shrubs—
Fungus pests ... 184	Hypericum patulum var. Henryi ... 179
Gladiolus tristis var. concolor ... 187	Oak and Yew forming one trunk ... 179
Grass land, experiments with ... 180	Week's work, the—
Impatiens Holstii as a bedding plant ... 185	Apiary, the ... 183
Irish gardeners' visit Evesham ... 185	Flower garden, the ... 183
Lapagerias growing in the open ... 183	Fruits under glass ... 182
	Hardy fruit garden ... 183
	Kitchen garden, the ... 182
	Orchid houses, the ... 182
	Plants under glass ... 182

ILLUSTRATIONS.

Bees, a simple method of transferring ... 183
Bulbophyllum Lobbianum colosseum, individual flower of ... 181
Bulbophyllum Lobbianum colosseum, a specimen plant of (Supplementary illustration)
Diagrams illustrating experiments with pasture land ... 180, 181
Fruit, a 1st prize collection of, exhibited at the Shrewsbury Show by Lord Harrington ... 178
Gladiolus tristis var. concolor ... 187
Pteris aquilina, a remarkable form of ... 189

ELVASTON CASTLE GARDENS.

AFTER a lapse of twenty years I had the pleasure a few days ago of paying a hurried visit to these far-famed gardens. Elvaston Castle is situated in the valley of the Trent, about 5 miles distant from Derby. The surroundings of the place are flat and commonplace, and consist of well-timbered, rich meadow-land. The situation is not an ideal one for the creation of an interesting and beautiful garden. Yet by the genius and wealth of the Earls of Harrington past and present, and the co-operation of eminent gardeners, out of this comparatively uninteresting material has emerged one of the most unique and interesting gardens in England.

One of the features of the place are the wonderful examples of topiary gardening contained here. This is a form of gardening that does not now appeal with much force to many horticulturists. But when it is carried out, as it has been done at Elvaston, on so gigantic a scale, and kept in such perfect condition, it is certainly impressive. It is laid out on a foundation of a beautiful green and velvety lawn, and there are huge specimens of trimmed evergreen trees, towering up in high proud columns, taking the form of carved arbours, colonnades and figures of many descriptions. The trees are intersected here and there by beautiful glades of well-kept lawns, and lighted up in

many directions by the presence of some of the most perfect and beautiful specimens of golden - coloured Holly we have seen, as well as by many other golden-hued trees and shrubs.

This is a garden of many surprises, consisting as it does of sheltered, cosy nooks and quiet retreats, which afford the most delightful privacy and retirement. Indeed, the whole atmosphere of this garden seems to be one of peace and repose. Another important feature of the pleasure grounds is the wealth of magnificent specimen Conifers, mostly planted some fifty or more years ago under the direction of the then Earl of Harrington's gardener, the late Mr. Barron, of Borrowash, a gentleman well known as one of the most distinguished landscape gardeners and horticulturists of his time. Many of these trees have now attained to immense heights and noble proportions, adding much dignity and grandeur to this fine domain. Not the least important of the improvements effected by planting was the formation of a broad avenue of trees opening out a splendid and distant vista from the windows of the house, and reminding one a little of the Long Walk in Windsor Great Park.

HARDY FRUITS.

Another important aspect of gardening which has received much encouragement, especially from the present Lord Harrington, is that of fruit-growing, which has been developed to a very high degree of perfection by his lordship's head gardener, Mr. Goodacre, during the past thirty or more years. There is no occasion to enlarge on this point, as his successes at our best national and international shows for that length of time testify to his skill far more eloquently than any words of mine could do. In speaking of the fruit at Elvaston as I saw it the other day, much will have to be left unsaid, as this notice is only a brief and passing bird's-eye view of the resources of this notable garden.

Knowing something as I do of the climate of Derbyshire, I have no hesitation in saying that few, if any, counties in England have a more inhospitable or a colder climate, or a climate more inimical to the successful growth of hardy fruit-trees than have many portions of this county. Yet, strange to say, through some freak of the weather, this year the crops, especially on wall-trees, are better in this part than in any of the southern counties I have seen. This is particularly true in regard to Pears. Apples also, although only a partial crop, are better than they are in the south, the Codlin section especially; and what surprised me greatly was to find a large tree of the variety Gascoyne's Scarlet Seedling borne down with the weight of an enormous crop. With the exception of last year I was told that equally heavy crops of this variety had been obtained for the past nine years. Friends in the cold Midlands should make a note of this. These few remarks on the out-of-door crops are by the way. It is in the cultivation of

FRUITS UNDER GLASS

that the Elvaston Gardens have taken so high a position, and especially in the production of high-class fruits for exhibition. Many gardeners have often wondered how the splendid samples of Apples, Pears and Plums,

which are characteristic of the Elvaston collections of fruit, were grown. Had they seen the five hundred or more specimen trees of these and other fruits grown in pots in cold orchard-houses of almost unlimited extent, they would wonder no longer.

The fruit has been gathered from most of the pot-trees of Peaches, Nectarines and Cherries. But of Apple, Pear and Plum-trees there were some magnificent examples of culture to be seen.

The Apple trees are now mostly placed out-of-doors in sunny positions against walls in order to improve the colour of the fruit, and so well has this object been attained that extraordinary high colour is the result. One Apple amongst many on a tree of Ribston Pippin had taken on such a deep crimson colour as to be altogether unrecognisable. The varieties favoured here for pot-culture are few, and include such as Cox's Orange Pippin, Ribston Pippin, Washington, Beauty of Bath, &c.

Of Pears in pots the result is equally satisfactory; many of them are now placed in various positions and aspects against walls out-of-doors, and they are well protected by netting, those requiring to be retarded against north walls, and those to be hastened against walls having a warmer aspect. Few are aware of the great influence exercised in improving the colouring of fruit by its exposure to sun and air out-of-doors. I noticed a striking instance of this at Elvaston, where two trees of the variety Louise Bonne of Jersey were growing side by side on a wall, one under glass, and the other out-of-doors. The latter bore a rich ruddy colour, while the former was of a shade of light green.

Plums in pots are grown grandly also. I have seen most of the Plum-trees in pots exhibited in London during the last five years, and those of Mr. Goodacre would compare favourably with the best of them.

I might say much of the Peaches, Nectarines, Figs, Melons, &c., but time and space forbid.

THE GRAPE-VINES.

I now hasten briefly to notice the crown and glory of the fruit at Elvaston, namely the Grapes, and especially late Grapes, with which Mr. Goodacre's name has been so long and conspicuously associated as a successful exhibitor. The summer crops of Grapes are past their best, but there are some fine bunches of the following varieties still left—Muscat Hamburg, Muscat of Alexandria, Black Hamburg and Madresfield Court. The quality, size and finish of these are very fine, and I presume they are kept back for exhibition.

Our time having now nearly expired we hasten to view the comparatively new, large and lofty block of vinerias a little distance away, in which the late Grapes are grown. Some of these are devoted exclusively to black varieties which are known to succeed under similar conditions of temperature, &c. Such immense clusters as are seen here of Gros Colmar, Gros Maroc, Black Alicante and Alnwick Seedling are very seldom met with, many of them weighing from five to seven pounds each.

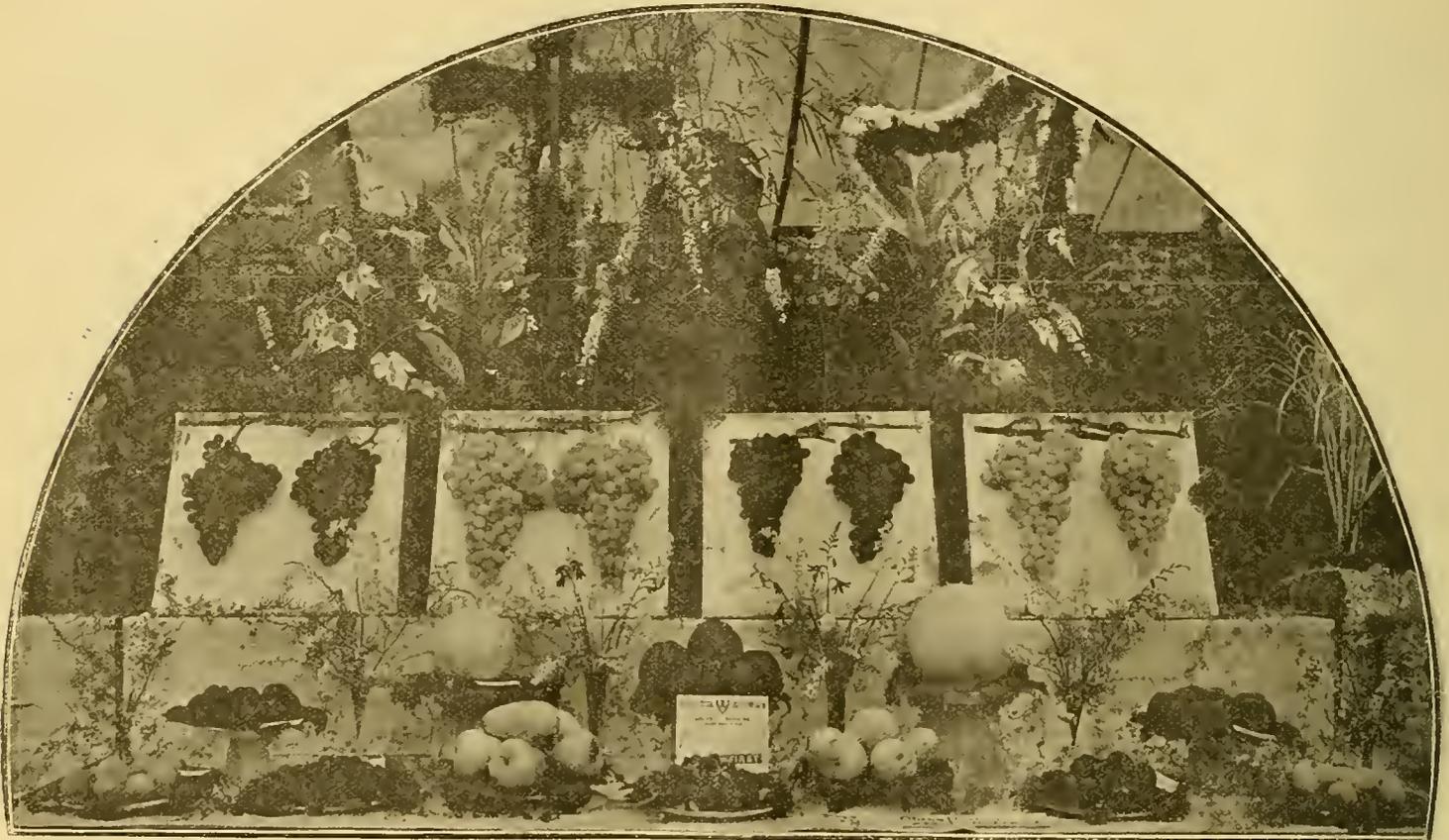
The Vines are clean and in a perfect condition of health, and by the time the full development of berries and blooms has taken place, say two months hence, they

will, indeed, be a treat to see: many of them are now jet-black, and fit for exhibition at any time. A circumstance in Grape-growing was pointed out which is worth noting as an encouragement to those who may wish to remove permanent Vines of old standing from one place to another, but are afraid to do so. An eleven-year-old double-rodged Black Alicante Vine was replanted in March last. So successful had the operation been that the Vine bore no trace

are in excellent health, the foliage being of fine size and colour, and splendid texture, showing that the crop, although so heavy, will be perfectly ripened in due course. Indeed, many of the bunches are ripe now. If we had seen nothing else to admire at Elvaston besides those grand winter Grapes we should have felt well repaid for the long journey we took to see them.

I have to thank Mr. Goodacre's son for his kindness and courtesy in showing me round the garden in his father's absence, and

Musa Cavendishii, a plant of much more dwarf habit, seldom exceeding 5 to 6 feet high, and producing smaller bunches and smaller fruits, which are thinner-skinned than the former and possess a more delicate flavour. It is known as the Chinese Banana, and besides the superior flavour of the fruit it has many characters to recommend it for general cultivation. This form is now being extensively grown at Barbados and shipped to this country in increasing quantities as Barbados Bananas. Another indication that this species is attracting attention for more general cultivation may be found in the following extract from the



[Photographed by Mr. Waller W. Naunton.]

FIG. 63.—THE SHREWSBURY SHOW: LORD HARRINGTON'S FIRST-PRIZE EXHIBIT IN THE CLASS FOR A COLLECTION OF SIXTEEN DISHES OF FRUIT.

(See p. i. of the Supplement to our last issue.)

whatever of having been subjected to such violent disturbance. The crop it bore was not quite so heavy as could be seen on the others, but otherwise the plant was as robust as any in the house. Growing with these Grapes were one or two rods of that noble-looking white variety, Chasselas Napoleon; these were very fine in bunch and berry, and I have no doubt will be seen and admired on the exhibition table before the season is over.

Following a good example, we have kept not the best wine but the best Grapes until the last, namely the Muscat vinery and its contents. I have not the dimensions of this house before me, but suffice it to say that the structure contains upwards of a thousand bunches of magnificent Grapes. The bunches would average all round 4 lb. each, a great many of them would turn the scales at 7 lb. or more. Each vine carries from nine to ten of these huge clusters. The Vines

also Mrs. Goodacre for one of the best cups of tea I ever tasted (a real Welsh cup of tea she called it). No wonder the Welsh people are called a nation of tea drinkers if all Welsh tea is as good as this was. O. T.

BANANAS.

THE VARIETIES FROM JAMAICA, BARBADOS, AND CANARY ISLANDS.—The differences in the size and quality of the Banana fruits imported from Jamaica and the Canary Island is a question that has recently been asked by a correspondent. In reply I would say that the Jamaica and Costa Rica Bananas are the produce of *Musa sapientum*, which grows to a height of some 20 feet or more, and is found in most tropical countries. It is now cultivated under many varieties, that grown in Jamaica being known as the Gros Michael. The bunches and individual fruits are much larger and have thicker skins than those grown in the Canary Islands, which are the produce of

Journal of the Jamaica Agricultural Society for June, 1904:

"After the storm of November, 1899, and the hurricane of August, 1903, when so much damage was done to Bananas, we called attention to the dwarf Banana, *Musa Cavendishii*, commonly called here the Chinese Banana, and its stout wind-proof growth. It easily withstood the rain and wind-storms of November, 1899; it even withstood the hurricane of August, and both times a good quantity of this variety was under our personal observation. In Fiji, where the people have always depended largely upon the Banana for food, and which now supplies the Australian and New Zealand markets with this variety, the introduction of the dwarf Banana in place of the imposing-looking tall varieties saved the people from being sometimes on the verge of famine, as they formerly were, through losses by storms recurring at short intervals. This variety is said not to keep so well as the Martinique. We have not found it so. It grows better on

poorer soils, and does not require so much moisture. It certainly does not sucker so profusely as the Martinique; but is not that an advantage, so long as it gives a succession of one or two, which it never fails to do? It can be planted 6 feet apart. At present our market in the United States does not want it, although it is the variety which goes from Hawaii to San Francisco, and supplies the Pacific coast of North America. But in the British markets it is preferred because it is now being supplied from the Canary Islands, and is also being shipped in small quantities, and successfully, from Barbados. The dwarf Banana ought to be taken up and cultivated by those who would make a specialty of supplying the British market. It can be grown on this plan with a far more moderate supply of water than the Martinique."

This extract fairly sets out the differences and advantages of the Canary Island or Barbados Banana over the Jamaica and Costa Rica kind. We are not in a position to say what number, or if any other varieties, are grown in the Canaries.

With reference to the composition of the Banana, the following quotation from Professor Church's *Handbook on Food*, forming one of the South Kensington series of "Science Handbooks," may be useful:—

"The Banana is a nutritious food, having less water and more nitrogenous matter than is commonly found in fresh fruits. It contains, when ripe, much sugar but very little starch. Freshly-picked Bananas contain:

	In 100 parts.	In 1 lb.
	oz.	gr.
Water	74.9	11 361
Albumen	4.8	0 335
Sugar and pectose ...	19.7	3 66
Fat	0.6	0 42
Cellulose	0.2	0 14
Mineral matter	0.8	0 56

For 1 part of flesh-formers in freshly-peeled Bananas there are 4 parts of heat-givers, reckoned as starch. One lb. of Bananas might produce at the most $\frac{2}{3}$ oz. of dry, nitrogenous substance of muscle or flesh." John R. Jackson, *Claremont, Lympstone, Devonshire.*

VARIEGATED CONIFERÆ.

(Concluded from p. 164.)

JUNIPERUS.

Juniperus chinensis var. *albo-variegata* is a dense-growing plant, possessing no outward character of its parent, being very broad in proportion to its height, and of a bright, glaucous tint all over, except at the ends of the shoots, which are irregularly marked with silvery-white. It is a very handsome plant, but not very popular.

J. chinensis var. *Youngi aurea*.—This is a golden form of the type, but it is a rather slow-growing and tender plant, especially in a young state. When it has attained a fair size it is a singularly handsome plant with its bright golden hue and graceful, feathery foliage.

J. japonica aurea.—Under this name a plant is known in nurseries which I cannot identify with any species except it may be *J. chinensis*. In habit, however, it differs materially, being of a spreading, semi-horizontal nature, somewhat approaching the common Savin, though much larger. The main branches are usually two to four in number, and grow in the form of an extended fan. The foliage is fine, and strongly tinted with bright orange colour. It is a good subject for a corner, the showiness of the plant being all on one side.

J. communis var. *alpina aurea* is a dwarf, spreading form of the common Juniper, with bright, bronzy-yellow foliage. It makes a splendid plant for the rockery, and also in the shrubbery, where a low patch of colour is desired. It will grow almost anywhere, but loses colour in the shade.

These Junipers are all practically indifferent to soil; but a moderately light loam and a full exposure to the sun suit them best.

THUYA.

T. occidentalis var. *aurea (lutea)*.—This is a bright-yellow form of the well-known American Arbor-vitæ, possessing the thin, upright habit of the parent plant. The colouring is deep and uniform all over the plant; but it must have a good moist soil to grow in, or it will become very thin and ragged.

T. o. var. *Ferracaneana*.—In a young state this form possesses very little colour to recommend it, but with age it assumes a pleasing tint of pale bronzy-yellow, which is very striking in winter when seen amongst darker-foliaged subjects, or under a low winter sun. It is a fast grower, succeeding almost anywhere, and deserves to be more generally planted than it is.

T. plicata (Lobbi, or *gigantea* of gardens) var. *zebrina*.—This is a comparatively recent introduction, and is an upright, fast-growing plant with cross stripes of bright yellow colour. It is nearly as quick a grower as the type, but makes a far denser and handsomer specimen.

T. orientalis var. *semperaurescens*.—This is a slow-growing plant, rarely attaining more than 4 to 6 feet in height, but its colouring during the winter months leaves nothing to be desired. The foliage assumes an intensely bright golden-bronze hue, which, seen under a low winter sun, resembles a flame of fire more than anything else. It should not however be planted in a low, damp position, as the high colouring renders it rather tender, and liable to be cut by frost, especially if the foliage is at all wet.

These Thuyas should all be grown on moderately dry ground, except where otherwise stated, as they are fairly easy to grow, and the colouring is enhanced on light soils.

Libocedrus decurrens var. *variegata*.—This resembles the type, except that it is variegated with splashes and stripes of bright yellow, which are fairly constant, even when the plant has attained a height of 20 feet or more. It can be grown in almost any soil or situation, but is a difficult subject to transplant.

Sequoia sempervirens var. *albo-spica*.—A handsome plant, but unfortunately it is rather tender, not that it gets killed by frost, but, commencing to grow early in spring, it continues till late in autumn, so that the ends of the shoots get cut by late or early frosts. I have seen plants about 10 feet high that were twenty years old, with half a dozen or more leaders. In districts where it will thrive it forms a graceful pyramidal plant, with the ends of the shoots tipped with silvery-white. A deep, well-drained soil and an open, sunny situation should be provided.

Picea excelsa var. *finendonensis* resembles the common Spruce in growth and habit, but the upper sides of the branches are of a brilliant silvery-white, which is very pleasing when seen under a winter sun. It requires a deep, moist soil.

Cedrus Deodara var. *albo-spica* is a form of the Deodar, having the ends of the shoots tipped with silvery-white. In habit it is denser than the type, assuming a broadly conical rather than a pyramidal outline. What its ultimate height will be it is impossible to say at present, but from present appearances I should say it will not attain to a height of more than 20 feet, and be rather broad in proportion. It requires a deep, rather light soil, and an open, sunny situation, as if at all crowded by other plants this variety is liable to lose its foliage and become thin and ragged.

C. D. var. *aurea*.—This is a new form of the Deodar, with bright yellow foliage, but it is impossible to say much about it at present, though from its appearance it is likely to be a decided acquisition to our gardens.

Pinus sylvestris var. *aurea* is a golden form of the common Scotch Pine, and makes a cheerful

bit of colour in the pinetum in winter. It is green in summer, but assumes a bright yellow tint in winter. It is a slow grower, but does well almost anywhere.

PROPAGATION.

The variegated forms of *Cupressus*, *Thuya*, and *Juniperus* can be increased by cuttings, except in the case of the more delicate ones, which thrive best when grafted on stocks of the species they belong to. Cuttings are made in August from the half-ripened shoots, inserted in sandy soil, and put in a cold frame, the atmosphere of which is kept close for a time. They will soon make roots, and should be left until late spring before planting them out, merely keeping them from frost during the winter, though two or three degrees do not hurt them. The other variegated Conifers mentioned should be grafted on stocks of the species they are forms of. It is sometimes advised to use a certain stock for certain Conifers, as *Abies pectinata* for any Silver Fir, but while this answers as a means of propagation, it does not always follow that the plants will grow and thrive afterwards. For example, *Cupressus macrocarpa* var. *lutea*, when grafted on *C. macrocarpa* or *C. sempervirens*, grows nearly as fast as a seedling plant, but when worked on *C. Lawsoniana* it takes years to make merely a stunted bush about 3 feet high. *J. C., Bayshot.*

TREES AND SHRUBS.

HYPERICUM PATULUM VAR. HENRYI.

The ordinary form of *Hypericum patulum* is fairly well known in south country gardens, being one of the most attractive of the St. John's Worts, also one of the parents of the valuable *H. Moserianum*. It is, however, not so hardy as could be wished, for it dies back to the ground nearly every winter and is frequently severely injured. This new variety, introduced from China by Dr. Henry in 1899, is a hardier and superior plant. It is sturdier in habit than the typical *H. patulum*, and so far has not suffered in the least through frost. The leaves, ovate and 2 to 3 inches long, are dark-green above and glaucous beneath. The flowers are of the rich glowing yellow colour common to this group of *Hypericums*, and $1\frac{1}{2}$ to 2 inches across. In habit and vigour this variety approaches *H. Hookerianum* (*oblongifolium*), but it is more bushy and better furnished than that species, and the flowers are rather larger. It has the two-edged flower-stems and more erect styles that distinguish *H. patulum* from *H. Hookerianum*. The new variety is flowering freely now in the Kew arboretum. *W. J. B.*

OAK AND YEW FORMING ONE TRUNK.

In the park of St. Pierre, about four miles from Chepstow, on the crown of some rising ground, is a colony of old Yews, interspersed with Oaks and other trees. There are about sixty of these Yews, some dead, some dying, and others in vigorous health. The history of the trees is obscure, but doubtless they were all planted at the same time. The tallest is between 60 and 70 feet in height, but the majority are about 50 feet high. The girth of the largest at 5 feet from the ground is 22 feet 6 inches. While one of these trees was being measured it was noticed that the bark on one half was different to that on the other portion, and on retiring to a little distance the branches of an Oak were seen overtopping those of the Yew. On close inspection it was found that a Yew and an Oak had grown so closely together that they formed a solid trunk to a height of 5 feet. The girth of the combined trunk at this height was just over 21 feet. It is a curious fact that none of the St. Pierre trees are hollow, as is generally the case with old Yews. *S. W. Fitzherbert.*

THE VEGETATION OF PASTURE LAND.

In the *Philosophical Transactions of the Royal Society*, vol. 173 (1883), is contained a very elaborate paper on the botanical results of experiments on the mixed herbage of permanent meadow at Rothamsted.* In that paper are discussed the results obtained on two unmanured plots and on several plots treated with manures of varying nature and of various strength for a period of over twenty years. These details are co-related with the meteorological records for the same period, and especially with those relating to certain separation or census years, when a minute investigation of component species of each plant was made. The conformation and habit of growth of each plant, so far as they are relevant, were also given in this paper.

Speaking of the botanical results only, we may say that a census of the plants found growing on all the plots, manured or otherwise, or in the hay derived from them, was made in different years by Mr. W. Sutherland, Mr. R. Keenan, Mr. W. B. Hemsley, Mr. Walter Davis, always with the invaluable aid rendered by Mr. Willis. These experiments are still going on and records are duly kept. Our present intention is simply to call attention to some of the salient results concerning the vegetation of the two unmanured plots. We must refer the reader to the paper above cited for full details, including those relating to a fourth separation year, 1877, not referred in the following notes, and for a discussion of their significance. The figures hereinafter given do not in all cases tally exactly with those in the more elaborate paper. There are many reasons for these discrepancies, which need not here be entered into, inasmuch as they do not affect the general conclusions.

The accompanying diagrams, made for our own convenience whilst engaged in collaboration with the Rothamsted heroes, show approximately the varying constitution of the herbage on the two unmanured plots (3 and 12) in the experimental grass plots, as determined by the census taken in the years 1862, 1867, and 1872 respectively. In each case the left-hand vertical column refers to the year 1862, the central one to the year 1867, whilst that to the right shows the condition of the plots in 1872. In the paper referred to the results of a fourth complete census are also given. In all cases the thin line refers to plot 3, the thick black line to plot 12. These details are interesting as showing the diversity in the plots dependent on inequalities of growth from variations in climatal conditions and the varying habits of the plants. As no manure has been applied to these plots for many years, the changes in the vegetation cannot be attributed to any other than climatal causes and individual peculiarities of the plants themselves. They afford indications of the nature of the struggle for existence or supremacy among plants growing together in association, independently of any differences in the quality or quantity of the food supply.

According to the last-issued summary (1905) the average produce of hay per acre on plot 3 has been 21.3 cwt., or, if the amount of the second crop be added, 22.1 cwt.; whilst in 1904 the total was 28.4 cwt. per acre—a considerable increase over the average, again showing the effect of season.

The figures for plot 12 are 24 and 24.9 cwt. on the average; whilst in 1904 the total amount is given as 28.7 cwt.—almost exactly the same as on plot 3. The mean amount for both plots is thus a little more than 24 cwt. per acre.

Turning now to details, fig. 1 shows the total number of different species of flowering

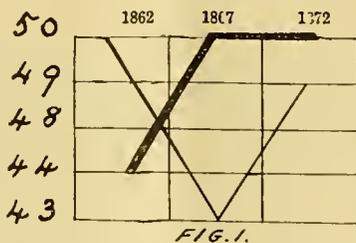


FIG. 1.

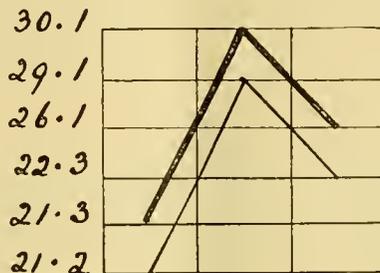


FIG. 2.

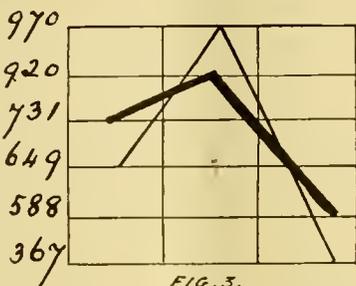


FIG. 3.

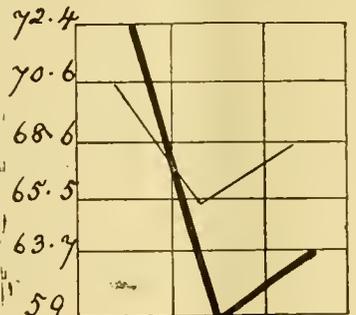


FIG. 4.

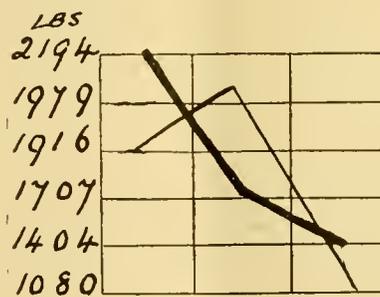


FIG. 5.

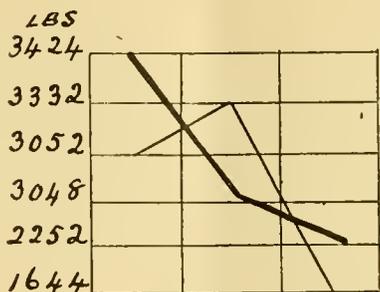


FIG. 6.

plants detected on plot 3 and on plot 12 in the three census-years 1862, 1867 and 1872. The thin line, representing the state of affairs in 1862 on plot 3, shows that on that plot there were fifty species in 1862, forty-three in 1867, and forty-nine in 1872. On plot 12 there were forty-four species in 1862, fifty in 1867, and the same number in 1872, so that the total number of detected species on the two plots taken together varied from forty-three to fifty, a mean of a little over forty-six. The great drop on plot 3 in 1867 would seem to indicate that certain species were dominant in that year and crowded the others out. Doubtless all fifty species existed every year, but some were in a dormant condition, or at least were either not represented in the hay or were not observed on the plots during the course of the season.

Fig. 2 shows the percentage of "miscellaneous" weeds in the three years, the "miscellaneous" including all flowering plants other than grasses and Leguminosae. The lowest percentage was 21.2 on plot 3 in 1862; the highest, 30.1 on plot 12 in 1867, the mean of the two being rather over 25. The conditions on the two plots must have been, as will be seen, very nearly alike.

In fig. 3 the total weight of the miscellaneous plants is shown varying from 367 lb. on plot 3 in 1872 to 970 lb. on the same plot in 1867.

In fig. 4 is shown the percentage of grasses to the whole herbage—the lowest percentage 59 on plot 12 in 1867, and highest, 72.4, on the same plot in 1862. The conditions are the reverse of those relating to the miscellaneous plants shown in fig. 2.

Fig. 5 indicates the total weight of the grasses in the two years, which varied from 1,080 lb. on plot 3 in 1872 to 2,194 lb. on plot 12 in 1862.

Fig. 6 shows the weight of the total produce, varying from 1,644 lb. on plot 3 in 1872 to 3,424 lb. on plot 12 in 1862. The curve for the grasses and for the total herbage is thus seen to be approximately the same (compare fig. 5).

Fig. 7 refers to the percentage of the Leguminosae (Clovers, &c.). Here the lowest percentage (5.35) occurred on plot 3 in 1867; the highest (10.7) in the same year on plot 12; so that there was in this year 1867 a directly opposite condition in the two plots as regards Leguminosae as there was also in the total number of species, as shown in fig. 1—owing, no doubt, to some individual differences between particular species which were not obvious on the surface.

Fig. 8 shows the weight in pounds of the Leguminosae, varying from 148 lb. on plot 3 in 1872, to 329 lb. in 1867 on plot 12, thus corresponding closely with the curve in figs. 7 and 11.

Fig. 9 shows the number of hundredweights per acre, varying from 14½ cwt. on plot 3 in 1872 to 30½ cwt. on plot 12 in 1862. The notes as to this particular figure are incomplete.

Fig. 10 shows the mean percentage of grasses to the whole of the herbage, varying from 56.02 on plot 12 in 1867 to 65.70 on plot 3 in 1872. The two plots correspond closely. The curve is nearly in conformity with that on plot 4, also representing the grasses.

In fig. 11, as in fig. 7, are given the percentages of the Leguminosae, varying from 5.35 in 1867 on plot 3, to 10.79 in the same year on plot 12, thus showing an opposite condition of affairs on the two plots in the same year. See also fig. 8. The diversity between these plants and the grasses is also marked. Compare figs. 10 and 11.

In fig. 12 are shown the percentages of miscellaneous weeds, varying from 21.2 on plot 3 in 1862, to 30.19 on plot 12 in 1867. The details of the two plots are here pretty uniform.

Fig. 13 shows the percentage of Ranunculaceae (Buttercups), varying from 2.02 on each plot in 1867, to 4.89 on plot 3 in 1862, so that the success of the Buttercups on that plot in that year was

* By Sir J. B. Lawes, Bart., Dr. (afterwards Sir) Henry Gilbert, and Dr. Maxwell T. Masters. See also *The Rothamsted Experiments*, by W. S. Fream, p. 133; *Plant Life*, by Dr. Masters, chap. vii., "The Battle of Life."

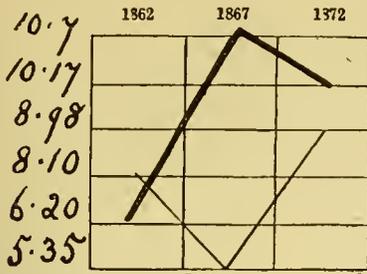


FIG. 7.

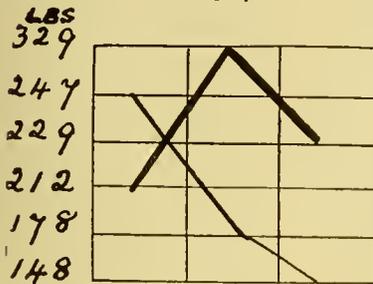


FIG. 8.

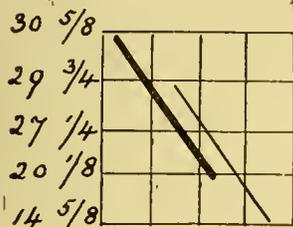


FIG. 9.

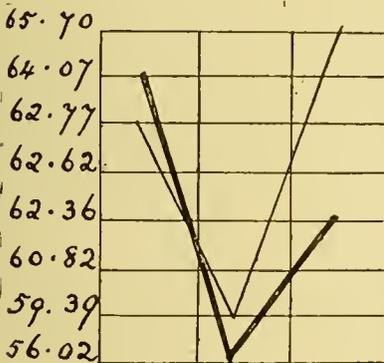


FIG. 10.

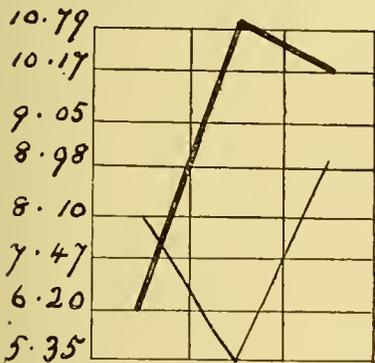


FIG. 11.

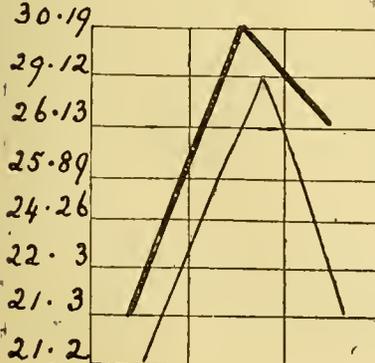


FIG. 12.

very marked. The general character of the curve is like those of figs. 4 and 10 (grasses).

Fig. 14 shows the great uniformity in the growth of the Umbelliferae for the two years, the percentages varying from 2.50 on plot 3 in 1862, to 6.62 on plot 12 in 1867. It also shows that the requirements of the Umbelliferae conform to those of the miscellaneous weeds generally—see figs. 2 and 12, but are just the reverse of those of the Ranunculaceae.

In fig. 15 are given the percentages for the Compositae. The two plots are shown to be pretty uniform, the range varying from 1.98 in 1862 on plot 3 to 5.34 on the same plot in 1872, and from 2.86 on plot 12 in 1862 to 7.61 in 1872.

Fig. 16 shows the same details in the case of the Plantains (Plantago). Here again the condition is nearly the same in the two plots, the lowest (0.41) being on plot 12 in 1872, the highest (10.73) in 1867 on plot 3, the range being from 0.41 to 10.73. The curve is almost the same as that for the weight of miscellaneous plants (fig. 3).

Fig. 17 gives the percentage details for Rumex acetosa: the lowest percentage was 1.40 on plot 3 in 1862; the highest, 3.61, on plot 12 in 1867.

Fig. 1 shows the number of species observed on the two unmanured plots in the years 1862, 1867 and 1872.

Fig. 2 shows the percentage of miscellaneous flowering plants other than grasses and Leguminosae on the same plots in the same years.

Fig. 3, weight of miscellaneous plants in lbs.

Fig. 4, total percentage of grasses.

Fig. 5, weight of grasses in lbs.

Fig. 6, total weight of produce.

Fig. 7, percentage of Leguminosae.

Fig. 8, weight of Leguminosae.

Fig. 9, cwt. per acre (there is some doubt as to the precise accuracy of this table).

Fig. 10, percentage of grasses.

Fig. 11 (duplicate of fig. 7), percentage of Leguminosae.

Fig. 12, percentage of "miscellaneous" plants.

Fig. 13, percentage of Ranunculaceae.

Fig. 14, percentage of Umbelliferae.

Fig. 15, percentage of Compositae.

Fig. 16, percentage of Plantaginaceae.

Fig. 17, percentage of Rumex acetosa.

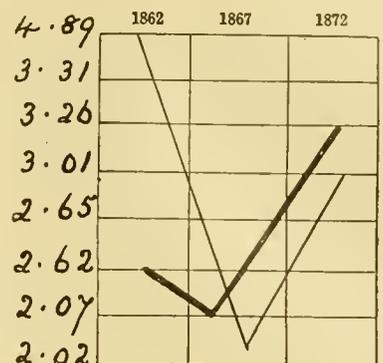


FIG. 13.

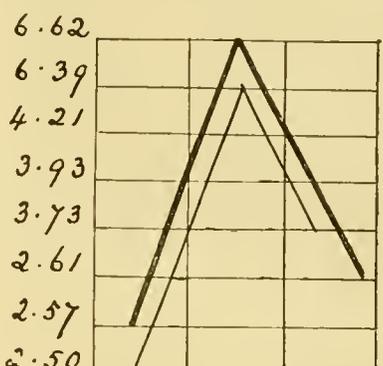


FIG. 14.

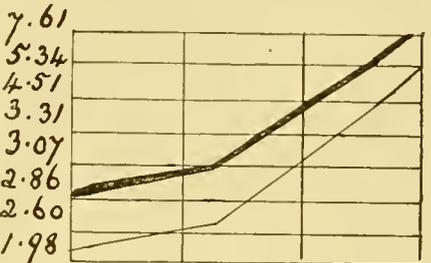


FIG. 15.

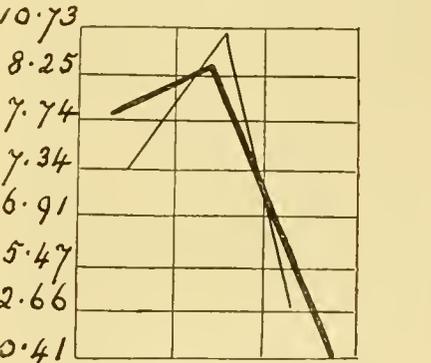


FIG. 16.

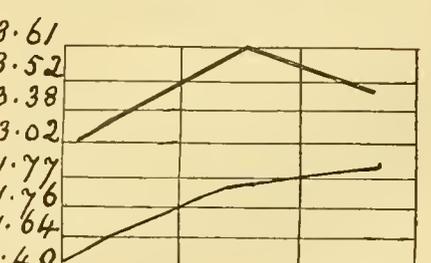


FIG. 17.

FORESTRY.

BELGIAN FORESTRY.

THE recent excursion of the Royal English Arboricultural Society to Belgium under the guidance of Professor Fisher gave those members taking part in it a splendid object-lesson of what can be done by an energetic and progressive Government Department of Forestry. Belgium is a small country, only about one-eighth the size of Great Britain, and yet she is able to show a system of state and communal forestry which, to say the least, is a striking contrast to what can be found at home. Under Dutch rule Belgian forests were said to be badly managed—many of the state forests being either sold outright or their timber turned into money—but after Belgium obtained her independence she was not long in putting things to rights. It was not until 1854, however, that the Code Forestier, by which Belgian forests are now administered, came into existence. While allowing full liberty to the private owner, it controls the system of management adopted in all forests belonging to public bodies, chiefly represented by the communes, and which cover altogether about half a million acres, or rather more than one-third of the total area of woodland in the country, the State forests occupying only 62,000 acres, while the private woodlands extend to 823,000 acres, representing altogether about 17 per cent. of the total area of the country.

This forest area occupies all classes of land, from deep good loam, which might fairly be claimed by the agriculturist, to peat-bog, or thin rocky land at high elevations. The greater part, however, occupies land of little use for anything but forestry purposes, also some really good land that has been covered with forest from early times.

Mountain land above the limits of tree growth does not exist, so that the half million acres of waste land represents rather a large proportion of the total area. This unsatisfactory feature is however being recognised by the Government, and since 1897 it has acquired and planted over 15,000 acres at a cost of £212,000.

During the last twenty years the Forest Department has been chiefly engaged in the conversion of

the large areas of coppice or coppice with standards into high forest. In Belgium as in England, ordinary coppice is no longer a paying crop, and an attempt is made either to replace the coppice with timber trees altogether, or to increase the proportion of Oak standards and the length of the coppice rotations generally, so as to obtain produce which will furnish pit-wood, if nothing larger.

In the communal forests the coppice with standard system is still favoured to a great extent, as it allows returns to be made at short intervals and according to the requirements of the communes for money. Exceptional expenditure, such as the building of a church, the laying down of a new water-supply or drainage system, or other work of that nature, is met by making a heavier fall of timber in the communal woods; and the great advantage of such a system to the present generation is obvious. The Mayor of the village of Poix, visited by the Society, is also the head woodman of the commune, and what better custodian of the woods and the villagers' interests combined could possibly be found?

The principal high forest crops are Beech (either with or without Oak), Spruce, and Scotch Pine. In the Ardennes large areas of pure coppice exist, and here and there may be seen the combination of agriculture and forestry, which is known as *sartage*, and which consists in sowing Rye or other cereals between the shoots of the underwood after each cutting of the latter, but the labour involved can hardly make the system profitable. The Conifers are usually grown on short rotations of thirty to forty years, being used chiefly for pitwood, pulp, &c. Beech and Oak form the bulk of the heavy timber, the former being particularly fine at moderate elevations, while Spruce does well on the higher ground. Scotch Pine rarely succeeds after the fiftieth year in the Ardennes, and so far as was seen its chief function seemed to be the reclamation of the worst classes of land, rendering them fit for Beech or other hard-wood crops. Of exotic trees, Weymouth Pine gives great promise of becoming useful, and succeeds well on the highest ground, it being evidently less affected by wind than is the case in England. For wind-breaks *Picea alba* and *rubra*, *Pinus Cembra*, &c., are used. A striking feature throughout the country was the extensive planting of roadside trees, chiefly Wych Elms, which has been carried out by the Department of Roads and Bridges during the last fifty years. Railway embankments were also largely planted with Cobbett's friend, the Locust-tree, but appeared to be chiefly treated as coppice.

The growth of all species proved clearly that Belgium has a better climate for timber-growing than has the greater part of England, probably due to its geographical position. Wind is said to be troublesome, but is evidently not of that persistent nature which affects tree growth so much with us.

Ground game in the shape of rabbits was not plentiful, although the foresters complained of the damage they did, as in duty bound. But in some of the State forests, deer do a good deal of damage, so that England is not the only country in which forestry is handicapped by game, as we are apt to think at times. *A. C. Forbes.*

(To be continued.)

REPORT ON THE TRIVANDRUM MUSEUM.—

We have received the Report on the Trivandrum Museum and Public Gardens for 1903-4. The want of an efficient water supply is found a great disadvantage. Various fishes and birds were obtained for the collections. Much work was done in the public gardens in spite of the lack of water, and there is a good record of plants that flowered, and of various species that were newly introduced into the grounds.

The Week's Work.

FRUITS UNDER GLASS.

By F. JORDAN, Gardener to Dr. CORBET, Impney Hall Gardens, Droitwich.

Cucumbers.—A sowing of some approved variety, such as a good strain of Telegraph, which is still difficult to surpass, should be made at the present time. Another sowing should be made about the middle of September to obtain plants for furnishing fruits during the winter months, and as these plants will have a long period of growth the old material from the hotbeds should be entirely cleared out and the pits thoroughly cleansed of woodlice and other insects. Have young healthy plants in readiness for planting when the beds are prepared. Do not use a large quantity of soil for planting, but rather give light top-dressings of a suitable compost at short intervals afterwards as the roots appear on the surface. Encourage the plants to make sturdy growth by giving free ventilation on all favourable occasions. Plants growing in pits and frames must have the old growths and decayed leaves removed and should be encouraged to develop young growths. Ventilate the structure early on bright mornings, closing the same early in the afternoon with sun-heat and plenty of atmospheric moisture present. Apply top-dressings of rich soil, also liquid-manure, to plants that are showing signs of exhaustion, and place fresh linings of litter to the frames in order to maintain a suitable degree of bottom-heat.

Tomatos.—Plants required for winter fruiting should be potted into 8-inch pots as soon as they require a shift and be stood out in the open, unless the weather is wet and unsettled, when they should be placed in a cool pit, given plenty of room, and full ventilation. Exercise much care in watering the plants. A mixture of good fibrous loam, lime rubble, and burnt ash, with a sprinkling of bone-meal, forms a suitable compost. Pinch out all side laterals as they appear, and have the plants neatly staked.

Cherries.—The foliage on trees in pots must be kept clean by freely syringing with clear water. The plants require to be well supplied with water. Late varieties that are planted out, and which have been kept on the dry side should receive liberal supplies of liquid manure or clear water as soon as the fruit is gathered, and the foliage thoroughly cleansed of insects by some suitable insecticide.

Plums.—Fruits of early varieties have been gathered by now, but trees of midseason and choice late varieties will still be yielding an invaluable supply now that fruit is scarce. The trees require liberal ventilation, and careful attention to watering, using clear water only on those trees whose fruits are ripe or ripening. Syringe and damp all available spaces in the house without wetting the fruits.

PLANTS UNDER GLASS.

By A. BULLOCK, Gardener to E. J. WYTHES, Esq., Copped Hall, Epping, Essex.

Cleansing of Structures.—It is very necessary to periodically cleanse all structures in which plants are cultivated at this season of the year, and before housing the plants grown out-of-doors during the summer months advantage should be taken of the opportunity afforded to have this work done thoroughly. Heated houses in particular must not be neglected in this respect. In the first instance thoroughly scrub all the woodwork with hot water and soft or carbolic soap. In cases where it is practicable to syringe the walls and woodwork of structures with paraffin and soapy water without fear of causing injury to the plants, let this be done, and afterwards whiten the walls with lime-wash to which a little paraffin has been added. Attention to these matters will amply repay for the trouble involved.

Stephanotis.—These plants will now have completed their growth, and therefore, if they are cultivated as specimens in pots, remove them to cooler quarters and lessen the supply of water afforded to the roots. Full exposure to the sun's rays is very necessary to ripen the growths thoroughly, and if this be done it will be sure to cause them to bloom freely.

Bougainvilleas.—If any Bougainvillea is planted out in a conservatory or similar structure, let

watering at the roots be gradually reduced to encourage resting, but this must not be done suddenly otherwise the plants will suffer a severe check. Admit more air where practicable; this will also tend to induce resting. Plants in pots should be removed to a cool, freely ventilated house, and treated similarly to those planted out in respect to the supply of water.

Tuberoses.—Little difficulty need be experienced in perfectly cultivating these sweet-scented flowering plants, but failure sometimes results from making a wrong start, and from employing too much heat in the early stages of growth. Let the bulbs be potted moderately firm in a compost of loam, leaf-soil, and silver-sand, used in equal proportions. This compost should be in a sufficiently moist condition that no further water will be needed until the bulbs commence to make roots. Place the pots containing the bulbs in a frame on a cool base composed of ashes, where they may remain until growth commences. The plants should then be removed to warmer quarters. At no time should very hard forcing be employed. If a succession of flowers is required, let batches of bulbs be potted at suitable intervals proportionate with the requirements of the garden.

THE ORCHID HOUSES.

By W. H. YOUNG, Orchid Grower to Sir FREDERICK WIGAN, Bart., Clare Lawn, East Sheen, S.W.

Odontoglossum crispum.—A very suitable rooting medium for this plant and for most of the hybrids from this species is a compost of peat two-fifths, sphagnum-moss two-fifths, and good Oak leaves one-fifth, adding some silver-sand and crushed charcoal during the mixing of the ingredients together. The peat employed need not be deprived of all the fine particles, neither need many of the Fern-rhizomes be removed. The Oak-leaves should be in a moderately dry condition, not much decayed, for the tougher they are the better; but remove all sticks and other undesirable matter. Let such a mixture be prepared at the present time, Fern-rhizomes be dried and got ready for drainage material, and sphagnum-moss be chopped for surfacing the plants.

When to Pot the Plants.—The fact that Orchid roots when taken from their surrounding materials and put into fresh compost seldom thrive afterwards, should be remembered when considering the needs of a plant. So long as a plant has sufficient room to develop, and appears to be in a satisfactory condition, a renewal of the surface materials just prior to the plant's making new roots should suffice. Plants that have reached the sides of their receptacles, or whose rooting medium is unsatisfactory, should be repotted when the new growths have become an inch or two in length.

How to Pot.—Carefully turn out the plant and pick away a large portion of the old material, cutting off dead roots and all leafless pseudo-bulbs. The size of pot that is necessary should be determined by the character, condition and habit of the individual plant, always restricting the size for delicate subjects and treating vigorous specimens more liberally. If Fern rhizomes are used for the drainage material the receptacle may be made about one-third full, pressing the rhizomes in moderately firm, and if crocks are used a similar quantity will be suitable. The plant should be held in such a position that the base of the new growths is on a level with the rim of the pot, then fill in around with the mixture to within about an inch of the rim, pressing it firmly but not hard, and trying in the process to bring the loose roots as near to the sides and surface as possible without injuring the points. The remaining space to nearly the rim should be filled in with the chopped sphagnum-moss, used in a moderately dry condition so that it cannot be made hard. If good peat is plentiful I should prefer to finish off the surface with peat and sphagnum-moss in the old-fashioned way.

Subsequent Treatment.—Assuming that the plants are in a well-regulated house; their treatment during the present month and October will be very simple. In an amateur's collection the potting of the plants will extend over a considerable period, and therefore general and systematic treatment cannot be afforded the whole. Those that are only resurfaced will need more liberal

applications of water than those which are re-potted, but in neither case should much be given until new roots have entered the fresh materials. If the weather be favourable to the use of the sprayer, sufficient moisture may be afforded by this means. The surface-moss may appear dry, but immediately beneath it will almost sure to remain moist for a long time after being placed there. Free ventilation, especially at night, should be employed until the end of September, whenever the temperature out-of-doors is favourable. Shade the plants from direct sunshine, but do not allow the blinds to remain down longer than is essential.

THE HARDY FRUIT GARDEN.

By W. H. CLARKE, Gardener to Sir WILLIAM PLOWDEN, Aston Rowant House, Oxon.

Plum trees.—Aphides have been very numerous this season and trees that were cleansed previous to ripening their fruits have probably become infested again during the time when syringing was necessarily suspended. Therefore as soon as the fruit has been gathered from a tree, let the points of badly attacked shoots be removed, and then cleanse the tree with Quassia-extract if it is necessary. Varieties that will ripen later may be treated similarly. Supply such late varieties with sufficient nutriment to enable them to perfect first-class fruits. In the gathering of Plums let the fruits be handled very carefully so as not to destroy the "bloom," which is very attractive. Choice dessert Plums should not be gathered until they are quite ripe.

Peaches and Nectarines.—Examine the trees daily and gather all ripening fruits. A "dead ripe" Peach is worthless, but some varieties of Nectarines, as for instance Humboldt, are improved by over-ripeness and slight shrivelling. Immediately a tree has been cleared of its fruits cut out all the wood that will not be required for fruiting next season. The remaining shoots may then be lightly tied or nailed in, and the trees cleansed. Expose all late fruits to the sun and air by the removal of foliage, and if necessary a shoot. Trim in lateral growths, excepting where a strong shoot was stopped some time ago; the lateral growths from this may be advantageously tied in and are preferable to coarse and sappy shoots.

Planting of Fruit Trees.—Where it is proposed to extend the planting of fruit trees, a careful note should be made of the best varieties to plant in the particular district. This question needs close attention, as some varieties thrive and produce good crops of fruit in one locality, but entirely die out in another. [For varieties of Apples it will be useful to refer to the result of the Apple census published in the *Gardeners' Chronicle*, October 29 and November 5, 1904. ED.]

THE KITCHEN GARDEN.

By W. FYFE, Gardener to Lady WANTAGE, Lockinge Park, Wantage.

Tomatos.—Plants that are now ripening their fruits upon outside walls will be benefited if some spare lights be placed over them and made secure to the wall, so that wind will not displace them. As the temperature at night may now be expected to become gradually colder, the provision of a glass protection will cause the fruits to mature more quickly than they would otherwise do. Plants intended for fruiting in winter, but which have not yet been put into the final pots, should now receive attention. Use for this purpose soil that is of a light nature and only moderately rich. So long as the weather continues to be mild these plants will make most satisfactory progress if cultivated out-of-doors. Turn the pots on to their sides during heavy rains until the plants have rooted well into the fresh soil. Pots measuring 7 or 8 inches in diameter will be sufficiently large for winter-fruiting plants.

Onions.—If the tops of large specimen bulbs are still green and in a growing condition, bend them over to cause the bulbs to mature, but do not break them. It may be necessary in the event of the bulbs splitting to twist or partly raise the bulb. If seeds of winter varieties have not been already sown, as advised in a former Calendar, let the work be done without delay.

Lettuce.—In order to have plants that will stand through the winter, several sowings should be made during September on porous soil. If the plants are not too large they may pass through a very severe winter upon a deep, rich, sandy loam, when on cold clay or soil which is not sufficiently drained they would be likely to perish. Ground which has been trenched recently, provided the surface is well prepared by forking or digging, so that heavy rains may pass freely away, would be suitable. Allow plenty of space between all Lettuce plants, as this is more important now even than it was earlier in the season. Suitable varieties are Brown or Bath Cos, Hick's Hardy White, and Cabbage Lettuce Stanstead Park, an old and valuable variety for this purpose, which last spring I saw in a condition not easily surpassed for early spring use.

Vegetable Marrow plants will continue in a fruitful condition until cut down by frost. Do not allow the fruits to get very large before being cut from the plant, or fewer fruits will afterwards be produced, and the flavour of the large fruits will be poor.

French Beans are generally in request, and although they are plentiful at present in the open garden, in order to maintain a supply it is necessary to sow seeds in pots at the present time, using light, rich soil. Let the pots stand in the open-air until the appearance of frost.

THE FLOWER GARDEN.

By W. A. MILLER, Gardener to Lord HENRY C. BENTINCK, M.P., Underley Hall, Westmoreland.

Propagation of Roses by Cuttings.—This work should be commenced by the middle of the present month. The strongest and hardiest of H.P.'s and varieties of the Rambler type, &c., succeed very well by this method. Insert the cuttings in light soil on a well-drained border facing to the west or east. Obtain the cuttings from plants that require a little thinning. Make the cuttings 9 to 12 inches long, and let each have a "heel" of last season's wood attached to it. Take out a trench, and insert the cuttings two-thirds of their length in the ground at 6 inches apart. Sprinkle sand round the base, add a little soil, and then make the ground firm by treading. Afterwards dig 15 inches more soil, stretch the line, and insert another row of cuttings. Cuttings of free-growing H.T. varieties should be inserted round the sides of 6-inch pots, using a sandy compost. Place them in a frame over a mild hot-bed. When rooted they can be wintered in a cool frame. If potted-on next spring they will make good plants to put out in early summer.

Propagation of Shrubs.—The propagation of various shrubs may now be commenced. Choose a border that is protected from searching winds, and having loosened the soil, put about 6 inches of sandy compost on the surface, and cover with a frame. Obtain cuttings 4 to 6 inches long from the half-ripened tips of branches. Make a clean cut at a joint, and remove an inch or two of the bottom foliage; insert nearly half the cutting and make the soil firm about it; water thoroughly and shade from hot sunshine. A considerable measure of success may be secured from the undermentioned shrubs:—Cephalotaxus, Cupressus, Cryptomeria elegans, Cerasus, Garrya elliptica, Juniperus, Ligustrums, Hederas, Ilex, Retinosporas, Thuyas, Thuiopsis, Taxus, Osmanthus ilicifolius, &c. The following can also be inserted in pots and placed on a slight bottom, heat:—Buddleia variabilis Veitchianus, Ceanothus of sorts, Choisya ternata, Euonymus-Eurya, Schizophragma hydrangeoides, and others.

THE APIARY.

By CHLORIS.

How to commence Bee-keeping in Autumn.—Many of those who keep bees in straw skeps will be preparing to take the honey, first destroying the bees over sulphur fumes. If anyone wishes to obtain bees cheaply he may do so now. Find out someone who is desiring to take his honey, and then offer to drive the bees; he will generally be glad for you to do so.

The Accessories necessary for the Task.—Purchase a good smoker, by that I mean one with a good fuel chamber; this will cost about four to six shillings. Buy a piece of coarse black net about 1 yard long and 18 to 24 inches wide; fasten the ends, hem the top, and put in a piece of elastic long enough to fit the crown of a hat tightly. Draw this down to the rim of the hat and tuck the free side into the coat. This enables you to do the work with confidence, for then you cannot be stung about the face. Some purchase a pair of rubber gloves and a pair of gauntlets, but these only make one clumsy in handling bees, and often the insects become so infuriated that the manipulator is driven out of the apiary. A skep will be necessary to receive the bees, an iron skewer to act as a hinge, and a pair of driving irons, which a blacksmith would make for a few pence.

Driving the Bees.—Choose a fine warm evening; fill the smoker with some lighted brown-paper, corduroy, rotten wood, or rags, anything that will smoulder well and create a good quantity of smoke. Give the bees to be operated on a good puff through the entrance; this drives them to the honey, where they will gorge themselves as Nature dictates, in order to have sufficient material to convert into wax should they be removed to a home without comb. Whilst the bees are so engaged place an empty bucket in an open space

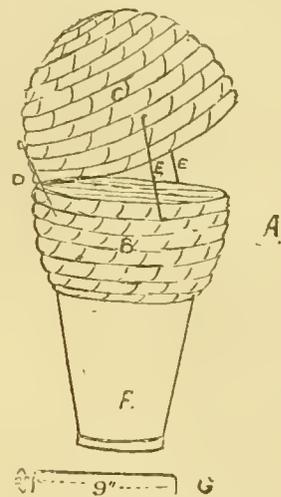


FIG. 67.—THE DRIVING OF BEES. (See explanations in text.)

some distance from the stand ready to receive the skep of bees when the stock have sufficiently gorged themselves, which will take two or three minutes. Give them another puff through the entrance to the skep, overturn the colony, and at once blow smoke over the combs to drive down the bees, which is the key to successful driving. Take the upturned hive and place it in the bucket; over the colony put the empty skep, and make it secure on one side with the iron skewer, raise the opposite side, and keep the top hive raised by means of the driving-irons. The illustration at fig. 67 will explain the operation:—A is the position for the operator with his back to the strong light; B, the skep containing the bees to be driven and the combs running from the operator; C, the empty skep to receive them; D, the iron skewer acting as a hinge; E E, the driving irons in position; F, the empty bucket, acting as a stand for the stock; and G is a driving iron with the dimensions marked.

How to Drive.—Tap the sides of B gently, and in a few minutes the bees will commence to ascend to the upper skep C. In about twenty to thirty minutes all the bees will have left B. Take off the irons and release the skewer D, overturn C and drop the bees into some receptacle, such as a bag of loose texture which will admit air. Drive others in the same manner and mix the lot. When home is reached, turn the bees out by shaking them on the frames containing full sheets of foundation and drive down with smoke. This done, cover up warmly with quilts and feed the bees with syrup.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Letters for Publication, as well as specimens and plants for naming, should be addressed to the EDITOR, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

Special Notice to Correspondents.—The Editor does not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editor does not hold himself responsible for any opinions expressed by his correspondents.

APPOINTMENTS for SEPTEMBER.

SATURDAY, SEPT. 2	{ Société Française d'Horticulture de Londres meet.
WEDNESDAY, SEPT. 6	{ York Dahlia Show. Glasgow and West of Scotland Horticultural Society's Show (2 days).
THURSDAY, SEPT. 7	{ National Dahlia Society's Show at Crystal Palace (2 days) Faisley Horticultural Society's Exhibition (2 days).
TUESDAY, SEPT. 12	{ Royal Horticultural Society's Committees meet.
WEDNESDAY, SEPT. 13	{ Royal Caledonian Horticultural Society's International Exhibition at Edinburgh (2 days).
TUESDAY, SEPT. 19	{ London Dahlia Union's Exhibition at Earl's Court (3 days).
TUESDAY, SEPT. 26	{ Royal Horticultural Society's Committees meet; National Rose Society's Autumn Show (2 days); and National Dahlia Society's Committee meet in Royal Horticultural Hall, Vincent Square, Westminster.
FRIDAY, SEPT. 29	—Michaelmas, Quarter Day.

SALES FOR THE WEEK.

MONDAY, SEPT. 4—Flowering Bulbs, and 130 cases of Lillium Harrisii, at Stevens' Rooms, King Street, Covent Garden.

WEDNESDAY, SEPT. 6—Flowering Bulbs, at Stevens' Rooms.

For particulars of Messrs. PROTHEROE & MORRIS' Trade Sales, see pp. ii. and iii. of our Advertisement columns.

AVERAGE TEMPERATURE for the ensuing week, deduced from observations of Forty-three Years at Chiswick —59'4".

ACTUAL TEMPERATURES:—

LONDON.—Wednesday, Aug. 30 (6 P.M.): Max. 60°; Min. 53°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—Thursday, Aug. 31 (10 A.M.): Bar., 30.2; Temp., 60°. Weather—Overcast, with occasional sunshine.

PROVINCES.—Wednesday, Aug. 30 (6 P.M.): Max. 60°, England, S.; Min. 54°, Scotland, E.

Fungous Pests.

In a communication to the National Horticultural Society of France on July 27 last, M. MANGIN, one of the Professors at the Museum at Paris, dealt with the subject of the moulds and mildews which attack plants under glass, and especially with the remedial measures to be adopted. Speaking generally these may be divided into two categories.

The first is that by which immunity from the attacks of certain diseases is secured, just as animals are inoculated to protect them from various contagious maladies. In this direction little or no progress has yet been made, and so far the experiments are but tentative.

The second means is the adoption of some method of sterilisation, which prevents the pest from developing upon the plants. Sterilisation can be effected in two ways. First, by heat, which has long been practised, having been advocated by MGR. DU BELLAY in the sixteenth century. In America steam is employed on a large scale for this purpose. The vapour is made to circulate

through a network of copper pipes pierced with holes and laid a few inches below the ground. The steam is formed by a generator, and is at a temperature of 90° to 100° C. (200° to 212° F.) when it comes into contact with the earth. The results obtained from the use of steam are excellent, numbers of eel-worms, mites, wire-worms, fungi, &c., being thus destroyed. Unfortunately the process is costly, working out at 1 franc 70 cents (about 1s. 6d.) per square metre (a yard and a third), and only reduced to 75 cents (or 7d.) however economically

from diseases, and among the chief of these is the antiseptic cleansing of all tools and appliances, such as stages, bell-glasses, frames, &c. It is necessary to wash these articles in some antiseptic, as, for instance, a one-per-cent. solution of sulphate of copper.

Other remedial measures, such as vaporisation with sulphur, nicotin, and cyanogen gas, are not mentioned by M. MANGIN.

BULBOPHYLLUM [BOLBOPHYLLUM] LOBBII COLOSSEUM.—Our Supplementary Illustration gives a representation of the fine specimen of this remarkable Orchid, which was exhibited by WALTER COBB, Esq., of Tunbridge Wells, at the Royal Horticultural Society's show held in the grounds of Chelsea Military Hospital, on July 11, and for which an Award of Merit and a Cultural Commendation were accorded. The original form was described by Dr. LINDLEY in the *Gardeners' Chronicle*, 1847, p. 423, and the variety colosseum was first shown from the Royal Botanic Gardens, Glasnevin, Dublin, on July 23, 1895. In colour the variety resembles the original type, but the flowers are much larger. They are of buff-yellow, faintly marked with purple, and have the odour of freshly-cut Cucumbers. The specimen illustrated plainly indicates that species reproachfully denominated "botanical," when grown into fine specimens, may be as effective as showier species. *B. Lobbia* is a native of Java, and requires to be grown in a warm-house. The hinged lip is peculiar, and becomes especially interesting when a fly having alighted on this part it is suddenly tilted over with its head against the column.

THE NATIONAL DAHLIA SOCIETY'S annual show will be held on Thursday and Friday next at the Crystal Palace. The Secretary, Mr. H. L. Brousson, informs us that there will be flowers from a number of new exhibitors, and that an exceedingly good display is anticipated.

LÉO ERRERA.—Belgian botany, which has so greatly suffered during the last five years in the loss of some of its most eminent members, has to mourn the sudden death of Dr. LÉO ERRERA, as we announced on p. 118. LÉO ERRERA was a brilliant Professor of Botany at the Free University of Brussels, who did honour to Belgian science. Possessed of a noble character and adequate means, he was not only a botanist, but a philosopher and a philanthropist. On the day of his death (which was August 2) he was seen in Brussels, active, spirited, and full of life. After the evening meal he complained of headache, and, following his mother's advice, he went for a walk in the park, where a short time afterwards his body was found in one of the main paths. The death occurred at his residence at Vivier d'Oye, at Uccle, near Brussels. LÉO ERRERA early acquired a prominent reputation in the scientific world by works not only in the botanical domain, but also in other branches of physiology and pure science. Since boyhood science had been his passion. To it he devoted his life with faith and zeal. He was an excellent professor, explaining his subject with clearness of method and incomparable elocution. He never lost an occasion to propagate any useful ideas, by lessons, lectures, in evening schools and in universities, &c. The list of his publications is considerable, and shows the variety and extent of his work. These publications are models of scientific diction. CRÉPIN was his first master in botany. ERRERA had for him a deep and affectionate admiration, and was working with zeal at his biography for the Belgian Academy of Science at the time of his death. At the recent Vienna International Congress of Botany LÉO ERRERA was designated as one of the Chairmen

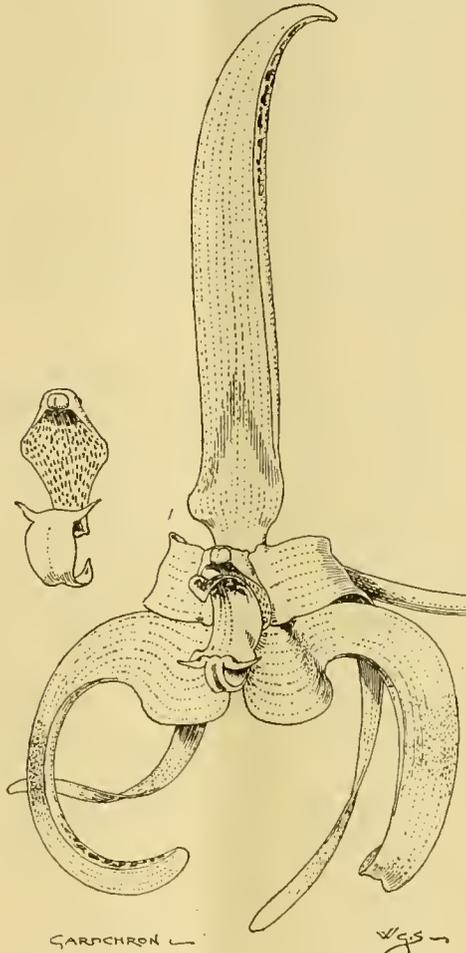


FIG. 68.—*BULBOPHYLLUM LOBBII COLOSSEUM*, Showing the hinged lip in two positions, as described in the text.

(See also Supplementary Illustration.)

managed. The great expense of sterilisation by steam renders it available only for very valuable crops, but as these are frequent in horticulture, there should be no hesitation about adopting the method in any case where the soil is so affected that it is impossible to grow the necessary plants upon it.

Sterilisation may also be effected by the use of antiseptics: salts of copper, naphthol, lysol, &c. These present certain difficulties. Salts of copper are very efficacious, but leave visible traces of their use. Further, long and patient observation is necessary to ascertain the exact dose necessary to kill the parasite without injuring the host-plant.

Naphthol does not stain the plants nor change their colours; it can also be used on food-plants without the risk of injury to men and animals who may eat the portions treated.

But there are always indispensable precautions to be taken when protecting plants



A FINE PLANT OF *BOLBOPHYLLUM LOBBII* COLOSSEUM, EXHIBITED BY W. COBB, ESQ., AT THE CHELSEA SHOW OF THE ROYAL HORTICULTURAL SOCIETY.

of the next Congress to be held in Brussels in 1910. He was a remarkable linguist, and at Vienna surprised the assembled botanists by discourses delivered with equal facility in several languages. LÉO ERRERA was a member of the Belgian Royal Academy of Sciences and Director of the Institute of Botany. He was 46 years of age. *L. G.*

THE SHREWSBURY SHOW.—In our report of the Shropshire Horticultural Society's show, we stated in our last issue that the exhibition was bigger and better than any previous one, and we now learn that the financial result constituted a record. The receipts on the first day of the show amounted to £813 7s. 4d., as compared with £405 5s. 9d. last year, and on the second day to £2,229 18s. 3d., as against £2,025 last year, making a total for the two days of £3,043 5s. 7d. The largest sum taken at any previous show was £2,923 1s. 3d. in the year 1902, therefore the receipts this year are £120 4s. 4d. to the good. It is interesting to record that in order to convey the vast numbers of people to the town, seventy special trains ran to Shrewsbury in the two days, and fortunately there was no accident. There were 355 bunches of Grapes shown, 72 of which were staged in the Champion Grape class. On p. 178 will be found an illustration of Lord HARRINGTON'S 1st prize exhibit in the class for sixteen dishes of fruit, prepared from a photograph kindly sent us by Mr. WALTER W. NAUNTON, one of the honorary secretaries. Mr. W. A. WATTS, St. Asaph, N. Wales, writes us to the effect that although he disposes of his surplus Carnation layers, he does not deal generally in nursery plants, and his exhibit of Carnations was a honorary one, for which he was awarded a Silver Medal. The firm described as Messrs. B. DOBBS & Co., Wolverhampton, in our report of the Medals awarded, should have been TOM B. DOBBS & Co.

THE LATE RICHARD DEAN.—The funeral of the late Mr. DEAN took place on Saturday afternoon last in Ealing Cemetery, when a large number of horticulturists and others paid their last tribute of respect to his memory. It is somewhat difficult to estimate the number that was in the cemetery, but about fifty well-known horticulturists, including those principally connected with the management of the National Chrysanthemum Society, were present, besides very many local people. Letters of sympathy also were received from upwards of forty who were unable to be present. No fewer than twenty-eight floral wreaths, crosses, anchors, or baskets were sent, including one of great size composed of Chrysanthemums, and sent by the National Chrysanthemum Society. Some of the donors were as follows:—The members of the National Chrysanthemum Society, the London Dahlia Union, the West Middlesex Building Society, the Ealing Horticultural Society; H. CANNELL, Swanley; HARRY and ARTHUR TURNER, Slough; WILLIAM MARSHALL, Chairman of the Floral Committee of the Royal Horticultural Society; SUTTON & SONS, Reading; JAMES VEITCH & SONS, Ltd., Chelsea; the Committee and Secretary of the Corn Exchange Chrysanthemum Society; Mr. A. B. WADDS, The Gardens, Paddockhurst, Crawley; Mr. and Mrs. HOWE, Streatham; and E. F. SUCH, Maidenhead. Mr. ALEXANDER DEAN, brother of the deceased, brought small posies of flowers to be thrown on to the coffin. The grave was lined with evergreens supplied by Mr. H. J. HOWELLS, Superintendent of the Ealing Cemetery, and flowers supplied by several horticultural friends. Mr. BEVAN supplied some white Chrysanthemums, which were employed next day to decorate the grave, a fitting tribute from the National Chrysanthemum Society's Committee. Mr. A. DEAN writes:—"Permit me the use of your columns to tender on behalf of my brother's

widow, his children, and myself, our sincere thanks to all those warm-hearted friends who sent letters of sympathy and flowers, or who attended at the graveside and saw him whom they had so well known and esteemed in life laid in his last resting-place. They came from far and near, many perhaps meeting on that spot after long separations, but all came for one object, to pay their respect for the last time to one who had known them all, but whose face they will never look upon again. My brother was not only an horticulturist, he was active in many other directions. To few men has it been given to live busier lives. He has left a void that cannot readily be filled."

NATIONAL CHRYSANTHEMUM SOCIETY.—On Tuesday evening last the Executive Committee met at Carr's Restaurant, Strand, Mr. THOMAS BEVAN presiding. The Chairman, pointing out the sad circumstances under which they assembled, alluded in feeling terms to the late Mr. RICHARD DEAN'S illness, and moved a vote of condolence with the family, which Mr. WITTY seconded. It was then stated that the officers had met together to consider what was best to be done at the present juncture, and they recommended that Mr. GERALD DEAN be appointed in his late father's place as Secretary *pro tem*. To this the Committee assented unanimously. It was also resolved that a Sub-Committee, consisting of the Officers and three members of the Committee, be appointed to consider and report as to the appointment of a new Secretary, his salary and duties. A Sub-Committee, consisting of the Officers and several members of the Committee, was elected to carry out the superintendence of the three shows to be held at the Crystal Palace during the forthcoming season.

IMPATIENS HOLSTII.—This showy species, of which an illustration was published on p. 14, has been exhibited several times as pot plants, and much admired. At the Royal Horticultural Society's meeting on Tuesday last Sir TREVOR LAWRENCE (gr., Mr. BAIN) exhibited a very large plant, as it had been lifted from the open ground and placed in a pot. Judging from this specimen, the species will make a first-rate bedding plant, for it was covered with its bright scarlet flowers, and appeared to be unaffected by the process of lifting.

PRESENTATION TO MR. HENRY ECKFORD.—Mr. ECKFORD being a native of Edinburgh, it was generally thought that no more fitting occasion than the period of the great International Show could be chosen for presenting him with some silver and an illuminated address which have been subscribed to by upwards of 200 admirers. On behalf of the Testimonial Committee Mr. P. MURRAY THOMSON, S.S.C., Secretary of the Royal Caledonian Horticultural Society, has very kindly made arrangements for the presentation to be made in The Hall, 5, St. Andrews Square, Edinburgh, on Thursday, September 14, at 3 P.M. Mr. PERCY WATERER, President of the National Sweet Pea Society, will take the chair. It is hoped that all the friends of Mr. ECKFORD who possibly can will be present. The subscription list, writes Mr. HORACE J. WRIGHT, Dault Road, Wandsworth, London, must be closed very shortly. The amount received up to Saturday, August 26, was £54 8s. 9d.

GRENADA (W. I.) FERNS.—Mrs. BROADWAY, the wife of the ex-curator of the Botanic Gardens, supplies named specimens of the Ferns of the island for albums or herbaria. Application should be made to Mrs. BROADWAY, The Bower, St. George's, Grenada, W.I.

IRISH GARDENERS AND EVESHAM MARKET GARDENS.—The Board of Agriculture for Ireland, being anxious that no opportunity should be

lost of improving the productiveness of the land of that island, are training instructors who will be placed in different districts. So that the knowledge of the instructors shall be as wide as possible, annual trips are taken to various parts of the kingdom, and this year the Vale of Evesham has been visited. The party was under the control of Mr. F. W. MOORE, Curator of the Royal Botanic Gardens, Glasnevin, Dublin, and consisted of eight instructors and eight pupils. They have been cordially received by the Evesham gardeners, who took considerable trouble to explain their methods. The Evesham men were impressed with the evident anxiety on the part of the visitors to learn all they could and their appreciation of what was done for them. The days were spent in wandering through the gardens and fruit plantations, and the impressions of the visitors are very interesting. In the first place they have observed the amount of individual effort which is made in experimenting. In Ireland, except, perhaps, in County Armagh, all this work would be done for them by the Department. Another point is the close manner in which every inch of land is utilised; nothing is taken up with big fences, and the extraordinary way in which catch crops are utilised so that the land shall never be idle very much impressed them. One or two doubted the wisdom of planting Beet between rows of young Strawberries, but it was pointed out that this not only did not harm the Strawberries but ensured that the land was kept clean. The readiness of one gardener to supply another with a particular variety of seed which had been found to answer in the district very favourably impressed the visitors. They considered the land to be in a very clean condition; but it was pointed out to them that in this respect the district is not now at its best; weeds have been growing very fast recently, and all the labour is required to harvest the Plums, although these are thin enough in some places. They were delighted, too, with the appearance of the fruit trees; the bark and foliage alike is so clean and healthy-looking that it was evident to them that spraying is extensively and regularly practised. Perhaps that is so in the plantations where the visitors have been, but there are others where much has yet to be learnt on this question. They also approved of the system of pruning adopted in the Vale, but were of opinion that their own plan of cutting more into the centre of the Apple trees is beneficial. The absolute absence of farmyard manure caused them great surprise. Everywhere in Ireland a heap of this manure would be seen, but it was explained that not only is it impossible to obtain the manure at Evesham in sufficient quantities, but experience has taught the growers that artificial manures are so suitable for particular crops and soils that the absence of farmyard manure is not felt at all. The visitors were astounded at the extent to which Tomatoes, Cucumbers and Vegetable Marrows are grown in the open fields round Evesham. This would be quite impossible, they say, in Ireland, as the atmosphere is too humid and there is not sufficient summer sun. The local markets have been visited, and the Irishmen were struck with the celerity with which the large number of lots were disposed of, and with the general air of activity and bustle which prevailed. The prices obtained rather disappointed them after those ruling at Dublin, but it was explained that probably the produce had to pass through two or three more hands before it reached the retailer, and everybody wanted his share of the profit. In addition to local gardens a large nursery at Worcester has been inspected. Maresfield has been visited, and also the large fruit plantations at Toddington. The visitors remained at Evesham for a week, and spent an enjoyable and, it is hoped, a beneficial visit.

THE GROWTH OF PLANTS WITHOUT CARBONIC DIOXIDE.—M. LÉFÈVRE has recently contributed a paper to the *Académie des Sciences* upon the development of plants exposed to light, but entirely deprived of carbonic dioxide in an artificial soil containing amides [crystallizable substances allied to ammonia but containing less water]. He begins by observing that the carbonic acid of the atmosphere is not the only source whence green plants may derive their carbon. By a series of experiments, M. LÉFÈVRE proved that in soil containing a suitable quantity of amides green plants could be developed though deprived entirely of carbonic acid gas. The plants increased to five or even ten times their height, multiplied their leaves, and the tissues were formed normally. When both carbonic acid and amides were absent the growth was arrested. Therefore growth under a glass in soil containing amides is effected by a process of nutrition.

PUBLICATIONS RECEIVED.—From the Lancashire Education Committee, Agricultural Department: *Scheme of Agricultural Education*, to be carried out in various farms and schools throughout the county during session 1905-6.—*The Journal of the Board of Agriculture*, August: Principal contents—Effect of Blue-stone and Formalin on Germination, Diseased "Evergood" Potatoes, Blackleg in Potatoes, Prevention of the Cabbage Flea, Bacterial Disease of Tomatoes, Preventing the Decay of Ripe Fruit, Larch Canker (*Dasycephala calycina*).—*Report on Rubber in the Gold Coast*, by W. H. Johnson, Director of Agriculture. Many efforts are made to induce native chiefs to plant rubber trees, but much instruction is still necessary if this industry is to be fully developed. *Hevea brasiliensis*, the Para rubber tree, appears to yield the best results when given a fair chance. Careless tapping and the tapping of immature trees have caused the waste of much good material.—*Report of the Nova Scotia School of Horticulture*. This bulletin, to December 31, 1904, is the last that will be issued, as since May in that year the School was closed as a separate institution and merged into the Nova Scotia Agricultural College, established at Truro. Excellent work in spraying and in connection with fruit-culture was done, and Professor Sears is to be congratulated on his success.—Ontario Agricultural College. Bulletin 144: *Apple Culture*, by H. L. Hutt. A useful practical pamphlet.

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his Correspondents.)

POLLARDING OF BURNHAM BEECHES.—The article on Burnham Beeches in the *Gardeners' Chronicle* for August 19 repeats the tradition that the old trees were beheaded by Cromwell's soldiers. The tradition goes still further, and asserts that they were dressed up in military costume to frighten the Royalists; while another version has it that they served as gun-platforms from which Windsor Castle was bombarded. In fact, so many unlikely theories have been advanced regarding the pollarding of the Beeches that it is worth while considering one which contains some elements of probability. Some years ago I made a careful examination of a few limbs blown off in a gale, and from the rings at the butt-end found that about 200 years had elapsed since the last general pollarding took place. This period would fit in very well with the Cromwellian theory, and they are just as likely to have been pollarded by Cromwell's soldiers as by anyone else in want of firewood. But to those at all acquainted with tree growth, it is quite evident that the trees owe their appearance not to one, but to successive pollardings, extending over at least several centuries. The enormous girth of the boles, together with the gnarled and fantastic appearance of the base of the crowns, make this perfectly clear, and no isolated case of mutilation could produce the same effect. Some other agency than that of Cromwell's army must therefore have been at work to satisfactorily account for such abnormal specimens of forest growth as are represented in this woodland, and the following seems to be the most reasonable explanation of it. It is a well-known fact that the tree growth on all unenclosed land was carefully preserved in olden times, and that rights of cutting fuel were either restricted to certain species or to certain methods of cutting. When enclosures were the exception rather than the

rule, the regeneration of forest growth was a difficult matter on land grazed by live-stock, while the growth of coppice shoots from the surface of the ground could only take place to a limited extent. This gave rise to the custom of pollarding the trees at a height above ground which would place the growth of new shoots above the reach of grazing animals, and thus ensure the perpetuation of the fuel supply. That the trees in Burnham Beeches were pollarded for any other purpose than this is extremely unlikely. The only remarkable feature about them is the fact that they are practically unique as regards their size and age in Europe, so far as Beech trees are concerned. We have abundance of Oaks, a large number of Ash, Elm, Willow, Yew, and, in the case of Epping Forest, Hornbeam, but it is only occasionally that one meets with a pollarded Beech. It is quite possible that Burnham Beeches was at one time within the boundary of Windsor Forest, and it is practically certain that the ground was never enclosed, the poverty of the surface soil prohibiting any form of cultivation. Why the practice of lopping ceased about 200 years back no one seems to know, but that its cessation occurred at a definite period, and was not partial or gradual, is evident from the appearance of the trees. There is, I believe, a rumour that the wood supplied fuel or charcoal for Windsor Castle, and if there is anything in it the more general use of "sea coal" or pit coal about that time might account for the lopping being discontinued. Whatever the motives may have been, however, the pollarding has produced one of the most interesting pieces of woodland in the country, and the only cause for regret is the fact that another century or so will see the disappearance of these old trees from wind and decay. A great deal has been done of late years to preserve them by bracing together the branches, but the most certain way of preserving them would be a return to the old custom of pollarding, and by thus relieving the hollow boles of the overhead weight enable them to stand for an almost indefinite period. How such a step would be received by the public may well be imagined, but that it could be done to a certain extent without interfering with the general appearance of the wood is a fact. *A. C. Forbes.*

ANNUALS.—The attention of exhibitors and judges of annuals ought to be directed to the definition of annuals as given by the Royal Horticultural Society in their Rules for Judging. Rule 160 is as follows:—"Annuals are plants which, naturally, begin and end their growth, and ripen seed and die within twelve months." At the recent flower show in Shrewsbury there were nine exhibitors in the class for twelve annuals, several of them, including the 1st and 2nd prize winners, had among their exhibits flowers that cannot be strictly called annuals, such as *Verbena hybrida*, *Scabiosa*, *Chrysanthemum inodorum*, and *Petunia*. Some gardeners to whom I have spoken on the subject say that these flowers and others can be grown as annuals—i.e., they can be grown from seed and flowered the same year; but so also can *Geraniums* and many perennials. I hope this matter may be taken up, and something definitely decided upon as a guide both to exhibitors and judges. *Amateur.*

GERMINATION OF SEEDS.—At a recent meeting of the Scientific Committee of the Royal Horticultural Society the Rev. W. Wilks mentioned a curious case of long-suspended vitality in Poppy-seeds. A clearance in the vicinity of his garden at Shirley resulted in the sudden and abundant appearance of single-flowered *Papaver somnifera*, obviously arising from seeds lying in soil which had lain undisturbed for at least twenty-six years—i.e., since he had been at Shirley, and how much longer it was impossible to say. As no such Poppies were known in the vicinity, the inference is unavoidable that they originated from seed at least twenty-six years old. Mr. Druery cited the case, recorded some years ago by him, of an abundant crop of double Poppies of this species which had appeared in a garden at Warton, near Carnforth, on the heaps of soil excavated to form cellars beneath a house there which was at least

a century old, indicating an even longer vitality. These, strange to say, were all of a peculiar leaden-grey tint, but were very double, while Mr. Wilks's examples are of the same colour but single. In the Warton case the Poppies were entirely confined to the heaps of soil thrown out from the excavations, and were not known in the vicinity at all. This case was equally well evidenced as that of Mr. Wilks's, for Mr. Druery, visiting Warton, saw the plants in full bloom, and ascertained the facts from the mason employed on the building, who was an ardent Fernist, an observant man, and could be entirely relied upon, apart from the fact of the confinement of the plants to the excavated soil. The difficulty of determining the longevity of seeds by actual systematic experiment is extremely great, owing to the very long periods required, and the necessity of treating them under similar conditions of deep burial and isolation from disturbing or stimulating influences. It would certainly appear that given such protection some seeds maintain their germinating powers for quite indefinite periods, and it is a well-known fact that deep excavations such as are made for railway cuttings frequently result in the appearance of plants which have become total strangers in the locality, and cannot therefore be imputed to freshly scattered seeds. In such cases, and in view of similar facts to the above, the idea that vitality can only be maintained at the expense of some consumption of the seed contents, would appear to be fallacious, especially as in the Poppy cases cited the seeds are extremely small. This, indeed, is probably a factor in their preservation, as larger ones would certainly be more apt to fall a prey to insects in the soil or fungoid attacks. It would at any rate be interesting if all such cases could be recorded, since, for the reasons above given, direct experiment is practically impossible owing to the time involved. *Chas. T. Druery, V.M.H., F.L.S.*

—With regard to "T. R. P.'s" experience with the non-appearance of seedlings, the failure is certainly not always due to bad or old seeds sent out by seed-merchants. It has always been a puzzle to me why so few seeds germinate from the myriads which are annually and naturally shed in a garden. Perhaps Foxgloves and Poppies shed more seed than most herbs—a large plant of the former bore, by calculation, a million and a half of seeds—but the number of seedlings may be twenty or so round about the plants. No seedlings ever appeared in some *Rhododendron*-beds known to the writer for twenty years, though the pods burst every year. Several seedlings may be found under a *Laburnum*-tree, but nothing like the number of seeds shed. So is it with many other trees and herbs. In the present year I sowed a number of annuals in March from seed purchased from Messrs. Ware. They all came up and blossomed well. The rest, from the same packets, were sown in April. A prolonged drought followed soon after. In many cases none came up at all; of others, a few only. I would suggest that perhaps the seeds germinated underground, but were killed by the drought, for I did not think of searching for them. Perhaps this experience may explain the non-germination of "T. R. P.'s" seeds of *Eucalyptus citriodora*. With regard to seeds lying dormant, when I went to Holland Park in 1898, the neglected garden (attached to my house) abounded in Docks; for six years seedlings came up, but were of course destroyed, so none seeded during that time. But why so many self-sown seeds should every year fail to appear is a mystery. *George Henlow.*

LAPAGERIAS.—In the *Gardeners' Chronicle*, on p. 166, Mr. Smith, writing from Sussex, says:—"Lapageria alba and L. rubra superba are also hardy here." As far north as Lincolnshire twenty-five years ago, I grew Lapagerias very successfully against a wall with a north aspect at the back of a vineyard without any other protection whatever: the plants flowered well until the end of the year. Mr. Nicholson also wrote (in 1885) in his *Dictionary of Gardening*, "Lapagerias succeed on walls and trellises outside in the warmest parts of the country, and are not injured by a little frost." *J. Ward, Ascol.*

GLADIOLUS TRISTIS CONCOLOR.

THIS *Gladiolus* is very rarely met with in gardens, but is one of the most valuable species, since it is the earliest of all to flower, being at its best toward the end of April. It is perfectly hardy in the south-west of England, even when planted only 3 inches below the surface and unprotected during the winter. The plants increase very rapidly both by offsets from the corms and by seed.

fragrant after twilight, and if a group of thirty or more flower-scapes is situated near an open window it will flood the room with delicate perfume. The leaves are rush-like, and show a section like a cross in form when cut horizontally. They are often nearly 3 feet in length. Strong flower-scapes will carry as many as four or five blossoms, all of which are expanded simultaneously, and which measure $3\frac{1}{2}$ inches across. *S. W. Fitzherbert, Devonshire.*



FIG. 69.—GLADIOLUS TRISTIS VAR. CONCOLOR: COLOUR OF FLOWERS SULPHUR-YELLOW.

If the flower-spikes are allowed to remain on the plants after the blossoms have withered, seed will be freely produced, and the next year numbers of self-sown seedlings will appear around the parent clumps. In horticultural dictionaries its height is given as 1 foot, but in the south-west the plants grow to a height of from 3 to 4 feet, and even taller.

G. tristis is very variable in colour, the form almost invariably sent out by nurserymen when this species is ordered having the three upper petals marked with a purplish-black band down the centre; this is inferior in beauty to the subject of this note, whose flowers are of a uniform pale sulphur-yellow. This is known as *Gladiolus tristis concolor* or *G. t. sulphureus*. The flower has the additional merit of being deliciously

HALF-HARDY SHRUBS.

On reading Mr. Fitzherbert's very interesting and suggestive description of Rosehill, Falmouth, on p. 103, one can scarcely help lamenting the comparative rarity in present-day collections of many of the fine plants found in Mr. Fox's garden. Without disparaging the favourites of to-day, I contend that the reintroduction of some of those of former times would afford owners of gardens much pleasure, even though in some instances the blooms might not be useful for cutting purposes. Not all of them require large glasshouses for their cultivation, and when the plants have reached a desirable size it is easy to maintain them at that size by root-pruning and repotting in pots or

tubs of similar dimensions to those they are occupying. Moreover, a few of each species can be kept in stock by occasional propagation by cuttings, layers, or seed.

Taking the plants in the order named in the note, there are *Acacias lophantha*, *longifolia*, *dealbata*, and *verticillata*, which flower under greenhouse cultivation early in the year; their management is of the easiest kind, repotting or surfacing soon after the flowering is over, some slight amount of pruning and cutting into not too severe a form being the only matters needing attention; and in early June standing them out-of-doors, preferably sinking the pots to the rims in a bed of fine gravel or coal ashes. Young plants not of flowering size may be grown on in cold frames, and receive one or two small shifts during the summer, the lights being drawn off in fine weather, but replaced on the frames during heavy rains. The proper kind of soil consists of hard peat one-third, leaf-mould and decayed wood refuse one-sixth each, and one-third medium loam, together with plenty of coarse, clean sand. The same kind of mixture answers for surfacing. Insects, with the exception of white scale, seldom trouble *Acacias*, and this pest is found only on the old wood, and can be readily destroyed by applications of petroleum emulsion or Gishurst's Soap. I would add to those named the beautiful *A. Drummondii*, with its cheerful-looking yellow catkins and neat foliage. *Boronia megastigma* is well known and highly appreciated for its fragrant brown flowers, abundantly produced from May till July; but there are others which if not furnished with fragrant flowers are in other respects very ornamental and uncommon in colour, viz., *B. serrulata*, *B. elatior*, and *B. heterophylla*. The whole of these require a compost largely consisting of hard peat, say, four-sixths, and two-sixths light fibrous loam, with much silver-sand mixed with these; and the pottings, as is the case with all these fine-rooted plants, requires to be done firmly. The plants should be kept under glass, or at the least be provided with protection from excessive rain during the summer and early autumn months. *Cantua dependens* may be treated similarly to the *Acacias*, and be frequently syringed so as to ward off infestation by red-spider, which, if present in great numbers, is sure to disfigure the leaves; *Coronilla glauca* and other species; also *Correa viminalis*, *C. cardinalis*, *C. magnifica*, *C. speciosa major*, and others, including *alba*, an easily propagated species, and useful as a stock on which to graft the others, are easily managed if grown in a mixture of equal parts of light loam and hard peat, with enough sharp sand to make it porous.

Habrothamnus (*Cestrum*) are showy plants, more especially *H. aurantiacus*, *H. elegans*, and *H. Newelli*, of easy culture and excellent as wall and pillar plants planted out, or for pot or tub culture, *Datura sanguinea*, *D. s. lutea*, and *D. arborea*, being plants of large growth, are better suited for big glasshouses than for smaller structures. The plants succeed in rich, heavy loam, and should be afforded considerable quantities of manure-water during the summer when grown, as they may be, for years in the same pot or tub. The plants form highly ornamental objects when placed in sheltered spots in the flower-garden in the summer-time. *Eugenia apiculata* and *E. Ugni* are tall, Myrtle-like shrubs, succeeding in pots filled with peat, loam, and leaf-mould in about equal quantities, and when they get as large as is desirable, leaf-mould may be dispensed with. The flowers resemble those of the Myrtle, and *E. Ugni* produces blackish-purple, edible berries. The foliage of *E. apiculata* is extensively employed by continental florists in bouquet-making. *Grevillea rosmarinifolia* is mostly known in this country as an ornamental foliage plant for planting in summer beds, but this and other species, as *Fosteri*, *Preissoi* and *robusta*, are excellent

conservatory plants with remarkably showy blossoms.

Pittosporums, although sufficiently frost-proof to stand out-of-doors in our southern and western maritime counties, are not to be despised for conservatory decoration in the less mild districts, their creamy-white flowers, and later, the expanding seed vessels holding scarlet-coloured fruits, being decidedly ornamental. A mixture of loam (two-thirds) and peat (one-third) is desirable. The flowers are mostly sweet-scented. *P. tenuifolium* has a nice, neat habit, and *P. Tobira* forms an excellent plant for covering a wall either indoors or out-of-doors. Besides the species of *Solanum* mentioned there are *S. hybridum* and *S. jasminoides*, both of which are worthy of indoors cultivation, being extraordinarily floriferous. Their cultivation presents no difficulties if a light loamy soil be chosen.

The *Hedychiums* are Ginger-like plants with spikes of deliciously fragrant flowers produced well above the foliage. The plants are of easy growth, and need during the winter, their resting period, about the same sort of treatment as that accorded to *Fuchsias*. A heavy loamy soil is best for them. I have not known *Rhodochiton volubile* to be grown the whole year round out-of-doors; usually one sees it as a rafter or pillar plant in the greenhouse; and it is highly ornamental in such positions, the black and purple-coloured flowers being then most readily observed. My purpose will have been served by these brief notes on plants once common in English gardens if the attention of some of the readers of the *Gardeners' Chronicle* are drawn to these rather neglected plants. *F. Moore.*

REMARKS ON THE CONDITION OF THE FRUIT CROPS.

(See Tables and General Summary, ante, pp. 81-87.)

(Continued from p. 153.)

7. ENGLAND, N.W.

LANCASHIRE.—The failure of Pear and Plum trees to develop crops is due to the cold, dry easterly winds which prevailed for weeks in spring, bringing insect pests in their train. Nothing suffered in this garden from frost. A couple of miles distant from here is an orchard of healthy Apple and Pear trees, which the owner informs me are bearing scarcely any fruit. Bush fruits, as usual, are full crops, and the bushes are in good condition. The same remarks apply to Strawberries. *W. P. Roberts, Cuerden Hall Gardens, Preston.*

— The fruit crops generally in this district are very poor, owing chiefly to the severe drought which has caused most of the fruit to fall. Great damage was also caused by bad weather when the trees were in bloom. The soil in these gardens is a cold heavy loam resting on a clay subsoil. *E. F. Hazelton, Knowsley Gardens, Prescott.*

8, ENGLAND, S.W.

CORNWALL.—The bush fruit crops in this district are extra good and the fruit is of excellent quality. Crops of Peaches, Nectarines, Plums, Apples, and Pears, however, suffered considerably from the late frosts and from the storm of April 30 and May 1. *Alfred Read, Port Eliot, St. Germans.*

— An unfavourable spring has again ruined what might otherwise have been bountiful crops of Apples, Pears, and Peaches. Bush fruits, being more sheltered, have produced exceedingly good crops. Fruit-trees of all descriptions flowered well. Peaches set a heavy crop, but a fierce gale nearly killed the trees. We are situated at a very high elevation, being almost 400 feet above sea-level. Our soil is very "hungry" and stony, but is amenable to good culture. *A. C. Bartlett, Pencarrow Gardens, Washaway.*

— Our soil is a heavy, adhesive loam on a clay subsoil. Peach and Nectarine-trees are carrying the best crop for some years past, and are more free from blight and blister than they have been for twenty years. Apple and Pear-trees were much blighted by the cold nights in May, in consequence of which there will not be more than half crops of these fruits. Small fruits are abundant and of good quality. *Wm. Sangwin, Treilissick Gardens, Truro.*

— The Apple and Pear crops promised well when the trees were in bloom, but owing to the chilly nights in May very few fruits developed. Strawberries were a moderate crop. *Richard Gill, Tremough Gardens, Penryn.*

— The whole of the fruit crops in this district looked remarkably well, and there was every appearance of a first-class crop until the first week in May, when severe gales injured the leaves of Peaches, Apples, Nectarines, Pears, Plums, and Apricots, causing a great number of the fruits to drop. Our soil is a light loam. *W. H. Bennett, Menability, Par Station.*

DEVONSHIRE.—Apple, Pear, and Plum trees are carrying very slight crops of fruit, for although there was a good show of blossom it failed to develop. This was probably due to the autumn of 1904 being dull and damp, when the trees became covered in moss, and the fruit-buds failed to develop perfectly. Although some of the flowers appeared to set well much of the fruit has since dropped. Strawberries have been extra good. Gooseberries and Currants also carried good crops of extra fine fruit. *Geo. Baker, Membrand Gardens, Newton Ferrers, Plymouth.*

— The fruit prospects in this district were excellent early in the season, almost all trees showing an extra amount of blossom, but these hopes have not been realised. The May frosts ruined the Apple crop. Pears and Plums are also unsatisfactory. The Pear-midge has done much damage among the Pear trees. Plums are plentiful on some trees; others have few or none. Strawberries were produced in abundance, but many of these fruits rotted away owing to excessive rains. Small fruits are abundant, and good in every respect. Our soil is warm, light, though deep, and rests on the Old Red Sandstone. *James Mayne, Bicton Gardens, East Budleigh.*

— The Pear crop is very light, and there are only fruits upon wall-trees. Among Apples the varieties with most fruit are Cox's Orange Pippin, Mère de Menage, Tower of Glamis (most reliable), Lord Grosvenor, Warner's King, and James Greive. Among Plums the varieties Czar, Early Prolific, Victoria, Monarch, and Kirke's are carrying the best crops. Peaches suffered badly from blister. Our soil is a heavy loam, and forms a good soil for fruit-trees. *T. H. Slade, Pottimore Gardens, Exeter.*

GLOUCESTERSHIRE.—The frost affected our Strawberries just as they were in bloom and did extensive damage to the Pear crop. Currants and Gooseberries are a very heavy crop. *William Keen, Bowden Hall Gardens, Gloucester.*

— Our Apple-trees, on which American blight is very prevalent this year, did not develop much bloom. Pears flowered well, and this crop on the whole looks promising. Of stone-fruits we have a fair crop; the trees bloomed well. Peaches set an abundance of fruit, but many dropped owing, in my opinion, to the cold, dry weather in May. Bush and small fruits are good. Filberts are also plentiful. The soil is of a clayey nature. The total rainfall in May was only 17 inches, while the wind was from a northerly point for twenty days. *John Banting, Tortworth Gardens, Falfield.*

— Apple, Pear, and Plum-trees flowered well, but set very indifferently, the whole of the fruit having since dropped from quite half the trees.

Gooseberries and Currants, both Red and Black, are abundant and of good quality. Strawberries were a failure in this neighbourhood. In our garden a full crop of these fruits set, but quite half of them decayed before they were ripened. All vegetable crops are plentiful and good. *W. H. Berry, Highnam Court Gardens, Gloucester.*

(To be concluded.)

THE FERNERY.

FERN HUNTING IN SCOTLAND.

A THREE weeks' stay in Scotland, a fortnight in Aberfeldy, and a week in Glasgow, gave me opportunities for several spells of Fern-hunting, and although they were not crowned with so much success as usually falls to my share, the accompanying illustration (see fig. 70) of a very fine form of the common Bracken (*Pteris aquilina*) will show that I did not fail in my quest entirely. Unfortunately this was a most tantalising find, as will be seen. I took the train from Aberfeldy to Pitlochry, hoping to find good hunting-ground there, but to my disappointment, although the roadsides appeared promising, stone dykes, mostly retaining walls to earthen banks, for more than two miles up the Tummel I hardly found a Fern, and even on the slopes there were too few to constitute good ground. The further I went the more I was disgusted, especially as the day was hot. Hence, finding that I must either return at once or lose the chance of a train for several hours, I turned and walked rapidly back, relinquishing hunting altogether, and when I reached the Tummel bridge, seeing a path by the river, evidently a short cut, I took it. Immediately I did so I noted the remarkable find above referred to some few yards down the river-bank, and on descending I found it, to my delight, not only extremely crispate and congested, but beautifully tasselled at all terminals—a thoroughbred, and a new one. Now comes the tantalising part: the frond, about a yard high, stood absolutely alone, and all those in the vicinity, yards away, were normal. It sprang from hard, rocky, stony ground, and to attempt to dig it out would, I knew, especially in summer, be simply murder. Examining the frond, too, I found no trace of a spore, and consequently all I could do was to take the frond, carefully fold it, and place it inside my waistcoat as a trophy, knowing full well that the plant was too well established not to assert itself again despite this acquisition. I caught my train, and on reaching home unfolded the frond and placed it in a bath, where it speedily resumed its pristine beauty; and after three days I was fortunate enough to find an amateur photographer in Mr. Dawson, of Aberfeldy, who most successfully secured two photographs, one from the back and the other from the front, which form my only souvenir, the frond itself, though pressed and dried, shrinking so much as to lose its chief charm. This was my only "prize," but several other abnormal sports fell to my lot. These included a mediodeficient Lady Fern with central pinnules and pinnulets reduced to thorns, leaving on both frond and pinna an open, central space.

This represents my fifth find of this curious type in widely distant places. *Lastrea montana truncata* with square ends tipped with thorns I found as usual in two places, neither plant however was thorough. It is very curious that one frond of such a marked type throughout should occur in a plant otherwise perfectly normal. A novelty in *Blechnum* I found near Grandtully, each frond having short round lobes halfway up the frond, then a normal portion, and then a distinct caudate top formed again of short round lobes; this is quite thorough in three plants, the fertile fronds presenting same character in the first find, while the others were

a yard or two away, and presumably seedlings. Another *Blechnum* found at Loch Kennard was *B. v. contractum* or *strictum*, with narrow serrated lobes halfway up, and slenderer pinnae than usual. A neat congested *Blechnum* occurred close by. These represent my finds; but visiting Mr. Alexander Cowan at Penicuik we had a hunt together, and he found a *Lastrea dilatata* with all its frond stalks spirally twisted, a very foliose form of same species, and an *Athyrium* of the *excurrens* or *truncatum* type with many pinnae on each frond, terminating in a slender thorn by the projection of the midrib beyond a shortened growth. Apart from "sports," I was fortunate enough to add *Polystichum angulare* to the flora of Perthshire, where it had so far not been recorded, by finding a plant near Aberfeldy, where I need hardly say I left it, only taking a frond to substantiate the record. *Chas. T. Drury, V.M.H., F.L.S.*

Floral Committee.

Present: W. Marshall, Esq. (Chairman); and Messrs. H. B. May, C. T. Drury, Geo. Nicholson, G. Reuthe, W. Bain, Chas. Jeffries, C. E. Pearson, W. Cuthbertson, E. H. Jenkins, M. J. James, Geo. Paul, Jas. Hudson, C. J. Salter, C. R. Fielder, C. Blick, R. Hooper Pearson, and H. J. Jones.

Before commencing the ordinary business of the meeting the Chairman referred to the death of Mr. RICHARD DEAN, who was the oldest member of this Committee, and had helped in its work almost since its institution. It was unanimously decided to send a letter of condolence to Mrs. DEAN and family.

Lord ALDENHAM, Elstree (gr., Mr. E. Beckett), contributed largely to the display in the Hall, having an extensive exhibit of ornamental flowering trees and shrubs, a comprehensive collection of *Codiaeums* (*Crotons*), and a hatch of a very fine strain of garden *Pentstemons* in many choice varieties. The sprays of trees and shrubs were in vases, and furnished the whole length of the concert platform. Some were

award at the Committee's disposal. A plant of *N. Burkei* excellens was noticed with twenty-four well-developed pitchers. Other good specimens were *N. Serrata*, *N. Curtisii* superba, *N. picturata*, and *N. Chelsoni* excellens. On an adjoining table Messrs. VEITCH displayed hatches of *Exacum macranthum* and *Ruellia amena*, the latter having pleasing red flowers that much resemble those of *Salvia splendens*. The same firm staged a semi-circular group of plants under the east wall of the Hall, included in which were four new plants, one of which, *Lilium leucanthum*, received a First-class Certificate, the others being *Serratula atriplicifolia*, a Composite with flower-heads resembling a large Burdock; *Aconitum scaposum* var. *pyramidalis*, and *Artemisia lactiflora*, with loose panicles of fragrant white flowers that were only in the bud state. It promises to become an excellent garden subject. A hatch of the strong-growing *Senecio glaberrimus* occupied the centre of the group, and was in finer condition than we have seen it before, its inflorescence of orange-coloured flowers being of very attractive appearance (Gold Medal).

Mr. Jas. Hudson, gr. to LEOPOLD DE ROTHSCHILD, Esq., Gunnersbury House, Acton, displayed four tubs containing *Nymphaea stellata pulcherrima* and other blue Water Lilies cut from plants that had been grown in the open since May 1. The water is kept at a temperature of 70°, heat from hot-water pipes being requisitioned when required. The handsomest form shown was *N. gigantea Hudsoni* (Silver Flora Medal).

Messrs. H. CANNELL & SONS, Swanley, Kent, put up a batch of *Cannas* in the style for which this firm is famous. Most of the finer varieties of this flower were included, and in addition a beautiful new variety which will be found described under Awards. On an adjoining table was a collection of dwarf forms of *Antirrhinum* staged by the same firm (Silver-gilt Flora Medal).

Messrs. DOBBIE & CO., Rothesay, N.B., showed two good forms of African Marigolds, of which the variety *Prince of Orange* is of the colour indicated by its name; *Lemon Queen* is a much lighter colour than the former. Both are of large size, and excellent for bedding purposes. The smaller French Marigold was represented by the variety *Legion of Honour* (Silver Flora Medal).

Messrs. PAUL & SON, Cheshunt, N., brought ten pot plants of *Hibiscus syriacus* with flowers of various shades of colours, sprays of the large-leaved *Tilia americana laxifolia*, coloured Oak foliage named *Quercus Alberti*, and flowering sprays of the handsome *Spiraea assurgens*.

Many new Dahlias were staged by different exhibitors. Mr. S. MORTIMER, Rowledge, Farnham, Surrey, had seedlings of both the "show" and "Cactus" types, some of which will be found described under Awards. The variety *Miss Alice Mortimer* is a "Cactus" Dahlia of good form and a pleasing terracotta colour; the variety *Curiosity* has received its name from the peculiar manner in which the petals are twisted.

Mr. JAS. STREDWICK, Silverhill Park, St. Leonards, showed ten new Cactus Dahlias, of which the best were *Ivanhoe*, a well-formed flower with lemon colour shading to bronze; and *Peach*, which has very incurved petals.

Mr. H. SHOESMITH, Westfield, Woking, presented nine seedling Dahlias, all of the Cactus type, the best of which received an Award of Merit. We noticed a good scarlet variety named Mr. F. Carter.

Messrs. J. CHEAL & SONS, Crawley, included single varieties in a display of these flowers, one of which received an award. *Bella* is another pleasing variety of the single type, having a well-shaped flower of mauve colour with a darker-coloured centre. Some good Cactus Dahlias were also included in the collection.

Mr. J. WEST, Brentwood, presented five new Cactus Dahlias, one of which was recognised as worthy of an award.

Messrs. BARR & SONS, King Street, Covent Garden, London, showed hardy flowers, including *Gladioli*, *China Asters*, *Antirrhinums* (a good strain), *Senecio pulcher*, &c.

Messrs. JOHN PEED & SONS, West Norwood, London, also showed a collection of hardy flowers season.

Mr. L. R. RUSSELL, Richmond, Surrey, brought forms of both *Erica vulgaris* and *E. vagans*, also the typical and white and other coloured forms of *Menziessia polyflora*.



FIG. 70.—A RARE VARIETY OF THE COMMON BRACKEN. (SEE P. 188.)

SOCIETIES.

THE ROYAL HORTICULTURAL.

AUGUST 29.—The ordinary fortnightly meeting of the Committees of this Society was held on Tuesday last in the Royal Horticultural Hall, Vincent Square, Westminster. The Hall was not nearly filled with exhibits, and the attendance was poor. Nevertheless several exhibits were of great interest. Messrs. J. VEITCH & SONS, Ltd., obtained a Gold Medal for a collection of very fine *Nepenthes* and a group of new and rare Chinese plants. Lord ALDENHAM was awarded a Gold Medal for an excellent display of sprays illustrating some of the most ornamental trees and shrubs. The Hogg Medal was awarded to Messrs. BUNYARD & Co., Maidstone, for an exhibit of fruit trees in pots.

The ORCHID COMMITTEE recommended four Awards of Merit to novelties, and the FLORAL COMMITTEE recommended two First-class Certificates and eleven Awards of Merit.

In the afternoon a paper by Mr. R. L. CASTLE on "Town Trees" was read by the Assistant Secretary.

shown in flower, others in fruit, and still others for their ornamental foliage only. Among the many dozen varieties shown we may mention *Quercus laciniata crispata*, *Rubus odoratus*, *Erythrina crista-galli*, *Tamarix japonica* with very graceful plumes of flowers, *Clerodendron trichotomum*, *Triostemon perfoliatum*, and *Robinia neo-mexicana*, as being especially interesting. The *Codiaeums* were staged on the floor and extended for a considerable distance down one side of the building. The plants were a remarkably bright lot, and were well furnished with foliage to the base of the stems. Maidenhair Ferns were used as a groundwork, and the continuity was pleasingly broken by elevated specimens of extra-good plants. Palms furnished a suitable background; the varieties *Warreni*, *cordatus tortilis*, *Reidii*, and *Thomsoni* were amongst the best (Gold Medal).

Messrs. JAS. VEITCH & SONS, Ltd., King's Road, Chelsea, staged a magnificent collection of *Nepenthes*, having about 30 specimens that embraced most of the finest species, hybrids, and varieties of these interesting plants. The plants were elevated on stands of various heights, the groundwork on the table being composed of Maidenhair Ferns. The whole collection showed excellence of culture, and it received the highest

Awards.

Canna nigra.—This variety has an excellent habit of growth, being very dwarf, 1 foot to 1½ foot high. The flowers are of the same colour as those of the well-known variety Queen Charlotte, but are very much larger and more brilliant. Shown by Messrs. H. CANNELL & SONS (Award of Merit).

Dahlia Blush Gem.—A show variety of considerable size, with rather broad florets and weak centre. The colour is very attractive, the effect being as white, tipped, with a delicate shade of mauve. The older florets become wholly of mauve colour. Shown by Mr. S. MORTIMER, Rowledge Nurseries, Farnham (Award of Merit).

Dahlia Daisy Easton.—A Cactus variety of clear yellow colour and good form, the florets incurving regularly towards the centre of the flower. Shown by Mr. H. SHOESMITH, Woking (Award of Merit).

Dahlia Nelson.—A Cactus variety with crimson flowers, the centre florets appearing purple before they expand, and the old florets showing the same colour when passing. From Mr. J. T. WEST, Norwood (Award of Merit).

Dahlia Pink Perfection.—A Cactus variety of a delightful shade of pink colour. The florets do not incline towards the centre of the flower as in the case of some varieties of this section. Shown by Mr. S. MORTIMER (Award of Merit).

Dahlia Stromboli.—A single-flowered variety of good form and large size. The colour is crimson-maroon, with a patch of white on each segment, having a curious effect suggestive of a finger-mark. Shown by Messrs. J. CHEAL & SONS, Lowfield Nurseries, Crawley (Award of Merit).

Goldia Schamini fl. pl.—This variety has large, double flowers of pink colour. The habit is very vigorous, and the plants are excellent for producing flowers for cutting. Shown by Sir TREVOR LAWRENCE, Bart. (gr., Mr. W. Bain) (Award of Merit).

Ixora "Mars".—A variety obtained from a cross between *I. coccinea* and the variety Prince of Orange. The flowers are larger and even more vivid in colour than those of *coccinea*. Shown by LEOPOLD DE ROTHSCHILD, Esq., Gummersbury House, Acton (gr., Mr. Jas. Hudson) (Award of Merit).

Lilium leucanthum.—Messrs. JAS. VEITCH & SONS, Ltd., exhibited a number of plants in flower under the name of *L. leucanthum*. For garden purposes this variety from Central China would appear to be a form of *L. Brownii*; but some of them produced bulbils freely in the axils of the leaves. The flowers are white with shading of brownish-rose colour (First-class Certificate).

Lobelia Kathleen Mallard.—A very brilliant purple-coloured double-flowered *Lobelia* was shown by Mr. A. R. MALLARD, Rainham, Kent. It is described as a sport from the well-known variety Emperor William, but the flowers appear larger in size and of more brilliant purple colour. It will make a very effective bedding plant (Award of Merit).

Nymphaea zanzibariensis rosea.—This is a magnificent and delightfully-fragrant *Nymphaea*, shown by Lord ROTHSCHILD, Tring Park (gr., Mr. Dye). The species is of blue colour, but this variety is of rosy-mauve with a rich buttercup-yellow-coloured base. The flower as shown is of very large size (First-class Certificate).

Pentstemon.—Some very fine *Pentstemon*s were shown by Lord ALDENHAM (gr., Mr. Beckett), and an Award of Merit was recommended for the strain.

Stenanthium robustum.—Under this name Mr. AMOS PERRY, Winchmore Hill Nurseries, exhibited an inflorescence 1½ foot long, with closely placed, white, fragrant flowers. This genus of bulbous plants belongs to the order Liliaceae. Most of the species have been introduced from North America, and are hardy (Award of Merit).

Orchid Committee.

Present: J. Gurney Fowler, Esq. (in the Chair), and Messrs. Jas. O'Brien (hon. secretary), De B. Crawshaw, F. Sander, H. T. Pitt, H. A. Tracy, W. H. White, T. W. Bond, A. A. McLean, W. Boxall, H. Little, W. H. Young, F. Wellesley, and Harry J. Veitch.

There was a very interesting show of Orchids, the fine group for which Messrs. CHARLESWORTH & CO., Heaton, Bradford, were awarded a Silver-gilt Flora Medal well demonstrating the value of their fine hybrid Cattleyas, *Laelio-Cattleyas*, &c., in supplying handsome flowers at this season, when the species are not much in evidence. The best plants in the group were four fine examples of their strain of the beautiful

Odontoglossum × *Rolfæ*, also *O.* × *Hallio-crispum*, four beautiful examples of the bright rose-coloured *Brasso-Cattleya* × *Digbyano* - *Warszewiczii* and one of the clear white *Brasso-Cattleya* × *Queen Alexandra*, *Laelio-Cattleya* × *Dominiana*, *L.-C.* × *Clonia*, *L.-C.* × *Nysa superba*, all very rich in colour; *Cattleya* × *F. W. Wigan* var. *auifera*, with a very fine golden labellum heavily veined with ruby-purple; *C.* × *Parthenia vernalis*, good *C.* × *Iris*, *C.* × *Germania*, *C.* × *Atalanta*, &c. Rare species were represented by well-flowered *Pachystoma Thompsoniana*, *Miltonia Schröderiana* with two strong spikes, *Cattleya Bowringiana superba*, *Bulbophyllum barbigerum*, two freely flowered plants of the white *Rodriguezia pubescens*, and the very distinct *Zygopetalum triste*, with flowers formed like those of *Z.* × *Perrenoudii*, but with sepals and petals of purplish-chocolate colour, and the labellum bright blue.

Messrs. STANLEY & CO., Southgate, were awarded a Bronze Banksian Medal for a collection of Orchids, including *Miltonia candida*, *Cattleya Loddigesii*, *C. O'Brieniana*, *C. Acklandiae*, *C. bicolor*, *Miltonia Regnelli*, *Zygopetalum crinitum*, &c. At the back were fine yellow *Oncidium varicosum*, and beneath them several good *Laelio-Cattleya* × *elegans*, that named *Turneri magnifica* being a very large form, with a bright ruby-purple front to the labellum.

Messrs. SANDER & SONS, St. Albans, staged a group of excellent hybrids, comprising *Laelio-Cattleya* × *Calistoglossa excellens*, a very large and finely-coloured form: *L.-C.* × *Henry Greenwood*, a distinct variety, with silvery-white sepals and petals, tinged with rose-purple, and having much white in the lip, the front of which was of a rich rose-purple colour. Forms of *L.-C.* × *bletchleyensis*, &c., were also included; and a good *Odontoglossum Uro-Skinneri*, *Cattleya* × *Shakespeare*, the fine *C.* × *Prince Edward superba*, and *Epidendrum scepterum*, a very pretty old species not often seen.

Messrs. JAS. VEITCH & SONS, Chelsea, staged a small group, the best in which were *Laelio-Cattleya* × *Henry Greenwood* var. *Imperator*, a very large, finely-formed, and richly-coloured flower; *L.-C.* × *bletchleyensis*, and *L.-C.* × *Dominiana langleyensis*, with intensely dark claret-purple coloured lip with gold veining at the base.

Messrs. WILLIAM BULL & SONS, Chelsea, showed five good varieties of *Cattleya* × *Atalanta*, and a good *Cypripedium* × *Argus Moensii* × *niveum* with a strong spike of one flower and two buds, the flower formed like a large *C. niveum*; it is white spotted with purple, and has a green base to the dorsal sepal.

FRANCIS WELLESLEY, Esq., Westfield, Woking (gr., Mr. Hopkios), showed *Cypripedium* × *Princess superbum* (Mons. Coffinet × *Fairieanum*), a delicately-tinted flower. The dorsal sepal is white with rose-coloured lines, and a delicate flush of rose, the same hue shading the rest of the flower, which is of the *C.* × *vexillarium* class.

AWARDS OF MERIT.

Miltonia vexillaria "The Dell variety," from Baron Sir H. SCHRÖDER, The Dell, Egham (gr., Mr. H. Ballantine).—A noble variety in size and form; probably the best *M. vexillaria* yet staged. The well-rounded flowers measured rather over 5 inches across diagonally, the colour being white suffused with purplish-rose. The central area of the lip was white, the disc yellow with radiating purple lines.

Laelio-Cattleya Issy var. *cuprea* (*L. tenebrosa* × *C. Leopoldi*), from Messrs. CHARLESWORTH & Co., Heaton, Bradford.—A very bright hybrid of medium size. Sepals and petals reddish-copper colour; base of lip white, front, rich purple.

Miltonia Cogniauxia, from C. B. GABRIEL, Esq., Easdale, Horsell, Surrey.—A pretty natural hybrid of *M. Regnelli* and *M. spectabilis Moreliana*. The stellate sepals and petals were of pale cream-yellow, barred with brown colour; lip violet-purple, darkest in the centre.

Cypripedium Godfreyana leucocheilum Goodson's variety, from H. S. GOODSON, Esq., Fairlawn, Putney (gr., Mr. G. Day).—A very handsome form of this always beautiful *Cypripedium*. The flowers were large and finely formed, of yellowish-cream colour, the sepals and petals bearing a broad reticulation of claret colour.

Fruit and Vegetable Committee.

Present: Jas. Cheal, Esq. (Chairman); and Messrs. S. Mortimer, Alex. Dean, E. Beckett, Geo. Kelf, Horace J. Wright, John Lyne, F. Q. Lane, C. Foster, G. Norman, and Owen Thomas.

Messrs. GEO. BUNYARD & CO., Maidstone, Kent, demonstrated the admirable results to be obtained with fruit-trees in pots in a collection of over fifty

specimens, embracing Peaches, Nectarines, Apples, Pears, Plums, Grapes, and Figs. The trees were plentifully fruited, and made a very fine display. Emperor Alexander and Gascoyne's Scarlet Apples were admirable; Peasgood's Nonesuch and Wealthy, were also commendable. The Plums were probably the best of the display, notably Bryanston Gage, Coe's Golden Drop, and Late Transparent Gage. Pears were represented by a dozen varieties, Doyenné Boussoch and Fondante de Cuerne being especially good. Peaches and Nectarines were not remarkable. The beautiful Dartmouth Crab was much admired (Hogg Memorial Medal).

R. HOFFMAN, Esq., Tower House, Streatham (gr., Mr. Thos. Tomlinson), exhibited eleven Apple trees in pots, all of which were well furnished with fruit, but scarcely matured enough to be seen at their best. The best specimens were Emperor Alexander, King of the Pippins, Mannington Pippin, and Allington Pippin (Silver Banksian Medal).

THE DUKE OF FIFE, East Sheen Lodge, East Sheen (gr., Mr. R. Mountford), showed a collection of well-grown fruit from the open. The display was arranged in good taste, the table being carpeted with St. Joseph Strawberries. A box contained excellent examples of Clapp's Favourite Pears. There were also Apples, Plums, Cherries, and Strawberries, all high-class produce (Silver Banksian Medal).

The sprays of Plum-trees shown by Mr. W. CRUMP, Madresfield Court Gardens, Malvern, demonstrated that Plums are not scarce in some parts of the country, for the branches were literally crowded with fruit, which hung in clusters. The varieties exhibited were Belgian Purple (from bush-trained trees), Cox's Emperor, Victoria, Sultan, Grand Duke, Pershore, and Bryanstone Gage.

Mr. Geo. Kelf, gr. to Miss ADAMSON, South Villa, Regent's Park, was awarded a Silver Banksian Medal for a very fine box of Peaches, grown within two miles of Charing Cross.

Mr. R. WINSTANLEY, Gogerddan Hall Gardens, Aberystwyth, exhibited a dish of Lemons, to which the Committee awarded a Cultural Commendation.

Mr. GEO. GUMBRELL, The Gardens, Wedbury, Ware, brought a dozen fruits of Clapp's Favourite Pear of exceptional size and quality, receiving a Cultural Commendation for excellence of culture.

Another choice example of fruit was the basket of Lady Sudeley Apples shown by J. STONE COYSH, Esq., 23, Woodville Gardens, Ealing, W. The Committee awarded this exhibit a Silver Banksian Medal.

Several seedling Melons were presented for Certificate, but none found favour with the Committee. A brace of Cucumbers named Essex Champion was also passed without receiving recognition.

A coloured Runner Bean named Firefly was shown. The pods are ornamental, being splashed with red on a yellow ground.

The Lecture.

TREES FOR TOWNS.

A paper written by Mr. LEWIS CASTLE on the above subject was read by the Assistant Secretary. Mr. CASTLE related the result of his experience in the parks and open spaces of London, gained during the summer and autumn of 1904. Much progress is undoubtedly being made in the beautifying of London with trees, but the work is still deplorably slow, due to the narrow streets and crowded gardens that everywhere abound. In the system of street planting that has obtained and is largely followed at the present time the monotonous repetition of a few subjects, such as Plane, Lime, and Poplar, is painfully evident, though why this should be is difficult to conceive when we consider the wealth of suitable species. It would not be advisable to experiment with untried species, but Victoria Park is rich in trees of distinct form and character from those in most of the parks, and the conditions obtaining in that park are such that trees which exist and flourish there might safely be planted in other parks. The rich Arboretum at Kew may even be taken as a guide, for there the conditions are almost the same as those in the most favoured parks.

Even of species of trees which have long been proved to be suitable for town cultivation it does not seem to be recognised that numerous forms and varieties almost as distinct as new species are available. That this is so may be proved by a visit to the Kew Arboretum, where there are thirty-four varieties of *Robinia pseudo-acacia*, and of these a dozen could be selected that would furnish great diversity of appear-

ance. The same may be said of the Ash with twenty-four elegant and distinct varieties, the Sycamore with sixteen forms, and the Norway Maple with fifteen. The planting of these forms of tried species would not be nearly so risky as planting trees whose suitability is unknown. The soil in large towns is generally unsuited to proper growth, and where the trees are further handicapped with asphalt and flag-stones the wonder is they succeed at all. But it is more particularly in reference to manuring that attention is desired. Deciduous trees on which our town planters depend for their subjects answer admirably to systematic manuring.

Another question affecting the proper growth and training of trees in towns is that of pruning. They are usually allowed to grow unrestrained for a time and are then cut back severely, with the result that bare branches are seen with dense masses of small growths at intervals. It is better to subject the tree to pruning when in a young state.

A list of suitable trees for town-planting was included in the paper, and this will be published in the Society's Journal.

SOCIÉTÉ ROYALE LINNÉENNE DE BRUXELLES.

AUGUST 20.—The first of the monthly meetings organised by the Royal Linnean Society of Brussels was held on the above date in the State Botanical Garden, and was a great success. One-hundred-and-twenty-three plants were exhibited for certificates, of which fifty-seven were Orchids. Chrysanthemums, Gloxinias and fruits, including Strawberries, Grapes, Peaches, Nectarines and Pears, were also shown. There were twenty-five exhibitors, fifteen from the neighbourhood of Brussels and ten from the country. The Jury numbered twenty-eight members, divided into three sections.

ORCHIDS.

Marquis de Wavrin (Chairman), and Messrs. Ch. Pynaert (Secretary), Pauwels, Praet, Hye, Putzeys, Janssens, Pourbaix, De Bièvre, Vuylsteke, Closson, De Smet-Duvivier, De Langhe-Vervaeke.

The gems of the show were Cattleya Pittiana splendens, exhibited by M. LAMBEAU, from Brussels; and Cypripedium Maudiae, from M. STEPMAN. They were awarded First-class Certificates. The following awards were distributed:—Certificate of Merit by acclamation to Cattleya Pittiana splendens from M. LAMBEAU, Brussels; Certificate of Merit by unanimity to Cypripedium Maudiae, from M. STEPMAN, Brussels.

Certificates of Merit for flowering, culture, or excellence of variety to Cypripedium Schillerianum, C. Charlesworthii callosum, C. C. tonsum, C. Gowerianum, superbum, C. The Hender, C. vexillarium, C. glaucophyllum, C. Lubbersii, and Cattleya Loddigesii, exhibited by MM. DUCHESNE, LANTHOINE & Co., Watermael. Cattleya Hardyana, from M. VERDONCK, Ghent; Cypripedium Kimballianum, from M. PAUWELS, Ghent; Cattleya Gooseensiana, from M. DE BIÈVRE, Laeken; C. Trianae var. Middle, Rita Claes and C. T. Baekhouseiana var. Fl. Claes, from M. CLAES, Brussels; Vanda Batemani, V. tricolor var. tenebrosa and Cypripedium barbatum var. bruxellense, from M. DRAPS, Laeken; Cypripedium beechense, from Cattleya Gaskelliana var. Formosa, from M. PRAET, Ghent; Cypripedium Dr. Clinge Doorenbos, C. insigne Chantini allium, C. Massaianum, from MM. JANSSENS & PUTZETS, Antwerp; Cattleya Vinckxiana, from M. DIETRICH, Anderghem; Cypripedium Gowerianum superbum, C. Gravesiae, C. A. de Laisse, Vanda caerulea rotundifolia, from M. LAMBEAU, Brussels; and Cypripedium prestantis, from M. STEPMAN, Brussels.

BOTANICAL CERTIFICATES were awarded to Megacelinium Arnoldianum De Wild. (Congo), from the Brussels Botanic Garden; and Maxillaria pallidiflora, from M. VAN DE PUTTE, Ghent.

HONORARY MENTIONS to Cattleya gigas, from M. PRAET, Ghent; Cypripedium fastuosum, from M. STEPMAN; Cattleya Hardyana, C. Pittiana, L.-C. Martineti, from M. DIETRICH; C. gigas cordean in variety, and C. Pittiana, Cypripedium Wertzianum, Miltonia Cogniauxiana var. superba, from M. LAMBEAU

MISCELLANEOUS PLANTS.

Th. Durand (Chairman), and Messrs. Etienne-Joiris (Secretary), Taburiaux, Herrewege, Bogaerts, Séghiers, Gilson, De Smedt Louis.

The best novelty was Dracena Bruanti var. Souvenir de François Buysse, exhibited by Mme. VVE. BUYSSE, of Meirelbeke. A Diploma of Honour with the Jury's felicitations was awarded to this extraordinary acquisition. It is a handsome variegated form of Dracena Bruanti. Obtained from a sport, it is one of the best additions in late years to decorative plants.

The following awards were made:—
DIPLOMA OF HONOUR with felicitations to Dracena Bruanti var. Souvenir de François Buysse, from Mme. VVE. BUYSSE, Meirelbeke, Ghent.
CERTIFICATES OF MERIT with felicitations to Anthurium Andreanum var. Souvenir du Père Draps, from M. DRAPS, Laeken, and Eucephalartos Laurentianus, from the BRUSSELS BOTANIC GARDEN.
CERTIFICATE OF MERIT to Dracena Mme. Gentil, D. Présid. de Middelcer, D. Souv. du 1er meeting; D. Memoria-Drapsi, D. Lambeauana, D. Père Charon, from M. DRAPS, Laeken.

FRUITS.

M. Van Dievoet (Chairman), and Messrs. Lorge (Secretary), Paras, Klettenberg, Joris, Op de Beek, members.

The SYNDICAT DES VITICULTEURS BELGES (M. Van Varenberg secretary), showed samples of Grapes, Peaches, and Nectarines, which were rewarded by Honorary Mention.

M. PARAS, head fruit-grower to H.M. King Leopold, showed four boxes of Strawberries of the following perpetual fruiting varieties:—Perpetuelle, La Perle, St. Antoine, and St. Joseph (Certificate of Merit by Acclamation).

M. VAN DIEVOET showed nine varieties of Pears gathered from July 20 up to August 20.

We call the special attention of our British friends to these meetings. Louis Gentil.

BRIGHTON HORTICULTURAL.

AUGUST 22, 23.—The fourteenth annual summer exhibition of this Society was held on these dates in the Dome and Corn Exchange. Exhibits were numerous and good, the cut flowers being an especial feature.

PLANTS.

The leading class among plants was that for a group of miscellaneous subjects arranged for effect. The premier award was gained by Mr. G. MILES, Victoria Nursery, Dyke Road, Brighton, who had well-flowered Liliums, Carnations, and Begonias, in conjunction with suitable foliage plants. Mr. G. Sims, gr. to E. A. WALLIS, Esq., Upper Lewes Road, Brighton, was 2nd.

The class for a group of Ferns arranged for effect caused spirited competition. Mr. J. Adams, gr. to Sir G. C. SHIFFNER, Bart., Coombe Place, Hamsey, Lewes, won the 1st prize with excellent specimens of Adiantum Farleyense effectively employed amongst smaller plants of other varieties. Mr. G. MILES was 2nd.

Tables measuring 8 feet by 4 feet, arranged with flowering and foliage plants, made quite an interesting feature. Mr. G. Eastwood, gardener to Mrs. GOULD, Downs Hotel, Hassocks, was 1st with a light arrangement of Bougainvillea Sanderiana, Lilies and suitable foliage plants. Mr. H. Goldsmith, gardener to D. HACK, Esq., Fir Croft, Withdean, was 2nd.

Tuberous Begonias were shown well. Mr. F. Collis, gardener to Mrs. HUGHES, Preston Park Avenue, Brighton, won 1st prize with dwarf, bushy plants that were well furnished with flowers.

Mr. H. Garnett, gardener to R. G. FLETCHER, Esq., Mount Harry, Withdean, won the 1st prize in the class for six well-coloured Codieums (Crotons).

Dracenas in three varieties were admirably staged by Mr. J. G. Ereveld, gr. to H. YOUNG, Esq., Withdean, who led easily, as he also did in the class for six Palms. Mr. EASTWOOD staged the best collection of six Ferns. Coleus were admirably shown, and Mr. F. COLLIS was awarded the 1st prize for large plants of popular varieties.

CUT FLOWERS.

For the best collection of Carnations artistically arranged with foliage plants and Ferns, a Silver Challenge Cup was offered. Messrs. H. & J. ELLIOTT, The Nurseries, Hassocks, secured the trophy with a highly creditable display. Miss SHIFFNER, Coombe Place, Lewes, who gained 2nd prize, had greater variety, but her flowers were smaller.

Roses were not numerous; the flowers were small, but of good quality. For twelve distinct varieties, Mr. Harris, gr. to E. M. EVERSFIELD, Esq., Denne Park, Horsham, was placed 1st; while for twelve Tea varieties, Mr. J. Davis, gr. to Major E. H. THURLOW, Buckham Hill House, Uckfield, gained a similar position.

Mr. J. Rogers, gr. to C. E. F. STANFORD, Esq., St. Aubyns, Rottingdean, won the 1st prize in the class for twelve spikes of Gladioli.

Dahlias were shown well. Messrs. J. CHEAL & SONS, Crawley, won the 1st prize in the class for twenty-four show or fancy blooms, and twelve bunches of Pompon varieties of these flowers.

In the class for twelve bunches of Cactus Dahlias, Messrs. J. STREDWICK & SONS, Silverhill Park, St. Leonards, were successful, having charming flowers that were beautifully displayed. Messrs. J. CHEAL & SONS were 2nd in this class.

Hardy perennials and bulbous flowers in twelve varieties made a great display. Mr. J. DAVIS's exhibit of Lilium lancifolium rubrum, Rudbeckias, Penstemons, Phlox, &c., easily secured the premier place. Mr. J. E.

Shirley, gr. to the Rev. T. G. WYATT, St. Wilfred's Parsonage, Hayward's Heath, was 2nd.

Annals in bunches of twelve varieties were well represented. Mr. J. DAVIS was placed 1st for these flowers with a representative collection. Mr. A. H. PARSONS, Malling Street, Lewes, had the best six bunches of Sweet Peas in popular varieties.

For the best decorated dinner table there were nine entries. Miss FLORENCE MOLYNEUX, Swanmore Farm, Bishop's Waltham, Hants, was 1st with a lightly-arranged table. Mrs. RABLEY, Islingwood Road, Brighton, came 2nd with a display of pink Carnations and Ivy-leaved Pelargoniums.

FRUIT.

Although the exhibits in the fruit classes were not numerous they were of good quality. In the class for a collection of eight dishes of fruit, Mr. JOHN GORE, Albion Nursery, Polegate, was awarded the 1st prize. The exhibit included good Grapes, Peaches, Nectarines, and Melons. The best Muscat of Alexandria Grapes were shown by Mr. G. H. SIMMONS, gr. to H. G. WHITE, Esq., Polegate. Competition in the class for Melons was keen. The best Peaches were staged by Mr. Verrall, gr. to Mr. F. SHENSTONE, Sutton Hall, Boreombe, who had two dishes of excellent fruit. Mr. J. GORE had the premier award for Nectarines. Plums were exceedingly well shown. In the class for four dishes of these fruits, Mr. F. W. THOMAS won with Cullen's Gage, Jefferson, Kirke's, and Victoria.

VEGETABLES were but moderately shown.

NON-COMPETITIVE EXHIBITS.

Gold Medals were awarded to Messrs. T. RIVERS & SON, Sawbridgeworth, Herts, for a grand collection of fruit-trees in pots. To Messrs. W. BALCHIN & SON, Brighton and Hove Nurseries, for an excellent group of foliage and flowering plants.

Silver-gilt Medals to Messrs. JOHN LAING & SONS, Forest Hill Nurseries, London, for Begonias, Caladiums, &c.; and to Mr. JOHN RUSSELL for plants, E. M.

SHROPSHIRE HORTICULTURAL.

AUGUST 23 & 24.

HONORARY EXHIBITS.

Concluded from p. 16. of Supplement to the issue for Aug. 26.

Messrs. J. CHEAL & SONS, Lowfield Nurseries, Crawley, Sussex, sent a splendid collection of Cactus, Pompon and single Dahlias.

Mr. G. H. TOWNDROW, Malvern Link, sent a new bedding Begonia named Bronze Beauty. It belongs to the fibrous-rooted section, is dwarf, with small red flowers. In autumn the small green leaves assume shades of crimson and purple colours.

Messrs. JARMAN, Chard, exhibited Roses, Dahlias, and beautiful annual Centaureas.

Rustic table stands filled with Sweet Peas and Carnations came from Mr. ROBERT SYDENHAM, Tenby Street, Birmingham.

Mr. ANGUS, The Gardens, Penicuik, sent Chrysanthemum maximum King Edward, and shapely flowers of Disa grandiflora.

Messrs. W. & J. BROWN, Stamford, contributed cut Roses, zonal Pelargoniums, and a few hardy flowers.

From Mr. AMOS PERRY, Winchmore Hill, London, N., came an effective display of hardy flowers and Water Lilies in great variety.

Messrs. T. S. WARE, Feltham, Middlesex, sent some beautiful Cactus Dahlias, and a large assortment of tuberous-rooted Begonia flowers.

Cut Roses, shown as grown, were exhibited by Mr. EDWIN MITRELL, Shrewsbury, who also had a very fine selection of hybrid Gladioli.

Mr. JOHN FORBES, Hawick, Scotland, had a comprehensive collection of Pentstemons and Phloxes. Beautiful Carnations were shown on the old-fashioned boards with paper collars.

Messrs. JONES & SONS, Cotton Hill Nurseries, Shrewsbury, displayed a grand lot of Sweet Peas, Carnations, and Dahlias.

Messrs. FELTON & SONS, Hanover Square, London, sent a small group of plants and cut flowers.

Messrs. W. CUTBUSH & SON, Highgate, London, exhibited a pretty group of Herbaceous plants and hardy Nymphs.

Messrs. CLIBRANS, Altrincham, put up a large group of small Codieums, in which yellow-leaved varieties preponderated, over a groundwork of Adiantum cuneatum.

Messrs. HEWITT & Co., Solihull, Birmingham, filled the end of the large plant tent with a rich display of hardy flowers.

Messrs. PRITCHARD & SONS, Shrewsbury, exhibited

Cannas, well-flowered plants of *Lilium auratum*, and exotic Ferns.

Cut flowers of double and single Tuberous Begonias arranged in small vases came from Messrs. B. R. DAVIS & SONS, Yeovil, Somerset.

Roses in great variety and excellent quality came from Mr. GEORGE PRINCE, Longworth, Berks.

Mr. JNO. ROBSON, Altrincham, exhibited Dahlias and a few other hardy flowers, besides flowers of a few good, "tree" or perpetual-flowering Carnations.

Earl POWIS, Powis Castle (gr., Mr. Lambert), exhibited a group of plants of *Dracena "Victoria,"* which included six large handsome plants and some smaller ones.

Messrs. HOBBS, Ltd., Dereham, Norfolk, made a very large exhibit of Dahlia-blooms and Roses, many of the Rose growths being trained to Bamboos, and some of the Dahlia blooms were arranged in stands of the same material.

Large exhibits of Sweet Peas were made by Mr. H. ECKFORD, Wem, Salop; Mr. ROBERT BOLTON, Warton, Carnforth; Mr. J. DERBYSHIRE, Hale, Altrincham, &c.

Zonal Pelargoniums of the double and single-flowered sections were contributed by Mr. VINCENT SLADE, Taunton. Sprays of Violas came from Mr. W. L. PATTISON, Shrewsbury. Cacti from Mr. RICHARD ANKER, Addison Road, Kensington; and rustic arbores and flowering plants and cut flowers came from Messrs. TOM B. DOBBS, Wolverhampton.

SCHEDULES RECEIVED.

THE MIDLAND DAFFODIL SOCIETY'S Seventh Annual Report.

ENQUIRY.

PRESERVATION OF RUNNER BEANS.—Can any reader describe a method of preserving Runner Beans in a fresh condition for winter use, other than that of placing them in layers of salt? T. W.

GARDENING APPOINTMENTS.

Mr. J. D. COLLEGE as Gardener to Mrs. ADAIR RIDGEMAN, Englefield Green, Surrey.

Mr. EDWARD WRIGHTON, for the past eight and a half years Gardener and Estate Bailiff to the late Sir RICLARD WYATT, at Gorthyoghared, Dolgelly, North Wales, as Gardener to ARTHUR WHITAKER, Esq., Chiddingstone Castle, Edenbridge, Kent.

Mr. W. C. HARRIS, General Foreman at R. BARCLAY'S, Esq., High Leigh Gardens, Hoddesdon, Herts, as Gardener to A. V. COX, Esq., Warren Cottage, Newmarket.

Mr. G. W. LONGURST, for the past two years Foreman in the Houses at Framfield Place, Uckfield, as Gardener to GEO. BLACKALL SIMONDS, Esq., Bradford House, Berks.

Mr. JAMES STEPHENSON, Gardener to the Duke of NEWCASTLE, Forest Farm Gardens, Windsor, as Gardener to WILLIAM ARKWRIGHT, Esq., Sutton Hall, Chesterfield.

Mr. STEPHEN DAVIES, for the past seventeen years Gardener and Bailiff to the late C. CHURCHILL, Esq., Weybridge Park, Weybridge, as Gardener to DAVID H. WILLS, Esq., Garbrand Hall, Ewell, Surrey.

Mr. WILLIAM LAMBERT, for the past three and a half years Hothouse Foreman at Madresfield Court, as Gardener to Earl GREY, Howick House, Northumberland.

Mr. G. ASLETT, for the past ten years Gardener to W. M. JOHNSTONE, Esq., Soham House, Newmarket, Herts, as Gardener to Mrs. F. W. CAMPION, Trumpets Hill, Reigate, Surrey.

ANSWERS TO CORRESPONDENTS.

EDITOR AND PUBLISHER.—Our Correspondents would obviate delay in obtaining answers to their communications, and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all communications relating to financial matters and to advertisements should be addressed to the PUBLISHER; and that all communications intended for publication, or referring to the Literary department, and all plants to be named, should be directed to the EDITOR. The two departments, Publishing and Editorial, are quite distinct, and much unnecessary delay and confusion arise when letters are misdirected.

ADDRESS: M. M. The address of Sir Daniel Morris, K.C.M.G., &c., Commissioner, Imperial Department of Agriculture for the West Indies, is Barbados, W.I.

BANANAS: J. A. R., *Alderley Edge.* The information you desire in respect to Bananas will be found in a note by Mr. Jackson on p. 178.

BEGONIA: *Lorraine.* The spots on the Begonia leaves have probably been caused by condensed moisture concurrent with a temporary low tem-

perature. Keep the leaves perfectly free from mites by syringing the plants or dipping them in tobacco-water.

BOOKS: A. H. We cannot trace the work you mention. We suspect it is out of print.

CATTELEYA: *Worcester.* The plant is badly affected with scale, and this pest is quite sufficient to cause the damage shown.

COLOURS: C. P. & Co. There has recently been published in the French language an exhaustive work on the subject, the title of which is *Répertoire de Couleurs.* It can no doubt be obtained from Messrs. Williams & Norgate, Henrietta Street, Covent Garden, London, W.C.

CYPRIPEDIUM LEAVES: E. T. The rusty appearance on *Cyripediums* is often seen on plants grown in an atmosphere that is too moist, or in too high a temperature. A similar appearance is caused by minute insects, sometimes by thrips. The remedy is to sponge the leaves frequently with a weak insecticide. Repot the plants and remove them to some other part of the house, or another house entirely.

DAHLIA: F. W. G. It is not our practice to name varieties of florists' flowers. Send the Dahlia to a nurseryman who cultivates these plants in large numbers.

DAHLIAS FOR EXHIBITING, &c.: *Anxious.* Your question involves too much for us to answer in the limited space at our disposal, but you will find everything you require in the *Official Catalogue and Guide of the National Dahlia Society.* It can be obtained from the secretary, Mr. H. L. Brousson, Foot's Cray, Kent. Price to non-members 2s., post free.

FUNGUS: A. B. The black fungus on *Acer* stump is *Xylaria polymorpha*, not uncommon.

GRAPES: H. J. We suspect the trouble is with the border, in consequence of which the roots are performing their functions unsatisfactorily. When the proper season arrives, thoroughly overhaul the border, and if it appears to be in a sour or otherwise bad condition, let a new border be made and ample means of drainage provided. Crop the Vines lightly for a season afterwards, and endeavour to obtain strong, well-ripened wood. With proper treatment you should not fail to obtain satisfactory results; but are you aware that Muscat of Alexandria and Black Hamburgh require different treatment in regard to temperature? Read the weekly Calendar in these pages on "Fruits under Glass."

HERBACEOUS BORDER: *Hugo.* We do not agree with the statement that there is no plant-food in mud obtained from a pond. You must not, however, apply it in a crude state. Make a heap of the material, incorporating plenty of sand, wood-ashes, road scrapings, and lime, and long manure, if obtainable. Turn it over several times at intervals of a few weeks in order to aërate and oxidise the components, and it will then be admirable for use in the herbaceous border, or, indeed, in almost any other quarter of the garden.

INSECT: A. W. per W. H., and T. W. The immature larva of the Goat moth, *Cossus ligniperda* (see fig. in *Gardeners' Chronicle*, p. 1172, 1871). This insect is very destructive to forest and ornamental trees, especially in the south and east of Great Britain, but in the north-west it is comparatively rare. The larva feed for three years, devouring and burrowing into the solid wood until in bad attacks it becomes completely honeycombed, and the tree succumbs to the attack. Occasionally a larva will leave its burrow in the tree and for some unaccountable reason bury itself in the ground, wherein it excavates a rather large chamber and lines it with a coarse network of strong silk fibres. In the fens of Cambridgeshire and Lincolnshire the larva show a decided preference for the pollard Willows, while in other districts the Elm and the Ash suffer equally from their attacks. A mixture consisting of clay, soap and paraffin forms an excellent means of prevention against the attacks of this pest; but when once the larva have established themselves in the trunk of the tree the best remedy is to place pieces of "stick" cyanide (POISON) in their burrows, and plug the entrance with stiff clay or a piece of wood.

MELON ROOTS: J. C. M. The roots are badly attacked with eelworm. Destroy any plants so affected. Remove the soil and thoroughly sterilise it by baking or other means. Do not cultivate Melons or Cucumbers in the same structure next season, and be careful to obtain loam from another source in the future.

NAMES OF FRUITS: W. D. B. The Peaches arrived in the condition of pulp. It is necessary when sending these soft fruits to pack them very carefully, preferably in wood-wool, and in addition to use plenty of soft paper round the fruits. Foliage should if possible be sent with the fruits, as the glands and other characteristics of the leaves form valuable means of identification. The Plum is Oullin's Golden.—A. H. M. The Peaches were all very well-grown fruits. The fruit of *Crimson Galande* is grand. Thanks for sending such examples so well packed. 1, *Violette Hâtive*; 2, *Dymond*; 3, *Crimson Galande*; 4, *Bellegarde*; 5, *Nectarine Peach*; 6, *Barrington*.

NAMES OF PLANTS: W. C. *Ononis Natrix.*—J. W. *Statices latifolia.*—T. E. G. *Empetrum nigrum.*—W. D. B. 5, *Arbutus Unedo*; 6, *Stachys lanata.*—*An Old Subscriber.* *Oncidium flexuosum.*—*Bart.* 1, *Trichopilia tortilis*; 2, *Oncidium Wentworthianum*; 3, *Masdevallia tridactylites.*—H. C. *Wicklow.* *Trichopilia coccinea*, so far as we can judge by the poor specimen sent. In such cases you should describe or roughly sketch the habit of the plant.—A. B. C. 1, *Sidalcea malvaeflora*; 2, *Achillea ptarmica flore-pleno*; 3, *Monarda didyma*; 4, *Conifer next week*; 5, *Rhus Cotinus.*—A. M. *Euphorbia Lathyris* (Caper Spurge).—*Mot.* 1, *Cyripedium oëanthum*; 2, *Portulaca grandiflora.*—C. S. *Araujia sericifera* syn. *Physanthus albens.*—W. D. W. 1, *Olearia Haastii*; 2, *Euonymus japonicus*; 3, *Myrtus communis*; 4, *Lycocateria formosa.*—J. S. *Lonicera brachypoda reticulata.*—*Amateur.* We cannot determine the specimen from such poor material.—H. C. D. *Tilia argentea*, the White Lime.

NEW POTATOS AT CHRISTMAS: T. W. Place the tubers immediately they are taken from the ground into tin boxes with close-fitting lids. Bury the boxes in holes 3 feet in depth in the garden, cover with soil, and indicate the locality by a stick. Avoid large tubers, and select those with smooth skins.

OPPORTUNITIES IN THE COLONIES: H. K. T. We think it is very likely you would find a good opening, but for fuller information as to the conditions which exist in different localities apply to the Government Emigration Department, 31, Broadway, Westminster.

ORCHID GROWERS: F. B. There is a *Gardeners' Directory* published which contains the names and addresses of gardeners and their employers in this country, but the Orchid cultivators are not given separately. The *Gardeners' Directory* can be obtained from our Publishing Department, price 1s. and cost of postage.

SAXIFRAGA SARMENTOSA: M. B. *Holland.* The species is only half-hardy generally in this country, although there are certain favoured localities where we think it would succeed out-of-doors entirely.

THE HORTICULTURAL HALL: J. C. More than one complaint has reached us relating to the slippery state of the floor, which is likely to be the cause of serious accidents. No doubt if the attention of the authorities were called to the matter it would receive attention.

VAPORISER: Ca. R. Mr. Ward was no doubt referring to Campbell's Patent Sulphur Vaporiser. The address at which they can be obtained is Exors. R. Campbell, Water Street, Manchester.

COMMUNICATIONS RECEIVED.—W. E. Gumbleton—W. H. —Exhibitor—M. T. M.—T. H.—W. F.—E. M.—C. H. P.—H. W. W.—W. J. V. (photographs)—F. W. B.—F. M.—E. H. W.—A. C. F.—P. M. T.—A. J. B. L.—C. P. & Co.—A. H. B.—A. D. R.—W. M.—F. J.—W. K.—G. & L.—E. B.—W. C. & Sons—H. T.—Pink Begonia—D. B.—J. M.—G. M.—W. W.—J. W.—J. S. & Sons—F. P.—F. P.—A. H.



THE
Gardeners' Chronicle

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CONTENTS.

Annuals at flower shows ... 204	Hemerocallis, three good ... 204
Apricots, two good varieties of ... 203	Judging at flower-shows ... 204
Bamboos, the flowering of ... 200	Kew notes ... 203
Beans, preserving ... 204	Nurseries in and around Edinburgh ... 195
Beans, Runner, low prices for ... 201	Obituary— Miles, Dr. ... 207
Books, notices of— Botanical Magazine Handbook of Forest Botany ... 203	Steele, Alexander ... 201
Publications received Carberry Tower, near Edinburgh ... 191	Orchids, special exhibitions of ... 201
China, plant-collecting in ... 202	Oxenford Castle ... 195
Colchicum autumnale, poisonous properties of ... 205	Plants new or noteworthy— Two new Eulophias ... 197
Conifers, blue ... 204	Societies— Aberdeen Royal Horticultural ... 206
Crocodylon Hookerianum ... 204	British Gardeners' Association ... 203
Eckford Testimonial... Edinburgh International Show ... 200	Horticultural Trades' Association ... 208
Edinburgh Royal Botanic Gardens ... 193	National Dahlia ... 207
Flowers in season ... 200	Reading Hort. ... 206
Fruit crops, remarks on the condition of ... 205	Sparaxis, a bed of ... 203
Grass land, experiments on ... 201	Swanley Horticultural College ... 201
Hopetoun House ... 196	Tagetes patula and T. cretaea ... 204

ILLUSTRATIONS.

Carberry Tower, Midlothian, view in the gardens at Hopetoun House, near Dalmeny, views in the gardens at ... 196, 197
Oxenford Castle, the residence of the Earl of Stair ... 208
Pear slug-worm, the ... 202
Rockery, the, in Edinburgh Botanic Gardens ... 202
Sirex gigas, the wood-wasp ... 208
Sparaxis, a bed of, in the South-West ... 203
Views in the Royal Botanic Gardens, Edinburgh (Supplementary Illustration)

SCOTLAND.

ROYAL BOTANIC GARDEN, EDINBURGH.

[See Supplementary Illustration, and Fig. 76.]

THE Royal Botanic Garden has occupied more than one site since its foundation in 1670; its present one was chosen in 1820. At that date the situation was comparatively open, but the growth of the city has gradually enclosed it, mostly by buildings of the villa type. The area of the Garden was at first only about 14 acres, and its present extent of 57 acres is the result of the successive additions of the ground at one time used by the Caledonian Horticultural Society as an experimental garden, and of the Arboretum which the Town Council purchased and presented to the Government in 1876. The necessity of combining the several areas thus acquired, and of adapting the Garden to receive the numerous visitors—which on some days are as many as 20,000—has caused many changes to be made in recent years. There are still in existence some of the trees which were transplanted from the Garden in its previous site at Leith Walk, but many of these are exhibiting signs of decay. In carrying out the planting of fresh specimens to replace them, and to bring the collection up to date, an endeavour has been made to classify the trees and shrubs into groups, so far as the soil and situation would permit.

On entering the Garden through the gateway in Inverleith Row, the visitor passes the offices, museum, and laboratories, and comes to the front range of plant-houses (see one of the views in Supplementary Illustration), which during the past twelve years has been almost entirely reconstructed. The range is built upon a terrace, and the houses run at right angles to a corridor. Behind the range may be seen the higher Palm-house and intermediate-house. The system of planting out in specially prepared beds is adopted as far as possible in the houses, and under these conditions growth of a luxuriant character is obtained. The houses of this front range are devoted to succulent plants, economic plants, greenhouse and stove plants, Orchids, and insectivorous plants. At the end of the range are still standing the remnants of the old houses, which are devoted principally to tropical and temperate Ferns.

In the corridor, which is a structure having a three-quarter span roof, the back wall being about 15 feet high, space is found for climbers and other plants requiring to be grown against a wall. Many interesting and rare species may be seen there, such as *Hidalgia Wercklei*, *Lonicera Hildebrandtiana*, *Cantua buxifolia*, *Acacias* and *Clematis* of kinds, *Solanum Wendlandi*, *Brugmansia sanguinea*, *Bougainvillea*, *Bignonias*, *Mackaya bella*, and other plants too numerous to mention here.

Behind the range is the *Nepenthes* and Aroid house, which is entered by a porch, the roof of which is covered with the long hanging stems of *Ipomoea Learii*, bearing hundreds of its lovely blue-coloured flowers. The effect gained in the *Nepenthes* house is certainly one of the prettiest, with its hanging pitchers and undergrowth of fine foliaged plants. Here and there at irregular points are some good examples of *Platynerium* growing upon tree trunks, *Anthuriums*, *Alocasias* and other species filling up the intermediate spaces. Planted among a groundwork of rocks in an adjoining house are *Bromeliads*, and tropical climbers cover the roof. Some fine plants of *Tillandsia regina* and its variety *gigantea* occupy prominent positions. The coloured leaves of the *Karatas* are attractive at the present time.

Stove plants in pots occupy the stages of the Palm house as well as the stove, and in all the houses the planted-out specimens show an excellence of growth unattained by pot plants. Amongst remarkable plants in the stove *Hibiscus Scotti* has this season borne hundreds of its fine yellow flowers. *Ruellia insignis* has bloomed well, and *Dioclea coriacea* has been covered with racemes of scarlet flowers. *Impatiens Hawkeri* and *I. Holstii* give colour to the house, as do also many fine plants with coloured foliage.

In the Palm house is an attractive group of Cycads. Being planted out their luxuriant growth shows the advantage of this method of cultivation. *Dioon spinulosum* and *D. edule*, *Cycas Riuminiana*, *Encephalartos pungens* and *E. horridus* and *Macrozamia Fraseri* are only a few of the specimens that are pictures of robust health.

The collection of herbaceous plants for study has lately been remodelled for the purpose of increasing the number of genera to the exclusion of a large number of species

in which there are only slight differences. Around the margins are planted a number of shrubs and small trees in their orders. Upon the terrace wall, which skirts and supports the terrace, is a good selection of wall plants of a hardy character, included among them being *Carpenteria californica*, *Fremontia californica*, species of *Escallonia*, *Ceanothus*, *Plagianthus betulinus*, and *Magnolias*.

An herbaceous border of about 200 yards in length is also worthy of a visit. Lying along the northern boundary, it has a southern exposure. It was made about two years ago, and is broken up in its entire length by *Coniferae*, *Hollies*, and other evergreens, the background being the boundary belt of deciduous trees with *Rhododendrons* planted under them. The herbaceous plants are arranged to produce a bold effect. Conspicuous just now are clumps of *Stokesia cyanea*, *Pentstemons*, *Hollyhocks*, *Liliums*, *Michaelmas Daisies*, and *Kniphofias*. Owing to a prolonged season of drought, the flowers have been of an evanescent character, and the border already presents an autumn appearance. Along its front margin are some good patches of *Acæna microphylla*; *Tunica Saxifraga* and *Linaria alpina*, which seem to revel in this sandy soil, are in full flower, as well as other creeping or dwarf plants suitable for forming edgings.

Efforts have lately been made to increase the collection of *Rhododendron* species, the Himalayan forms succeeding here remarkably well. Where the quantity of a particular species is sufficient it is planted in a large bed, while for the smaller and more tender species a border has been made under a Yew-hedge. Groups of *Rhododendron Thomsoni*, *R. fulgens*, *R. campylocarpum*, *R. cinnabarinum*, *Anthopogon ciliatum*, *A. campanulatum*, *A. niveum*, and many other species give to this part of the garden a bright appearance in early spring. At the present time these beds and borders are gay with the various species of *Lilium* in flower.

The collection of *Hollies* is arranged near by, some good examples of the varieties being notable, such as *Ilex Aquifolium camelliæfolium*, *Handsworthensis*, and *Golden Milkmaid*.

On the slope of the hill to the west of the plant-houses is the *Azalea* (*Rhododendron*) garden, the beds being of an irregular pattern and large in size. The American and Chinese hybrids are well represented.

Among the shrubs now in flower is *Eucryphia pinnatifolia*, like many other of the Chilean shrubs, such as *Tricuspidaria dependens*, *Mitraria coccinea*, and *Berberidopsis corallina*, now about 12 feet high against a wall. The *Eucryphia* seems perfectly at home in the open-air here.

So much has been written from time to time regarding the rock-garden (see Fig. 76), a brief notice need only be given. An endeavour has been made during the past few years to reconstruct the rockwork by the use of larger and more irregular stones, and to take away the small pockets so long in use. The plants are being massed in bold clumps. The genera *Erica* and *Calluna* are now in full flower, among the former being a bed of "Crawford's Heath," a double form of *Erica Mackayi* found by F. C. Crawford, Esq., in Galway. This is an excellent grower, and like

most of the *Ericas* it has flowers of a lovely shade of pink colour, while the doubling is perfect. The collection of *Saxifragas* is extensive, and even when out of flower the plants have a pretty effect by reason of their different tints of green foliage. A bank of *Cotoneaster horizontalis* will soon be rich in its autumn colourings of both fruit and foliage. At the back of two of the larger mounds almost vertical walls have been built, where it is hoped plants requiring this position may be cultivated.

Conifers, although growing moderately well for a certain number of years, generally lose their vigour after reaching a height of about 30 feet, this being due to the light, sandy nature of the soil, and perhaps also to the smoke-laden atmosphere common to

course of three years. An excellent library is provided for the use of members of the staff.

The interest of the public is stimulated by lectures given free to all by the Regius Keeper, Professor Balfour, F.R.S., in the lecture-hall. *R. L. Harrow.*

[We have to thank Professor Balfour for obligingly furnishing us with the photographs. Ed.]

CARBERRY TOWER.

CARBERRY TOWER, the seat of Lord Elphinstone, is one of the most interesting and attractive estates in Midlothian. It is situated about 7 miles from Edinburgh and 2 miles from Inveresk station, to which there are frequent

and the *Souvenir de la Malmaison Carnations* are quite a feature of the place. There is also a healthy stock of well-grown plants of the American varieties of the winter-flowering type.

In the outside garden vegetables are specially well done, most of them being quite up to show standard. Hardy fruits are also grown well.

The herbaceous plants alone are well worth a visit, being rich in variety and robust in health. There are large stocks of *Carnations*, *Pentstemons*, *Phloxes*, *Antirrhinums*, and other florists' flowers. Mr. Kidd has a great admiration for *Sweet Peas* and grows them well, but this season the long drought has been sadly against them.

In few gardens are *Roses* better cultivated than at Carberry Towers, and on entering the gardens one is apt to suppose it is purely a *Rosary*. *Pillar Roses* are particularly in evidence, and at the back of the herbaceous borders have a



FIG. 71.—VIEW IN THE GARDENS AT CARBERRY TOWER, NEAR EDINBURGH, SHOWING A BED OF GALTONIA CANDICANS, ALSO A CIRCULAR GATEWAY IN A STONE WALL.

city gardens. The species grown are numerous, but it is only as young trees that they have a healthy and vigorous appearance. The herbarium building, which is situated near to the collection of Conifers, will be remembered by many as the exhibition hall of the Caledonian Horticultural Society, when this part of the garden was in possession of that Society.

From its foundation the Royal Botanic Garden has been connected with the University of Edinburgh, in that the Professor has always been Regius Keeper, and the University students are taught in the Garden; but the educational work of the Garden has been in recent years extended, so that the young gardeners and foresters employed in the garden and arboretum pass through a special course of instruction in the sciences underlying the practical part of their work. The lectures, which embrace many subjects, are given by specialists, and extend over a

trains from Edinburgh, and half a mile from Smeaton station, where, however, trains are fewer.

The mansion is an imposing building situated amidst beautiful trees, and has fine lawns around it. The banks of a small lake are prettily adorned with an interesting collection of shrubs. The gardens are not of great size, but every phase of cultivation is represented. Mr. Kidd, the gardener, is one of the younger race, full of enthusiasm and energetic, and one cannot wonder that so many things are specialised at Carberry.

There is a considerable extent of glasshouses, in which fruit and flowers are cultivated thoroughly well. Grapes are always good, the specimens of Muscat of Alexandria being widely known as among the best that are seen at Scotch shows. For some years past Mr. Kidd has taken a prominent place as an exhibitor of Grapes. Peaches, Nectarines, Melons, &c, are much in evidence, and excellent orchard-house fruit is cultivated. The *Carnations* are grand,

splendid effect. The *Chrysanthemums* are a fine lot of plants, and in just such condition as to promise extra good flowers.

Mr. Kidd is the present holder of the Scottish Challenge Cup, and probably means some day to win the great Edinburgh prize.

On leaving the garden proper, the visitor is conducted into what is called the flower-garden, a delightful retired square radiant with beauty. This is quite distinct from the usual style of bedding display. Here the beds and borders are irregular, and while the usual bedding plants are not quite in disuse, they are not prominent, but are delightfully mingled among the choicest hardy flowers, *Roses* and flowering shrubs. The grass lawn on which this garden is planted is most refreshing.

One of the striking features of Carberry is the *Sequoia* (*Wellingtonia*) avenue, composed of fine, healthy trees about 30 feet in height, and healthy to the ground. Any gardener who has half a day to spare cannot do better than visit Carberry. *M. T.*

OXENFOORD CASTLE.

OXENFOORD CASTLE, the Midlothian seat of the Right Hon. the Earl of Stair, is a little over ten miles distant from Edinburgh, and four from Dalkeith. It is easily reached by train and brake, and the journey may be covered in about an hour and a half. The Castle, which is a stately and substantial edifice, occupies a commanding position on the left bank of the river Tyne, and stands in an extensive park, the newer parts of which are finely wooded with every species of familiar tree. These have been arranged with

is a moderate extent of glasshouses, filled with fruit-trees and choice plants; and while the latter are grown to a considerable extent, fruit constitutes the chief feature of the garden. The rosary, too, is well planted with up-to-date varieties of Roses.

As it exists at present, Oxenfoord Castle involves a portion of an old castellated mansion which was erected some time during the latter half of the sixteenth century by one David Macgill, who acquired the lands of Oxenfoord in the reign of Mary, Queen of Scots (1561-1567). It was gradually enlarged and beautified by suc-

SOME EDINBURGH NURSERIES.

COMELY BANK.

The nursery of Messrs. Cunningham Fraser & Co. was commenced in 1810 by the late James Cunningham, a well-known Scots florist, and has continued since in the possession of the family, the sole proprietor of the firm being T. C. Fraser, his grandnephew. Unlike most Scottish nurseries, forest trees are not grown here. The grounds extend to forty acres, and evergreen and deciduous shrubs form the major portion of the stock, but standard and ornamental trees



FIG. 72.—OXENFOORD CASTLE, NEAR DALKEITH, THE RESIDENCE OF THE EARL OF STAIR.

great judgment. In the immediate vicinity of the Castle itself much taste has also been displayed in the disposition of shrubberies and flowers, while the ancient groves of timber there, and the lawns cut into terraces and slopes in the old style of landscape gardening, add much to the beauty of the scene.

Along the sides of what is known as the "Terrace Walk" stand some stately Sequoias (Wellingtonias), one of which was planted on March 10, 1863, by the late North Dalrymple, ninth Earl of Stair, in commemoration of the marriage of his present Majesty, King Edward the Seventh. The gardens, which cover a considerable area of ground, are laid out with exquisite taste and are beautifully kept. There

ceeding owners, until 1842, when it assumed its present massive and stately appearance as the result of extensive alterations and additions wrought upon it by General Sir John Hamilton Dalrymple, Baronet, who became heir to the Macgill estates through his mother, and succeeded to the Earldom of Stair in 1840. King James the Second when Duke of York, and his daughter, the Princess Anne, afterwards Queen Anne, enjoyed hospitality here for some weeks. Hard by Oxenfoord Castle stood the old Manor House of Chesterhall, once the seat of the Wedderburns, and the birthplace of the famous Alexander Wedderburn, who became Lord Chancellor Loughborough and the first Earl of Rosslyn.

are also well grown. Hollies are grown in great quantity, from 30,000 to 50,000 being planted out from cutting frames every year. Whole quarters of plants of the variety Golden Queen may be seen in different sizes. Yews, Irish and English, are also grown largely, several acres being under this crop.

Aucubas and Rhododendrons are extensively cultivated, the named varieties of Rhododendrons being mostly raised from layers. Seedlings are raised from cross-fertilised flowers, and excellent varieties have been obtained by this method. Hardy Heaths are very interesting, the collection including from fifty to sixty sorts. Alpine plants are a speciality, the collection being very comprehensive. There are about 250 varieties of Saxi-

fragas, including some of the new introductions of Mr. W. Boyd, which are not yet in commerce. "Faldonside" and "Cherry-trees" being two of the finest.

A note on the Alpine plants was published in our issue for April 30, 1904. Herbaceous plants are extensively cultivated, and the collection is up-to-date. Many rare and out-of-the-way plants are to be seen in this nursery, and some are growing under most unlikely conditions.

BEECHHILL AND ROSEMOUNT NURSERIES.

The nurseries of Mr. John Downie are beautifully situated about two miles west of the city of Edinburgh, and can be easily reached by proceeding by car to Murrayfield, or by train to Pinkhill station.

Beechhill Nurseries contain choice Coniferae, including the most beautiful varieties. There is an extensive collection of deciduous flowering and ornamental trees and shrubs. The late Mr. John Downie devoted a great deal of both time and attention to the hybridising and improving of florists' flowers, and many of the varieties he raised are still to be found in the collections.

The glasshouses are used for the cultivation of stove and greenhouse plants, Palms, Ferns, pot-Vines, &c. The collections of zonal and regal Pelargoniums and tuberous-rooted Begonias are a feature. Ornamental stove foliage plants are cultivated with every success.

Belgrave Park Nurseries are devoted to the cultivation of general outdoor nursery-stock, the soil, situation, and aspect being admirably suited for them. Forest-trees may be seen in all sizes, from seedlings up to transplanted specimens. Roses and fruit-trees occupy a considerable area. The well-known variety of Crab, "John Downie," is grown in all sizes. Rhododendrons, green and variegated Hollies, flowering shrubs, such as Weigelas, Spiraeas, Forsythias, &c., specimen standard trees of Lime, Sycamore, Oak, &c., English Yews, hedging, and general covert plants, are cultivated. The nurseries are at all times open for inspection.

T. METHVEN & SONS.

Immediately opposite to one of the entrances to the Royal Botanic Gardens are the grounds of Messrs. T. Methven & Sons, whose seed offices are in Princes Street. The business was established by the late Thomas Methven, and now belongs to his two sons. Altogether the firm cultivates some 70 acres of land, some of which is at Warriston, the remainder being in Leith Walk, Iverleith, and Baugholm.

R. B. LAIRD & SONS.

The nurseries of Messrs. R. B. Laird & Sons are at Pinkhill, Murrayfield, on the west side of the city, and about 3 miles out. Trams run nearly to the site, and buses quite thereto and beyond. Inclusive of the ground covered by the glass-houses and other buildings, the area of the nursery is rather under 50 acres.

DAVID W. THOMSON.

The nursery belonging to Mr. David W. Thomson is in the Granton Road, past the Botanic Gardens. It consists of about 35 acres of land, all of which is now devoted to out-of-door culture. Trees and shrubs are an especial feature. Mr. Thomson is the son of the veteran David Thomson, late gardener to the Duke of Buccleuch at Drumlanrig.

DICKSON & Co.

The nursery of this firm is situated three miles out of the city in the direction of Dalkeith. Trams will convey visitors to within five minutes' walk of the place. The nursery contains an extensive stock of Conifers, forest trees, shrubs, fruit trees, &c. The glasshouses include eleven with span-roofs. Dahlias and many other border plants are grown. The firm cultivates about 100 acres of land.

HOPETOUN HOUSE.

AMONG the many places of horticultural interest in the neighbourhood of Edinburgh is Hopetoun House (see figs. 73, 74, and 75), the Linlithgowshire seat of the Marquis of Linlithgow.

and was [about 1698] finished by Mr. Robert Adam, another distinguished architect who flourished in the early part of the eighteenth century. A noble building in itself, it occupies a position of great beauty, and commands a most extensive view of the Firth of Forth and its shores.



FIG. 73.—VIEW IN THE GARDENS AT HOPETOUN HOUSE, THE RESIDENCE OF THE MARQUIS OF LINLITHGOW.

The best way to reach Hopetoun from Edinburgh is by taking train from the North British Railway Waverley station to Dalmeny station, whence a pleasant walk leads to the grounds.

Much could be said of this aspect of Hopetoun, but at the present time it will be sufficient to state that the visitor to the grounds, which are open to the public any day, will be charmed with the prospect

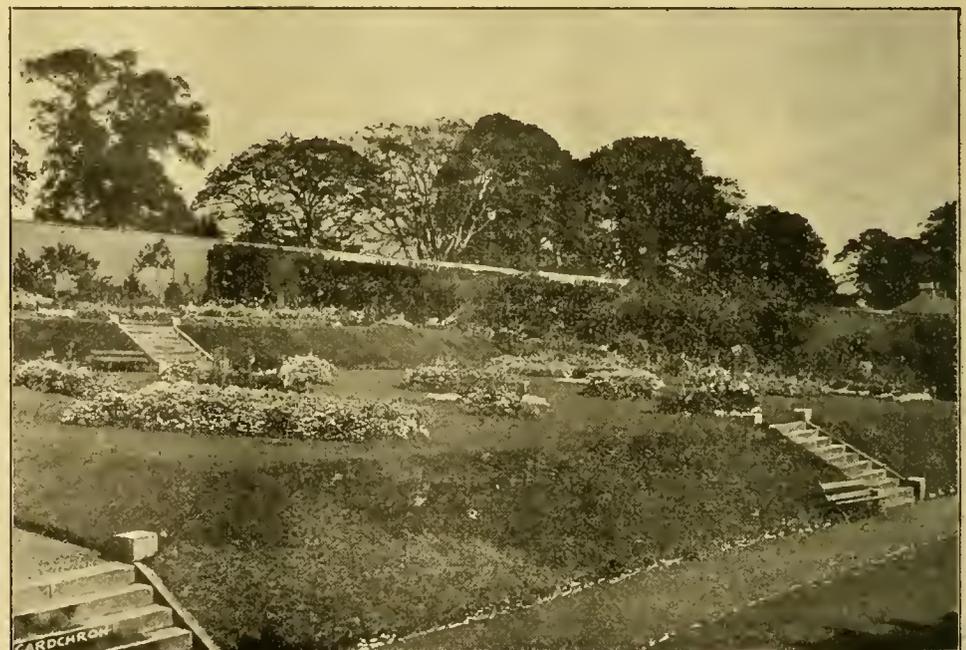


FIG. 74.—TERRACES WITH FLOWER-BEDS AT HOPETOUN HOUSE.

Many, however, go by way of South Queensferry, whence a longer though enjoyable walk along the shore road leads to the entrance.

Hopetoun House, in the French palace style of the age of Louis XIV., was designed by Sir William Bruce, the rebuilder of Holyrood,

from almost any part, and with the view which is to be had of the site of the future naval base. The gardens are not open to the public, but permission to see them is generally easily obtained by those really interested in horticulture. The park, which includes a deer park containing

a fine herd of deer, extends to about 1,700 acres, and the pleasure-grounds are understood to have been originally laid out between 1725 and 1730, but many changes have been made since that time. Only recently a number of large trees were successfully removed to add to the beauty of the grounds. Arboriculturists will find much to interest them in the magnificent trees which abound everywhere. Even those less devoted to such pursuits cannot fail to be charmed with the "dark walk," the great Yews and the noble Hollies which are throughout the grounds. The magnificent old Cedars have long been famous.

In spring a great portion of the grounds is bright with Daffodils, Snowdrops, and other spring-flowering bulbs.

The gardens abound with interest to the horticulturist, containing as they do everything necessary for the requirements of a large household in the way of flowers, fruit, and vegetables, besides the plants for garden decoration. The

as *Étoile de France*, *Souvenir de Président Carnot*, and many others. Carpeted with *Alyssum*, these have been very attractive this season. In other situations *Roses* are cultivated in great numbers, both outside and under glass, and it may be mentioned that the variety *Mdlle. Cécile Brunner* has long been a favourite with the *Marchioness*.

Herbaceous plants are well and extensively cultivated in borders and elsewhere, and besides the finest of the taller choice alpine plants now receive considerable attention.

The herbaceous plants include many new species and varieties, and as great numbers are cultivated the effect is excellent. This season a group of about 100 plants of *Incarvillea Delavayi* was superb, while the newer *I. grandiflora* has also succeeded well. By way of showing the varied character of the collection it may be said that *Chrysanthemum maximum Robinsoni*, *Astilbe Davidii*, *Meconopsis integrifolia*, *Sidalcea Rosy*

such new plants as *Buddleia variabilis Veitchiana* and other novelties.

The conservatories are always kept supplied with flowering plants, and the stoves contain many interesting subjects, in addition to those which are cultivated more commonly. *Orchids* receive a full share of care, and the collection includes a number of the best forms of these indispensable flowers, of which *Calanthes* should be specially mentioned. The plant-houses are prettily adorned with suitable climbers, and the high culture one expects in such an establishment is noticeable everywhere.

Melons have been good this season. Among the varieties usually grown here are two that were raised at Hopetoun. One of these, named *Earl of Hopetoun*, is a very handsome and well-flavoured Melon, while the other of equal merit is named *Countess of Hopetoun*. *Tomatos* and *Cucumbers* are also very largely represented.

The range of vineries is extensive, and the *Grapes* are always cultivated well at Hopetoun House, a succession of *Grapes* being maintained over a long period. A large number of varieties of *Peaches* and *Nectarines* have borne abundant crops this season, and *Pines* are cultivated well. A large area is devoted to outdoor fruits.

Drought this season has affected some of the kitchen garden crops injuriously, but they are generally of good quality; while *Onions* are excellent and *Peas* have cropped well.

Hopetoun is one of the most important horticultural establishments south of the Forth, and visitors to the International Horticultural Exhibition should not miss an opportunity of inspecting the gardens. *S. Arnott*.



FIG. 75.—SEA-WALK AT HOPETOUN, LOOKING EAST, WITH THE FORTH BRIDGE IN THE DISTANCE.

reputation the gardens obtained under the charge of the late Mr. James Smith is well maintained by his successor, Mr. Thomas Hay, who receives every encouragement from his employers.

The gardeners enjoy a Saturday half-holiday; and their usual working hours are limited to nine on other days. An addition to the bothy, which is in course of erection, will contain a bathroom and other comforts for the young men.

The kitchen garden proper is a walled enclosure of 11 acres, with extensive ranges of glass-houses and large flower and vegetable gardens and fruit quarters. It practically occupies two sides of a valley, with a small stream intersecting it.

In the Rose-garden the blooms have been exceedingly fine this season. A feature is the large beds each filled with one variety only, these including such fine *Roses* as *La France*, *Caroline Testout*, *Madaune A. Chatenay*, and others whose value for cultivation in masses has been proved. These beds have been carpeted with a lovely heliotrope-coloured *Viola*, raised in Mrs. Wauchope's garden at Niddrie. Of this, 10,000 plants are employed. There is also a new *Rose* border, in which there are choice varieties, such

Gem, and *Gypsophila paniculata* fl. pl. are among those to be met with in the gardens. A supplementary border is devoted to seedlings for removal to the herbaceous borders proper, and there have been here about a hundred plants of *Astilbe Davidii*, with *Senecio elivorum* and *S. tanguticus*, and other species of value, together with *Delphiniums*, *Chelones*, and many others. Unfortunately the dry season has been unfavourable to their good development.

A noteworthy border is one filled with *Pentstemons*, some 3,000 plants of named varieties being cultivated here, besides a stock of the fine scarlet variety *Lord Charles Hope*, which was raised here, and a bed of the old *Newbury Gem* mingled with *Fuchsia Riccartoni*, *Montbretias* and *Gladioli*, together with early-flowering *Chrysanthemums*, are exceedingly good.

Carnations deserve a special note, there being in all about 7,000 plants grown, of which 5,000 are cultivated in two large borders. A house is also devoted to the finer yellow-ground varieties, and in another house is a splendid collection of the best varieties of *Souvenir de la Malmaison*. Ornamental shrubs are largely planted, and include

NEW OR NOTEWORTHY PLANTS.

TWO NEW EULOPHIAS.

EULOPHIA is a large and difficult genus, having its head-quarters in tropical and South Africa and the adjacent Mascarene Islands, but is also well represented in Indo-Malaya, and sparingly in Polynesia and America. Most of the species are terrestrial and furnished with subterranean tubers, and many are deciduous. A few others are epiphytes and have aerial pseudo-bulbs. Many of the species are found in comparatively dry regions, or where the rains are periodic, hence the modifications seen in their vegetative organs. The following two additions to the genus have just flowered in cultivation.

EULOPHIA PANICULATA, Rolfe, n. sp.*

This is a large epiphytic species, bearing a tall scape about 5 feet high, terminating, as its name indicates, in an ample panicle of numerous flowers giving an imposing appearance. It

* *Eulophia paniculata*, Rolfe. — A densely-tufted epiphyte with stout, woody rhizomes about $\frac{3}{4}$ inch broad. Pseudo-bulbs approximate, ovate-oblong, irregularly 5-angled, 3 to 5 inches long, $1\frac{1}{2}$ to $2\frac{1}{2}$ inches broad, diphyllous. Leaves strap-shaped, subacute, coriaceous, conduplicate at the base, 13 to 19 inches long by 9 to 14 lines broad, irregularly marbled on the upper surface with dull, dark green on a pale green ground. Scape stout, erect, about 5 feet high, extending in a much-branched panicle above. Flowers very numerous and loosely-arranged, dusky-brown on the sepals, the petals and lip yellowish-green veined and somewhat reticulated with purple-brown colour. Bracts oblong-lanceolate, acuminate, 2 to 3 lines long, those at the base of the side branches 6 to 10 lines long. Pedicels slender, $\frac{3}{4}$ to $1\frac{1}{4}$ inch long. Sepals spatulate, obtuse, narrowed at the base, 6 to 9 lines long. Petals elliptical-oblong, obtuse, somewhat undulate, 4 to 6 lines long. Lip strongly three-lobed, 4 to $5\frac{1}{2}$ lines long by nearly as much broad; side lobes suborbicular; front lobe again divided into two broadly-rounded lobes; disc with three prominent longitudinal keels, the outer pair terminating abruptly below the middle, the median one extending further and terminating in a pair of diverging, flattened calli above the mouth of the spur; spur oblong, obtuse, $1\frac{1}{2}$ to 2 lines long. Column oblong, curved, about 2 lines long. Native of Madagascar.

flowered at the Royal Botanic Garden, Glasnevin, in June, 1904, and Mr. F. W. Moore states that he picked the plant up in one of Messrs. Sander's houses in September, 1902, and that Messrs. Sander purchased it at the sale of the late M. Alfred Bleu's Orchids at Paris, beyond which nothing was known about it. Then it appeared at the recent horticultural exhibition held at Bruges from July 30 to August 15, being exhibited by Herr C. Garber, Whlgb., Pavo-di-Trento, Süd Tyrol, Austria, who has since sent it to Kew for determination, stating that it is a native of Madagascar. A living plant has also been presented to the Kew collection. The plant is a strong, densely-tufted epiphyte, with very stout woody rhizomes and large, ovate-oblong, 5-angled pseudo-bulbs, which bear at the apex a pair of strap-shaped fleshy or coriaceous leaves, which are irregularly marked on their upper surface with dull dark-green on a pale-green ground. Mr. Moore states that the inflorescence appears from the base of the pseudo-bulb with the young growth, which latter remains undeveloped until flowering is over. The inflorescence sent by him had fifteen side-branches, the lower of which had eleven flowers, the aggregate number being nearly 150. They measure from 1 to 1½ inch across; the spatulate sepals are dusky-brown in colour, and the shorter petals and lip yellowish-green, lined and somewhat reticulated with purple-brown. There are two or three other epiphytic species in Madagascar with a paniculate inflorescence, but all are far inferior in size to the present interesting addition.

EULOPHIA UNDULATA, Rolfe, n.sp.†

This is a native of Rhodesia, and was recently sent to Kew with a collection of Rhodesian plants, bulbs, and seeds, by C. F. H. Monro, Esq., of the Office of Mines, Bulawayo. It is a terrestrial species having subterranean pseudo-bulbs, from which arises a tuft of three to five narrow, plicate leaves. A scape now produced from an old bulb is about a foot high, rather slender, and bears half-a-dozen flowers, with several terminal abortive bracts, showing that the scape is not fully developed. The spreading sepals are lined and suffused with purple-brown colour on a paler ground, and the petals and lip are pale green. There are three very prominent undulate keels on the lip's disc, in allusion to which the name is given. The spur of the lip is proportionately longer than in most of its allies, being nearly as long as the limb, and but little shorter than the other segments. There is a short broad foot to the column, showing that the species belongs to the *Cyrtopera* group. *R. A. Rolfe*.

† *Eulophia undulata*, Rolfe.—A terrestrial Orchid, with subterranean ovoid pseudo-bulbs, about half an inch broad. Leaves borne in tufts of three to five from the apex of the pseudo-bulbs, linear-lanceolate, acute, plicate, not fleshy, of a slightly glaucous green, 3 to about 8 inches long, 2 to 5 lines broad, with about two exterior supporting sheaths (reduced leaves) which are thickly spotted with red brown colour. Scape produced from the preceding growth, erect, slender, about a foot high, with two or three oblong-lanceolate sheaths below. Raceme at present six-flowered with several terminal abortive bracts, showing imperfect development. Bracts linear-lanceolate, acute, 2 lines long. Pedicels 6 lines long. Sepals spreading, oblong-lanceolate, subobtuse, slightly narrowed below the middle, lined and suffused with purple-brown colour on a paler ground, the lateral pair obliquely curved near the base. Petals incurved over the column, oblong, subobtuse, slightly shorter than the sepals, pale green. Lip attached to the broad, short foot of the column, extended in front into an erect three-lobed limb, half an inch long, and behind into a narrowly conical, somewhat curved spur, about as long as the limb, and placed at right angles to it; colour, light green; side lobes of lip erect, oblong, and obtuse; front lobe ovate-oblong, obtuse, 2½ lines long; disc with three prominent, very undulate keels extending from base to apex, and a pair of much smaller ones on each side; spur somewhat dorsally compressed and bidentate at the apex. Column oblong, about 4 lines long, light green, the broad foot being extended beyond the insertion of the lateral sepals for half a line. Native of Rhodesia.

BOOK NOTICE.

TREES, VOL. III. A Handbook of Forest Botany for the Woodlands and the Laboratory. By H. Marshall Ward, Sc.D. (Cambridge University Press.)

WE have on former occasions noted the plan adopted by Professor Ward in the two previous volumes of this series, so that it is only needful to say that in the present instalment the Professor deals with the inflorescence and with the flowers of our commoner trees and supplies in a condensed form a great deal of information which will be as useful to the ordinary student as to the forester. The latter half of the volume is occupied with details relating to various trees. Special attention is given to the Willows, a most perplexing group. The arrangement of the several orders is likely to give careless students a very erroneous idea of natural affinities. Perhaps in the final volume the arrangement adopted for convenience may be supplemented by one more in accordance with a natural system of classification.

The Week's Work.

FRUITS UNDER GLASS.

By F. JORDAN, Gardener to Dr. CORBET, Impney Hall Gardens, Droitwich.

Pines.—Plants which are now swelling their fruits will require very careful watering, for although dryness at the roots must be guarded against, at the same time too much moisture would be liable to cause blackness in the centre of the fruits. As these approach the ripening stage, clear water only must be applied to the roots, with less damping and syringing of the house generally as the days shorten; damping the beds twice daily and the paths when necessary will be generally sufficient. Syringing overhead must also be avoided or large crowns will develop on the fruits. Slightly reduce the atmospheric moisture of the house when the plants of Smooth Cayennes intended for winter fruiting come into flower, allowing more moisture again when they have passed this stage. Do not apply strong doses of liquid manure or guano-water at this season. See that the bottom-heat does not exceed 90° when increased firing becomes necessary. The temperature at night should be maintained at about 73°, falling to 68° in the morning. Advantage should be taken of bright days to close the structure early in the afternoon with as much sun-heat present as possible.

Earliest Queens.—The earliest plants of this variety will soon be approaching their season of rest, which condition should be encouraged by reducing the supply of water at the roots, and by lowering the temperature by day and night, while at the same time permitting a freer circulation of air on all favourable occasions. See that the plants do not become too dry owing to bright weather, or they would be seriously injured. A little tepid water poured round the outsides of the pots on to the plunging material when it becomes dry is preferable to direct watering at the roots. Damping the beds and paths will furnish sufficient moisture. A temperature of 65° should be maintained at night. Later-fruiting plants should be kept steadily growing until the pots are well filled with roots and growth finished. Supply the plants at alternate waterings with weak guano and soot-water, closing the house early in the afternoon. This treatment should be continued until the fruits are maturing, when they should be treated as recommended above. The shading of younger plants should now be discontinued, while overhead spraying must be performed on bright days only. Plants in small pots and that require a shift should be potted at once. If the roots have a much restricted area it entails too much watering during the winter months.

Suckers.—Plants which have been rooted in pits or in frames should be shortly removed to their winter quarters, where the temperature of the bed does not exceed 75°, and where fire-heat is at command. Late suckers may still be inserted. These should be kept in a close atmosphere and watered carefully, and treated as advised in the Calendar for July 29.

PLANTS UNDER GLASS.

By A. BULLOCK, Gardener to E. J. WYTHES, Esq., Copped Hall, Epping, Essex.

Tree Carnations.—Plants raised from cuttings which were rooted early and are intended for flowering in winter should now be removed from the open air to their winter quarters. Let the structures to which the plants are removed be ventilated freely while the weather is favourable. If there is any sign of aphid fumigate at once with XL-All.

Mignonette.—Another good sowing should be made now for raising plants to flower early in spring. Thin down to three plants in a pot those of a previous sowing.

Richardias (Callas).—Let these be lifted and potted up, placing the pots in a cold frame for a time. Employ a good rich compost consisting of loam three parts and spent Mushroom-dung one part, adding a little bone-meal and silver-sand.

Chrysanthemums.—Pay strict attention to the buds that are forward, and protect them from earwigs, using inverted pots partly filled with hay, and hoisted on sticks; examine them as often as necessary. Let the late summer-flowering plants be protected from the rain, which is apt to spoil the flowers as they expand.

Violets.—Lose no time in preparing either the frames or hot-beds in which the plants are to flower during the winter months. If a brick frame is to be employed for the purpose, let it be filled and well trodden with Oak or Beech leaves, allowing them to settle well before placing the soil on them. For forming a hot-bed, mix a little long litter with the leaves, and allow this also to settle before adding the soil.

General Work.—During this month low temperatures at night and occasional frosts are not at all uncommon, therefore make preparations for removing to protected quarters tender subjects that have stood in the open for some time past. *Bouvardias*, *Libonias*, *Solanum capsicastrum*, &c., that have been planted out should now be lifted, potted up, and stood in cold frames where they can be shaded and syringed frequently if the weather is at all warm; they will then soon recover from the check caused by the disturbance. *Araucarias* and other winter-flowering plants requiring potting should be attended to without delay.

THE ORCHID HOUSES.

By W. H. YOUNG, Orchid Grower to Sir FREDERICK WIGAN, Bart., Clare Lawn, East Sheen, S.W.

Miltonia vexillaria.—In most instances resurfacing with fresh sphagnum-moss or repotting should now take place, the exceptions being those plants that were given this attention in the spring, and such autumn-flowering varieties as *M. v. Leopoldii* and *M. v. Klabochorum*. Very satisfactory results are obtained here by growing *Miltonia vexillaria* in a leaf-mixture of a similar nature to that recommended for *Odontoglossum crispum* in last week's Calendar. Use, however, is made of pans, which hold a lesser depth of material than pots, therefore the compost becomes dry sooner. *Miltonias* are mostly surface-rooting subjects, seldom penetrating beyond the sphagnum-moss, yet they appear to derive benefit from the leaf-mixture beneath. Allowing the plants to become dry at the roots before operating on them, much of the old materials may be picked away or shaken out without actually disturbing those roots which are clinging to the sides of the receptacles, afterwards working in new materials, and surfacing with fresh sphagnum-moss. Do not repot any plants that have room for further development, and good drainage. When the potting is completed arrange the plants on the shadier side of a *Cattleya*-house, and do not place them very near the glass or outer doorway. Do not apply any direct root waterings for a week or more, but damp regularly between the plants, and on bright mornings during the present month spray the plants overhead. Should an extra bright day occur spread sheets of paper over them during strong sunlight. The rooting-medium should be kept only moderately moist throughout the autumn and early winter months. Spray the plants overhead occasionally with some approved insecticide to prevent thrips. The

varieties mentioned above may be left over until early in next spring, but should be staged with the rest of the plants.

Trichopilias.—*T. suavis* having rested in a cool-house since flowering is now growing again, and requires attention. This species may be cultivated in pans for suspending. The plants succeed very well in a medium containing leaves, provided care be exercised in applying water. Two seasons is quite long enough for the roots to continue in the same material, and repotting should be carried out at the end of that period if the old material cannot be picked out. Place Fern rhizomes at the bottom of the pans, then apply compost, and afterwards surface with chopped sphagnum-moss. Suspend the plants in the coolest part of a Cattleya house, and afford water very sparingly throughout the growing period. *T. marginata* may be treated similarly. *T. fragrans* is best cultivated in pots, and may be repotted and treated in a similar manner to *Odontoglossum crispum*. The plants are now flowering, but growth will probably commence soon, and afterwards the requirements of the roots should be given attention. When *Trichopilias* are at rest, as is the case just now with *T. tortilis*, *T. sanguinolenta*, &c., the plants require very dry and cool conditions.

Laelia purpurata and *L. tenebrosa*.—These desirable plants may be repotted during the present month where occasion demands. They grow remarkably well in a leaf-mixture, but are not quite so free-flowering as when leaves are not used. In preference, therefore, use pots, and insert drainage material to half their depth, then work in amongst the roots of the plants a compost of good turfy peat two parts, and sphagnum-moss one part. Do not retain old leafless pseudo-bulbs, as they are of no value to the growing portion of the plant. The plants should be staged in the warmest part of a Cattleya-house, and only very moderate supplies of water must be afforded those which have been disturbed at the roots until such are re-established. Plants that have been merely resurfaced will require a more liberal supply.

THE KITCHEN GARDEN.

By W. FYFE, Gardener to Lady WANTAGE, Lockinge Park, Wantage.

Cabbage.—Plants raised from seeds sown during July or very early in August should now be ready for planting in their quarters. Carefully lift the plants from the seed-beds, and destroy any that show traces of the "clubbing" disease, which is visible in a young state in the shape of a knob at the roots. It is a good plan to dip the roots of healthy plants in a puddle made of clay and soot, for when so treated the roots soon take hold of the fresh soil and suffer little in the meantime. Cabbages generally make the best progress when planted in rich garden soil. Those that have been "pricked" out must be lifted and replanted with a trowel, in order to retain a ball of soil at the roots. Those moved direct from the seed-beds and planted with a blunt dibber are readily and securely planted, for sturdy "quick-heating" Cabbages are often the result of firm planting in moderately solid ground.

Parsley.—The present is a suitable time to fill pits and frames with this important herb, and no pains should be spared to secure a good supply for the daily demand during winter. Plants raised from seeds sown during July will now be in good condition for transplanting, and plants can still be moved to sheltered positions in the open. If the supply of Parsley at the present time is abundant, cut down a portion of the plants to the ground. These will throw up a valuable supply of young leaves later. Remove the strong outside leaves from plantations of this herb intended to stand the winter, for these will not keep in good condition, but if they are removed will be replaced by more serviceable and harder leaves. Cut down any plants having the appearance of developing seed.

Coleworts.—We are now planting this vegetable in quantity in every available quarter, putting in the variety Rosette for early winter cutting and that known as Hardy Green for a later supply. When grown quickly few green vegetables are

more delicious or more appreciated. The space they require is small, 12 inches by 15 inches between the plants will suffice.

Hoeing.—Before the approach of damp weather give close attention to every quarter of the garden for the destruction of weeds. The use of the hoe in addition allows light and air to gain free access to the plants, thus rendering them hardier and better enabled to withstand the winter.

THE HARDY FRUIT GARDEN.

By W. H. CLARKE, Gardener to Sir WILLIAM PLOWDEN, Aston Rowant House, Oxon.

Root-pruning, &c.—Now is the best time to make a general survey of all fruit trees, carefully noting those which are growing unsatisfactorily, or from excessive vigour fail to bear a crop of fruit. Hardy fruit trees this year, owing to deficient crops, are growing strongly, and if well set with fruit buds this freeness of growth may be counteracted by a good "set" next season. Root-pruning is advisable in instances where trees have failed to carry a crop for three or more consecutive years, especially if growing on strong, free-rooting stocks. But aged trees should only be root-pruned if they are very vigorous, and the work should then be executed on one side of the tree only in one year. Many trees growing on a subsoil of chalk, and are suffering from what is termed "yellowing." Let the roots be carefully lifted towards the latter end of September, and a fresh rooting medium placed about them. The compost for this purpose may be prepared now, as the work must be done as expeditiously as possible.

Fruit Gathering.—This is an important detail in fruit cultivation, and a great amount of care and forethought is necessary in order to ensure each variety being gathered at its proper season. No hard-and-fast rule can be laid down for guidance, but the fruit-grower must use his own judgment. On trees growing in close, heavy soils, fruit hangs, as a rule, for a much longer period than that grown on light, warm land. It is necessary to examine the fruit frequently at this season with a view to gathering, and in the case of that intended for home consumption the early morning is the best part of the day for the work. If on lifting a fruit gradually to a horizontal position it parts readily from the tree it is fit for gathering. Another good guide in the case of Apples and Pears is to inspect the pips, which will be of a dark brown or black colour when the fruit is ready for removal from the tree. Mid-season and late varieties of Pears are often gathered too early. The latest kinds can be allowed to hang on the trees with advantage until after the foliage has fallen, and are even benefited by a slight frost, which acts as a deterrent to premature shrivelling.

The Fruit Room.—If this has not been thoroughly cleansed the work should be done without delay. Every particle of rubbish and anything that prevents a free circulation of air must be removed; the shelves should be well washed with soap and water, and the door and windows fully opened to admit a free circulation of air. In a well-constructed thatched fruit-room, Hambleton Deux Ans Apples were kept in a sound condition until the last week in June. Thin-skinned varieties need particular care in handling. The best fruits should be selected and carefully laid by themselves, using the smaller ones for present use. Let a thin coating of clean Wheat-straw be placed on each shelf to prevent the fruits from becoming bruised, and especially in the case of open shelves, where the fruits would come in contact with the sharp edges of the staging.

Strauberies, Plums, &c.—The rains during the past week will prove beneficial in many respects. Newly planted Strawberries will make roots and grow speedily. The old plants are producing runners freely, and these must be removed. Autumn-fruiting varieties should be protected with a glass frame or with tilted handlights. The trusses should be staked and the fruits not allowed to become coated with soil or eaten by slugs. Plums are splitting in consequence of the rainfall. These damaged fruits should be gathered and used for kitchen purposes.

Expose bunches of outdoor Grapes to all the light and air possible, removing no leaves other than really necessary for the purpose. Shoots for fruiting next season should be nailed close to the wall, as the wood will ripen better owing to the radiating heat from the bricks.

THE FLOWER GARDEN.

By W. A. MILLER, Gardener to Lord HENRY C. BENTINCK, M.P., Underley Hall, Westmoreland.

Fuchsia Riccartoni is a splendid autumn-flowering plant for the wild garden, succeeding well on banks and in shady places where there is a moderate amount of soil and moisture. In order to propagate the species by cuttings, choose sturdy growths about 4 to 6 inches long, and free from flowers. Insert them round the sides of 5-inch pots. Place them in a hotbed in a frame, and shade them on bright days till rooted, then transfer them to a cool frame. They will winter safely in any structure that is kept free from frost, and should be potted off early next season. *F. gracilis* is nearly as valuable; and *F. Dunrobin Bedder* is a fine dwarf, free-flowering variety.

Shrubby Veronicas can easily be propagated now by inserting young growths in a mixture of sand, leaf-mould, and loam in a cold frame, shading them from brilliant sunshine. *V. salicifolia* produces a continuous profusion of bluish-white, sweet-scented flowers for many months together: *V. La Séduisante* has purple stems and flowers; *V. Andersoni variegata* is a good edging plant; *V. Traversi* is the hardiest, and is useful for cultivation under trees. The dwarf-growing species make good wall and rockery plants, such as *V. epacridea*, *V. carnosula*, *V. cupressoides*, *V. lycopodioides*, &c.

Propagating various plants.—Insert cuttings of *Alternantheras* and other bedding-plants that require warm treatment, and of *Salvia fulgens* and Paris Daisies. A few plants of *Agathæa cœlestis* should be potted and grown for stock purposes. *Vinca elegantissima*, which is a useful plant for edging purposes and for furnishing vases, is easily propagated from cuttings inserted in a cold frame. The following plants can all be propagated similarly to the last-named:—*Nepeta teucriifolia*, *Santolina Chamæcyparissus*, *Thymus citriodorus aureus*, *T. c. argenteus* Fraser's White, and *Scrophularia nodosa*. *Astilbe Davidii* is an herbaceous plant of distinctive appearance. The leaves are of a bronzy-green colour when young, and develop to a bright green when mature. The graceful spikes of deep rose-violet or mauve-coloured flowers are from 3 to 6 feet high. The plant is easily increased by seed. *Senecio tanguticus*, although a strong-growing perennial, is of light and graceful appearance. The golden-yellow-coloured flowers are produced in dense panicles, and attract attention at this season. This can also be easily raised from seed. *S. clivorum* has foliage of bold appearance, and develops strong-growing spikes of bright orange-yellow-coloured flowers. It thrives in ordinary soil, and lasts many weeks in bloom. The above species of *Senecio* ripen seeds in ordinary seasons.

Annuals for the Herbaceous Border.—The following annuals are useful border plants:—*Arctotis grandis* requires a warm aspect; it has elegant whitish foliage, and white Daisy-like flowers tinged with lavender colour. *Dianthus Royal Pink* is a good strain of these useful and free-flowering plants. *Nicotiana Sanderae* is very free in flowering; it is adaptable for planting in vases. *Nigella "Miss Jekyll"* is of very attractive appearance. It is a vigorous-growing plant, and produces an abundance of long-stemmed flowers of a clear cornflower-blue colour set in fine foliage. *Alonsoa Warscewiczii compacta* is a free-blooming variety, and has bright scarlet flowers. The blue *Anagallis Phillipsii* and the species of *Linaria* that are annuals are useful for planting on walls.

Hollyhocks that were raised from seed sown outdoors in June should now be placed in a cold frame. In wet localities the safer plan will be to pot them, and have them established for wintering on a dry shelf in a well-ventilated structure.

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY, SEPT. 12—Royal Horticultural Society's Committees meet.

WEDNESDAY, SEPT. 13—Royal Caledonian Horticultural Society's International Exhibition at Edinburgh (3 days).
North Middlesex Dahlia Show at Alexandra Palace (3 days).

SATURDAY, SEPT. 16—Kidderminster and District Dahlia Show.

SALES FOR THE WEEK.

MONDAY TO FRIDAY NEXT—Dutch Bulbs, at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 10.30.

MONDAY, SEPT. 11—Twentieth Annual Trade Sale of Pot Plants, at Dyson's Lane Nurseries, Upper Edmonton, by order of Mr. H. B. May, by Messrs. Protheroe & Morris, at 11.—Sale of Dutch Bulbs at Stevens's Rooms, King Street, Covent Garden.

TUESDAY, SEPT. 12—Annual Trade Sale of Winter-blooming Heaths, &c., at Burnt Ash Road Nurseries, Lee, S.E., by order of Messrs. B. Maller & Sons, by Protheroe & Morris, at 11.

WEDNESDAY, SEPT. 13—Annual Trade Sale of Winter-flowering and other Plants at the Nurseries, South Woodford, by order of Mr. John Fraser, by Protheroe & Morris, at 11 o'clock.—Sale of Dutch Bulbs, at Stevens's Rooms, King Street, Covent Garden.

THURSDAY, SEPT. 14—Thirty-seventh Annual Trade Sale of Stove and Greenhouse Plants, at Brimsdown Nurseries, Enfield Highway, by order of Mr. J. H. Thompson, Jun., by Protheroe & Morris, at 11. Twenty-fourth Annual Trade Sale of Winter-blooming Heaths, &c., at the Longlands Nursery, Sidcup, S.E., by order of Messrs. H. Evans & Sons, by Protheroe & Morris, at 11.

FRIDAY, SEPT. 15—Sale of Greenhouse Plants at The Nursery, High Street, Clapham, S.W., by order of Mr. G. B. Fischer, by Protheroe & Morris, at 1 o'clock.—200 plants of *Cypripedium Fairieanum*, collection of Cattleya, *Laelio-Cattleya*, and *Cypripedium Hybrids*, Established Orchids, &c., at 67 and 68, Cheapside, E.C., by Protheroe & Morris, at 12.30.

(For further particulars see our Advertisement columns.)

AVERAGE TEMPERATURE for the ensuing week, deduced from observations of Forty-three Years at Chiswick—58°.

ACTUAL TEMPERATURES:—

LONDON.—Wednesday, Sept. 6 (6 P.M.): Max. 71°; Min. 59°.
Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—Thursday, Sept. 7 (10 A.M.): Bar., 29.7; Temp., 64°. Weather—dull.

PROVINCES.—Wednesday, Sept. 6 (6 P.M.): Max. 69°, Guildford; Min. 58°, West of Ireland.

The Flowering of Bamboos.

PROFESSOR FOREL, of Morges, sends us a note on the flowering of Bamboos. He recalls the fact that certain species bloom annually, others but once, in their old age, and die after flowering. It is also to be noted that those Bamboos which flower once do so simultaneously over a wide tract of country. For years, or even for decades, they remain as green plants with ornamental foliage, but produce no blooms. HUMBOLDT stated that MUTIS botanised for twenty years in swamps where *Bambusa Guadua* formed immense forests without meeting with a single flower; and this is the experience of other travellers. Then, suddenly, as if in response to some mysterious agency, all the plants lose all their leaves, bear fruit and die, and the thicket is after a time renewed by the growth of the seedling plants.

For some species the cycle is periodic. Thus, on the west side of India *Bambusa arundinacea* flowers every thirty-two years; other species bloom every thirteen years. These simultaneous harvests entail certain misfortunes; the seeds are produced so abundantly that rats, mice, &c., increase greatly on the diet, and in the succeeding year, finding this food no longer available, they attack and destroy the grain crops, often causing quite a famine.

This peculiarity of simultaneous flowering occurs also at Morges, in Switzerland, where, last month, Professor FOREL noticed fully twenty clumps all in flower. In the Parc de l'Indépendance, where there are some fine groups of Bamboo, some fifty or a

hundred stems dropped their leaves and bore large, densely-crowded trusses of flowers, inconspicuous and yellowish-grey. All the stems of one plant, those of the previous year as well as those eight or ten years old, were covered with these flower-spikes, the weight of which bent down stems some twenty feet high. The sight was unusual and striking. The flowering was not confined to one locality, but similar instances were observed at Territet, Nyon, Lausanne, and Bex. M. CORREYON had *Phyllostachys Henonis* in flower in his gardens at Chêne-Bourg, and noticing a similar occurrence in England on his visit in May last, considered it to be general throughout Europe.

M. FOREL is desirous of ascertaining if this simultaneous flowering is due to ordinary growth or to climatic conditions. He wishes to know within what area it is confined, if all the plants die after bearing fruit, and whether the fruit is fertile.

Many of our readers are in a position to solve some at least of these questions, and they will find in the first chapter of Lord REDESDALE'S delightful book, entitled *The Bamboo Garden*, a summary of the information possessed on this subject up to the date of publication. *Arundinaria Simoni* is mentioned as an exception to the rule, as it has not infrequently borne seed in this country and been apparently none the worse afterwards.

THE EDINBURGH SHOW.—There is every prospect that the International exhibition to be held by the Royal Caledonian Horticultural Society in the Waverley Market, Edinburgh, on Wednesday, Thursday, and Friday next, will be eminently successful, and it is expected that there will be a large number of visitors from the South. Mr. A. DEAN writes as follows, "Kindly permit me to inform those purposing to go to the great horticultural exhibition at Edinburgh, and intending to travel on the 12th inst., that no special fare having been arranged the ordinary return third-class (tourist) fare is 50s. The station agent at King's Cross (Great Northern Railway) has kindly intimated that if ten persons will arrange to travel down by the train leaving King's Cross at 10 A.M. on Tuesday next, he will provide a saloon carriage for the party. Will those desirous of so travelling please drop me a postcard to that effect at once, to 62, Richmond Road, Kington-on-Thames, that I may inform the King's Cross authorities in good time." The Midland Railway Company and the London and North-Western Railway Company would probably offer equal facilities. The Midland Company have indeed shown considerable enterprise in canvassing those intending to send exhibits. We publish this week notes and illustrations of important gardens and nurseries in Edinburgh or within a few miles of the city, some of which might be visited without much inconvenience or loss of time. We shall give a report of the exhibition in our next issue.

"BOTANICAL MAGAZINE."—The September number contains coloured illustrations of the following plants:—

Pelastites japonicus, Maximowicz, t. 8032.—A species from Eastern Asia, which in the island of Saghalien, according to SCHMIDT, has leaf-stalks taller than a man, and the blade reaches a diameter of 3 feet. The species was referred to in *Gardeners' Chronicle*, October 30, 1897, p. 311, under the name *P. j. giganteus*.

Cirrhopetalum breviscapum, Rolfe, t. 8033.—This new species from Perak is described by Mr. ROLFE. The scapes are erect, about 1½ inch high, of light green colour marked with red-brown, and

one-flowered. The flowers are of rather large size; the dorsal sepal and petals dull purple, the lateral sepals yellow spotted with red-brown, and the lip rose-purple.

Prunus pendula, Maximowicz, t. 8034.—This species, which MAXIMOWICZ describes as having been found in the wild state in the mountain forests of Central Nippon, is the same plant that was introduced into Europe in 1863 as *Cerasus pendula rosea*. It is a variable species. Some varieties have flowers of palest pink colour, and others are deep rose-coloured. The variety illustrated, says Dr. OTTO STAFF, is merely a state with pendulous branches of a species with normally erect branches.

Scilla messeniaca, Boiss, t. 8035.—A species resembling *S. pratensis* in the raceme of flowers, but having very distinct leaves, and flowering two months earlier, namely, in March. Although described some sixty years ago, says Mr. L. FARMAR, bulbs were first obtained for Kew in 1897.

Cotyledon insignis, t. 8036, N. E. Brown.—Mr. BROWN describes this new species which Mr. JOHN MAHON discovered on one of the mountains of Nyasaland, British Central Africa, at an altitude of 7,000 feet. Seeds were sent to Kew in 1898, and the species first flowered in February of this year. The flowers have some resemblance to those of *C. curviflora* (*Botanical Magazine*, t. 2044), but in all other respects it is entirely different. Colour of flowers yellowish-green with overlay of pale-red.

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.—The Secretary announces that Mr. GEO. BUNYARD, V.M.H., has forwarded a donation of £5 18s 6d., being the amount received by him for naming fruit for non-customers and members of the trade.

FLOWERS IN SEASON.—From Mr. AMOS PERRY, Winchmore Hill, London, N., we have received specimens of the new *Stenanthium robustum*, which received an Award of Merit at the last meeting of the Royal Horticultural Society. This Liliaceous plant has Anthericum-like foliage, and develops a graceful plume of small white flowers, the spike measuring from 9 to 12 inches in length. The flowers are borne singly on the upper portion of the inflorescence, but lower down it is paniced, spikelets arising in the axils of numerous scaly bracts. The flowers have a perfume somewhat resembling that of new-mown hay. Mr. PERRY also sends two *Sagittarias*, under the names *S. macrophylla* and *S. chilensis*. Speaking of the former, he says: "It is growing fully 3 feet high, in by no means a good situation. The flowers are larger than any variety of Arrowhead in my collection, which consists of twenty-one species and varieties. Its immense leaves make it a plant worthy of cultivation for its foliage alone." *Sagittaria chilensis* has a more restricted inflorescence than that of *S. macrophylla*, and the leaves are ovate-acuminate. *Rudbeckia fulgida var. variabilis* is a useful plant for the herbaceous border. The varietal name is derived from the varying degree of colouring in the flowers, some of which have ray-petals of almost pure yellow colour, while others are tinged with a Coreopsis-like shade of dark red.

—Mr. G. D. DAVISON, Westwick Gardens, Norwich, has sent us flowers of several new seedling *Montbretias*, including the variety *Prometheus*, probably the finest *Montbretia* yet produced. This variety has relatively enormous flowers of a rich orange colour, which when expanded are almost regular in shape, and measure 3½ inches across. The variety *Hereward* develops a long spike with numerous light-orange almost yellow-coloured blooms. The habit is erect. *Germania* has deeply-coloured flowers densely produced on the inflorescence. Other desirable varieties have been raised by Mr. DAVISON.



VIEWS IN THE ROYAL BOTANICAL GARDENS, EDINBURGH.

ROYAL HORTICULTURAL SOCIETY.—At the suggestion of the Orchid Committee the Council have adopted the following scheme, which they hope will have the effect during the ensuing year of inducing Orchid growers, both large and small, amateur and professional, to exhibit their already certificated and other choice varieties at the fortnightly shows of the Society. Without in any way wishing to alter or curtail the exhibits as at present shown, which they hope will be continued exactly as they are now, they propose to award additional diplomas to plants of exceptional merit shown in one combined group. This group will be composed of all the exhibits duly entered for this special competition in accordance with the schedule. They hope that by this means groups may be brought together representing to a large extent the varieties of the particular species decided upon for exhibit on each occasion, together with the hybrids having that species as one of their parents. At the same time the Society's paintings of the species and hybrids therefrom to which awards have already been given will be exhibited. They believe that these exhibits will have a great educational value to hybridists, orchidists, and to Fellows generally, and they rely upon all Orchid growers to assist them in making the exhibit as complete as possible. W. WILKS, *Secretary*.

SPECIAL EXHIBITIONS OF ORCHIDS DURING THE YEAR 1906.

- (1) Without in any way interfering with the present system of exhibiting at the fortnightly shows of the Society, at certain of such shows special Diplomas will be given to Orchids specially exhibited, where considered worthy, viz.:—
 - (a) Two Diplomas for the 1st and 2nd best species on each day; and
 - (b) Two for the 1st and 2nd best hybrids of that species.
- (2) The species and hybrids exhibited specially for such Diplomas must be according to the following schedule, any plants being admissible whether they have previously received an award from the Royal Horticultural Society or not. All hybrids are eligible whether the species named in the schedule was the seed-bearing or the pollen parent.
- (3) Cut spikes of flowers may be shown for these Diplomas, but all disbudded spikes will be disqualified.
- (4) The paintings bearing on either the species or hybrids therefrom in the Royal Horticultural Society's collection will be exhibited at the same time for comparison.
- (5) Seven days' notice must be given of intention to exhibit for these special Diplomas.
- (6) Inasmuch as all plants in competition for these Diplomas will be staged together, competitors are particularly requested to specially mark each exhibit so as to avoid mistakes of ownership at the close of the show.
- (7) A Sub-Committee of three judges will be appointed by the Chairman of the Orchid Committee to recommend these Diplomas, and they will be granted by the Council only if the exhibit appears to be undoubtedly worthy.
- (8) The awards will be named as follows:—

Species—1st Diploma.	Hybrids—1st Diploma.
Do. 2nd do.	Do. 2nd do.

January 9, 1906. *Lælia anceps*, vars. of type (coloured); *Calanthe* and *Calanthe* hybrids.
 January 23. *Oncidium*.
 February 13. *Cypripedium villosum* (including *Boxalli*); *C. hybrids*; *Lælia anceps*, white varieties; *Cattleya Trianae* and *C. T. hybrids*.
 March 6. *Dendrobium aureum*, *D. a. hybrids*, *D. nobile* and hybrids.
 March 20. *Lycaste* and *L. hybrids*.
 April 3. *Cymbidium* and *C. hybrids*; *Masdevallia* and *M. hybrids*.
 Easter Tuesday, April 17. *Odontoglossum crispum* (spotted, unspotted, and hybrids). *O. Pescatorei*

(spotted, unspotted, and hybrids). *O. triumphans* and hybrids.

May 1. *Cypripedium bellatulum*, *C. concolor*, *C. niveum*, *C. Godefroye*, hybrids of above four kinds. *Odontoglossum crispum* and *O. Pescatorei* (spotted, unspotted, and hybrids). *Odontoglossum luteo-purpureum* and hybrids.

May 15. *Lælia purpurata* and hybrids; *Lælio-Cattleya Schilleriana*, *L.-C. elegans*, hybrids of above two; *Miltonia vexillaria* and hybrids; *Epidendrum radicans* hybrids.

June 12. *Cypripedium Lawrenceanum* and hybrids; *Cattleya Mossie* and hybrids.

July 17. *Lælia tenebrosa* and hybrids; *Phalenopsis* and hybrids.

August 14. *Lælia elegans* and hybrids; *Cattleya Warszewiczii* (*gigas*) and hybrids.

September 25. *Cypripedium Rothschildianum* and hybrids.

October 23. *Lælia Dayana* and *pumila*, and hybrids. *Cattleya Dowiana* and *C. Dowiana aurea*, and hybrids.

November 6. *Sophronitis grandiflora* and hybrids. *Dendrobium Phalenopsis*, *Cattleya labiata* and hybrids.

November 20. *Cypripedium Fairicanum* and hybrids.

December 11. *Cypripedium Spicerianum* and hybrids. *Cypripedium insigne* and hybrids. *Calanthe* and hybrids.

LONDON DAHLIA UNION.—We are informed that the annual display of the Union will take place in the Prince's Hall of the Earls Court Exhibition, on September 19 and 20, when, in addition to valuable money prizes, the "Hobbies" Challenge Cup, value ten guineas, will be competed for. Intending exhibitors are reminded that they must give notice in writing to the Secretary, on or before September 15, of the classes in which they intend to exhibit. Copies of the Schedule can be obtained from the Secretary, 7, Marlborough Road, Ealing.

HENRY ECKFORD TESTIMONIAL.—Mr. HORACE J. WRIGHT, Dault Road, Wandsworth, writes as follows:—"The Committee has resolved that this Fund shall be closed on Saturday, September 9. Will those therefore who still desire to contribute kindly send to me on or before that date? The subscriptions to the evening of Saturday, September 2, amounted to £56."

SWANLEY HORTICULTURAL COLLEGE.—It is reported that this institution has benefited by a gift of £1,000 from Mr. E. G. BAWDEN, a resident of Clapton, who has given £100,000 for distribution to benevolent undertakings and to the advancement of knowledge. The money allocated to the Swanley College is to be expended in preparing women for emigration and colonial life.

SOCIETY OF AMERICAN FLORISTS.—The American horticultural journals for August 12, 19, and 26 contain long accounts of the convention of the "Society of American Florists and Ornamental Horticulturists" recently held at Washington, at which matters of considerable importance to the Society and American horticulture generally were discussed.

ALEXANDER STEELE.—A note in the *American Florist* records the death of ALEXANDER STEELE, a retired florist, at the age of ninety years. Our contemporary describes deceased as a native of Perthshire, and states that he was the confidential friend and companion of the Duke of ATHOLL, many years ago, before going to Winchester, Va.

PUBLICATIONS RECEIVED.—*Bulletin of the Department of Agriculture, Kingston, Jamaica*, Vol. iii., pt. 8.—*Gartenflora* for September.—*The Estate Magazine*.—*Revue l'Horticulture Belge*.—*Deutsche Japan-Post* for August 5. A journal published in the German language at Yokohama.—*The Queenstand Flora*. A general index to the Queensland flora, by F. Manson Bailey, F.L.S.—*The Fungus Flora of Yorkshire*, by Geo. Massee and C. Crossland, published by the Yorkshire Naturalist's Union.

EXPERIMENTS ON GRASS-LAND AT ROTHAMSTED.

IN respect of the explanations and diagrams published last week, showing the nature and results of experiments made at Rothamsted over a series of years, the following article by Mr. J. J. Willis is specially interesting:—

"Experiments on the mixed herbage of grass-land were commenced at Rothamsted by the late Sir J. B. Lawes in 1856, and are still in progress, so that the present year (1905) is the fiftieth of their continuance. About 7 acres are devoted to the purpose, which are divided into twenty-two plots. The differences in the flora caused by the continual application of the same manure are very remarkable and especially conspicuous before the plots are cut for hay. There are two continuously unmanured plots, and the remainder have respectively received different descriptions of manures of known composition and definite quantity.

In considering the effects of manures upon grass-land, we have to take into account something more than the gross weight of produce. Every meadow will be found to have its characteristic vegetation, consisting of various grasses, Clovers, and miscellaneous species classed together as weeds, according to variation of soil or to difference of treatment. This is fully demonstrated on the Rothamsted grass plots, which differ enormously according to the character of the manure applied year after year.

The total produce of hay, its botanical composition, and the chemical composition of the mixed herbage, are found to be widely different, according as one or other of the manurial ingredients are given or withheld.

Even in the very early period of the experiments it was found that those manures which were the most effective with Wheat, Barley, and Oats, grown separately on arable land, were also the most effective in bringing forward the grasses in the mixed herbage; whilst those which were the most beneficial to Beans, Peas, Lucern, Sainfoin, Vetches, &c., grown separately in the ordinary rotation of the farm, also greatly developed the Leguminous species of the mixed herbage, and *vice versa*.

Turning first to the total weight of produce yielded, the results of selected plots show that the average weight of hay for the forty-nine years, 1856—1904, is as follows:—

Grown without nitrogenous manure—		cwt. per acre
Without manure ... ..	...	22
Superphosphate alone ... ..	...	23½
Minerals without potash ... ..	...	28
Minerals including potash ... ..	...	38½
Mean		28
Grown with nitrogenous manure—		cwt. per acre
Ammonia salts alone .. .. .	...	28
Nitrate of soda alone ... .. .	...	35½
Superphosphate and ammonia salts ... ..	...	35½
Minerals and ammonia salts ... .. .	...	54
Minerals and nitrate of soda ... .. .	...	59½
Mean		42

It is here seen that applications of nitrogen in manure increase the amount of Hay harvested from an average of 28 cwt. to 42 cwt. per acre, a gain of 14 cwt. It is further seen that nitrate of soda is much more effective for grass than are ammonia salts. Nitrate of soda alone has given an average of 35½ cwt. of hay per acre, against 26 cwt. with ammonia salts; and when full minerals are added to the nitrogenous fertilisers, nitrate of soda is again to the fore, the reason being that nitrate dissolves rapidly, sinks into the subsoil, and so encourages plants of a widely distributing root habit, enabling them to obtain a greater food supply, and the better to withstand periods of drought.

DIFFERENCES IN FLORA.

With the great differences in the quantity of hay yielded, there is also great variation in the

botanical character of the herbage, not only as regards the bulk of grasses, Clovers, or weeds, but in the nature of their development as to leafiness or stemminess, and in maturation. The aspect of the plots receiving nitrogenous manure shows very characteristic differences, not only in the colour of the herbage, but in the large proportion of grasses encouraged. A botanical separation of the hay shows 57 per cent. of grasses, against 66 per cent. without nitrogen, while the Clover-plants are practically absent, and the weedy herbage is reduced to about one-half per cent.

chlorophyll-formation to a great extent follows in the track of nitrogen assimilation; but the total quantity of farm-stock food produced—meat, milk, and wool materials—depend essentially on the amounts of potash available in the soil."

LEAVES FROM MY CHINESE NOTE-BOOK.

(Continued from p. 174.)

Two plants which during October and November form pretty objects on account of their brightly coloured fruits are *Cratægus Pyracantha*

In November *Eleagnus pungens* is one mass of white bells, and the Loquat (*Eriobotrya japonica*) is covered with fragrant white flowers. *Paliurus orientalis* is here, and in many other parts of this province, the common hedge plant. To anyone in search of a subject for fencing purposes in a warm temperate climate, I recommend this plant. It grows from 8 to 15 feet in height, and is so thickly beset with stout spines that neither man nor beast can penetrate it.

Apart from the above, the following enumeration includes the bulk of the common shrubs: *Hibiscus mutabilis*, *Berberis lineata*, *Lespedeza bicolor*, *L. striata*,



FIG. 73.—THE ROCKERY IN EDINBURGH BOTANICAL GARDENS.

(See also Supplementary Illustration, and article on p. 193.)

The flora demonstrates that the Clovers are very dependent upon a full supply of potash in the manure. Two plots with phosphates and potash show an average of about 24 per cent. of Clovers, compared with 7 per cent. on an adjoining plot similarly treated but to which no potash is applied. If there is a plentiful supply of mineral substances, including potash, in the soil, the herbage develops stems and shows a greater tendency to flowering, seeding, and ripening. The results of the plot receiving superphosphate alone shows how disastrous a continuation of such one-sided manuring may become. Phosphatic manure used alone for some years, whether of superphosphate or basic-slag, will quickly impoverish the soil.

Luxuriance of crop is intimately associated with the amount of nitrogen available, and

and *Euscaphis staphylcoides*. The *Cratægus* is too well known to need any comment, save that here bushes 2 to 3 feet in height are the rule. The *Euscaphis*, with its loose bunches of red capsules, which dehisce and expose the black shining seeds, is perhaps less known than it deserves to be. *Symplocos cratægoides*, *Prenna ligustroides*, and the sub-shrub *Osbeckia crinita* with its lovely, rich scarlet flowers, are common plants; and *Rhododendron* [*Azalea*] *indica* is, of course, abundant. A striking plant in August and September is a species of *Blumea*. This shrubby Composite attains to the height of 12 to 15 feet, and bears large flat corymbs of pale lilac-coloured heads of flowers. Of Roses there are *Rosa levigata*, *R. mrschata*, *R. multiflora*, *R. microphylla*, and two other species with which I am not familiar.

Camellia sp., *Eurya japonica*, *Psychotria elliptica*, *Buddleia variabilis*, *Mæsa sinensis*, *Leptodermis oblonga*, *Hydrangea aspera*, *Viburnum ropinquum*, *Cornus paucifloris*, *Ilex pedunculata*, *Rhamnus davuricus*, *Berberis Wallichiana*, *Glochidion obscurum*, *Lagerstroemia indica*, *Aralia spinosa*, *Acanthopanax aculeatum*, *Wistaria sinensis*, *Meliosma* sp., *Cæsalpinia Nuga*, *C. sepiaria*, *Molotus barbata*, and other species; various species of *Rubus*, *Hedera Helix* on walls and trees, and *Myricaria germanica* amongst the sand and shingle of the river-beds.

The commonest climbers are two species of *Clematis*, *Mucuna* sp., *Pederia tomentosa*, *Humulus japonicus*, *Pueraria Thunbergiana*, and *Polygonum multiflorum*. Herbs are, perhaps, not so numerous as shrubs. I have mentioned the *Hedychium*, which is far and away the commonest herb. *Curcuma longa*, *Canna indica* var. *orientalis*, *Alpinia Galanga*, and *Curculigo recurvata* are often associated with the *Hedychium*, and the same may be said of *Aspidistra punctata*. *Chrysanthemum*

indicum is abundant, and is a charming object in November with its wealth of bright yellow flowers.

Anemone japonica, with flowers of many shades of red and pure white; *Senecio clivorum* and *Iris japonica* are common roadside plants. In waste places *Lycoris aurea* and *L. radiata* are common.

During September the lovely climbing *Dichondra repens*, with masses of white flowers, is extremely pleasing. This *Convolvulaceae* plant is well worth cultivating in our green-houses.

Several species of *Impatiens*, with yellow, red and white flowers, are common in the ditches and sides of Rice-fields.

Three species of *Musa* occur around here—viz., *M. Cavendishii*, *M. coccinea*, and *M. lasiocarpa*. This last is a new species of Franchet's. The leaves are somewhat glaucous, 2-4 feet long; the bracts are yellow or orange-yellow, persistent, and very showy; the fruits are 1-1½ inch long, woolly, and many-seeded.

Of Orchids, we find *Dendrobium nobile*, *D. chrysanthum*, *Bletia hyacinthina*, and the variety *Gebina*, *Cymbidium sinense*, *Habenaria* sp., and *Arundina chinensis*, the last-named being particularly abundant on the grassy hills and sandstone cliffs.

Other common herbs I might mention are *Lobelia sessilifolia*, *Osbeckia chinensis*, *Strobilanthus* sp., *Boltonia indica*, *Agrimonia Eupatoria*, *Verbena officinalis*, *Begonia* sp., *Hemerocallis fulva*, *Parnassia* sp., *Poterium officinale*, *Nepeta Everardi*, *Campauomer axillaris*, *Aster Fordii*, and other species; *Bredia* sp., *Bidens* sp.; the cosmopolitan tropical weeds *Siegesbeckia orientalis* and *Xanthium Strumarium*, and various species of *Compositæ*, *Acanthaceæ*, and *Labiatae*.

Near to houses, *Clerodendron squamatum* and a species of *Crinum* are common. Ferns luxuriant, especially on the moist sandstone rocks. *Woodwardia orientalis* is particularly fine, the fronds being often 12 feet or more in length. Besides this plant and the *Gleichenia* before alluded to, I found *Osmunda regalis*, *Lygodium scandens*, *Cheilanthes patula*, *Gleichenia longissima*, *Asplenium lanceum*, *Lindsea fabelulata*, three species of *Adiantum*, and many species of *Aspidium*, *Pteris*, *Polypodium*, *Asplenium*, and *Nephrodium*. Four species of *Selaginella* occur, and of course the cosmopolitan *Nephrodium molle* and *Pteris longifolia* are abundant.

The vegetables and fruits of Kiating are similar to those of other parts of China. Opium is here, as in most parts of Szechuan, largely cultivated as a winter and early spring crop. *E. H. W.*

(To be continued.)

UNDERLEY HALL, KIRKBY LONSDALE.

THOSE who travel to Edinburgh by the West Coast route (London and North-Western Railway) could not do better than call at Underley Hall, the residence of Lord Henry C. Bentinck. Underley is situated about 1 mile from Kirkby Lonsdale, and lays low among the mountains, with the river Lune running close by. The Hall is approached by a winding carriage drive ¾ of a mile long, over a magnificent bridge crossing the Lune, built by its present owner. The building is covered with creepers, including *Ceanothus Gloire de Versailles*, *Bignonia radicans*, and *Buddleia variabilis Veitchiana*. Looking away from the mansion the country is well wooded for miles around, and a finer sylvan scene it would be difficult to find in the North of England. Some specimen trees of *Abies Douglasii*, *A. lasiocarpa*, and *A. concolor* are noteworthy; and of Beech, Elm, Birch, Ash, and Oak there are many well-grown specimens. The flower-garden is looking its best; there are no *Pelargoniums*, but *Begonias*, *Lobelia*, *Calceolaria amplexicaulis*, *Viola "Archie Grant,"* &c., are very effective. Herbaceous plants, including some excellent varieties of *Phlox*, are well represented in the borders. To reach the wild or rock-garden one has to cross the river Lune by boat. The rock-garden is situated on an embankment, underneath which runs the river. Everything is planted in colours to harmonise. The wild-garden is intersected with winding walks with an occasional seat, and together with the adjoining woods are open to the public. The glass is extensive, though modern. Mr. Miller, the head gardener, and his staff have everything in good order. *W.*

FRUIT REGISTER.

APRICOTS; ST. AMBROISE AND POWELL'S LATE.

WE find these two varieties of Apricots to be good croppers on the whole, and also, what is of equal importance, the trees are less liable to lose their live branches than are others. A fairly long experience has taught me that the otherwise excellent variety Moor Park is more subject to this failing than any other. For dessert purposes none can excel it. St. Ambrose gives fruit fine as to size and colour, and the flavour too is very good. Powell's Late was, I believe, raised in the Royal Gardens at Frogmore. *H. J. C.*

SPARAXIS IN THE OPEN.

OWING to the genial climatic conditions which prevail on the southern shores of Devon and Cornwall, residents in that favoured district are enabled to grow successfully in the open-air many

ing in the open, where the stately *Watsonia Ardernei* will perfect its tall, white flower-spikes between 5 feet and 6 feet in height. Indeed, in the south-west all bulbs coming from the Cape, New Zealand, Australia, and South America, are well worth a trial in the open if a well-protected and warm border can be assigned to them. *S. W. Fitcherbert.*

KEW NOTES.

CRINUM NATANS, Baker.—This species is flowering in the Victoria-tank, and is wonderfully distinct from all other *Crinums*. It is an aquatic species, having a rather small bulb, with leaves 5 feet in length, 1½ to 2 inches in breadth, strap-like, much undulated on the margins, and entirely submerged. The flower-scape is 2 feet in height, compressed, and dark green in colour. There are six flowers in the umbel (sometimes more); the perianth-tube is 6 inches in length; the perianth-segments are linear-lanceolate, recurved, and about 3 inches in length. The bulbs were sent to Kew by Sir John Kirk, who



FIG. 77.—BED OF SPARAXIS OUT-OF-DOORS IN THE SOUTH WEST.

rare and tender plants whose culture in other portions of the country would necessitate glass protection. Among these are numerous bulbous plants, denizens of the Cape of Good Hope, Asia Minor, South America, and other portions of the globe, many of which are as vigorous and free-flowering as if they were growing in their native habitats. *Ixias* and *Sparaxis* make a brave show in the spring, and, when once planted, remain in good health for years. The bed of *Sparaxis* shown in the accompanying illustration, fig. 77, has not been interfered with for seven years, but never fails to produce abundance of bloom every May. In the same garden *Sparaxis* have been naturalised in a steep, grassy bank, and have done well for two years. The beautiful blue *Marica cœrulea*, with its *Tigridia*-like flowers, and *Cypella Herberti*, with blossoms similar in shape but apricot-yellow in colour, natives of Brazil and Buenos Ayres respectively, blossom well in warm borders beneath south walls in some gardens, and in September the brilliant *Nerine Fothergilli* major produces its large flower-heads of vivid vermillion. The Chilean *Crocus*, *Tecophylea cyanocrocus*, bears its bright blue blossoms in early spring, and such gems as *Bessera elegans* and *Milla biflora* may sometimes be seen flower-

collected them in the Niger waters. The species has also been found at Fernando Po and Sierra Leone. It is figured in the *Botanical Magazine*, t. 7862.

GLADIOLUS MACKINDERI,

Flowering in the Cape-house is a single plant of this comparatively new and charming species, which is most certainly a gem amongst its kind. It was introduced by Professor Mackinder, of Christ Church, Oxford, in honour of whom it was named. He collected seeds during his ascent of Mount Kenia, British East Africa. The species flowered at Kew in October, 1901, and was figured in the *Botanical Magazine* for October, 1902, t. 7860. It is a slender-growing species, its nearest affinity being *G. watsonioides*. The leaves are about 1 foot long, narrow, and slightly glaucous. The stem is from 18 inches to 2 feet in height and the spike from 4 to 6 inches in length, having generally from 4 to 6 flowers, which are a beautiful scarlet with a yellow perianth-tube. The perianth-segments are nearly equal in size, and broadly orbicular-ovate in form. The fully-expanded flower has a diameter of 1½ inch. It is a species which freely produces bulbils and readily matures seeds. Seedlings attain to the flowering size in about two years after sowing. *W. H.*

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his Correspondents.)

BLUE CONIFERS—In the *Gardeners' Chronicle* for August 19, "J. C., Bagshot," describes Tsuga Pattoniana var. glauca (Abies Hookeriana of gardens) as a "slow-growing large bush or small tree of about 12 feet or a little more in height." It is no doubt true, as "J. C." states, that in many parts of the country this variety does not much exceed the dimensions given, but it does in others. In Perthshire, where the conditions seem to suit so well such a large proportion of the Conifers, very much larger specimens occur. In the *Report of the Conifer Conference* (1891) specimens are recorded from that county 15, 17, 19, 25 and 30 feet in height. The last-mentioned of these trees grows at Murthly, the Perthshire seat of W. S. Fotheringham, Esq. I photographed this tree along with eleven other American Conifers growing in the same district two years ago, and enlargements of these photographs were exhibited by the Royal Scottish Arboricultural Society at the St. Louis Exhibition of 1904. These the Arboricultural Society have kindly lent for exhibition at the forthcoming international fruit and flower show of the Royal Caledonian Horticultural Society to be held in the Waverly Market, Edinburgh, on September 13, 14, and 15, where they will be seen by the public on this side of the Atlantic for the first time. This Murthly plant is now over 40 feet in height, and does not by any means seem to have as yet reached its limit of growth. It differs from the type in having pendulous branchlets, a character (no doubt of seminal origin) which gives it a much more graceful appearance than that possessed by the ordinary form of Tsuga Pattoniana [Abies Hookeriana]. A. D. Richardson, Edinburgh.

RUNNER BEANS.—In respect to "T. W.'s" enquiry on p. 192, I always preserve Runner Beans by putting them into a liquid containing $\frac{1}{4}$ oz. of saltpetre and about $\frac{1}{2}$ oz. of salt to 2 quarts of clear spring water. I find them good for winter use, not too salt, and they keep well. Wm. Smythe, 48, New Town Road, Hove, Sussex.

RUNNER BEANS AND DEFECTIVE DISTRIBUTION.—The crop of this vegetable is so abundant and the prices rule so low in the Evesham district, that tons of fine produce are ungathered this week. Market prices (auction) have been down to 6d. and 8d. a pot of 40 lb., and in some instances, after paying expenses, the growers have had only 2d. or 3d. per pot returned to them. It is a most regrettable fact that large quantities of such a useful vegetable should be thus wasted, especially when the shop prices in the towns seem quite out of proportion to those which reach the producer. Runner Beans have been sold at $1\frac{1}{2}$ d. and 1d. per lb., or at the lowest 2 lb. for $1\frac{1}{2}$ d., which would mean 2s. 6d. to 5s. per pot, but about one-fifth of that only goes to the grower. A more striking example of our defective methods of distribution could scarcely be imagined. In an ordinary season Runner Beans supply the small holders with a serviceable succession to the Asparagus, but this year it is a great disappointment, as Vegetable-Marrows and Ridge Cucumbers are almost as unsatisfactory in prices. Brussels-Sprouts are looking extremely well, however, and late Peas are bearing good crops on some land, so there may yet be a chance to make up for the season's losses. R. L. Castle, August 31.

TAGATES PATULA AND T. ERECTA are respectively the botanical names for French and African Marigolds, which were exhibited recently before the Royal Horticultural Society by Messrs. Dobbie & Co. An old authority says "the Tagetes were named after Tages, a Tuscan divinity, the son of Genius and the grandson of Jupiter. Tagetes patula is a tender annual, deservedly popular from the brilliance and variegation of its flowers. It is cultivated in Japan, China and many parts of India, but does not appear to be indigenous of these countries. The varieties of Tagetes erecta differ chiefly in the shades of the same colour, but there are also double and quilled forms. Both species are raised from seeds upon a moderate hot-bed in the

beginning of April, and when they are 3 inches high transplanted to where they are finally to remain. The varieties are very apt to degenerate and can only be reproduced by the most careful selection and separation." This old chronicler knew a great deal about Marigolds. Planting out in Britain should not be done before the end of May or early June. Marigolds were introduced to Europe from Mexico in the 16th century. C. M. W.

ANNUALS AT FLOWER SHOWS (see p. 186).—I agree with your correspondent "Amateur" that it would be well if something could be done to guide both exhibitors and judges in this matter. Trouble arises in this way. One year the judges may allow Verbenas, Petunias, &c., to pass in collections of annuals; the following year the judges, who may be different men, may disqualify or pass over altogether the collections containing these flowers. This is most unsettling to the growers. The only way, so far as I can see, to overcome the difficulty is to put a clause in schedules to the effect that "only flowers must be staged in these classes which are generally recognised as (hardy?) annuals, and which naturally begin and end their growth and die within twelve months." I also think the addition of the word "hardy" would simplify matters. True hardy annuals should be given more attention and encouragement than they are. I do not judge annuals at Shrewsbury, but am much interested in everything horticultural connected with that marvellous show. A Shrewsbury Judge.

—Annuals are plants produced from seed, sown, grown, and dying away in one year; any other plants which can be raised from seed, grown, and flowered in one year, cannot be classed as annuals if they continue to grow on for another year. The fact that in these days of skilled gardeners so many kinds of flowers can be produced in one year (from seeds) is no reason why such plants should be considered annuals. A. J. Long, Head Gardener, Wyfold Court.

CRINODENDRON HOOKERIANUM.—In a neighbouring garden there is a plant in bloom under the name of Crinodendron Hookerianum. I can find no reference to it in any book in my possession except in a list of plants shown by a firm at an early show of the Truro Daffodil Society; this list is printed in the *Journal of the Royal Horticultural Society*, vol. xxvii., p. 24. The plant is growing well in the open, in soil consisting chiefly of rotten leaves and loam. It is 3 feet high and 2 $\frac{1}{2}$ feet through. Its leaves are of a bronze-green colour; the flowers chocolate-red, very pretty, and not unlike a small Liliun. I should be grateful for a reference to any notice of it. H. W., Trevinee [The correct name of this Chilean plant is Tricuspidaria hexapetala. It belongs to the order Tiliaceae, and produces red flowers on long peduncles produced in the axils of the leaves. You will find an illustration in *Nicholson's Dictionary of Gardening*. Ed.]

JUDGING.—Now that "showing" is fresh in our memories, I would like to ask fellow-readers of the *Gardeners' Chronicle* to record their opinion on the system of judging horticultural products generally, and more especially fruits and vegetables, as I think a considerable difference exists with regard to the system adopted by different judges when adjudicating upon the various products before them. While some place the same value on all dishes of fruits or vegetables in a collection by fixing a maximum of five or other number for each dish, others adopt the system of the Royal Horticultural Society, and award points of different value, as set down in the code of rules for judging; for instance, Black Grapes, nine points, Apricots six, and Currants four. This certainly seems to me the [most satisfactory] method to adopt. The same remarks apply equally to vegetables. I should like to see all horticultural societies have a note in their schedules to the effect "that all exhibits will be judged by the Royal Horticultural Society's Code of Rules," which may be had for 1s. 6d. from the Secretary. Exhibitors and the public generally would then know by what system their exhibits were being judged, and if the "points" could be published,

so much the better. I certainly think it is time all societies adopted a satisfactory standard for judging, and followed the lead of the Royal Horticultural Society. That there will always be grumblers I have no doubt, but let us try to reduce the number if possible. Exhibitor.

THREE GOOD HEMEROCALLIS.—The beautiful species *H. citrina*, received three years ago from Herr Sprenger, of Naples, has bloomed with me this summer most abundantly for the third time. The first year it sent up one flower-stem which bore twenty blooms. Last year I had two fine spikes bearing about forty flowers each, and this year the plant produced four fine spikes, and is now sending up two more for an autumn bloom. The fact of each of these six spikes producing from thirty to forty flowers proves that this may be considered the most free-blooming member of its family. The flowers are of large size and of a delicate shade of pale-lemon colour. The texture of the petals, however, is somewhat frail, and they are apt to be broken and torn from the flower if exposed to high winds. Another variety sent to me at the same time and under an exactly similar name by Mr. Perry, of Winchmore Hill Nurseries, but which is evidently a garden hybrid which I have named after the sender, is quite distinct in form of flower, which is considerably shorter and broader in petal, and of more perfect shape than *H. citrina*. It bloomed well the first year, but last year did not flower at all, though the plant seemed perfectly healthy, and had more than doubled itself in size. This summer however it more than made up for lost time by sending up six flower-spikes bearing from six to twelve flowers each, two of which also far exceeded all others in the bed in height, rising to over 5 feet. It also seeds truer than all varieties known to me, and should be valuable to the hybridiser and raiser of new varieties. The third variety is the fine hybrid named Dr. Regel, by far the deepest orange colour of them all, and one of whose parents must, I think, have been the fine *H. aurantiaca* major. This having bloomed well in July is now bearing five more spikes for an autumn bloom, which no other variety known to me save the species *H. citrina* does. Of another fine hybrid sent by Herr Sprenger under the name of *H. parthenope*, and by M. Lemoine, of Nancy, as *H. luteola*, I have two plants in my bed, received from their respective raisers. The one from Naples bloomed well; the one from Nancy, though more than twice as strong and in most robust and vigorous health, has not bloomed at all—an abstinence which it is difficult to understand. W. E. Gumbleton.

WASPS ATTACKING FRUIT.—To cover long lengths of fruit-walls with Hexagon wasp-proof netting would mean a great deal of expense in netting, time, and labour, which many cannot afford for the purpose. In regard to the use of beer and sugar, I agree with Mr. Snell (see p. 175), for whether the bottles are placed on the trees or a distance from them, or if there are no bottles at all, still the wasps come. We are troubled very much with wasps here, although measures are taken to destroy all nests we can find, in addition to catching all the queens possible. Let us as gardeners do all we can to exterminate wasps, and let all horticultural societies encourage children to catch queen wasps by offering prizes for them. Mr. Clark said on p. 149 the taking of nests is the best cure, and without a doubt it is, but these require much finding. I watched some wasps devouring a tree of Plums to-day, and made up my mind to follow them home, but when they darted over the wall and took a sharp turn to the left they were lost to sight, though not to memory. F. Johnson, *The Gardens, Maiden Erlegh, Reading, Berks.*

—In respect to Mr. Snell's note on p. 175, I still contend that a larger number of bees are attracted to the trees by these baited traps. More fruits are attacked than would be the case if the extra attraction was not there. To cover a large wall space with Hexagon wasp-proof netting would be rather a formidable matter, but to do this would hardly be necessary where a succession of fruits is grown, ripening at different periods, for it is very portable. In addition it answers a threefold purpose—(1) the protection of fruit from wasps, birds, &c.; (2) retarding the ripening of fruits,

when this is desirable; and (3) the protection of the flowers in spring. The purchaser therefore obtains a good compensation for his outlay. If carefully dried and the lengths for various purposes are properly labelled before being packed away, the netting will last for several years, and is an economical and perfect means of protection. *W. H. Clarke.*

THE POISONOUS PROPERTIES OF COLCHICUM AUTUMNALE.—The deleterious nature of all parts of *Colchicum autumnale* (see p. 166, *ante*) is not of common knowledge, with the result that sometimes stock is poisoned by hay which contains the foliage of this plant. The plant is in full leaf in the summer, although it is indistinguishable at that season by its flowers, these appearing in the autumn. In grass-land planted with this plant by man, or growing wild, as it does in some districts, if the grass is made into hay the mowers should be instructed to collect every vestige of the foliage before the mowing takes place, or whilst the grass is lying in the swathes, as when dried into hay it is not readily detected by inexperienced men. Through my neglecting to do this, I once lost a valuable heifer, and several cows were rendered ill thereby. The action of the poison causes inflammation of the stomach. *F. M.*

THE WEATHER IN CORNWALL.—Although no very serious damage was done here by the heavy gales during August, the weather was unusually wet and boisterous. Thank goodness we have not experienced such damage as that recorded by Mr. Jackson on p. 175. The total rainfall was 5.99 inches; greatest fall was 1.3 inch on the 24th; number of days upon which rain fell was 21. The gauge here is 240 feet above sea-level, 8 inches above ground, and 8 inches in diameter. The maximum temperature recorded 72°, the minimum 43°; the former on the 16th, the latter on the 13th. Apples and Pears (of these there is only a slight crop) were blown down, but beyond this the damage done was slight. I am sending an inflorescence of *Hedychium Gardnerianum* cut this morning from the open. It has had very little protection. *H. W., Trerince, September 4.* [A very fine and fragrant inflorescence. *Ed.*]

REMARKS ON THE CONDITION OF THE FRUIT CROPS.

(See Tables and General Summary, *ante*, pp. S1-S7.)
(Concluded from p. 183.)

HEREFORD.—The only varieties of Apple-trees carrying a full crop are Stirling Castle, Cox's Pomona, and Gladstone. Our best Pears are Durondeau, Pitmaston Duchess, Duchess d'Angoulême, Marie Louise d'Uccle, Beurré d'Avalon, Beurré Bachélier, and Magnate. Apple and Pear trees suffered very considerably from the Winter Moth in the spring. Nuts are an exceedingly heavy crop, for I never saw the bushes so heavily laden as they are this season. Our soil is of a light and sandy nature, the subsoil red sandstone. *Thos. Spence, Goodrich Court Gardens, Ross.*

— In some of our orchards we shall not gather as many hundredweights of fruit as we usually do tons, although the trees are fairly clean and healthy. Bush-trained trees growing in sheltered places of such varieties as Worcester Pearmain, Lord Suffield, Lord Grosvenor, Lane's Prince Albert, and Cox's Pomona have moderate crops. Pear-trees trained on walls where they have slight protection from frost are carrying a medium crop of fruit. Peaches and Nectarines on open walls are very good, and have required severe thinning. The foliage of these trees is clean and free from "blister." Morello Cherries set and stoned well. Strawberries have been a failure, all the first blooms being ruined by frost, and what little fruit developed suffered from mildew. Raspberries, Currants, and Gooseberries are seen in abundance. Our soil is a heavy clayey loam resting on limestone. *Geo. Mullins, Eastnor Castle Gardens, Ledbury.*

MONMOUTH.—The soil here is a deep, heavy, or clayey loam resting on marl. The situation is low, subject to fog and late spring frosts, and

altogether rather unfavourable to the ripening of wood. We had an abundant supply of blossom upon all kinds of fruit-trees, and though we did not experience severe late frosts, there was a spell of cold east winds and cold, rainy weather during the time Pears, &c., were in blossom. There is a moderate crop of Apples upon bushes of some varieties. Amongst the best bearers are King of the Pippins, Ribston Pippin, Allington Pippin, Cox's Orange Pippin, Wealthy, Lane's Prince Albert, Newton Wonder, Frogmore Prolific, Peasgood's Nonesuch, Lord Grosvenor, Lord Suffield, and Blenheim Orange Pippin. Orchard fruit is generally thin. Upon walls some Pear trees carry fair crops, though there are poor crops upon pyramids. *Thomas Coomber, Hendre Gardens, Monmouth.*

— The crops of Apples, Pears, Cherries, and Plums in this district are the worst on record. Many large orchards contain scarcely an Apple or Pear; this applies more particularly to grass orchards. In a few sheltered places dwarf trees are satisfactory. The chief cause of failure were the cold, dull days in the early part of May, followed by the severe frost on May 22. *John Basham, Fair Oak Nurseries, Bussaleg, Newport.*

SOMERSETSHIRE.—Seldom have I seen a more promising prospect for a fruit crop up till the severe frosts on May 22 and 23, with piercing cold winds, the frosts being severe enough to kill most young shoots of hardy shrubs, &c. Trees that then had an abundant crop of Pears which had attained a good size are now fruitless, Apples being almost as bad in many cases. Plums on walls escaped to some degree. The frost was followed by a severe attack of fly, &c. Some Pear trees are almost leafless. *John Crook, Forde Abbey Gardens, Chard, near Somerset.*

WORCESTERSHIRE.—If only the market gardeners in the Midlands could give as excellent a report of their harvest as can the farmers in Warwickshire, Worcestershire, Gloucestershire and Oxfordshire, the agricultural districts would be in a very flourishing condition. Unfortunately they cannot, owing partly to the early frosts preceded by the east winds in May, which destroyed so many fruit buds in the low-lying districts of the fertile valley of the Avon. Farmers in the Midlands do not go in for the cultivation of fruit largely, and those that do are not satisfied with this year's crop. There appear to be some good orchards of Apple Blenheim Orange Pippin in places, but fruit is very partial, and those who have anything like a fair yield will reap a harvest worth having. Plums are now coming into the market in large quantities. There was at first an idea that Pershore and Prolifics would be cheap, but it has been seen that prices are satisfactory. Prolifics are a short supply, and cannot meet anything like their demand. Gooseberries have been good. *M. H. S.*

— The all-important Apple crop is nearly a failure, a few sheltered places and isolated trees here and there excepted. It was caused, we think, by frosty nights, protracted north-easterly winds, sunless weather and low temperature all through the blossoming period. Insect pests became numerous, and thus completed the wreck, especially such as the Apple-sucker, Apple blossom weevils, and all the worst pests. Pears fared but little better, whilst the Pear-midge has devastated whole orchards of every single fruit. On wall trees the crops are better, but are below average. Plums are very partial, but there are heavy crops in many places, especially of Victorias. Apricots under protection, also Peaches and Nectarines, have done well. Bush fruits are abundant and good. Strawberries have been generally good all through. The new Bedford Champion is a monster; some fruits weighed 3 oz. each under ordinary outside cultivation. *W. Crump, Madresfield Court Gardens.*

— The fruit crops in this district are certainly under the average, although we had a great show of bloom. Apples and Pears are very thin, and Plums are irregular. Although every precaution was taken, Apple and Pear trees were infested with caterpillars. Peaches, Nectarines, and Apricots are all good, and the trees are clean and healthy. All small fruits have been good and plentiful, Strawberries especially so. *F. Jordan, Impney Gardens, Droitwich.*

WALES.

CARMARTHENSHIRE.—During forty years' experience I have never seen such a poor crop of Apples and Pears, especially the former. Many of the trees did not blossom, and the little crop that has formed thrives very badly. The soil is of a light nature with gravel beneath. *William Parker, Neuaddfawr Gardens, Lludover.*

CARNAVONSHIRE.—The fruit crop here is the worst I have known for upwards of forty years. The soil is of a very light nature. *W. Speed, Penrhyn Castle Gardens, Bangor.*

DENBIGHSHIRE.—I attribute the failure of Apples, Pears and Plums to the very heavy crops of last season. Holt, a great Strawberry-growing district near here, has had one of the best seasons that they have had for many years past, and the prices obtained have been good. *W. Weir, Rhosnessney, Wrexham.*

GLAMORGANSHIRE.—Until the beginning of May there was every promise of heavy crops of Apples, Plums and Cherries, but the cold winds that prevailed during the early part of that month destroyed most of the blossom. Pears are an average crop and of good quality. Peach, Nectarine and Apricot trees are carrying heavy crops, and are looking exceptionally healthy. No doubt the unusual amount of bright weather which we have experienced in this part of the country has had much to do with this healthy condition of the trees. Strawberries and all kinds of small fruit are exceptionally plentiful and good. *R. Milner, Margam Park Gardens, Port Talbot.*

PEMBROKESHIRE.—Apples and Pears are poor crop generally in this district. Wet and dull weather prevailed during the flowering season, and various insect pests, which have increased greatly of late years, presumably owing to a succession of mild winters, have also caused great injury in the orchards. All small fruits are a very heavy crop. Of Plums there are but few, with the exception of Victorias, which are very abundant. *Geo. Griffith, Slebeck Park Gardens, Haverfordwest.*

IRELAND.

GALWAY.—I am sorry to report an almost total failure of the Apple crop in this district. This I conclude is due to the enormous crops carried by the trees last year, together with the excessive wet autumn, winter, and spring, preventing the trees from properly maturing the wood, with the consequent absence of blossom. Crops of Pears and Plums are little better than those of Apples. Small fruits are a moderate crop. The soil is of a light nature resting on limestone rock. *Thos. Dunne, Lough Cutra Castle Gardens, Gort.*

LONFORD.—The fruit-crops in this district are very good, with the exception of Apples, which are not more than half an average crop. The soil is a heavy retentive clay resting on a yellow subsoil. *John Rofferty, Castle Forbes Gardens, Newtownforbes.*

CORK.—Apple, Pear, and Cherry trees developed a beautiful display of blossom, but the cold, wet weather at the time of flowering prevented a great quantity of the bloom from setting. Consequently the crop of these fruits in this district is below the average. *C. Price, Mitchelstown Castle Gardens*

KILDARE.—Crops of the chief kinds of Apples, Pears and Plums are under the average. The severe frosts of April 7 and May 22 did much damage, but the principal cause of failure was the continued prevalence of dry east winds during April and May. Drought has also caused much of the young fruits to fall. *Fred Bedford, Straffan House Gardens.*

CHANNEL ISLANDS.

JERSEY.—The fruit crops, which early in the season looked promising, were spoilt later by the fruit dropping, probably owing to the low temperature prevailing directly after the blossoming period. The Pear crop was further reduced by that terrible pest, the Pear midge, which apparently can only be reduced by the joint action of all growers in every district. *H. Becker, The Nurseries, Five Oaks.*

SOCIETIES.

HORTICULTURAL TRADES' ASSOCIATION.

AUGUST 23, 24, 25.—For the past five years the Association has held its annual meetings in London, but this season the Council determined to inaugurate a series of country meetings, to be held by rotation in the principal centres throughout the kingdom. This departure has proved an unqualified success in every way, and will probably form a precedent for all future meetings. The ancient city of Worcester is crammed with interesting features—horticultural, historical, and architectural; while the generous hospitality and unwearied efforts of the past-President, Mr. Carrington, through the whole of the two days, put the finishing-touches to a most interesting and instructive outing.

Thirty-five members assembled from all parts of the country, some even journeying as far as Scotland, Ireland, and the Channel Isles. The social side of the Association's work was felt by all to have been advanced by the meeting in a way never previously experienced. At a dinner one converses with neighbours on either side, and perhaps even across the table; but all the others might as well be a mile away for purposes of conversation. In a two days' touring and walking round nurseries the line is ever changing, and members find themselves in turn brought in contact with everybody present, so that after a short time those previously unknown to each other, even by sight, are seen chatting as familiarly as old acquaintances. In these informal talks all manner of knotty business questions come up, and by free discussion are ripened for future settlement.

Most of the members came together at the Star Hotel, Worcester, on Wednesday evening, August 23, a considerable number having come on from the Shrewsbury Show, and a short Council meeting was held to settle one or two details of the programme. Punctually at 9.30 next morning, the party, led by the genial proprietor, R. Smith-Carrington, Esq., started for Messrs. Richard Smith & Co.'s nurseries, which are some 300 acres in extent, and took a full three hours to inspect even cursorily. Unfortunately, the growth of the city has led to the cutting off of a large slice of the nurseries for building purposes, and some 80 acres have to be cleared during the present season. Additional land is being prepared and planted to make up for that which is being given up. After over three hours' tramping around some were leg-weary and all hungry, so that the announcement of lunch was most acceptable. Mr. Carrington's hospitality having received full justice, his health was proposed in a brief but hearty speech by the President, Mr. Bunyard, and the party was once more on its feet.

The afternoon was spent in inspecting the nurseries of Mr. J. H. White and Mr. W. B. Rowe, not covering so many acres as seen in the morning, but each containing several features of interest. Mr. White's nursery covers part of the old battlefield of Worcester. At Mr. Rowe's nursery the general interest centred on his two new Apples, King Edward VII. and W. Crump, the former a very valuable culinary variety, and the latter a table fruit resembling Worcester Pearmain, but with very high flavour, and not in condition till March. The habit and growth of "King Edward" were very favourably commented upon, the growth being stout and clean, and very rarely affected by American blight.

ANNUAL MEETING.

After dinner the election of officers took place. Eight members of Council retiring by rotation were re-elected without opposition. One vacancy only remained, which was filled by the nomination and election of Mr. A. W. Paul, of Waltham Cross. The retiring President nominated Mr. Stuart Low (Hugh

Low & Co.) as his successor, saying that he was in every way qualified for the position, by ability, character, and as head of a business famous throughout the civilised world. The motion was seconded by Mr. H. S. Rivers, and carried by acclamation. In the discussion which followed several important matters were brought forward.

Friday's proceedings opened with a brake drive of seven miles, through a charming country, to the celebrated gardens of Madresfield Court, thrown open by special permission of Earl Beauchamp. All present were aware of Mr. Crump's fame as a fruit grower, but only one or two had any idea of the wealth of interest these noble gardens contain in Conifers, hardy flowers, &c. The avenue of Abies (*Picea*) *nobilis glauca* caused astonishment to everyone, and indeed it is a sight to linger in the memory for years. The magnificent collection of spring bulbs could only be guessed at, but many fine things were still in flower among hardy plants, and not in small patches, but planted in bold masses of dozens and hundreds, forming grand splashes of colour in harmony with the majestic surroundings.

FIRMS REPRESENTED.—J. Basham, E. J. Batchelor, G. Bunyard & Co., W. W. Clarke, W. Deal, Alex. Dickson & Sons, Dobbie & Co., Harrison & Sons, Hobbies, Ltd., E. Hollamby, Howcroft & Watkins, B. Hurst & Son, J. Jefferies & Son, Little & Ballantyne, H. Low & Co., W. Magee, S. Mortimer, R. C. Notcutt, Jno. Palmer, Parker & Sons, J. R. Pearson & Sons, Pennell & Sons, Thos. Perkins & Sons, T. Rivers & Sons, W. B. Rowe, R. Smith & Co., Chas. Smith & Son, I. Titterton, R. Wallace & Co., W. E. Wallace, Walshaw & Son, M. Young & Son. *Communicated.*

ABERDEEN ROYAL HORTICULTURAL.

AUGUST 24, 25, and 26.—The annual exhibition of the above Society was held on these dates in the Duthie Public Park, Aberdeen, by kind permission of the civic authorities.

Last year the entries numbered 1577, and this year they totalled 1804. The arrangements for the exhibition were made with the customary completeness seen at these shows, by the acting directors, of whom Mr. Thomas Ogilvie, of Keppelstone, is Chairman, and Mr. Samuel Pope, Vice-Chairman, while the secretarial duties are performed by Mr. J. B. Rennett.

POT PLANTS.

A very large and spacious marquee was set aside for the accommodation of pot plants. Taken collectively the display was rather meagre, and not up to the average seen at these shows, and especially was this the case in the classes for stove and greenhouse plants.

Begonias were excellent in quality, no better having been seen in Aberdeen, but the entries were few.

Fuchsias and Pelargoniums were also of a high standard, and here again the entries were small. Petunias, however, made not only a splendid display, but the entries were very large.

For the best table of Begonias, Palms, and Ferns, Mr. JAMES JENKINS, Clifton Road, Aberdeen, won 1st prize.

Mr. JOHN SIMPSON, Varvil Bank, Aberdeen, won 1st prize in the class for Fuchsias.

For the best six plants for dinner-table decoration Mr. JOHN PETRIE, The Gardens, Crathes Castle, was awarded premier place for a collection including fine specimens of *Cocos Weddelliana*, *Crotons*, and *Pandanus*.

Mr. Alexander Duncan, gr. to Mr. ADAM MAITLAND, Albyn Place, Aberdeen, was 1st for Begonias, having a beautifully-coloured specimen of the *tortilis* type.

Among other prominent prize-winners in this section were Messrs. A. DOUGLAS, Keppelstone; WILLIAM MACRIE, Morken; JAMES JAMIESON, Hawkhill; and JAMES ANDERSON, Aberdeen.

CUT FLOWERS.

The entries in the classes for cut flowers numbered 716, or nearly a hundred more than last year. The season has been an exceptionally favourable one, and as might be expected the display in these classes was an outstanding feature of the show. Sweet Peas, Begonias, and herbaceous flowers were exceedingly well shown.

Table decorations attracted considerable attention, and in these classes competition was very keen. Premier honours went to Mr. D. WILSON, King Street, Aberdeen, who had a large epergne filled with Sweet Peas relieved with *Gypsophila alba*, the lower basin being filled with richly-coloured Begonias and white Stocks, while around the centrepiece were trails of *Smilax*, the whole forming a noteworthy exhibit. 2nd place was awarded to Mr. JAMES SM, Aberdeen.

Mr. A. DALGARNO, Woodside, Arbroath, staged splendid Roses, as did also Mr. JOHN PETRIE, Crathes Castle, while Messrs. D. & W. CROLL, Dundee, led in the nurserymen's classes for these flowers.

Other prominent exhibitors in the classes for cut flowers included Messrs. ALEXANDER GRIGOR, Fairfield; W. MACKIE, Morken; J. PETRIE, Crathes Castle; ALEXANDER DUNCAN, Aberdeen; A. DOUGLAS, Keppelstone; A. DALGARNO, Arbroath; and GEORGE SHERIFFS, Denmore.

FRUIT AND VEGETABLES.

Although the entries in the fruit section numbered 208, the display could not be described as equal to the average seen at Aberdeen. Mr. JOHN PETRIE, Crathes Castle, secured chief honours for Grapes, his bunches of Muscat of Alexandria, Alicante and Black Hamburg varieties being of large size and the berries excellently finished.

For a collection of fruit Mr. W. SCORGIE, Springhill, won 1st prize; while for the best collection of hardy fruit only, Mr. W. HARPER, Perth, secured a similar award.

The entries in the classes for vegetables numbered 453, comprising a very meritorious collection, an advance on the display last year. The most noteworthy exhibits were Cabbages, Carrots, Potatoes, and collections of vegetables.

For the best collection of vegetables a well-known vegetable grower, Mr. ALEX. PATERSON, Ruthrieston, had a meritorious display that won 1st honours.

Other prominent prize-winners in this section were Messrs. James Smith, jun., Kainhill; Frank Kinnaid, Broomhill; John Paterson, Denwood; W. Harper, Perth; J. Ferguson, Linton House, the last-named winning grandly in the Potato classes; W. Coutts, Ellon; and A. Grigor, Fairfield.

MISCELLANEOUS.

Non-competitive exhibits were staged by Messrs. COCKER & SON, Aberdeen; Messrs. BRN. REID & CO., Ltd., Aberdeen; Messrs. W. SMITH & SON, Aberdeen; and Mr. DUSTAN, Holburn Nurseries, Aberdeen, to each of whom was awarded a Silver Medal.

BRITISH GARDENERS' ASSOCIATION.

AUGUST 29.—A meeting of the Executive Council of the British Gardeners' Association was held at the Hotel Windsor, on the above date. The Secretary reported that seventeen new members had joined since the previous meeting, bringing the total up to 675.

Messrs. Hawes & Frogbrooke were elected on the Council. Messrs. Pearson, Curtis, and the Secretary were appointed a sub-Committee to draft the rules of the Association, and to submit them to a future meeting. It was decided to hold the meetings of the Association in future at the Royal Horticultural Society's Hall in Vincent Square.

As it was found impossible to secure a suitable meeting place on any of the days during the Royal Horticultural Society's Fruit Show in October, it was decided that the proposed Conference should be deferred. Mr. W. Watson made the following statement: "I regret to have to inform the Council that the Board of Agriculture have called upon me to relinquish my connection with the British Gardeners' Association, as they consider it incompatible with my position as a public servant that I should assist a movement of this kind. While this precludes me from taking any further part in it, the Association will always have my best wishes for its success. It must not be inferred that the Board of Agriculture disapprove of the British Gardeners' Association, because of their objection to my taking a part in it. I have the fullest belief in the aims of the Association, which must succeed if the original programme as set forth in our prospectus is rigidly adhered to."

The next meeting will be held at the Royal Horticultural Society, Vincent Square, Westminster, on September 26. *John Weathers, Secretary.*

READING HORTICULTURAL.

AUGUST 30.—The annual summer exhibition of this Society was held in the Forbury Gardens. Vegetables and cut flowers were prominent features of the display. The arrangements were of the best.

Vegetables are always an important item at the Reading shows, owing mainly to the liberality of Messrs. Sutton & Sons, who annually offer valuable prizes for twelve distinct kinds that are judged under a special code of points. Four growers competed in Messrs. Sutton's class. The coveted 1st prize of ten guineas fell to Mr. Kneller, gr. to Sir W. PORTAL, Bt., Malshanger Park, Basingstoke, who had a magnificent collection, including Perfection Tomato, Up-to-Date Potato, Peerless Cucumber, Ne Plus Ultra Runner Bean, Gladstone Pea, Blood-red Beet, Tender-and-True Parsnips, Ailsa Craig Onion, Prizetaker Leek, Early Giant Cauliflower, New Red Intermediate Carrot, and Superb Pink Celery, the whole securing a total of 67 points. Mr. Dymock, gr. to G. D. FABER, Esq., M.P., Rush Court, Wallingford, was placed 2nd, with 63½ points. Mr. Pope, gr. to the Earl of CARMARVON, Highclere Castle, Newbury, was 3rd, with 63 points.

Tomatoes were well shown, Mr. Bastin, gr. to Sir A. HENDERSON, Bart., Buscot Park, Faringdon, winning in the class for one dish of these fruits; Mr. KNELLER being 2nd.

Single dishes of vegetables were well staged in the respective classes, as were the collections in the Cottagers' Divisions.

FRUIT was good in quality, although not numerous. For a collection of six dishes Mr. Wasley, gr. to J. B.

TAYLOR, Esq., Sherfield Manor, Basingstoke, was an easy 1st, with Madresfield Court and Muscat of Alexandria Grapes, Barrington Peaches, Jefferson Plums, and Clapp's Favourite Pears. Mr. BASTIN was placed 2nd.

Grapes in their respective classes were fairly well represented. Mr. Howard, gr. to Lady SUTTON, Benham Park, Newbury, won in the class for Black Hamburg, having good bunches and large berries, but the latter were a trifle deficient in colour. Mr. W. PALMER was 2nd.

In the class for any other black variety of Grapes Mr. WASLEY staged good Madresfield Court, and secured the leading place.

Mr. Galt, gr. to C. E. KEYSER, Esq., Aldermaston, staged the best exhibit, Muscat of Alexandria.

Peaches were of remarkable quality. Mr. Booker, gr. to W. B. MONCK, Esq., Coley Park, won 1st place with the variety Barrington, the fruits being of large size and beautifully coloured.

The best Nectarines were staged by Mr. HOWARD, who had the variety Pineapple.

Plums were shown well. Eleven growers competed in the class for three dishes of these fruits. Mr. HOWARD won with the varieties Denniston's Superb, Kirk's Seedling, and Jefferson's.

Mr. PAGE won for three dishes of dessert Apples; while Mr. KNELLER secured a like position for kitchen varieties.

CUT FLOWERS.—For twenty-four show or fancy varieties of Dahlias Mr. JOHN WALKER, Thame, secured the leading position with well-finished examples of popular kinds. Mr. C. TURNER, The Nurseries, Slough, came 2nd with smaller flowers.

For twelve show or fancy Dahlias Messrs. F. TAYLOR & SONS, Kingham Nurseries, Chipping Norton, won 1st place; while Mr. WALKER secured a similar position for twelve bunches of Cactus varieties.

Roses were well staged, considering the lateness of the season. Mr. JOHN JEFFERIES, Cirencester, won in the class for eighteen varieties, Messrs. F. TAYLOR & SONS occupying a like place for twelve distinct varieties. In the class for twelve vases of any cut flowers, distinct, Mr. WASLEY secured 1st prize.

HONORARY EXHIBITS.—Messrs. W. CUTRUSH & SON, Highgate Nurseries, London, had an interesting group of flowering and foliage plants. Mrs. PHIPPEN, Reading, arranged an exhibit of wreaths, crosses, &c., which were much admired. Mr. E. SUCH displayed an attractive-looking exhibit of Cactus Dahlias.

NATIONAL DAHLIA.

(By Telephone.)

SEPTEMBER 7, 8.—The annual exhibition of the National Dahlia Society was opened at the Crystal Palace on Thursday last, as these pages were passing through the press. The display was much larger than usual, and the general quality of the flowers very little inferior to those shown last year.

The number of entries this year was 285, against 206 last year. It was in the amateurs' classes that this increase occurred, there being in these 45 to 50 per cent. of new exhibitors. A severe thunderstorm passed over the Palace at 12.35 P.M.

In the NURSERYMEN'S classes the 1st prize in the class for Forty-eight Blooms of distinct Show varieties was won by Mr. J. WALKER, nurseryman, Thame, Oxon. The best exhibit of twenty-four blooms came from Mr. GEO. HUMPHRIES, Kington Langley, Chippenham.

For Fancy varieties Mr. WALKER obtained 1st prize for eighteen blooms, distinct; and Mr. W. TRESSEDER, nurseryman, Cardiff, 1st prize for twelve blooms.

Most interest was shown, as usual, in the competition for Cactus Dahlias, and a Silver Challenge Cup, value 10 guineas, was offered for the best collection of eighteen varieties shown in bunches of six blooms each. This Cup and the sum of £2 10s. was won by Messrs. STREDWICK & SON, Silver Hill, St. Leonards.

In the AMATEUR'S Classes, the Silver Challenge Cup, offered for the best collection of twenty-four blooms, distinct, of show or fancy Dahlias, or these types intermixed, was won by Mr. T. HOBBS, The Cedars, Downend, Bristol, a Vice-President.

The best collection of twelve blooms of distinct varieties of show Dahlias was exhibited by Mr. E. T. MATTHEWS, 42, Almond Street, Derby.

Fancy varieties were exhibited best by Mr. J. NEWMAN, Bell Inn, New Cheltenham, Kingswood, who won 1st prize, offered for the best collection of twelve blooms distinct.

There were numerous exhibits in the class for six Cactus varieties, arranged in vases, each vase containing six flowers. The 1st prize was awarded to Mr. A. TAYLOR, 5, Vernon Terrace, East Finchley.

Fuller details will be given in our next issue.

Obituary.

DR. MULES.—The death is recorded of Dr. Philip Henry Mules at his residence, The Old Parsonage, Gresford. To the general public deceased was well known as a successful ophthalmic surgeon, but he was also a very ardent horticulturist, and had especial enthusiasm for the cultivation of hardy herbaceous flowering plants. He was an occasional contributor to these pages, and the well-known variety of Aubrietia "Dr. Mules" was named in his honour. Deceased's garden at The Old Parsonage, Gresford, was one of the most interesting in that district.

MARKETS.

COVENT GARDEN, September 6.

Cut Foliage, &c.: Average Wholesale Prices.		Hardy foliage	
s.d.	s.d.	s.d.	s.d.
Asparagus plumosus, long tralla, each ...	0 4-0 9	(various), per dozen bunches	2 0-3 0
— medium, bunch ...	0 9-1 0	Ivy leaves, bronze ...	1 6-2 0
— short spray, per bunch ...	0 9-1 6	— long trails, per bundle ...	1 0-2 0
— Sprengerii ...	0 6-1 0	— short green, doz. bunches ...	1 0-1 8
— tenuissimus ...	0 6-0 9	Moss, per gross ...	4 0-5 0
Adiantum cuneatum, per dozen bunches ...	3 0-4 0	Myrtle, per dozen bunches ...	2 0-4 0
Cycas leaves, each ...	1 6-2 0	Physalis, per doz. bunches ...	4 0-6 0
Fern, English, p. dozen bunches	1 0-2 0	Smilax, p. dozen trails ...	4 0-6 0
— French, dozen bunches ...	3 0-4 0	Viburnum Opulus with berries, p. dozen bunches	3 0-4 0
Grasses, hardy, p. dozen bunches	2 0-4 0		

Plants in Pots, &c.: Average Wholesale Prices.		Eunonymus, per dozen	
s. d.	s. d.	s. d.	s. d.
Aralia Sieboldi, p. dozen ...	4 0-12 0	Ferns, in thumba, per 100 ...	8 0-12 0
Araucaria excelsa, per dozen ...	18 0-30 0	— in 32's, p. doz.	4 0-10 0
Aspidistras, green, per doz. ...	21 0-30 0	Fuchsias, p. doz.	3 0-5 0
— variegated, per doz. ...	30 0-42 0	Ficus elastica, p. doz. ...	9 0-16 0
Asparagus plumosus nanus, per doz. ...	9 0-12 0	— repens, per dozen ...	4 0-6 0
— Sprengerii, per dozen ...	6 0-9 0	Heliotropes, per dozen ...	2 6-3 0
— tenuissimus, per doz. ...	6 0-12 0	Kentia Belmoreana, per doz. ...	12 0-18 0
Asters, per dozen	3 0-8 0	— Posterianna, p. doz. ...	12 0-21 0
Begonias, tuberous, per doz. ...	3 0-4 0	Latania borbonica, per doz. ...	9 0-18 0
Campanula isophylla, per dozen ...	3 0-5 0	Lilium lancifolium, per dozen ...	4 0-8 0
— Mayi, per doz.	4 0-6 0	Marguerites, white, per dozen ...	4 0-8 0
Cannas, per doz.	5 0-6 0	Pelargoniums, per dozen ...	3 0-5 0
Chrysanthemums, per dozen ...	6 0-24 0	— zonal ...	3 0-4 0
— coronarium, double yellow, per dozen ...	3 0-5 0	Privet, golden, per dozen ...	5 0-12 0
Coleus, per dozen	2 6-4 0	Rhodanthe, per dozen ...	3 0-4 0
Crotons, per doz.	12 0-30 0	Selaginella, per dozen ...	3 0-5 0
Cocos Weddelliana, per doz. ...	12 0-30 0	Solanums, dozen	6 0-9 0
Cyperus alternifolius, dozen	2 6-4 0	Verbena, Miss Willmott, per dozen ...	3 0-5 0
Dracenas, per dozen ...	9 0-24 0		
Eulalia japonica variegata ...	12 0-18 0		

Vegetables: Average Wholesale Prices.		Mushrooms, half bushel	
s. d.	s. d.	s. d.	s. d.
Artichokes, Green, French, p. doz.	8 6-3 0	— Buttons, lb.	1 0 —
Aubergines, per dozen ...	1 6 —	Mustard and Cress, per doz. pun.	1 0-1 6
Beans, English, Scarlet Runner, bushel	0 9-1 6	Onions, Spring, doz. bunches	2 0-2 6
— French, per half bushel ...	1 0-1 6	— Valencia, per case ...	8 0 —
Beetroot, bushel	1 3-1 6	— Dutch, bag ...	5 0-5 6
Cabbages, p. tally	2 0-3 0	— English, bag	5 6-6 0
Carrots, new, doz. bunches ...	1 6 —	Parsley, 12 bunches	1 6-2 0
— washed, un-	2 0-2 6	Peas, English, per bush ...	5 6-6 0
— bag, washed, doz.	2 6-3 0	— shelled, quart	1 0-1 6
Cauliflowers, doz.	2 0-2 6	Radishes, p. doz. bunches ...	0 8-1 0
Celery, English, doz. bundles	12 0-15 0	Sorrel, half bush.	1 0 —
Cucumbers, doz.	1 6-2 6	Spinach, p. bush.	2 0 —
— Dutch, p. box	1 0-1 6	Tomatoes, English, per 12 lb.	1 6-2 0
Endive, per doz.	0 6-1 0	— seconds, 12 lb.	1 0-1 6
Horse-radish, foreign, p. dozen bundles ...	12 0-15 0	— Jersey, 12 lb.	1 6-2 0
Mint, per dozen ...	1 6-2 0	— French, crate	2 0-3 0
Leeks, 12 bundles	1 6-2 0	— 3 bush.	1 6-1 9
Lettuces, Cabbage, per dozen ...	0 6-1 0	— Lisbon, case	4 0-5 0
Mushrooms(house) per lb. ...	0 9-1 0	Turnips, doz. bun.	2 0-2 6
		— bags ...	3 0-3 6
		Vegetable Marrows, per tally ...	2 0-2 6
		Watercress, per doz. bunches	0 6 —

Cut Flowers, &c.: Average Wholesale Prices.		Marguerites, white, p. doz. bnchs.	
s.d.	s.d.	s.d.	s.d.
Asters, 12 bunches	1 0-4 0	— yellow, dozen bunches ...	2 0-3 0
Azalea mollis, per bunch ...	1 6 —	Mignonette, doz. bunches ...	2 0-4 0
Bouvardia, per doz. bunches	6 0-8 0	Montbretias, doz. bunches ...	3 0-6 0
Calla aethiopica, dozen blooms	2 0-3 0	Odontoglossum crispum, pr. doz. blooms ...	2 0-2 6
Carnations, per doz. blooms, best American vars. ...	1 6-3 0	Pelargoniums, doz. bunches:	
— smaller do. ...	0 8-1 0	— Show ...	4 0-6 0
— Malmaisons ...	4 0-8 0	— Zonal, double scarlet ...	3 0-6 0
Chrysanthemums, per doz. blooms	1 6-2 6	Roses, 12 blooms, — Niphetos ...	1 0-3 0
— small blooms, per doz. bnchs.	2 0-6 0	— Bridemaid ...	1 0-2 0
Coreopsis, p. doz.	1 6-2 0	— Kaiserin A. Victoria ...	1 6-2 0
Dahlias, per doz. bunches ...	2 0-3 0	— General Jacquemont ...	0 6-1 0
Eucharis grandiflora, per dozen blooms ...	1 0-2 0	— C. Mermel ...	1 0-2 0
Gaillardias, doz. bunches ...	2 6-4 0	— Caroline Testout ...	1 0-2 0
Gardenias, per doz. blooms ...	1 0-1 6	— Liberty ...	1 6-2 0
Gladiolus Colvillei, p. doz. bunches ...	0 9-1 0	— Mad. Chateau ...	1 6-2 6
— brecheyensis, p. doz. spikes	0 6-0 9	— Mrs. J. Laing ...	1 0-1 6
Gypsophila, per dozen bunches	2 0-3 0	— Sunria ...	1 0-2 0
Lilium auratum	1 6-2 6	Statice, p. dozen bunches ...	1 6-2 6
— lancifolium, rubrum and album ...	1 0-2 0	Stephanotis, per doz. trusses ...	1 0-2 0
— longiflorum ...	2 0-3 0	Sweet Peas, per doz. bunches	3 0-4 0
— tigrinum ...	1 0-1 6	Sweet Sultan, per doz. bunches	2 0-3 0
Lily of the Valley, p. doz. bnchs.	6 0-12 0	Taberosa, per dozen blooms	0 2-0 3
— extra quality	15 0-21 0	— on stems, per bunch ...	0 6-1 0
		Violets, 12 bunches	1 0-1 6

Fruit: Average Wholesale Prices.		Melons, each	
s. d.	s. d.	s. d.	s. d.
Apples cooking, per bushel ...	3 0-5 0	— French, Rock	1 9-2 0
— windfalls, per bushel ...	1 0-1 6	— Valencia, per case ...	6 0-7 0
— Dessert, per bushel ...	5 0-8 0	Melon Pears, per box ...	2 0-4 0
Bananas, bunch	7 0-14 0	Nectarinas, A., p. dozen ...	8 0-12 0
— Giants, per bunch ...	12 0-14 0	— B., per dozen	1 6-4 0
— Jamaica ...	3 0-6 0	Nuts, Cobnuts, p. lb. ...	0 4 1/2 —
— loose, per doz.	1 0-1 6	Oranges, Jamaica, per case ...	18 6-20 0
Figs, per dozen	0 9-1 6	Peaches, A., per dozen ...	6 0-8 0
Grapes, Alicante, per lb. ...	0 6-1 0	— B., per doz.	1 0-3 0
— Madresfield Court, per lb.	2 0-2 6	Pears, French Williams, crate	6 0-9 0
— Gros Maroc, lb.	0 9-1 0	— boxes (48)	3 9-4 6
— Muscats, lb.	0 9-2 6	Pineapples, each	3 0-5 0
— Sweetwater, p. case ...	6 0-8 0	Plums, English: half bushel:	
— Denia, white, per barrel ...	4 6-5 0	— Damsons ...	2 6-3 0
— Lisbon, case	5 0-8 0	— Pond's Seedlings ...	4 6-5 0
Lemons, Naples, per case ...	25 0-30 0	— Cox's Emperors	3 6-4 6
— Messina, case	16 0-20 0	— Monarchs ...	3 6-4 6
		— Victorias ...	3 0-4 0

REMARKS.—English Tomatoes are a glut on the market, owing to enormous quantities arriving daily. Bananas are plentiful, ripe and green fruits, and they are obtainable at reasonable prices. There are no claret-coloured Bananas on the market this week, but a consignment is expected shortly from the West Indies. Peaches are plentiful, and there is little demand for same. Nectarines are moderate in price. Trade is slow generally.

COVENT GARDEN FLOWER MARKET.

No improvement can be recorded in trade. There is still a good supply of flowering plants, of which Chrysanthemums now take the lead; the best of these command a ready sale, while many of the second quality are in demand for planting in gardens. Solanums are now coming from several growers, and further remind us that the winter is at hand. Asters in pots are still of good quality, but they do not sell readily. Coreopsis in dwarf, bushy, well-flowered plants are still obtainable. Verbena Miss Willmott is plentiful, but supplies will soon be over. Zonal Pelargoniums continue abundant, and of these some well-flowered plants are seen. A few good Fuchsias are noticed, but these are now almost over for the season. Good Bouvardias are seen, but are scarcely equal in quality to those grown by Messrs Beckwith & Son in years gone by. Large supplies of Ferns are arriving, and the trade in these, though somewhat improved, is not sufficient to enable growers to effect a clearance. Many of the choicer varieties are seen; these, however, can only be disposed of at the same prices as for ordinary sorts. Aralia Sieboldi, Aspidistras, Ficus elastica, and Palms in all sizes are procurable. The trade for these foliage plants seems to have improved a little. Hardy shrubs and climbers of various sorts are plentiful, Clematis in flower being specially good.

CUT FLOWERS. Chrysanthemums are now the chief feature in the market. Among white varieties "Queen of the Earlies" is one of the best. The yellow form of the

some variety is also good. Harvest Home still remains a favourite market variety. Mrs. Blake is of a pleasing bronzy-brown shade. The varieties Madame Desgranges and Mrs. Hawkins arrive in large quantities. The varieties of Madame Marie Masse are good, especially that with yellow flowers. Tea and Hybrid Tea Roses are now of better quality. Madame Chateau, Kaiserin Augusta Victoria, Catherine Mermet, Perle des Jardins, Sunset, Sunrise and Liberty are among the best varieties seen. Roses from the open are now very inferior in quality, although a few fairly good samples of Mrs. J. Laing are seen. Azalea mollis from retarded stock is very pretty. Carnations are plentiful, except extra-sized blooms, which will now be scarce until the winter stock is available. Lily of the Valley is plentiful, and some of extra fine quality makes up to 21s. per dozen bunches. Lilliums continue plentiful, but higher prices are asked for flowers of best quality. Some extra-fine *L. auratum* are seen, and *L. longiflorum* is also good. Violets of poor quality are arriving. Bouvardia Humboldtii is good. Eucharis, Gardenias, and Tuberoses are all over-plentiful. Asters are still over-abundant, and the prices in many cases have not been sufficient to pay for their culture. Dahlias are also a glut on the market. Sweet Peas are almost finished for the season. A. H., Covent Garden, September 8, 1905.

ANSWERS TO CORRESPONDENTS.

APPLE BROWN SPOT: D. C. The Apples are attacked by a disease which has recently made its appearance in the United States, and is known there as the Apple Brown Spot. The surface of the fruit is marked with somewhat orbicular brown spots, which extend inwards into the fruit, gradually enlarging, and ultimately becoming confluent. Hitherto the cause of this disease has not been discovered, and consequently no remedy can be suggested, although it is under observation at some of the experiment stations. It would be advisable to examine all Apples for storage, and carefully remove those which have any evidence of brown spot, it being very probable that it would extend to sound fruits. No fungus or bacteria have yet been discovered in connection with the spot. Occasionally the spots are seen in the flesh of the fruit, when cut, without showing any external discolouration, and this is doubtless a manifestation of the same disease. This is not by any means the first time it has been observed in Britain.

APPLE-SHOOT: H. T. The wood is affected with several varieties of scale insect. Let the trees be given a good dressing with an insecticide in winter. The time for carrying out this operation and method of doing so will be explained in the weekly Calendar published in these pages under "Hardy Fruit Garden." It is not practicable to destroy the scale whilst the trees retain their foliage.

BEAN: J. P. & Son. One of the purple-podded Beans of Continental origin.

BEGONIAS: Pink Begonia. They are seedling varieties, which we cannot undertake to name.

CARNATIONS: J. W. We cannot name the varieties of Carnations you send. A nurseryman may do so, but they should be packed more carefully than these were.

CHRYSANTHEMUM: H. W. The appearance of the leaves is probably due to a check caused by cold, dry winds, or it may be from excess of stimulating manures at the roots.

CUCUMBER DISEASE: J. G. The plant is attacked with the "spot" disease, of which much has been written in these pages. See p. 13 in our issue for January 7, 1905.

EPIDENDRUM: C. B. The fungus is certainly *Hemileia americana*. Affected leaves should be removed and burned as soon as they can be spared without injuring the plant.

FERN: F. P. There are several varieties of scale insect, also thrips and white aphids upon the fronds received. They are so dirty that you would do well to cut all the fronds away and burn them. This will cause the plants to make new growths that with care you will be able to keep in a clean condition. Respecting the Adiantums, we have known many gardeners vaporise these plants with XL-All, and without causing injury, but the applications should be very mild. Some growers have told us that the old fronds show signs of injury first, which is somewhat surprising.

GHEENT AZALEAS: A. H. B. Many cultivators arrange these plants in beds of one colour. For a combination of two colours you cannot do better than plant a yellow-flowered variety with any of the dark red or crimson sorts. At the Paris International show, held in May last, we were particularly impressed with a group of these plants, in which the variety Anthony Koster (yellow) was interspersed with Robert Croux (deep crimson). With regard to the proper distance for planting, that will depend on the size of the plants, but they should be placed somewhat closely together in order to produce the best effect. When more space is required for the future development of the plants, that can be afforded by lifting and replanting.

GRAPES: W. W. The berries are affected with Anthracnose (*Gloeosporium*), a very difficult fungus disease to eradicate. Some good may be done by dredging the leaves with flowers of sulphur occasionally, and after making several applications mix a little lime (about one-third) with the sulphur. You cannot apply anything to the ripening fruits.—T. T. The Grapes arrived in an impossible condition for satisfactory examination through extremely bad packing. They were in a condition of pulp, with which the leaves were mixed, so that the disease cannot be determined. One of the leaves was black with the mould, *Fumago vagans*; and another gave evidence of *Penicillium*. These are not ordinary diseases of the Vine.—T. H. H. Some of the berries are badly shanked, a condition usually attributed to some check, such as unsatisfactory root action. With regard to the brown appearance of the berries we find no fungus, and this condition must be due to some external influence, such as fumigating too strongly or the depositing of moisture on the berries.

INSECT: C. B. The specimen you send is the Giant Sirex. The female lays her eggs in

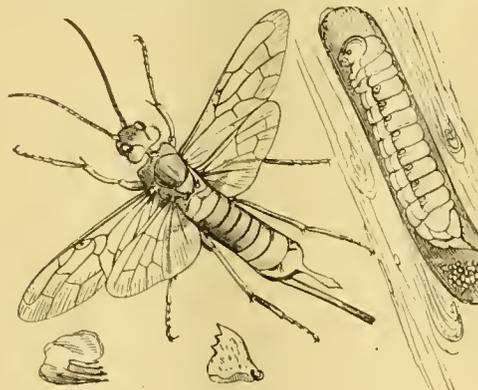


FIG. 78.—SIREX GIGAS, THE WOOD WASP.

various kinds of Conifers, usually selecting trees that are not in good health or that are past their prime. The larvæ feed on the solid timber, and are full grown in about seven weeks, when they change to chrysalids in the tree. Any trees which are found to be infested should be felled and disposed of so as to prevent the spread of the insect.

INSECTS ATTACKING COLCHICUMS: B. L. If you send us specimens of the insects, with plants that have been attacked, we may be able to help you.

LAWN: Weed. The plant is *Prunella vulgaris* (Selfheal). Encourage the growth of the grasses by applications of nitrogenous and phosphatic manures, and in time the pest will become crowded out.

NAMES OF FRUITS: J. M. Irish Peach.—J. Service. Apple Duchess Favourite. Pear Green Chisel.—D. Barnard. 1, White Westling; 2, Minchull Crab; 3, English Codlin.—J. D. Plum Pond's Seedling.—B. A. I. Apple Herefordshire Spice.—Iola. You must send better specimens. Plums should not be packed loosely with Apples and Pears. They were crushed beyond recognition. The Apples were deformed examples. The Pears were im-

mature. We can only undertake to name fruits for such of our readers as will send good specimens, carefully packed in boxes, that are not likely to be crushed in the post. It is advisable to send two fruits of each variety.—W. F. 1, Oullin's Golden; 2, Rivers' Monarch.—G. N. N. G. Prunus myrobalana.—W. T. 1 and 4, Princess of Wales; 2, Nectarine Peach; 3, Sea Eagle; 5, Grosse Mignonne.—J. Grandison. Peaches arrived as pulp.—Harrison Weir. Plum Mitchelson's.

NAMES OF PLANTS: J. M. 1, Cnicus Marianus; 2, Chrysanthemum maximum; 3, Helianthus rigidus; 4, Brassica tenuifolia.—F. F. Zanthoxylum Blackburnia syn. Blackburnia pinnata.—Wm. W., N. B. The Orchid from West Africa is Polystachya grandiflora. The Fern, which you call "Male Fern," is Onoclea [Struthiopteris] germanica, and the fronds sent, which you consider abnormal, are the fertile fronds, which in this species are always produced independently of the barren fronds, in the centre as you describe.—S. Green. 1, Salix repens argentea; 2, S. cinerea; 3, Ribes aureum; 4, Arundo Donax variegata; 5, Magnolia acuminata; 6, Abies nobilis glauca.—W. C. & Son. Pyrus eleagnifolia.—A. B. C. 4, Juniperus virginiana var. aurea variegata.—R. O. Arundinaria fastuosa.—G. M. Impatiens Roylei and Sedum telephium.—Amicus. We cannot determine your specimen, as you send leaves only.—J. M. Eranthemum strictum, Botanical Magazine, t. 3063.—J. M. C. Dendrobium moschata, and Doodia caudata.—Begonia. Begonia vivicans. Iola. Helxine Solerolii.—A. Y. L. 1, Epidendrum fragrans; 2, please state particulars as to habit, &c., of this Orchid.—T. W. R. A species of Lonicera; send again when in flower.

PEAR LEAVES: J. M. The pest attacking your Pear trees is the Pear or slug-worm (see fig. 79).

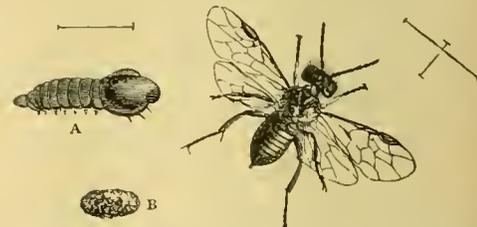


FIG. 79.—THE PEAR SLUG-WORM AND CHERRY SAWFLY (SELANDRIA ATRA).
A—Maggot. B—Chrysalis.

After feeding for a few weeks upon the leaves the slug-worms become caterpillars, and then go down into the soil around the trees, from which they emerge as saw-flies, similar to the one shown in fig. 79. The slug-worms are covered with a thick slime. If gas-lime or quick-lime be dusted over them they are able to throw it off by exuding slime. But they are not able to repeat this process many times in succession, and this allows an opportunity of their being destroyed by such means. Take away the surface soil from under the trees after the leaves have fallen, and sterilise it, then topdress with fresh soil.

PLANTS IN NURSERY: Constant Reader. We regret that we are unable to divulge the name of the writer.

TOMATO: F. P. The foliage is attacked by a fungus (Cladosporium), frequently described in these columns. Cut away the foliage and fruits that show signs of the disease. Tomato-plants, when young, should be sprayed with potassium sulphide (liver-of-sulphur). Dissolve 1 ounce in a gallon of hot water, then make up to 2½ gallons with cold water.

COMMUNICATIONS RECEIVED.—A. H. (thanks for Zionia).—G. H. H. W. (photograph under consideration).—T. M. Wells—J. W. B. (photograph)—D. R. W.—W. E. G.—H. Corveon—A. E. V. Y.—W. R.—T. W.—R. T.—H. R.—Essex—R. L. H.—W. M.—W. J. V.—R. L. H.—C. G. G. (many thanks)—J. O'B.—M. T. M.—S. W. F.—A. D. G. & S. Ltd.—R. L. C.—National Rose Society—J. Ollerhead—P. M. T.—E. J.—A. H. H.—Darlington—W. W.—J. S.—E. H. J.—W. S.—H. J. C.—J. H. D.—A. D.—J. H. L.—Constant Subscriber—W. J. B.—D. E.—A. H.—J. A. J.—J. H. T.—G. C. D. & Co.

(For Weather see p. x.)



THE
Gardeners' Chronicle

No. 977.—SATURDAY, Sept. 16, 1905.

CONTENTS.

Agricultural returns	215	Potato flowers, the	
Annals, what are?	213	colours of	214
Books, notices of—		Royal Caledonian Horticultural Society	203, 219
Carnations, Picotees, and the Wild Pinks	212	Sagittarias	214
Eckford, Mr. H., Testimonial presented to Edinburgh International Show	218, 219	Seeds, germination of	213
Fruit-growing conference on	217	Societies—	
Gloriosa Rothschildiana citrina	211	Chelmsford and District Gardeners'	218
Hops, the cultivation of	217	Royal Caledonian Horticultural (International show)	219
New Invention—		Royal Horticultural National Dahlia	218
Fruit transit, an improved box for	224	Tynninghame, East Lothian	211
Nicotiana Sandere	213	Wasps attacking fruits	214
Obituary—		Week's work, the—	
David Laird	217	Flower garden, the	215
Physalis peruviana	214	Fruits under glass	214
Plants, new or noteworthy—		Hardy fruit garden	215
Two new Senecios	212	Kitchen garden, the	214
		Orchid houses, the	215
		Plants under glass	214

ILLUSTRATIONS.

Cotton Thistle, the	219
Edinburgh Town Gardens (Supplementary Illustration)	
Flower-bed in the form of a clock	213
Gloriosa Rothschildiana citrina	211
Portraits of members of council of the Royal Caledonian Society (Supplement 4 pp)	
View in the Royal Botanic Gardens, Edinburgh	210

THE ROYAL CALEDONIAN HORTICULTURAL SOCIETY.

TO those who are not intimately acquainted with Scottish horticulture, the announcement that the Northern Kingdom can lay claim to a horticultural society which is now almost a century old—one which is, in fact, only a very few years younger than the Royal Horticultural Society itself—may cause surprise. Such however is the case, and four years hence the Royal Caledonian Horticultural Society, the premier horticultural society of Scotland, will have completed the first century of its existence.

The foundation of the Caledonian Horticultural Society took place on December 5, 1809, at a meeting held in the hall of the Royal College of Physicians, George Street, Edinburgh. The building in which this historic meeting took place has long since disappeared, and its site is now occupied by the fine building which forms the head office of the Commercial Bank of Scotland. The foundation meeting was a small one, consisting as it did of seventeen people. Perhaps the most notable of those who took part in that meeting were Dr. Andrew Duncan, senr., the "Father" of the Society, and Mr. (latterly Doctor) Patrick Neill. The objects of the Society were "to encourage and improve the cultivation of the

best fruits, of the most choice flowers, and of the most useful culinary vegetables"; and it may be said that throughout its long career the Society has never wavered in its efforts to carry out the objects aimed at by its founders.

A "Seal of Cause" was granted to the Society by the Town Council of Edinburgh in 1816, and two Royal Charters were received—the first in 1824, and the second in 1898.

The meetings and shows of the Society were held in the hall of the College of Physicians till 1827, and for this privilege the Society kept the College gardens in good order. With the object of further extending its usefulness, however, and in order that the horticultural experiments which had been conducted for the Society by the various nurserymen in Edinburgh might be undertaken under its own supervision, it was decided to acquire an experimental garden. In 1824, therefore, the Society entered into possession of 10 acres of ground on the lands of Inverleith, on the north side of the city, which it leased from the Crown for a term of seventy years, and here, from 1827 till it quitted the premises in 1865, the shows were held, and all the other business connected with the Society was transacted. This venture, however, latterly proved too heavy a burden for the Society, and almost involved it in financial disaster. Large sums of money were sunk in the erection of buildings and in other ways, and so deeply did the Society draw upon its funds that in 1865 it was compelled to give up the enterprise which it had entered into with such high hopes forty years before. The lease was assigned to the Crown, and the ground was incorporated with the Royal Botanic Garden, of which it now forms a part, though the name by which it was formerly known still clings to this section of the latter institution. Most of the structures which were erected in the experimental garden and other evidences of its work have now been swept away, but there still remain the Society's hall, now used as the herbarium and library of the Royal Botanic Garden; also the dwelling-house which formed the residence of the superintendent of the experimental gardens, and the massive cast-iron gate in Inverleith Row. A number of the trees also still remain, though their environment has been very greatly altered.

To enumerate even a fraction of the experiments which were conducted by the Society in their experimental garden would take up more space than can be afforded in such a short notice as this. It may be mentioned, however, that the raising and cultivating of fruit-trees was a matter to which the Society devoted much attention, and in order to demonstrate the effects of different kinds of walling on such plants, the wall which formed the dividing-line between the experimental garden and the botanic garden, part of which remained long after the amalgamation took place, was formed of a series of sections built, or rather faced, with various kinds of building material—freestone, whinstone, brick, &c. Against this wall fruit trees of various kinds were grown, the object being to ascertain whether any influence, and if so what, different kinds of walling had on the growth and fruit production of the trees. Since 1865 the Society has, as it did previous to its occupancy of the experimental

garden, confined itself to the holding of exhibitions.

After leaving the experimental gardens these exhibitions took place in the Music Hall in George Street, and since 1878 they have been held in the Waverley Market, which adjoins the Waverley Railway Station. For many years these shows were held annually, in spring, summer, and autumn; but some years ago the summer show was discontinued, and now two exhibitions only are held, in May and September; and this year the show is international in character, and on a more gigantic scale than anything which has yet been attempted in Edinburgh. In 1811 the Society commenced to publish its horticultural papers, and these were issued in parts, under the title *Memoirs*, till 1829; but owing to lack of sufficient support on the part of the horticultural public the publication of these papers had to be discontinued. In the present year, however, the Society has again taken up this important work, and a few months ago the first part of a new series of the *Memoirs* was issued from the press.

In its early days the shows of the Society were of course on a much more modest scale than they are at the present time. In 1810 the number of entries did not exceed fifty, now they sometimes reach to almost three thousand. In the early days, too, the prizes were in almost all cases medals, which were generally commuted, such articles as snuff-mulls, spectacles, umbrellas, dessert-spoons, &c., being taken in place of them, while now money prizes are generally given. Looking back to these times, one cannot but marvel how, with no railways, and with, in many districts, the most meagre facilities for travelling of any kind, so many exhibits were brought forward. Compared with the great facilities which competitors now enjoy in this respect, it says much for the enthusiasm which inspired these early competitors that they were able to transport their exhibits such long distances, and from such out-of-the-way parts. Prior to 1827 exhibits were brought from such far-off parts of the country as Ross and Sutherland, and many were the obstacles which exhibitors had to encounter on these long and hazardous journeys. To give one illustration of the difficulties connected with the transport of plants in those days, it may be mentioned that in 1829 a box of plants, cuttings and seeds sent to the experimental garden by the Horticultural Society of London by coach cost £1 19s. 6d. for carriage. At the shows in the early days home-made wines—Gooseberry, Elderberry, and other—seem to have formed an important feature, and judging from the quantities staged there seems to have been keen competition for the prizes. In these days of huge crops of Potatoes, it may also be interesting to note that at a meeting of the Society on December 9, 1824, a Vote of Thanks was given to Mr. John MacNaughton, gardener, Edmonston, for specimens of the Don Potato produced on ground sown with salt at the rate of 6 bushels per acre, and where the produce amounted to 174 bolls per acre, or nearly 35 tons.

Amongst the many able men who have piloted the Society through its long career, there is one whose name stands out in bold relief from all the others. It is that of

Dr. Patrick Neill, one of the most enthusiastic and most enlightened horticulturists of his day, and one whose name will go down to posterity among the greatest benefactors of Scottish horticulture. Dr. Neill was the head of one of the leading printing establishments in the city, and the garden of his private residence, Canonmills Lodge, situated close by the Water of Leith, and little more than a stone's-throw from the Society's Experimental Garden, stocked as it was with all the rare and curious plants

will be kept green in the horticultural world; and the Neill Prize, which consists of the interest on this sum, and which is awarded every second or third year to some distinguished Scottish botanist or cultivator, is a much-coveted honour.

Dr. Neill was the first Secretary of the Society, and he continued to act in that capacity till his death in 1851, when the duties of the office were taken up by Dr. John Hutton Balfour, Professor of Botany in the University of Edinburgh, who dis-

The present President of the Society] is Lord Balfour of Burleigh, K.T., ex-Secretary for Scotland, whose photograph is given on p. i. of our Supplement. During his term of office his Lordship has taken the greatest interest in the welfare of the Society, and it is in no small measure due to his influence and to his energy in furthering its objects that the Society owes its present prosperous position.

The Vice-Presidents are Sir James Miller, Bart., of Manderston; Mr. J. Martin White,



FIG. 80.—A VIEW IN THE ROYAL BOTANIC GARDEN, EDINBURGH.

(See *ante*, p. 193.)

which could then be procured, formed a veritable Mecca to the horticulturist. The ground occupied by this garden is now, curiously enough, covered by the recently-erected buildings of the printing establishment of the firm, which still trades under the name of Neill & Co. The late Mr. Patrick Neill Fraser, for long a prominent member of this Society, and for many years, prior to 1898, its Treasurer, was the principal partner. It is, however, in connection with Dr. Neill's bequest of £500 to the horticultural profession, through the medium of this Society, that his memory

charged the duties till 1865, the year in which the experimental garden was given up, and that in which the Edinburgh Horticultural Society and the Royal Caledonian Horticultural Society were amalgamated. At this time Mr. John Stewart, W.S., the Secretary of the Edinburgh Society, was appointed Secretary of the Royal Caledonian Horticultural Society, with Mr. William Young as Assistant Secretary. Mr. Stewart was succeeded by his son, Mr. Charles Stewart, W.S., and on the retirement of the latter, Mr. P. Murray Thomson, S.S.C., was appointed to the combined offices of Secretary and Treasurer.

of Balruddery; Mr. W. H. Massie, of the firm of Dicksons & Co, nurserymen, Edinburgh; and Mr. C. W. Cowan, Dalhousie Castle.

During his term of office, Mr. Martin White has done a great deal to further horticulture by the interest he has taken in stimulating a more refined taste in the use of cut flowers for decorative purposes, and it is at his instance that a book dealing with this subject is shortly to be published.

As a Councillor, and latterly as a Vice-President, Mr. Massie has spared no efforts

to strengthen the Society, and is at the present time one of its most energetic workers.

Mr. C. W. Cowan is an enthusiastic horticulturist, and his collection of Daffodils at Dalhousie Castle is noted throughout the country.

As at present constituted, the Council consists of an equal portion of nurserymen, gardeners, and of amateurs, or independent members, and the Society is singularly fortunate in this, the year of its International Show, in having a Council which conducts its work in such a whole-hearted manner.

In the selection of the present Secretary and Treasurer the Society has also been

GLORIOSA ROTHSCHILDIANA CITRINA.

The typical *Gloriosa Rothschildiana*, the showiest of the genus, was illustrated from the type specimen which flowered in the gardens of the Right Hon. Lord Rothschild at Tring Park (gr., Mr. A. Dye), (where a small number of specimens of it received from Uganda were then in great beauty) in the *Gardeners' Chronicle*, May 23, 1902, p. 323. Its flowers were bright ruby-crimson, the segments having a slight gold margin on the lower halves, which passed away when the flower matured.

The variety "citrina" (fig. 81) flowered at Tring Park out of a recent importation of *G. Rothschildiana* from Uganda, and was noted in the *Gardeners' Chronicle*, July 22, 1905, p. 67. The habit of the plant is similar to the type,

TYNINGHAME.

NONE of the many places of horticultural interest around Edinburgh will better repay a visit than Tynninghame, the East Lothian seat of the Earl of Haddington, K.T. Were it only that its history is an epitome of the progress made in Scottish horticulture, arboriculture and domestic architecture since it passed into possession of the present family in 1628, it would be full of interest to all devoted to these subjects.

The old dwelling-house of Tynninghame was, it is said, occupied in the thirteenth century by the Bishops of St. Andrews, and before passing into the hands of the Marquis of Annandale, from whom it was purchased by the first Earl of Haddington, it belonged to the famous family of the Landers of the Bass. Lady Bass either rebuilt or enlarged Tynninghame in 1617, and the sixth

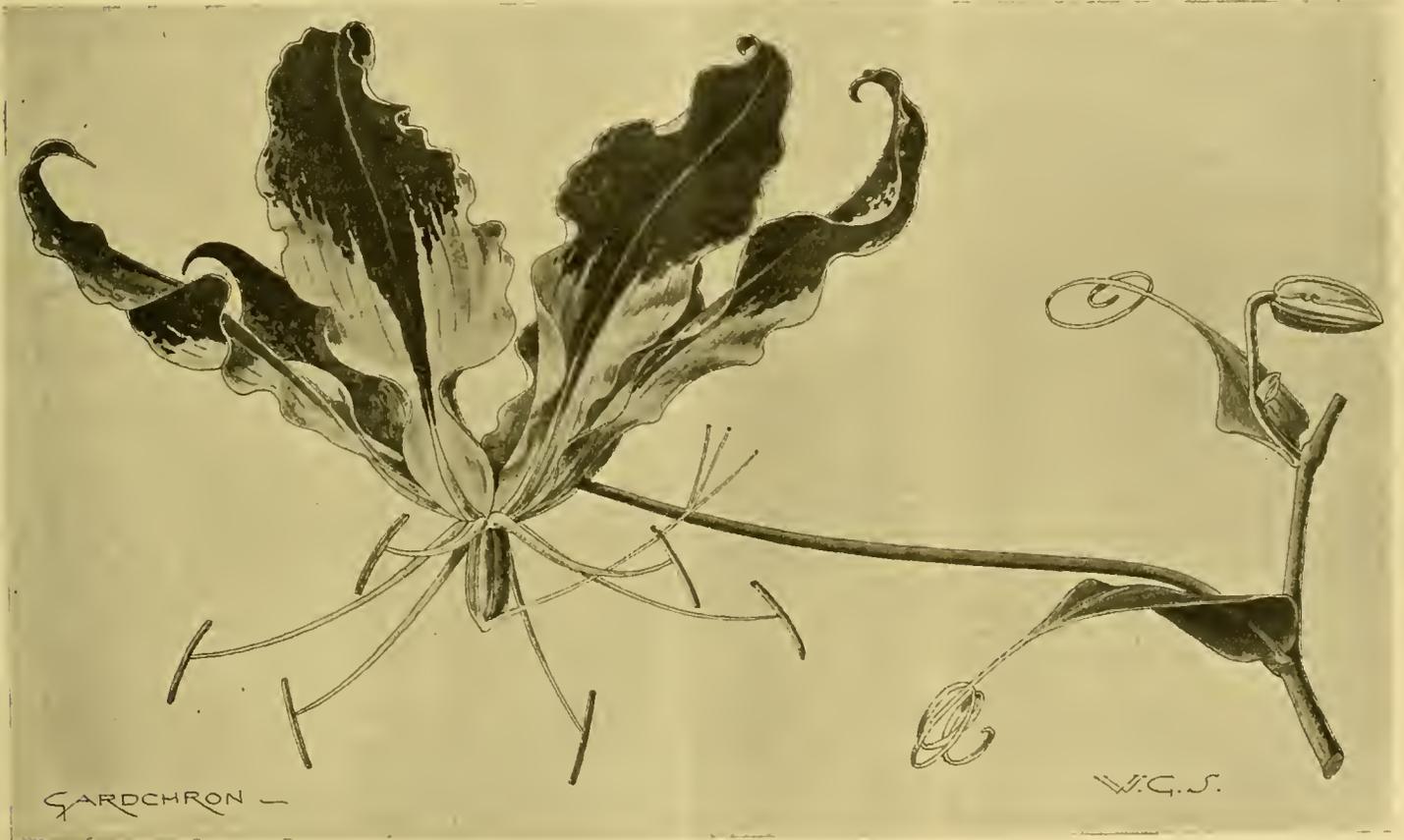


FIG. 81.—GLORIOSA ROTHSCHILDIANA CITRINA COLOUR OF FLOWER CITRON-YELLOW AND CLARET-PURPLE.

extremely fortunate. A lawyer by profession, Mr. Murray Thomson is an ardent lover of plants, and from his early boyhood has been a keen amateur gardener. His courtesy and kindness to all who come in contact with him in connection with the exhibitions of the Society and with its affairs generally, have made him one of the most popular of officials, and the energy and enthusiasm which he brings to bear on his work have in a very large measure contributed to the success of the Society in recent years. It may be mentioned that the popular competition in garden plan-drawing, which was started some years ago, was entirely due to his initiative.

In the Supplement given in the present issue will be found photographs of the President, Vice-Presidents, Secretary, and of most of the members of the Council.

though the leaves are narrower; the flowers are also similar in form, opening with slightly wavy, reflexed segments, which become broader and assume a more horizontal position as the flowers mature. The variation in colour is the most remarkable feature, and constitutes it one of the most striking of the genus. The flowers on opening are of a clear citron-yellow with a feather-like band of deep claret colour up the middle of each segment. As the flower matures the yellow assumes a more chrome tint, and the claret-coloured band widens, while later the claret colour suffuses the whole of the flower as it passes out of bloom. The colours of the flower are unique in the genus, and, like the type, the variety is a great acquisition.

Gloriosas are very easy to cultivate, as they merely require to be grown in an intermediate-house until they have passed out of bloom, and then to be kept perfectly dry until growing time comes round again.

Earl, who may be termed the great transformer of Tynninghame, modernised the house, which then presented the appearance of a typical Scottish mansion of the time, with many gables, pointed towers, and a balcony from which steps led to the flower-garden.

The ninth earl began a thorough improvement of the house on his succession in 1828, and the result was the mansion in its present form, a credit to the celebrated architect then employed—Barn, of Edinburgh—and his employer. It is a characteristic example of the Scottish baronial mansion, and is surrounded by gardens and grounds of the greatest beauty, making it seem almost incredible that this was an almost treeless waste some 200 years ago.

That this was the case there can be no doubt, as the work in the direction of improving the estate by planting trees by the fourth and fifth Earls had all been undone in the course of a nineteen years' tenancy of Tynninghame by

another family; and when the sixth Earl began his great work of planting and improvement in 1705, the place was literally, as he recorded, "in ruins." His work has become historical, and its success gave a great impetus to estate improvement in Scotland.

One can only glance briefly at what was then done. A "wilderness," as it was called, was laid out; Binning Wood, some 360 acres in extent, was formed; a noble avenue of Limes led to the wood from the house; later many acres of pure sand close to the sea were covered with trees, and magnificent hedges of Holly, extending at that time to about five miles in length, were formed. The seventh Earl, his grandson, also carried out several improvements, one of which was the formation of a new walled garden, two of the walls being heated by flues. Some old trees and a Vine called Tynninghame Muscat are supposed to date from this time—1759.

The eighth Earl, following in the path of his predecessors, planted largely, and his successor altered and extended the flower-garden, introduced trees into the parks, using large specimens for the purpose, and greatly improved the place by planting Rhododendrons by the woodland paths.

The present Earl of Haddington has not fallen behind his ancestors in beautifying the property, as countless improvements have been effected since his succession, so that the estate is now one of high perfection and the gardens are ever beautiful.

At the present time Tynninghame presents in its grounds and gardens many features which make a few hours spent in their precincts seem all too short. The Holly hedges still remain, though, unfortunately, a fungoid disease which broke out some years ago proved exceedingly destructive to these noble Hollies. They are still, however, an object of wonder and admiration to those who see them. There are many splendid trees, although the great gale of 1881, which destroyed some thousands of trees, uprooted many of the finest specimens. A Sycamore some 22 feet in girth is specially of interest. New trees have been added from time to time, and the finest varieties of Rhododendrons have been planted.

Throughout the grounds many new and fine shrubs have been introduced, and those who picture the climate of the Haddingtonshire sea-coast as bleak and unfavourable will be surprised to see the reputedly tender plants which flourish at Tynninghame. Bamboos succeed, and noble specimens of *Garrya elliptica* in the open will be an object-lesson to many. Mr. R. P. Brotherston, Lord Haddington's gardener, a valued contributor to this Journal, deserves credit for the results he is able to show.

The garden overflows into the woods, and before entering the formal garden we see what is called wild gardening of the best kind carried out on a broad and well-considered style. In the "wilderness" and elsewhere there are myriads of coloured Primroses, Snowdrops, Narcissi, wild Tulips, and other bulbs and plants covering the ground everywhere, and making a walk among them delightful.

The flower garden proper, close to the mansion, is particularly effective in autumn, when the bedding plants are at their best. Even the most devoted advocates of natural gardening will not deny that bedding as carried out at Tynninghame suits perfectly the surroundings, and is executed with consummate skill. The flower-garden is of large extent, with clipped Yews, trimmed shrubs in stone tubs, terrace walks ornamented with vases, well-heads from Venice, and two stone-beds architecturally well designed. This, though formal in its style, is excellent in effect. Long lines of zonal Pelargoniums, associated with other summer flowers, with beds of the finest bedding plants skilfully disposed and well grown, meet the eyes everywhere. It is impossible to detail the

plants employed, but many not usually employed for the purpose are aptly used.

The kitchen garden presents many surprises, and not the least of these are the herbaceous borders, which are in themselves worth a journey to Tynninghame to see. The plants are grown in generous masses, and as the best of the old and new species and varieties are used there is much to admire, besides the skill and taste with which they are planted. Mr. Brotherston strives successfully to keep these borders bright, and the regular substitution of plants in bloom for those which have passed away makes them a source of unceasing interest throughout the season of flowers.

But these great borders are not the only attractions of the gardens. Here, for instance, is a little old-fashioned garden filled with the sweet herbs of the olden time, and the other plants then cherished. There a long arched pathway, about 440 feet long, covered with Apple Keswick Codlin, grown mainly for its floral effect, is a sight of great beauty in its season. A collection of old-fashioned Roses has been gathered from many a source, and is full of interest to the lover of the Rose of olden times. Again, we look in on little orchards, whose grassy turf is spangled with Narcissi in spring, and elsewhere are modern Roses of all kinds. Grassy paths, bordered on either side with flowers both modest and stately, invite one to tread their velvet carpets, and the walls, covered with fruit trees, or archways with climbers, draw our eyes away from the statues and the fountains which are passed.

Less attractive to the many, but not less interesting to the horticulturist, are the vegetables. Like the other departments these bear the evidence of the thoroughness which characterises Mr. Brotherston's work.

The glasshouses, some of which are old and hardly of modern structural character, are, however, well suited for the requirements of the establishment. They contain the usual stove and greenhouse plants, besides others less well known. Winter-flowering plants are of great value in a place such as this, where out-door flowers are at command at other seasons, and they are well grown, while Grapes, Peaches, Nectarines, and other indoor fruits are well cultivated. No one who has the opportunity should omit to see Tynninghame, as a place where one finds the results of the work of generations of enlightened lovers of plant-life who have endeavoured to make still more beautiful a noble estate.

Tynninghame, which lies between North Berwick and Dunbar, is best reached by rail to East Linton, whence an enjoyable walk or short drive leads to the entrance gateway, near which is one of the most beautiful of Scottish villages largely owing to the flower-plots which accompany the houses, as a result of the premiums given by the Earl of Haddington for the best kept gardens. *S. Arnott.*

BOOK NOTICE.

CARNATIONS, PICOTEES, AND THE WILD GARDEN PINKS. Written by several authorities and edited by E. T. Cook. (*Country Life Office.*)

A PLEASANT little book, the contents of which are written by such experts as Professor Henslow, Messrs. E. H. Woodall, W. A. Watts, J. Douglas, K. Dean, H. Thomas and H. Correvon, the last-named contributing a paper on the "Pinks of the Alps." Most of the authorities above-named have often recorded their experiences in other ways, but it is serviceable to have their opinions concentrated within the covers of one book. The volume is well got up, with several excellent illustrations, and will be acceptable to lovers of the genus *Dianthus*. We are glad to see a protest about paper collars and the childish practice of "dressing" flowers, which cannot be called gardening, and should not have been allowed to survive the nineteenth century.

NEW OR NOTEWORTHY PLANTS.

SENECIO VEITCHIANUS AND S. WILSONIANUS,

New Species of the Section Ligularia, from China.^{*}

Senecio Ligularia (syn. *Ligularia sibirica*), as generally understood, ranges from the Pyrenees and Lapland eastward through Siberia and the mountains of Northern India to Japan and China, and it varies very much in stature, size of the flower-heads, and in other particulars.

In the early part of the last century a very showy plant was cultivated under the name of *Ligularia sibirica* var. *speciosa*. Some botanists regarded it as a distinct species, among them Lindley, who illustrated it in the *Botanical Register*, vol. x. (1824), t. 812, under the name of *Cineraria speciosa*.

In my Enumeration of the Plants of China I described (*Journal of the Linnean Society*, vol. xxiii., p. 455) what I then regarded as probably a variety of *Senecio Ligularia* under the name of *polycephalus*.

Dr. A. Henry collected the specimens of this plant, and he also collected specimens of a species similar to, but not the same, as the plant figured by Lindley; both in the province of Hupeh.

Mr. E. H. Wilson collected seeds of the two in the same province, and a short time since he brought to Kew living specimens. Comparing them in this condition, I have no hesitation in treating them as distinct species. I will not attempt to deal with all the forms or varieties usually referred to *Senecio Ligularia*, but confine myself to those from China, which, from incomplete dried specimens, I formerly referred to that species.

S. Ligularia, Hook f.—Apart from floral characters, which are not so easily seized, all the forms referred to this species now in cultivation at Kew, including the old *speciosus*, are characterised by the stalks of the lower or radical leaves being channelled on the upper side with sharp edges. The under side is angular, not evenly rounded; and the blade is circular heart-shaped at the base. The ray flowers or ligules of the variety *speciosus*, the only one I need bring into comparison here, are relatively broad and contiguous.

S. Veitchianus, Hemsl.—The solid, early glabrescent stalks of the lower leaves of this hand-

^{*} *Senecio* (§ *Ligularia*) *Veitchianus*, Hemsl., species nova, inter alios foliorum radicalium petioli solidis semiteretibus supra planis et laminis triangulari-cordatis distincta.

Herba perennis, robusta, glabrescens, caulibus florigeris 3-6 pedibus simplicibus. *Folia* radicalia ampla; petioli usque ad 18-20 poll. longi; laminae latores quam longe, usque ad 15-16 poll. late et 10-11 poll. longe, late virides, argute dentate. *Folia caulina* similia, sursum gradatim minor, petioli basi dilatatis semialexicaulibus. *Pedunculi* monocephali, conferti, primum suberecti, demum deflexi, juxta involucrium tribracteati; bractea antica foliacea, involucrium superans, ovata, grosse dentata; bractea 2 postice vel interiores lineari-filiformes. *Capitula* numerosissima glabrescentia, circiter 2½ poll. diametro. *Flores* radii circiter 10, aurei, ligulis spatulatis emarginatis pollicaribus. *Achenia* cylindrata, striata, glabra. *Pappi* setae quam corolla breviores, infra medium sordiae purpureae.

Senecio (§ *Ligularia*) *Wilsonianus*, Hemsl., species nova a *S. Veitchiano* petioli teretibus pubescentibus cavis, inflorescentia basi ramosa, pedunculorum bracteis omnibus minutis filiformibus et capitulis saltem dimidio minoribus recedit.

Herba perennis, robusta, caulibus florigeris 3-5 pedibus medio pauciramosis. *Folia* radicalia ampla; petioli usque ad 25 poll. longi; laminae reniformi-cordate, 18-20 poll. late, 9-10 poll. longe, saturate virides, argute dentate. *Caulis* pars florifera 2-2½ ped. longa, basi ramulis paucis oligocephalis (interdum 10-cephalis) instructa, ceterum pedunculis monocephalis fructiferis divaricatis vel deflexis. *Capitula* numerosissima, tarde glabrescentia, circiter 1 poll. diametro. *Flores* radii 6-8, aurei, ligulis tridentatis 4-5 longis et 2 lin. latis. *Achenia* cylindrata, sulcata. *Pappi* setae sordide, quam achenia vix longiores.

some species are half-round with a flat upper surface, and the blade is usually triangular-heart-shaped in outline, and nearly a third wider than long, but the latter character is probably inconstant. The ray flowers are relatively long and narrow, with wider spaces between them. Compared with the following species, the leaves are of a bright green, and the largest before me have stalks 18 to 20 inches long, and blades from 15 to 16 inches broad by 10 to 11 inches long. The flower-stems are stout, 3 to 6 feet high, and unbranched; the flower-heads are about 2½ inches

in *S. Veitchianus* there is an 'outer (in relation to the main axis of the inflorescence) leafy one, which covers the head before expansion, and two inner linear ones shorter than the involucre.

S. stenocephalus, Maximowicz.—This is another species of the same section now in flower at Kew, also collected by Wilson. It is an elegant and curious species, and I mention it here because I suggested in my *Enumeration of Chinese Plants* that it might be a variety of *S. Ligularia*, and the late Mr. Franchet (*Bull. Soc. Bot. France*, vol. xxxix., p. 297) actually reduced it to that species.

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his Correspondents.)

WHAT ARE ANNUALS?—This interesting point arises only at flower shows, and wherever it crops up I have invariably found that the good sense of exhibitors has kept them from being disqualified. Still it is a matter on which judges should look with lenient eyes, as so many diverse views exist as to which plants should be classed as annuals and which not. I think in all cases in which Verbenas, Petunias, or similar semi-woody plants are staged as annuals, it is wise to assume, because they are commonly raised from seed in the spring, and if planted out die in the winter, the competitor did honestly believe they were annuals. But when the revised edition of the Royal Horticultural Society's *Rules of Judging* is issued, I think it will be found that annuals are defined as plants sown, flowering and dying the same season, and which cannot be increased by means of cuttings. That definition would put Verbenas, Petunias, Lobelias and similar plants out of the field. A. D.

NICOTIANA SANDERÆ.—The decorative qualities of this plant were prominently brought to my notice in several gardens whilst on a holiday in the Isle of Wight during August. In most instances, one of which was in a cottage garden, the plants were sturdy, much branched, and very floriferous. [This was particularly so in the case of a large, well-filled bed on the lawn in the gardens of "West Hill," Shanklin. Here, at 4 o'clock in the afternoon on a hot, brilliant day, this particular bed attracted one's notice from afar by reason of its unusual tint and brilliancy of colouring. It was a surprise to me, after what I had read, that each flower of mature development was fully expanded, and not closed, as some have described as being the case when the plants are exposed to strong sunshine. Another fact that was obvious was their evident ability to withstand fierce winds without the aid of stakes or other supports. This was due in a measure to their sturdy nature and the habit of branching near the base, the branches of the various plants steadying each other as they grew up. The colour was mostly of a deep ruby-purple, only one plant in the bed being considered of inferior merit. Some plants in a border near by gave promise of even finer qualities, the few expanded blossoms being exceedingly deep in colour. In a less-exposed position on the same lawn was a large bed of *N. sylvestris*. This is an exceedingly noble-looking plant, introduced from Argentina in 1898. It grows to a height of 5 feet or more, and its basal leaves are very broad, and a foot or more in length. The flowers are white with a long corolla-tube (3 inches), but, like most members of the genus, they suffer from strong light. In the mild climate of Shanklin, Mr. C. H. Snook informed me that this species flowers profusely well into November. W. H. Young, East Sheen, S.W.]

THE GERMINATION OF SEEDS.—The wastage of seed alluded to by your correspondents was remarked upon by Darwin many years ago. Whatever may be the case in a state of nature it is not difficult in a state of cultivation to account for the failure to germinate. The ground may be baked hard by the sun; there are also the ravages of insects and domestic animals to be taken into account as well as the rapacity of birds. A strong wind may blow the seed away, or heavy rain wash it into the gutter. But this is beside the point. My original observation had nothing to do with seed buried yards underground or scattered casually on a border. I was referring entirely to control-experiments carried on indoors, and my point is that where light, air, temperature, and moisture are under control it should be possible to count upon a certain percentage of success in every case where very exceptional treatment is not required. There are three kinds of rubbish on the market to-day to be avoided: (1) dead seed; (2) dead mixed with a little live seed; (3) live seed, but of a poor strain. In contrast to some of my recent failures I sowed alongside them some *Phyllocactus* seed obtained from Messrs. Veitch, Chelsea, and every seed germinated. Can your correspondents suggest why it is that the seed

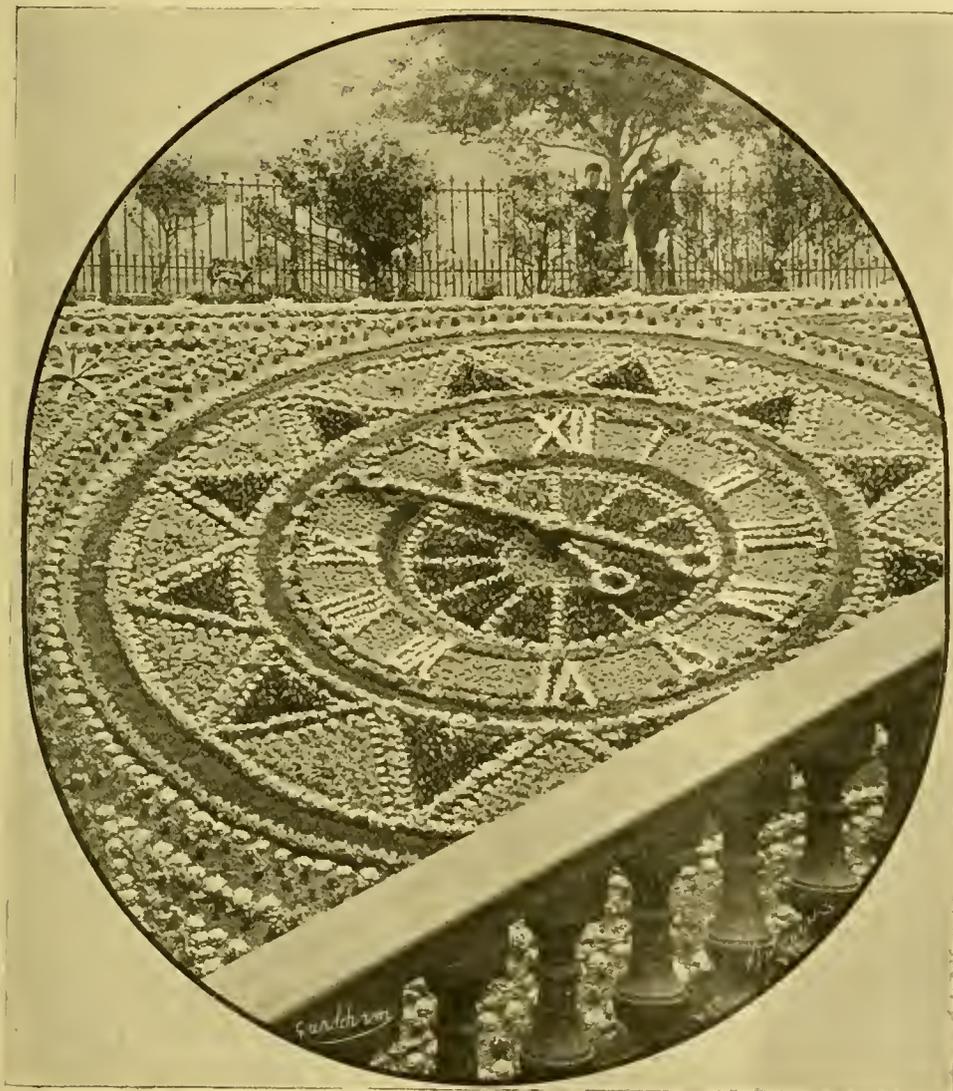


FIG. 82.—FLORAL CLOCK IN A TOWN GARDEN, EDINBURGH.

across, and borne singly on the main stem, the flower-bearing part of which is often from 2 to 2½ feet long.

S. Wilsonianus, Hemsley.—This is my *S. Ligularia* var. (?) *polyccephalus* referred to above. It differs from both of the preceding in the root-leaves having quite round or terete, hollow, pubescent stalks, 18 to 26 inches long. The deep green blade is usually between kidney and heart-shaped in outline, 18 to 20 inches broad by 9 to 10 long. The flower-stem is slenderer than that of *S. Veitchianus*, 3 to 5 feet high, branched in the middle, simple in the upper part; lowermost branches sometimes bearing as many as ten or twelve flower-heads, which are usually less than an inch in diameter. The bracts on the stalks of the flower-heads are all small and linear, whereas

As in the case of the others, the living plant reveals characters which leave no doubt of its being a distinct species. One of its peculiarities, as described by Maximowicz, is the presence of only one ray-flower in each head.

Both *S. Veitchianus* and *S. Wilsonianus* were first collected by Dr. A. Henry in the province of Hupeh, where, Mr. Wilson informs me, they are common in wet places at altitudes of 4,000 to 6,000 feet.

Senecio Veitchianus and *S. Wilsonianus* are handsome plants for the bog-garden. Messrs. James Veitch & Sons have exhibited both; the former under the name of *S. Ligularia* var. *speciosa*, and the latter as *S. polyccephalus*, Hemsley. Unfortunately this name is preoccupied. W. Eotting Hensley.

obtained from the leading houses germinates, and the other does not, unless the difference is a difference between dead and alive? I sowed some "mixed Cactus" so called a year ago. One seed germinated; it proved to be Gorse! It may not be easy to forecast the periods of germination for seed sowed in the open, although I notice a useful list in a little book by Mr. Walter P. Wright; but it should be easy for seeds sown under glass and in a moderate temperature. It would be practically useful; a saving of time and some check on the rubbish of which I am informed there is a quantity on the market. *T. R. P.* [It is certain that some seeds are, as we in our ignorance call them, capricious in their germinating powers, even under the most favourable conditions. Ed.]

WASPS ATTACKING FRUITS.—During the summer of 1903 when I was at Moor Court, North Staffordshire, the wasps caused very great damage to the fruit there, although all the nests that could be found were destroyed. At first I did not think it advisable to place beer and treacle near the fruit because of attracting the wasps to the fruit itself, but afterwards it became necessary to do something, and so bottles containing beer and treacle were suspended among the fruit, when the wasps and flies seemed to leave the fruit in favour of the bottles. A great many were caught and destroyed in this way. This year in South Hants they have also commenced to eat the fruit, inside and out-of-doors, and we have suspended bottles containing treacle and beer among the trees. I think the large "Blue-bottle" fly is as destructive as the wasp. *E. Jeffery, South Hants.*

SAGITTARIAS.—These plants, by reason of their beautiful flowers and their charming sagittate leaves, are worthy companions of the Water Lily. The foliage of *S. montevidensis*, which rises from 2 to 4 feet out of the water, is an attraction in itself; but it becomes more so when accompanied by the delicate spikes of pure white flowers, whose petals are evenly marked at the base by three maroon-coloured spots. When naturalised in the aquatic rock garden, it imparts an air of lightness and beauty to its surroundings. *S. gracilis*, and indeed all the species, have also white flowers. The common Arrowhead, *S. sagittifolia*, is one of the most beautiful of our British water-plants. The flowers possess dark-coloured anthers, which contrast well with its white petals. This species increases rapidly under very adverse circumstances, and will in a short time cover an entire stream. *S. variabilis* (syn. *japonica*), the snowy-flowered Arrowhead, is a very handsome plant, the large snowy white flowers enclosing beautiful golden-coloured anthers. This variety, if planted on the banks of a stream and in shallow water, soon spreads to deeper parts, where it increases rapidly and flowers abundantly. One of the most beautiful of all our aquatic plants, and one that bears flowers resembling enormous double white Stocks, is *S. japonica* fl.-pl. This variety is quite hardy, and in favoured spots increases with freedom. The flower-spikes rise directly out of the water to a height of from 18 inches to 2 feet, and are covered with immense double white blooms that measure individually 2 to 2½ inches in diameter. The flowers appear in succession, and the display lasts for a considerable time. It is a worthy subject for planting in ornamental water or in swampy ground. *W. H. Clarke, Aston Rowant, Oxon.*

PHYSALIS PERUVIANA.—*Physalis peruviana* is grown in these gardens for providing a few dishes of its fruit as dessert during the winter months. Cuttings rooted in January will fruit in twelve months, and after fruiting for a period of about four months should be cut down and allowed to "break" again. The shoots are tied in or nailed to the wall thinly, where they will grow strongly, and bear fruit another season. One obstacle to the successful culture of this desirable fruit is the susceptibility of the plant to attacks of red-spider. It is difficult to eradicate this pest from the leaves, and only by constant syringing and fumigating can it be kept down. This is to be regretted, because from January to the advent of Strawberries a change or an augmentation of

fruit is in many places very acceptable. I am informed that the fruit is much larger and of better taste when grown out-of-doors. For some years past it has been quite a success, both as a dessert fruit and for preserving purposes, when grown out-of-doors, in the parish of Mawnan, between the Helford river and Falmouth. I have no doubt but that in favourable seasons this plant, provided there are no late spring frosts to check it, would do well outside. It has lived through one winter here, although it died back to the soil-level, shooting again from beneath the ground. Through an accident, however, the shoots were broken off, and by the time the fruits appeared on the second growth frost and wind prevented their ripening. *H. W., Trevince.*

ORANGE-COLOURED POTATO FLOWERS.—In the report of the Scientific Committee (August 12, 1905, p. 138), it is stated that Mr. Sutton showed a Potato plant bearing yellow or orange-coloured flowers, and said that he did not think that an orange-coloured Potato flower had ever before been seen or recorded. I may say that, in the *Catalogue Méthodique et Synonymique des Principales Variétés de Pommes de Terre*, by M. Ph. L. de Vilmorin, 1902, under the name of "Hollande à fleur jaune," a variety with that special colour of flowers is mentioned. The plant is still grown at Verrieres le Buisson, where it has been since the year 1888. *A. Menissier, Verrieres le Buisson (S.O.).*

The Week's Work.

FRUITS UNDER GLASS.

By F. JORDAN, Gardener to Dr. CORNET, Impney Hall Gardens, Droitwich.

Early Peach House.—The present is a suitable time to lift or root-prune trees requiring these operations in the earliest houses, and to prepare for the removal and replacement of those not in a satisfactory condition. This work should be pushed forward while the weather is favourable, but if those trees intended for planting are growing in the open against walls, their removal must be delayed until growth is less active. The best trees for planting in early houses are those that have been grown in succession-houses, and these can be removed with safety as soon as the wood is matured and the leaves begin to fall. Their places in the succession-houses can be filled with trees from the open wall. When planting good drainage must be provided and a layer of about 2 feet of good soil. Place freshly-cut turves with their grass sides downwards over the drainage, and fill the border with good loam, adding lime rubble, wood-ashes, and a sprinkling of bone-meal, according to the texture of the loam. It is better to have the compost poor rather than too rich for young trees. The trees can afterwards be well mulched and liberally fed when the fruits are swelling. Plant carefully and not too deeply. Remove all injured roots with a sharp knife. Make each layer firm by careful treading and ramming until all is finished. Water thoroughly. Syringe the tree two or three times daily and shade if necessary. In the case of large trees which have been neglected, one side only of the tree should be root-pruned at one time, deferring severing the other roots until next season. At a distance of 3 or 4 feet from the stem according to the size of the tree, take out a trench 1 foot in width down to the drainage and bring all the roots nearer to the surface. The operator should proceed carefully, working towards the tree, using a fork for the purpose, removing the old soil if necessary, and replacing it with a suitable compost. Shorten all strong-growing roots to within 6 or 9 inches from the place of their origin. Perform the work quickly and carefully. If the roof-lights have been removed these should be replaced by the end of this month, but the fullest ventilation should still be given. Very little pruning will be necessary to trees that were attended to as advised when the fruit was cleared, the only attention necessary being the removal of any strong growths not yet matured. Six inches of space should be allowed between the shoots. Keep all trees well supplied with water, for this is the time to take precautions against bud-dropping by

keeping the border in a medium state of moisture. Less moisture will be required when the trees are at rest. The latest varieties of Peaches only will now be hanging. The trees should be given every assistance to ripen their fruits by allowing a little fire-heat at night time and by keeping up a constant circulation of cool, dry air.

THE KITCHEN GARDEN.

By W. FYFE, Gardener to Lady WANTAGE, Lockinge Park, Wantage.

Peas.—On July 10 I sowed numerous varieties of Peas upon a south border, the individual varieties ranging in height from 18 inches to 2 feet. Among these was Carter's Little Marvel, which attains a height of 18 inches; this produced rich deep-green pods that were well filled with Peas of fine appearance and quality, and these were in the best possible condition for culinary purposes on September 4. I regret not having sown a much larger quantity of this variety, for the quality is superior to either Autocrat or Gladstone, varieties from which we now gather daily, although not in such abundance as would have been the case in a season with a greater rainfall. Of the numerous second-early and mid-season varieties grown here Criterion is much the best. Provided the accommodation is at disposal, Peas such as Little Marvel, sown in 7½-inch pots, placed in frames, and later removed to shelves in warmer quarters, will produce welcome crops during the winter.

Runner Beans.—Upon newly-trenched and well-manured ground Runner Beans are giving good returns, the haulm having attained a height of from 10 to 12 feet, and produced pods abundantly from the base to the summit of the growth. By freely picking the pods before seeds are formed the plants will continue to develop fresh blooms, followed by pods, which will continue to form until the appearance of frost. The principal varieties grown here are Ne Plus Ultra, Hackwood Park and Mammoth Exhibition. The last-named is a valuable addition, being a prolific cropper, and producing long, straight, handsome, smooth pods of fine flavour, numbers of which measure 12 inches in length.

Beetroot.—In the early part of the season we experienced some difficulty in the germination of some varieties of seeds, of which Beetroot was one. This crop has since made rapid progress, and some of the larger-growing varieties, if allowed to remain, will attain proportions too large and coarse for table use. These will now be carefully lifted and stored in some cool position.

Carrots.—Stump-rooted varieties of vigorous and rapid growth, such as Scarlet Model, will now have attained maturity. If these are allowed to remain in the ground, the advent of rain will cause numbers of the roots to split, rendering them useless; consequently they must be lifted and stored as advised for Beetroot, taking care not to include damaged and deformed roots.

PLANTS UNDER GLASS.

By A. BULLOCK, Gardener to E. J. WYTHES, Esq., Copped Hall, Epping, Essex.

Plants to Flower in Winter.—In order that winter-flowering plants may bloom well it is as necessary that the growths of soft-wooded subjects should become well ripened, as in the case of the hard-wooded species. At no time should plants be allowed to become drawn or weakly through dense shading and over-crowding, but light and air must be judiciously allowed them. Only on very bright days will it now be necessary to shade plants from the sun's rays.

Begonias Gloire de Lorraine and Turnford Hall.—Plants that were rooted early in the spring have grown to a useful size and are fast developing their flower-buds. Less ventilation and a temperature by night of 60° with artificial heat must be afforded them. Let the plants be watered carefully at the roots with diluted liquid-mauve obtained from the soaking of sheep droppings, and continue with this liquid until the flowers are nearly developed. The use of the syringe overhead must be dispensed with, but the stages containing the plants should always be kept in a moist condition by syringing between the pots.

Begonias Winter Cheer, Ensign, Mrs. John Heal and others of this type must be afforded the very best conditions of light obtainable. Avoid an excess of moisture about the foliage, but continue to immerse in "Quassia Extract," and fumigate not less than once a week with XL-All Compound. A temperature of 65° by night will suit them.

Colcathyrsoides.—To prevent the foliage turning yellow and unhealthy, it will be necessary to remove the plants to warmer quarters as the nights becomes colder. This should be done gradually, or otherwise, if placed in a very warm house, the plants would soon attain a drawn appearance, and, becoming less dwarf, they would not be so useful for general purposes.

Gesnera exoniensis.—Let the pots be well filled with roots before commencing to feed the plants, keeping them as near to the light as possible in a considerable degree of heat.

Vallota purpurea.—This is one of the most useful bulbous flowering plants for the greenhouse, and during the month of August can always be relied upon to furnish a bright display of flowers. At no time should water be withheld entirely from the roots, but after the flowering period a less quantity will suffice. The plants are seen to the best advantage when the bulbs are crowded together in an 8-inch pot, and in this condition they will remain robust for a long time if liberally fed with diluted sheep manure or artificial manure. A cool greenhouse temperature suits them at all times. The bulbs are not likely to flower freely until the pots have become well filled with roots, and frequent potting is unnecessary. If it is desirable to increase the stock by division, let this work be done without delay.

THE FLOWER GARDEN.

By W. A. MILLER, Gardener to Lord HENRY C. BENTINCK, M.P., Underley Hall, Westmorland.

The Rock Garden.—*Oxalis corniculata rubra* is a dwarf plant suitable for growing in rough, rocky places. Seeds of this plant should be collected as soon as opportunity occurs. *Silene Schafta* is a hardy rock plant that flowers at the present season. It is adaptable for any position in the rock-garden, where its purplish-rose-coloured flowers furnish bright patches of colour.

Cuttings of Bedding Calceolarias should be secured for propagating purposes before the advent of frost. Choose growths of medium strength, about 2 or 3 inches in length, and insert them in 6 inches of soil in a cold frame and at about 2½ inches apart. The frame should possess a well-drained bottom, and on this should be placed a compost composed of two parts leaf-mould, two parts sand, and one part loam, the whole being surfaced with a layer of pure sand. Press the soil firmly before inserting the cuttings. Do not allow them to flag, and shade them from bright sunshine till they are rooted, when they can be more freely exposed to light and air, until eventually on mild days the sashes can be entirely removed. See that no "damping" occurs, and do not allow the temperature to fall below freezing-point. Some varieties of *Calceolarias* produce flowers so freely that it is difficult to procure suitable cuttings, but this difficulty can be surmounted by growing surplus plants in a reserve garden and by not allowing these plants to flower, by which means suitable growths will be obtained.

Violas.—Towards the end of the present month preparations should be made for the propagation of these useful bedding plants. The cuttings should be inserted in frames facing south. Some sand mixed with ordinary light garden soil, with a surfacing of river sand, will be found a suitable propagating medium. At this late season healthy "stocky" growths are produced in the centres of the plants. These root freely, and give the best results in every respect. Prepare the cuttings about four nodes in length, and insert them two together at about 2 inches apart. Give sufficient water to settle the soil. Keep a close atmosphere in the frame, and afford shade on sunny days to prevent the cuttings from drooping. When rooted, give abundance of air on all favourable days.

Hedges.—The trimming of Yew, Box, and other hedges should be finished forthwith. Broad-leaved shrubs, such as Bay, Laurels, Hollies, &c., should be pruned with a knife. Keep the soil round about the roots clear of weeds to promote healthy growth. The planting of Holly hedges may be commenced.

Border Carnations should be planted in their quarters as soon as the layers are sufficiently rooted. Make the border firm by treading when the soil is in good order. They should be planted firmly in beds 4 feet across at a distance of 12 inches from plant to plant, allowing a suitable alley between each bed. Sever the layers from the old plants carefully, and preserve as much soil as possible about the roots.

Daffodils should now be planted in beds of any ordinary garden-soil that has been well stirred by deep digging. Do not place rank manure about the bulbs. Daffodils do admirably on grass where the soil is of a loamy nature, and will thrive in partial shade as well as in the open. Scatter the bulbs broadcast, and cover them where they fall, thus preventing their growth in formal lines. The bulbs should be planted at an average depth of 2 to 3 inches.

THE ORCHID HOUSES.

By W. H. YOUNG, Orchid Grower to Sir FREDERICK WIGAN, Bart., Clare Lawn, East Sheen, S.W.

Watering and Shading.—The amount of light and natural heat being now much lessened, damping should be less frequent, and when resorted to should be performed carefully; while in houses that are naturally damp there will be whole days on which no damping will be necessary; especially is this so in the case of cooler compartments. Spraying overhead should be limited to plants that are not injured by water lodging in their growths, and even then it must only be permitted on the most favourable occasions. The matter of watering will also need careful consideration, for should mild damp weather prevail growing plants will not suffer nearly so much from moderate dryness as from a saturated condition at the roots. Sunlight should be made the most of, and as the late season has been a moderately sunny one, the plants will by now be well fitted to withstand a moderately strong light without injury. Shading of a semi-permanent nature that has been used in conjunction with other shading should be removed entirely, as the lath or other blinds will now afford sufficient protection. Shading should not be given for a minute longer than strong sunshine prevails. During fitful weather, and when only broken spells of sunshine occur, only those houses containing the more delicate-leaved subjects need be shaded.

Fire-heat will be necessary for the maintenance of the day temperatures in the warm houses, but its use should be limited to the least amount necessary. In the cool-houses the employment of fire-heat should be postponed until climatic conditions render it imperative. Its use in these houses should at all times be limited in quantity, allowing only sufficient to promote and maintain the requisite temperatures, and it must never be employed to induce rapid or premature growth in the plants. Abundance of fresh air at this season is doubly needful for the perfecting of growth and the prevention of disease. Fresh air does not necessarily mean draught ventilation, which must be avoided as much as the opposite extreme.

Moss used in the culture of such Orchids as *Vandas*, which are watered freely during the summer months, may by now have become rather long. To prevent mistakes in watering, this should be trimmed down to its original level. In many instances, when the moss is carefully pulled off, a green living surface will again be produced before prolonged dryness is essential.

Cypripedium Faircanum.—Most Orchid-growers will be eager to acquire a plant of this celebrated species, which, after being for many years so rare in cultivation, has again been re-discovered and introduced to commerce (see *ante*, p. 168, fig. 57). It is a matter of surprise to the present generation of Orchid-growers how, from being at one time so plentiful, it had almost become extinct in our gardens. I have had

no experience with it as a living-plant, but from a careful inspection of the one now flowering at Kew and from other plants I have seen there appears to be nothing more suggestive of difficulty in its culture than is to be found in a newly-imported plant of *C. insigne*. I would therefore suggest that plants of this species be placed in an intermediate-house, along with the latter species, or with such hybrids as *C. Arthurianum* and *C. Niobe*, and receive similar treatment to these.

THE HARDY FRUIT GARDEN.

By W. H. CLARKE, Gardener to Sir WILLIAM PLOWDEN, Aston Rowant House, Oxon.

Cordon Gooseberries trained on north and east walls should by now have had their fruit gathered. It is good practice severely to prune a number of the new growths from these trained bushes, and where a number of shoots have formed close together in consequence of close-pruning and stopping, many of these should be entirely removed to allow the light and air to reach those shoots that remain. Fruit on cordon-trained Currant trees will still hang for some time, but immediately a tree is cleared of its fruit it should be pruned as advised for cordon Gooseberries. Do not leave the prunings lying about the ground, as they will form a lurking-place for many noxious insects.

Raspberries.—Manurial waterings and top-dressings of farmyard manure should be given to Raspberry canes now that the young growths are still active. The roots will revel in it, and it will strengthen and build up the canes for next year's crop. Late-fruiting varieties will need their fruit protected from birds, and their canes, where laden with fruit, to be supported to the wires. The Mahdi, whose parents are Belle de Fontenay Raspberry and the common Blackberry, will also need to have its fruit protected from birds. The colour of this fruit may be likened to that of a well-ripened Mulberry, and they will be found valuable at the present season.

Rubus laciniatus is a decided acquisition to our autumn fruits, and where growing strongly is bearing freely. It is of much superior quality to the common Blackberry. None but the strongest-growth should be allowed to remain, while a system of regulating the branches should be resorted to, otherwise a tangled growth will result. To propagate the *Loganberry* it should be rooted from cuttings, the present being a suitable time to prepare them. The cuttings should be treated similarly to those of Gooseberries. They root readily and grow rapidly during the first season. Shorten unsightly spurs. This may be done at once on trees from which the fruit has been gathered, as the cut heals much more quickly at this season of the year than later. On neglected trees, where the spurs throughout are of considerable length, only a portion on each branch should be operated upon, leaving the remainder for treatment another season. Old, dead snags, which offer refuge to insects during the winter, should be removed with the hand-saw.

General Work.—The fruit-grower will have much to attend to at the present season, chief amongst his duties being that of fruit-picking, which should receive daily attention. Many Apples and Pears are attaining considerable size, and will require supporting with small pieces of fish-netting. One thickness of netting will be sufficient, otherwise the sun's rays will be interrupted and the fruit will not colour beneath the meshes, thus causing a pattern of the netting on the fruits, and producing an unsightly appearance. Extra large varieties of Apples and Pears should not be grown as standard-trained trees, especially in districts where they are exposed to strong west and south-westerly gales. Some varieties of Apples and Pears make very bad and ugly trees when trained as bushes and pyramids. Young shoots in an unsuitable position can be regulated and drawn into place by attachment to a stake driven into the ground; the branch so tied will retain that position naturally after a period of a few months. The showery weather we are now experiencing has caused weeds to grow fast. Every opportunity should therefore be taken on fine days to ply the Dutch-hoe beneath the trees.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Letters for Publication, as well as specimens and plants for naming, should be addressed to the EDITOR, 41, Wellington Street, Covent Garden, London. Communications should be written on ONE SIDE ONLY OF THE PAPER, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

APPOINTMENTS FOR THE ENSUING WEEK.

SATURDAY, SEPT. 16 { Kidderminster and District Flower Show.
TUESDAY, SEPT. 19 { London Dahlia Union's Exhibition at Earl's Court (2 days).

SALES FOR THE WEEK.

MONDAY TO FRIDAY NEXT—
Dutch Bulbs, at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 10.30.
MONDAY and WEDNESDAY NEXT—
Sale of Spring-flowering Bulbs, at Stevens's Rooms, King Street, Covent Garden.
THURSDAY NEXT—
Clearance Sale of Greenhouse Plants, at Anglesea House, Anglesea Road, Surbiton, by Protheroe & Morris, at 12.30 o'clock.
FRIDAY NEXT—
Imported and Established Orchids, by order of Messrs. Sander & Sons: Bulbs from S. Africa, and a choice collection of Established Orchids, at 67 and 68, Cheapside, E.C., by Protheroe & Morris, at 12.30 o'clock.

(For further particulars see our Advertisement columns.)

AVERAGE TEMPERATURE for the ensuing week, deduced from observations of Forty-three Years at Chiswick—56.9.

ACTUAL TEMPERATURES:—

LONDON.—Wednesday, Sept. 13 (6 P.M.): Max. 67°; Min. 51°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—Thursday, Sept. 14 (10 A.M.): Bar., 30.3; Temp., 61°. Weather—Bright with fresh breezes.

PROVINCES.—Wednesday, Sept. 13 (6 P.M.): Max. 63°, East Coast of England; Min. 52°, West Coast of Scotland.

The Show at Edinburgh.

THE International Show that closed at Edinburgh last night has fulfilled most of the expectations that were entertained in regard to it, being very full and good, and the attendance satisfactory. On another page will be found a short sketch of the Royal Caledonian Horticultural Society, and in a supplement to the present issue portraits of Lord BALFOUR OF BURLEIGH and most of the members of Council and its officers are given.

It is not necessary for us to dwell further upon the excellent work the Society is doing in the northern part of this Island for the promotion of horticulture, nor to contrast the International Exhibition of 1905 with that held in Edinburgh in 1891. The reasons for again holding such a show were set forth in an article which was published in these pages in 1903, and the statements that were then made in respect to the advance and development that have taken place in most of the branches of horticulture during the fourteen years that have intervened, have their justification in the amount of popular esteem the pursuit of gardening now enjoys. Had there been little or no development in that time, such as has actually been obtained from the practice of cross-breeding, selection, and skilful and careful cultivation, the love of gardening in this country would not have become so general as it is.

It is a question whether the Exhibition in the Waverley Market really afforded an illustration of all this, or, indeed, whether any single exhibition could possibly do so. Certainly, much of the development there has been is exemplified in Orchids, florists' flowers, and particularly in such plants as

tuberous-rooted Begonias, Streptocarpus, Cannas, Dahlias, Chrysanthemums, Sweet Peas, Roses, &c. At no single show can all these be exhibited at their best, and some of them, as Orchids and newly-introduced species of plants, were poorly represented at Edinburgh. But hardy flowers were exceedingly well represented. Dahlias were shown well, and Roses as well as they could be expected to be in September. Honorary exhibits from members of the trade, and one from the Corporation of Glasgow, contained most of what was interesting in the way of plants in pots. For some reason or another plant cultivation in Scotland, if judged by the exhibitions, is not equal to that common in the South, and again, the classes in this section were weakest. We have spoken of some of the less striking features of the show first.

Turning to the magnificent exhibits of GRAPES and other choice tender and hardy fruits, there is nothing to be said but that they were excellent in every respect. Mr. BEISANT is to be congratulated on having won the Scottish Challenge Trophy for Grapes, and with it the HOGG Medal, and the Cup presented by His MAJESTY THE KING for the best exhibit in the competitive fruit classes. Whilst the first prize exhibits were of the highest excellence, those which followed were in most cases very little inferior to them. Generally speaking there were no poor exhibits.

The VEGETABLES also were of the very best quality, and formed a feature that could hardly fail to have a good influence upon cultivators. It may be said that many of the best exhibits came from districts south of the Tweed; but in many instances, and particularly in the case of hardy fruits, the increased quality is the direct result of a more genial climate. Also in other instances, where the exhibits were brought from the South, they were cultivated by Scotsmen. The details of the successes and failures of exhibitors will be found on another page, but a word may here be said in regard to the general arrangement and effect of the show.

We heard some criticism from this point of view, and bearing in mind the way in which similar exhibitions are managed on the Continent, it is disappointing to find that our own shows cannot be made more attractive. But in the case of Edinburgh the Royal Caledonian Horticultural Society had many difficulties to contend with. In the first place, no more suitable building could be got for the show than the Waverley Market, and this building was used for the purposes of a market up to 10 A.M. on the morning previous to holding the show. After that time the building had to be cleared, the positions for every exhibit marked out, and the whole arranged. Mr. MURRAY THOMSON and the members of the Council worked like Trojans all day and most of the night, whilst many of the exhibitors were hard at work until five o'clock on Wednesday morning.

The judges commenced their work at 6 A.M., and there was consequently very little time indeed for artistic arrangement.

We are not surprised, though we regret, to find that the section for exhibits of a scientific nature failed to excite much interest. It is always a difficult matter at such exhibitions to obtain exhibits of

scientific interest, but Dr. WILSON, of St. Andrews University, showed interesting hybrids, and gave information of their origin that was useful to visitors who inspected the collection.

A deputation from the Royal Horticultural Society of England visited the show and made a number of awards, as shown on another page. The deputation consisted of Sir TREVOR LAWRENCE, Bart., and Messrs. H. J. VEITCH, J. HUDSON, H. B. MAY, GEO. BUNYARD, A. H. PEARSON, and the Rev. W. WILKS. A very large number of other faces that are familiar at meetings in Vincent Square were also to be seen at Edinburgh.

The Show was formally opened at noon by Lord BALFOUR OF BURLEIGH, who was supported by the Council and officers of the Royal Caledonian Horticultural Society and by the deputation from the Royal Horticultural Society, with the band of the 2nd Highland Light Infantry at their back.

In the evening a dinner took place at the North British Station Hotel, at which Lord BALFOUR presided. Speeches were made by the Lord Provost, Sir TREVOR LAWRENCE, Mr. HARRY VEITCH, Rev. W. WILKS, M. PHILIPPE DE VILMORIN, and others.

We cannot close these remarks without reference to the sad death of Mr. DAVID LAIRD, as related on another page. He had been enthusiastic on behalf of the exhibition, and his demise was the subject of general conversation in Edinburgh.

Lastly, we cannot conclude our remarks without gratefully acknowledging the help we have received from Mr. MURRAY THOMSON, Mr. McHATTIE, and Prof. BALFOUR.

NEW MARKET AT KEW BRIDGE.—Mr. LEOPOLD DE ROTHSCHILD will lay a memorial stone at the extension of the new wholesale markets on Monday next, the 18th inst., at 5 P.M.

AGRICULTURAL RETURNS.—The Board of Agriculture and Fisheries has issued a preliminary statement of the areas of crops and numbers of live stock in Great Britain in 1905, compiled from returns collected on June 5, and showing comparisons with 1904. Amongst the crops which have increased are Wheat, 30.7 per cent.; Rye, 11.6; Beans, 0.8; Potatoes, 6.7; Mangolds, 1.31; Cabbage, 4.9; Kohl Rabi, 12.7; Vetches or Tares, 6.4; small fruits, 1.1; Orchards, 0.5; Hops, 2.4. The following crops have decreased: Barley, 6.9 per cent.; Oats, 6.2; Peas, 0.2; Turnips and Swedes, 0.9; Rape, 4.0; Lucerne, 4.2, and Flax, 21.7.

HENRY ECKFORD TESTIMONIAL.—The serious illness of Mr. HENRY ECKFORD made it imperative that the presentation arrangements should be altered. It was decided that the illuminated address and the gift of a handsome tea and coffee service on a salver should be taken to Wem. This was done, and the presentation made quietly on Saturday morning, the recipient being in bed and exceedingly weak. Mr. ECKFORD was most deeply affected, and could scarcely thank the friends who had subscribed to the gift. He made his gratitude clear, and also his sorrow that he could not meet his friends in Edinburgh according to arrangement. Everyone will desire to sympathise with the family of Mr. ECKFORD in these circumstances. It is satisfactory to know that he suffers no pain, except during periods of coughing, and that he knows the members of the family who tend him at his bedside. The total sum of the contributions was £58 17s. 9d.

SOCIETIES.

THE ROYAL HORTICULTURAL.

SEPTEMBER 12.—The usual fortnightly meeting of the Royal Horticultural Society was held on this date, and although the Hall was not filled with exhibits there was a good general display of flowers, fruits, and vegetables. The various Committees, in spite of the impending show at Edinburgh, found plenty to occupy them in adjudicating upon novelties, and each recommended Awards, the FLORAL COMMITTEE granting no fewer than seventeen Awards of Merit, of which eleven were given to seedling Dahlias. Several excellent collections of these flowers were seen in the Hall. Messrs. CANNELL staged a remarkable collection of Onions, which evoked much admiration.

A lecture was given in the afternoon by the Rev. Professor GEO. HENSLOW on "The Meaning of Natural Selection."

Floral Committee.

Present: W. Marshall, Esq. (Chairman); and Messrs. Chas. T. Duery, John Green, Wm. Howe, C. R. Fielder, Chas. Jeffries, Chas. E. Pearson, W. P. Thomson, E. H. Jenkins, and Chas. Dixon.

Mr. A. LL. GWILLIM, Cambria Nursery, New Eltham, Kent, entirely filled one of the side tables with flowers of single and double varieties of tuberous-rooting Begonias. They were arranged in bands of separate colours, and were relieved with common Blackberry foliage. The selection of colours was excellent (Silver Banksian Medal).

Mr. L. R. RUSSELL, Richmond, Surrey, displayed some nicely-grown plants of hardy Clematis in small pots. They were all showy-flowered varieties, and made a bright group (Silver Banksian Medal).

Messrs. WM. BULL & SONS, King's Road, Chelsea, set up a collection of ornamental stove and greenhouse foliage plants.

A good exhibit of herbaceous Phloxes was arranged by Messrs. GUNN & SONS, Olton, Birmingham. The collection embraced most of the finer varieties. Mention may be made of Iris, Sheriff Ivory, Josephine Gerbaud, and Tapis Blanc, the last-named being a new dwarf-growing variety with large flowers of purest white colour (Silver Flora Medal).

Messrs. JAMES VEITCH & SONS, Ltd., King's Road, Chelsea, showed a number of seedling Streptocarpus nicely flowering, although only eight months from the time of sowing. They were of the Achimenes-flowered type. The variety *S. giganteus* has flowers of good lavender or greyish-blue colour. Messrs. Veitch also showed a batch of hardy plants, among which was the new *Artemisia lactiflora* with *Spiraea* like and very fragrant inflorescences; *Aconitum Wilsoni*, growing 7 feet high; *Lilium leucanthum*, several forms of *Hibiscus*, *Ceanothus "Phare,"* and *Aristolelia Macquariegata*, an ornamental-foliaged plant (Silver Banksian Medal).

Five large plants of *Asparagus Sprengeri* were shown by J. WESTMACOTT, Esq., Widbury, Ware (gr., Mr. Geo. Gumbrell) (Silver Banksian Medal).

Mr. M. PRICHARD, Christchurch, Hants, put up a collection of herbaceous flowers; the display included most of the best things now in season. We noticed *Coriaria terminalis* with its spikes of yellow fruits; *Gaillardias* were a feature in the collection (Silver Flora Medal).

Mr. AMOS PERRY, Winchmore Hill, London, N., also displayed herbaceous flowers. The whole collection formed a remarkably fine lot. The Thistle-like *Stoebea purpurea* was shown in good form; also *Liatris pycnostachya* and *Asclepias tuberosa* (Silver Banksian Medal).

Messrs. J. PEED & SON staged an extensive collection of herbaceous plants and flowers, interspersed among which were numerous vases containing Pompon Dahlias. As stated above, several good exhibits of Dahlias were shown.

Messrs. CARTER, PAGE & Co., 52 and 53, London Wall, E.C., staged the best display of these flowers, having examples of the Cactus, Pompon, and single types nicely put up, and in most of the choicer varieties. The Cactus Dahlias were especially meritorious (Silver-gilt Banksian Medal).

Messrs. CHEAL & SON, Crawley, showed Cactus and single Dahlias. The flowers were arranged in bunches in exhibition style, the singles occupying the centre of

the display. These latter were especially meritorious (Silver Banksian Medal).

Mr. J. T. WEST, Tower Hill, Brentwood, also staged good examples of these flowers. The display was extensive, and comprised many of the best varieties of the Cactus and Pompon types (Silver Flora Medal).

Messrs. CANNELL & SONS, Swanley, Kent, had, in addition to a display of Cactus Dahlias, some improved varieties of garden Pentstemons.

Messrs. JAS. STREIBWICK & SON, St. Leonards, presented several new varieties of Cactus Dahlias, some of which will be found described under 'Awards.'

From the gardens of Sir TREVOR LAWRENCE, Bart., Burford, Dorset, came a plant of *Clematis heracleifolia*.

A dark-foliaged *Begonia* of the *semperflorens* type, named *Bronze Beauty*, was shown by Mr. G. H. TOWNBROW, nurseryman, Malvern.

AWARDS OF MERIT.

Cactus Dahlia Mrs. F. H. Cook.—Colour orange-scarlet. A large flower of good substance, with somewhat heavy petals. Shown by Messrs. J. CHEAL & SONS.

C. D. Starlight.—Medium-sized flower of bright scarlet colour, and of pleasing form.

C. D. Mrs. H. Shoemith.—A white variety with rather stiff petals, but a bold, well-shaped flower with plenty of substance.

C. D. H. Shoemith. See Awards of National Dahlia Society, p. 220. The above three from Mr. H. SHOESMITH.

C. D. Primrose.—A pleasing sulphur-yellow coloured variety of good form.

C. D. Daisy.—A curious and pleasing combination of colours: the ground is yellow but the florets are rose-pink for about a third of their distance from their apices.

C. D. Peach. The petals are well incurved, and form a pleasingly-shaped flower. The colour is orange-scarlet.

C. D. Mrs. Macmillan. A large flower of pink colour; the bases of the petals and the younger florets are white, forming a distinct and pleasing centre.

C. D. Tom-Tit.—A miniature form of Cactus Dahlia, very bright pink in colour. It received the appellation of Pompon-Cactus from the grower, a name which well describes the flower.

C. D. The Pilot.—See Awards of National Dahlia Society, p. 220. The above-named six varieties were shown by HOBBIES, Ltd.

Pompon Dahlia Thora.—See Awards on p. 220. Shown by Mr. C. TURNER.

Chrysanthemum Geo. Bowness.—A sport or form of *Madame Marie Masee*. The habit is dwarf, sturdy, and very floriferous. The colour is dull, being a poor shade of bronze merging to a dull lake.

C. Wells Masee.—Also a form of *Madame Marie Masee*, and similar in every respect to the preceding except in the colour of the flower, which is white.

C. Harri.—A very free-flowering and bright-coloured variety, the flowers being orange-yellow with a slight suffusion of purple. Valuable for furnishing cut flowers, and likely to prove useful for market purposes. The three last-named were shown by Mr. W. WELLS.

Scdum spectabile atropurpureum.—A form of *S. spectabile* with flowers of richer colouring than the type. The habit is vigorous and erect, with more substance in the foliage and stems than has the older form.

Diervilla (Weigela) rosea var. Saturne.—A dull red or reddish-erimson form of this well-known shrub.

Sagittaria narrophylla.—A variety with large foliage and tall lax spikes of white flowers. The foliage develops showy autumnal tints at this season. (See p. 200 in our issue for last week.)

The three last-named from Mr. AMOS PERRY.

Orchid Committee.

Present.—J. Gurney Fowler, Esq. (in the Chair); and Messrs. Jas. O'Eric (hon. sec.), De B. Crawshay, J. Douglas, W. H. Young, W. Cobb, G. F. Moore, W. H. White, H. Ballantine, J. W. Odell, T. W. Bond, A. Hislop, F. W. Ashton, A. A. McBean, W. Boxall, H. A. Tracy, H. Little, N. C. Cookson, and F. Wellesley.

There was a very interesting show of Orchids, the President of the Society, Sir TREVOR LAWRENCE, Bart.,

CONFERENCE OF FRUIT GROWERS.—In connection with the Royal Horticultural Society's great show of British-grown fruit on October 10, 11 and 12, 1905, a Conference on fruit-growing will be held under the united auspices of the National Fruit Growers' Federation and the Royal Horticultural Society in the Hall, Vincent Square, Westminster. The following preliminary programme has been issued:—

Tuesday, October 10, 2.30 P.M. to 5 P.M.—Chairman, Sir Trevor Lawrence, Bart., K.C.V.O., V.M.H. (President of the Royal Horticultural Society).—Subject, "Foreign Competition and how to meet it."

(A) *Best Varieties to Grow*, Mr. Geo. Bunyard, V.M.H.; Mr. Jos. Cheal, F.R.H.S.

(B) *Grading, Packing, &c.*, Mr. James Itarper, (Dublin), Mr. Herbert Pantin, Dr. Goethe (Darmstadt).

Wednesday, October 11, 11 A.M. to 1.30 P.M.—Chairman, E. S. W. Cornwallis, Esq. (President of the Royal Agricultural Society of England)—Subject, "Fungoid and Insect Pests and How to Meet them." Professor F. V. Theobald, M.A. (S.E. Agricultural College, Wye), Mr. F. Smith (Loddington, Maidstone), Mr. Geo. Masee, F.L.S., V.M.H. (Kew), Mr. Cecil Warburton, M.A. (Zoologist to the Royal Agricultural Society).

2.30 P.M. to 5 P.M.—Chairman, Arthur S. T. Griffith-Boscawen, Esq., M.P.—Subject, "Land Tenure and Rating Difficulties." Mr. Cecil Hooper, Nominee of the Wisbech Fruit-Growers' Association, Nominee of the Market-Growers' Federation, Nominee of the Surveyors' Institution.

Thursday, October 12, 11 A.M. to 1.30 P.M.—Chairman, Sir Albert Rolitt, M.P.—Subject, "Railway Grievances." Mr. W. W. Berry (Faversham), Mr. John Ideus (Worcester), Mr. Geo. Mouro (President of the National Federation of Fruits Trades' Association), Mr. T. F. Godard.

2.30 P.M. to 5 P.M.—Chairman, Colonel Long, M.P. (President of the National Fruit Growers' Federation).—Subject, "Distribution of Information in connection with the proposed establishment of an experimental Fruit Farm by the Board of Agriculture, and its possible extension for demonstration of Commercial Fruit-Growing." Mr. Spencer Pickering, F.R.S. (Director of the Woburn Experimental Fruit Farm), Mr. W. A. Mackinnon (late of the Canadian Government Fruit Farms), Mr. H. F. Gettling. W. WILKS, Secretary.

THE CULTIVATION OF HOPS.—The Board of Agriculture and Fisheries has issued a preliminary statement compiled from the returns collected on June 5, 1905, showing the acreage under Hops in each county of England in which Hops were grown, with a comparative statement for the years 1904 and 1903. It appears that whilst in 1904 there was less land under Hops by 139 acres than in 1903, this year the area is considerably greater. In 1903 there were 47,938, in 1904 47,799, and in 1905 48,968 acres. All the counties in which Hops are grown have a greater acreage under this crop than last year, excepting those of Salop and Surrey, the former having 135 acres against 140 last year, and the latter 343 acres against 377 last year.

SOUTH-EASTERN AGRICULTURAL COLLEGE.

—The next session at the South-Eastern Agricultural College, Wye, will commence on Monday, October 2, when there will be ninety-four students in residence. The inaugural address of the session will be given by Professor MARSHALL WAED, F.R.S., Professor of Botany, Cambridge University.

Obituary.

DAVID LAIRD.—As these pages were passing through the press we received the distressing intelligence of the death by drowning in Loch Awe of Mr. David Laird. He was a member of the council of the Royal Caledonian Society, and a prominent personage in all horticultural matters, as well as in arboriculture. His portrait is given on the last page of the Supplement. Mr. Laird was deservedly very popular with all who knew him, and was present in London at the dinner of the Gardeners' Orphan Fund in the spring. His loss indeed threw a gloom over the proceedings in Edinburgh. Mr. Laird was in his fifty-third year, and the cause of the accident is not known. His funeral, on the 13th inst. was attended by over 1,500 persons, including many prominent horticulturalists.

(gr., Mr. W. H. White), staging a small group of rare species, including a fine specimen of *Miltonia vexillaria* Leopoldi, *Catasetum pileatum* Bungeoethi, *Cypripedium* × *Youngianum* superbum, and others, which will be found in the list of Awards.

Major G. L. HOLFORD, C.I.E., C.V.O., Westonbirt, Tetbury (gr., Mr. Alexander), showed *Cattleya* × *Lord Rothschild* Westonbirt variety (*Gaskelliana* × *Dowiana aurea*), a very handsome and fragrant form; the fine *Cattleya* × *Iris magnifica*, which secured an Award of Merit; a plant with one flower of *Cypripedium Fairieanum*, and cut examples of *Laelio-Cattleya* × *Tunis* (L.C. × *cinnabrosa* × *C. Warscewiczii*), an attractive flower with whitish sepals and petals delicately veined with pale lilac, and tinged with yellow, and an intensely dark ruby-crimson lip; L.C. × *Baroness Schröder* (L. Jongheana × *C. Trianae*), with a prettily frilled lip, and colouring of *C. Percivaliana*; *Epi-Cattleya* × *Lilianæ* (*C. Gaskelliana* × *E. costaricensis*), and the now rare *Oncidium Jonesianum*.

FRANCIS WELLESLEY, Esq., Westfield, Woking (gr., Mr. Hopkins), sent *Cattleya* × *Patrocini* Westfield variety, a fine form with bright rose sepals and petals spotted with reddish-purple; *C. × vernalis magnifica* (*Dowiana aurea* × *maxima*) with sepals and petals cream-white delicately veined with lilac, and purple lip having golden lines from the base; *Laelio-Cattleya* × *Herman Holmes superba*, and *Cypripedium* × *Baron Schröder* var. *punctata* with dark claret-purple dotted lines in the upper sepal, and fine markings on the petals.

G. L. PALMER, Esq., Lackham, Lacock, Wilts (gr., Mr. Bannerman), staged a small group of hybrid *Cypripediums*, including *C. × Shilliamum* superbum, *C. × villosa-Rothschildianum*, *C. × Bryan*, *C. × Ashburtonia expansum*, and several unnamed seedlings.

NORMAN C. COOKSON, Esq., Oakwood, Wylam (gr., Mr. Chapman), showed *Cypripedium Fairieanum* of the recent importation; *C. × Drurio-Rothschildianum*, a singular hybrid with the united lower sepals rather exceeding in size the dorsal sepal, which is usually the most important feature (the flowers were yellowish marked with red-brown); and two others (see Awards).

C. J. LUCAS, Esq., Warnham Court, Horsham (gr., Mr. Duncan), sent *Cypripedium* × *Edith Lucas* (*Clinkaberryanum warnhamense* × *insigne punctatum* violaceum).

C. L. N. INGRAM, Esq., Elstead House, Godalming (gr., Mr. T. W. Bond), showed *Laelio-Cattleya* × *callistoglossa* var. *fulgens*, a large flower with rosy-lilac sepals and petals and fine glowing claret-purple lip.

H. T. PITT, Esq., Rosslyn, Stamford Hill, sent *Cypripedium* × *Grace Pitt* (*Lecanum virginale* × *niveum*), a pretty hybrid with white flower with a rose tint on the lower half of the dorsal sepal and the upper parts of the petals and lip.

H. S. GOODSON, Esq., Fairlawn, West Hill, Putney (gr., Mr. G. E. Day), showed *Cattleya Harrisoniana* "H. S. Goodson," a fine form with rose-coloured sepals and petals spotted with purple; *Cattleya* × *Warnero-Bowringiana*, and *C. × Minerva*.

Messrs. SANDER & SONS, St. Albans, were awarded a Silver Banksian Medal for a select group, in which were *Laelio-Cattleya* × *hetchleyensis magnifica*, very fine in colour; L.C. × *Purple Emperor* (*callistoglossa* × *Warscewiczii*), with large lilac sepals and petals, and broad purple lip; *Cattleya* × *Hardyana*, part of the original plant certificated in 1885, and still one of the best; *Cattleya* × *Pittiana*, *Cattleya* × *Lord Rothschild*, and two fine *Cattleya* × *Iris*, for one of which see Awards.

Messrs. HUGH LOW & Co., Enfield, were awarded a Silver Banksian Medal for a neat group, which included two fine *Miltonia spectabilis* Moreliana, M. Regnelli, and the variety *citrina*; *Phalenopsis violacea*, and the much finer *P. v. Low's* variety; a good specimen of *Cattleya* × *mollis*, *Lycaste leucantha*, *Cattleya aurea*, *Cypripedium* × *Massaianum*, and *Angraecum articulationum*.

Messrs. STANLEY & Co., Southgate, staged an effective group, at the back of which were a selection of fine yellow *Oncidium varicosum*, and interspersed were various forms of *Cattleya bicolor*, *C. Gaskelliana*, *C. aurea*, *C. Harrisoniana*, and *Laelio-Cattleya* × *elegans*. In front were several *Zygopetalum crinitum*, and others noted were *Z. intermedium*, *Miltonia candida*, *Odontoglossum crispum*, *O. × Adriane* and *Cattleya* × *Tankervillei* (*bicolor* × *Rex*), an attractive hybrid with pale yellowish sepals and petals and purple lip.

Awards.

FIRST-CLASS CERTIFICATE.

Cattleya × *Kienastiana Oakwood* variety (*Dowiana aurea* × *Luddemanniana*), from NORMAN C. COOKSON, Esq., Oakwood, Wylam, Northumberland (gr., Mr. H. J. Chapman).—A very fine hybrid bearing a general resemblance to *C. × Hardyana* and *C. × Lord Rothschild*, but with the rounded, elongate, erect-leaved pseudo-bulbs of *C. Luddemanniana* (more commonly known in gardens as *C. speciosissima*). The flowers, which are large and finely formed, had dark rose-coloured sepals and petals, and rich crimson lip with gold lines radiating from the base to the centre.

AWARDS OF MERIT.

Cypripedium × *villosa-Rothschildianum* (*villosum* × *Rothschildianum*), from NORMAN C. COOKSON, Esq.—A strong grower with spikes of flowers produced like those of *C. Rothschildianum*. Flowers yellow with reddish-brown lines on the upper sepals and petals, and a reddish tinge on the lip. The plant bore five fine flowers on two spikes.

Cattleya × *Iris magnifica* (*bicolor* × *Dowiana aurea*), from Major G. L. HOLFORD (gr., Mr. Alexander).—The plant, which was finely grown and well flowered, had blooms of good substance. Sepals and petals honey-yellow-coloured, with a bronze tint; lip crimson-purple with rose lines between the small side lobes.

Cattleya × *Iris inversa* (*aurea* × *bicolor*), from Messrs. SANDER & SONS, St. Albans.—In this fine form *C. aurea* was the seed-parent, and resulted in a dwarfier plant and large flowers with broad segments. Sepals and petals of a bronze tint with the golden ground colour showing through at the margins. Front of lip glowing purplish-crimson, base striped with rose on bluish-white ground.

Stanhopea connata, from Sir TREVOR LAWRENCE, Bart., Burford (gr., Mr. W. H. White).—A remarkably showy and rare species, a marked feature in which is the fleshy, globose hypochil of the lip. Flowers light orange-coloured, with a deep claret blotch on the inside of the base of the lip, the outside and the lower halves of the petals being blotched with the same colour.

Cycnoches peruvianum, from Sir TREVOR LAWRENCE, Bart.—The singular plant bore a pendulous raceme of male flowers with the sepals and petals greenish spotted with red-brown, the much divided white labellum being above the slender curved column.

BOTANICAL CERTIFICATES.

Calanthe japonica, from Sir TREVOR LAWRENCE, Bart.—Resembling a small *C. veratrifolia*. Flowers white. Two varieties were shown, the one with a red spot on the lip resembling *C. Textori*, and the other with a yellow crest.

Brassarola cucullata, from Sir TREVOR LAWRENCE, Bart.—A singular terete-leaved species with white flowers, the labellum being singularly elongated. The ovary is 6 inches in length, and the beaked character peculiar to *Brassarola* is highly developed. It was the original species of the genus (1813) syn. *B. cuspidata*.

Oncidium Harrisonianum, from Sir TREVOR LAWRENCE, Bart.—A small Brazilian species resembling a dwarf *O. pulvinatum*, to which section it belongs. A profuse bloomer. Flowers pale yellow, marked with chestnut-brown.

CULTURAL COMMENDATION

To Mr. W. H. White, Orchid-grower to Sir TREVOR LAWRENCE, Bart., for *Epidendrum Laucheanum*, with a pendulous raceme of over one hundred flowers. Sepals and petals copper colour; lip yellow.

Fruit and Vegetable Committee.

Present: Owen Thomas, Esq. (Chairman); and Messrs. J. Arnold, J. Basham, W. Bates, J. Jaques, Geo. Kelf, J. Lyne, H. Markham, H. Parr, W. Pope, W. Poupart, G. Reynolds, H. Somers Rivers, Jesse Willard, G. Woodward, and H. J. Wright.

H. F. WALKER, Esq., Highley Manor, Balcombe, Sussex, exhibited a dozen dishes of fruits, embracing Apples, Pears, Plums, Peaches, and Morello Cherries. Some well-finished, Exquisite Peaches were noticed. Magnum Bonum Plums and Cherries were also of meritorious quality. Lord Suffield Apples seemed out of place in a collection of dessert fruit (Silver Banksian Medal).

Miss ADAMSON, South Villa, Regent's Park (gr., Mr. G. Kelf), showed a couple of dozen Melons. The fruits were not large but were well finished. The varieties included Regent's Park, Earl's Favourite, Hero of Locking, British Queen, and Ringleader. A box of Coe's Golden Drop Plums looked very tempting (Silver Banksian Medal).

Messrs. J. PEED & SON, West Norwood, staged a small collection of Apples, Pears, and Tomatos.

Mr. Geo. Gumbrell, gr. to J. WESTMACOTT, Esq., Widdbury, Ware, exhibited Pears, Tomatos, and Potatos. The Pears were of splendid quality, Durandeau, Louise Bonne of Jersey, and Souvenir du Congrès especially so. The Potatos were a clean, well-grown lot of tubers (Bronze Banksian Medal).

Messrs. JAS. VEITCH & SONS, Ltd., Chelsea, exhibited a number of varieties of Tomatos grown in the open. The display was intended to demonstrate the cropping qualities of the various kinds, the entire plants being shown with the clusters of fruits. The best results were seen in the varieties Winter Beauty, Frogmore-Selected, The Hastings, Comet, Dunn's Superlative and Chemin. Messrs. VEITCH also exhibited a representative collection of pot-herbs (Cultural Commendation).

Messrs. H. CANNELL & SONS, Swanley, showed some remarkable Onions. The size of the bulbs was much commented upon, and they received the high award of a Silver-gilt Knightian Medal. The varieties were Ailsa Craig, Cranston's Excelsior, The Giant and Cocoonut. A row of Cannell's Defiance Cabbage was placed at the back of the Onions.

Messrs. HARRISON & SONS, Market Place, Leicester, staged well-grown Carrots, Tomatos, Turnips, Potatos, and Beans (Cultural Commendation).

Captain A. E. SPEER, Sandown Lodge, Esher, Surrey (gr., Mr. R. H. Perry), showed a collection of Gourds (Silver Banksian Medal).

A box of Belle de Fontenay Raspberries was exhibited by Mr. W. A. COOK, Leonardslee, Horsham.

Several Melons and Apples were shown for award, but none was recognised as worthy this distinction.

Award.

Plum September Prolific.—A medium-sized yellow-coloured fruit, much resembling the variety Gishborne. The fruit was exhibited on the branch, which was literally covered with Plums. A cooking variety, and said to be a most prolific cropper. Shown by Mr. W. L'OPPART, Twickenham.

CHELMSFORD AND DISTRICT GARDENERS'.

AUGUST 30. The members made an excursion to Halstead on the above date. By kind invitation of Geo. Courtauld, Esq., the magnificent grounds of his residence, "Cut Hedge," were inspected under the guidance of the head gardener, Mr. Tullet. From thence the party proceeded to the Halstead Temperance Hotel, where they were received and entertained by Miss Philbrick, to whose gardens, "The Cedars," they afterwards adjourned for the rest of the day. S. M. C.

NATIONAL DAHLIA.

SEPTEMBER 7, 8.—As announced in our last issue by the aid of the telephone (the first occasion, we believe, on which a report of a flower show has been given by this means), the annual exhibition of this Society, held at the Crystal Palace on these dates, was a success, the number of entries being very large, the quality of the flowers good, and the attendance of the public more numerous than usual. Happily the weather proved favourable, for although rain and thunder accompanied the opening of the show on the 7th, the unfavourable conditions soon passed off, and by the afternoon of that date and during the succeeding day the weather was bright and enjoyable. Much interest was centred in the nurserymen's class for eighteen varieties of Cactus Dahlias in bunches of six flowers, the judges awarding the 1st place to Messrs. STREDWICK & SON'S exhibit. As this firm has now won the 1st place in this class for three years in succession the Silver Challenge Cup becomes their absolute property. No fewer than fifteen new varieties were awarded the Society's Certificate of Merit.

NURSERYMEN'S CLASSES.

Show Dahlias.—As stated in our last issue, Mr. J. WALKER, Thame, Oxon, won in the class for forty-eight show varieties, his opponents being Mr. S. MORTIMER.

Farnham, and Mr. CHAS. TURNER, Slough, who followed in the order named. The premier collection contained some excellent flowers, among which may be mentioned Mrs. Morgan, T. W. Girdleston, John Hickling, Purple Prince, John Standish (excellent specimen), John Rawlings, E. T. Rawlings (splendid in colour), Mr. Glascock, and David Johnson. Mr. MORTIMER was a good 2nd, one or two of his specimens lacking size. He showed Imperial, Wm. Rawlings, Pleasaunce, John Standish, Mabel Stanton, and David Johnson in first-class style.

The class for twenty-four blooms of show Dahlias was contested by two growers only, Mr. C. HUMPHREYS,

Albany, Emin Pasha, Frank Pearce, Buffalo Bill, Peacock, John Cooper, Comedian, Comte de la Saux, Edmond Boston, and Nansen. Messrs. J. CRAY & SON, nurserymen, Frome, were 2nd; with Mr. HUMPHREYS, Kington Langley, Chippenham, 3rd.

Show and Fancy Dahlias Intermixed.—Mr. J. R. TRANTER, Hart Street, Henley-on-Thames, staged the best dozen show and fancy Dahlias intermixed. Exhibitors in the preceding classes were precluded from entering in this. Messrs. J. CHEAL & SON, Crawley, Sussex, were 2nd, followed by Messrs. F. TAYLOR & SONS, Chipping Norton, 3rd.

premier display, but lacked the refinement seen in that exhibit. Columbia, Rainbow, Pearl, Mrs. J. J. Crowe, and H. W. Sillem were the pick of the varieties. Messrs. BURRELL & Co., Cambridge, were 3rd. Four growers competed in the above class.

The similar class for twelve varieties only brought five entries, but some good competition was seen. Mr. H. SHOESMITH, Westfield, Woking, was awarded the 1st prize for a good lot of flowers that possessed meritorious substance and colouring, the variety Mrs. F. C. Stoop being especially good. Mrs. H. Shoesmith and Florence Boorman also deserve mention. Mr. G. HUMPHREYS was 2nd with a display noticeable on account of being staged against a background composed of dark velvet, and not in accord with the other exhibits around. Dainty and Ianthé were shown well. Mr. J. WALKER was 3rd.

Forty-eight Cactus Dahlias in Distinct Varieties.—Four competed in this class, the whole taken collectively being a very even lot. Messrs. BURRELL & Co., Cambridge, secured the 1st prize, some of their more notable varieties being Winitred, Pleasaunce, Epopee, Mrs. Ed. Mawley, Ronald, Mr. D. B. Crane, and Mrs. L. H. Brousson. Messrs. KEYNES, WILLIAMS & Co., Salisbury, came 2nd with somewhat smaller flowers, and Mr. G. HUMPHREYS, 3rd.

Twenty-four Cactus Dahlias in Distinct Varieties.—This class, similar to but smaller than the last-named, brought more than double as many exhibits, as no fewer than nine growers competed. Size and colour again told, and were factors in securing the 1st prize for Mr. WALKER, Thame. His best flowers were Mrs. E. Mawley, Mont Blanc, Phineas, J. H. Jackson, and Mrs. L. H. Brousson; 2nd, Mr. SEALE, Nurseryman, Sevenoaks; 3rd, Mr. S. MORTIMER.

Cactus Dahlias in Vases.—The inclusion of berries, grasses, and ornamental foliage was permitted for sake of effect, but the quality of the flowers was to be the first consideration. Twelve varieties, six blooms of each variety, were called for, and each exhibit of a dozen vases made a pleasing feature; there being four entries. Messrs. BURRELL & Co., Cambridge, were awarded the 1st prize, their flowers being of high quality and the arrangement good. Sprays of berries, Asparagus, Prunus Pissardi, Rhus Cotinus, &c., set off to advantage such varieties as Olivette, H. F. Robertson, Mrs. J. W. Wilkinson, Rubens, &c. Mr. SEALE came 2nd with a good display, in which berries were freely used. 3rd, Messrs. J. CHEAL & SONS.

Pompon Dahlias.—Mr. CHAS. TURNER staged the best twenty-four varieties of this type; followed by Messrs. CHEAL, 2nd; and by Mr. SEALE, 3rd. In the class for twelve varieties of these flowers, Mr. JOHN WALKER secured premier place among five exhibitors. Messrs. J. CRAY & SON being 2nd.

Single Dahlias.—Messrs. CHEAL and SEALE were the only exhibitors in the class for twenty-four varieties, in bunches of ten blooms each, and they were placed in the order named. The best flowers in the premier exhibit were Vesuvius, Columbine (grand specimens), Miss Roberts, Snowdrop, and Serita.

Messrs. J. CRAY & SON were 1st in the class for twelve varieties in similar bunches to the above; Mr. J. WALKER being 2nd. These were the only exhibitors in this class.

AMATEUR CLASSES.

The amateur classes were more strongly contested throughout than in the preceding classes, and the quality of the flowers was little if at all inferior to that in the blooms shown by the professionals. As will be seen from our note last week, the increased number of entries was remarkable. Limited space prevents us from giving as full a report of the various entries as we could wish.

Show or Fancy Dahlias.—For twenty-four varieties of show or fancy Dahlias, or the two intermixed, the Society offered a Challenge Cup with a monetary prize of three guineas, with substantial prizes for 2nd and 3rd places. Mr. T. HOBBS, The Cedars, Townend, Bristol, carried off the trophy with a splendid lot of flowers; his best examples were Mrs. Hobbs, Mrs. Foreman, Geo. Rawlings, Imperial, Rev. J. B. Camm, and Maud Fellowes. Mr. S. COOPER, Hamlet, Chippenham, Wilts, was 2nd; and Mr. T. JONES, Brynper-y-lan, Ruabon, N. Wales, 3rd.

Show Dahlias.—For the prize for twelve varieties seven growers competed, Mr. E. T. MATTHEWS, 42, Almond Street, Derby, taking the 1st prize; followed by Mr. T. JONES, 2nd. Mr. G. HOOD, Langley, Langley Burrell, Chippenham, was 1st in the class for six varieties.

Cactus Dahlias.—Two good exhibits among five were seen in the class for six vases, each containing six flowers of the Cactus type, and relieved with suitable foliage, berries, &c., those of Mr. J. Bryant, 5, St. Martin's Terrace, Salisbury, being adjudged the best.

The ten-guinea Challenge Cup for nine varieties in bunches of three blooms each, the Cup to be held for one year, unless won three times in succession, when it becomes the permanent possession of the exhibitor,



FIG. 83.—THE COTTON THISTLE, SOMETIMES CONSIDERED TO BE THE SCOTCH THISTLE.

(From a photograph kindly supplied by Mr. R. Draper, Seaham Hall Gardens, Seaham Harbour.)

Kington Langley, Chippenham, and Messrs. J. CRAY & SON, The Nurseries, Frome. The former was an easy winner. Prominent flowers in the 1st prize group were Florence Tranter, Daniel Cornish, Mrs. Gladstone, Duchess of York, and Ethel Britton.

Fancy Dahlias.—Competition in the class for eighteen fancy Dahlias was also limited to two growers, Mr. J. WALKER and Mr. S. MORTIMER. The former, as announced last week, led, his most noteworthy flowers being Rebecca, Mrs. Mortimer (especially good), Rev. J. B. M. Camm, T. W. Girdleston, John Forbes, Matthew Campbell, and Dorothy.

Greater competition was seen in the class for twelve fancy Dahlias. Six growers competed, which resulted in a good display. Mr. WM. TRESEDER, The Nurseries, Cardiff, won the 1st prize for a dozen blooms of splendid quality, having Mrs. Saunders, Gaiety, Duchess of

CACTUS DAHLIAS.

Champion Class.—As stated above, the most valuable and keenly-contested prize is the ten-guinea Challenge Cup, which carries with it a monetary prize of £2 10s., for eighteen varieties of Cactus Dahlias, in bunches of six flowers. This was again won by Messrs. JAMES STREDWICK & SON, who now become absolute possessors of it, according to the stipulations which require three successive wins. The display was marked by the refinement of the colours, which were all of the lighter shades. The varieties were Victorian, Primrose, Mrs. Gaskell, Ibis, J. B. Riding, Mrs. Macmillan, Butterfly, Twilight, Ella Kremer, William Marshall (new), Diavola, Geo. Gordon, Lady Colin Campbell, Star, Edward Drury, Pearl, Florence M. Stredwick, Dr. G. G. Gray; Messrs. CHEAL & SONS were 2nd with an admirable collection, that had more brilliant colours than the

was awarded to Mr. H. BROWN, 174, North Street, Luton, Beds; and the Gold Badge, presented by Messrs. Dobbie & Co. for twenty-four varieties of this type, was taken by Mr. J. BRYANT, 5, St. Martin's Terrace, Salisbury.

Pompons and Singles.—Mr. H. BROWN, Luton, had the best dozen bunches of Pompon Dahlias, and Mr. J. NEWMAN, Bell Inn, New Cheltenham, the best twelve "singles."

Decorative Classes.—These were well contested, the tastefully arranged baskets, vases, bouquets, &c., demonstrating the great suitability of the Dahlia, when interspersed with suitable greenery, for this class of work.

Medal Flowers.—Nurserymen: Best bunch of Cactus Dahlias, J. B. RIDING, shown by Messrs. STREDWICK. Amateurs: F. M. STREDWICK (Cactus), shown by Mr. F. H. McGRATH, Lindley, Huddersfield. The bronze medal for the best seedling Show or Fancy Dahlia was awarded to Mariner (Show), exhibited by Mr. S. MORTIMER.

NON-COMPETITIVE GROUPS.

Messrs. HOBBIES, Ltd., Dereham, Norfolk, put up a splendid display of Cactus Dahlias, staged in Bamboo tripods, &c. (Silver-gilt Medal). Messrs. WARE, Ltd., Feltham, staged a somewhat similar collection (Silver-gilt Medal). Silver Medals were awarded to Messrs. CANNELL & SONS, Swanley; Mr. J. T. WEST, Tower Hill, Brentwood; and Mr. J. E. KNIGHT, Tottenhall Nurseries, Wolverhampton, for exhibits of cut Dahlias. Mr. A. L. GWILLIM, Cambria Nurseries, New Eltham, Kent, staged tuberous Begonias. Messrs. PEED & SON, Upper Norwood, exhibited hardy and alpine plants interspersed with vases containing Pompon Dahlias.

Certificated Plants.

CACTUS DAHLIAS.

The Pilot.—A commendable flower of bright terracotta colour, with pleasingly incurved petals. The bases of the petals are yellow, forming a pleasing contrast. Shown by HOBBIES, LTD., Dereham, Norfolk.

Nelson.—A large flower with refined petals of a dark purple colour shading to deep magenta in the older florets. Shown by Mr. J. T. WEST.

Fris.—Also a refined flower of light mauve-pink colour, with long well-shaped petals. The form is commendable.

Wm. Marshall.—One of the best among this year's seedling Cactus Dahlias. The flower is of a light yellow-bronze colour. Form and substance are both good.

Edward Drury.—A pleasing flower of dark primrose-yellow colour. The petals are much incurved. These three from Messrs. STREDWICK & SON.

Mrs. F. Grinstead.—A very large flower with a good base. The colour is crimson with a magenta reverse. Shown by Mr. F. GRINSTED.

Pink Perfection.—Valuable by reason of its bright colour, which approximates somewhat to that of its name. A refined flower. Shown by Mr. S. MORTIMER.

Lady Fair.—A new type of Cactus Dahlia with fimbriated petals, giving the flower a somewhat straggling appearance. The colour is poor yellow with a suspicion of rose. Shown by Messrs. KEYNES, WILLIAMS & CO.

White Lady.—A white flower with rather stiff petals, but having a well-balanced form.

H. Shoesmith.—A good crimson-coloured flower, with very convolute petals.—The above were shown by Mr. H. SHOESMITH.

POMPONS.

Mutator.—A well-formed flower of dark crimson colour, and of medium size.

Thora.—A charming flower of small size. Colour cream shading to soft rose. The above two were shown by Mr. C. TURNER.

Kitty Barrett.—A new break in this class of flower. The petals are of a lovely yellow, and are tipped lightly with claret colour. Of charming form, a variety much admired.

Midjet.—A refined flower of pale rose suffused with a light orange bloom, a difficult colour to describe, but resembling that seen in the "single" Columbine. The above two from Mr. J. T. WEST.

SHOW.

Mariner.—A well-shaped flower of deep yellow or orange colour, having the tips of the floret tinged with claret colour. Shown by S. MORTIMER.

RUTHIN FLOWER SHOW.

SEPTEMBER 8.—The second annual exhibition was held in the beautiful and picturesque grounds of Ruthin Castle on the above date, by kind permission of Colonel Cornwallis West. The entries in the horticultural section numbered over 400 in excess of the previous show—a total of 787.

ROYAL CALEDONIAN HORTICULTURAL INTERNATIONAL SHOW AT EDINBURGH,

September 13, 14, 15.

AN International Show was opened in the Waverley Market, Edinburgh, on Wednesday, 13th inst., and remained open for the two following days. There were 254 classes, and the exhibits numbered 1860. There were 344 competitive and 62 non-competitive exhibitors. The extent of the show may be imagined when it is stated that there were fifty-one judges employed to adjudicate upon the exhibits. The event was generally admitted to be a great success.

TABLE AS ARRANGED FOR DESSERT:

This class is similar to the one at the recent show at Shrewsbury; but as the "pointing" is a little different we reproduce the conditions as stated in the schedule, particularly as the number of points obtainable for varieties of Grapes in this class are the same in most of the other classes:—

Table of Dessert Fruit, 10 feet by 4 feet 6 inches.—To be decorated with plants, in pots not exceeding 5 inches (and) or cut flowers (and) (or) foliage. Not more than sixteen "dishes" of fruit selected from the following list:—

		Maximum Number of Points for each Dish.
Two varieties Apples ...	6 on each Dish	7
Do. Apricots ...	9 do. ...	6
Do. Cherries ...	40 do. ...	5
Do. Figs ...	9 do. ...	7
Four varieties Grapes ...	2 Black and 2 White (1 bunch to a dish)	
Maximum points for each dish of		
Muscats of Alexandria ...		10
All other Muscats and Black Hamburg		9
Any other Grapes ...		8
Two varieties Melons, single fruit (not to be cut) ...		8
Do. Nectarines ...	6 on each Dish	8
Do. Peaches ...	6 do. ...	8
Do. Pears ...	6 do. ...	8
Do. Plums ...	9 do. ...	6
One variety Strawberry ...	40 Strawberries	6

The prizes were as follows:—1st, £25; 2nd, £10; 3rd, £12; 4th, £3; 5th, £1.
£50 of the above Prizes is given by the Corporation of the City of Edinburgh.

There were six exhibits in this competition, and just as at Shrewsbury the winner of the 1st prize was Mr. J. H. GOODACRE, gr. to the Earl of HARRINGTON, Elvaston Castle, Derby. He had two ornamental baskets, each containing two bunches of Grapes, one bunch of each of the varieties Black Hamburg, Chasselas Napoleon, Madresfield Court, and Muscat of Alexandria. All these were of very good quality. The other fruits were Figs (apparently Brown Turkey), Peaches Royal George and Princess of Wales, Nectarines Pineapple and Milton, Apples Washington and Ribston Pippin, Pears Doyenné du Comice and Pit-maston Duchess, Plum Transparent Gage, and Melons Hero of Lockinge and Countess. The quality of all these fruits was very high, and no "dish" could properly be characterised as weak. The floral decorations consisted of orange-red-coloured Montbretias and white Francoa, with foliage of a few elegant grasses and Selaginellas, Ampelopsis, &c., arranged in three tall trumpet-shaped glasses, and twelve smaller ones. The 2nd prize remained in Scotland, being won by Mr. Richard Cairns, gr. to JAMES MARTIN WHITE, Esq., Balruddery, Dundee. The Grapes in this exhibit consisted of the varieties Black Hamburg, Buckland Sweetwater, Muscat of Alexandria, and Mrs. Pince. The bunch of the last-named variety was extremely large, and had it been better coloured it would have been a "champion" specimen. 3rd, Mr. D. Kidd, gr. to Lord ELPHINSTONE, Carberry Tower; and 4th, Mr. Robert Daves, gr. to the Hon. E. L. WOOD, Temple Newsam, Leeds. A 5th prize was awarded in this class to Mr. Wm. Smith, gr. to the Earl of STAIR, Oxenfoord Castle, Dalkeith.

COLLECTIONS OF FRUIT.

Collection of Twelve Distinct Varieties.—In the class for twelve dishes of fruit there were as many as six exhibits, and in this series, as in the class for a table arranged as for dessert, Mr. J. H. GOODACRE won the 1st prize. He had six bunches of Grapes, showing the varieties Gros Maroc, Madresfield Court and Muscat of Alexandria. His other fruits were Peaches Sea Eagle and Princess of Wales, Nectarines Pineapple and Victoria, Apple Cox's Orange Pippin (excellent), Fig Brown Turkey, Plum Transparent Gage, Pear Doyenné du Comice and Melon Taunton Hero. The pointing in all these classes was done on the same basis as described in Class I for the dessert table. The 2nd prize was won by the writer of our weekly Calendar on "Fruits under Glass," Mr. F. JORDAN, gr. to Dr. CORBET, Impney Hall, Droitwich, Worcestershire. His Grapes were Madresfield Court, Gros Maroc, and Muscat of Alexandria, all of which were good in quality and appearance, but were not so remarkable for large size,

though they were fully large enough for all but exhibition purposes. He had excellent Peaches in Sea Eagle and Princess of Wales, large-sized fruits of Victoria and pretty fruits of Rivers' Orange Nectarines, very fine fruits of Souvenir du Congrès Pear, Jefferson Plum, Brown Turkey Figs, and Hero of Lockinge Melons. 3rd, Mr. D. MURRAY, gr. to the Marquis of AILSA, Culzean Castle, Perthshire, whose two bunches of Cooper's Black Grape were remarkable for high development and excellent colour. The fruits generally were of good quality, if not of first-class exhibition type. 4th, Mr. Robert Daves, gr. to Hon. E. L. WOOD, Temple Newsam, Leeds. In particular instances the exhibits were relieved a little by floral decorations, but no attempt was made to make them as effective from this point of view as were the collections at the Shrewsbury show. Consequently the collections required much less room than would otherwise have been needed.

Eight Distinct Varieties.—In this smaller class there were five exhibits, and the 1st prize went to ALLOA, N.B., being won by Mr. A. KIRK, gr. to J. THOMSON PATON, Esq., Norwood. The Grapes consisted of two bunches of each of the varieties Madresfield Court and Muscat of Alexandria, the former variety being shown in the better form; and the other dishes were of Barriogton Peaches, Pineapple Nectarine, rather small but well coloured; Clapham Pear, Worcester Pearmain Apple, and a Queen Pineapple. Mr. D. KIDD, of Carberry Tower, won the 2nd prize; and Mr. W. SMITH, of Oxenfoord Castle Gardens, Dalkeith, the 3rd.

Orchard-house Fruit.—Prizes were offered for twelve dishes of fruit grown in an orchard-house. In this class the 1st prize was won by Mr. ROBERT DAVES, and the fruits consisted of the following varieties: Nectarines Murray and Albert Victor, Peaches Violette Hâtive (very remarkable for the degree of colouring) and Dymond, Fig Brunswick, Pears Doyenné Boussoche and Durondeau, Apples Washington and Gaseyne's Scarlet Seedling, Plums Cox's Emperor and Diamond, and Apricot Moor Park. The quality was good all through, but, lacking the Grapes and any decoration, these collections failed to present an effect at all equal to those of hothouse fruits. Of the remaining four exhibits, that winning the 2nd prize was shown by Mr. J. H. GOODACRE, whose Emperor Alexander Apples were extraordinary specimens, being of quite unusual size and colour. The new Apple Allington Pippin was also very fine indeed, and for the rest they were of good if not superlative quality. 3rd, Mr. Richard Cairns, gr. to JAS. MARTIN WHITE, Esq., Balruddery, Dundee, who had a dish of Peasgood's Nonsuch Apples, almost as large as Pumpkins. 4th, Mr. George MacKinlay, gr. to Lady COWPER, West Park, Amptill, Bedfordshire.

Six Dishes of Fruit (for amateurs and bonâ fide gardeners only).—In this class black and white Grapes were allowed as separate dishes, flavour and quality were first considered. Mr. J. H. GOODACRE added the 1st prize to his other gains, and showed excellent specimens of Muscat of Alexandria and Madresfield Court Grapes, Royal George Peaches, Victoria Nectarine, Ribston Pippin Apple and the Countess Melon; all these varieties were of first-class quality in the different fruits. The only other exhibitor was Mr. Richard Cairns, gr. to JAMES MARTIN WHITE, Esq., Dundee, who had Mrs. Pince Grapes in place of Mr. Goodacre's Madresfield Court.

OTHER VARIETIES OF FRUIT.

Peaches. Figs failing to be remarkable we pass to the Peaches, of which a very large number of excellent fruits were shown. The 1st prize for two varieties, six fruits of each variety, was won by Mr. J. H. GOODACRE, with the varieties Rymakers and Royal George; and the 1st prize for six fruits of one variety, by Mr. R. Glen, gr. to J. H. GRAHAM, Esq., Larbert House, who had extraordinarily large fruits of Sea Eagle.

Nectarines.—The 1st prize for twelve fruits in two varieties was won by Mr. F. JORDAN for exquisite fruits of Pineapple, and rather less tempting-looking specimens of Victoria. The 1st prize for six fruits of one variety was won by Mr. John M. Stewart, gr. to J. NEILSON, Esq., Mollace Castle, Douglas, having capital specimens of the choice variety Pineapple.

Apricots. The variety placed 1st in the class for twelve fruits was that of Moor Park, shown by Mr. D. Rhind, gr. to Miss MILNE HOME, Coldstream.

Plums.—For the best four dishes of dessert varieties, there were numerous exhibitors, and 1st place was obtained by Mr. J. Vert, gr. to Lord HOWARD DE WALDEN Saffron Walden, Essex, with the varieties Coe's Violet, Late Orange, Jefferson and Coe's Golden Drop. The best exhibit of two dishes was one from Mr. R. GRINDROD, gr. to G. BATES, Esq., Whitfield, Hereford, he had Guthrie's Late Gage and Kedniston's Superb, showing both varieties in good style. The display of culinary

Plums was equally good and perhaps of greater extent. The 1st prize for four dishes was won by Mr. JAS. VERT, for the varieties Pond's Seedling Monarch, Grand Duke, and President. The best exhibit of two varieties only was shown by Mr. R. M. WHITING, Hereford, who had Pond's Seedling and Monarch. A further class was arranged for two dishes of dessert Plums grown under glass, and in this competition Mr. VERT obtained the 1st prize for very handsome specimens of Reine Claude d'Altham, and Coe's Golden Drop.

Melons.—Mr. J. H. GOODACRE won the 1st prize for two distinct varieties, showing Counter and Diamond Jubilee. The 1st prize for one fruit of a green or white-fleshed fruit was also awarded to Mr. GOODACRE for the variety Taunton Hero, and the best scarlet-fleshed fruit was of the variety Blenheim Orange, shown by Mr. Jas. Day, gr. to the Earl of GALLOWAY.

Pine-apples.—There were classes for two Pine-apples and for one fruit only. In the former class the only exhibitor was Mr. D. Murray, gr. to the Marquis AILSA, Culzean Castle; and in the latter class Mr. Robert Dawes, gr. to Hon. E. L. WOOD, Temple Newsam, Leeds, was also the only exhibitor. The time has passed when British gardeners are able to exhibit Pines, for, except in rare instances, the cultivation of the fruit has been abandoned, and with much regret by some at least of those who formerly delighted to exhibit their magnificent fruits. On this occasion Mr. Murray had a beautiful specimen of the variety Smooth Cayenne, and a smaller fruit of Queen. Mr. Dawes's specimen was a fair one of Queen.

Fruit-trees in Pots.—This class was one for four fruit-trees in pots, and bearing ripe or unripe fruit. The 1st prize was awarded to Mr. ADAM BRYDON, Tweedbank, Innerleithen, who showed four Pear-trees heavily laden with fruit; but the trees themselves were not of the most perfect form and training. The 2nd prize specimens were of better training, and had more variety, there being two Pears and two Apples, but the crops were less heavy. 3rd, Mr. D. Kidd, gr. to Lord ELPHINSTONE, Carberry Tower.

GRAPES.

SCOTTISH CHALLENGE TROPHY.

Eight bunches of Grapes, not more than two bunches of any one variety.—The 1st prize in this class consisted of the Challenge Trophy, value 30 guineas (to be won three times), with a gold badge and £15. The Challenge Trophy is presented by Mr. W. H. MASSIE. Each collection had to be decorated with flowering or foliage plants in pots not exceeding 5 inches in diameter; also with cut flowers or foliage in glass or ware or loose. The maximum number of points that could be awarded for one individual bunch of any particular variety will be seen from the tables given below. There were six competitors in the class, and the 1st prize was awarded to Mr. James Beisant, gr. to Mrs. GEORGE ARMISTEAD, Castle Huntley, Longforgan. The varieties shown and the number of points awarded to each bunch were as follows:—

No. of Bunch.	Variety.	Maximum No. of Pts.	Points awarded.
1.	Appley Towers ...	8	7
2.	Muscate of Alexandria ...	10	8
3.	Chasselas Napoleon ...	8	7½
4.	Appley Towers ...	8	7½
5.	Madresfield Court ...	9	8
6.	Muscate of Alexandria ...	10	8
7.	Chasselas Napoleon ...	8	7½
8.	Madresfield Court ...	9	7½
Total ...		70	61

It will be seen therefore that in no single instance was the maximum number of points awarded, at the same time the bunches of Chasselas Napoleon and Appley Towers were very nearly perfect from all points of view. It may be pointed out that not more than two dishes of any one variety were allowed, and the number of points obtainable for each variety was lower than was the case at Shrewsbury, consequently the aggregates are not comparable on an equal basis. In addition to the 1st prize the exhibitor of this collection was awarded a "Hogg" Medal by the deputation from the Royal Horticultural Society, and also the Cup presented by the KING for the best exhibit in the competitive fruit classes. The 2nd prize was awarded to Mr. A. KIRK, gardener to J. THOMSON PATON, Esq., Norwood, Alloa, whose exhibit obtained fifty-three points, which were awarded as follows:—

No. of Bunch.	Variety.	Maximum No. of Pts.	Points awarded.
1.	Madresfield Court ...	9	7½
2.	Duke of Buccleuch ...	8	6½
3.	Gros Maroc ...	8	7
4.	Muscate of Alexandria ...	10	6½
5.	Duke of Buccleuch ...	8	6½
6.	Madresfield Court ...	9	7½
7.	Muscate of Alexandria ...	10	6
8.	Appley Towers ...	8	5½
Total ...		70	53

Again there was no single instance in which maximum points were allowed. The judges had evidently set a very high standard. They were Mr. John W. McHattie and Mr. M. F. Barnes. Mr. J. H. GOODACRE, who was only one-half of a point behind the last-named exhibitor. His varieties were as follows—Black Hamburg, 6½ and 6 points; Muscate of Alexandria, 7½ and 7 points; Gros Maroc, 6 and 6 points, and Madresfield Court, 6½ and 7 points. 4th, Messrs. D. & W. BUCHANAN, Forth Vineyards, Kippen, who were awarded 52 points. The remaining exhibitors were Mr. Jno. Leslie, gr. to Mrs. COATES, Pitcullen House, Perth (51 points); and Mr. W. J. Green, gr. to Sir C. M. PALMER, Bart., M.P., Grinkle Park, Yorks (50 points). It was remarkable that in this class there was no inferior exhibit. Whilst some were excellent, all were good.

OTHER CLASSES FOR GRAPES.

Six Bunches of Grapes.—Not more than two bunches of any variety might be staged, in a space not exceeding 6 feet 6 inches by 2 feet. The 1st prize consisted of silver plate value £12 12s., presented by Messrs. Mackenzie & Moncur. There were as many as seven exhibitors in this class, and the honour of being placed 1st among these belonged to Mr. James Beisant, gr. to Mrs. GEO. ARMISTEAD, Castle Huntley. His varieties and the points awarded to each bunch were as follows:

No. of Bunch.	Variety.	Maximum No. of Pts.	Points awarded.
1.	Madresfield Court ...	9	7
2.	Muscate of Alexandria ...	10	7½
3.	Kempsey's Alicante ...	8	6½
4.	Appley Towers ...	8	6
5.	Muscate of Alexandria ...	10	6½
6.	Appley Towers ...	8	6
Totals ...		53	39

In this class again the competition was exceedingly keen, as is shown by the fact that 67 points were obtained by Mr. W. Taylor, gr. to W. MARSH, Esq., Bath, who won the 2nd prize. His varieties were as follows: Black Alicante (two bunches) 6, and 6 points; Muscate of Alexandria 6½ and 6½ points, and Gros Maroc 6 and 6 points. 3rd, Mr. A. Kirk, gr. to J. THOMSON PATON, Esq., Norwood, Alloa, who gained 36 points; and 4th, Mr. J. Leslie, gr. to Mr. COATES, Perth, who won 35½ points. The other exhibitors were Mr. J. H. GOODACRE, Mr. Thos. Bradshaw, gr. to the Marquis of DOWNSHIRE, Co. Down, and Mr. H. E. Hughes, gr. to Sir DUNCAN HAY, Bt., Kings Meadows, Peebles, N.B. Each exhibit was decorated as in the Trophy Class.

Four Bunches.—The exhibitors in this class numbered eight, and the 1st prize was won by Mr. W. J. Green, gr. to Sir C. M. PALMER, Bt., M.P., Grinkle Park, Yorks. The varieties were Alwick Seedling and Muscate of Alexandria, and the points were awarded as follows:—

No. of Bunch.	Variety.	Maximum No. of Pts.	Points awarded.
1.	Muscate of Alexandria ...	10	7
2.	Alwick Seedling ...	8	5
3.	Muscate of Alexandria ...	10	7
4.	Alwick Seedling ...	8	6
Totals ...		36	25

Only one point separated the 2nd prize exhibitors, Messrs. D. & W. BUCHANAN, who showed Muscate of Alexandria (two bunches), 6 and 6 points; Black Hamburg, 6 points; and Alwick Seedling, 6 points. 3rd, Mr. W. Pirie, gr. to C. W. COWAN, Esq., Dalhousie Castle, Bonnyrigg; and 4th, Mr. J. J. Wann, gr. to Lord BALFOUR OF BURLEIGH.

The following classes were for two bunches of particular varieties.

Muscate of Alexandria.—This was a good class, there being nine exhibits, and the quality was commendable all through. The two bunches from Mr. Wm. Galloway, gr. to the Earl of WEMYSS, Gosford, Langniddry, were, however, much superior to all the others. The bunches were from moderate to large size, of excellent form, and were composed of very large well-developed berries. Taken together, they were perfect in colour, and there was scarcely a bit of "bloom" that had been rubbed. The 2nd prize was awarded to Mr. Jno. Finnie, gr. to A. R. BROWN, Esq., Summerhill, Shandon; and the 3rd prize to Mr. W. Pirie, gr. to C. W. COWAN, Esq., Dalhousie Castle.

Any other White Grape.—There were only five exhibits in the class for any other white variety, and if we except the 1st prize pair of the Buckland Sweetwater, shown by Mr. M. MATHESON, North Berwick, the others were only very moderate indeed. "Golden Queen" was shown perfectly green.

Black Hamburg.—Among nine pairs of bunches of this popular variety the best were shown by Mr. Jno. Anderson, gr. to E. L. J. BLYTH, Esq., Inchgary, North Berwick; these were excellent in size of berry and in colour. The 2nd and 3rd prizes were awarded to Mr. M. Taylor, gr. to J. YOUNGER, Esq., St.

Andrews, and Mr. D. Buchanan, gr. to Col. DALRYMPLE HAMILTON, Bargany, Dailly, Ayrshire.

Muscate Hamburg.—This variety was not shown specially well, and the 1st prize bunches from Mr. J. H. Goodacre, gr. to the Earl of HARRINGTON, Elvaston Castle, Derby, though well coloured and possessing capital bloom, were composed of small berries. Mr. James Day, gr. to the Earl of GALLOWAY, Galloway House, Garliestown, had the 2nd prize; and the 3rd prize was awarded to very large, heavy bunches, only imperfectly coloured, from Mr. M. Taylor, gr. to JAS. YOUNGER, Esq., St. Andrews.

Madresfield Court.—The exhibits of Madresfield Court were by no means better than are shown frequently in England, and the 1st prize went to Derby for two moderate-sized bunches of large berries, shown by Mr. J. H. GOODACRE. These were not so perfectly finished as we have seen them from this famous cultivator. The 2nd prize went to Mr. M. TAYLOR, for bunches of large size and well-developed berries, but they lacked finish, and one of the bunches was decidedly ugly in outline. A totally different pair from Mr. James McNeill, gr. to Major THORBURN, Craigerne, Peebles, obtained the 3rd prize. These were very small bunches, having exceedingly large berries, very well coloured, but showing signs of shrivelling. There were five exhibits.

Black Alicante.—There were seven exhibits in this class, and the best was one from Bath, being shown by Mr. W. Taylor, gr. to W. MARSH, Esq., Bath. The bunches were less heavy than is often seen at exhibitions, but still they were large enough, and if the berries were a trifle small, they were at the same time perfect in colour. The 2nd prize was awarded to Mr. W. Pirie, gr. to C. W. COWAN, Esq., Dalhousie Castle, for very much heavier bunches; and the 3rd prize to Mr. J. Leslie, gr. to Mrs. COATES, Pitcullen House, Perth.

Gros Colmar.—This variety was very indifferently coloured, and apparently the 1st prize was withheld. Messrs. D. & W. BUCHANAN, Forth Vineyards, Kippen, were awarded the 2nd prize for two bunches of only moderate size, but having very large individual berries.

Gros Maroc.—Very good bunches of this variety were shown by Mr. W. TAYLOR, from Bath, and the 1st prize was awarded to them. If thinning had been done a little more severely it would have improved the size of the berries and the appearance of the bunches. 2nd, Mr. Jas. Beisant, gr. to Mrs. GEORGE ARMISTEAD, Castle Huntley, Longforgan. There were six exhibits.

Lady Downes.—There were seven exhibitors in this class, and the pair of bunches from Mr. D. Kidd, gr. to Lord ELPHINSTONE, Carberry Tower, were very fine; if they lacked something it was size in the berries. 2nd, Mr. W. Thompson, gr. to Col. MURRAY BAILLIE, Calley; and 3rd, Mr. Geo. Scott, gr. to Mrs. WHYTOCK, Seathwood, Dundee.

Any other Black Grape.—Among seven exhibits, one of Alwick Seedling from Mr. Jas. Gordon, gr. to SIR H. E. MAXWELL, Bt., M.P., Monreith, Whauphill, gained the 1st prize. The same variety from Mr. W. Johnson, gr. to the Dowager Duchess of ROXBURGH, Dunbar, was 2nd; and one bunch of Alwick Seedling, with one also of Appley Towers from Mr. J. Leslie, gr. to Mrs. COATES, Pitcullen House, Perth, 3rd. Other varieties in this class included Diamond Jubilee; and one from Mr. Thos. Bradshaw, gr. to the Marquess of DOWNSHIRE, Hillsborough Castle, Co. Down, described as a new seedling from Black Hamburg and Mrs. Pince.

Single Bunch Classes.—The exhibits in the classes for single bunches were not specially noteworthy. We indicate the 1st prizes only. The 1st prize for Muscate of Alexandria was won by Mr. Geo. Scott, gr. to Mrs. WHYTOCK; for Black Hamburg by Mr. M. MATHESON, North Berwick; for any white variety other than Muscate of Alexandria, by Mr. D. KIDD having Canon Hall Muscate; for Madresfield Court, by Mr. JAMES BEISANT; for Black Alicante, by Mr. W. Smith, gr. to Mrs. DOUGLAS, Newtownards, Dumfries; for Alwick Seedling, by Mr. SAMUEL GORDON; for Diamond Jubilee, by Mr. J. Leslie, gr. to Mrs. COATES, Perth, in which the berries were relatively enormous in size; for Lady Hutt, by Mr. R. Glen, gr. to J. H. N. GRAHAM, Esq., Larbert House, who had one of the best bunches of this variety we have ever seen; for Duke of Buccleuch, by Mr. A. Kirk, gr. to J. THOMPSON PATON, Esq., Norwood, Alloa; for Mrs. Pince, by Mr. D. KIDD; for any other Black Grape, by Mr. Jas. J. Wann, gr. to Lord BALFOUR OF BURLEIGH (President), who showed Barbarossa.

New Varieties of Grapes.—The only exhibit of one bunch of any new Grape, introduced into commerce since 1900, was one shown by Mr. Thos. Bradshaw, gr. to the Marquis of DOWNSHIRE, Co. Down. It was named Marchioness of Downshire, and was described as a seedling from Muscate of Alexandria. The berries were large, cone-shaped, being much larger at the base, and sloping off to apex of berry. Colour pale yellow, having little bloom, and being semi-transparent in appearance.

In the class for one bunch of a seedling variety of Grape not in commerce, there appeared to be one exhibit only, and the variety shown was that already noticed in a previous class, from Mr. Thos. Bradshaw, gr. to the Marquis of DOWNSHIRE, Hillsborough Castle, Co. Down. It was described as a seedling from Black Hamburg and Mrs. Pince's Muscat, the former variety being the seed-bearer. The bunch was rather long, had one "shoulder" of the Alicante type, and the berries were short, not round, but approaching that form, and carried intense colour and bloom.

Flavour in Grapes.—Prizes were offered for the finest-flavoured bunches of black and white varieties. That for "black" was won by Mr. J. Leslie, gr. to Mrs. COATES, Perth, who had a reddish-looking bunch of Muscat Hamburg. Mr. W. THOMSON was 2nd with the same variety. The 1st prize in the class for a white variety was won by Mr. John Finnie, gr. to A. R. BROWN, Esq., Summerhill, Shandon, who had Muscat of Alexandria. The same variety won the 2nd prize for Mr. J. H. GOUGHAN; and the 3rd prize for Mr. George Scott, gr. to Mrs. WHYTECK, Seathwood, Dundee.

Grapes with finest "Bloom."—Gros Maroc was awarded the 1st prize in this class, which was for development of bloom and finish. It was shown by Mr. W. J. Green, gr. to Sir C. M. PALMER, Bart., M.P., Grinkle Park, Yorks. The variety Black Alicante from Mr. W. Thomson, gr. to Col. MURRAY BAILLIE, Cally, was 2nd; and Coopers' Black from Messrs. MORRISON & BARKER, School of Gardening, Corstorphine, 3rd.

Heaviest Bunch of Grapes.—In the class for mere weight in black Grapes a huge bunch of the variety Barbarossa from Mr. M. Taylor, gr. to JAS. YOUNGER, Esq., Mount Melville, St. Andrews, was 1st, but the exact weight was not stated. An enormous, much-shouldered bunch of Black Alicante, from Mr. J. Leslie, gr. to Mrs. COATES, Perth, was 2nd.

The heaviest bunch of a white Grape was one from Mr. SAMUEL GORDON.

COLLECTION OF HARDY FRUITS.

There was only one exhibit in a class for eighteen dishes of hardy fruits, distinct varieties, grown entirely in the open air. This exhibit came from Sussex, being from Mr. Alex. Findlay, gr. to COUNT A. MUNSTER, Maresfield Park. It contained good specimens of Apples, Pears, Peaches, Nectarines, Figs, Cherries, Plums, Medlars, Mulberries, Quinces, Cob Nuts, Walnuts, and Red Currants.

APPLES.

There were plenty of Apples shown in all the classes, and whilst the best undoubtedly were those from England, some from certain districts in Scotland were satisfactory. The largest class was one for eighteen dishes of distinct varieties of Apple, four fruits of each variety, grown in the open-air.

There were numerous exhibits, and the best was one from Mr. G. LOGAN, Ballinora, Cork. We may remark that the fruits were good specimens, and gave but very little indication of the poor Apple year 1905 unfortunately is in most parts of Britain. Space will not allow us to give a list of the varieties. The 2nd prize was won by Mr. LUDLOW BEAMISH, Ashgrove, Queens-town, co. Cork; and the 3rd prize by Mr. ROBERT G. SINCLAIR, Congalton, Drem. It should be pointed out that no exhibitors other than those residing in Scotland or Ireland could show in the above class.

Eight Dishes of Dessert Apples.—In this class the 1st prize exhibit was one from R. M. WHITING, Esq., Hereford, the competition in these smaller classes being open to all cultivators in the United Kingdom. The varieties were as follows—Blue Pearmain, Charles Ross, Allington Pippin, James Grieve, Lady Sudeley, Ribston Pippin, Rival, and Worcester Pearmain. 2nd, Mr. F. JORDAN, Impney Hall Gardens, Droitwich. 3rd, Mr. A. Smith, gr. to Madame STUART, The Convent, Roehampton Lane, Surrey.

The 1st prize for four dishes of dessert varieties was won by Mr. James E. Hatbaway, gr. to J. BRENNAN, Esq., Thirsk. The varieties were Washington, Allington Pippin, Chas. Ross, and Gascoyne's Scarlet Seedling. There were nine entries.

For a collection of eight dishes of culinary varieties, Mr. F. JORDAN, Impney Hall Gardens, Droitwich, won the 1st prize with very fine specimens, the size of them being equal to the best. 2nd, Mr. W. H. Bacon, gr. to Sir MARCUS SAMUEL, Bart., The Mote, Maidstone.

In the smaller class for four dishes of culinary varieties, the 1st prize went to Cheshire, being won by Mr. JNO. LEE, Kingscott, Higher Evington, Cheshire. The varieties were Pott's Seedling, Lord Suffield, Warner's King, and Peasgood's Nonsuch—excellent and large specimen fruits.

Collection of Six Varieties of Apples Grown in Scotland.—The best specimens in this class for Scottish-grown Apples were shown by Mr. D. Murray, gr. to the Marquis of AILSA, Culzean Castle, Perthshire. His varieties were Peasgood's Nonsuch, Ecklinville Seedling, Bismarck, Annie Elizabeth, Worcester Pearmain, and Lady Sudeley. 2nd, Mr. Alex. Dewar, gr. to Mrs. MANN THOMPSON, Dankeith, Kilmarnock.

Apple James Grieve.—There was a special class for six fruits of this variety, and Mr. R. M. WHITING, Hereford, showed some splendid examples.

Best dish of Dessert Apples.—The variety of dessert fruits in a class for one variety that gained 1st prize was Ribston Pippin, shown by Mr. W. H. DIVERS, gr. to the Duke of RUTLAND, Belvoir Castle, Grantham.

Culinary Variety.—In a similar class for a culinary Apple, the best variety was Peasgood's Nonsuch, from Mr. GEORGE SCOTT, Dundee.

DESSERT PEARS.

The best collection of eight dishes of dessert Pears was shown by Mr. W. H. Bacon, gr. to Sir MARCUS SAMUEL, The Mote, Maidstone, who showed the varieties Directeur Hardy, Doyenné Boussoch, Triomphe de Vienne, Doyenné du Comice, Dr. Jules Guyot, Beurré Mortillet, Pitmaston Duchess, and Marguerite Marillat. 2nd, Mr. JAS. E. HATHAWAY, Thirsk.

In the class for four dishes, the 1st prize was won by Mr. John Smith, gr. to Earl DE GREY, Coombe Court, Kingston, Surrey. The varieties were Beurré Hardy, Williams' Bon Chrétien, Pitmaston Duchess, and Souvenir du Congrès.

The best exhibit of four dishes of culinary Pears was shown by Mr. W. H. BACON, Maidstone.

Pears grown in Scotland.—The best collection of six varieties was from Mr. Robt. R. Greenlaw, gr. to H. J. YOUNGER, Esq., Benmore, Kilmun. The varieties were Conference, Beurré d'Amanlis, Pitmaston Duchess, Marguerite, Marillat, Souvenir du Congrès, and Magtate.

PRESERVED FRUITS.

For one dozen bottles of British-grown fruits, Mr. E. BECKETT, Aldenham House Gardens, Elstree, won 1st prize with specimens that, so far as we could judge from appearance only, were excellent; 2nd Mrs. W. R. ORR, Pomona House, Loughall, co. Armagh.

In a class for bottled fruits, in which those who sell such fruits could exhibit, the 1st prize was won by the MIDLOTHIAN FRUIT PRESERVING COMPANY, Eyre Place, Edinburgh.

VEGETABLES.

Although the finest collections came from England, at least Scotland could claim the largest share in the single dish or smaller collection prizes, hence it was seen that, taken for all in all, honours were pretty well divided. Certainly in the collections open to all the kingdom it is doubtful whether at any time more superb quality was ever seen than in the exhibits of Mr. E. BECKETT and Mr. J. GIBSON, whom we are all so pleased to see once more in vegetable competitions. The inclusion of these two famous growers in the open competition made the class literally the most exciting feature of the show. Greek met Greek, and as a consequence there was a stiff tug-of-war.

OPEN COLLECTIONS.

These consisted of twenty-four dishes of not fewer than twelve kinds. The 1st prize, a splendid display of twenty-four kinds, was won by Mr. E. Beckett, gr. to Lord ALDENHAM, Elstree. He staged superb white and pink Celeries, very fine Musselberg and Pritzetaker Leeks, Mammoth and Early Giant Cauliflowers, Ailsa Craig and Sutton's A1 Onions, Peerless Cucumbers, New Intermediate and Long Surrey Carrots, Satisfaction and Supreme Potatos, Perfection and Golden Queen Tomatos, Duke of Albany and The Gladstone Peas, Hollow-Crown Parsnips, Orange Jelly Turnips, Sutton's Black Beet, Marrows, Prize-winner Runners, and Dwarf Gem Brussels-Sprouts. His points were 143. The 2nd prize was worthily taken by Mr. James Gibson, gr. to the Duke of PORTLAND, Welbeck Abbey. In his splendid collection, which obtained 139 points, were superb white and pink Celeries (very fine), the Lyon and Pritzetaker Leeks, the Sutton Globe and Ailsa Craig Onions, Autumn Mammoth and Magnum Bonum Cauliflowers, Alderman and The Gladstone Peas, very handsome King Edward and Superlative Potatos, and Epicure and Peerless Cucumbers. Mr. B. W. Harper, gr. to J. R. RICHARDSON, Esq., Perth, was 3rd; and Mr. B. Ashton, gr. to the Earl of LATHOM, Ormskirk, 4th. There were 7 collections staged. It is worthy of note that Mr. BECKETT also won the Veitch Memorial prize of £5, in having, in solid white Celery, Musselberg Leeks, and Early Giant Cauliflowers, the three finest kinds as examples of vegetables in either collection. The Royal Horticultural Society also awarded both Mr. BECKETT and Mr. GIBSON Silver-gilt Knightian Medals.

In the class open to Scotland only, for 18 dishes of not fewer than 12 kinds, there were eight entries. In this class, oddly enough, a brother of Mr. James Gibson, viz. Mr. M. B. Gibson, gr. to A. C. WALKER, Esq., Troon, was first, having 96 points awarded. His arrangement was very neat and somewhat diverse from what is usually seen. His chief dishes were Ailsa Craig and Cranston's Excelsior Onions, Standard-bearer and Solid White Celeries, Favourite and Lyon Leeks, Sutton's Ideal and seedling Potatos, Best-of-all Runner Beans, Peerless Cucumbers, and Intermediate Carrots. 2nd, with 94 points was Mr. J. Waldie, gr.

to W. H. DOBIE, Esq., Dollar, who had very fine Crofter Potatos, Epicure Cucumbers, Mammoth Cauliflowers, Sulham Park and Giant White Celeries, and red and yellow Tomatos. Mr. R. Stuart, gr. to the Earl of LAUDERDALE, Thirlestane Castle, was 3rd.

All the other vegetables in competition were staged in the open-air on the market roofs, where the sun and wind rather dried them.

The best dish of Mushrooms was sent by Mr. A. ROBERTSON, Loanhead. There were eighteen brace of Cucumbers, the best coming from Mr. A. PILLING, Elland, the fruits rather large; Mr. E. BECKETT having the 2nd best. In most cases the names were blown away. There were twenty-one plates of Tomatos, Mr. BECKETT coming 1st with handsome Perfection. Mr. WHITING, Hereford, was 2nd with a similar variety. Not fewer than fifteen plates of fifty pods of Peas were staged, Mr. J. S. BALCHIE, Denny, having fine Alderman as 1st; whilst Mr. HARPER had most superb Gladstone.

There were twenty-two dishes of French Beans, Mr. BECKETT having the best in Canadian Wonder; Mr. J. GIBSON coming 2nd with the same variety. Mr. M. STUART had the best Cauliflowers. Mr. B. ASHTON the 1st prize Carrots; and Mr. BECKETT was 2nd with unduly large Intermediate.

There were no fewer than seventeen dozens of Leeks, Mr. STUART having the best really wonderful sample, 16 inches of blanched stems of the Improved Lyon. Mr. HUGHES, of Peebles, was 2nd.

With twelve Onions Mr. Baker, gr. to Sir DUDLEY KING, Devon, was 1st with Excelsior. Mr. M. KNEELER, Malshanger Gardens, Hants, coming 2nd with the same variety.

There were twenty-four lots of four Celery, the best Giant White coming from Mr. KENNEDY, Dumbarton; Messrs. PILLING and BECKETT coming respectively 2nd and 3rd.

Potatos were largely shown, thirteen lots being staged in the class for twelve dishes, distinct. In this case Mr. DONALD MCPHERSON, Bridge of Weir, was 1st, having very handsome samples of The Factor, Just-in-Time, Scottish Triumph, Satisfaction, Abundance, Up-to-Date, Jubilee, Mr. Bresee, and Climax Red, and others. He was very closely run by Mr. GEMMELL, Chapelton Hamilton, whose samples were very fine, King Edward, Purple-eye Kidney, and Lord Tennyson being specially handsome. Mr. McRAE, was 3rd.

The same exhibitors took exactly similar positions in the class for six dishes, there being twenty competitors. Again Mr. McRAE was a winner in the class for twelve kidneys, having very fine Duke of York; Mr. GEMMELL coming 2nd with International. With twelve rounds, twenty lots being shown, Mr. PATERSON, Roxburgh, was 1st with flattish Up-to-Date; Mr. KERR, of Langton, coming 2nd with the same variety.

HONORARY COLLECTIONS OF VEGETABLES.

Messrs. DOBIE & Co., Rothesay, put up a very interesting and beautiful collection of six dishes of Potatos, which included most of the best varieties in commerce, and some quite new. Of whites very fine were Midlothian Early (a first early and remarkable cropper), The Factor, Southern Queen, Warrior, Sir J. Llewelyn (quite round), Duchess of Cornwall, Nobleman, Abundance, Eureka, Dobbie's Favourite, Superlative, Duke of York, White Hebron, Sir W. Raleigh, and The Scot, whites; and of coloured, Adirondack, Purple Perfection, Ruby Queen, Noroton Beauty, King Edward, Waverley, Crimson Beauty, and Queen of the Veldt, amongst others.

Mr. SCARLETT, Edinburgh, staged a small collection of choice varieties, having Sharpe's Empress, Midlothian Early, Diamond, Flour Ball, Southern Queen, Russet Queen, and Sir J. Llewelyn, all capital samples.

Mr. JAMES KERR, Dumfries, showed thirty varieties, having with others Conquering Hero, Kerr's Seedling, Duchess of Buccleuch, Kerr's Early, Gem, Seedling, Duchess of Cornwall, whites; and Purple Robe, Purple Russet, King Edward, Lord Tennyson, and Leda, coloured.

From Messrs. SUTTON & SONS, Reading, came a mixed collection of Melons, Cucumbers, Tomatos, and other kinds. Of Cucumbers very handsome were samples of Every Day, Pride of the Market, Lord Roberts, Peerless, Satisfaction, and Epicure. Of Tomatos there were capital samples of Satisfaction, Perfection, Princess of Wales, Eclipse, Best of All, Abundance, A1, and Winter Beauty (dark red); Peachblow (pale red), and Wonder of Italy and Dessert (small red), also Sunbeam and Golden Nugget (yellow). With these were fine Capsicums and large purple and white Aubergines. Of Melons the chief varieties were Perfection, A1, Best of All, Empress, and Darwin Seedling. The whole was most gracefully and pleasingly arranged, and attracted much attention.

From Mr. J. WILSON, of Hereford, came a quantity of fine examples of Excelsior Onions; also a dish of Wilson's Market Garden Tomato, a good red of the ordinary type.

Mr. CHARLES PAGE, Liberton, had very handsome red Tomatos in baskets unnamed, and a few of the yellow Sunbeam.

Mr. W. G. HOLMES, Tain, sent some exceedingly fine examples of the Gladstone Pea, of which he claims to be the raiser.

An interesting and unwonted exhibit for a British show was the very extensive collection of vegetables just as grown for the Paris market sent by Messrs. VILMORIN, ANDRIEUX ET CIE, Paris, and which served to show that whilst variety in edibles of this description in the French markets seems to be much greater than it is with us, the quality is, as compared with our best examples, low. The collection, which was literally a huge one, was laid on a bed of moss on the market floor. It was backed by many plants in pots of Capsicum, Chillies, Tomatos, &c., in front being various Cabbage, Lettuce, Endives, then coming Potatos, Onions, French Beans, Gourds, Marrows, Cucumbers, Parsnips, Radishes, Turnips, Beets, Celery, huge Aubergines, and giant Pumpkins, with other things too numerous to mention. That such a collection would have a certain amount of educational value there could be no doubt, but the majority of onlookers, especially stolid practical gardeners, would demur to the cultivation shown by the samples. It need scarcely be added that in undertaking to send over so extensive a collection of French garden vegetables the Messrs. VILMORIN & Co. merit all praise and thanks.

PLANTS IN POTS.

These were not extensively exhibited, and as a rule, were deficient in size and quality. The chief prizes were offered in the following classes:—

Group of Plants, arranged on floor within a space 20 ft. by 15 ft.—The 1st prize in this class was £25 and a gold medal. There were five groups, some of which were in every respect excellent, and indeed, superior to any hitherto shown in Scotland. Mr. Knight, gr. to Sir W. LAWSON, Bart., Brayton, Carlisle, was a good first, his chief plants being *Codiaeums*, very well grown and coloured. The following plants included *Oreohids* in variety, with similar and other decorative plants intermixed. The 2nd prize of £20 was secured by Mr. J. E. DAVIS, gr. to Col. E. R. S. RICHARDSON, Balathie, Stanley, with a nicely arranged lot of commoner material. 3rd of £15 to Mr. HUGHES, gr. to Sir DUNCAN HAY, Bart., Kingsmeadows, Peebles; and 4th of £10 to Mr. Wood, gr. to J. BUCHANAN, Esq., Oswald House, Edinburgh.

Eight Foliage Plants, Distinct, exclusive of Palms.—The 1st prize, solid silver tea service, value £12 12s., was presented by Messrs. Maekenzie & Moncur, Ltd. There was nothing of special merit in this class, none of the plants being large. Mr. McMillan, gr. to the Earl of HOME, Douglas, was 1st, an *Anthurium crystallinum* being his most meritorious specimen. 2nd, Mr. KNIGHT, Brayton, with a nice lot of plants. 3rd, Mr. McKinna, gr. to Sir R. Usher, Esq., Ratho.

For Six Foliage Plants, in pots not exceeding 3 inches, there was a keen competition. Mr. J. THOM, gr. to Mrs. HUTCHISON, Carlisle, secured 1st prize with small well-coloured *Crotons* and *Dracenas*. Mr. POTTER, gr. to W. PERRINS MOORE, Esq., Whitehall, Cumberland, 2nd; and Mr. HUGHES, 3rd.

Mr. KNIGHT, with a fine *Croton*, secured the 1st prize or one stove or greenhouse plant with ornamental foliage; Mr. McMILLAN being 2nd.

In the class for four stove or greenhouse plants, in lower, distinct, the specimens were very poor. Mr. HUGHES won the 1st prize; and Mr. MCKINNA the 2nd prize.

On the contrary, the 1st prize for one stove or greenhouse flowering plant, from Mr. Miller, gr. to J. E. CREE, Esq., Tusculum House, North Berwick, was a splendid example of *Statice profusa*, of large size and covered with strong flowering spikes.

For Six New Plants, in six distinct species or varieties, sent out by Messrs. William Bull & Sons, New Plant, Seed, and Bulb Merchants, King's Road, Chelsea, London.—Mr. J. Vert, gr. to Lord HOWARD DE WALDEN, Saffron Walden, was awarded the 1st prize with *Davallia lucida*, *Heliconia illustris*, *Ceropegia Woodii*, *Dracena Victoria*, *Maranta tigrina*, and *Anemia rotundifolia*.

In the class for six hybrid *Oreohids* only two exhibitors entered—viz., Mr. A. FINDLAY, to whom the 1st prize was awarded. Mr. A. DRYBURGH, Gogor Park, having 2nd prize.

The 1st prize for one *Oreohid* was awarded to A. R. HENDERSON, gr. to Miss NELSON, Salisbury Green, for a splendid specimen of *Arachnanthe Lowi* carrying six spikes.

The 1st prize for four exotic Ferns went to Mr. R. Stockdale, gr. to J. J. McLAREN, Esq., Ratho Park, Ratho, who staged four *Adiantum Farleyense* in very fine form. Mr. WOOD, with four *Davallia* species, was 2nd; and Mr. McMILLAN was 3rd.

For two *Adiantums*, distinct, there was a good competition, Mr. J. HERMISTON, gr. to J. HERBMAN, Esq., Hazelbank, was a good 1st prize winner, with *A. Williamsii* and *A. cuneatum grandiceps*.

Mr. W. BINCE, Rockville, Murrayfield, was 1st for two *Selaginellas*, distinct, a rather poor class.

In the classes for British Ferns the competition was strong. For four British Ferns, distinct, excluding dwarf Ferns, Mr. CH. PATTISON, Linwood, Paisley, was 1st.

In the succeeding class, that for nine dwarf British Ferns, distinct, pots not exceeding 6 inches, there was again a strong competition, Mr. W. ROBERTSON, Falkirk, being 1st with a beautiful little lot, including *Seopolendrium vulgare* Coolingii, *S. v. cristatum* Tensum, *Athyrium filix-femina unicum*.

Mr. THOM was a good 1st for four *Dracenas*, showing well-grown, well-coloured plants.

For two *Dracenas*, Mr. MCKINNA was 1st.

Mr. KNIGHT showed a pair of well-coloured *Crotons* in the class for these; Mr. THOM being 2nd with smaller plants, also of good colour.

Table Plants were exhibited of good quality, Mr. KNIGHT, Brayton, securing 1st prize with a nice even lot not too large. 2nd, Mr. Smith, gr. to Earl DE GREY, Coombe Court, Surrey.

Tuberous-rooted Begonias made a gay picture, most of the plants being large and well-flowered. For three single varieties, Mr. BROWN, Dalkeith, won the 1st prize; Mr. FRASER, Corstorphine, being 2nd.

In the corresponding class for double-flowered varieties, Mr. BROWN was again victor with extra-fine plants. For fibrous-rooted varieties the 1st prize was awarded to Mr. FRASER.

Fuchsias.—There was a large show of *Fuchsias*, but the plants were generally rough, though of large size. Mr. HEATLIE, Galashiels, secured the 1st prize for two specimens; and Mr. AITKEN, Balerno, had 2nd prize.

For one specimen Mr. THOMSON, Dalkeith, was awarded the 1st prize.

Liliums.—Mr. Leslie, gr. to Mrs. CURRIE, Trinity Cottage, for three *Liliums* secured 1st prize with grand specimens of *L. speciosum* in variety. Mr. A. JOHNSTON, Trinity, was 2nd; and Mr. A. HUME, Corstorphine, 3rd.

There were also small displays of *Pelargoniums*, *Vallotas*, and *Hydrangeas*.

CUT FLOWERS

(Open to Gardeners and Amateurs).

HARDY FLOWERS.

A piece of plate and £10 were offered for a collection of hardy garden flowers, grown in the open, staged in a space 8 ft. by 5 ft. There being five competitors, they made a grand display. Mr. ADAM BRYDON, Tweedbank, Innerleithen, won the coveted award, which carried also with it the Royal Horticultural Society's Silver Flora Medal. *Liliums*, *Gladioli*, *Alstromeria psittacina*, *Eucomis punctata*, and *Lobelia cardinalis* were noteworthy.

Eight Distinct Bunches of Hardy Herbaceous Flowers.—These were a great feature, no fewer than nine collections being staged. Mr. D. CHRISTIE won with handsome bunches of *Lobelia cardinalis*, *Pentstemon barbatus*, *Lilium auratum*, and *Montbretia crocosmæiflora*.

To show the value of hardy herbaceous flowers for decorative effect, prizes were offered for one vase, 14 inches high, filled with any one variety, *Liliums*, *Gladioli*, and double *Chrysanthemums* excluded.

Collection of cut Flowers, from the open Borders or Flower Beds.—These were staged to show effective arrangement and quality of bloom in a space 5 ft. by 5 ft. A 1st prize of £8 was offered, for which eight exhibitors entered. Mr. J. Mackinnon, gr. to R. ANDERSON, Esq., Eastwood Hill, Giffcock, won the 1st prize with good *Roses*, *Montbretias*, *Lobelia cardinalis* lightly arranged. Mr. A. Dickson, gr. to M. G. THORBURN, Esq., Glenormiston, was 2nd.

Twelve Gladioli, distinct.—The Society's Silver Medal and £2 were offered. Mr. C. J. FODERY, Warkworth, Northumberland, won with large clean flower-spikes of good varieties. Mr. J. COLLIER, Warkworth, 2nd, also staging well.

Six Gladioli. Nine collections were staged. Mr. A. BRYDON won with large blooms of choice varieties; Mr. R. Laurie, gr. to M. SMITH, Esq., Roseleen, Prestwick, being 2nd.

For the most meritorious and decorative arrangement of six vases of *Liliums* there was but a poor display. Mr. W. VEITCH, The Cemetery, Carlisle, was 1st with fair blooms of *Harrisii*, *auratum*, and *lanceifolium*.

Hollyhocks were but moderately staged in six distinct varieties by Mr. ROBERTSON, Heatherwood, Anrum, who received the premier award for short spikes and moderately good flowers.

Begonia Blooms, double and single, were well shown. Mr. THOS. JOHNSTON, East Linlor, had the best in the former class, having clear, well-formed, handsome examples. Mr. J. Muir, gr. to J. H. WALKER, Esq., Crosbie Towers, Troon, won in the latter class with exceedingly fine blossoms, rich in colour.

*Dahlia*s were shown numerous. For twelve show or fancy varieties, distinct, there were twelve com-

petitors. Mr. W. VEITCH, The Cemetery, Carlisle, was 1st with full-sized clean blossoms.

For twelve *Cactus* varieties, distinct, ten competed. Mr. B. MARTINDALE, Sioshill, Cathcart, Glasgow, won the 1st prize with richly-coloured examples of popular varieties.

In the class for six bunches of *Cactus* varieties, distinct, six blooms in each bunch, there were but two collections. Mr. H. RUTHERFORD, gr. to JAS. DUNCAN, Esq., Brechin, won the 1st prize with medium-sized flowers of bright appearance.

Pompon varieties in six bunches, distinct, six blooms in a bunch, were staged by nine competitors. Mr. W. JENKINS, Cambuslang, won with fairly good examples.

Sweet Peas.—For nine bunches of *Sweet Peas*, distinct, shown with their own foliage, there were eighteen competitors, all of good quality. Mr. John Ness, gr. to Captain J. C. AITKEN, Esq., Nisbet House, Duns., was distinctly ahead with extremely fine blooms.

For six bunches, distinct, with any foliage, *Gypsophila* or grasses, there were no fewer than seventeen entries, making a fine display. Mr. J. NESS won in this class also with admirable examples of leading varieties.

Roses.—For twenty-four blooms, of no fewer than eighteen varieties, the Hugh Dickson Silver Challenge Cup and £5 was offered as a memorial prize. Mr. W. PARLANE, gr. to Mrs. DENNISTOWN, Rosslea, won premier place, having moderately good examples.

For twenty-four blooms distinct in not fewer than twelve varieties of H.P., H.T., or T., Messrs. T. SMITH & SON, Stanraer, offered a Silver Cup, and a Gold and a Silver Medal as prizes. Mr. J. RUSSELL, Newton Mearns, was 1st, with fair flowers.

For twelve blooms, distinct, Mr. J. RUSSELL had the best exhibit, followed by Mr. W. PARLANE. There were eight exhibitors.

For twelve *Teas* in not fewer than six kinds Mr. W. PARLANE secured the leading award with good blooms for so late in the season.

Prizes were offered for one vase 12 inches high filled with any one variety, arranged for effect with *Rose* foliage. Mr. A. TODD, Stoneybank, Musselburgh, won with a handsome bunch of *Caroline Testout*, amongst seven competitors.

For six vases, one variety in each, with stems not less than 9 inches long, Mr. W. PARLANE had the best exhibit.

"Garden" or decorative *Roses* in six distinct varieties, not fewer than three trusses of each, made a fairly good display. Mr. A. HUME, gr. to J. JOHNSTONE, Esq., Corstorphine House, won easily with an interesting display.

Carnation growers received considerable encouragement. Messrs. Laing & Mather offered 5 guineas as 1st prize for six vases of border varieties, distinct, with not more than twenty fully opened blooms in each vase, arranged for effect with any foliage or *Gypsophila*. Mr. A. BRYDON, Tweedbank, Innerleithen, had the best of a good display of eight competitors. *Lady Cadogan*, *Asphodel*, *Helmisman*, and *Saffrona* were noteworthy. Mr. INNES, Hawick, was 2nd.

For six vases of *Picotees* with own foliage and buds, Mr. JAS. STEWART, Jun., Woodend Cottage, Whius, Alloa, won with *Greenow*, *Lucy Glitters*, Mr. Nigel, and *Daniel Defoe*.

Pansies.—For twenty-four fancy *Pansies*, distinct, no fewer than eleven entered, creating much interest among the devotees of this flower. Mr. ALEXANDER OLLAR, Kilkenny Cottage, Campbelltown, was 1st; Mr. DUNSMAN, Strathloanhead, Avonbridge, 2nd.

For twelve show *Pansies*, distinct, Mr. OLLAR again won the premier award.

Violas made a magnificent display. For twelve distinct varieties, nine blooms in each, Mr. OLLAR was here again successful with a handsome collection. Mr. J. Johnston, Mrs. Chichester, Lady Grey, and My Bonnie Lad were the most noteworthy.

Early-flowering Chrysanthemums in twelve distinct varieties, naturally grown, not disbudded, eight of Japanese and four of *Pompons*, were the best staged by Mr. A. LIVINGSTONE—a disappointing display.

For four vases of early-flowering *Chrysanthemums*, distinct, not more than six blooms in each, Mr. THOS. Baird, gr. to J. YOUNGER, Esq., Amsbrae, 'Cambus,' won the 1st prize with ordinary November-flowering sorts.

Montbretias were an interesting feature of the show. For six distinct varieties there were four competitors, all of them staging the old forms, of which *crocosmæiflora* was mainly conspicuous. Mr. W. Pine, gr. to C. W. COWAN, Esq., Dalhousie Castle, 2nd.

Pentstemons as a favourite Scotch flower, were expected to see grandly shown. For twelve spikes distinct, seven competed. Mr. C. TRAILL, gr. to Col. FERGUSON, Buchanan, Bowling, was 1st. He did not, however, prove to be very strong in point of quality. Mrs. Ferguson, Buchanan, and *Simplicity* were the most conspicuous varieties. Mr. J. ROWATT, Glasford, Strathaven, won 2nd prize.

Hardy or Half-Hardy Annuals in twelve distinct varieties, to be effectively arranged, made a poor

display. No attempt at arrangement had been made. The varieties, too, were of poor merit.

Royal Horticultural Society's Awards.

(The order in which the names are arranged has no significance.)

GOLD MEDALS.

The Corporation of Glasgow (Parks Department, for interesting Botanical Plants), Mr. David W. Thomson, for Group of Plants and Shrubs; Messrs. James Veitch & Sons, Ltd., for Group of Plants and Fruit.

SILVER-GILT HOGG MEDALS.

The Earl of Haddington, for Fruit; M. M. Vilmorin, Andrieux et Cie., for Vegetables.

SILVER-GILT FLORA MEDALS.

Sir Wilfrid Lawson, Bart., M.P., Group of Plants; Messrs. R. Wallace & Co., Hardy Plants, &c.; Messrs. James Cocker & Sons, Roses; Messrs. Charlesworth & Co., Orchids; Mr. John Downie, Group of Plants.

SILVER-GILT KNIGHTIAN MEDALS.

Lord Aldenham, Vegetables; Duke of Portland, Vegetables; Messrs. Sutton & Sons, Fruit and Vegetables.

SILVER-GILT BANKSIAN MEDALS.

Messrs. Dobbie & Co., Hardy Flowers; Mr. A. E. Campbell, Gladioli; Messrs. Wm. Cutbush & Sons, Group of Plants; Mr. J. Phillips, Group of Plants; Mr. A. J. A. Bruce, Insectivorous Plants; Messrs. T. S. Ware, Ltd., Begonias; Mr. J. Smellie, Cactus Dahlias; Messrs. Cunningham & Fraser, Hardy Plants.

SILVER HOGG MEDALS.

Mrs. G. Armistead, Fruit; Messrs. George Bunyard & Co., Ltd., Apples.

SILVER KNIGHTIAN MEDAL.

Messrs. Storrie & Storrie, Fruit Trees in Pots.

SILVER FLORA MEDALS.

Messrs. Hobbies, Ltd., Cactus Dahlias; Mr. John Forbes, Dahlias and Pentstemons; Mr. A. Brydon, Herbaceous Plants.

SILVER BANKSIAN MEDALS.

Mr. Norman Davis, Chrysanthemums; Mr. R. Bolton, Sweet Peas (ordinary strain); Mr. George Logan, Apples.

Awards made by the Royal Caledonian Horticultural Society to Honorary Exhibits.

GOLD MEDALS.

Messrs. Geo. Bunyard & Co., Ltd., for Pot Fruit Trees, &c.; Messrs. Charlesworth & Co., for Orchids; Messrs. Cunningham, Fraser & Co., for Hardy Shrubs and Cut Flowers; Messrs. Dobbie & Co., for Potatoes; The Corporation of Glasgow (Parks Department), for exhibit of Rare and Interesting Plants; Messrs. Storrie & Storrie, for Orchard-house Fruit Trees; Mr. D. W. Thomson, for Topiary Work; Messrs. James Veitch & Sons, Ltd., for Group of Plants and Exhibit of Fruit; Messrs. R. Wallace & Co., for Herbaceous and other Plants.

SILVER-GILT MEDALS.

Messrs. Blackmore & Langdon, for Begonias, &c.; Mr. A. J. A. Bruce, for Saccrarias; Messrs. Wm. Cutbush & Sons, for group of flowering plants; Messrs. James Cocker & Sons, for herbaceous flowers and Roses; Messrs. Dobbie & Co., for Dahlias, Roses, &c.; Messrs. Dicksons, Ltd., Chester, for plants and cut flowers; Mr. John Downie, for group of plants; Mr. John Forbes, for cut flowers; Messrs. Little & Ballantyne, for hardy ornamental trees and shrubs; Messrs. T. Methven & Sons, for group of plants; Mr. John Phillips, for stove and greenhouse plants; Messrs. Sutton & Sons, for fruit and vegetables; Mr. D. W. Thomson, for plants; Messrs. Thomas S. Ware, Ltd., for Begonias; Mr. James Wilson, St. Andrews, for decorative Begonias, &c.; Messrs. Vilmorin, Andrieux et Cie., for vegetables and cut flowers.

SILVER MEDALS.

Mr. Robert Bolton, for Sweet Peas; Messrs. James Dickson & Sons, for hardy Shrubs; Mr. Henry Eckford, for Sweet Peas; Messrs. Hobbies, Ltd., for Cactus Dahlias; Messrs. Stansfield, Bros., for Alpine Garden.

BRONZE MEDAL.

Mr. T. R. Hayes, for Heaths.

SCHEDULES RECEIVED.

CHICAGO HORTICULTURAL SOCIETY'S Autumn Exhibition in November (preliminary schedule).

DEVIZES BENEVOLENT SOCIETY'S Annual Chrysanthemum Show and Bazaar, to be held in the Corn Exchange, Devizes, on Tuesday, November 14, 1905.

NEW INVENTION.

AN IMPROVED BOX FOR FRUIT TRANSIT.

A NEW fruit-box has been manufactured by Messrs. Edward Spencer & Co., London. Each fruit is contained in a wooden cylinder, to prevent the fruits being bruised during transit. A great variety of boxes can be had to hold any quantity of the cylinders, which latter are made in six sizes, from 2½ to 6¼ inches in diameter.

TRADE NOTE.

Mr. R. A. Morris, of Ashley Street, Birmingham, Bulb and Seed Merchant, has removed to 225, Bristol Street, Birmingham.

ENQUIRIES.

VERANDAH ON NORTH SIDE OF HOUSE.—Please give a list of the best plants for placing on stages which are being erected for winter work, such as shrubs or conifers. My employer insists upon getting stages erected for growing Pelargoniums, &c., in summer, and evergreens in winter. There are two verandahs, one on each side of the front door (north), there is no glass on the top of the verandahs. We have now hanging baskets; the plants in them do fairly well, but get drawn. I admit the empty verandahs are not very pleasant to the eye, but I do not think plants will do very well.

COLOURED VINE LEAVES.—Vine leaves very nicely coloured are sold in London during the winter months for garnishing, having evidently gone through some kind of preservation. Can any reader tell me how it is done? D. H.

ANSWERS TO CORRESPONDENTS.

AMERICAN BLIGHT: R. T. You had better leave the pest until the leaves have fallen, when you should "dress" the tree with caustic solution made by dissolving ½ lb. caustic and ½ lb. crude potash in 5 gallons water. Stout gloves should be used when handling this corrosive liquid. Petroleum Emulsion is also a good eradicator of this pest. See that the liquid is worked well into the crevices of the bark. All prunings should be taken to the bonfire and burned.

AZALEA: Essex. For outdoor work *A. pontica* varieties are the best in point of fragrance. The so-called hybrids between *A. mollis* and *A. sinensis* are also valuable, but not so fragrant. Anthony Koster is a fine variety.

BOOKS: Old Book. Is the title of your book *The Gentleman and Gardener's Calendar*, an edition of which was published by Richard Bradley in 1718?

CATERPILLAR: J. A. J. The caterpillar had escaped. Try dusting the leaves with Pyrethrum powder or Hellebore powder.

FUNGUS: W. B. S., Junr. The name of the fungus is *Merulius lachrymans*, the fruiting condition of the dry-rot.

GRAPES: T. T. Your fruits and leaves are in a shocking state, from the attacks of both insects and fungi. You would do well to turn the Vines out and start afresh.—Horley. The berries are affected with the spot disease, *Gloeosporium*. Burn the diseased berries. Use Bordeaux-mixture next spring when the berries are about to set.

LAWN: W. R. You may destroy the Plantains by dropping a spot or two of carbolic acid into the hearts of the plants. At the same time for this particular species we think that hand-weeding has much to recommend it.

FRUIT GROWING: W. X. E. We do not recommend individual firms. Your better plan is to advertise in the gardening papers.

MUSHROOM BEDS: X. Y. Z. Peat-moss litter is not a satisfactory material for making Mushroom-beds. We do not advise its use for the purpose.

MUSHROOMS: B. S. W. The fungi belong to *Agaricus naucinus*, and must not be confounded with the Mushroom *A. campestris*. The spores of the former are white, in the latter they are purple-brown. *A. naucinus* may be harmless, but it is not usually given in the edible lists, and should be considered suspicious.

NAMES OF FRUITS: S. J. Tonkin. Old Hawthornden.—W. J. B. 1, 3, and 4, Williams' Bon Chrétien; 2, Iris Gregoire; 5, Knight's Monarch; 6, Jargonelle.—Constant Subscriber. Plum Late Rivers; Pear Suffolk Thorn; 1, Early Louise; 2, Early York.—D. E. 1, Chelmsford Wonder; 2, Yorkshire Beauty; 3, Stirling Castle; 4, Baumann's Red Reinette; 5, New Hawthornden; 6, Lady Palmerston.—Wilton Lodge. Rotten and unrecognisable.

NAMES OF PLANTS: G. S. *Berberis vulgaris*. It is not our practice to answer by post.—John McL. 1, *Calceolaria chelidonioides*; 2, *Impatiens Roylei*.—D. H. Specimens not numbered. Wall plant is *Lycium sinense*. The others next week.—F. G. B. *Saponaria officinalis*.—W. C. & S. *Serratula tinctoria*.—W. L., Ireland. 1, *Pinus excelsa* probably; 2, *Cedrus atlantica*; 3, *Picea Morinda*; 4, *Abies grandis*; 5, *Cupressus thyoides*; 6, *Sequoia sempervirens*, Red Wood.—F. L. *Pseudotsuga Douglasi*. A Pavia, we cannot tell which without flowers.—J. P., York. *Cyrtoceras reflexum* (multiflorum) and a light-coloured *Cypripedium* × *Ashburtonæ*—A. W. G. 1, *Codiaeum* (*Croton*) *Johannis*; 2, *C. interruptum*; 3, *C. trilobum*; 4, *C. cornutum*; 5, *C. Weissmanni*; 6, *C. angustifolium*.—A. C. 1, *Cimicifuga racemosa*; 2, *Abutilon Savitzi*; 3, *Dichorisandra undata*; 4, not recognised; 5, *Curculigo recurvata*; 6, *Olearia Haastii*.—J. Y. 1, *Masdevallia Harryana* (mauve); 2, *Epidendrum fragrans* (the striped lip); 3, *Oncidium incurvum*; 4, *Epidendrum inversum* (the narrow-lipped flower); 5, *Marchantia polymorpha*; 6, *Corydalis lutea*. Your numbers were detached.—U. O. *Impatiens Royleana*.—E. M. V. 1, Potato we cannot not name, send to some specialist; 2, *Columna erythrophæa*; 3, a seedling Conifer, unrecognisable in this stage, perhaps *Cupressus funebris*.

PALMS: H. R. We do not advise "topping" the tree. Can you not exchange your specimen for a smaller one? Perhaps one of the larger nurserymen would be able to oblige you.

PLANTS CULTIVATED IN THE SOUTH-WEST: M. B., Holland. There have been several articles lately on this subject, and others will shortly appear.

POTATO DISEASE: G. C. Your tubers are attacked with the black scab or warty disease of Potatoes. Gas-lime applied to the soil about May or June will kill the fungus. Burn all diseased tubers. You will find an illustration on p. 259, and full particulars on p. 257 of our issue for April 23, 1904.

ROOT PRUNING: Tooling. Any rich, light, friable soil is useful for working among the roots. Old potting-soil is an excellent medium. Do not place manure among the roots when they are root-pruned. Apply this as a mulching.

STOCKS AT FLOWER SHOW: B. B. D. We are of opinion that the judges were correct, as the stipulations required three trusses of Stocks, and not three plants.

COMMUNICATIONS RECEIVED.—R. H. P.—R. W. & Co.—R. N., Florida (please put sufficient stamps on your communications, we had 10d. to pay on your letter)—F. M. W.—H. K., Marienfelde, Berlin—W. W.—J. O. (glad to see your handwriting again)—J. S.—J. W. B. D. Little & Ballantyne—E. M. C.—G. H. H. W.—C. T. D.—T. W.—J. G. P., Harrogate (we cannot decipher the name you enquire about, please write again)—W. G. S.—Count de K.—F. de Laet, Coëlich—L. Castle—R. B. W.—S. C.—S. T. D., Hongkong—A. J. H.—S. M. Verrières.—A. F.—F. M.—H. C.—W. A. C.—C. R.—H. W.—O. W.—J. S.—J. C. (next week)—G. W., Rugby. 10a.—X. Y. Z.—Guyot.—J. E.—M. McN.—E. S.—F. G. N.

(For Markets and Weather, see pp. x. & xii.)

ROYAL CALEDONIAN HORTICULTURAL SOCIETY.



THE
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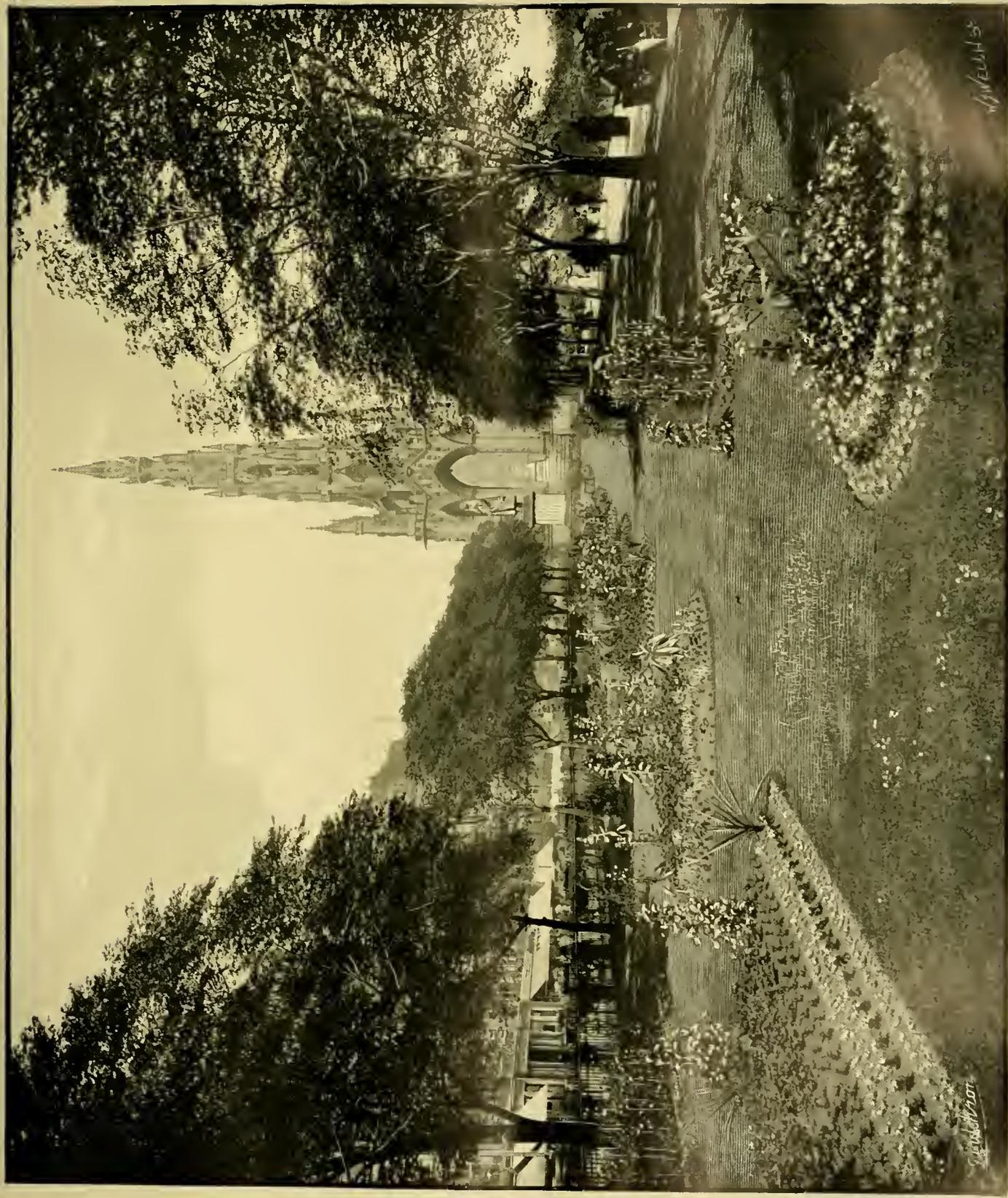
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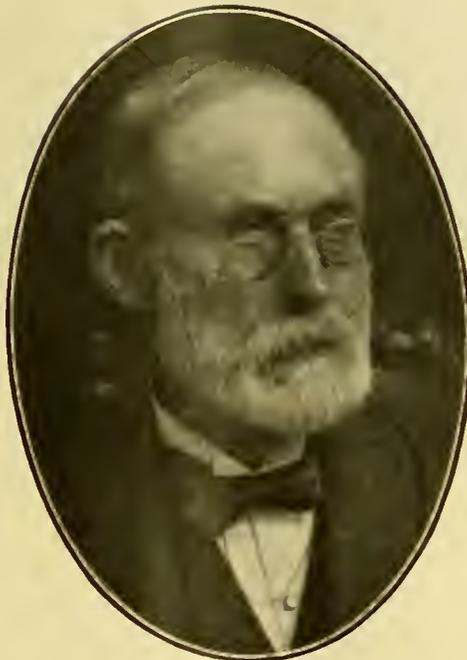
VIEW OF THE TOWN GARDEN, EAST PRINCES STREET, EDINBURGH, SHOWING THE STATUE OF BLACK, AND THE MONUMENT TO SIR WALTER SCOTT IN THE DISTANCE.



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Mortonhall Gardens, Liberton.



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Late of the Royal Botanic Gardens, Edinburgh.



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THE Gardeners' Chronicle

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CONTENTS.

Acer erioearpum ...	233	Onions, Albanian ...	233
Agapanthus umbellatus globosus ...	237	Over-sea supplies ...	234
Alpine garden ...	237	Peach, the, as a stock for Plums ...	236
Campanula Zoysii ...	238	Pinus yunnanensis ...	235
Saxifraga Guthrieana variegata ...	229	Portulacas ...	234
Books, notices of—		Potato experiments ...	235
Insects and Fungi		Potato-leaf eurl ...	234
Injurious to Plants		Rosary, the ...	236
Brussels Botanic Garden ...	232	Roses, manures for ...	232
Cereus, the genus ...	232	Salads, winter ...	236
Cyclobothra flava ...	235	Seeds, the germination of ...	234
Cypripedium Fairrieanum, sale of ...	233	Societies—	
Dahlias, a trial of ...	237	Gardeners' Debating ...	239
Eupatorium micranthum ...	229	London Dahlia Union ...	239
Farm and garden produce, transit of ...	223	National Chrysanthemum ...	239
Forestry—		Royal Caledonian Horticultural ...	238
The Douglas Fir at Scone ...	225	Royal Horticultural (Scientific Committee) ...	237
Grapes at Longleat ...	228	United Horticultural Benefit and Provident ...	232
Hartwell Park, Bucks	133	Strawberries, autumn	232
Judging at flower shows ...	234	Trees and shrubs ...	229
Lily season, the ...	225	Vases and tubs in gardens ...	225
Maqitoba, horticulture in ...	233	Violets, culture of ...	236
Marvel of Peru ...	235	Week's work, the ...	230, 231
Obituary—		Zephyranthes, a note on ...	235
Mrs. C. T. Drury ...	233		

ILLUSTRATIONS.

Agapanthus umbellatus globosus ...	237
Campanula Zoysii ...	238
Eupatorium micranthum ...	229
Leaf sections of Pinus yunnanensis ...	236
Pear attacked by Fusicladium dendriticum ...	240
Pinus yunnanensis ...	227
Vinery at Hartwell Park, Bucks (Supplementary Illustration).	

THE LILY SEASON.

IT was to be expected that, owing to the abnormal dryness of their usual season of growth, Lilies would have been this season a comparative failure; but so far as my observation extends, such has not been the case. Wherever they received from their cultivators even moderate attention, especially in the essential direction of providing adequate moisture, they have succeeded remarkably well.

By far the finest display of Lilies I have seen this year was produced by hundreds of splendid specimens of the beautiful Madonna Lily (*Lilium candidum*), grown among pink and crimson Roses, such as the varieties Captain Hayward and Mrs. Sharman-Crawford, in the gardens of Logan House in this parish, the highly picturesque residence of Mr. Kenneth McDonall. I have never seen anything so beautiful elsewhere. In my own garden, where oriental and occidental Lilies are given shelter from devastating winds, and in most instances have a congenial soil, such noble species as *Lilium monadelphum Szovitzianum*, which is invariably commanding in its imposing height and magnificent floral effect; *L. chalcedonicum*, the far-famed Scarlet Martagon (which Sir Edwin Arnold erroneously describes in his *Light of the World* as the Lily that Christ blessed, seeing that, as Mr. J. G. Baker, of Kew, has told me, it is not a native of Palestine); *L. pardalinum*, the wonderfully spotted Panther Lily of California, and its most interesting and vastly multiplying derivative, *L. Burbanki*; likewise the stronger-growing varieties of *L. auratum* and *L. speciosum*, invaluable in autumn for the decoration of our gardens, have entirely surpassed my most sanguine anticipations.

Lilium monadelphum Szovitzianum is one of those great Lilies which, when once strongly established in our gardens, and especially in a soil largely composed of clay, assumes gigantic dimensions; here it seldom contents itself with an elevation of less than 8 or 9 feet, thereby constituting itself a formidable rival of the great *L. giganteum*. As much may be asserted of the massive growth and floral capabilities of that veritable king among oriental Lilies, *Lilium auratum platyphyllum*, whose flowers are this season of immense size and substance, many of them being nearly 12 inches across. A sport from this variety, entitled *virginale*, in colour almost pure white, is without exception the grandest and loveliest variety I have ever seen. But it has been found extremely unreliable here, which may have been partly owing to the somewhat cold and adhesive nature of the soil. A peaty environment with adequate drainage might in this and similar instances prove highly beneficial. The late Dr. Wallace, of Colchester, recommended for such Lilies "a dry clay soil, broken very small."

The various forms of *Lilium auratum* have frequently been described by cultivators as being pathetically evanescent, but the only varieties in my own garden which have hitherto come under this uncompromising category are those known as *rubrovittatum* and *virginale*. This characteristic in such varieties is all the more regrettable, because they are so highly distinctive.

The various beautiful forms of *Lilium speciosum*—the latest, and one of the most richly fragrant and artistic of all Lilies—are worthy successors of *Lilium auratum*. They have this advantage over their immediate predecessors, that their fragrance is more refined. *David R. Williamson, Kirkmaiden, Wigtownshire.*

FORESTRY.

THE DOUGLAS FIR AT SCONE.

IN a former note of mine about the "thinnings" at Scone in 1887, I mentioned that my statements were based upon those which I had from the late Mr. McCorquodale himself, the various articles in the *Perthshire Constitutional*, and especially on those which appeared at that time on the Douglas Fir in the *Gardeners' Chronicle*. It seems, however, that Mr. Simpson still fears that I give my information on very "loose data." I have looked over my Douglas papers, and give now the facts about the "thinnings" at Scone in the autumn of 1887.

With the good old Mr. McCorquodale I had, after my several visits to Scotland in those years, a constant correspondence for some years, and I may say that he assisted me in the most kind and liberal way in giving me every information. I wanted to introduce the Douglas Fir into Germany, where at that time it was very little known. Not only did he send me many samples of different soils at Scone, but he sent me a root-cut of one of the thinnings, 36½ inches high and 25 inches through, from a tree 56 feet high.

To get, however, a clear statement about a first thinning of a Douglas plantation I sent a paper to Mr. McCorquodale, asking him to return it, after having been kind enough to put his answers to my questions. He complied with my wishes, and I copy these answers, which were in his own handwriting.

The plantation at Taymount contained 4,296 stems. At the first thinning, in 1887, 647 were

felled. They were classified for sale into three sizes, as follows:—

1st size, 106 stems, containing 1,660 cubic feet	
2nd size, 163 " " " 552 "	
	1,712 Total cu. feet
3rd size, 378 stems (averaging 26 feet long by 3 inches diameter at the small end; this size is under measurable timber).	647

"I beg to explain that the cause of such a large proportion of the thinnings being so small, is, that as far as consistent with good order, the small trees were thinned-out to give place to better trees, and also from a border running parallel with the railway, which was burned at an early age of its growth; most of them are thinned out now. There are trees 63 feet high, which were thinned-out in this plantation. The sale of the thinnings took place on December 23, 1887, and they sold at about the same rate as Larch. The largest class sold well at about 1s. per cubic foot, even better than Larch; certainly better than any Larch I could saw [supply] of the same age."

(Signed) WILLIAM MCCORQUODALE.

I hope this will settle the question about the first thinnings of a Douglas plantation, with all the false and legendary notions. *John Booth, Gross Lichterfelde, near Berlin, 39, Mozartstrasse.*

THE USE OF VASES AND TUBS IN GARDENS.

THERE has been an increasing interest for several years past in the cultivation of plants in tubs and ornamental stone or metal vases for the decoration of terraces and other suitable situations. Having been very successful with plants in tubs and vases during six years, my experience may be useful to others. The tubs are the first consideration. Very fine Oak tubs are now sold in various shapes and sizes to suit all tastes and purses, but if expense is a consideration, empty petroleum barrels are excellent makeshifts. If a barrel be cut in halves it will make two nice tubs. These should be carefully scorched to get rid of the oil, and then painted according to the wishes of the individual; green with black bands or terracotta with bands of black are suitable colours. Several holes should be drilled in the bottoms, and some crocks or clinkers put in to thoroughly drain the tub. The soil should be prepared previously and may consist of good loam, well-rotted manure, and leaf-soil in equal parts, with a little sand added. If there is any difficulty in getting such a compost, ordinary soil may be used if enriched with a little artificial manure.

There is a wide range of suitable plants. Marguerites have been very successful, and if these can be placed in a position having a dark background, such as an Ivy-covered wall or a Yew or Holly hedge, they appear to light up the whole place, and will continue to make a fine show until quite late in autumn, especially if attention be given to one or two points in their culture. When the plants have become well established they must never be permitted to become dry at the roots, for they are thirsty subjects, requiring copious supplies of water. Apply a top-dressing to the roots occasionally, using some fine soil and mixing with it a little artificial manure. A handful of similar manure may also be sprinkled over the surface of the soil occasionally. At frequent intervals remove the faded flowers.

Pelargoniums are capital subjects, being very showy. These do not require so much water, and if the Ivy-leaved varieties are admired the soil for these should be made up in a mound, or some of them trained to sticks, and others in the same receptacle allowed to droop round the sides of the tub.

Do not mix many different plants or colours in one tub, one good colour having a decidedly

better effect. In some cases an edging of drooping plants may be added—for instance, white trailing Lobelia with scarlet Pelargoniums, blue Lobelia with white Marguerites, &c. Myrtles are excellent shrubs for such cultivation, and are always appreciated, both for the delicate perfume of the foliage and for the purity of the flowers. *Choisya ternata*, *Aloysia citriodora* (the lemon-scented Verbena), Orange-trees, Cannas, Begonias, the New Zealand Flax, *Phormium tenax* (a fine plant for an exposed position), *Cordyline indivisa*, Palms, Sweet Bays, and Fuchsias, are all useful. *Agapanthus umbellatus* makes an ideal tub-plant, both the blue and white varieties thriving and flowering over a long period in the early autumn months.

Palms will succeed best in shade, as the foliage is liable to become burned when brought from the greenhouse. The plants will succeed best if they can be put in the tubs early in spring, and given the advantage of a start under glass, or failing this, they may be placed in a warm position under a wall facing to the south, giving them slight protection at night. At the end of September or later, according to the locality, the perennial plants that will be cultivated another year should be removed to winter quarters, where frost must be excluded; but the softer-wooded plants, as Marguerites, Begonias, &c., are better renewed every spring.

The successful culture of plants in tubs will depend upon the attention given to their respective requirements, that they may not suffer lack of water, or become impoverished for the want of a little weak soot-water or artificial manure. X. Y. Z.

PINUS YUNNANENSIS.*

ONE of Wilson's discoveries in Szechuan and Eastern Tibet, was at first supposed to belong to a hitherto undescribed species of *Pinus* nearly allied to *P. khasya*. The specimens were submitted to several eminent botanists familiar with Indian and with Chinese Pines who happened to be at Kew at the same time. As opinions were much divided, the drawing (fig. 86) was sent to Paris, in order that it might be compared with the *P. yunnanensis* of Franchet, of which no specimens exist in our herbaria. M. Bureau obligingly stated in reply to our enquiry that the drawing corresponded exactly ("identique") with the *P. yunnanensis* of Franchet, of which there is in the Paris "Museum" an unique example. The leaves in the Paris specimen are almost always in tufts of three. According to Mr. Wilson's notes the tree is 30 to 100 feet in height, 8 to 12 feet in girth. Its timber is hard, very resinous, valued for building purposes and for making torches. It is rare in the valley of the Ting river, W. Szechuan, between 3,500 to 5,500 feet. In the valley of the Yalung river, Eastern Tibet, at an altitude of from 8,000 to 9,000 feet, it forms forests. In these circumstances it often remains unbranched for the first 60 feet. Cones belonging to the growth of five separate years may often, says Mr. Wilson, be found on one tree at the same time. This happens also in a closely-allied species from Manipur, collected by Sir George Watt.

The following description is taken from Wilson's specimen.

Bark of old branches greyish-brown, covered with ash-coloured, scaly epiderm; leaf-scars only slightly prominent. Bark of young branches glabrous, shining, orange-brown; leaf-scars conspicuous. Buds, ovoid-conic; scales linear lanceolate, acuminate, chestnut-brown, with whitish fimbriate margins. Leaves generally in groups of

three, sometimes in pairs, each very slender, 16—23 cent. long, linear, acute, semiterete, minutely serrulate, concave on the ventral face, or carinate when there are three leaves in the tuft, stomata in many rows. Young sheaths 23 mill. long, tightly convolute, subcoriaceous, lanceolate, pale chestnut-brown, with white, slightly fringed margins. Leaf-section boat-shaped, convex on the dorsal surface, deeply keeled on the ventral surface when the leaves are in threes, concave when they are in pairs. Beneath the epiderm is a double layer of hypoderm, enclosing the mesophyll, the cells of which have infolded walls. The resin-canals are mostly sub-epidermal, but two or three are more deeply placed in the leaf substance, so that in this case the position of the resin-canals is of relatively little value as a distinguishing character. The meristele is elliptic, curved when the leaves are in pairs, or somewhat triangular when the leaves are in threes. The endoderm-cells are apparently about forty, but not easily to be counted; and the fibro-vascular bundle is branched, with a wedge of stereome separating the two divisions.

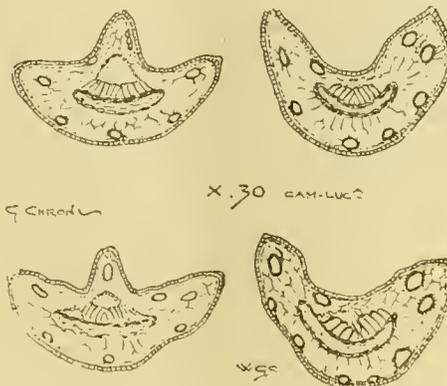


FIG. 84.—PINUS YUNNANENSIS.
To the left transverse sections of leaf from a three-leaved tuft; to the right similar sections from a leaf of a two-leaved tuft. (See Text.)

The cones are lateral, shortly stalked, ultimately subsessile, often in pairs, spreading or deflexed, larger than those of *P. khasya*. When mature and when the scales are expanded, the cones measure about 10 to 13 cent. in length, 10 cent. in diameter. The cone-scales are shining brown. The upper border of the convex apophysis is lancet-shaped and somewhat pointed, transversely keeled, somewhat wrinkled, umbo small depressed, four-sided rhomboid with a very small caducous mucro. Seeds not seen. The foliage is thicker than that of *P. khasya* and the cones are larger. In Sir George Watt's Manipur Plant, n. 5954,

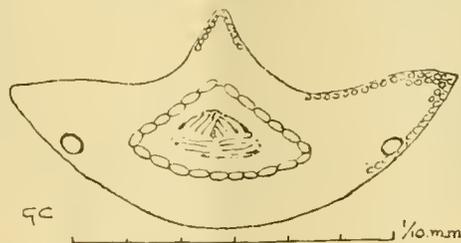


FIG. 85.—LEAF SECTION OF PINUS FROM MANIPUR (Sir G. Watt).

the leaves are shorter than those of Wilson's plant; the cones also are shorter; the apophysis not lancet-shaped but rounded, and less angular on the upper border, smoother, and the umbo slightly

more prominent. The leaf section shows the resin canals sub-epidermal and the meristele triangular with a branched bundle.

In *P. khasya* the leaves are in threes, convex dorsally, with a prominent keel on the ventral face. The resin canals are sub-epidermal, the meristele three-sided, and the fibro-vascular bundles branched.

NOTICES OF BOOKS.

INSECTS AND FUNGI INJURIOUS TO PLANTS.
Part II. By G. F. Strawson. (London: Spottiswood & Co.)

WE are glad to welcome this interesting and practically important book. The methods of remedial treatment for insect and fungous pests are arranged under four heads:—1, gas processes; 2, contact treatment; 3, toxic; 4, mechanical; 5, preventive, the latter being of all the most important, on the principle of putting a lock on the stable door to prevent the theft of the steed.

In this country we have had previously no one book as comprehensive as that on the *Spraying of Plants* by the late E. G. Lodeman. We shall not make objectionable comparisons, but we may at least say that there are points touched in the more recent publication which were not so fully dealt with in the American book.

Mr. Strawson lays great stress on gas processes, using the term "fumigation" for atmospheric operations, and "vaporising" for the operations carried on in the soil. Some objection might be raised to these terms, but as the author's meaning is fully explained there is no need to quibble about the terms employed. The gas process is simply the production of hydrocyanic acid gas by the action of sulphuric acid poured on cyanide of potassium. Of course, in the hands of careless operators this is a most dangerous procedure, but, given ordinary care and reasonable precaution, there is really nothing to fear, whilst there can be no doubt as to its efficiency. Contact treatment is used in the case of insects which, like green-fly, obtain their food by suction. Soft-soap, either alone or thoroughly mixed with kerosene, and used as a spray in the manner described on p. 53 of this book, will usually suffice to rid the plants of this pest.

The "toxic" treatment consists in spraying with some substance like Paris-green or arsenate of lead, which is poisonous to the insect. When spraying was first introduced here, and we from information received strongly advocated its use, we remember the difficulty there was in obtaining the necessary ingredients, not so much on account of their poisonous quality, which indeed renders the utmost caution necessary, as of the supineness of the dealers in not advertising their wares.

The mechanical treatment includes the uprooting or destruction of the affected plants—a drastic remedy which would not be called for if sufficient attention were given to preventive treatment. The virtues of strict cleanliness, which cannot be too strongly insisted on, have been long recognised by gardeners. Very often nothing more is required; but as a rule cultivators are careless in the matter of overcrowding their plants and in the use of manure, which may be and often is full of disease-germs. They do not practise sterilisation of the soil, and they are unwilling to put themselves to the trouble and expense of adopting preventive measures.

With regard to soil-sterilisation, Mr. Strawson has much to say about "vaporising," by which he means the introduction into the soil of the field or garden of a material that is capable of slowly decomposing and of giving off a noxious gas, which fills the interstices of the soil without causing injury to the plant. What this substance

* *Pinus yunnanensis*, Franchet, in *Journ. de Bot.*, p. 253. W. Szechuan, ad alt. 3,000—5,000 ped. Tibet orient in montibus seens fluvium Yulang, ad alt. 8,000—10,000 ped., Wilson, n. 3,000!



FIG. 86.—PINUS YUNNANENSIS, Franchet: A CHINESE PINE.

Showing cones of various ages: leaves in tufts of three, sometimes in pairs: cone-scales seen from the back, the front, and the side: from Mr. Wilson's specimen. (See p. 226.)

is Mr. Strawson does not tell us, but he names it "Vaporite," and alleges examples of its successful application to soils affected with wire-worm, phylloxera, and other noxious insects. Whether it is equally serviceable in the case of eel-worms we do not know. Mr. Strawson gives numerous formulas which will be useful for reference, and he is very careful—which many writers are not—to tell us the exact proportions in which the substances he recommends should be used.

The latter part of the volume is devoted to an account of the principal insect pests which vex the minds of the cultivators. This portion of the book is illustrated with numerous cuts, many of them from drawings from the pencil of the late Miss Georgiana Ormerod, the talented sister of Miss Eleanor Ormerod. Lastly, Mr. Strawson advocates a method of supplying a plant with water, as it were automatically, by the use of a porous cylinder introduced into the soil within an ordinary flower-pot and kept filled with water.

We have said enough to show that the book is one that every cultivator would do well to have on the most accessible shelf in his office for convenience of reference.

GRAPES AT LONGLEAT.

FOR a number of years Longleat Gardens have been made famous by the success which has attended the cultivation of Grapes in their several varieties, and of which perhaps the Alexandrian Muscat stands out as the most successful. It was, I believe in the early sixties when Mr. Wm. Taylor first came to Longleat, and the year after his arrival found him active in the preparation for and erection of the famous Vinery. It is noteworthy that here, as in a few other instances, the extension system of training has given results far superior to that obtained from a restrictive practice. For some forty years these Vines have continued to yield class crops of high-class fruit, and the crop now rapidly maturing appears to be as good in quality as any of its predecessors.

The division of the range devoted to Muscats measures 80 feet in length by 30 in breadth. In this four Vines are planted, one in each corner of the structure. These fill the whole space, and at the present time over 600 bunches are seen, or an average of just over 150 bunches to each Vine. None of the bunches weighs less than 1½ to 2 lb., and the largest, which are long, tapering, well-shouldered clusters, weigh as much as 6 lb. It would be a very easy matter to increase the number to 1,000 bunches if the grower favoured quantity rather than quality. In the erection and planting of this vinery provision was very wisely made for having ample space above and between the Vine rods and the glass roof. A large lantern roof, with lights to open continuously on each side, and other deeper front lights, which open just above the ground line, maintain a circulation of air which tends so largely to the continued success of the Longleat Grapes. There is never any need for shade, nor is there ever a sun-scorched leaf, and the atmosphere of the structure is not in the least degree oppressive, even in the hottest weather.

The depth of golden colour which always characterises the Longleat Grapes is due partly to the fact that ample space is given to each rod and lateral, and partly to the soil, which seems so well to suit the Vine. One would scarcely expect to find exuberance of foliage in Vines occupying a border for the long space of forty years, but I observed that young rods, encouraged with a view to replace the older ones, show ample vigour; indeed they would extend into many yards were

this permitted or necessary. Mr. Gandy's careful study has achieved a marked success. In some stages of their past history artificial manures played an important part in the maintenance of the growth and crops, and no doubt this still supplements the applications of liquid manure from the farm-yard.

In an adjoining compartment black Grapes are almost equally satisfactory, the bunches and berries being large, and the colour in every case already a jet black. The varieties Black Alicante, Alnwick Seedling, Gros Maroc, Lady Downes, and Black Hamburgh are all represented. It is a curious fact that although almost every other kind of Grape will succeed to perfection at Longleat, Mrs. Pince's Muscat, in regard to colour, signally fails. This

ALPINE GARDEN.

CAMPANULA ZOYSII.

THE pretty little *Campanula Zoysii* is one of the choicest and most distinct members of a genus comprising flowers of the greatest beauty and of the highest merit in the garden. It is among the numerous species which cannot well be planted in the border, but which find their homes more happily in the rock garden. The number of these is rather large, and some of the smaller species are almost unrivalled among the host of alpine flowers prized for their diminutive stature and perfect beauty. Among all these dwarf Campanulas, *C. Zoysii* always commands notice,

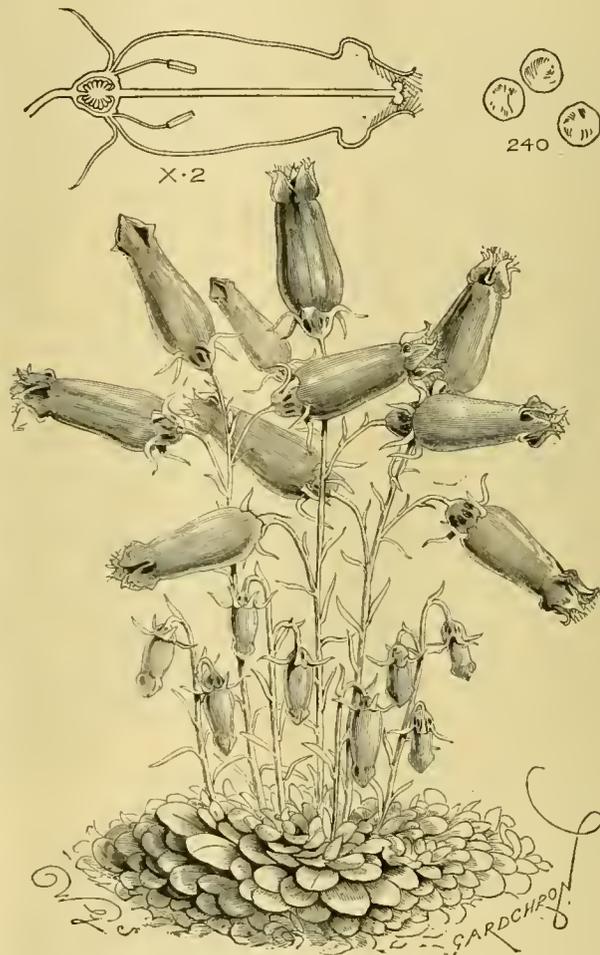


FIG. 87.—*CAMPANULA ZOYSII*: COLOUR OF FLOWERS BLUE.

clearly indicates a constitutional peculiarity requiring a special kind of soil. At Longleat it was given a long period in which to "mend its ways," but without avail, and others now furnish the space it occupied.

For Vines of such an age the main stems have attained phenomenal girth; indeed, this was very marked in their earlier days, and was encouraged by Mr. Taylor by the retention of lateral growth developing from the base upwards. Many visitors in those days remarked the presence of so much stem growth—some even considered it a waste of vitality, but it has been proved that if it did no good to allow this apparent superfluity it has done no harm, for having built up a large trunk, there must be more and better channels for the transmission of sap, which has to support so large a leaf surface and heavy weight of fruit. *W. Strugnell.*

so pretty and distinct are its blue flowers, so singularly constricted at the mouth (see fig. 87) as to give them a character of their own. The radical leaves are rather obovate, and those of the stems are somewhat lanceolate and linear. The whole plant is quite of tufted habit, and its height rarely exceeds 3 or 4 inches, although one has met with it almost 6 inches high.

Campanula Zoysii is one of the species which like plenty of sun, but it is not particular as to the formation of rock on which it is grown. Unlike a few of the genus it has no dislike to lime, but it should have a sunny chink between two stones, and a light and gritty soil. Although it likes a sunny position it must not be allowed to become absolutely dry at the roots.

While *Campanula Zoysii* cannot well be called difficult to cultivate, it has been found that the stock should be renewed occasionally by propagation. The writer has seen some fine plants,

which appeared to be in perfect health for some years, going off during a winter of the normal character. The species comes from Carniola and the neighbouring districts, and, although introduced as far back as 1813, it is far from plentiful in gardens. This is regrettable and surprising, seeing that it is stocked by most nurserymen who make a speciality of rock plants. It flowers about June, and the floriferousness of even a small plant is an object of remark by all who see it for the first time.

SAXIFRAGA GUTHRIEANA VARIEGATA.

This very beautiful variegated-leaved Saxifrage is but little cultivated, and it is only now and then that one sees it offered by nurserymen dealing largely in alpine plants. I have never been able to trace its origin, and it is not mentioned in even such exhaustive works of their class as Mr. George Nicholson's *Dictionary of Gardening*, being omitted even from the "1900 Supplement" of that invaluable work. The variety has been known to me for twenty years or so, but unfortu-

EUPATORIUM MICRANTHUM.

This is the correct name of the shrub that is almost universally known as *E. Weinmannianum* (see fig. 88). It is a native of Mexico, and can therefore scarcely be considered hardy, but in the south-west it never receives the slightest injury from the winter frosts, even when grown in bush form, without wall protection. It is particularly valuable for its late-blooming habit. In September, *Escallonia montevidensis* or *floribunda* perfects its white pyramida of flower, and when these have faded *Eupatorium micranthum* expands its flat, white, fragrant flower-heads. The plants flower through October and the greater part of November, and even in December fresh flower-clusters are still to be seen. After the blossoms have faded they are succeeded by grey, downy seed-vessels which have a pretty effect. The feathery flower-heads last well in water, and may be arranged to good effect in tall vases. The oval leaves are deep green and the shoots Willow-like. There is a variegated form known as tricolor that is a handsome plant, having its

half the size of the leaves, and two much smaller. The flowers are six-petaled, 2 inches in diameter, white, with a blotch of light pink on each petal. The petals are deltoid in form, and thick and waxy in texture. There are twelve stamens with short filaments, and large, yellow, oblong anthers which are united by the margins and form a circle around the slender style. The anthera dehisc by minute pores at the apex. The flower is beautifully scented, and in general appearance may be said to be like a glorified Apple-blossom. The Kew plant was obtained from Lemoine et Fils, of Nancy, who do not appear to have catalogued this species, possibly owing to the possession of a limited stock only. *B. gracilis* succeeds well in an intermediate temperature, and potted in a peaty compost.

TREES AND SHRUBS.

AUCUBA GRAFTING.

THE male *Aucuba japonica* is a common plant in many gardens, but the berry-bearing or female is much less common. Of this there are many—viz., *A. aurea marginata*, *A. sulphurea*, *A. salicifolia*, *A. latimaculata*, *A. macrophylla*, and others. In order to obtain berries on the latter, various devices are adopted; for example, placing a plant of *A. japonica* in the vicinity of the females, so that the pollen may be distributed by the wind over the female blossoms; grafting branches, or rather budding them on the female bushes; or what is surer, as the plants do not synchronise in the time of flowering, secure pollen of the male *Aucuba* flowers, and apply [it] with a camel's-hair pencil. The pollen will retain its potency for a month or longer [much longer] if kept dry in a glass tube or tin-foil. Grafting may be carried out in this month and onwards to February in warmth. A few striking male *Aucubas* are found in the varieties bicolor, maculata, marmorata, sulphurea (with yellow-blotched leaves), and *A. japonica viridis*, *macrophylla*, and *himalaica*, with green leaves. F. M.

TAMARIX PALLASII VAR. ROSEA.

Under the name of *T. hispida* var. *aestivalis* this Tamarisk was sent out from the nursery of M. Leon Chenault, of Orleans, some four or five years ago. When it first flowered at Kew it was found to belong not to *T. hispida*, but to *T. Pallasii*, although, according to M. Chenault's account of its origin, it first appeared in a seed-bed of *T. hispida*. Dr. Stapf however, our first authority on the Tamarisks, has definitely identified it as a form of *T. Pallasii*. However erroneous a name may be, it is always a long time before a plant loses the name under which it is first distributed.

As a hardy shrub this Tamarisk has proved to be a most valuable acquisition. It flowers in July and August, and a new shrub which blooms in those two months is three times more valuable than if it flowered in May. In habit it has all the delicate grace of the Tamarisks, the plume-like branches being of a delicate pale green colour. The flowers come in short cylindrical racemes, which themselves are borne in large compound panicles, and on strong growths 1½ to 2 feet long. The colour is of a beautiful pale rose. The individual flower is, in this as in all Tamarisks, very small. This shrub can be propagated pretty much in the same way as Willows and Gooseberries are propagated, that is by putting in stout cuttings of the previous summer's wood in sandy soil as soon as the leaves have fallen. A group planted in a bed near the Cactus-house at Kew has been very beautiful for some weeks past.

FLOWERING OF BAMBOOS.

For some few years past hardy Bamboos have been flowering more or less over the whole



[From a photograph by Mr. F. M. Bennett.]

FIG. 88.—EUPATORIUM MICRANTHUM: FLOWER-HEADS WHITE AND FRAGRANT.

nately it is hardly possible to retain it in my garden because of the fondness of the blackbirds and thrushes for pulling the plants out of the ground. This has been observed in other gardens, and may account for the scarcity. The typical *S. Guthrieana* appears as scarce, but as it is very like *S. Andrewsii*, also said to be a hybrid, this is of little consequence. It is different, however, with the variegated-leaved form, which is so beautiful that it ought to be well cared for.

The leaves of *S. Guthrieana variegata* are its chief attraction, being of a pretty glaucous grey, and each having a broad band of rather pale gold colour, giving the narrowish, ligulate leaves and the rosettes which they form a charming appearance. From these rosettes rise in summer the panicles of white, purple-dotted flowers, which, when seen a little distance away, look rather pinkish in general effect. There is no difficulty in cultivating this Saxifrage, provided that the birds will leave it alone; but if they do attack it, means must be taken for the protection of the plant. It is cultivated, among other places, in the Royal Botanic Gardens Edinburgh, and plants are at present being offered in some British catalogues. *S. Arnott, Carsethorn-by-Dumfries, Scotland.*

leaves prettily mottled with rose, white and yellow colours. *Eupatorium micranthum* grows into a thick, rounded bush, and assumes large dimensions. The accompanying illustration shows a shrub that is about 8 feet in height and the same in diameter. *S. W. Fitzherbert, Devonshire.*

KEW NOTES.

BLAKEA GRACILIS, Hemsley.—A small specimen of this extremely rare Melastomad was recently in flower at Kew. The genus consists of about twenty species, all of which are shrubby in habit. They are natives of the West Indies and Central America to Peru. The only other species in cultivation at Kew is *B. trinervia*, which is a much larger-growing species than the one under notice. *B. gracilis* makes a compact shrub with a height and diameter of from 2 to 3 feet. The leaves are opposite, elliptic-acuminate, glabrous, and entire on the margins. They are coriaceous in texture and about 3 inches in length by 1½ inch in breadth. The solitary flowers are produced in the axils of the leaves, on erect pedicels 1½ inch in length. Close to the calyx are four foliaceous bracts, two of which are about

country. This season I am afraid we are seeing the culmination of the disaster (for it can only be described as such). At Kew every plant of *Arundinaria Simoni* that had not previously flowered is doing so now. And the same has to be said of *Phyllostachys Henonis*, perhaps the most beautiful of hardy Bamboos. *P. fulva* (of Mitford) is flowering also. Last year we lost all the fine plants of *Phyllostachys Castillonis* and *P. Boryana*, and what few remained of *P. nigra punctata* are now going the way of the rest. All these kinds of *Phyllostachys* as they have flowered have been examined by Dr. Stapf, and their floral characters prove them all to belong to one species—*P. nigra*. It would be interesting to know from some reader in Japan (whence all these Bamboos came) if they are flowering in that country at the present time. Unless the *Phyllostachys* are ripening seed better elsewhere than at Kew we shall have to look to Japan to renew our stock. But it would not be worth while to import plants of the present generation, which, if not already at their flowering stage, will, I should think, soon reach it. Seedlings raised at the present time will not flower for probably another thirty years at least. *W. J. Bean.*

POTATO LEAF-CURL.

ALTHOUGH this disease has a place in Masee's *Text-Book of Plant Diseases*, it is the first time that it has been brought to our notice as a real pest in this country. In the work above named it is characterised as a "well-known disease of the foliage of Potatoes known as 'leaf-curl,' which attacks the stem, usually close to the ground at first, and gradually creeps up, first causing the leaves to curl and finally the stem also collapses. When the leaves first curl there is usually no external sign of the fungus, but at a later stage the stem and leaves become more or less studded with blackish, minutely velvety patches."

This fungus apparently first made its appearance in the United States, and specimens were sent to us in 1883 on *Datura* and *Tomato*, when it was described and named as *Macrosporium Solani* (Cooke). Afterwards it was discovered by Saccardo that a species had already been named *M. Solani*, wherefore he called the present species *Macrosporium Cookei* (Saccardo). Although it had been hinted that this mould had appeared in this country, it was not until this season that we became aware of it as a virulent pest.

The genus *Macrosporium* has some of its members which are exceedingly troublesome in gardens, especially the black rot on ripe *Tomatoes*, and a black mould on the leaves of *Carnations*. In this instance the leaves become bullate, and covered with somewhat circular or confluent blackish spots, rather velvety on the under surface, which at length bears the rather short and slender flexuose brown hyphae, and these at length produce the conidia of a species of *Cladosporium*, at first simple, slightly coloured, then uniseptate or biseptate; shortly afterwards these are accompanied by *Macrosporium* spores which are clavate, four to six times septate, with longitudinal septa, so as to become muriform, at first hyaline, soon becoming coloured ($60-70 \times 10 \mu$). These conidia are much smaller than those of *Macrosporium Tomato*. The other *Macrosporium Solani* (Ellis) is also a native of the United States, but it occurs on the dead leaves of the *Potato*, and would therefore be a saprophyte, with conidia nearly twice as long ($120-140 \times 15-18 \mu$), with more numerous septa, and pointed at the apex.

It would appear that for some time, in the British species, the only conidia to be seen are those of the *Cladosporium* form. What is the exact relationship of the *Cladosporium* to the *Macrosporium* has not yet been determined, but it is certain that in other species of *Macrosporium* the true clavate, muriform conidia are preceded by

or mixed with, the smaller and simpler conidia which are characteristic of *Cladosporium*.

At present no effective means have been discovered for preventing or destroying the mould, but it may safely be stated that when the black spots appear and the disease is in full vigour, it is too late to attempt to hold it in check. However, it must be urged that it is advisable to collect and burn all blackened haulms and foliage, since the spores may persist through the winter on all fragments of diseased leaves and stems, and reappear on the young plants of the following spring.

Spraying with a solution of ammoniacal copper carbonate, or dilute Bordeaux-mixture, may check the disease, if commenced sufficiently early. It is uncertain whether any "sclerotia" are formed in this disease, but if so the spraying would be likely to prevent their formation.

It is not at present clear to what extent this disease will affect the tubers. Hitherto we have seen it only from Nottinghamshire, but it is well that *Potato* growers should be on the alert. *M. C. Cooke.*

The Week's Work.

THE ORCHID HOUSES.

By W. H. YOUNG, Orchid Grower to Sir FREDERICK WIGAN, Bart., Clare Lawn, East Sheen, S.W.

Dendrobiums.—These plants, almost without exception, will have reached, or be approaching the limit of their growth, and in consequence they will now need very different treatment to that which has been accorded them during their growing season. *D. Phalaenopsis*, *D. bigibbum*, *D. Goldei*, *D. Leeannum*, *D. formosum*, and other species which produce their flowers as the growths near completion, will need all the heat and light obtainable in the East Indian-house; but the rooting medium and atmospheric surroundings should be kept much drier. When the flowers have faded a very restricted supply of moisture at the roots will suffice. *D. nobile* and the many hybrids from it require an intermediate temperature, plenty of light, and moderately free ventilation in order that they may ripen the newly-made pseudo-bulbs; while to prevent disfigurement from the disease known as "spot," both cold draughts and a "stuffy" atmosphere must be avoided, although for some considerable time after the limit of their growth is reached, and during the period they are occupying their resting quarters, the rooting medium must be again moistened soon after it has become dry. As the year draws to a close water at the roots will only be needed when signs of shrivelling appear in the younger pseudo-bulbs. If red spider is feared, an occasional spraying with an approved insecticide should be applied when conditions favour such a proceeding. Species of a deciduous nature, such as *D. Wardianum*, *D. crassinode*, *D. primulinum*, &c., will need very little water after the leaves have fallen. Place plants of the first-named species in a cool, well-ventilated house, where the young growths can be held in check for as long a period as is reasonable. *D. Falconerii* gives the best results when grown in a cool position, and from now onward through the winter and early spring months an occasional spraying of its pendent growths will be sufficient to keep them in perfect condition. *D. × Vennis*, a hybrid from *D. Falconerii* × *D. nobile*, also needs cool treatment, but it will not stand such protracted drought as the first-named parent.

Dendrobium thyrsiflorum, *D. Farmerii*, and others of this section need a cool temperature, with a light dry atmosphere and very dry basal conditions, but not such as will cause shrivelling, when at their period of rest. *D. fimbriatum*, *D. moschatum*, *D. suavisimum*, *D. chrysotoxum*, *D. clavatum*, &c., may be allowed to rest where they have grown, but their supply of water must be limited to very small quantities. *D. McCarthia* and *D. luteolum* are difficult to cultivate through many winters in succession, as they proceed to grow late in the season, and thus have little chance to mature their growth. Place these

plants in the lightest and warmest quarter of the stove and keep the rooting materials just moist. *D. Devonianum* is another species that does not take kindly to ordinary treatment. The plants are deciduous, and after the leaves have perished very little water is needed to keep the long pendent pseudo-bulbs from shrivelling. Another difficult subject to succeed is *D. Bensoniae*. This needs much heat and light to mature its deciduous pseudo-bulbs. It should be allowed a good position in the stove, and when the leaves have dropped further watering will seldom be required. *D. Dearei* differs from most species in needing very little rest, though a much restricted supply of water should be given during the dull season. It thrives best grown in a basket suspended on the shaded side of the warm house during the summer and the lightest side in winter. Water must be kept from entering the points of the young growths.

FRUITS UNDER GLASS.

By F. JORDAN, Gardener to Dr. CORRET, Impney Hall Gardens, Droitwich.

Muscat of Alexandria.—For some reason this valuable Grape has not coloured so well this season as might have been expected. The temperature of houses in which the Grapes are ripened must be gradually reduced, and the amount of atmospheric moisture lessened. At the same time a constant circulation of cool, dry air must be allowed. Remove any decayed berries or leaves.

Early Vines.—Continue to carry out the work of root-lifting and replenishing the borders where necessary while the weather is still favourable, according to the directions given in the Calendar for August 12.

Mid-season Grapes.—Allow a little warmth in the pipes by night and by day to dispel any moisture present in the atmosphere, giving a little top and front ventilation whenever the weather is favourable. Endeavour to keep the foliage healthy for a long period, and allow the bunches to receive as much light as possible. See that the Vines do not suffer from lack of water at the roots, and when water is to be given, choose a fine day for its application, removing the mulching for the purpose and replacing it again to prevent the moisture from rising.

Late Grapes.—If the Vines have received careful treatment during the summer months the Grapes should be thoroughly ripened by the end of this month, after which artificial heat only sufficient to expel damp and prevent the temperature from falling below 50° in the morning will be necessary. The process of damping the paths and borders should only be resorted to on bright mornings. The paths must be very carefully swept in order to prevent the dust from rising and settling on the berries. The lateral growths on late Vines of *Gros Colmar* which have been allowed free extension should now be removed. Recent weather has not been favourable to the finish of this Grape, which should be given almost the same treatment as that afforded to *Muscat of Alexandria*, and it requires as long a season of growth as that variety. Feeding with stimulants should now be discontinued, but tepid water should still be given, as the bunches will hang for three months before being bottled.

Pot Vines intended for starting into growth in November, and whose wood should be quite ripened by now, should receive what little pruning is necessary, in order to allow the Vines as long a period of rest as possible. Apply styptic to the cut surfaces, and keep the Vines in a cool, dry place, where little water should be given them, and only sufficient to prevent the soil shrinking from the sides of the pots. Young canes grown from eyes inserted during the beginning of the year, and which are intended for cut-backs or for planting next spring, should shortly be removed to a fully-ventilated house, or placed against a south or west wall. Secure the canes to prevent their being damaged by the wind, and do not allow them to suffer from want of water at the roots.

THE KITCHEN GARDEN.

By W. FYFE, Gardener to Lady WANTAGE, Lockinge Park, Wantage.

Green Herbs.—To procure a supply of green herbs during the winter cut the plants down close to the ground as soon as the present growth is ripened. Some time before the herbs are required lift the plants from the beds, using a fork for the purpose and without disturbing more of the soil about the roots than is necessary; put them closely together in a frame or pit upon a bed of leaves covered with fine leaf-soil. Place 2 inches of fine leaf-soil about the plants, and water sufficiently to settle the soil amongst the roots. Afford a mild bottom-heat, and abundance of young serviceable shoots will soon be produced. Ventilation must be given in order to keep the plants sturdy. Sorrel and Chives should be lifted with a ball of soil and planted in earth of a stiff character. Marjoram should be grown in pots in a temperature with fire-heat of 45°, and must be given abundance of air to prevent damping. More difficulty is experienced with such tender herbs as Sweet Basil, which requires to be grown in a forcing-pit or near to the glass in a Cucumber-house. Sow the seeds on the surface of the soil, and cover them with light shading until germination takes place. Hardier herbs for winter use, such as Chervil, should be sown in a warm, sheltered corner out-of-doors.

French Beans.—On the 12th, 13th, and 14th inst. we had sharp frosts which have blackened French Beans and Vegetable-marrows. Beans growing in pits heated with hot-water and that are now coming into bearing will be in no danger from frost, but if the heat is derived from dung-linings the danger from damping is great; consequently care must be exercised in affording water. Beans in heated pits should be frequently syringed for the purpose of destroying red spider. Sowings of this vegetable should be made at intervals of three weeks.

Seakale.—Plants grown for the purpose of early forcing will soon need lifting. Seakale naturally sheds its leaves very late in the season, and similar to all other plants forces best after a period of rest; but well-matured plants, even if some of the leaves are present, if partially lifted some time previous to forcing, will give good results. A Mushroom-house or a cellar in which a temperature of 65° to 70° can be maintained will answer admirably for forcing the plants, and it must be understood that total darkness is essential to secure proper bleaching and tenderness in the produce.

Globe Artichokes.—All flower-stems should be cut down close to the ground, the exhausted soil about the roots removed, and replaced by 6 inches of farmyard manure, covered with the same depth of well-sifted coal-ashes. Later in the season protect the plants with similar material, placing it in pyramidal form in and around the plants.

THE FLOWER GARDEN.

By W. A. MILLER, Gardener to Lord HENRY C. BENTINCK, M.P., Underley Hall, Westmoreland.

Bulbous and other Flowers.—Crown Imperials (*Fritillaria imperialis*).—These succeed best planted in loamy soil in an open position. The present is a suitable time for planting the bulbs, which should be placed from 4 to 6 inches deep, and on their sides, in order to prevent water from lodging in their centres. Varieties of the Snake's-head *Fritillaria* are excellent subjects for planting in grass in moist, shady places. *Alstroemerias* should be grown in quantity, as their flowers travel well and remain in good condition for a long period when cut. A sunny border having a good depth of sandy soil suits them. Plant the roots 9 inches deep, and afford the plants protection until they have become established. *Lilium candidum* requires a good depth of heavy loam. When once the bulbs have been planted they should not be disturbed. Dust the bulbs with flowers-of-sulphur before they are planted, in order to prevent disease attacking them. English and Spanish Irises thrive well in ordinary garden soil. The planting of these should not be longer delayed. Dog's-tooth Violet (*Erythronium dens-canis*) and the American varieties are useful spring-flowering bulbs,

showing well on rockeries and when naturalised in grass. Plant the roots 3 inches deep in a little sand. Snowdrops, Scillas, Muscari, Ornithogalums, Chionodoxas, and Winter Aconites, should be planted soon. *Anemone fulgens* does best in a well-drained, rich, warm soil with a sunny and dry aspect. *A. pennina* is also a desirable variety. *A. St. Brigid* is an extra fine strain, having stiff flowering stems developed well above the foliage. The arrangements for next year's planting should be decided upon whilst the beds are full of bloom.

Herbaceous Borders will now be showing unsightly bare spots. These can be largely filled by spreading out the shoots of such plants as *Chrysanthemums*, *Helenium autumnale cupreum*, and the many beautiful herbaceous *Asters*. The Japanese *Anemones* are useful border plants, as they withstand the effects of heavy rains. *A. japonica alba* is difficult to surpass for all purposes. *Queen Charlotte* is one of the finest of the newer varieties; it has large flowers of a soft shade of pink colour, and is a robust grower. *Prince Heinrich* has double flowers of a rich pink colour. Japanese *Anemones* succeed best when planted in rich soil of a light nature, with which is incorporated plenty of leaf-mould. They will grow in half-shady places, and may be easily propagated by division of their roots. Cuttings of Lavender and Rosemary about 6 inches long should now be inserted in sandy soil under handlights. Choose healthy shoots for this purpose. *Phygelius capensis* is a very showy autumn-flowering plant when grown in a warm situation. If cuttings be inserted in a cold frame at the present time they will furnish good plants for next season.

THE HARDY FRUIT GARDEN.

By W. H. CLARKE, Gardener to Sir WILLIAM PLOWDEN, Aston Rowant House, Oxon.

Apricots.—These, like the generality of trees producing stone-fruits, do not like severe cutting of their branches, especially after the trees have become denuded of leaves. Where disbudding and pinching have been practised during the summer, in accordance with the advice given in these columns, there will be little remaining to be done, but the present is the time to perform any necessary pruning. Apricots bear principally on spurs, whose formation can be largely induced by the cultivator. On trees whose young growths have been pinched back to four or five leaves, and the subsequent growths pinched again to two or three leaves, several small shoots will have been formed. These various axillary growths should be shortened back to the third or fourth leaf made at the first growth, or in cases where there is a cluster of eyes, to the third or fourth bud. From these spurs which have been so formed the fruit crop will be developed next season. Shortening these spurs at the present time induces the buds to become strong, plump, and well ripened, and capable of producing strong, healthy blossom. The extension shoots, and those required for replacing those which have become barren or which have died, should be cut back to the length required. If short, close-jointed shoots have been developed, severe cutting will not be necessary; but too great a length of vigorous shoots must not be left, otherwise fruiting spurs only will form towards the end of the branches, leaving two-thirds of the shoot barren as long as the branch remains. Clean cuts heal quickly at the present time, and gumming is seldom occasioned by them. All shoots should as far as possible be nailed close to the wall so as to fully ripen and harden the young growths.

Peaches and Nectarines.—Mid-season varieties are now ripening fast; in fact, many trees are already cleared of fruit, and the latest varieties will soon be ready for gathering. Fruits when in a condition for gathering will part easily from the shoots, and if placed on cotton-wadding overlying a sheet of glass, or on the shelves of a cool fruit-room, will keep for some days. Peaches and Nectarines are of superior flavour when gathered in this way, and should not be allowed to drop into nets improvised for catching them. All trees as they are cleared of fruits should have their surplus shoots removed, and growth of the

present season regulated, and exposed to all the sunshine possible.

Red Spider, &c.—Trees infested with red spider should be treated with a suitable insecticide, for at this season the pest can be easily eradicated. A strong and powerful application of the insecticide can be applied at the present time. I have used the following mixture with success. Place in a 4-gallon can one handful of flowers-of-sulphur and 2 oz. of soft-soap to each gallon of water; fill up the can with warm water, and mix the whole thoroughly together. Every particle of foliage and wood should be wetted, likewise the wall and the crevices, wherein many insects hibernate. After allowing this to remain on the foliage for three days an occasional syringing with clear water will benefit the trees.

PLANTS UNDER GLASS.

By A. BULLOCK, Gardener to E. J. WYTTLES, Esq., Copped Hall, Epping, Essex.

Zonal Pelargoniums.—Plants that have been grown as advised in a previous Calendar should now be transferred to suitable quarters for the perfection of their flowers. Choose a light, well-ventilated structure and place the plants as near to the glass as is possible, allowing sufficient room between them to permit a free circulation of air. During cold nights a little fire-heat should be given for the purpose of preventing "damping" in the plants. A teaspoonful of gnano to a gallon of water forms an excellent stimulant, and should be given each time the plants require water.

Leonotus leonurus is a suitable subject for furnishing a cool conservatory. It is easily increased, and a succession of flowers may be maintained by propagating at intervals. Plants that have passed out of flower should be cut back, placed in a warm house, and syringed frequently. Young growths quickly develop, and when these are of a suitable length they should be inserted five or six in a pot and plunged in a mild bottom-heat. When rooted, pot them off singly into small pots and place them near the light in a warm house.

Primula × kewensis.—Plants that are well rooted should be afforded light and air in order to ripen them. On very bright days only should a light shading be given, gradually dispensing with it entirely. Plants intended for flowering in January should not be allowed to develop blooms until required.

Chrysanthemums.—Plants with prominent flower-buds should be placed under glass to avoid damage from rains or heavy dews.

Roman Hyacinths, Early Narcissus, &c.—Remove to a cold frame and shade for a few days those that have started into growth.

Tuberous-rooting Begonias.—As these pass out of flower stand them in a cold frame or in a cool-house, in order to thoroughly ripen their growth and thus ensure the tubers remaining in a sound condition whilst in a dormant state. Water at the roots should be given sparingly, and as the foliage dies off moisture must be withheld entirely. The pots containing the tubers should be turned on their sides beneath the staging in a house where the temperature is not allowed to fall below 40°.

Lobelia tenuior.—Another sowing should now be made for a successional batch, and the seedlings treated in the same manner as advised in a previous Calendar.

Mignonette.—Afford these plants a position as near to the light as possible, and allow free circulation of air to pass between them. Afford suitable support to the plants, using thin stakes for the purpose.

SALICORNIA HERBACEA.—In the Calais market recently we met with this vegetable for sale. It was formerly used like samphire for pickling in this country, but we have not seen it so utilised for many years. Samphire, by the way, still grows in some abundance on or close to Shakespeare's Cliff, Dover, and in such circumstances that it is not likely to be extirpated.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Letters for Publication, as well as specimens and plants for naming, should be addressed to the EDITOR, 41, Wellington Street, Covent Garden, London. Communications should be written on ONE SIDE ONLY OF THE PAPER, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

Special Notice to Correspondents.—The Editor does not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editor does not hold himself responsible for any opinions expressed by his correspondents.

Illustrations.—The Editor will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens, or of remarkable plants, flowers, trees, &c.; but he cannot be responsible for loss or injury.

Newspapers.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY, SEPT. 26. Royal Horticultural Society's Committees meet: National Rose Society's Autumn Show (4 days); and National Dahlia Society's Committee meet in Royal Horticultural Hall, Vincent Square, Westminster.

FRIDAY, SEPT. 29—Michaelmas, Quarter Day.

SALES FOR THE WEEK.

MONDAY TO FRIDAY NEXT—Dutch Bulbs, at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 10.20.

MONDAY and WEDNESDAY NEXT—Sale of Dutch Bulbs, at Stevens's Rooms, King Street Covent Garden.

WEDNESDAY NEXT—31,000 Fruit Trees, 5,000 Roses, Ornamental Trees and Shrubs, &c. at The Nursery, Downham, Norfolk, by order of Messrs. Bird, Vallance & Co., by Protheroe & Morris, at 11.—Lilium Harrisii from Bermuda, also L. candidum, Narcissus, &c., at 3; Ornamental and Decorative Palms and Plants, at 5, at 67 and 68, Cheapside, E.C., by Protheroe & Morris.

FRIDAY NEXT—Imported and Established Orchids from various sources, at 12.30 o'clock, at 67 and 68, Cheapside, E.C., by Protheroe & Morris.

(For further particulars see our Advertisement columns.)

AVERAGE TEMPERATURE for the ensuing week, deduced from observations of Forty-three Years at Chiswick—55.5°.

ACTUAL TEMPERATURES:—

LONDON.—Wednesday, Sept. 20 (6 P.M.): Max. 62°; Min. 45°.
Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—Thursday, Sept. 21 (10 A.M.): Bar., 30.3; Temp., 49°. Weather—Bright sunshine.

PROVINCES.—Wednesday, Sept. 20 (6 P.M.): Max. 60°, S.W. Coast of England; Min. 51°, North Ireland.

Manures for Roses.

AT the recent Rose Congress in Paris M. GEORGES TRUFFAUT spoke of the experiments which had been made with reference to the use of artificial manures in Rose-culture.

A special Committee had been organised at a previous meeting to enquire into the question of manuring Roses, and to ascertain what are the fertilising substances most beneficial to them. M. COCHET, the well-known rosarian, made some investigations into the chemical composition of the Rose Madame Ulrich Brunner. M. HÉBERT and M. TRUFFAUT also analysed plants of the same variety, supplied by M. COCHET, and arrived at almost identical results.

Roses, according to these experiments, are not very exacting as regards the nature of their food. A plot containing 40,000 Roses to the hectare (about 2½ acres) yielded about 6,000 kilos. (nearly 55 tons) of branches and leaves, and these contained nitrogen 46 kilos. (92 lb.), potash 19 kilos. (38 lb.), phosphoric acid 15 kilos. (30 lb.), lime 51 kilos. (102 lb.), and magnesia 31 kilos. (62 lb.). It may be seen from this that Roses require a large

amount of nitrogen, which is the most important constituent in their food. A new and unexpected result to be noted is the importance of magnesia as a constituent of the food of Roses. Magnesia, indeed, seems to some extent to replace potash, and experiments have further confirmed this idea.

Speaking broadly, it is found that nitrogenous manures mixed with the soil, even when slow to decompose, yield results that are only slightly favourable. Roses apparently prefer the application of liquid manure to the use of solid food, the latter being slow in undergoing nitrification. Thus the application of manure in composts containing 30 per cent. of dried blood and 51 per cent. of burnt horn has sometimes given unsatisfactory results.

According to M. COCHET's experiments, the Roses grown in a soil mixed with a double supply of "complete manure" did the worst, and those grown with potash only also yielded bad results. The plants grown without nitrogen did fairly well in soil, but very indifferently in sand. Therefore, according to M. COCHET's experiments, the use of fertilisers containing nitrogen and phosphoric acid were the most satisfactory, and those that contained potash only were the least so.

The work of the experimenters brings out the fact, as the result of five series of experiments in as many districts and in soils of various quality, that Roses are plants especially requiring nitrates; even three times more nitrates than phosphates. Potash alone seems of but little use and may even be injurious, while magnesia seems to serve as a substitute for potash as a food for Roses. "We think," continues M. TRUFFAUT, "that this fact is established for the first time. Magnesia and manganese appear to play an important part which we must try to elucidate by continuing our experiments. Meanwhile it is as well to bring this fact to the notice of rosarians, as it is the more remarkable because potash has hitherto been generally considered as of paramount importance in the cultivation of Roses."

ROYAL HORTICULTURAL SOCIETY.—The next meeting of the Committees will take place on Tuesday, September 26. In conjunction with this meeting will be held the Autumn Rose Show of the National Rose Society, the latter display extending over the following day. The Committee of the National Dahlia Society will also meet in the Royal Horticultural Hall on the 26th inst., to grant Certificates to seedling Dahlias.

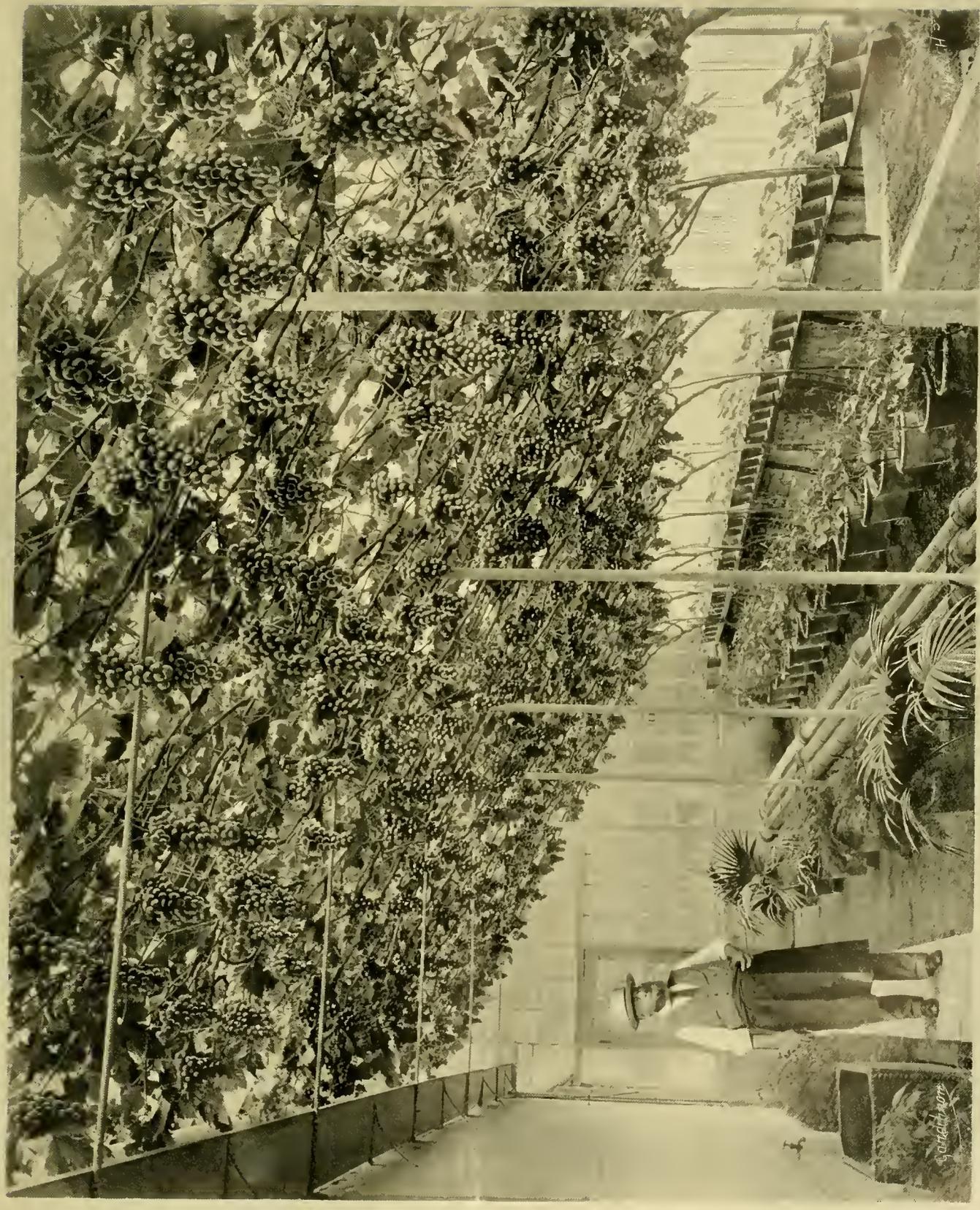
A REVISION OF THE GENUS CEREUS.—Mr. ALWIN BERGER is employed by Sir THOMAS HANNURY in his famous garden at La Mortola to look after the botany of the collections, and he has seized the opportunity presented by the large number of Cacti cultivated there to study the characters of some of them. With the assistance of Dr. W. TRELEASE he has just published, in the *Sixteenth Annual Report of the Missouri Botanical Garden* (May, 1905), some interesting notes on the genus *Cereus*, which he wishes to be considered as an attempt only to group the various species under sub-genera, in the hope that it will draw the attention of other botanists to an interesting and difficult order of plants, the forms of which are very numerous, while the characters relied upon by some botanists who have studied them are decidedly open to question. Attention is being specially devoted to the plants

of this order by Mr. N. E. BROWN, who has in the large collection cultivated at Kew exceptional facilities for studying them. Many of the so-called species have been made by horticulturists, who have given new names to plants unknown to them perhaps, but which had already been named by botanists. The difficulty of preserving Cacti in herbaria adds to the labour of the botanist who undertakes their study. However, good work of this kind is being done by the botanists of the United States, and we are indebted to the Germans FORSTER and SCHUMANN for exhaustive monographs of the order. Mr. BERGER has not attempted more than to group the various species (there are over 200 of them!) according to certain characters which he sets forth. He may be interested to know that *Cereus giganteus* has flowered several times recently at Kew; that *C. triangularis* fruits there, and that the big *Cereus* in the gardens at Monte Carlo, represented in his Plate V., is no doubt what is grown at Kew as *C. peruvianus*. We note that he follows SCHUMANN in preferring the name *speciosus* for the plant generally known as *C. speciosissimus*, and that he has removed *Pilocereus senilis* from the other species of that name, placing it in Pfeiffer's *Cephalocereus* along with *C. columna Trajani*, &c. He follows BENTHAM and HOOKER in including under *Cereus* the *Echinocereus*, *Echinopsis*, *Pilocereus* and *Leptocereus*. *C. Wittii*, a Brazilian epiphytic species with climbing flat stems and large flowers, he considers "a beautiful connecting-link with *Phyllocactus*." We have always looked upon *C. speciosus* (*speciosissimus*) as affording this link. This plant has, as BERGER notes, had a share in the origin of many of the much admired garden forms of *Phyllocactus*. *W. W.*

AUTUMN STRAWBERRIES.—Messrs. W. PAUL & SON, Waltham Cross Nurseries, Herts, sent us (September 19) a box containing excellent fruits of three varieties of autumn-fruiting Strawberries. One of these is the well-known variety St. Joseph; another is La Constante Féconde, similar in form and size to the fruits of St. Joseph, but having less prominent seeds. The best variety of the three, however, is one named Oregon, having much larger fruits, which are more or less wedge-shaped. As showing the size of these fruits, it may be useful to state that six of them together weighed just under 3 oz., and several exceeded half-an-ounce each. In flavour they are very agreeable, and may be fairly described as among the best fruits of this type of Strawberry we have seen. Messrs. PAUL state that all of the fruits were gathered from plants grown under the ordinary conditions of field cultivation.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT SOCIETY.—We are informed that the annual dinner will be held at the Holborn Restaurant (Royal Venetian Chamber), High Holborn, on Tuesday, October 10, 1905, at 6.30 P.M. WILLIAM MARSHALL, Esq., the first President of the Society, has consented to take the chair on this occasion. It is hoped that all members and friends of the Society who can possibly attend will endeavour to do so. Tickets may be had of the Secretary, W. COLLINS, 9, Martindale Road, Balham, S.W.

BRUSSELS BOTANIC GARDEN.—A very striking feature in the Botanic Garden, Brussels, is a clump of Bamboos which may be well seen from the adjoining boulevard. The plants are some 14 or 15 feet high, and the stems, especially in the case of *Phyllostachys sulphurea*, are of a golden-yellow colour. Less highly coloured are *P. pubescens* and *Bambusa mitis*. Of late years a great deal has been done in these gardens to illustrate the "adaptations" of plants to their environment. The "series *éthologiques*," both in



A CROP OF GRAPES IN THE GARDENS AT HARTWELL PARK, BUCKS, THE RESIDENCE OF COL. E. DYKE LEE.

and out-of-doors, serve to show not only the varying morphological features of plants, but also the "reason why." A well-devised system of labelling renders these collections very instructive. They are well adapted to stir the imagination and promote the intelligence of the "sight-seer." A well-arranged Wood Museum has been opened since our last visit, and will prove very useful to the students of forestry and of the diseases and injuries of trees. A bust of the late Director, M. CRÉPIN, has been placed in the herbarium. It is a successful likeness, and represents the pleasant smile with which he greeted his friends.

FARM AND GARDEN PRODUCE BY RAIL.—The reader has long been conversant with the disputes between cultivators and carriers, both complaining of the treatment meted to them by the other. The Board of Agriculture and Fisheries appears to be well adapted to act as a go-between in any case of dispute, and having already done good service, holds forth a promise to do more whenever required. Much misapprehension on the part of cultivators has, we are assured, been dispelled, and railway companies are also invited to seek the aid of the Government department in Whitehall. Aggregation of produce required to be conveyed is asked from their clients by carriers, in fact, co-operation in seeking to reach a market. Organisation on the part of the cultivators—farmers, market gardeners, fruit-growers, and others—might soon be made to make things work smoothly. Chambers of Agriculture or local societies can easily approach traffic managers through the medium of the Board of Agriculture, who now propose to organise conferences, local or otherwise, to settle disputes, attended by a Government representative. Mr. T. H. ELLIOTT the Secretary of the Department, has just issued a circular in terms covering all this, and we are certain that much good will follow the general acceptance of the proposal. For years the *Gardeners' Chronicle* gave publicity to the work done by the Great Eastern Railway Company in its endeavours to familiarise the subject with the cultivator—the half-yearly returns of the parcels carried by the railway company proved how much could be done in this direction.

CYPRIPEDIUM FAIRRIANUM.—The 179 nice healthy little plants of this charming *Cypripedium* catalogued in Messrs. PROTHEROE & MORRIS's sale on Friday, September 15, brought together a goodly company of orchidists bent on business, with the result that by fair competition, without reserve, the whole realised about £550. Three guineas seemed to be the general price for fair specimens, though some were sold for as low a price as 30s, while in the case of a few extra plants, or plants in bud, 5, 7, 13, and 14 guineas were paid for a plant, and in one instance 21 guineas was realised.

ACER ERIOCARPUM.—This Maple, known as Sir Charles Wager's Maple, is not used as a town tree so often as its merits demand. It does well as a change from the universal Plane. We have long been familiar with it as a town tree, and were pleased to see it in use largely in the magnificent new streets with which Antwerp has been endowed. In the Zoological Garden of that city, moreover, is a specimen of a variety of this tree with very graceful, pendulous branches. Its elegantly cut foliage is silvery-grey on the under surface. Lovers of trees should take note of this variety.

HORTICULTURE IN MANITOBA.—From the recently-issued annual report of the progress of things agricultural and otherwise in Manitoba, we get the information that the Western Horticultural Society is proving a success and a boon to the cultivators of the soil in that far-off land

of promise, where there are still 25,000,000 acres of arable land unappropriated—this out of a total of 30,000,000! The Society noted is in great demand for the supply of information on all matters relating to horticultural garden plants and flowers and fruits suited to the climate. This information is ungrudgingly supplied, as also are such seeds and plants as can be raised at headquarters, where we are told that nearly 300 plants of the Carolina Raspberry were sent out in the past twelvemonths, as also were scores of the perennial Phlox and of *Rosa rugosa*.

OVERSEA SUPPLIES: AUGUST.—We have of late become so used to what is known as "breaking the record," as scarcely to be prepared for the record of a still more astonishing trade-feat such as that recorded in "The Trade and Navigation Returns" for the month of August, from whose pages we gather that the value of the imports for that period is placed at some £46,862,991, the figures for the same term last year being £42,439,943. Thus, the difference or gain is £4,423,048. We look, of course, for a corresponding increase in the matter of exports, nor are we disappointed. The value of last month's export of British and Irish produce is placed at £29,517,836, against £26,359,880 for the same period in 1904, or a gain of £3,157,956. The value of the foreign and colonial produce exported is £6,427,636. There is but one floricultural subject recorded in the Returns—that relating to the import of fresh flowers; this for last month was £1,423, against £1,526 for the corresponding term in 1904—a loss of £103. We connect this item with the endeavour now being made in Kerry to place Irish-grown spring flowers on the market before those from the Channel Islands, Scilly Isles, and the South of France. This is now being done to a limited extent, but properly fostered the trade may even enable us to forestall the French productions in the Paris market. The influence of the Gulf Stream and the effect of the proximity of the Atlantic on vegetation in Kerry is very marked. The summary statement respecting the import of fruits and vegetables follows:—

IMPORTS—AUGUST.	1904.	1905.	Difference.
	£	£	£
Fruits, raw—			
Apples	55,724	44,726	-12,998
Apricots and Peaches	2,249	5,402	+3,153
Cherries	8,191	2,410	-5,781
Currants	7,948	5,878	-2,070
Gooseberries	131	26	-105
Grapes	131,829	112,312	-19,517
Pears	223,500	154,542	-68,958
Plums	253,314	315,545	+62,231
Strawberries	241	17	-224
Vegetables, raw—			
Onions ... ..bush.	72,874	78,990	+6,116
Potatoes ... ..cwt.	57,063	27,044	-30,019
Tomatoes	167,827	148,508	-19,319
Gross total, including varieties of fruits and vegetables not enumerated in this Table	1,312,845	1,333,887	+21,042

ALBANIAN ONIONS.—A good crop is reported by Messrs. WEICHEL & Co., of Magdeburg, as regards quantity, but the Onions are generally only of small or middle size. Therefore the large export Onions will probably be scarce, and rather high prices are expected for this type. The quality is satisfactory. The Dutch crop is said to be similar to ours, whilst in Spain the crop is not so good as last year.

MRS. C. T. DRUERY.—We hear with much regret of the death, on the 19th inst., of Mrs. DRUERY, wife of our valued correspondent, Mr. CHARLES T. DRUERY, of Shaa Road, Acton.

HARTWELL PARK, BUCKS.

[SEE SUPPLEMENTARY ILLUSTRATION.]

HARTWELL PARK, the seat of Col. E. D. Lee, is situated in the centre of the Vale of Aylesbury, two miles from the county town of Bucks. The mansion is an ancient stone structure in the Tudor style with oriel and mullioned windows, with enlargements of a later period. Owing to the absence of creepers it presents a somewhat severe appearance which detracts from its picturesqueness although its setting is exceedingly beautiful. The house has many interesting historical associations, being celebrated as the residence of King Louis XVIII. of France during the greater part of his sojourn in England at the time of the great French Revolution, after the execution of his brother Louis XVI., and the death of his nephew Louis XVII. in prison, and the rise of the First Empire. The consort of the exiled French King also died here. Dr. Lee, well known during the earlier and middle portions of the nineteenth century for his scientific attainments, also lived at Hartwell House, indications of his work being visible everywhere in gardens and park. The demesne is enclosed for some two miles on the high road from Aylesbury to Thame by a wall built of stone quarried on the estate, and in the portion constructed by Dr. Lee are embedded some remarkable fossils, thus forming a museum of considerable geological interest.

The entrance to the park is guarded by handsome iron gates, and a wide roadway with a fine avenue of trees with broad grass verges conducts to the mansion. The park is some 130 acres in extent, and, like other old English woodland, is remarkable for its sense of harmony and repose. During the long course of years everything un-uitable has been eliminated either by Nature or by the hand of man, so that what remains is an apt example of the survival of the fittest and of the persistence of the best. Very beautiful alleys are formed by the trees, at the ends of which are to be found in splendid environment classical statues, columns, and ruined Gothic arches. The trees in the park consist of those usually found in the Midlands in similar situations, and many of which may be regarded as specimens—Beech (for which Buckinghamshire is famous), Hornbeam, Spanish Chestnut, Horse Chestnut, Walnuts, Thorns (white and red), Laburnums, Oak, Pinus in several species, Abies in variety, Sycamore, Elm, Ash, Liquidambar, Cedar, &c. Under the trees flourish and bloom in their season Snowdrops, Crocuses, and Violets in sheets, together with Winter Aconite, Wild Hyacinths, Anemones, &c. In the park is a splendid old-world pleasure called the "Shepherd's Bower," a rustic summer-house situated in romantic and harmonious surroundings, near which are some of the finest specimen trees in the park. I put a tape round two good specimens of *Cedrus Libani*, and found they measured respectively 5 feet from the ground 12 feet 9 inches and 12 feet 8 inches in circumference, and one especially had a splendid head. In the summer-house was a quaint inscription of three verses, the last of which I quote—

"Then say why seek the lofty tower,
From scenes like these shall courts detain?
Peace loves to haunt the rural plain,
And pleasure wonnes in Shepherd's Bower"—

of which it may be observed that if the poetry is indifferent the sentiment is beyond reproach.

On leaving the park I was shown the fruit-houses, which are seven in number, occupying a range over 300 feet long. The first contained a splendid crop of Tomatos; the fruits hung in ropes; very few of the blooms could have failed to set, and although the quantity was great, the size of the fruits was uniformly large—many above average. One fruit examined turned the scale at 14 ounces, and was 13 inches in circum-

ference. The variety was Sutton's Perfection. Other houses were devoted to Peaches and Nectarines, which, I was informed, had borne enormous quantities of fruit, the varieties grown being—of Peaches, Barrington, Dymond, Dr. Hogg, Grosse Mignonne, Viollette Hâtive, Hale's Early; and of Nectarines, Lord Napier, Humboldt, Darwin, Dryden, Elruge, Victoria, and Rivers' Early Orange.

The Grapes looked well and were in thoroughly healthy condition. In a late vinery good bunches were developing of the varieties Black Alicante, Lady Downe's Seedling, Gros Colmar (does not do very well at Hartwell), and Syrian. In another house were young plants of Muscat of Alexandria, Black Champion, and Madresfield Court, which were growing vigorously, having made 22 feet of growth this season. The seventh house contained the Vines which form the subject of our Supplementary Illustration. The house is 50 feet long, the length of rafters being 18 feet. The varieties are Foster's Seedling and Black Hamburg.

In one of the houses was a remarkably good specimen of *Cestrum* (*Habrothamnus*) *elegans*, which was furnishing a quantity of bloom, that is used for decorative purposes. In the Cucumber-house were some good plants of the variety Telegraph; while the Melons were well netted and were furnishing a good crop, the principal varieties being Sutton's Best of All and Hero of Lockinge.

Hartwell does not possess a conservatory, but two large greenhouses are employed to produce plants and flowers for decorative purposes. They contain good plants of the tenderer Roses, Lilies, Palms, Caladiums, Celosias, Fuchsias, Pelargoniums, Araucarias, and a splendid collection of Begonias and Gloxinias of Sutton's superb strains. I also noticed some pretty little Palms raised by the gardener from Date seeds, which he will find useful for decoration later in the season. The trees in the outside fruit garden looked well, but were carrying very meagre crops. The disastrous frost late in May proved terribly destructive, which is rather surprising, considering the position of the trees, sheltered by the park on the one side, and by a magnificent Yew hedge on the other. Fruit is grown on trees trained in the standard, espalier, cordon, and bush forms, mostly the last-named. Of Apples, among many others were the following varieties: Cox's Orange Pippin, Ribston Pippin, Blenheim Orange Pippin, Irish Peach, Quarrenden, Beauty of Kent, and Small's Admirable, which I was told bears on alternate years immense crops of splendid fruits. Of Cherries there were the varieties Morello, May Duke, and Napoleon; while of Pears were Williams's Bon Chrétien, Louise Bonne of Jersey, Knight's Monarch, Winter Nelis, Marie Louise; and of Plums, Victoria, Transparent Gage, Pond's Seedling, Goliath, Kirke's Blue, &c. I was informed there had been a good crop of Gooseberries and Currants, the Black Currants having been entirely free from the destructive Bud-mite, though the pest has appeared in the neighbourhood. The Strawberry crop was almost a failure. Fig Lee's Perpetual is producing a fine crop in a congenial situation. Here were to be seen hundreds of Chrysanthemums of the best varieties growing strongly in pots, promising good blooms for exhibition and for decorative purposes.

In the kitchen garden, three acres in extent, the crops were looking as well as could be expected this dry season. Asparagus has proved satisfactory, while Peas have done and are doing well. The following are the varieties principally grown: William Hurst, Sutton's May Queen, Duke of Albany, Autocrat, Champion of England, Daisy, and Duke of York.

As the park is severed by a public road, the two parts are connected by a tunnel, which is rendered interesting owing to the fact that

fragments of the corbels, cornices, and capitals of the old dismantled church were used in its construction, and it is closed at one end by the old oaken church door. On passing through this archway one reaches the grounds immediately contiguous to the mansion and the mansion itself.

From the front of the house a magnificent panorama extends. To the left is the church, separated from the lawn by a slight iron fence only, while to the right lies a magnificent lake, crowded with water-fowl (it would form an admirable site for choice Nymphæas), the upper and narrow arm of which is crossed by a picturesque bridge, the span of which is composed of one of the arches of the Kew Bridge recently taken down, while immediately in front are two noble avenues of Oak, Walnut, Elm, &c., beyond which the horizon is bounded by the distant hills forming the south-western boundary of the Vale of Aylesbury—a scene exquisitely beautiful and typically English.

The windows of the other side of the house look over a spacious lawn, flower-garden, and park. On the lawn are planted good specimens of *Sequoia* [*Wellingtonia*] *gigantea*, *Cryptomeria elegans*, a fine clump of *Ruscus*, with other interesting subjects; also were placed Oranges in tubs, very floriferous, and bearing good fruits; with a collection of Japanese pigmy-trees, including, among others, miniature Cedars, Larch, Bambusa, Oak, and *Cerasus*, the last-named of which, I was informed, had flowered during the spring.

In the flower garden the formal bedding system has been superseded by the employment almost entirely of a choice collection of herbaceous perennials. It would be difficult to discover a better collection, the result being a constant supply of flowering subjects all the year round. At the time of my visit there were in bloom magnificent clumps of *Tritoma*, *Phloxes*, and *Delphiniums*, in splendid variety; *Asters*, *Nicotiana Sanderae*, *Helianthus*, and many others too numerous to mention. Although much may be said in favour of this system of bedding it has the disadvantage of appearing somewhat untidy as the various plants discontinue flowering and die down. There was also a good collection of *Roses*, grown in bush and standard forms, also on pillars and arches, many trees of which were still bearing good flowers. Among a great number I noticed *Mrs. John Laing*, *Charles Lefebvre*, *Ulrich Brunner*, *Caroline Testout*, *Marquise Litta*, *Augustine Guinoisseau*, *Ben Cant*, *Duke of Edinburgh*, *General Jacqueminot*, *Devoniensis*, *Alfred Colomb*, *Criusson Rambler*, *Pink Rambler*, and many others.

I must not forget to mention two interesting rockeries, one constructed many years ago by the present head gardener, in which are planted a good collection of alpine plants and other rock-loving species, including specimens of *Hypericum*, *Aralia*, *Gentian*, *Potentilla Tormentilla*, *Daphne*, variegated *Strawberry*, *Osmunda regalis*, *Scolopendrium*, *Lastreas*, *Polystichums*, *Sedums* in variety, &c. The second rockery was designed by and erected under the superintendence of *Mrs. Lee*, and is a monument to her taste and skill. There is also a small pond in which is cultivated a collection of *Nymphæas* and other water-plants.

The gardens and lawns, which occupy an area of some 10 acres, have been under the care of *Mr. Robins* for thirty-two years, and are a testimony to his cultural ability. He is well known to the horticultural world, though he does not exhibit so much as formerly; he is secretary to the Stone and District Horticultural Society, and Chairman of the Vale of Aylesbury Chrysanthemum Society, being esteemed by all who know him. His portrait is shown in the Vinery in the Supplementary Illustration, which is from a photograph by *Mr. A. T. Burr*, of Aylesbury. *R. T. H.*

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his Correspondents.)

JUDGING.—In respect to "Exhibitor's" note on p. 204, I should like to say a word about the judging of groups of plants and flowers for effect. According to my experience, there is more difference of opinion with regard to this class of exhibits than there is in any of the others. How seldom, when competition is keen, would a second pair of judges if called in give the same awards? To properly stage a group of plants for effect is one of the most difficult things to do in a competition, and if the exhibitor does not know something of the judge's taste in this respect, or the arrangement he favours best, he is severely handicapped. My idea of a well-arranged group of plants is one disposed well from the background to the front, the whole set well up, possessing lightness, and affording pleasure to the eye. In addition, it should not be glaring in effect, nor allow dead flowers, sticks, or pots to be exposed. Of course, if one exhibitor has a nice lot of Orchids and another exhibitor is without any, the former is bound to win if his arrangement possesses any merit at all. But if other things be equal, the honours should be given to the one that shows the best completed group, if tastefully arranged. It has often occurred to me, Are gardeners always the best judges in this class? They may be excellent critics in the classes for vegetables, fruit, and specimen plants, but when it comes to groups for effect their decisions do not always give general satisfaction. *H. C., September 11.*

HALF-POINT JUDGING.—Having been a grower and exhibitor of horticultural produce for many years, and a constant reader of the *Gardeners' Chronicle*, I should like to state that I fully agree with point judging (but not with the use of half-points) At the Edinburgh International Show last week I noticed that a fine exhibit of eight bunches of Grapes was awarded a third prize, being only $\frac{1}{2}$ point behind the second prize exhibit. The maximum number of points allowed for the whole was 70. Under such rules I consider $\frac{1}{2}$ points totally unnecessary, and too much like hair-splitting. *T. Lockie, Senr., Diddington Hall Gardens.*

PORTULACAS—Those who possess plants of *Portulacas*, and desire to save seeds, should take up the plants before frost ensues and place them on a sunny shelf in a greenhouse or vinery, or in a window, to ripen their seeds, which they will do in about one month, whereas left on the plants the seeds would be destroyed, together with the plants. For planting as edgings to beds of succulents, or in situations that are too warm and dry for the generality of flowering plants, they are particularly appropriate and useful. As edgings it is best to employ them in bands of three or four lines, the effect being superior to that afforded by one or two lines only. *F. M.*

THE GERMINATION OF SEEDS.—It is, I think, an open question whether the absence of any sign of life above ground is attributable to non-germination or not, for, as Professor Henslow remarked on p. 186, it is probable that certain seeds germinate underground. Let me give an instance bearing upon this interesting if disappointing phase of the subject. In the third week of June last I sowed a pint of Peas, apparently of excellent quality, in a position where only a score of plants had appeared from a similar quantity sown earlier. The score or so of plants were lifted carefully and replanted at one end of the row. A trench of soil, the latter 2 feet deep, had been originally prepared and well manured, so that at the last sowing the soil was merely forked up, a foot-wide shallow trench opened and the Peas sown. The soil is very light overlying gravel and sand. The seed was sown from the bag and was not hastened by soaking in water, as is often done, and I think, with indifferent results when late sowings are made. The sowing was completed in the early afternoon, and a heavy thunderstorm—quite a deluge for the time—was experienced during the evening of the same day. The row of Peas in the slightly sunken trench received more of the rainfall than would have been the case otherwise, and I imagined the Peas had been thereby favoured. Within twenty-four hours.

however, a mole, or perhaps two, had undermined a good portion of the row, working it in a direct line, and consequently a large number of the Peas were lifted out. To my surprise, however, every Pea had germinated, the radicle varying from half an inch to three-quarters of an inch in length. In carefully replacing the Peas, which I laid in sideways, to avoid injury to the radicle, I noticed the ground was more like a hotbed, and the day following the storm was very hot and sultry. I probably replanted of the disturbed Peas not fewer than 100, and I concluded somewhat naturally, perhaps, that the outlook was favourable for a late dish of Peas; to my surprise, however, about a score of plants was the sum-total in the entire row, and the produce of a pint of seeds. Examining the row later, I found great numbers of seeds quite rotten, and had it not been for the interference of the mole I should of course have concluded that the seed was bad. My present conclusions, with the evidence at my disposal, are that the heavy rain and subsequent heat, producing conditions almost of a tropical nature, favoured an altogether too rapid germination, which proved fatal to growth or existence afterwards. I have known instances of failure through wet and cold in spring, and it is quite clear to my mind now that an equal amount of danger exists to vegetable life in those instances where the extreme opposite conditions prevail. As the failure now recorded is but one of two lots both planted in June, the first failure may have been due to the same cause. In the first instance I only saw the rotting Peas in the soil. Another year I hope to put this matter to the test, by covering and shading one portion of a row, while exposing to heat and watering, in the absence of rain, the other portion. Professor Henslow further remarked that it has always been "a puzzle why so few seeds germinate from the myriads which are annually shed in a garden." Is it not probable that birds and mice would each carry away a large quantity? In the case of other seeds, and those which do not as a rule germinate before the ensuing spring more particularly, would it not be reasonable to suppose that their vegetative properties were impaired by exposure in winter? Seeds of *Laburnum* are often found to have germinated in the pods, but I have no personal knowledge that it is usual for them to do so. *E. H. Jenkins, Hampton Hill.*

POTATO EXPERIMENTS.—Some very interesting experiments made by Messrs. Sutton & Sons last year at Reading with their late Potato Discovery, have led to others of a similar nature being conducted this year. Thus it will be remembered that with a view to test the results of planting rooted and potted shoots taken from tubers sprouted in warmth of the first, second, third and fourth growths, with also eyes and whole sets, several hundreds of plants were grown. This year the trial is a smaller one. First come a breadth grown from tubers not sprouted, grown on plants of last year also not sprouted. These all have very vigorous habit with no blanks. Then comes a breadth of first sprouts this year, taken from tubers that were from first sprouts last year. There are a few failures, but growth generally is good. Next come second sprouts from tubers of second sprouts produced last year. Growth is rather less strong and there are more failures. Then come third sprouts from the third sprout-produced tubers of last year, and oddly enough of these there is hardly a failure, and growth is excellent. There were also fourth sprouts from the same tubers, not potted, but with some roots attached dibbled direct into the ground, and also cuttings from tops root'd, then planted out. Both have made very fair growth. Eyes from tubers produced from eyes only last year, and planted direct, gave, as might be expected, poor growth. Also there were whole sets from which three sets of sprouts had been removed, yet these produced very good growth, but similar sets cut in halves have poor growth. Generally, it may be inferred that sprout-propagation as compared with planted tubers from which sprouts have not been removed has a weakening effect. Still, that may be less or more, just as the conditions under which propagation took place were cool or hot. A further although yet small trial had perhaps

more interest, as it had an important bearing on the question as to why south-rn-grown tubers have much less robustness to produce plant growth than have northern-grown tubers. In this case, of several varieties, Abundance, Magnum Bonum, and others, rows of immature or unripened tubers had been planted side by side with fully-ripened tubers of the same varieties, and in each case the unripened tubers produced much the best growth. The inference is that southern tubers ripen too completely to make good seed-tubers. Certainly in the north, Scotland especially, frosts often cut down the tops whilst they are still in vigorous growth. The matter is one that very wide and careful experiments only can elucidate. In the case of tubers of 5 to 6 oz., 3 oz., and 1½ to 2 oz., planted in rows side by side, the growth was exactly proportioned to the size of the tubers. That fact, a well-known one now, also evidences the impropriety of constantly planting the small tubers of any stock instead of the larger ones. It is by no means improbable that such deterioration as may exist in Potatos is more due to the common practice of planting small tubers instead of the largest. *A. D.*

CYCLOBOTHRÆ (CALOCHORTUS) FLAVAS.—This curious little plant, which is figured in *Botanical Register*, vol. 20, plate 1663, as *Cyclobotbra lutea*, and in Swete's *Flower Garden*, plate 273, as *Cyclobotbra barbata*, is now in flower with me under such peculiar circumstances that I think a notice of it may be interesting to readers of the *Gardeners' Chronicle*. For many years, certainly more than fifteen, possibly twenty, I have grown a plant under the name of *Rhodostachys andina*, which in leaf is exactly similar to the plant which I found in Chile three years ago, and from which I raised seeds which have been distributed under that name. In the centre of this plant, which completely fills with a dense mass of roots a large pot, a single stem of the *Cyclobotbra* appeared some five or six years ago, and died down again soon after flowering. I have no recollection of ever having received the *Cyclobotbra*, which is a Mexican plant, and have not the least idea of how it got into the pot. I did not see its leaf or flower again until this year, when it has again come up from the centre of the supposed *Rhodostachys*, which may possibly be a Mexican plant wrongly identified. As the majority of the other *Cyclobotbras* are usually short-lived in cultivation, the persistence of this single bulb (which, if it has produced unnoticed leaves, has only flowered twice in twenty years) in the centre of such a dense mass of roots for so many years is very remarkable, and points to the fact that complete dryness in winter is desirable for it, and probably for other Mexican bulbs, which are rarely seen for more than a year or two after their introduction. *H. T. Elwes, Colesborne.*

MARVEL OF PERU.—This year the several varieties of *Mirabilis Jalapa* have bloomed satisfactorily owing to the unusually fine, warm weather and genial rains, at the least when planted in sunny situations, and any others are adverse to freedom of flowering, although perhaps favouring the growth of the plants. It is an old inhabitant of our gardens, and should be treated as a perennial rather than as an annual. The blossoms open in the evening, and emit a pleasant fragrance. The flowers of the type *M. Jalapa* are of a rosy tint, and of this there are white and yellow sports. Varieties have been raised by crossing *M. Jalapa* and *M. longiflora*, a long-tubed flower of great fragrance, the first-named being employed as the seed-bearer, the reverse cross being abortive. The crossing of these two species has been productive of a great number of new varieties, which cross freely with each other. I am led to make these few remarks by observing numerous plants of *M. Jalapa* and its sports in the flower borders of Battersea Park. It may be stated that small colonies of the plants are more effective than single specimens dotted about, taking the precaution not to crowd them together, a well-grown plant occupying a square or circle 1½ foot across. When frost is likely to occur the plants should be dug up, and the roots preserved during the winter in fine coal-ashes, sand, or charcoal dust, in the manner followed with *Cannas*, *Dahlias*, &c. *F. M.*

FLORIDA.

ON CERTAIN FORMS OF ZEPHYRANTHES.

A SHORT time ago a friend of mine spoke in glowing terms of the "Rain Lilies" as he had seen them in flower on the Carnegie estate on Amelia Island, near Fernandine, Fla. I was asked for its botanical name, but was unable to answer. The Rain Lily haunted me in my dreams. From the description I suspected it to be a species of *Zephyranthes*, but I was not quite certain. Some time ago a lady friend of mine near Clarcona, about 7 miles from here, a great lover of plants, and usually well versed in the botanical names of garden plants, showed me large clumps of her "Rain Lilies," some of which were fortunately in flower. I recognised the plant at once as *Zephyranthes carinata*, a native of Mexico, Cuba, Jamaica, &c. It grows abundantly in our garden, forming large clumps in rich soil. In Jacksonville it is frequently used as an edging around large beds of *Amaryllis* (*Hippeastrum*) *equestre*, *A. (H.) Johnstonii*, and *Crinums*. After the first rains have fallen in June, and again after each rain which follows a dry spell, it opens its strikingly beautiful flowers in great profusion. The colour is of rich deep rose; each flower is borne singly on a stem about 8 inches high. When grown in good soil the bulbs reach the size of large Hickory-nuts. It is perfectly hardy here, and an evergreen, with an abundance of narrow, deep green, slightly channelled leaves about a foot long. The closely allied *Zephyranthes rosea* is neither so large nor so leafy. While residing in the backwoods of Texas I heard the beautiful pure white *Cooperia Drummondii* called the Rain Lily or Rain Flower. After a rain in summer the "post-look"-woods are covered with innumerable white blossoms, which form a charming sight.

Still more puzzling to me were the names "Fire Lily" and "Easter Lily," applied to a certain native plant here. Last spring I was informed that the flat-woods were ablaze with Easter Lilies, and a little later news reached me that certain tracts of the same woods were covered with "Fire Lilies." I immediately visited these latter localities, and found the ground, where the grass had been burned a few days ago, literally covered with large white flower-trumpets flushed beautifully with pink in the unexpanded buds. Each blossom was borne singly on a stout stem about 10 inches to a foot high. They emitted a delicate, wild-wood fragrance. These large stretches of woodland, entirely destitute of undergrowth and only covered with tall, long-leaved Pines, formed a very charming spectacle—there were thousands upon thousands of white, Lily-like blossoms. The leaves are very narrow and weak, and the bulb, which is buried about 3 or 4 inches in the black, moist soil, is not larger than a small Filbert, and it must be a matter of surprise that such a strong flower-scape and such a large blossom can be produced by such a tiny bulb. This species proved to be *Zephyranthes Treatii*, named in honour of Mrs. Mary Treat, its discoverer, well known as a botanical writer in this country. It not only flowers abundantly at Easter-time, but always after the grass has been burned in the flat-woods the flower-scapes appear in great abundance. I have transplanted it largely to my garden, where the small leaves are grown in winter, and the flowers appear by the middle of April.

While travelling in Florida in April, 1886, I learned that the beautiful *Atamasca Lily* (*Zephyranthes Atamasca*) was known in certain parts of Florida as the "Sawnee Lily." It grows most abundantly on the banks of that far-famed river, and tourists are usually pleased to hear the pretty flower called by that name. Bouquets of it are purchased and forwarded to northern friends

from the Suwanee region, bearing the inscription: "Way down upon the Suwanee Ribber," &c. The flowers are white, flushed with deep rose colour inside and outside. While in Savannah on April 4, 1904, a few days after Easter, I saw large vases filled with Atamasca Lilies, arranged with Ferns and sprays of Asparagus Sprengeri, in the flower-shops, and this arrangement was very beautiful and pleasing. They were offered as "Easter Lilies." All the species of Zephyranthes are fine, but those mentioned have the largest flowers. I grow in my collection, in addition to the above-named species, the following:—*Z. candida*, *Z. tubispatha*, *Z. texana*, *Z. citrina*, *Z. Taubertiana*, and *Z. Lindleyana*. *H. Nehrling, Gotha, Orange Co., Florida.*

WINTER SALAD.

RAMPION AND LAMB'S LETTUCE.—In England the want of fresh vegetables during the winter is so great that it may be well to call attention to two plants which might easily be more frequently cultivated, as they require neither hot-bed nor frame, and yet are available for use all through the winter. The Rampion, or *Campanula Rapuncululus*, also called Jacob's Staff, Lent Rampion, Grasshopper's Foot, Wild Radish, and Bishop's Hair, is a pretty biennial of the genus *Campanula*, with a white root about 4 inches long and $\frac{1}{2}$ inch in diameter, with several leaves, either sessile or short-stalked, the leaves being oval, and resembling those of the Lamb's Lettuce, but of a brighter green, and somewhat smaller. The edible parts are the roots and the young leaves of the heart. These make an excellent salad, being firm and crisp, rather less tender than the corn-salad, but less insipid.

In fresh soil not too recently manured seeds may be sown in July, but if sown too early the plants are apt to run to seed the first year, and so be wasted. The seed, which retains its germinating properties for five years, may be sown either broadcast or in rows of shallow depth about 8 inches apart; and to secure an even distribution, as the seed is so small, it should be mixed with twenty times its weight of sand or finely-sifted earth. After sowing, all that is needed is to press the soil with the back of a spade, to scatter a little fine soil over the seed, and to protect from a too-powerful sun with a covering of litter. For the latter purpose a little Radish or Spinach seed is sometimes sown with it. To stimulate the growth the soil must be in good heart and the plants supplied with water, but not so copiously as to wash away the seed. In eighteen days the plants will appear, and should the sun not be too strong, the litter may then be removed. After this but little attention is needed, as the plants require only thinning when three or four leaves appear; to be weeded when necessary by hand, and frequently watered in hot weather.

Rampions may be taken up in November, but are often left for use in January, requiring only to be covered with litter during hard frost. A good plan to secure a supply during hard weather is to take up some roots beforehand and bury them in sand in a cellar. Some of the best heads may be left for seed and need not be transplanted.

CORN-SALAD, or Lamb's Lettuce, is one of the Valerian family. It is a biennial with sessile leaves of a greyish-green, and makes a cooling and refreshing salad. Like the Rampion, it can be sown in corners of gardens which would otherwise be wasted in the dead season, and is available during the winter when little green stuff is to be got to break the monotony of the Potato or the danger of ptomaine poisoning from tinned vegetables. The kinds to be recommended are the Round, the

Etampes, the Green Full-heart, and the Shell-leaved, the first being the most used. Lamb's Salad is seldom sown before August, so that another crop can be taken previously, and little more cultivation is required than to rake over the soil to level the surface, and in a small garden it may even be sown among other vegetables. If required during the whole winter, one sowing may be made in August to be taken up in October, a second in September for use during the winter, and a third in October for use in the early spring. Seed of two years old is the best to employ, as the crop comes up more quickly and regularly than if last year's seed were used, and it ceases to germinate after five years. It may be sown in rows about 6 inches apart, but is generally sown broadcast at the rate of about 3 oz. of seed to the square yard; and with occasional waterings will appear in a fortnight with two-year-old seed, or in a month with last year's seed, and then needs only weeding. Plants can be taken up as required, beginning of course with those which are most advanced or are crowding one another, and if covered with litter or straw-matting can be taken up throughout the hardest frosts. Of the autumn sowing the fine heads reserved for seed need not be transplanted, and should be gathered about the end of May before fully ripe, to prevent shedding of the seed. The heads should be laid out on canvas in a shady spot, beaten out when fully matured, and bagged and ticketed. Lamb's Lettuce, especially where too thickly sown, is liable during the winter to a kind of mildew, the nature of which has not as yet been determined, and in this case the plants attacked should be taken up and removed. *J. J. Dunnington-Jefferson, Les Camelias, Wimereux, Pas de Calais, France.*

VIOLETS.

THE time has again arrived for planting Violets in frames and in their flowering quarters in the open. With us in Cornwall Violets commence to flower about the middle of August. This season, however, we were a week later in finding a few blooms. The middle of September is a suitable time in which to make new plantations of these flowers. When taking up the plants for planting in the frames care should be taken to keep as much soil as possible about the roots. The compost which we find most suitable is composed as follows:—One-half virgin loam, one-quarter fairly rotten Oak-leaves, and one-quarter made up of wood-ashes and old hotbed manure. The soil should be light in composition. I have tried using it moderately heavy, but the result has not been satisfactory. However desirable it is to get the plants at an angle at which they may have the maximum amount of light, it is, if possible, more important that they should have enough water. This, more frequently than not, they do not get if the bed is made too sloping. But at the same time Violets resent a soil that is heavily charged with water. For the first few days after planting, a good sprinkling of water should be given twice a day with the lights removed, unless there is a likelihood of heavy rain. Shade from strong sunshine.

Lady Hume Campbell is probably the most floriferous variety; Mrs. J. J. Astor, De Parme, Marie Louise, and Comte De Brazza succeed well with us. The last-named variety requires a warm and a fresh soil. It seems to be unable to thrive well in rich kitchen-garden soil, but I find that it grows luxuriantly in the open field in mould that was simply overturned with turf only partly rotted. Given shelter in a frame during the flowering period and suitable conditions, it should be less difficult to get this Violet to bloom freely.

The varieties Wellsiana, Amiral Avellan, and Princess of Wales have already produced flowers

this season. If the Violets are growing strongly a change of place is necessary, but provided the plants are in soil which is not too rich or too light they flower well where the cuttings were rooted. Incorporate with the soil in which they are to be planted in the border one barrowload of wood-ashes per cubic yard (18 by 18 feet). A slope in this case is certainly desirable, and a fair amount of treading will do no harm. Both in the frame and on the open border a sprinkling of superphosphate of lime will help the plants to produce flowers. There may be enough phosphoric acid from the wood-ashes, but this is probably variable in quantity, and a sprinkling of the above manure will do good. *H. Williams, Trevince, Redruth, Cornwall.*

THE ROSARY.

WICHURAIANA HYBRIDS.

M. MEYRAN, speaking at the Rose Congress in Paris, alluded to the new race of Roses derived from *R. Wichuraiana*. The varieties alluded to are produced by fertilising a Japanese climbing species, *Rosa Wichuraiana*, with pollen from different Tea and Noisette varieties.

These Roses have the exceptional strength of the mother-plant, and their shining foliage and luxuriant growth render them useful for growing over banks and rocks and in similar situations. The long, pliant branches are often 9 to 13 feet long, and will run up trees and cover bowers and hedges. If stem-grafted they make fine weeping Rose-trees, and are profusely covered with bloom.

These varieties are to be recommended which furnish in spring an abundance of buds for cutting.

René André has undoubtedly the finest bloom. The flower is $2\frac{1}{2}$ to about $2\frac{3}{4}$ inches across; the bud is of deep rosy-red colour; the petals are bright rose at the top, orange-yellow towards the base, passing into white towards the centre, with carmine veins that grow gradually paler.

Albéric Barbier has a semi-double or double flower that opens well, attaining a diameter of $2\frac{1}{2}$ to 3 inches, of a delicate creamy-white colour, canary-yellow in the middle; the bud is darker.

These new Roses are not climbers, but may certainly be substituted with advantage for certain climbing Roses with single flowers.

COLONIAL NOTES.

THE PEACH AS A STOCK FOR PLUMS.

IN your issue of August 5, p. 112, your correspondent, W. Earley, enquired for information as to the use of the Peach as a stock for the grafting and budding of Plums. I may state that the majority of stone fruits in this colony, such as Apricots, Peaches, Plums, and Nectarines, are worked either on stocks of the Peach, Peach Almond (a cross between the Peach and Almond), or the Almond. Plums worked on either of the above stocks make much finer growth, are more fruitful, and succeed better from all points of view than if worked on the Plum stock. The only variety that does not do so well on the Peach is the Green Gage. The Peach has one great advantage in that it does not "sucker up" like the Plum. Your correspondent is under the impression that the Peach stock has a dwarfing effect on the tree; such is not the case. They grow far more vigorously on the above-mentioned stocks. In some districts of the dry Karroo, and especially where the land is constantly irrigated, trees worked on the Almond are preferable; they do not suffer from root rot, as is sometimes the case with the Peach. *C. J. Jowlett, Curator, Botanic Gardens, Graaff Reinet, South Africa.*

**AGAPANTHUS UMBELLATUS
GLOBOSUS.**

At the meeting of the Royal Horticultural Society held on August 15 last, Messrs. William Bull & Sons, King's Road, Chelsea, exhibited a

ciated with the typical *A. umbellatus*. It is found that when grown out-of-doors the plants lose somewhat the distinctly globular character of inflorescence, due probably to the less rapid development of the flowers than is the case indoors.

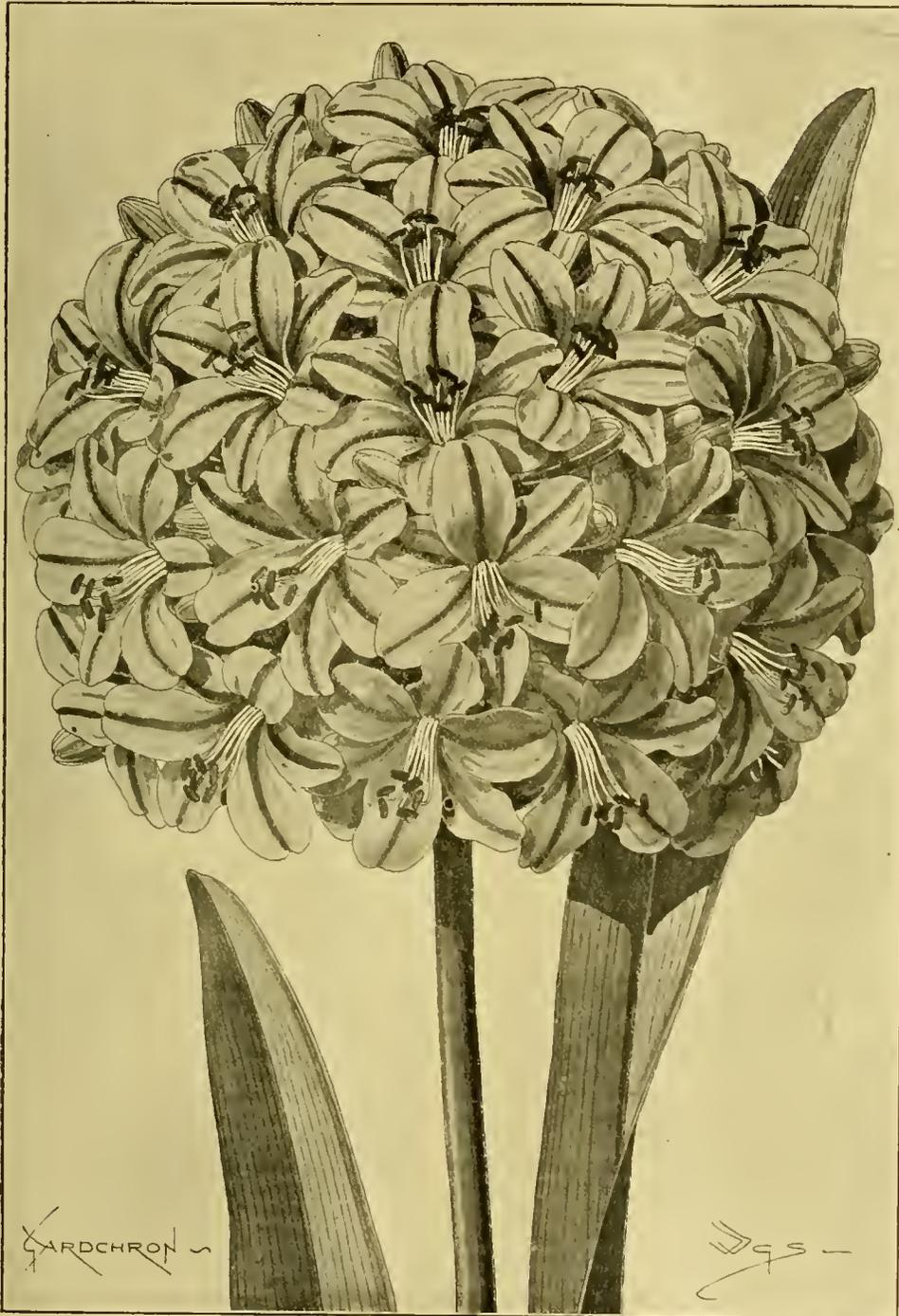


FIG. 89.—AGAPANTHUS UMBELLATUS GLOBOSUS: COLOUR OF FLOWERS, BLUE.

number of plants of an *Agapanthus* under the name *A. globosus*, Hort. Bull. These plants bore markedly globular-shaped umbels of flowers. As will be seen on reference to fig. 89, the variety promises to be a useful addition to those already existing, and which are so suitable for cultivation in vases, pots or tubs.

It was sent to Messrs. Bull by a correspondent in the Orange River Colony. The plant is said to be deciduous, the leaves dying quite to the base in winter, a characteristic not usually asso-

ENQUIRY.

FRANÇOIS VAN STERBECK.—There is a portrait, dated 1673, of this "savant botaniste et architecte Anversois" in the Museum of Pictures at Antwerp. He is represented with a *Herbal*, perhaps that of Dodoens, in front of him. The open page seems to indicate that the learned botanist was a student of fungi. Who was this François van Sterbeck? The name is not a familiar one.

SOCIETIES.

**THE ROYAL HORTICULTURAL
Scientific Committee.**

SEPTEMBER 12.—*Present*: Mr. Massee (in the chair); Mr. Gussow, Mr. Worsley, Dr. Ridley, Mr. Odell and Rev. G. Henslow (Hon. Sec., pro tem.).

Abies amabilis, diseased.—Mr. BARTLETT, of Pen-carrow Gardens, Cornwall, sent specimens and a photo of this tree badly affected by *Chermes abietis* (see illustration in our issue for Sept 23, 1893). There is no effectual remedy, as spraying is practically useless.

Potatoes diseased.—Mr. G. S. SAUNDERS, of Devon, sent some tubers received from allotment gardens near Liverpool badly attacked by *Odomyces leproides*. As each tuber contains a mass of spores, which are readily disseminated, the tubers should be burned, and no Potatoes again planted on the same soil.

Apple, variety.—Dr. BONAVIA forwarded some remarkably dark crimson-coloured Apples. They were borne by a double-flowering tree, and had the strange name *Pyrus Medzwetz Ryana*. It was not stated whence they came.

Liliaceae Diseased.—Mr. GUSSOW showed microscopic specimens of *Botrytis cinerea*, which he had found attacking the Lily of the Valley, white Lily [*Lilium candidum*?], Solomon's Seal, Tulips, and Snowdrops. The fungus appeared to be identically the same on each plant, not having developed any "biological forms."

Viola, sp. cleistogamous.—Mr. WORSLEY showed pods from species of Violets. Mr. HENSLOW observed that it is suggested that as the flowering season declines, and the foliage is developed in the Violets, flowers are produced on the runners, but they bear no corollas. In warmer regions, as Liguria, Violets bear no cleistogamous buds, while the conspicuous flowers are fertile, whereas these latter are barren in England. Hence the presence of the cleistogamous buds appears to be a matter of compensation—(*Origin of Floral Structures*, pp. 562, 563).

Orchids.—Mr. ODELL showed sprays of two fine Orchids, one from South Africa, *Satyrium carneum*; the other from North India, *Anthogonium gracile*.

CACTUS DAHLIA TRIALS AT WISLEY.

On September 15 some Cactus Dahlias at Wisley were examined by a sub-committee of the Floral Committee. Freedom of flowering in the various varieties, and their general decorative or garden value, were among the items duly considered by the judges. The following varieties were each awarded three points:—

Arab.—A showy crimson-maroon-coloured variety. The flowers are developed well above the foliage on stiff wiry stems.

Aunt Chloc (Baxter).—Flowers of a very dark velvety-maroon colour, the florets being finely pointed, and together forming a good shapely flower. The plant does not exceed 3 feet in height, and is of free-flowering habit.

D. A. Dunbar (Cheal). This variety is also dwarf in habit, being not more than 3 feet in height. The plant is very free-flowering. The colour of the flower is reddish-scarlet, and the florets are well incurved.

Dainty (Hobbies).—The flower is rosy-pink with mauve shading, the base of the florets being cream-and-buff. A pleasing and distinct flower.

Floradora (Veitch).—A handsome flower of scarlet-crimson colour with maroon shading. The flowers are of good shape, and are developed at a height of about 3½ feet.

J. H. Jackson (Veitch).—A very fine dark variety. A good type of flower, with long, narrow florets, well incurved, and coloured a velvet-crimson with a maroon centre. One of the earliest of the deeply-coloured kinds. Height 3 feet.

Mavis (Hobbies).—A very distinct flower, coloured salmon and buff. Height 3 feet.

Mary Service.—The flower is a rosy-salmon colour, with the bases of the well-shaped florets of fawn colour. Height 3½ feet.

Mrs. F. Goddard (Cheal and Veitch).—A very handsome flower, coloured a deep crimson. Height 3½ feet.

Mrs. McKergow (Cheal).—A shapely flower, coloured fawn and buff, with florets of medium width and prettily incurved. Height 3½ feet.

Orion (Cheal).—The colour of this flower is a warm rosy-mauve, a good and desirable shade. The florets

are less incurved than usual. The habit of the plant is good, and it is an early and free bloomer. Height 3 feet.

Reliable (Hobbies).—A very pleasing flower, with long, pointed, incurved florets, that are coloured salmon and buff. Height 3½ feet.

Waterloo (Walker).—A scarlet-coloured flower of shapely form and freely produced. Height 3½ feet.

Chinese Aster "Ray" (Carter).—This was awarded three marks for the strain. The principal colour shades in the flowers are violet or purplish-violet, white with rosy tips, and others nearly white. An elegant and highly decorative group, the long florets being much quilled and extremely pleasing.

ROYAL CALEDONIAN HORTICULTURAL INTERNATIONAL SHOW AT EDINBURGH. SEPTEMBER 13, 14, 15.

(Concluded from p. 224.)

CUT FLOWERS (OPEN TO ALL).

ROSES—These were shown numerous and in good condition for so late in the season. In the class for thirty-six distinct varieties a Gold Medal and £3 was offered as 1st prize. There were five exhibits, and these made a good display. Mr. HUGH DICKSON, Royal Nursery, Belfast, won somewhat easily with flowers which in many instances were very good. The varieties Charles Lefebvre, Caroline Testout, Hugh Dickson, Ulrich Brunner, Madame Charles Craplet, Comtesse de Turenne, and Mrs. Theodore Roosevelt were his best examples. Messrs. J. COCKER & SONS, Aberdeen, were 2nd.

For eighteen blooms, distinct varieties, Mr. HUGH DICKSON was again successful with neat blossoms of popular varieties, and Messrs. D. & W. CROLL, Dundee, 2nd.

In the class for twenty-four Tea varieties, in which a Gold Badge and money prizes were offered, Messrs. D. & W. CROLL led with small but neat flowers, especially of the varieties Marie van Houtte, Catherine Mermet, Maréchal Niel, and Mrs. E. Hawley. Messrs. ADAM & CRAIGMILE, Rubislan, Aberdeen, won the 2nd prize.

For twelve blooms of any pink-coloured Rose arranged in a vase, Messrs. DICKSON & CO., Waterloo Place, Edinburgh, won 1st prize with the variety Mrs. W. J. Grant; Messrs. T. SMITH & SONS, Stranraer, being 2nd with that of Mrs. J. Laing.

For a similar number of blooms of any white variety, Messrs. ADAM & CRAIGMILE won the 1st prize with Frau Karl Druschki.

Messrs. J. COCKER & SONS won a similar prize for any scarlet or crimson-flowered variety, with Dupuy Jamin. Messrs. T. SMITH & SON were 2nd with the same variety.

China varieties arranged in a bowl with only Rose foliage made a pretty class. Messrs. W. & R. FERUSON won the 1st prize with mixed varieties; Messrs. DICKSON & CO., Edinburgh, being 2nd with the variety Madame Laurette Messimy.

The class for twelve blooms in as many varieties, arranged in separate vases, brought numerous exhibits, and there was a good display. Messrs. J. COCKER & SONS obtained the place of honour with handsome examples of Frau Karl Druschki, Killarney, Caroline Testout, Mrs. John Laing, La France, Captain Hayward, and Admiral Dewey. Messrs. DICKSON & CO. were 2nd.

In the class for a collection of Roses, arranged for effect on a square table 8 by 5 feet, there were no fewer than five competitors. Messrs. J. COCKER & SONS were distinctly ahead with grand blooms of the varieties Caroline Testout, Frau Karl Druschki, Madame Abel Chatenay, Madame Ravary, and Mrs. R. S. Crawford among others. Mr. HUGH DICKSON showed very well for the 2nd prize; and Messrs. D. & W. CROLL, Dundee, were 3rd.

DAHLIAS.

In the class for twenty-four show or fancy varieties a brilliant display of colour was contributed by five exhibitors. Mr. J. SMELLIE, Bushey, N.B., won the 1st prize with full-sized well-finished blooms of popular varieties, among which the following were conspicuous: Mrs. Gladstone, Harry Keith, T. W. Girdlestone, Mrs. Langtry, A. M. Burnie, J. T. Rawlings, W. G. Head, and Dan Cornish. Mr. S. MORTIMER, Swiss Cottage, Farnham, Surrey, was 2nd with smaller but beautifully-formed specimens. Messrs. S. CAMPBELL & SONS, High Blantyre, were 3rd.

Cactus varieties made a glorious show. The leading class was for eighteen bunches, distinct varieties, six blooms in each bunch. Mr. J. SMELLIE again won the highest award with handsome blooms, arranged with Gypsophila on black velvet. The best varieties were J. B. Bryant, Carmen, Pearl, Thos. Parkins, Phineas, H. J. Jones, and Mabel Needs. Messrs. CAMPBELL & SON were 2nd. The last-named firm was 1st with twenty-four Cactus varieties, distinct; Mr. SMELLIE being 2nd.

Pompon varieties were neatly arranged in six vases of twelve blooms (distinct) in each. Messrs. CAMPBELL & SON won the 1st prize, and Mr. W. VEITCH, the Cemetery, Carlisle, the 2nd prize.

GLADIOLI, CARNATIONS AND PICOTÉES.

Gladioli were splendidly displayed. For thirty-six spikes, not more than two spikes of any one variety, there were three exhibitors. Messrs. A. E. CAMPBELL & SON were distinctly ahead with magnificent spikes of the following varieties—Bavarian, Honoré, Madame P. Palmer, Gloire de Feu, Gargantua, Exposition de St. Louis, and Protée. Messrs. G. MAIR & SON won the 2nd prize with an irregular set, containing many grand blooms.

Carnations and Picotées arranged with their own foliage, with not more than nine expanded blooms, in twelve distinct varieties, in vases, made a considerable display. Mr. F. M. WHITEHEAD, Selkirk, won the 1st prize easily with fairly good blooms of the varieties Winnie Russell, Perseus, Anne Bealey, Duchess of Westminster, Lady Steele, and Seagull. Messrs. J. SIMPSON & SONS, Dundee, were 2nd.

FLORISTS' DEVICES.

The formal arrangements of cut flowers were staged at one of the ends of the building, where they made a large and interesting display. The best exhibit of a decorated dinner-table (10 feet by 5 feet) was one from Messrs. FELTON & SON, 7 to 9, Hanover Square, London, W. The principal feature of this decoration was the liberal use in the centre of the table of sprays of *Oncidium varicosum* Rogerii, whose deeply coloured yellow flowers imparted a very rich effect to the scheme. Miss F. W. MOLYLEUX, Swamore House Farm, Bishop's Waltham, although quite an amateur, succeeded in obtaining 2nd prize with a pretty arrangement in which only flowers of *Odontoglossum crispum* and Lily of the Valley were used, relieved with a few sprays of Asparagus, and some leaves of *Codiaeum* and sprays of *Ampelopsis tricuspidata*.

Messrs. FELTON & SONS also obtained 1st prizes in the respective classes for a Bouquet of Roses, for brides' and bridesmaids' bouquets, bouquet of Dahlias, &c.

Miss ALICE TODD, Stonybank, Musselburgh, was awarded 1st prizes for a floral harp and a hand bouquet, whilst Messrs. PERKINS & SONS, Coventry, also obtained good prizes for exhibits in this section.

SKETCH-PLAN BY UNDER GARDENERS.

There were six plans submitted for the prizes offered for the best design drawn to scale (40 feet to 1 inch) for laying-out a piece of ground about 20 acres in extent, the natural features being the same in each case, and the roads and fences indicated in a sketch-plan, which was sent to each competitor. None but under gardeners were permitted to compete for these prizes, and the designs submitted were considered very satisfactory. The competition will certainly have a good effect in encouraging young gardeners to study this important branch of their profession.

The prizes were awarded as follows:—1st, Mr. FRANK PHILIP, Philipphang Gardens, Selkirk. 2nd, Mr. ANDREW DICKSON, Dalkeith Palace Gardens, Dalkeith. 3rd, Mr. E. H. HOWARD, Barrowash Gardens, Derby.

Awards to Novelties.

Certificates or Awards of Merit were awarded to varieties of plants, flowers, and fruits, amongst which were those following:—

Apple Coronation.—A rather low, round-shaped fruit, striped or flaked with red on a yellowish green ground. A dessert variety possessing considerable flavour. Apple "*Rougemont*," a conical-shaped fruit of dull red colour over green, was also shown. It is a culinary variety. Both these were shown by Mr. GEO. PYNE, Topsham Nurseries, Devonshire.

Sarracenia × Crispiana.—A hybrid with purple "pitchers" about 10 inches in length, from S. Courtii × S. Sanderiana. Shown by Mr. A. J. A. BRUCE, Nurseryman, Chorlton-cum-Hardy, Manchester.

Senecio lanaticus, *Clematis montana rubens*, and *Aconitum Wilsoni*. These new Chinese species have all been illustrated or described in these pages. From Messrs. JAS. VEITCH & SONS.

Mouhretia "Prometheus", which has been described several times recently in these pages. From Messrs. WALLACE & CO., Colchester.

Rosa sericea "les Grandes Epines".—An exceedingly decorative variety, in which the brilliant red spines are developed to an unusual degree. Shown by Messrs. VILMORIN, ANDRIEU & CIE., by Messrs. PAUL & SONS, Cheshnut.

Cupressus Lawsoniana Knowfieldensis glauca.—A variety with glaucous foliage and somewhat distinct habit of growth. Shown by Messrs. LITTLE & BALLANTYNE, Carlisle.

Tamarix hispida var. aestivalis (T. Pallasii rosea), see paragraph on p. 229.

Colchicum speciosum album and *C. Bornmulleri*, from Messrs. WALLACE & CO.

Berberis vulgaris purpurea macrophylla, from Messrs. PAUL & SONS, Cheshnut.

Dahlia Marjorie Casleton, *White Swan*, and *Silver Wings*, from Messrs. HOBBS, Ltd.

Dahlia Mrs. R. P. Felton, from Mr. S. MORTIMER.

Dahlia "Good Hope", from Messrs. DOBBIE & CO.

HONORARY EXHIBITS.

Of the large number of honorary exhibits, three were especially interesting to the visitors at an Edinburgh show. One was from the GLASGOW CORPORATION, another from Messrs. CHARLESWORTH & CO., Bradford, and the third from Messrs. JAS. VEITCH & SONS, Ltd., King's Road, Chelsea. That from the GLASGOW CORPORATION, shown by Mr. Jas. Whitton, Superintendent of the Parks and Curator of Botanical Gardens, took the form of a large group of plants of tall and low stature, and consisting of species that are quite uncommon at exhibitions. A plant of *Euphorbia grandiceps* was 13 or 14 feet in height, and *Cereus peruvianus* of equal stature. These were mixed with tall Palms, *Dracenas*, *Cardulovicas*, &c. Smaller succulent plants were numerous, and represented many interesting species, mixed with Bromeliads. Insectivorous plants included well-grown specimens of *Nepenthes Dicksoniana*, and *N. × mixta*, &c., also *Sarracenas*, *Droseras*, &c. There were also Orchids, as *Cypripedium*, *Odontoglossum*, and *Oncidium*; water plants were shown in glasses; then there were *Selaginellas*, Ferns, Lichens, and many other plants, all of which were exhibited in finely-grown specimens, showing that the plant-cultivation in the Glasgow Botanic Gardens and parks is of a very high order.

Messrs. CHARLESWORTH & CO.'s exhibit of Orchids was especially valuable at Edinburgh, because none worthy of notice was shown in the competitive classes, and in Orchids there has been such development since the last international show was held, that is hardly equalled in any other class of plants. In addition the hybrid *Cattleyas* that form so prominent a feature of the Orchids in bloom in September are exactly of the class that has been obtained by cross-fertilisation during that period. In the group we noticed fine specimens of *Laelio-Cattleya gigas* Digbyano, L.-C. Gotoiana, L.-C. × *Violetta*, L.-C. Dominiana, L.-C. Issy; also a number of plants in flower of the lovely *Cattleya × Ibis*, and *C. × F. W. Wigan*, *Vanda Sanderiana*, *Phalenopsis Rimsteadiana*, &c.

Messrs. JAS. VEITCH & SONS' exhibit was composed of fine foliage plants, arranged with delightful effect, and relieved with a few choice plants in flower, including Orchids. The fine foliage plants were all rare and tender species, and most of them, like the *Codiaeums*, were those that require a stove temperature. *Nepenthes × Sir W. T. Thistleton-Dyer* also was exceptionally good. In addition, Messrs. VEITCH exhibited some of the firm's recent introductions from China, as *Senecio tanguticus*, &c., and a magnificent collection of 100 dishes of choice Apples. The arrangement of the plants in the group was the more remarkable, because Messrs. VEITCH'S vans were delayed for some time at Carlisle.

Mr. DAVID W. THOMSON, nurseryman, Edinburgh, arranged a very effective group of plants on the floor of the hall. There were fine foliage plants and shrubs, relieved by bold masses of retarded *Azalea mollis* in flower, abundance of *Lilium speciosum*, early-flowering *Chrysanthemums*, *Verbenas*, &c.

Messrs. THOS. MEYHEN & SONS, Edinburgh, also exhibited a group of considerable dimensions composed of flowering and fine foliage plants.

Mr. JNO. PHILLIPS, Granton Road Nurseries, Edinburgh, had a very large exhibit of fine foliage and flowering plants arranged on the floor of the hall.

Messrs. W. CUTBUSH & SONS, Highgate Nurseries, London, N., made a brilliant display of hardy flowers in great variety, including flowers of choice *Nymphaeas*.

A group of fine foliage plants from Mr. JNO. DOWNIE, Nurseryman, Edinburgh, was arranged to very good effect.

Roses were shown capably by Messrs. J. SIMPSON & SONS, Dundee, and by Messrs. COCKER & SONS, Aberdeen, who had also other flowers.

Messrs. R. WALLACE & CO., Kilnfield Gardens, Colchester, exhibited one of their well-known groups of hardy flowers, in which choice varieties of Gladiolus, *Mouhretias* and Water-Lilies were attractive features.

Messrs. J. GRIEVE & SONS, Broughton Road Nurseries, Edinburgh, had a group of flowers composed of early-flowering *Chrysanthemums* and Chinese Asters.

The only collection of fruit trees in pots was one from Messrs. STORRIE & STORRIE, Glencairn Nurseries, Perthshire, which deserves special praise, as the plants were very good specimens, freely cropped, and representative of considerable variety.

An excellent exhibit of gathered fruits was that from Messrs. GEO. HUNYARD & CO., Royal Nurseries, Maidstone, which included dishes of the fruits now in season.

Sweet Peas were very charming as shown by Mr. H. ECKFORD, Weir, Salop; and Mr. ROBERT BOLTON, Carnforth.

Of tuberous-rooted Begonias there were a valuable group of plants in flower from Messrs. T. S. WAKE, Ltd., Feltham, Middlesex. Messrs. B. R. DAVIS & SONS, Yeovil; and Messrs. BLACKMORE & LANGDON, Twerton Hill Nurseries, near Bath, who had fine bedding varieties in Argus and Gladiateur.

Messrs. W. BULL & SONS, New and Rare Plant Nursery, King's Road, Chelsea, exhibited a few Cattleyas, including a very fine form of Cattleya Atalanta named chelseiensis, also Orlontoglossum grande, and a small group of plants of the variegated Hydrangea, H. nivalis.

Messrs. R. H. LATH, Ltd., Wisbech, exhibited Dahlias and Chrysanthemums; Mr. JNO. FORBES, Hawick, Phloxes, Carnations, Pentstemons, Dahlias, &c.; Mr. ALFRED YOUNG, Elgin, Phloxes and hardy flowers; Mr. S. MORTIMER, Knowledge Nurseries, Farnham, a collection of Dahlias; and Messrs. CUNNINGHAM, FRASER, & Co, Comely Bank Nurseries, Edinburgh, a group of hardy flowers; Messrs. M. CAMPBELL & SON, High Blantyre, Dahlias and early-flowering Chrysanthemums; Mr. NORMAN DAVIS, Framfield Nurseries, Sussex, and Messrs. W. WELLS & Co., Redhill Nurseries, Surrey, collections of Chrysanthemums.

Messrs. DOBBIE & Co., Rothesay, N.B., had a very representative exhibit of hardy flowers.

Mr. CHAS. PAGE, Liberton, showed Tomatos and early-flowering Chrysanthemums.

One of the largest exhibits of Dahlias was one from Messrs. HOBBS, Ltd., Dereham, Norfolk, and a group of hardy flowers from Messrs. DICKSONS, Chester, attracted considerable attention.

Messrs. J. STORMONTH & SON, Kirkbride, Cumberland, exhibited plants of Meconopsis cambrica plena, the Welsh Poppy.

Mr. T. R. HAYES, Keswick, staged many varieties of Ericas, including E. vagans grandiflora, E. vagans alba, and E. vulgaris alba gracilis.

Messrs. STANFIELD & HAYES showed specimens of rock and alpine plants, planted on a rockery.

Mr. A. J. A. BRUCE, nurseryman, Chorlton-cum-Hardy, had a good display of Sarracenia, and a few plants of Marguerite Golden Sun and M. Queen Alexandra.

Messrs. BEN REID & Co., Ltd., Aberdeen, staged a good number of plants of Lilium Harrisii.

Messrs. ALEX. CROSS & SONS, Ltd., Glasgow, showed samples of their fertilisers and manures; as also did Messrs. W. COLCHESTER & Co., Ipswich, and Messrs. WILLIAMSON, MAIN & GEMMELL, 263, Argyle Street, Glasgow.

Messrs. JOSEPH BENTLEY, Ltd., Barrow-on-Humber, made a display of their manures, weed destroyers, &c., and also samples of Grapes and Carnations said to have been grown with their manures.

Orchid and other peats and Mushroom-spawn were displayed by Mr. G. H. RICHARDS, Borough High Street, London; and by Mr. J. DON, Park Row, Nottingham.

Mr. JOHN PINCHES, 3, Crown Buildings, Camberwell, London, effectively staged numerous specimens of his Acme Labels, also the Acme Bloom-protector.

Messrs. MACKENZIE & MONCUR, Ltd., Edinburgh and London, exhibited a large and well executed model of the buildings the firm has erected in the Royal Gardens, Windsor, such as glasshouses and offices, new stables, workshops, and garden bothy, &c. Particulars that were given showed that the area covered by the hot-houses is 3 acres, and there are 145,000 square feet of glass used. The heating is by six Cornish boilers, each 22 feet long, and there are 54,750 feet or over 10 miles of piping. The roof water is conveyed into cisterns in the houses, and there is a reservoir for the overflow, the latter being pumped into high cisterns for use as needed. This model was a feature of great interest.

Dr. WILSON, of St. Andrews University, exhibited some hybrids including Brassicas, Peas (wrinkled and smooth), Potatos, Gooseberry and Black Currant hybrid, &c., all of which were of interest.

Mr. JAS. WILSON, nurseryman, St. Andrews, exhibited a large group of cross-bred, soft-wooded plants, such as Begonias, Fuchsias, &c., but they were much past their best.

Several hybrid Veronias were shown by Mr. ROBERT LINDSAY, Murrayfield, and also the parents of same, and it was interesting to note that in most of the instances the hybrids were apparently exactly intermediate between the parents.

THE ROOF GARDENS.

The roof of the Waverley Market was rendered more attractive than usual by exhibits of young Conifers from Messrs. LITTLE & BALLANTYNE, Carlisle, hardy flowering plants from Messrs. CUNNINGHAM, FRASER & Co., Conifers, &c., from Messrs. JAS. DICKSON & Co., Edinburgh, and samples of choice gravel for use on garden paths were exhibited by Messrs. GAVIN, PAUL & SONS, Ltd., 14, Torphigen Street, Edinburgh.

THE ATTENDANCE.

On the first day the receipts at the doors amounted to £427; on the second day, £464, and on the third day, £224. Total £1,115. Owing to a misprint in our last issue the fifty-guinea Challenge Cup for Grapes was described as of the value of thirty guineas.

NATIONAL CHRYSANTHEMUM.

SEPTEMBER 18.—On Monday evening last a meeting of the Executive Committee was held at Carr's Restaurant, Strand, Mr. Thomas Bevan presiding.

A letter was read by the Chairman from Mrs. Dean acknowledging the vote of condolence proposed at the last meeting.

A communication was read from the *Evening News* relating to a Chrysanthemum show to be held under the auspices of that journal, from which it appeared that 7,000 children had been supplied with plants of the Chrysanthemum to grow for a show at which certain prizes will be offered. It was resolved that two small Silver and two Bronze Medals of the National Chrysanthemum Society be presented to the organisers for competition amongst the children. We understand the show will be held in the Horticultural Hall, Westminster, and that the exhibitors will be divided into two sections—1st, those that live within 3 miles of Charing Cross; and 2nd, those that live beyond that radius.

A vacancy occurring on the Executive Committee the place was filled by Mr. Kybers, and Mr. Harrison was elected to fill a vacancy on the Floral Committee. A financial statement to date was submitted, which the Committee regarded as satisfactory.

Reference was made to the forthcoming conference on the early varieties. This will take place on the first day of the October show at the Crystal Palace. It was pointed out that the papers to be read would be considerably increased in value if groups or collections of early-flowering Chrysanthemums could be arranged for in the Conference room. The Chairman thought it would be very instructive to have plants grown in the open ground without any special treatment. Mr. Harrison thought the suggestion an excellent one. He grew a large number of varieties, and although progress had been made, there was still great room for further improvement. In this country Mr. Sawyer had raised some good seedlings, while in France M. Ang. Nonin had also helped to increase the number of good seedlings.

Several new members were elected, and the meeting closed after the election of the Guildford and District Society as an affiliated society.

CONFERENCE ON EARLY CHRYSANTHEMUMS.

A Conference Meeting will be held in connection with the National Chrysanthemum Society's October Show, on the first day, October 4, at the Crystal Palace, when the following papers will be read. The Conference will be open to all, free of charge:—

Authors.	Titles.
D. B. CRANE ...	Garden Chrysanthemums.
C. HARMAN PAYNE ...	History of Early-flowering Chrysanthemums.
J. W. MOORMAN and E. F. HAWES	Early Chrysanthemums for Town Gardens.
GEORGE GORDON, V.M.H.	Decorative Value of Early Chrysanthemums.
E. F. SUCH ...	Early Chrysanthemums for the Market.

LONDON DAHLIA UNION.

SEPTEMBER 19, 20.—The Union held its fifth annual exhibition on these dates in the Princes Hall, Earl's Court Exhibition. The display was equal to any of the previous exhibitions held by the Union. The trade exhibits were a notable feature of the show, excellent groups of Dahlias and other flowers being seen, and these were arranged in nearly all cases with pleasing effect, tall Bamboo epergues and tripods being freely used by the exhibitors. No fewer than 115 new varieties were presented to the committee for awards, and of this number sixteen received the Union's Certificate of Merit. The majority of these have received awards from other societies during this season, and have thus been already described in our columns. A notable feature was a display of Dahlias of the large decorative type, with single or semi-double flowers, likened by some to single Cactus Dahlias. These were staged by Messrs. COPPIN & SON, Utrecht, Holland. By some these were regarded as over-large and coarse; still, we were favourably impressed with some of the varieties shown, notably Baron de Graney, with a pure white flower; and Glory of Baarn, whose petals are of an exquisite shade of mauve-pink.

In the competitive classes Mr. F. W. SEALE, nurseryman, Sevenoaks, was a prominent prize-winner, being 1st for the best display of Cactus Dahlias, occupying a space measuring 12 feet by 6 feet, and arranged with suitable foliage; for three vases of new Dahlias introduced since 1903-4; for six bunches of Pompon Cactus Dahlias; for twelve Show Dahlias; and for twelve Cactus Dahlias in distinct varieties. His display of Cactus Dahlias in Class I was much admired. It was arranged in tall bamboo epergues, and the Dahlias were of first-class quality. Messrs J. CHEAL & SON, Crawley, were 2nd in the class for a display of Cactus Dahlias. Messrs. KEYNES, WILLIAMS & Co., Salisbury, staged the best six vases of Cactus Dahlias in Class 2; being followed by Mr.

CHAS. TURNER, Slough, 2nd; and Mr. S. MORTIMER, Farnham, 3rd. Mr. STEPHEN WALKER, Thame, Oxon, was 2nd to Mr. SEALE for three vases of Cactus Dahlias introduced since 1903-4, among eight competitors; and Messrs. J. CHEAL & SONS, Crawley, followed Mr. SEALE in the class for six bunches of Pompon Cactus Dahlias, in which there were six entries.

Mr. L. McKENNA, St. Lawrence, Twyford, Berks, won in the amateur class for four varieties of Cactus Dahlias, having really excellent examples of J. B. Riding, Violetta, F. M. Stredwick, and F. H. Chapman. Mr. W. STEPHENS, Isleworth, was 2nd.

The best twenty-four blooms of show Dahlias were those exhibited by Mr. MORTIMER, and he had some splendid flowers, notably John Hickling, Daniel Cornish, Penelope, Blush Gem, and R. F. Rawlings.

Messrs. J. STREDWICK & SON, St. Leonards, won easily in the class for twelve varieties of Cactus Dahlias in bunches of six flowers of each variety.

The HOBBS'S Challenge Cup offered for the best nine varieties of Cactus Dahlias in bunches of three blooms, and open to amateurs only, was won this year by Mr. W. LOCKYER, gr. to Rev. G. TWENTYMAN, Greenhill Park, New Barnet.

Other prominent prize winners were Messrs. SIDNEY COOPER, W. E. PETERS, ED. MAWLEY, H. L. BROUSSON, H. A. NEEDS, and J. BURRELL & Co.

NON-COMPETITIVE EXHIBITS.

As mentioned above, the non-competitive groups of Dahlias and other flowers from the exhibitors mentioned below were excellent:—Messrs. J. Burrell & Co., Cambridge (Gold Medal); Mr. J. T. West, Brentwood (Gold Medal); Messrs. T. S. Ware & Co. Ltd, Feltham (Gold Medal); Hobbies, Ltd., Dereham (Large Gold Medal); Messrs. Bakers, Wolverhampton (Large Gold Medal); Messrs. Dobbie & Co., Rothesay (Gold Medal); Messrs. Cannell & Sons, Swanley (Large Gold Medal); Mr. John E. Knight, Wolverhampton (Silver-gilt Medal); Mr. E. F. Such, Maidenhead (Silver-gilt Medal); Messrs. Wm. Artindale & Son, Sheffield (Silver-gilt Medal); Messrs. H. Copijn & Son, Utrecht, Holland (Silver Medal); and Mr. John Walker, Thame, Oxon. Messrs. S. Spooner & Sons, Hounslow, received a Gold Medal for a collection of Apples.

GARDENERS' DEBATING SOCIETIES.

BRIXTON, STREATHAM AND CLAPHAM HORTICULTURAL.—The first paper of this session was given before a good attendance of the members on Thursday, September 14, by Mr. F. Clark gardener to Major-General W. Carnall, Westbury, Streatham High Road, Mr. Glover (Vice-President) in the chair. Mr. Clark's subject was "The Culture of the Peach," and his paper was chiefly remarkable for its advocacy of annual root-pruning. Statistics of the bearing and lasting qualities of the trees under his charge were given, which spoke well for the method of treatment he advocated. J. M. E.

EGHAM GARDENERS.—At the last monthly meeting, when Mr. W. Swan presided, Mr. Sturt, of Round Oak, Englefield Green, Surrey, read an interesting paper on vegetable culture. In the course of his remarks, the essayist pointed out the value of deep trenching, and of thoroughly mixing the manure with the soil. The good effect of ridging heavy soil during winter was explained, and useful information was given as to the best methods of sowing vegetable seeds, &c. Exhibits of vegetables were made by W. G. Rigden, Esq. (gr. Mr. J. Lingwood); W. A. Stearns, Esq. (gr. G. J. Wheeler); Mr. Worsfold, and Mr. Livesley. The winter session will commence on Wednesday, Oct. 4, when Mr. Reid, of the Surrey Bee-keepers' Association, will give a lantern lecture on modern bee-keeping. The meetings after this date will be held on the first and third Wednesdays in the month. W.

CRAWLEY AND DISTRICT GARDENERS.—The second annual exhibition of the above Society was held on Wednesday, 13th inst., in the Assembly Rooms, Crawley, being opened by Mrs. H. H. Fioch, of Goffs Hill. Mr. and Mrs. Finch kindly provided the Medals awarded. The exhibition generally was of a very creditable nature. Mr. A. B. Wadds, gr. to Sir Weetman Pearson, Bart. M.P., Paddockhurst, Wirth, put up a group of choice ornamental and flowering plants, as well as a collection of Apples and Pears. Mr. Neal, gr. to John A. Nix, Esq., C.C., Tilgate, Crawley, showed a splendid group of highly-coloured Crotons, Draconas, &c., in addition to a collection of fruit, consisting of Grapes, Peaches, Nectarines, Plums, Apples, Pears, &c., all of first-class quality. Both the foregoing exhibitors were awarded a large Silver-gilt Medal. Eleven other Silver-gilt and nineteen Silver Medals were awarded to successful exhibitors, which included many well known gardeners, including Mr. W. Shepherd, gr. to H. Hobson Finch, Esq., Goffs Hill, Crawley; Mr. Daisley, gr. to the Rev. A. Bridge, Worth Rectory; Mr. J. White, gr. to John Goddard, Esq., J. P., The Elms, Crawley; Mr. H. Brookes, gr. to Miss Rawson, Deerwood, Ifield; Mr. J. Martin, gr. to P. Sillard, Esq., Muchah Hill, Crawley; Mr. G. Coombes, gr. to L. Mersel, Esq., Nymps Hand-cross; and to Mr. J. Guyart, gr. to F. E. Charles, Esq., Lowfield Heath, &c. Messrs. J. Cheal & Sons, Lowfield Nurseries, made a very large display of Cactus, single, and Pompon Dahlias, which were unanimously awarded a Gold Medal.

BATH AND DISTRICT GARDENERS.—The third annual meeting of the above Association was held on September 14, Mr. R. B. Cater occupying the chair, Mr. Milburn, the Treasurer, presented the statement of

accounts, which showed that the receipts were £19 6s., and there was a balance in hand of £1 14s. 6d. from 1904; the expenses were £21 14s. 8d., leaving a deficit of 1s. 8d. The report and accounts were adopted. Mr. Walters moved the re-election of Mr. Cater as President, and of the Vice-presidents, with power to add to the number. This was carried. Mr. W. F. Cooling was re-elected Chairman, and the Committee of Management was re-appointed, with the substitution of Mr. Thompson's name for Mr. Taylor, who had left the district. Mr. A. A. Walters was, on the proposition of Mr. Wilton, chosen to the new office of Vice-Chairman. Mr. R. W. Rogerson was re-elected Secretary, and Mr. Milburn, Treasurer.

TRADE NOTE.

HOGG & ROBERTSON, LTD.—This company has been registered with a capital of £40,000 in 4,000 shares of £10 each, to acquire as a going concern the business of a seed merchant, &c., carried on by James Robertson at 22 and 43½, Mary Street, Dublin, under the style of Hogg & Robertson, and also the business of bulb grower, now carried on by him at Rush, county Dublin. The first directors are Messrs. James Robertson, J. P., Robert Tait Robertson, and Alexander J. Sinclair, all of Dublin. Registered office: 22, Mary Street, Dublin.

ANSWERS TO CORRESPONDENTS.

BOOKS: *J. S.* The work is what we supposed it to be, and is not very valuable. Show it to a seller of second-hand books.

CATHERINE PEAR: *A very old Lady.* We believe this old variety, recorded by Parkinson in 1629, can still be obtained from the nurserymen, but it is not largely grown. It is a small fruit, 2½ inches long, and pyriform in shape. The skin is smooth and shining, of clear yellow colour with blushes of red streaked with darker red on the side next the sun and strewed with numerous russet dots. It ripens in August. The poem referred to was written by Sir John Suckling in his ballad "Upon a Wedding," where the mention of this Pear occurs in the following lines:—

"Her cheeks so rare a white was on,
No Daisy makes comparison
(Who sees them is undone),
For streaks of red were mingled there,
Such as are on a Katherine Pear
(The side that's next the sun)."

CATTLEYA LEAVES DISEASED: *W. C. S.* The leaves sent are attacked by a fungus disease. Cut off and burn all affected parts, and change the situation of the plants.

CANCHALAGUA: *J. G. P.* A Californian term applied to the genus *Erythraea*, known also as the Blush-worts. The best garden species are *E. venusta* and *E. Muhlenbergi*. *Erythraea* form elegant little plants for the rockery, and succeed best grown in a sandy loam.

CORRECTION. The Cactus *Dahlia* Primrose, Daisy, Peach, Mrs. Macmillan and Tom-Tit, certificated at the last meeting of the Royal Horticultural Society, were shown by Messrs. J. Stredwick & Sons, St. Leonards, and not by Messrs. Hobbes, Ltd., as was reported on p. 217.

CREeping PLANT. *E. C. C. D.* The name of the plant is *Helxine Soleirolii*. It belongs to the natural order *Urticaceae*, and is a native of Sardinia and Corsica. It forms a very pleasing stove or greenhouse edging plant, and is easily propagated by cuttings. It soon spreads over the soil. It much resembles *Sibthorpia europaea* in appearance and habit, but the leaves are asymmetric, whereas in *Sibthorpia* they are regular.

CUCUMBERS: *W. J. I.* The roots are attacked by eelworms (microscopic insects). There is no cure but to turn out the soil and sterilize it, and plant afresh in fresh soil obtained from another source.

GLORY PEA: *A. R. E.* This is the common name applied to *Clianthus Dampieri*, a Leguminous plant from Australia and New South Wales. It produces red flowers with a dark purple blotch on each, and is somewhat difficult to cultivate successfully. The plants are herbaceous and perennial, and if planted out-of-

doors should be planted in sandy soil in the warmest position possible.

GRAPES DISEASED: *G. F. N.* The berries are attacked with the "spot" disease, *Gloeosporium ampelophagum*. Burn the affected berries, and next spring spray the Vines with Bordeaux-mixture when the berries are about to set.

MARKET GARDENING UNDER GLASS: *R. L. H.* This can be followed as successfully in England as in Guernsey, as is shown by the great establishments of the Messrs. Rochford, Kay, &c., in Hertfordshire, and by the numerous establishments at Worthing. You should visit these.

PEARS DEFORMED: *G. B.* The Pears are imperfectly fertilised, as you will observe from the absence of seeds when the fruits are cut. The Pear is not formed from the carpel, as true fruits are, but from the thickening of a portion of the stem, which explains the presence of buds on your abortive Pears. The fruit of Louise Bonne of Jersey received is attacked with a fungus, *Fusicladium dendriticum*. Burn all the diseased fruits, and spray the trees with the Bordeaux-mixture, first, as the

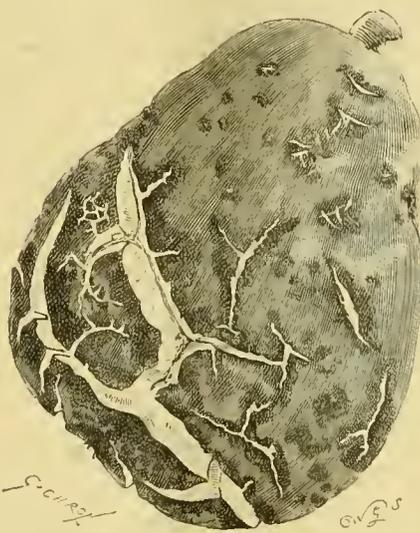


FIG. 90.—*FUSICLADIUM DENDRITICUM*, A FUNGUS DISEASE ON PEARS.

flower-buds begin to open in spring, again, when the petals of the blossom are falling, and lastly when the fruits are of the size of Peas or slightly larger.

NAMES OF FRUITS: *W. L., Ireland.* Thank you for sending such good specimens and so well packed. 1, Trumpeter; 2, Fearn's Pippin; 3, Cullen; 4, Loudon Pippin; 5, York Pippin; 6, Royal Russet. — *T. S. Hollandbury.* — *J. T. H.* 1, Wiltshire Defiance; 2, Warner's King; 3, Sandringham; 4, Lemon Pippin; 5, Stirling Castle; 6, Yellow Siberian. — *Guyot.* 1, Beurré Diel; 2, Diamond. — *W. Morgan.* Not recognised. — *Iola.* 1, Waltham Abbey Seedling; 2, Quarrenden. — *G. W., Rugby.* The Peach was quite decayed when it arrived. — *E. S.* The large Pear numbered 1 is Madame Treyve. The small one, also numbered 1, is Autumn Nelis; 2, Doyenné Bossou; 3, Gratioli of Jersey. — *X. Y. Z.* 1, Both Peasgood's Nonsuch, not in the least unusual; 2, Lady Sudeley. — *C. G.* There is no reason to suppose that the variety of Grape is any other than Gros Maroc. In the specimen received the characteristics are quite what they should be. The cracking of some of the berries has been caused by a detail in the cultivation—possibly by letting the soil in the border become too dry, and afterwards flooding it with water. Maintain the conditions as regular as possible.

NAMES OF PLANTS: *A. E. G.* 1, *Maranta bella*; 2, *Dracena nigro-rubra*; 3, *Cyrtodeira fulgida*; 4, *Acalypha marginata*; 5, *Saintpaulia ionantha*; 6, *Selaginella caulescens*. — *W. B. G.* *Datura Stramonium*, the Thorn Apple. — *J. E.* 1, *Tradescantia virginica*; 2, *Centranthus ruber*;

3, *Dracocephalum speciosum*; 6, *Helianthus decapetalus* double fl.; 5, *Monarda didyma*; 4, *Helenium autumnale*. — *M. McN.* You greatly overtax our courtesy. Another time do not send more than six, and by way of penance send us a trifle for the Gardeners' Orphan Fund. 1, *Neprolepis exaltata*; 2, *Aspidium angulare* var. *bulbifera*; 3, *A. (Lastrea) rigidum*; 4, *Asplenium bulbiferum*; 5, *Begonia nitida*; 6, *B. weltoniensis*; 7, *B. prestoniensis*; 8, *Euonymus japonicus variegatus*; 9, *Sedum Sieboldi*; 10, *Abutilon Boule de Neige*; 11, *A. megapotamicum*; 12, *Veronica salicifolia*; 13, *Syringa Josikaea*; 14, *Quercus Ilex*; 15, *Q. Ilex latifolia*; 16, *Juniperus recurva*. — *D. R.* A late growth of *Trifolium incarnatum* and *Lotus tenuis*. — *W. L.* *Hibiscus syriacus*. — *W. L. W.* *Datura Stramonium*, the Thorn Apple. — *H. H.* 2, *Portulaca grandiflora*; 5, *Gaura Lindheimeri* and *Salvia coccinea*. — *A. P. B.* 1, *Cornus sanguinea foliis aureo-marginatis*; 2, *Viburnum Opulus*; 3, *Cornus sanguinea*; 4, *Colutea arborescens*; 5, *Escallonia macrantha*; 6, *Cotoneaster microphylla*. — *W. P.* 1, *Viburnum Opulus*; 2, *V. lantana*. — *C. W.* We do not undertake to name varieties of Dahlias. Specimen No. 7 is *Saponaria officinalis*. You should try to produce better colour in your Grapes, and pack them more carefully if you intend them for consumption. — *H. W.* 2, *Mesembryanthemum*; 5, *Clarkia pulchella*. — *W. H. H., Leeds.* *Miltonia Clowesii*. — *C. C.* What wretched specimens! No. 2 is *Cupressus funebris*; the others you must send again when in flower. — *W. M. Y.* *Hippeastrum reticulatum*.

PEACH: *T. A. C.* and *G. F.* The stone was never formed properly, and thus it eventually split apart. The cause is due to some detail in the cultivation, but it is difficult to say definitely what this may be.

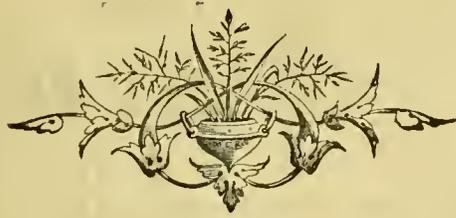
PINEAPPLE CULTURE: *C. P. & Co. Question:* 1. What proportion of fertiliser analysing 9 per cent. ammonia should be incorporated with (a) fresh leaf-mould (b) leaf-mould already used once for Pine-growing? 2. Would periodical root-waterings of nitrate of potash be beneficial? If so, strength and frequency of application to (a) and (b) as above. 3. Any other recommendations applicable to above crop.

— *Answer:* 1. (a) A good manurial mixture for Pineapples under conditions mentioned would be 40 lb. nitrate of soda, 15 lb. bone-meal, 25 lb. superphosphate (high grade), 10 lb. sulphate potash, and 10 lb. quicklime, total, 100 lb.; 1½ oz. per square yard of surface might be applied about once a month; or 8 oz. of the mixture should be mixed with one wheelbarrowful of the leaf-mould. The lime will neutralise the acidity of the leaf-mould and assist in the nitrification of the same. The same proportion of any fertiliser containing 9 per cent. ammonia may be used; (b) to leaf-mould already used once give 2½ oz. of the above mixture per square yard of surface, or 15 oz. per barrowload of the material. A little wood-ashes if obtainable would be beneficial in this case in addition to the other fertilisers. 2. (a) Yes, much benefit would be obtained from the practice, 1 oz. per gallon of water may be used once a week; (b) add a little quicklime to the nitrate of potash and use as above. The available lime is quickly used up by the leaf-mould, and requires renewing from time to time. Chalk powdered finely is a useful material, and wood-ashes as previously mentioned.

COMMUNICATIONS RECEIVED.—*Louis Gentil*—*P. M. T.* Edinburgh—*M. T. M.—E. M.—W. J. T.—H. H. T.*—*Pitman's Metropolitan Reporting and Shorthand Writing Agency*—*W. H. S.—L. Brussels*—*E. S. R.*—*J. G.—Constant Reader*—*A. G. J.—L. E. T.—C. M. L.*—*H. W.—G. D. D. W.—P. W.—A. E. H.—Drummond*—*F. H.—B. M. & Sons—J. W.—T. S. W.—L. C.—S. C.*—*H. F.—E. H. J.—C. J. E.—W. J. C.—H. W. W.—C. R.*—*W. B. G.—G. B. & Co.—G. B.—H. T.—W. E. P.—J. L.*—*P. B. & Bros.—C. E. T.*

MARRIAGE.—*MR. JOHN OSBORNE PEED*, son of *MR. THOMAS PEED*, of Messrs. JOHN PEED & SON, Nurserymen, Streatham, was married on September 18 to Miss AMY GREENHILL, of Herne Hill.

(For Markets and Weather, see pp. x. & xii.)



THE
Gardeners' Chronicle

No. 979.—SATURDAY, Sept. 30, 1905.

CONTENTS.

Annuals, what are? ...	251	Ote Hall, Burgess Hill ...	249
Apiary, the Bee Exhibition at the Crystal Palace	250	Palm, a purple-leaved Peach Golden Eagle ...	243
Botanists, some old-time ...	249	Pear, "new," "Roosevelt" ...	243
Castanospermum australe ...	244	Pear, a seedless and coreless ...	248
Chinese vegetables ...	245	Pear, Catherine ...	252
Chrysanthemums, early-flowering ...	249	Plant-food, formation of, in soils ...	241
Cyclamen, hardy ...	252	Plants for tubs ...	252
Elm-limbs falling from tree ...	252	Pruning, experiments on ...	252
Grafting and its results	248	Roses at the Royal Horticultural Hall...	219
Grapes, seedling, at Edinburgh Exhibition ...	243	Societies—	
Hole, Dean, memorial window to the late...	251	National Dahlia ...	253
Market gardening—		National Rose ...	254
Transplanting Cab- bages ...	252	Royal Horticultural	252
Monstera, deliciosa, fruits of, in market...	249	Trillium seed, the germination of ...	242
Motors and market gardenog ...	249	Veronica Hulkeana ...	242
Oak-tree, a giant ...	249	Wedding of Mr. G. L. Paul ...	248
Orchid notes and gleanings—		Week's work, the—	
Cypripedium Fair- ricanum ...	244	Flower garden, the	244
Orchids at Glebe- lands...	243	Fruits under glass...	247
		Hardy fruit garden	247
		Kitchen garden, the	247
		Orchid houses, the	246
		Plants under glass	246
		Wisley Gardens, the ...	248

ILLUSTRATIONS.

Castanospermum australe ...	245
Ote Hall, Burgess Hill ...	249
Pear "Roosevelt" ...	243
Veronica Hulkeana ...	242
Views in the Gardens at Ote Hall, Burgess Hill (Supplementary Illustration)	
Window erected to the memory of the late Dean Hole ...	251

FORMATION OF PLANT-FOOD IN SOILS.

CHEMICAL research has shown that as a plant nears its flowering and fruiting period phosphoric acid and other constituents pass rapidly into the younger parts of the plant, preparatory to being stored in the flowers, seeds, or fruits, to meet the requirements of rapidly maturing growth at these periods. Seedling plants and the young parts of plants may therefore live for some time on this reserve supply before they draw to any extent upon the soil.

The phosphoric acid, potash, proteins, carbo-hydrates (starch), &c., thus obtained and stored up in the bud or seed serve to feed the tuft of young leaves or seedling for a long time. A similar transfer of valuable food constituents takes place before the fall of leaves in autumn in practically all deciduous trees.

IMPORTANCE OF NITROGEN.

Of all the essential elements of plant-food, nitrogen is in one sense of the greatest importance—first, because no plant can be produced without it; secondly, it is the one that is most liable to escape; and, thirdly, because it is more expensive to supply artificially than the mineral constituents. It

is the most volatile and elusive of all the elements; to-day it may be applied to the soil, to-morrow it may be carried away in drainage water out of root-range, or it may pass as ammonia-gas into the atmosphere.

It has been aptly said that nitrogen is always trying to "run away" or to "fly away." It is also very unstable, which however is not the least valuable of its characteristics when properly understood. Professor Voorhees says, "To-day it is an element of the atmosphere or of a manufactured product; to-morrow it is a constituent part of the growing plant; the next day the same element may exist as an animal product, and the day following it may be returned to the soil to feed other plants."

It is more liable to escape than any of the other plant foods, because it is available largely in proportion as it changes to a nitrate, and after it assumes that form it is less likely to be absorbed or fixed in the soil.

Garden soils, lawns, and meadow lands, which are frequently well supplied with humus matter, retain and hold plant-food constituents in a much greater degree than do ordinary arable soils, which shows that the loss of nitrogen through the operations of the forces of Nature may be reduced to a minimum by the careful management of the soil. The presence of suitable amounts of vegetable humus matter and the practice of good cultivation are conditions that should be within the power of every gardener to provide, though it may be sometimes impracticable to keep the kitchen-garden plots always covered with a crop. But the improvement in texture, due to the exposure of a bare turned-up soil to atmospheric influences, more than balances the loss of plant food thus caused, particularly through the winter with its wide changes of temperature.

After a very wet winter, when there has been excessive drainage, it is usually advisable to apply to the early crops of Peas, Cabbage, Lettuce, Spinach, Asparagus, &c., a little readily available nitrogen, which may take the form of guano, nitrate of soda, or sulphate of ammonia, about 1 lb. per square rod being sufficient. A dressing of soot has also been found to answer well. If rain does not follow quickly after the application of the manure, apply a thorough artificial watering.

NITROGEN AS A CONSTITUENT OF PLANT FOOD.

Nitrogen is essential to the formation of albumen and of various constituents of the protoplasm or living substance of plants. It is absorbed from the soil by the plant largely in the form of nitrates or of ammonia. The latter when very dilute can in some cases be directly absorbed by foliage. It has been used to some extent in this way by placing carbonate of ammonia on steam-heated pipes in conservatories. If there is more ammonia in the air, however, than the plants can convert into proteins, the protoplasm will be coagulated, and growth will be almost completely checked; or in the case of a great excess the leaves may be killed. An amount not greater than 3 to 4 parts in 10,000 greatly stimulates the development of foliage, thus retarding flowering or fruiting. Ordinarily the amount of ammonia in the air is too small to be of any importance either as a direct food of plants or as a source of nitrogen for the roots by accumulating in the soil. By far the most important source

of nitrogen for most crops is afforded by the nitrates of the soil.

The main source of nitrogen in the soil, besides that produced by the decay of organic matter, is the fixation of the nitrogen of the atmosphere through the agency of bacteria or other micro-organisms. Though about 75 per cent. of the volume of the air consists of nitrogen, it does not become available for ordinary plants, except as it is absorbed by these micro-organisms and converted into nitrates or some other higher nitrogen compounds. Many varieties of bacteria and fungi have been found which can absorb free nitrogen from the air if they are supplied with suitable food. This is usually derived from decomposing vegetable matter or from living roots and cells. In some cases bacteria and algæ are associated in the process, and in others, bacteria live on or in the roots of more highly developed plants, forming swellings or tubercles on them, as in the Leguminous family. The great importance of this to all cultivators of the soil is at once apparent, and the study of the conditions favouring the growth of these beneficial micro-organisms is of the highest practical value.

EXPLANATION OF NITRIFICATION.

Nitrogen in the form of nitrates is generally regarded as the best kind of nitrogenous food for plants. They obtain this food from four sources—(1) from the nitrates which are already present in the soil; (2) from those that are carried down to the soil from the air in rain, snow, and dew; (3) from those that are applied artificially in manures; and (4) from the nitrates which are formed in the soil from the ammonia of other substances.

As is well known all the nitrogen that is applied to the soil for manurial purposes, especially in farmyard dung, sea-weed, or vegetable composts, is not in the form of nitrates, and before it can be taken up and used by the growing plant, the organic nitrogen must be changed, first, into the form of ammonia gas, and then into nitric acid. These changes all take place through the agency of micro-organisms, and that particular process in which the nitrogen of the ammonia is changed into nitric acid is called nitrification. This change is accomplished by the joint action of two separate organisms, one of which changes the nitrogen of ammonia into nitrous acid, while the other changes the nitrous acid into nitric acid.

It is well known that the conditions that are required for the development of nitrifying organisms are the presence of certain food and other elements—heat, moisture, air, and some mineral base, such as lime or potash, to neutralize the nitric acid as it is formed. The nitrifying organisms require certain substances as food, among which phosphoric acid is most important. It has been found that without phosphoric acid there can be no nitrification. This may be one of the reasons why phosphates show such beneficial results when applied to some soils, besides which they furnish plant food directly. The three conditions which exert a marked influence on nitrification, and which in horticultural practice are more or less intimately associated, are heat, air, and moisture.

The process is most rapid during warm weather, and in a conservatory or garden frame in the presence of sufficient air and

moisture. Here, then, is one of the reasons why thorough tillage is so essential in successful gardening. The loosening and pulverising of the soil allow the admission of the necessary air, and regulate the supply of moisture. If the soil is either very dry, or saturated with water to the exclusion of air, nitrification is retarded, and may be permanently stopped. This is a point requiring attention in pot cultures.

The final product of nitrification is nitric acid. But the nitrifying organisms cannot develop in the presence of a free acid, hence the beneficial effect of liming sour soils. Peaty soils, black-coloured garden soils, and others to which large quantities of coal-ashes have been applied, are very liable to become soured. An application of lime corrects the sourness of the soil by neutralizing the free acid, and then, if the other conditions of heat, air, moisture, and food are available, nitrification may proceed.

There must be an excess of lime applied over and above the amount necessary to correct the acidity of the soil, in order to neutralise the nitric acid as it is formed. Basic slag has also been found of great value in the aid of nitrification. The caustic lime of the slag may have at first a retarding effect on the nitrifying organisms by rendering the soil too alkaline, but it soon gets converted into a mild form, and then acts most beneficially.

The organisms found in the tubercles on the roots of Leguminous plants, such as Peas, Beans, Clovers, Lupines, &c., are not the organisms that produce nitric acid. These are what are called bacteria, whose office is to seize or fix upon the free nitrogen of the air or the nitric acid of the soil, and to store it up in the tubercles for the use of the host-plant. *J. J. Willis, Harpenden.*

(To be continued.)

FOREIGN CORRESPONDENCE.

GERMINATION OF TRILLIUM SEEDS.

MR. O. O. WRIGLEY (see p. 96) seems to have tried all ways but the right one to induce the seeds of *T. grandiflorum* to grow. Like very many North American plants, the seeds are erratic in their period of germinating, unless they have first been well frozen. It must be borne in mind that this is essentially a plant that will stand cold to any extent in its native woods in the northern United States and in Canada. Though a deep covering of snow is present most of the time, it is not unusual for the soil to be frozen a foot deep before snow arrives.

Gather the seeds as soon as they ripen, which in this part is about September 1. Sow them at once, and place them out-of-doors until a hard frost has, so to speak, put them to sleep. It will afterwards be found very easy to induce them to germinate, either out-of-doors in spring or in warmth in the greenhouse.

The most suitable way would be to sow them out-of-doors in moist, shady woods, where without care they ought in two years to produce plants strong enough to bloom.

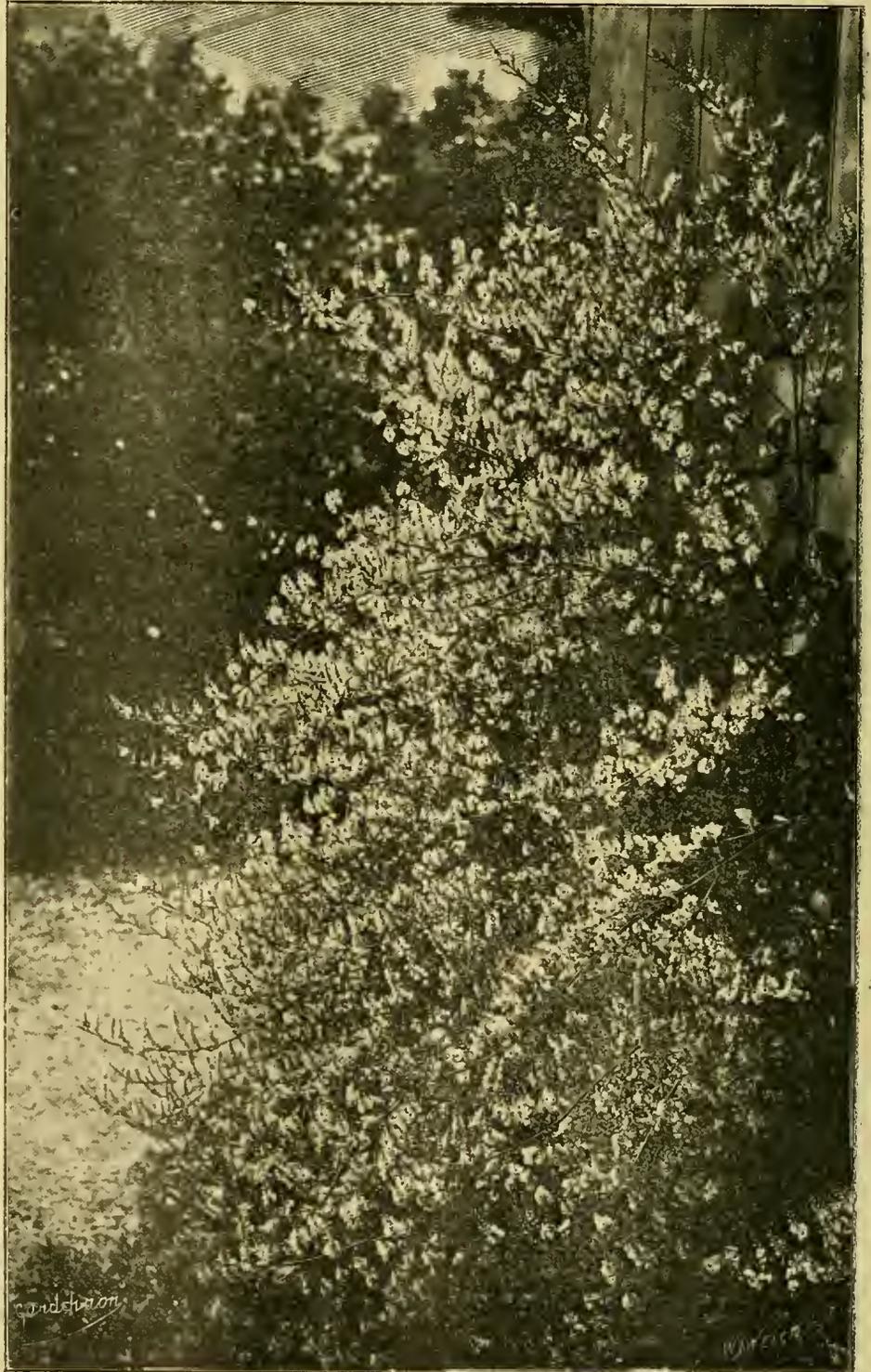
It was my privilege at one time to handle many thousands of *T. grandiflorum* intended for export to England and Holland, and as collected roots are so cheaply obtained here, the raising of plants from seeds is rarely attempted.

It should perhaps be added that the duration of the freezing process does not appear to be of importance, a week being as good as a month. *E. O. Orpet, Lancaster, Mass., U.S.A.*

VERONICA HULKEANA.

This is certainly the most beautiful of all the shrubby Veronics. Like the majority of the family it is a native of New Zealand, where it is found in the mountainous districts. It was introduced into this country about forty years

When cultivated in this manner it is a charming sight at the close of the month of May, when its countless bloom-sprays, many of them from 18 inches to 2 feet in length, standing out from the wall and, slightly drooping, form a cloud of delicate lavender colour from the topmost shoot to the ground-level, at once attracting the



[From a photograph by Mr. Fitzherbert.]

FIG. 91.—VERONICA HULKEANA: FLOWERS LAVENDER-COLOURED.

ago, but in spite of its loveliness is seldom met with even in the south-western counties. It is totally distinct from all other shrubby Veronics in appearance, surpassing them in the grace of its long, branching flower-panicles. If left to itself the plant will form a loose growing bush, but it presents a more attractive picture when grown against a wall, the wall being valuable also for the additional protection it affords the plant.

attention and exciting the admiration of every beholder. A large plant 5 feet in height and as much across will often bear as many as 200 flower-sprays. The species is frequently reported to be very tender, but I have known plants to be uninjured when other shrubby Veronics in the same garden were damaged by frost, and the reason for its having obtained this character is doubtless to be ascribed to the fact that

old plants, and in some cases even young ones, often die off in an unaccountable manner. The death of the plants is sometimes attributed to the strain of flower-and-seed-production, but I have known a plant only 2 feet in height which bore but half-a-dozen flower-sprays die, and large examples have flowered and borne seed year after year in perfect health, only to succumb eventually.

With the possibility of this sudden collapse in their minds, possessors of fine specimens are naturally on the look-out for signs of failing vigour in their plants, for the death of such a shrub is a serious loss to the garden, depriving it of one of the most beautiful features in late spring, and many years must elapse before a small plant can attain large proportions. In order to prevent an undue drain on the strength of the plant it is advisable to cut the flower-sprays immediately the blossoms wither.

Cuttings from 3 to 6 inches in length, taken off with a heel during the late summer and early autumn, strike readily, and plants may also be easily raised from seed. In the colder districts this *Veronica* makes a most attractive conservatory plant. *S. W. Fisherbert, Devonshire.*

FRUIT REGISTER.

PEAR "ROOSEVELT."

M. CHARLES BALTET, the famous pomologist of Troyes, sends us an account and illustration (fig. 92) of this new fruit. "This Pear," he says, "is destined to bring about a revolution in our fruit gardens and orchards. The tree is robust and fertile when grafted on the free-stock or on the Quince. The fruit is very large, sometimes measuring 16 inches round, globular or ovoid; skin smooth, of a pleasing whitish-yellow colour shading into lemon, with carmine or vermilion spots on the sunny side. The flesh is snow-white, delicate, sweet and melting, of an agreeable flavour. It may be said to be ripe during the whole of October, as it really begins at the end of September and continues in use to the beginning of November." M. CHARLES BALTET, of Troyes, who has introduced this Pear into commerce, after testing it for years, has appropriately named it after President Roosevelt, whom he designates as the man of the time, and a prominent advocate for that peace which is so necessary in gardens as elsewhere.

SEEDLING GRAPES AT EDINBURGH.

Any new variety of Grape that is likely to be a worthy addition to existing varieties is certain to excite interest. It seems difficult to obtain better varieties than those that have stood the test of many years' cultivation, like Black Hamburgh or the Alexandrian Muscat. Mr. Bradshaw, gr. to the Marquis of Downshire, Hillsborough Castle, staged fruits of two seedling varieties at the late Edinburgh show. No. 1 was a seedling from the varieties Black Hamburgh and Mrs. Pince, and certainly in appearance the fruit partook of the characteristics of both its parents. In the shape of the berries it was like Mrs. Pince, with the colour and bloom of Black Hamburgh. In flavour it was a combination of the two, being moderately sweet and crisp. It is a variety well worthy of an extended trial; but perhaps its greatest fault is the want of size in the berries. This defect might have been owing to some preventable cause. The 1st prize for any seedling Grape not in commerce was awarded to it.

No. 2 was named Marchioness of Downshire, and was staged by Mr. Bradshaw in the class for any new Grape introduced since 1900. No award was made. To me the fruit seemed too much like that of White Tokay in the shape and flavour of its berries, although they were distinctly larger in

size. Perhaps one of its parents was that variety; if so, I fear its future is not a bright one, as White Tokay has few of the attributes of a good Grape beyond a vigorous constitution.

Mr. Kirk, from Alloa Gardens, staged Directeur Tisserand in the class for any other black variety than those specified, and was awarded the 2nd prize. I do not remember having seen this Grape before. The bunch was of moderate size and the berries also; in shape they were oval with a blunt end; the colour reminded one of Mill Hill

ORCHID NOTES AND CLEANINGS.

ORCHIDS AT GLEBELANDS, SOUTH WOODFORD.

J. GURNEY FOWLER, Esq, the energetic Treasurer of the Royal Horticultural Society and Chairman of the Orchid Committee, is an enthusiastic Orchidist, and the many important additions to the collection contained in the well-arranged Orchid-houses in his gardens constitute

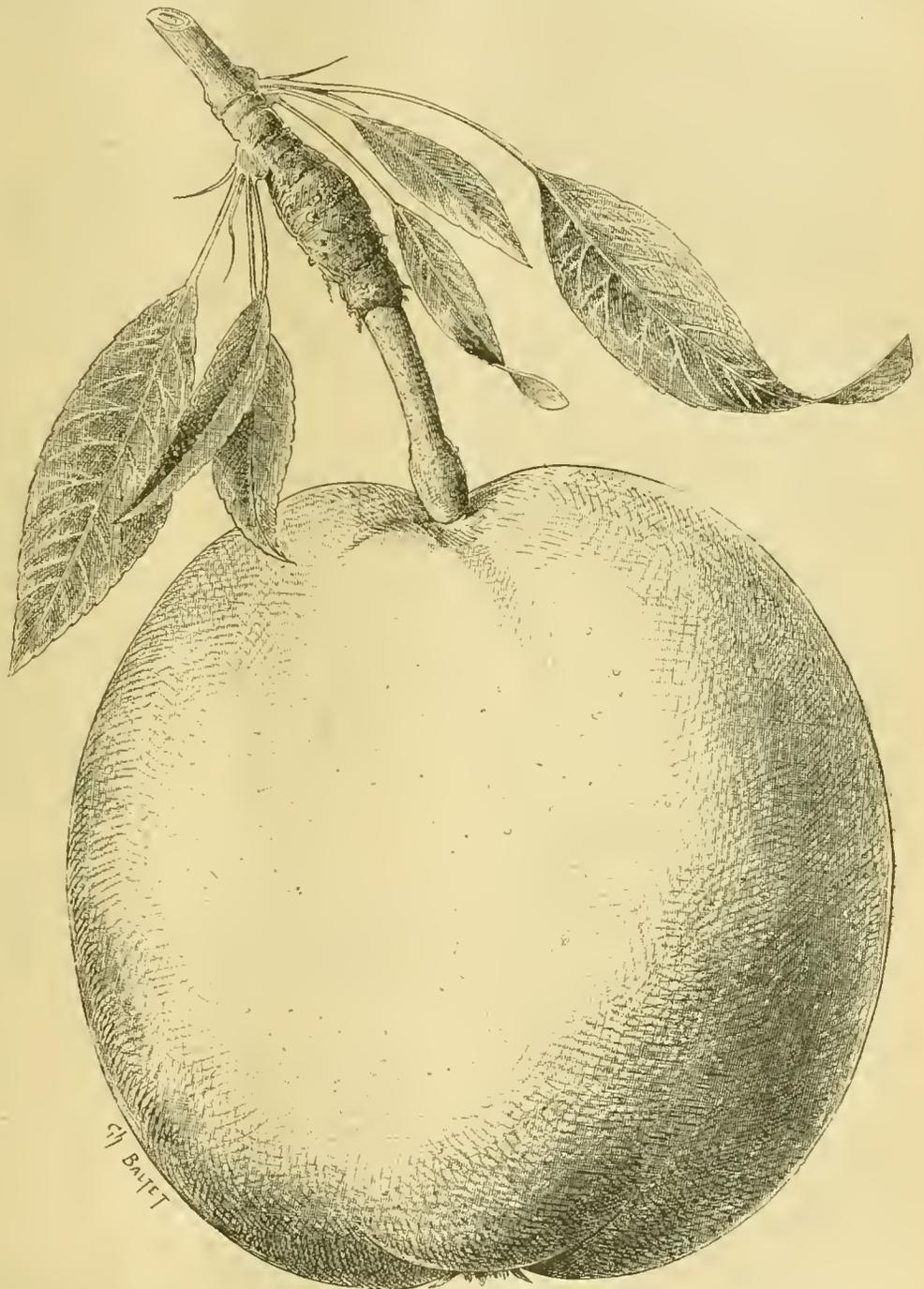


FIG. 92.—NEW PEAR "ROOSEVELT."
Raised by Messrs. Baltet Frères, of Troyes.

Hamburgh when nicely hammered, as is so common in that variety. *E. Molyneux.*

PEACH GOLDEN EAGLE.

As a late-ripening Peach for indoor cultivation there are few better varieties than Golden Eagle, a variety raised by the late Mr. Rivers. The fruit attains to a good size, and is of a rich shade of yellow colour, but on the sunny side deep red. The flavour is of first-rate quality. *J. Murray, Sopley.*

it one of the most important in the neighbourhood of London.

Cypripediums, Cattleyas, Lælias, and their hybrids, Lælio-Cattleyas, Odontoglossums, and Dendrobiums are all strongly represented, and in each class are superb specimens of some of the best in cultivation. Many that have already been much talked about are enquired after, such as the unique *Cypripedium* × *Leeanum* J. Gurney Fowler; the beautiful white *Cattleya* × *Warsce-*

wiczii Frau Melanie Beyrodt, for which a First-class Certificate was obtained at the last Holland House show; and the superb Glebelands variety of *C. Mossie Reineckiana*, and they are found to be in robust health. The white *Cattleya Warscewiczii* had twelve pseudo-bulbs and six flowering shoots, and the *C. Reineckiana* forty pseudo-bulbs and eight young growths. It may be remarked that throughout the collection the large proportion of young growths to the old pseudo-bulbs was extraordinary.

The huge specimens of *Vanda Sanderiana* and *V. cœrulea* exhibited a few years ago next call for remark. The *V. Sanderiana* has had to be separated in order to shorten the plants, and they now form parts of a dozen grand specimens in one of the houses. Pictures representing them in their original splendour adorn the walls of the library, together with some large photographs of Brazilian forest scenery, showing Orchids in their natural state, brought by Mr. Gurney Fowler from South America.

The first house entered had a good collection of *Cattleyas* with *Epidendrum radicans* and *E. O'Brienianum* at one end planted out in sphagnum-moss, a plan also adopted in several of the other houses. Here a fine example of *C. Harrisoniana* was in bloom. The next, an intermediate-house, had a vigorous batch of good *Lycastes*, *Zygopetalums*, and allied plants; and a choice batch of fine yellow and other named varieties of *Cypripedium insigne*, including the handsome dark-coloured *C. insigne Fowlerianum*. Here, also, are four strong specimens of *Cypripedium Fairrieanum* of recent importation.

The *Odontoglossums* occupy a range in two divisions, and are largely composed of healthy, thriving plants not yet bloomed, and out of which some good blotched forms are expected. Some good hybrids are with them, including *O. Rossii majus* × *O. × Adrianae*, and a few other promising crosses, together with several forms of *O. × ardentissimum*, a very pretty and distinct variety of which, with one large rose-purple blotch in the middle of each segment, was in bloom. *O. × ardentissimum exquisitum* is thriving well; *O. luteo-purpureum Vuylstekeanum* has seven pseudo-bulbs and five strong leading growths, and should be a fine example when next in flower. *O. × waltoniense* and the blotched forms of *O. crispum* are in good condition, and, remarkable for their vigour in these cool houses, a batch of *Lælia Jongheana*, a good example of *Oncidium ornithorhynchum album* with a strong spike, a lot of *O. varicosum*, *O. concolor*, and other *Oncidiums*; a strong specimen of *Odontoglossum coronarium*, and a collection of *Masdevallias*, of which several of the forms of *M. Harryana*, *M. Veitchiana*, *M. Carderi*, *M. × Hincksiana*, *M. Schlimii*, and a few others were in bloom.

The warmer *Cypripedium*-houses contained a fine selection, all equally vigorous, some hybrids, such as the beautiful *C. × Olivia*, and the hybrids of *C. Rothschildianum* being of very large size. Strong specimens of *C. × Miss Louisa Fowler*, *C. × P'Ansoni*, forms of *C. × Ileanum*, including five plants of the handsome variety "*Clinkaberry-anum*," and a like number of *C. × Mary Beatrice* "*Queen of Ethiopia*," and *C. Lawrenceanum Hyeannum*. *C. niveum*, *C. × Nandii*, and others were in bloom, and in the same house was seen a good specimen of *Eulophiella Peetersiana*, and another of *E. Elisabethæ* of the original importation, which in itself is a good indication of the unremitting care and skill of Mr. J. Davis, the gardener at Glebelands.

An intermediate-house contained a good collection of *Cymbidiums*, including the rare *C. Huttoni*; *Camaridium ochroleucum*, a pretty white species not often met with; a good selection of *Miltonia vexillaria*, *Oncidium lamelligerum*, and *O. tigrinum* with stout spikes, and other fine specimens.

The span warm-house range contained a remarkably good collection of *Phalaenopsis* with perfect foliage, principally *P. Schilleriana*. Here was a small but healthy collection of *Vandas* and *Aërides*, including a number of strong specimens of *Vanda Sanderiana*, and a truly remarkable plant of *V. Amesiana* about 3 feet in height, and with many growths sending up stout flower-spikes. Also *Vanda Lowii*, and a good selection of hybrid *Dendrobies*, *D. × Schneiderianum* having abnormally stout pseudo-bulbs; a selection of *Lælia anceps*, five plants of the rare *L. tenebrosa* Walton Grange, and other good things.

The next cooler house had a nice lot of *Phalaenopsis Rimestadtiana*, which is found to be the easiest *Phalaenopsis* to grow, and the freest in flowering. Some are in bloom, and the large white, sometimes rose-tinted flowers well bear out the good character given. Overhead was a good show of the large white *Dendrobium formosum giganteum*, with varying tints of yellow on the disc of the lip. One side of the house was entirely occupied with the best hybrid *Cattleyas*, *Lælio-Cattleyas*, and rare forms of species, including *C. Schröderæ* Fowler's variety, *C. S. Pitt's* variety, and a choice selection of other rare forms of the *C. labiata* section. In bloom were a very beautiful *Cattleya × Iris*, *Lælio-Cattleya × Nysa superba*, several *L.-C. × elegans*, &c.; while the superb *Brasso-Lælia × Edward VII.* had just passed out of flower.

A novel feature in many of the houses, and one which contributes much to the equal distribution of the heat and the prevention of erratic currents of air, is seen in the loose brick screens or walls built without mortar, and with openings 4 inches or so between the ends of the bricks. These are built up from the ground at the edge of the walk to the edge of the staging, enclosing the area beneath the staging and the hot-water-piping, so that the heat has to pass through the openings in the bricks in order to reach the middle of the house. These loose brick walls become saturated, and give off a regular degree of moisture. The adoption of this simple device in some houses where the plants are often injured by the excessive and unequal distribution of the heat from the hot-water-piping would prove highly beneficial.

THE GARDEN.

The garden at Glebelands is an old one. Ornamental flowering and foliage plants, apart from Orchids, are still well grown, and the houses devoted to these were gay with bloom, *Clerodendron Fallax* being especially noticeable.

The vines were well cropped, and *Roses*, which used to be prime favourites, are still extensively and well grown both indoors and out.

The lawn has at one end a noble *Tulip-tree*, and on and around the lawn are several large *Taxodium distichum* and *Cedars*, while the border contains a good collection of herbaceous perennials, with an ornamental pond at one end.

Outdoor fruits are said to develop satisfactorily, Apples being especially good, some of these trees being heavily laden with fruits.

CYPRIPEDIUM FAIRRIEANUM.

As there is little doubt that the plants formerly in cultivation were nursed to death in a too high temperature a word of warning on that point will not now be out of place. Being of low stature the plants should always be kept near the glass of the roof. For the present they will succeed best in a temperature of 60° to 65° Fahr. But during the winter months 55° to 60° would be better, the lower temperature being observed at night, for nothing is more fatal to plants under glass than a too high night temperature. The plants should be kept in the temperature mentioned until March, when more warmth and moisture should be given. When further experience of the plant has been gained, it will probably be found to be one of the hardiest of *Cypripediums*.

CASTANOSPERMUM AUSTRALE.

IN the garden of the "Châlet des Rosiers," at Garavan, near Mentone, where Queen Victoria once spent a winter, and which now belongs to a Russian gentleman, there are but few trees of interest. Among them I observed, about six or seven years ago, a young tree of vigorous growth with large pinnate leaves. Since then I was informed that it had begun to flower, but unfortunately I always failed to see a specimen of it until I happened to do so this year. The gardener could not give me any particulars about the origin of this stately plant, nor could I guess from his description of the flower and the little fruit he presented to me—the first one produced (see fig. 93, s)—to which family the tree could belong.

Recently I visited again the garden and found the tree with young buds. It has now grown into a bush, branched from the bottom, and is about 6 m. high. Another specimen, which promised to form a beautiful tree, had been destroyed. The flower-buds came in quantity from the old wood, but they were yet so young that little could be seen from them, except that they promised to be something which I had never seen in any of our Riviera gardens.

At my request the gardener kindly sent me over a few flowering spikes, from which I easily ascertained that the plant in question is *Castanospermum australe*, A. Cunningham. As there is no figure, so far as I know, except in *Hook. Bot. Misc.*, t. 51, a publication to which I have no access, I thought it might be of interest to all lovers of evergreen trees to make a drawing of a flower-spike and a leaf.

The racemes which I received are 12 cm. long, and bear 16 to 20 flowers on pedicels of about 3 cm. in length. The rachis is thickened at the point of the insertion of the pedicels. The pedicels turn to one side, the racemes are therefore secundiflorous. The calyx is conical at the base, above broadly campanulate, and like the pedicels of a dull orange-yellow colour. It is shortly five-lobed, the two upper lobes being the broadest, the three under ones are narrower but somewhat longer. The petals are all free; on opening they are, as well as the stamens, of a yellowish-green colour; then soon turn to orange, and finally become a fine deep-red colour, similar to some *Erythras*. To these latter trees or shrubs the flowers have indeed much resemblance. But the relationship of *Castanospermum* is not with these, and on account of the free stamens, &c., it belongs to the tribe *Sophoreæ*. The individual flowers at hand measure from the bottom of the calyx to the anthers of the much exerted stamens 5 cm. (= about 2 inches). In the young state, when the flowers are of an orange colour, the anthers shed their pollen, and, as in many other plants, the flowers assume the deeper and finer colour when the stigma becomes mature.

Castanospermum australe is described by Bentham in his *Flora Austr.*, ii., 275, as a large tree, native of Queensland and New South Wales, where it seems to grow along the rivers. The genus only comprises one species. The large globular seeds are eaten roasted like Chestnuts.

For horticultural purposes it is a very desirable evergreen tree for subtropical gardens, where it can be grown in the open-air. The individual leaves measure from the base of the petiole to the top of the end leaflet 30 to 50 cm.; the leaflets are from eleven to fifteen in number, and some are over 15 cm. long, giving a total breadth of over 25 cm. to the whole leaf. It seems to grow quickly on deep, fresh soil. When in full flower the tree is sure to be very attractive. *Alvin Berger, La Mortola, Ventimiglia, Italy.*

LEAVES FROM MY CHINESE NOTE-BOOK.

(Continued from p. 174.)

ON CHINESE CEREALS, VEGETABLES, AND CULINARY OIL-YIELDING PLANTS.—What food the population of a country lives upon is always of interest and importance, and of no nation is this more true than of the Chinese. This nation is to a very large extent vegetarian, flesh being only eaten in small quantities except on festival occasions. Pork, chickens, ducks, and fish represent the meat, of which the Chinese are excessively fond, but to the great majority these are luxuries only indulged in on rare occasions. Rice is to them what Wheat is to us, only more so. So long as the average Chinaman

Kingdom. Other parts of China have vegetables peculiarly their own. For example, around Pekin "Crosnes" (*Stachys tuberifera*) are commonly cultivated, but no mention of them will be found in these notes since they did not come under my observation. Again, at the treaty ports, where foreigners have settled, varieties of our own vegetables have been introduced and are cultivated for their use. These, with rare exceptions, do not come within the province of this article.

The difficulty of affixing the correct scientific names to plants long cultivated is a very real one, and one that can be appreciated by all. Whilst in the following pages I cannot hope to have altogether escaped error in this matter, I

and all that obtains to-day is mere imitation of the past.

The cultivation of this cereal—how it is sown thickly in small nursery-beds, transplanted when large enough to handle in little tufts into previously prepared and flooded fields; how it is made firm by subsequent treading, kept free from weeds, and the requisite amount of water maintained; how, as the crop ripens, the water is led off, and how finally the fields are reaped by hand, and the grain beaten off there and then into large wooden bins—is too well known to demand detailed comment here. In Southern China two crops of Rice are obtained in one year, but in Central and Western China only one crop is grown. This occupies the ground from May till the end of August. The Chinese cultivate three well-marked varieties of Rice—viz., ordinary, red, and glutinose. The first two are grown for food only; the red being the hardest is cultivated at higher altitudes than the other, but is by no means confined thereto. This Red Rice (*Hung-ni*) gets its name from the reddish colour of the pellicle, which adheres tenaciously to parts of the grain after milling. Glutinose Rice does not take the place of the other two as a food-stuff, being only eaten for a change. It is valued for the weak spirit which is made from it, for sugar which is extracted from it, and for making into cakes and sweetmeats. It is later to ripen than the other varieties, and always commands a higher price in the market.

In Yunnan the Chinese cultivate a variety which will grow without water. This upland Rice yields but a poor crop, and is very inferior. It is probably the same as that cultivated in India under similar conditions.

Wheat.—Whilst the Chinese are pre-eminently a rice-eating race, it should be borne in mind that there are millions of Chinese who save on rare occasions never eat Rice at all. To these, Wheat, Maize, and Buckwheat are the staple cereals. In the Rice-growing districts of China Wheat is a winter crop, occupying the ground from October to early May. In the mountainous districts and in the colder provinces it is a most important summer crop. I have noted no fewer than five varieties, comprising both "red" and "white" Wheat, both awned and awnless. In late August the mountain sides and valleys in Western Szechuan present a glorious picture of miles and miles of rolling grain-fields. In this region 3,000 to 10,500 feet represent the Wheat-growing belt. The grain is sown by hand in rows, the seeds being dropped in clusters a few inches apart. In the Yang-tze Valley, if the Wheat-crop is late in ripening, it is ploughed in to make way for Rice. In the plains of Central China the grain is threshed out the moment it is harvested. On the Tibetan borderland it is tied into sheaves and stacked, ears downwards, on tall hurdle-like arrangements until time and weather admit of its being threshed. These same remarks apply to Barley, Oats, and other crops. The grain is ground into flour and made into cakes and vermicelli. Chinese flour is usually gritty and of bad colour.

Barley.—This cereal is sparsely cultivated throughout the Yang-tze Valley, and it is only in the mountainous Tibetan borderland that it is largely grown. The Chinese do not care for the meal, and the grain is chiefly used for making spirits, for feeding pigs and other domestic animals. The Tibetans, on the other hand, highly esteem it. Roasted and ground into meal and mixed with tea and rancid butter it forms "tsamba," the national and staple food of the Tibetans. As it is harder than Wheat its culture extends to higher altitudes; the highest point I noted it was 13,000 feet. Both Chinese and Tibetans cultivate several varieties, but the six-rowed variety, *Hordeum vulgare* var. *hexastichum*, is most in favour. Around Sung-pan, a



FIG. 93.—CASTANOSPERMUM AUSTRALE. (SEE P. 244.)

1. Leaf. 2. Raceme. 3. Standard. 4. Wing. 5. One of the free keel-petals. 6. Calyx in longitudinal section showing insertion of stamens and petals and the stipitate ovary. 7. Ovary, longitudinal section, showing the ovules. 8. A young fruit with a single seed. 9. A well-formed fruit, copied from Taubert's monograph of the Leguminosae, in Engler and Prantl's *Naturpflanzfamilien*, iii., 3, fig. 103 N. All natural size.

can get rice he is happy; but this would be scarcely true of ourselves if we could only get bread!

Next to Rice, Wheat, Maize, Pulse, and Cabbage are the more important food-stuffs. The Chinese fry most of their vegetables, and for this purpose vegetable oil is nearly always used. That expressed from the seeds of members of the Cabbage family, *Glycine hispida*, and *Sesamum indicum*, being most in request.

Whilst the Chinese cultivate a great variety of vegetables the quality of one and all, judged from our standpoint, is wretchedly inferior. With the exception of Maize and Sweet Potatoes, it is safe to say that not a single Chinese vegetable would command attention in this country.

In this article I have attempted a fairly exhaustive account of this subject, in so far as it came under my observation during the five years I travelled in China. These observations were limited to three provinces, namely, Yunnan, Hupeh, and Szechuan. The estimated area of these three provinces is about 372,500 square miles; more than three times that of the United

have used every means at my command to ensure accuracy.

For the purpose of convenience I have grouped the subjects under several headings, beginning with—

CEREALS.

Amongst these Rice stands pre-eminent. It is cultivated everywhere in China where the climate admits, and where the water necessary for its culture is obtainable. The methods of cultivating this cereal afford a good insight into Chinese character. They illustrate well their extreme patience and conservatism. Rice is an aquatic, and its culture has called for the elaborate system of irrigation which obtains in many parts of China, notably the plain of Chentu. In this system water is conveyed by every conceivable method. In undulating country terraced cultivation is very much in vogue, the system being most elaborate and complete. For generation after generation these same systems have been employed, and much as one appreciates the vast amount of labour involved, it is borne in upon one that it is the brain of a bygone age that devised the scheme,

variety of the above having purple paleæ is largely grown, being considered harder than the type. This purple barley is apparently peculiar to these parts, being quite distinct from the two-ranked chocolate Barley (*Hordeum coeleste*, *Viborg*), cultivated in parts of the Himalaya. Ordinary Barley (*H. vulgare*) is cultivated in less quantities by Chinese and Tibetans. In Hupeh and in the river valleys of Western Szechuan I met with occasional patches of *H. vulgare* var. *segiops*, *Meyer*. This variety is the Mi-mê (Rice-Wheat) of the Chinese.

Oats.—Though these are not much grown by the Chinese in the parts I traversed, they are cultivated to a considerable extent by the Tibetan and other tribesmen in the highlands of the Tibetan borderland. The Chinese prefer *Avena nuda* (which they designate as Yen-mê); the Tibetans and tribes-folk, *Avena fatua*. The grains are roasted and ground into oatmeal, or cooked and eaten whole.

Maize.—This cereal [of American origin] ranks next to Rice and Wheat in importance, and is cultivated throughout the length and breadth of China. In the Yang-tsze valley it is always a summer crop, and two crops are frequently harvested. In the mountains of Western China its cultivation extends up to 7,500 feet, and in exceptionally favourable districts even higher. Green corn is really a delicious vegetable, and ought to be used in this country. The Chinese, however, do not employ it extensively in this form. When ripe the sheaths of the cobs are folded back, exposing the grain. They are then tied in bunches and suspended from the roofs of houses, where they can be kept dry. The grain is ground up and made into meal-cakes. It is also used for making spirit. From the culms sugar is sometimes extracted, but their chief use is for fuel.

False Millet (*Sorghum vulgare*).—This is the Kao-liang of the Chinese, which is largely used in China for making wine. It is cultivated generally throughout Central and Western China, but not so extensively as in other parts of China, notably Manchuria. The largest areas I noted were on the plateaux of Yunnan, the plain of Chentu, and the fluvial areas of the Min and Fo rivers. Its altitudinal limit is the same as that of Maize, and, like this latter, it is always a summer crop. Two varieties are grown, one with purple, the other with yellowish "heads." It is occasionally employed as food, more particularly in mountainous districts, but 90 per cent. of it is used for making wine.

Panicum miliaceum (Chan-tzu) and *Setaria italica* (Hsiu-ku) are both cultivated, but not in large quantities. The seeds are used in making cakes, but the chief use of the latter is for feeding bird-pets.

Coix lachryma, Job's-tears (Ta-wan-tzu), is cultivated in small patches throughout Central and Western China. Though occasionally used as food in the form of gruel, "Job's Tears" are chiefly valued as medicine. They are supposed to possess tonic and diuretic properties, and are administered in cases of phthisis and dropsy.

Buckwheat.—Of this two species are commonly cultivated—viz., *Fagopyrum esculentum* and *F. tataricum*, the K'u ch'iao mè and T'ien ch'iao mè respectively of the Chinese. These constitute a most important crop, especially in the highlands. Under favourable climatic conditions two crops are harvested. A field of the pink Buckwheat (*F. esculentum*) in flower is one of the prettiest sights imaginable. It is most commonly grown in Western China on terraced mountain-sides. The other species grows twice the height of the above, and bears greenish-white flowers. The altitudinal limit equals and possibly exceeds that of Barley.

After the seeds are threshed out they are ground up in water, and the husks are removed by a fine sieve. The flour is then made into dough

with a little salt, to which lime is added. This dough is made into vermicelli, when it is ready for cooking and eating.

Buckwheat constitutes a most important article of food amongst the Chinese living in the mountainous districts, and also with the tribes-folk of the Chino-Tibetan borderland. It is a very accommodating crop, for it thrives on the poorest of soils, requires little attention beyond sowing and harvesting, and matures very quickly.

E. H. Wilson.

(To be continued.)

The Week's Work.

PLANTS UNDER GLASS.

By A. BULLOCK, Gardener to E. J. WYTHES, Esq., Copped Hall, Epping, Essex.

Stove Foliage Plants.—Let those plants which are grown for their richness of colour alone be afforded all the light obtainable, shading of any kind being no longer necessary. Maintain a temperature at night of 70°, using artificial heat for the purpose if necessary. Let the atmosphere be kept moist by frequently damping the stages and walks. The plants may be syringed overhead twice during the day, once in the early morning, and again early in the afternoon. If the structure containing the plants has not been cleansed recently, it should be thoroughly cleansed now, and an inspection of the plants made at the same time, taking every care to remove any signs of mealy-bug, scale, &c., there may be found. This can be done without risk of causing injury to the tenderest foliage by using an application of paraffin and water at the rate of a wineglassful of paraffin to 3 gallons of water. The plants may either be dipped in the preparation or be syringed with it, but the liquid should be thoroughly and constantly stirred to prevent the oil rising to the surface, for if this be applied to the plants in an undiluted condition it will cause them injury. A half-pint of paraffin to 3 gallons of water should be used for syringing the brick and woodwork in the house, and when dry the walls should be whitened and sweetened with limewash.

Lilium Harrisii.—Let the bulbs be potted up as soon as they are received, using a compost consisting of two parts loam and one part of well-decayed leaf-soil, adding a liberal quantity of silver-sand. Well mix these ingredients together. In potting the bulbs let them be kept well down in the pots to allow of a good top-dressing being applied at a later date. The pots containing the bulbs may be stood in a cold frame until the bulbs show signs of growth, and water should not be afforded until root-action has commenced.

Lilium longiflorum giganteum.—Let these be treated precisely in the same way as are *L. Harrisii*. These will flower at a later date, and form a useful succession to *L. Harrisii*.

Early-flowering Tulips, &c.—These bulbs are now being received, and should be potted up without loss of time if they are intended to flower from Christmas onward. Before plunging them in ashes afford a good watering and allow the water to drain from the pots.

General Work.—After this date plants of a tender nature are not safe to remain out-of-doors without protection being afforded them. Let provision be made for the safe housing of *Chrysanthemums*, *Primulas*, *Cinerarias*, &c. Afford *Freesias* that have started into growth a light stake to prevent them falling about.

THE FLOWER GARDEN.

By W. A. MILLER, Gardener to Lord Henry C. BENTINCK, M.P., Underley Hall, Westmorland.

The Rockery.—Many rock-garden plants can at this season be successfully propagated. A layer of sandy soil 3 inches in depth in a cold frame will suit the requirements of the majority of these plants. *Artemisias* are of easy culture, and cuttings inserted now will develop into good plants by next season. The silvery foliage of *A. Stelleriana*, *A. ludoviciana*, *A. sericea*, and *A. Villarsii* is always pleasing. Other plants with grey or silvery leaves are *Achillea argentea*, *Alyssum argenteum*, *Antennaria tomentosa*, *Cerastium*, *Scabiosa parnassi*, *Senecio argenteus*, *S. laxifolius*, *Stachys lanata*, *Othonnopsis cheirifolia*, and

Santolina. *Cistus* may be easily increased by cuttings inserted at the present time under a handglass; they will need protection during severe weather. *C. laurifolius* is a strong-growing and hardy variety. The following plants can be propagated in a similar manner to *Cistus*: *Helianthemum*, *Linum perenne*, *L. flavum*, *Linarias*, *Veronicas*, *Erigerons*, *Hypericum Moserianum*, *tricolorum*, *Antirrhinum sempervirens*, *A. glutinosum*, *Gaultheria nummularioides*, *Philesia buxifolia*, and *Polygala chamæbuxus* can all be increased from cuttings or from suckers. Cuttings of the following tender rock plants require to be inserted in a warm frame:—*Convolvulus Cneorum*, *C. mauritanicus*, a trailing species with blue flowers; *Pratia begoniaefolia*, this species bears violet-coloured berries during the autumn; *Polygonum capitatum*, a creeping variety that colours well, growing against the face of a rock, and where it is subjected to much heat; *Sedum carneum variegatum*, and *Mesembryanthemum*.

Ericas are propagated by layers, and can also be increased by cuttings. Choose half-ripened growths that are 1 inch in length free from flowers, and insert them in well-drained pans containing a sandy-peaty compost, placing a finely-sifted layer of the mixture on the surface. Place the pans in a cold frame, and cover them with a piece of glass, but do not allow the condensed moisture to damage the cuttings. The following are all desirable varieties:—*E. vulgaris* *Alportii* *flore-pleno*, *E. v. var. gracilis*, *E. v. Serlei*, *E. v. Hammondii*, *E. vagans*, *E. v. grandiflora*, *E. Tetralix Mooreana*. *Menziesia polifolia* and its varieties are similarly increased.

Stock Plants.—Stock plants of tender bedding subjects must soon be placed in their winter quarters. Place the pots containing *Lobelia erinus*, *Tropæolums*, and *Alyssum* (*Koniga*) upon a shelf in a light, well-ventilated house. *Zonal Pelargoniums* require a dry atmosphere. *Heliotrope*, *Coleus*, *Alternantheras*, *Iresines*, *Mesembryanthemums*, &c., require warmth. A few plants of *Agathæa cœlestis* should be potted for the purpose of providing cuttings for next season.

Seed Collecting should be done on fine days. Spread the capsules in a dry, airy structure until the seeds are mature.

Climbers.—*Solanum jasminoides* and *Physanthus* [*Arauja*] *albena* are rapid growers. Cuttings inserted in heat now will develop into useful plants for next year.

THE ORCHID HOUSES.

By W. H. YOUNG, Orchid Grower to Sir FREDERICK WIGAN, Bart., Clare Lawn, East Sheen, S.W.

Dendrobium Jamesianum and *D. infundibulum* need cool treatment. These will continue growing for some time, but as the conditions are now less favourable to evaporation the material in which they are growing should be allowed to approach dryness before being wetted again. After the growths have attained their limit scarcely any water will be needed. *D. Brymerianum* is a late-growing kind, and its growth is now little more than half completed, but if allowed a light place in a Cattleya-house copious waterings will not be necessary. This plant is subject to attack from red spider; sponge or spray the leaves occasionally to prevent this pest.

Cochlidias.—The few species which constitute this genus produce flowers similar in character and colour, and since hybrids have been raised from *Odontoglossums* fertilised with one of their number their popularity has increased. *C. rosea*, *C. vulcanica*, and *C. sanguinea* may be grown under the same conditions as the cool *Odontoglossums*, except that they require more light. This may be afforded them by suspending the receptacles near to the roof glass. In whatever material they are planted moderately dry treatment is essential at all times, for prolonged saturation is very detrimental to the roots, which are much thinner than those of most Orchids. *C. Noetziiana* produces the largest and most attractively-coloured blooms. Planted in a mixture containing leaves and kept near the roof-glass at the warm end of the *Odontoglossum*-house, success will be attained by keeping the material moist when the plants are growing, and subjecting it to long periods of drought from the time growth has ceased until

the new growths in the following season have become considerably advanced. Repotting should only be done when absolutely necessary. The annual resurfacing or occasional repotting should be done when the young growths are an inch or so in length. Press the material about the roots moderately firmly, and employ a good proportion of peat when merely resurfacing the plants.

Pachystoma Thomsonianum and *Paphinia cristata*.—These two plants of botanical interest are both in flower. The first-named species is a deciduous-leaved plant from West Tropical Africa, and should be grown in small, well-drained pans, in a mixture of equal parts of fibrous loam, peat, and sphagnum-moss, with a sprinkling of sand, staking or suspending the plants near to the roof-glass in the warmest house. Much water is only needed when root-action is most vigorous, and when the small, flattish pseudo-bulbs are made up the roots must be kept dry. The Paphinias are natives of the West Indies, mostly tropical, and, though allied to the Lycastes, need quite different treatment. The one mentioned and the still finer species, *P. grandis*, need very careful management to keep them alive and healthy, the young growths being so very prone to damp-off. They succeed best planted in small, thoroughly well-drained pans and a small quantity of peat and sphagnum-moss, which needs to be kept moist throughout, but must not remain saturated for long at a time. It is advisable, when young growths are present, not to wet them at the base, or to allow water to lodge in the expanding leaves. Thrips and red-spider must be kept from them by carefully dipping the plants in an insecticide, and by fumigating the house occasionally.

Cattleya citrina.—This singular-growing species is now, after a long rest, making new growths. Good results are not easily obtained with this plant unless the position in which it is cultivated is a favourable one, and to find this usually requires long and varied experience. Being a winter-growing species it is difficult to produce the conditions under which the plants grow naturally, these being much moisture, plenty of light, fresh air, and a moderately cool temperature. Their habit of growing downwards makes it very awkward to fix the plants in pots or pans, so other methods have to be adopted. Blocks of hard-wood or teak-wood rafts are very suitable, fixing the plants on with copper wire, with a small quantity of peat and sphagnum-moss between the latter and the rafts. They should then be suspended, leaves downward, against a partition or wall in an intermediate-house, where they may obtain a fair share of light and air, and be syringed occasionally. Those grown in suspended pans must be carefully watered, always trying to keep the base in a moist condition without saturating it.

FRUITS UNDER GLASS.

By F. JORDAN, Gardener to Dr. CORBIET, Impney Hall Gardens, Droitwich.

Melons.—The growth of late Melons this season has been most favourable. The plants should be syringed on bright mornings only, and then but lightly. If conditions permit give a little ventilation early during each day, taking every advantage of sun-heat to close the house early. A warm and somewhat dry atmosphere should be maintained when the fruits begin to ripen, as at this late season of the year they are liable to splitting. Plants grown for supplying fruits at the end of next month should be afforded a steady bottom-heat, with a temperature of 70° at night, falling to 65° in the morning. Syringe the paths and borders of the house, but avoid excess of moisture in dull or unsettled weather. Crop the plants lightly; do not give heavy applications of stimulating manures, and see that the water applied to the roots is made tepid before use, selecting a bright morning for its application. The laterals must be stopped and the growth regulated in order to allow the fruits and leaves as much sunlight as possible. More failures at this season of the year are to be attributed to badly-constructed houses than to any other cause, therefore the growing of late Melons should not be attempted in the absence of suitable houses.

Figs.—While the weather continues fine as at present early pot-trees may with advantage be

allowed to remain out-of-doors, and until the houses or pits intended for their reception are made ready. In the event of severe weather obtaining they should be removed to the warm end of a cool orchard-house, or be given a position where protection can be afforded, as severe autumn frosts will be prejudicial to them. Fig-trees are very subject to the attacks of both red-spider and scale, therefore they should be carefully washed with some approved insecticide, and the house in which they are growing thoroughly cleansed, and if necessary painted before the time for forcing arrives in November. Keep the roots moderately moist, and pot or top-dress all trees that require these operations, according to the directions given in the Calendar for August 26. The maturing of the wood in late houses must be aided by removing any small shoots that are not required, and by allowing those that remain full exposure to sun, light, and air. Give the trees a thorough washing with water from the hose, in order to remove insects, &c., as soon as they have been cleared of fruit. If any trees are in an unsatisfactory condition of growth, examine the borders to ascertain the cause. If the borders are at fault, remove the old soil down to the drainage and to within 2 feet of the stem; partially lift the roots, cut off all the stronger-growing, and spread out the fibrous roots in a fresh compost; make the soil firm afterwards by treading. Remove any immature fruits which are visible on the branches, and give the trees a good watering, syringing them daily until the leaves fall.

THE KITCHEN GARDEN.

By W. FYFE, Gardener to Lady WANTAGE, Lockinge Park, Wantage.

Potatos.—From reports in this neighbourhood the Potato disease is spreading rapidly. With the thermometer not infrequently falling to 30°, digging of the late varieties should not be longer delayed. Pay careful attention to grading and storing the tubers, and no better opportunity is to be had for selecting the medium-sized and best-formed tubers for seed purposes than directly they are lifted. The practice of allowing seed tubers to remain on the ground for a longer period than can possibly be avoided has nothing to recommend it. Harvest them, and spread them out in some dry, cool, airy, dark place that is free from frost, and at the first opportunity that can be afforded pack them closely together, standing them on end in shallow trays or in boxes. The weakening effect of allowing them to sprout prematurely by being kept in heaps and in a too high temperature should be avoided. Those intended for culinary purposes will keep well if placed in small conical heaps resting upon a dry foundation out-of-doors. Do not allow the haulm to remain upon the ground, but clear it off and burn it as soon as possible. If the land is not required for planting late Greens, &c., afford a dressing of air slaked lime, and fork the ground well with the object of destroying the disease spores.

Tomatos.—Fruit grown out-of-doors and gathered before it is ripened will keep for several weeks in a temperature of from 45° to 50°, provided the fruits are placed singly on an open trellis. They should also be covered with tissue-paper and be turned occasionally. The present season has been a fairly good one for Tomatos planted in the open, if the compost in which they have been growing was not of too rich a nature. Last season and again this I have had satisfactory results under glass with Tomatos planted in a border consisting principally of ashes. The rods developed large trusses with fruits of good form and colour, and without any appearance of disease.

Celery.—Provided an abundant supply of water is afforded this crop the plants will now be growing rapidly, and the important operation of "earthing-up" will demand attention when the weather is fine. In doing this keep the leaves of each plant close to the crown while the fine soil is placed round them. The better results will well repay the trouble of tying each individual plant so that the soil may not come in contact with the young and tender centres. While the plants are growing rapidly it is better to repeat the work at short intervals than to add too much soil at once, and thus run the risk of checking the development of the centre leaves.

THE HARDY FRUIT GARDEN.

By W. H. CLARKE, Gardener to Sir WILLIAM PLOWDEN, Aston Rowant House, Oxon.

The Planting Season is now approaching, and consideration should be given to the questions what and where to plant. It is a good practice to visit the nurseries early, and make a selection of the trees required from amongst the batches which are growing there.

Preparing the Ground.—This is an important procedure. Where aged trees on walls are to be supplanted by younger ones they may be removed immediately, and the soil entirely taken away to the depth of 2 feet to 2 feet 6 inches, and 4 feet from the wall, afterwards putting fresh soil in its place. Where turf cannot be spared for this purpose a good top spit from the kitchen garden will be a good change. Being rich in humus, fruit-trees will grow in it well. When preparing these holes attention should be given to the subsoil and drainage. If these are unsatisfactory, a layer of brickbats 1 foot in thickness should be placed at the bottom of the holes, and over these a covering of turves, grassy side downwards. Pyramids and bush trees, also, standards, will well repay this extra amount of care and trouble taken in the planting. All kinds of stone-fruits will be much benefited by the liberal admixture of mortar-rubble, old plaster, or bone-meal to the soil.

Bush Fruits.—Where new plantations are to be formed the ground should be prepared. If in poor condition a liberal dressing of manure should be given, and the soil afterwards bastard-trenched. Select a piece of ground as far as possible from the side of old plantations, so that the new bushes may not run the risk of infection from insects, such as the Currant-bud Mite, where this has been prevalent.

Raspberries.—The preparation of the ground for these requires much care. A heavy dressing of well-rotted manure is necessary, and the ground should be dug at least two spits deep, placing a good coating of the manure between each layer—viz., one layer at the bottom of the trench, previously forking this up. The second layer of manure may be thoroughly incorporated with the soil nearest the surface. It is usual for Raspberries to occupy the same ground for several years, which makes it imperative that the preparation should be thoroughly carried out.

Pears which ripen at this season, such as *Fondante d'Automne*, *Souvenir du Congrès*, *Madame Treyve*, *Beurré d'Amanlis*, &c., should be examined frequently, only gathering those fruits which by experience can be seen are ready, and are found to part easily from the stalk when gently lifted in an upward direction. By gathering the fruits gradually in this manner, although entailing more labour, a longer succession is maintained. Standard trees cannot be treated in this manner, it being prudent to gather the crop when the bulk is ready.

Plums.—Following the dry months of July and August, the September rains did much damage to the Plum crop by causing the fruits to split. The late varieties should now be well protected from birds and wasps. *Coe's Golden Drop* will hang some time after it has shrivelled, or it can be gathered when ripe, and wrapped in silver paper, it keeping well for several days this way. *Ickworth Imperatrice* and *Angelina Burdett* are much improved by shrivelling; and *Lato Transparent*, *Reine Claude de Bavay*, *Guthrie's Late Green*, are all excellent Gages for late supplies grown as wall trees.

Mulberries.—Where these fruits are used for culinary purposes they should be gathered and bottled a little before they are quite ripe. Mixed with Apples in tarts they are approved by some persons; they can likewise be made into delicious jelly.

Quinces.—The fruits will soon be ripening, and should be gathered when of a rich golden colour, and the pips have turned a dark brown. The making of Quince jelly and the flavouring of Apple tarts are the chief uses to which Quinces are put. Of the three varieties generally grown, Apple-shaped, Pear-shaped, and Portugal; the Apple-shaped variety contains more juice and is the best.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Letters for Publication, as well as specimens and plants for naming, should be addressed to the EDITOR, 41, Wellington Street, Covent Garden, London. Communications should be WRITTEN ON ONE SIDE ONLY OF THE PAPER, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

Special Notice to Correspondents.—The Editor does not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editor does not hold himself responsible for any opinions expressed by his correspondents.

APPOINTMENTS FOR OCTOBER.

WEDNESDAY, Oct. 4	{ National Chrysanthemum Society's Exhibition and Conference at Crystal Palace (2 days), Brixton, Streatham, and Clapham Horticultural Society's General Meeting.
SATURDAY, Oct. 7	{ Société Française d'Horticulture de Londres Meet.
TUESDAY, Oct. 10	{ Royal Horticultural Society's Show of British-grown Fruit, at the R.H.S. Hall, Vincent Square, Westminster (3 days). National Rose Society's Committee Meeting.
WEDNESDAY, Oct. 18	{ Royal Botanic Society's Show.
TUESDAY, Oct. 24	{ Royal Horticultural Society's Committees Meet.
TUESDAY, Oct. 31	{ Southampton Chrysanthemum Show (two days).

SALES FOR THE WEEK.

MONDAY TO FRIDAY NEXT—Dutch Bulbs, at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 10.30.

MONDAY and WEDNESDAY NEXT—Sale of Dutch Bulbs, at Stevens's Rooms, King Street, Covent Garden.

WEDNESDAY NEXT—Lilium longiflorum, L. candidum, Decorative Plants, &c., at 3 o'clock, at 67 and 68, Cheapside, E.C., by Protheroe & Morris.

THURSDAY NEXT—Clearance Sale of Nursery Stock, by order of the representatives of the late Mr. J. Ashby, at The Royal Nurseries, Ascot, by Protheroe & Morris, at 12 o'clock.

FRIDAY NEXT—Orchids in variety, at 67 and 68, Cheapside, E.C., by Protheroe & Morris, at 12.30 o'clock.

(For further particulars see our Advertisement columns.)

AVERAGE TEMPERATURE for the ensuing week, deduced from observations of Forty-three Years at Chiswick—54°.

ACTUAL TEMPERATURES:—

LONDON.—Wednesday, Sept. 27 (6 P.M.): Max. 58°; Min. 51°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—Thursday, Sept. 28 (10 A.M.): Bar., 29.8; Temp., 58°. Weather—Fair, with occasional sunshine.

PROVINCES.—Wednesday, Sept. 27 (6 P.M.): Max. 56°, England, S.; Ireland, S.E.; Min. 52°, Scotland, N.E.

Grafting and its Results.

THE various grafting experiments made by M. DANIEL and others, to which we have from time to time alluded, may seem at first sight as interesting only to the physiologists; but to take this view is to limit our range very unnecessarily, and to deprive ourselves of future practical benefit. It may seem to some mere ingenious trifling to graft an Ipomœa on to a Batatas, or the perennial Sunflower on to the annual species, but when the significance of these experiments is grasped, their potential practical value becomes apparent. The Ipomœa purpurea and the Ipomœa Quamo-clit are annuals. Their life-cycle is completed with one complete season. The chlorophyll and other nutritive substances which they are enabled to produce are sufficient for the needs of the plant during its short existence. The Batatas edulis, the Sweet Potato, however, though a plant of the same order, is, in our climate,

a slow-growing perennial, and its tubers do not attain their full size till after several years of cultivation. In other words, its reserve-store of chlorophyll, and specially of starch, instead of being formed in one season, is accumulated slowly during several years, the light and heat of one season not being adequate for the purpose.

M. DANIEL's experiments, as mentioned in the *Comptes Rendus* for July 17, 1905, p. 214, are very interesting from this point of view. The Professor first of all ascertained that ordinary ungrafted cuttings of the Batatas (Sweet Potato) produced no tubers at all in the first season of their growth. But when grafts either of the Ipomœa or of the Quamo-clit were placed on the shoots of the Batatas, then tubers were formed immediately on the Batatas stock. In the case of the Ipomœa Quamo-clit, which is a less robust plant than the Ipomœa purpurea, the tubers produced as a result of grafting on the Batatas were smaller and less perfectly formed than were those produced under the agency of the stronger-growing scion. In this way the direct relation between the assimilating power of the leaves and the production of tubers, in other words, the amount of accumulation of starch, &c., is plainly evidenced. The greater value of a hardy scion whose foliage does its work quickly as compared with a more tender and less efficient foliage is also manifest. So that if a particular plant be tender and slow growing, its hardness and its rapidity of development may be enhanced by engrafting upon it a scion of more vigorous habit.

Adverting now to the Helianthus, it will be remembered that H. multiflorus is a perennial with tuber-like root-stocks. In this country it rarely perfects its seeds. The ordinary Sunflower, H. annuus, is, as its name denotes, an annual. Its roots are fibrous, and in ordinary summers it yields abundance of ripe seed. When H. multiflorus is grafted on H. annuus, the grafted plants become stouter and more woody than the ungrafted Sunflowers do, and their roots are very freely produced. The graft remains dwarf, and branches from the base instead of at the top, as does the ordinary Sunflower. It forms also short root-stocks, which die in the winter. Its leaves are more developed, with a thicker cellular tissue, and the crystals of oxalate of lime which are contained in the cells are differently distributed. The flowers are very numerous and produce abundance of well-formed seeds, which, however, owing to the lateness of the blooming period, do not come to maturity. One perfect seed was, however, obtained from the grafted plant, and this when sown produced a plant of Helianthus multiflorus, showing the modifications derived from the sunflower stock just alluded to. It was in fact a dwarf sunflower with much developed foliage, but branched at the base.

Observations will be continued for the purpose of noting whether the production of seed, obtained from a scion of an infertile plant grafted on to a fertile stock, will be continued in succeeding generations. It is in any case apparent that we may have it in our power, by the mediation of grafting, to obtain seed on plants which do not usually ripen their seeds, and to establish a kind of compensatory action between seed production and tuber formation.

MARRIAGE OF MR. GEORGE LAING PAUL.—

On the 19th inst., at St. Michael's Church, Bedford Park, Chiswick, Mr. G. L. PAUL, eldest son of Mr. GEORGE PAUL, of the Rose Nurseries, Cheshunt, was married to Miss PEARCE, of Bedford Park, Chiswick. The employes of Messrs. PAUL & SON presented the bridegroom with a handsome hall-clock, with barometer, &c., on this auspicious occasion. The numerous friends of Messrs. PAUL will gladly add their congratulations.

PINUS YUNNANENSIS.

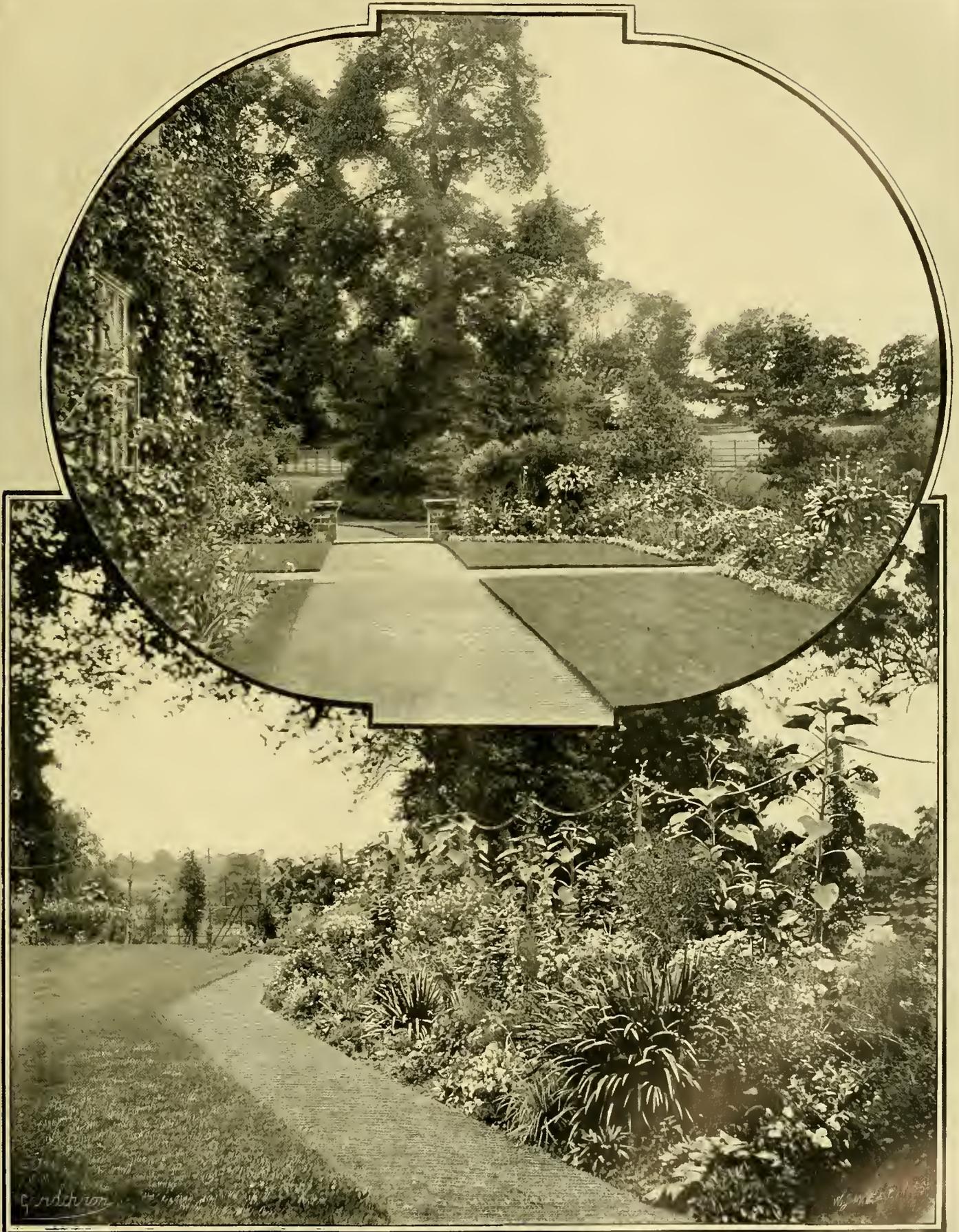
In describing this Pine we omitted to mention that it forms part of the rich harvest collected for Messrs. JAMES VEITCH & SONS by that energetic collector Mr. E. H. WILSON, though we fear there are no young plants in cultivation in Messrs. VEITCH's nurseries. For botanical purposes and to ensure accuracy of record the description should have been signed by the writer, MAXWELL T. MASTERS.

SEEDLESS AND CORELESS PEAR.—Messrs.

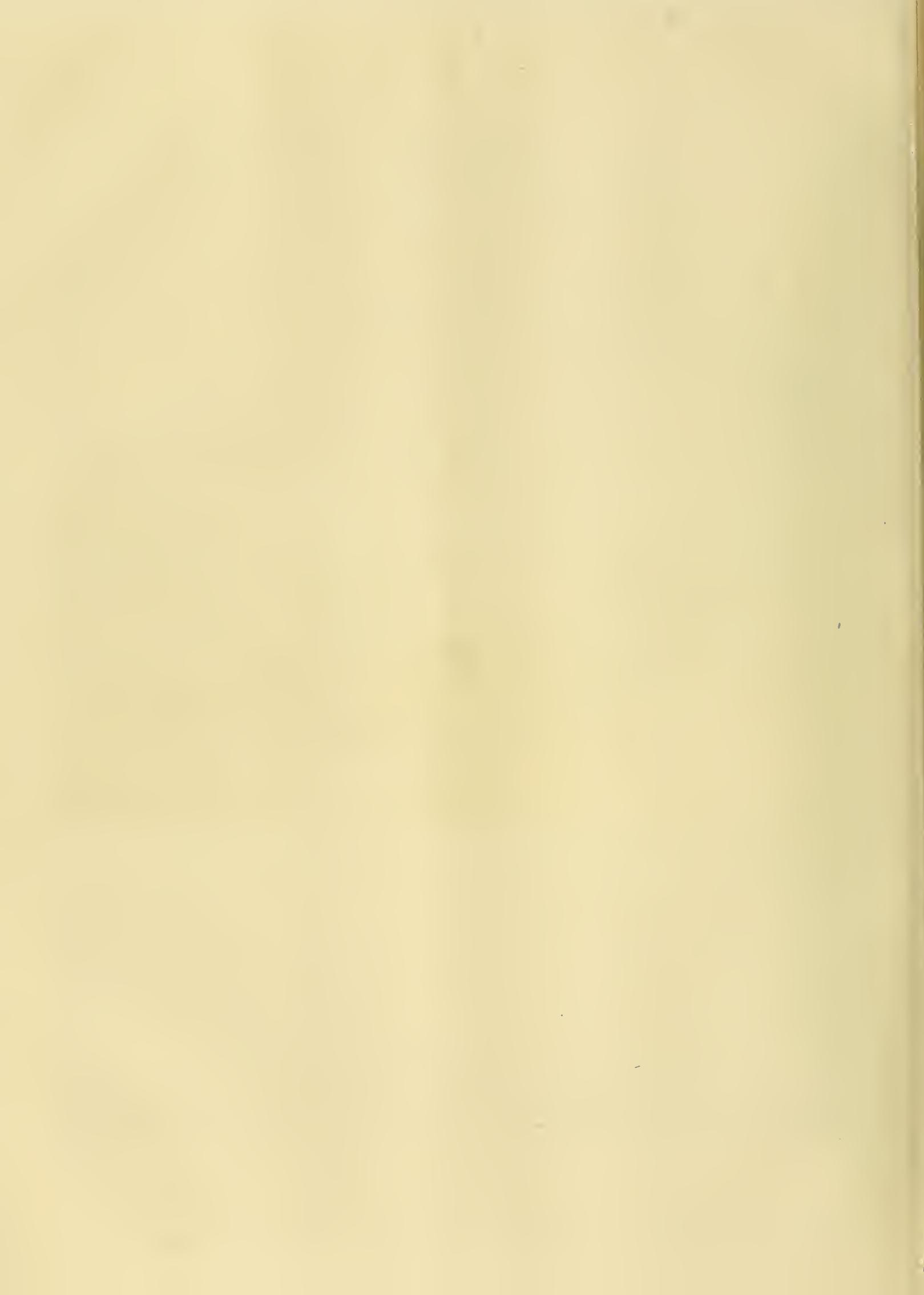
CHERRY BROS., of Covent Garden, send us a specimen of the Pear advertised by another firm in a recent number. The specimen sent is not absolutely coreless and seedless, as traces of both may be seen, but it is so for all practical purposes. Moreover, the fruit is perfectly Pear-shaped, and not one of those distorted monstrosities which we occasionally meet with, and which have been repeatedly illustrated in our columns. These distortions are generally absolutely coreless. Coreless, or practically coreless, Apples and Pears excite the curiosity and astonishment of the ordinary observer, but no one acquainted with the real structure of a Pear-Apple, or even with the female flower of Cucumber or Melon, will experience any difficulty in understanding the nature of the case. The curious thing is that practical men, so-called, who grow these fruits all their lives and handle them every day, should be so ill informed as to the structure of the objects from which they derive their living. "Nature study" and "Board schools" may equip the coming generation with a better knowledge of these matters. In the present case it is probable that the flowers were not efficiently fertilised, and so the carpels (core) and the seeds were not formed properly. It must be remembered that Pears and Apples, though usually producing bisexual flowers, are sometimes (like the Strawberry) of one sex only. In Messrs. CHERRY'S Pear we find the stamens were perfect, but we cannot see a trace of the style, though, as before stated, there are faint indications of a carpel and even of an ovule.

CERTIFICATED DAHLIAS.—The Secretary of the National Dahlia Society informs us that, in addition to the varieties described on p. 220, Cactus Dahlia Zoe also received the Society's Certificate of Merit at the show held recently at the Crystal Palace, although it was not so labelled. The variety is described as a large white flower of erect habit, and was shown by Messrs. J. POWELL & Co., Cambridge.

WISLEY.—Having recently visited the Royal Horticultural Society's Gardens at Wisley, a correspondent, "E. J.," writes on September 20 as follows:—"Just now a very pretty garden picture may be seen at Wisley. It consists of a naturally grown group of the common Holly, probably 20 feet high, over which on the one side and from the uppermost parts of the branches the well-known Traveller's Joy (*Clematis vitalba*) casts a mantle of its silken seed-heads, while lower down on the opposite side the Flame Nasturtium (*Tropæolum speciosum*) drapes the outermost tips of the Holly leaves with scarlet flowers and the pale green of its meagre leafage, the whole thrown into greater relief by the pure white clusters of Aimée Vibert Rose. Beautiful, pleasing, and lasting, it is one of those garden pictures worth striving for and waiting some years to obtain.



VIEWS IN THE GARDENS AT OTE HALL, SUSSEX, THE RESIDENCE OF HERBERT WOODS, ESQ.



Lilium Brownii leucanthum fills an area with welcome fragrance, and not far away, if long past flower, the still towering spikes of *Lilium giganteum*, upwards of 7½ feet high, bear ample proof of the dozen flowers each that not a few have borne. *Gaultheria procumbens* makes a perfect carpet on the soil in these gardens, and close by is a lovely lot of *Epigæa repens* in perfect condition is something to remember. Here it is in company with *Shortia galacifolia* and *Galax aphylla* furnishing a sharp-set ditch-bank shaded and cool, a rare plant in the best gardens of Britain. Pretty patches of colour are afforded by the now leafless *Colchicums* and autumn *Cyclamen*, the latter chiefly of *C. repandum* [*hederæ-folium*] and its white variety.

REV. H. B. BIRON.—Calling at Lympe a few days since, we regretted to hear of the sudden and severe illness of this well-known Rosarian.

DODOENS, DE L'ESCLUSE, DE LOBEL.—We often meet with variations in the spelling of the names of these worthies, it may be of interest therefore to note that in the *Musée Plantin* at Antwerp, in which several of the works of the old Flemish botanists were printed, and where the type and the blocks used to illustrate them are still preserved, the names are spelt as at the head of this note. Botanically the Latinised forms DODONÆA, CLUSIA and LOBELIA, conserve the memories of these pioneers. In Brussels there is a statue of DODOENS (1518—1585). We do not know where to look for one of GREW or RAY or ROBERT BROWN.

THE POTATO CROP.—We have seen some bad instances lately of the Potato disease, and there are complaints from many sources, but it is to be hoped, judging from the tone of some correspondents, that the general condition of the crops is not so bad as it has been reported to be.

A GIANT SURREY TREE.—A correspondent wrote in the *Times* of September 23 as follows:—“The biggest tree in the South of England is said to be the King's Oak at Tilford, which stands on the village green between two ancient bridges over the river Wey, and is some 30 feet in circumference at a height of 6 feet from the ground. It is mentioned in the charter of Waverley Abbey, the Cistercian monastery near by, but now in ruins, which gave its name to the works of Sir WALTER SCOTT. The new motor omnibus service between Farnham and Haslemere crosses Tilford Common and passes close to this giant tree, which is still in vigorous growth.”

MOTORS AND MARKET GARDENING.—In a recent issue of the *Commercial Motor* appeared a long article on the uses of motors to market gardeners and fruit-growers, chiefly but not solely for the conveyance of their produce to the markets. Numerous illustrations that accompany the article prove that many growers already employ this means of traction. Thus, one of the pictures represents a tractor and one 4-ton covered van owned by Mr. JOSEPH ROCHFORD, Broxbourne, which affords holding capacity for 1 ton of Grapes or 4 tons of Cucumbers. Many other such examples are given from different establishments. Messrs. WILD & ROBBINS, Sipson Farm, Yiewsley, Middlesex, have a tractor which can take 360 half-bushels of Plums, and is said to save £3 a week whilst doing so. In addition there are illustrations of motors hauling three reaping machines, pulling a large Elm tree, and doing other agricultural work. The writer of the article compares the cost of horses and steam with that of motors, and according to his figures the motors are cheapest in the end. Notwithstanding some of us do not take kindly to the racing motors which now disfigure the highways in this country, there can be little doubt that for commercial purposes the motor will

largely supersede horses and steam. Motor lawn-mowers have been employed advantageously for several years past in gardens, and it will not be surprising if the suburban cultivator of fruits and vegetables, harassed as he is in some instances by unsympathetic railway companies, should eventually find in motor tractors a cheaper means of conveyance.

THE AUTUMN ROSE SHOW.—The Royal Horticultural Hall in Vincent Square, S.W., was filled with the fragrance of Roses on Tuesday last, when the National Rose Society held its autumn exhibition, and even Mr. MAWLEY'S anticipations were more than realised. Such a show at the end of September has only been possible since the advent of the Hybrid Tea Roses, which have proved themselves to be continuous bloomers to a much greater degree than what have been known as the Hybrid Perpetuals. It was explained during the interesting lecture on Autumn Roses, delivered by Mr. COOLING at the afternoon meeting, that these autumn Roses are not varieties that will only bloom in autumn or those that are at their best in autumn, but varieties that flower in June and continue to do so until prevented by the severity of the weather.

OTE HALL.

[SEE SUPPLEMENTARY ILLUSTRATION.]

OTE HALL, the residence of Herbert Woodr, Esq, in the parish of Wivelsfield, near Burgess Hill, Sussex, is interesting to lovers of old-time places, for its foundations were laid and its gables and stacks of ornamental chimneys were reared at about the time when Raleigh was returning from America, bringing with him tubers of the plant that was destined to become of the highest importance in our vegetable gardens, and which now has a national society to watch over and guard its interests. Remote as this period sounds it does not nearly cover the history of the Ote Hall Estate, for a family designated de Otehall lived here as early as 1341, in King Edward III's reign.

The present stately old building looks as if another 300 years will make but little difference

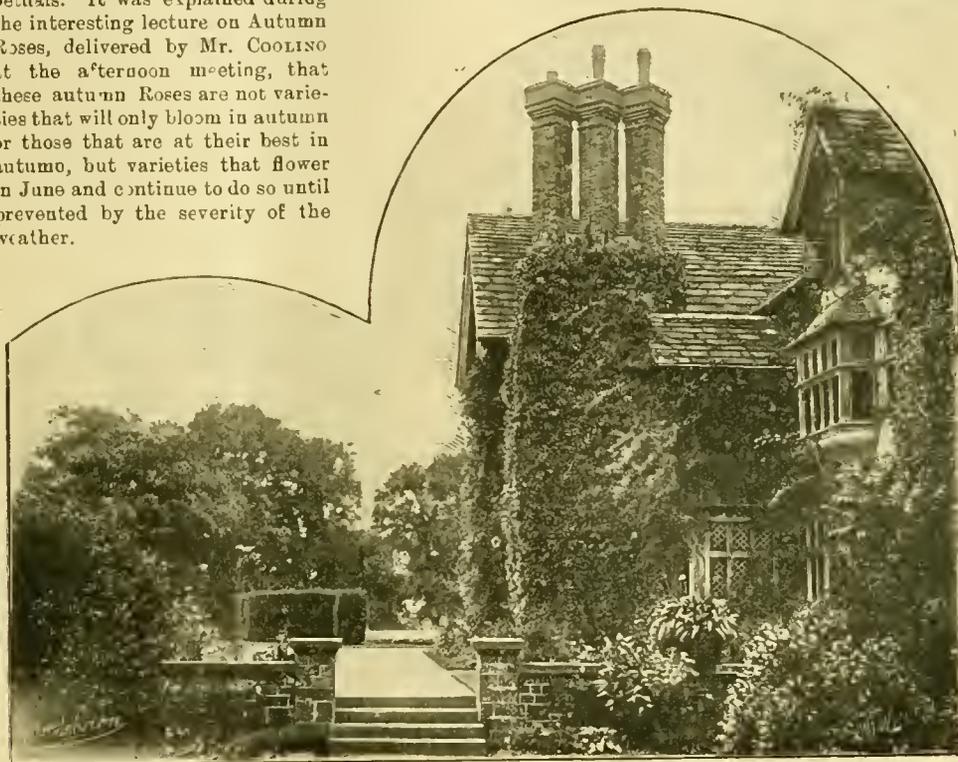


FIG. 94.—OTE HALL, BURGESS HILL.

(See also Supplementary Illustration.)

MONSTERA DELICIOSA.—Gardeners who may have occasion to visit Covent Garden Market at the present time may be interested in the fruits of *Monstera deliciosa*, exposed for sale in the Central Avenue. We were informed the fruits are from Portugal, and are sent in small boxes, which realise from 12s. to 18s. per box. They were labelled “Pine-tree fruits,” possibly because the flavour of the fruit has some resemblance to that of the Pineapple.

CONFERENCE AT THE CRYSTAL PALACE ON EARLY-FLOWERING CHRYSANTHEMUMS.—The National Chrysanthemum Society's Conference, mentioned on p. 239 of last issue, will consist of two meetings to be held on October 4. The first meeting will be at 3.30 P.M., when it is hoped the President, C. E. SHEA, Esq, will preside. Papers, as already announced, will be read by Messrs. C. HARMAN PAYNE, E. F. SUCH, and J. W. MOORMAN. The second meeting will be at 6.30, when Mr. T. BEVAN will preside, and papers will be read by Messrs. D. B. CRANE, G. GORDON, V.M.H., and E. F. HAWES. The meetings will be held in the King's Room, and there will be exhibits to illustrate the Conference papers.

to its appearance, although it was first erected in the year 1600. The gardens of that period would no doubt have proved extremely interesting could we have been permitted to ramble round them, as was our pleasure to do in the present gardens a few weeks since. The environment of the old house is typical of the beautiful Weald of Sussex, a most favoured spot, and studded around with Oak and other British trees, also numerous Conifers and other ornamental plants.

The present gardener, Mr. Chas. Jones, has had a large share in the modelling of the gardens as they now appear, for on all sides can be seen evidences of his work in the making of flowerbeds and borders, and in the planting of fruit-trees, &c. The beautiful herbaceous border seen in the bottom picture of our Supplementary Illustration is one of his more recent additions to the gardening features around the Hall. This border extends for several hundred feet in an almost semi-circular manner, and encloses the spacious lawn. Being of considerable width it accommodates a rich and varied collection of hardy herbaceous plants, so that some of them are in flower at all seasons of the year. A

pleasing background to the border is furnished by climbing plants on rustic pillars that are connected by festoons of ropes. Pillar Roses of all descriptions, Clematis, and other showy climbing plants alternate with each other, and when these have furnished the poles and ropes intended for their support, they will present a delightful sight. The lawn alluded to is approached from the house through a sunken garden that was formerly laid out in the Dutch style, but which now accommodates flower beds that at the time of our visit were gay with summer bedding plants. A bed of tuberous-rooting Begonias, edged with Pelargonium Lady Plymouth, was especially noteworthy.

A flight of stone steps leads one to the terrace upon which the mansion has been built, and where grass plots are intersected with well-kept paths, and surrounded with flower borders, those in the front of the mansion being planted with showy annuals. The walls of the old house are covered with such plants as Ivies, Roses, Clematis montana, Jasminum and Ampelopsis. Roses are plentiful about the grounds, one large scroll bed being entirely filled with these plants, which, although not long planted, have borne a wealth of flowers and have developed luxuriant growth.

Pleasing as are these decorative portions of the gardens, the fruit and vegetable quarters are equally so, and this especially applies to the fruit-gardens. Mr. Jones is quite an enthusiastic fruit-grower, and his delight in his well-trained fruit-trees was readily apparent. The majority of the fruit-trees in the gardens are of his own raising, and it must be recorded that nowhere would one expect to find better examples, whether bush or pyramid, espalier or cordon-trained trees, all of them showing the perfection of training that denotes the master hand.

The older occupants of the fruit gardens have undergone a rigorous examination, and inferior or unsuitable varieties either exterminated or cut down and re-grafted with a first-class variety. Thus a fan-trained tree of Joséphine de Malines Pear had been "worked" on an inferior kind. The tree afterwards developed splendid growths, and fruited freely. Furthermore, the tree was a perfect specimen of this kind of training.

Bush-trained Apple-trees line either side of one of the main walks. Each tree is an example of good training, and they represent twenty of the very best varieties. Bush-trained Cherry-trees have this season borne enormous crops of fruit, Governor Wood, Emperor Francis and May Duke may be singled out as being specially productive. Plums are a variable crop this season at Ote Hall, some of the trees, notably Kirke's, Victoria, Czar and Cox's Emperor have good crops, but others are carrying little or no fruit. Gooseberries and other small fruits have perfected enormous crops of fine quality. The gardens also contain an excellent collection of Pears, and whilst some of the trees are laden with fruit others have none at all. But the feature of the fruit gardens is the collection of wall-trained trees. Wherever there was the opportunity a fruit-tree has been planted, and scarcely a foot of bare wall space is to be seen. Even the low walls of the glass-houses are so utilised, and although the outside borders of the vinery have not been intruded upon, still Pear-trees creep round the walls from other side borders and make the best of the warm front walls of the building. The glass structures are not extensive, and only comprise a small range, one end of which forms the vinery, the corresponding end being the stove, with a cooler compartment, utilised as a greenhouse or conservatory, separating the two. But the lack of extensive glass-houses is no deterrent to Mr. Jones in producing supplies of choice flowers and fruits. He has resorted to other means, and with

success. By the help of wind screens he has converted warm nooks into suitable places for the growing of tender subjects, and with the aid of a few unheated frames produces a goodly supply.

Tomatoes growing in one of these sheltered corners were quite equal to those usually seen in glass structures, and inverted Sea-kale covers were doing duty for pots. Thus is the resourcefulness of the ingenious gardener, who has not an unlimited supply of the best appurtenances, seen. Hotbeds for Cucumbers and Melons were made as they should be, with the result that success was assured with these fruits. The quarters apportioned to vegetables were well filled, and our description of these gardens would be incomplete without a reference to these. The appearance of the crops denoted the all-round capability of the man in charge; and that it does not stop at gardening is testified by the many excellent views from photographs taken by his camera which appear from time to time in the gardening Press, including those of Ote Hall in our present issue. Tomatoes planted out in the vegetable gardens were looking well, and developing good crops of fruits. Interesting were the beds of Onions. Side by side were seen two breadths of Ailsa Craig. Whilst one batch had been transplanted from frames during the first week in April from seed sown early in January, the others were raised from seed sown in the open during the last week in February. The transplanted bulbs were more than twice the size of the others, although growing under otherwise similar conditions.

THE APIARY.

THE BEE EXHIBITION AT THE CRYSTAL PALACE.

UNDER "Home Industries" the *Journal of the Society of Arts* for September 22 contained an article upon the Bee Exhibition recently held at the Crystal Palace, from which we extract the following remarks:—

"The Bee Exhibition served a useful purpose in reminding the many thousands who visited it of the possibilities of bee culture. With the growth of the acreage under fruit trees are more than ever necessary. One of the drawbacks to fruit-growing is the unfruitfulness of trees. It is due to many causes, and not least to insufficient bees to fertilise the blossoms. Rain very often occurs during the blossoming season and washes the pollen away from the blossoms, and insects, particularly bees, are necessary to fertilise. They are necessary, too, for the cross-fertilisation of the blossoms. Certain fruit-trees are self-sterile, that is to say, they require pollen from other trees to fertilise the blossoms. And this self-sterility is more noticeable when fruit-trees are planted in large blocks with one variety of Apple. In California they have found it necessary to plant other trees, which they call pollenisers, to provide the pollen for fertilisation. They generally plant these trees in rows among the other trees, and they have, of course, to select trees that flower about the same time, so that the insects can carry the pollen from one tree to another and so fertilise the blossoms. For example, two Apples are grown very extensively in California, the Bellefleur and the Winter Pearmain, both very fine Apples. The time of flowering is twenty-six days for the Bellefleur from the time the first blossoms open until the last blossoms drop. In the case of the Pearmain the period is twenty-four days. These Apples planted by themselves are very shy bearers; probably only one bud in ten would set. Therefore they plant other trees as pollenisers. The one used very extensively is the Astrachan, because it blossoms with the Bellefleur for twenty-two days, and blooms eighteen days at the same time that the Pearmain blooms.

THE BEE AS FERTILISER.

The bee is more useful and effective for carrying pollen from one variety to another than are other insects, because in the spring, when fruit blossoms have to be fertilised, there are more bees flying than any other insect. It is reckoned that there are twenty bees to one of

other insects. These might perform the same office, but they are not on the wing at that particular period. Nor is it only Apples that are fertilised by the bee. They serve the same purpose with other trees, Pears, Cherries, Plums, especially Pears. And with small fruit, too, Strawberries produce much more abundantly if they are fertilised by bees. The bee has to work round the Strawberry blossom. There are no fewer than 200 fertilisations of a large Strawberry to get a perfect fruit, and a Strawberry hard and green on one side shows imperfect fertilisation. It follows that all fruit-growers should keep bees. Mr. T. W. Cowan, who represented the British Bee Keepers' Association, told the Departmental Committee on Fruit Culture, in his very interesting evidence, that there ought to be at least one hive per acre of fruit. Of course wild bees are as useful as the others for fertilising the blossoms, but with cultivation wild bees become exterminated. When orchards are properly cultivated there are no wild bees found in them. The ground is ploughed up and the bees are not able to make their nests in the ground, so that the number of wild bees is reduced, and there are fewer insects for fertilisation.

BEES AT TODDINGTON AND HISTON.

The fruit-growers as a body are not sufficiently alive to the necessity of bees for the purposes of fertilisation, but some have recognised their value, strikingly proved at Toddington, in Gloucestershire, where a large acreage was put down to fruit some twenty years ago by Lord Sudeley. The orchards on the property were suffering from unfruitfulness. The trees were almost a failure at one time, until Lord Sudeley introduced bees, when the trees soon began to bear freely. Another illustration of the usefulness of bees in fruit-grounds may be taken from the experience of Mr. John Chivers, at Histon, near Cambridge. He is the well-known jam manufacturer, and began keeping bees with the object of benefiting his fruit, and he has found them directly profitable apart from their service to his trees. In 1903 he got about 4,000 lb. of honey, and made £100; last year he got 9,000 lb.; probably this year the product will show still further increase, so that the bees not only serve a useful and indeed necessary purpose in fertilising the fruit, they pay handsomely in honey for the trouble and cost of keeping them.

BEES A PROFITABLE HOME INDUSTRY.

Bees provide a very profitable home industry. A case is within the knowledge of the present writer of an agricultural labourer who has been able to buy a freehold cottage out of the profits of bee-keeping. It may be interesting to note how it works out. Take the most primitive kind of hive, the common straw hive or skep, which will long be used by villagers from its easy make and small cost. The cost of the skep may be put at 2s., and 10s. for the swarm to put into it. Other charges do not exceed 2s., making 14s. in all. The cost of feeding is small. Altogether the outlay for the year is probably covered by £1. In a good season one skep would produce 20 lb. of honey, which the villagers would sell retail at 8d. per lb., say, 15s. Next year the one skep has become three, and the revenue has increased from 15s. to £2 5s., which is mostly profit. It will be seen that in four or five years, with ordinary good fortune and natural increase, the villager would be putting aside several pounds per annum as profit. He can always get a sale for his honey. The man referred to above made his own market by working up a connection in his immediate neighbourhood, but even if competition has to be reckoned with, the village grocer is always ready to buy, and the wholesale price never falls below 6d. per lb.

If bar-frame hives are used, the production and consequent profits are greatly increased. The produce from the hives is often from 40 to 60 lb. Mr. Chivers's average last year was 50 lb., and from one hive 150 lb. was taken. Put the average at 50 lb., and the wholesale price at 6d., that means 25s. from each hive, of which at least £1 would be profit. Bees can be kept in almost any part of the country, but they do best where they can get at Sainfoin or White Clover. It is astonishing that villagers do not more generally add to slender wages by keeping bees. The original outlay, as has been shown, is trifling, and looking after the bees is a pleasant occupation, making but slight call upon exertion, and the profits are large. Bees are subject to few diseases, "foul brood" being the most common and fatal, and it is highly contagious, but it is seldom found where the bees are properly cared for, and kept dry and clean."

THE LATE DEAN HOLE.

The illustration at fig. 95 represents a window in stained glass which has been erected to the memory of the late Dean Hole, and will be unveiled in Cauntton Church, Newark, on October 5.

Rose." There are two angels holding a scroll, upon which are the following words:—"Right dear in the sight of the Lord is the death of His saints." The arms of Rochester and those of the late Dean appear under the central light. There is an inscription running at

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his correspondents.)

THE PURPLE-LEAVED PALM (LIVISTONA MARIÆ?).—In the *Gardeners' Chronicle* for June 4, 1887, p. 734, there is an account of the discovery and introduction of a new species of *Livistona* which Mueller had named *L. Mariæ*. It was found in 1872 by Mr. Ernest Giles in South Australia, near Macdonnell's Ranges, in lat. 24°, long. 133°, and he wrote:—"Last night (August 31) was clear and cold; the thermometer went down to 24° by daylight, but upon the appearance of the sun the temperature rose rapidly. . . . We had the gratification to discover a magnificent specimen of the Fan Palm growing in the channel of a watercourse with the drift of floods washed against its stem. . . . It was 60 feet high. I obtained a quantity of its leaves for my kind and generous friend, the Baron von Mueller. . . . Having found in this glen so many stately Palm trees, I have called it the Glen of Palms." Plants of this Palm were distributed from Kew, but they do not appear to have done well either at Kew or elsewhere, probably owing to improper treatment. A few weeks ago Mr. R. Hoffmann, of Streatham, exhibited at a meeting of the Royal Horticultural Society half-a-dozen young plants of a Palm which he had named *Livistona Hoffmanni*, but which the Floral Committee had suggested was *Latania rubra*. This was clearly an error, as Mr. Hoffmann's Palm is quite different from *Latania rubra*, or, as it is now called, *L. Commersoni*, a well-known species from the Seychelles; but I have every reason to believe that it is a *Livistona*, and probably Muller's *L. Mariæ*. Mr. Hoffmann kindly presented to Kew one of his plants, and furnished the following particulars regarding it:—"The Palms I exhibited at the Royal Horticultural Society's meeting came from South Australia. I first saw a specimen of this Palm in a garden at Bendigo, Victoria, and on my admiring it its owner offered to obtain one for me from his friend in Oodnadatta, in the central part of South Australia. I subsequently received a small lot of seed of it, with the information that there were twenty or thirty fully grown trees of the same species growing in a sort of oasis. From these seeds I raised the plants you saw at the meeting." I have never seen a Palm so highly coloured as these were, every leaf being of a dark coppery purple, the colour of the best form of Purple Beech. When grown in an ordinary stove and shaded the colour is not developed, but Mr. Hoffmann found that under quite cool treatment and exposed to full sunshine the leaves assume the colour described. So far as one can tell from a comparison of young plants, the only difference between Mr. Hoffmann's Palm and *L. Mariæ* as represented at Kew and elsewhere is in the colour. Palm cultivators are much indebted to Mr. Hoffmann for having made known the qualities of this *Livistona*, which, unless I am very much mistaken, is certain to become a popular plant for the conservatory in winter, and for the open air in summer. *W. Watson.*

WHAT ARE ANNUALS?—In this query "A. D." (*Gardeners' Chronicle*, p. 213) raises a question which might be discussed at great length. The plants "A. D." refers to are not annuals, yet all may be treated as such. The same may be said of *Mignonette*, yet very few gardeners would think of classing it with perennials, though the same plants may be kept for years; and *Mignonette* may also be propagated from cuttings, which will make roots almost as readily as do *Verbenas*; and while the ordinary *Verbenas* of gardens are perennials there are species which are decidedly annuals. There are also some species of *Lobelias* which are annuals, and though the ordinary form of *L. erinus*, from which we get the blue *Lobelias* of gardens, is a perennial, the varieties may be crossed with the annuals. *L. tenuior*, so far as I have seen, is decidedly an annual. While there may be a difficulty in defining some things, there are plenty of subjects which are only of annual duration, and those who exhibit in a class for annuals should avoid anything that is doubtful. I have on several occasions been asked

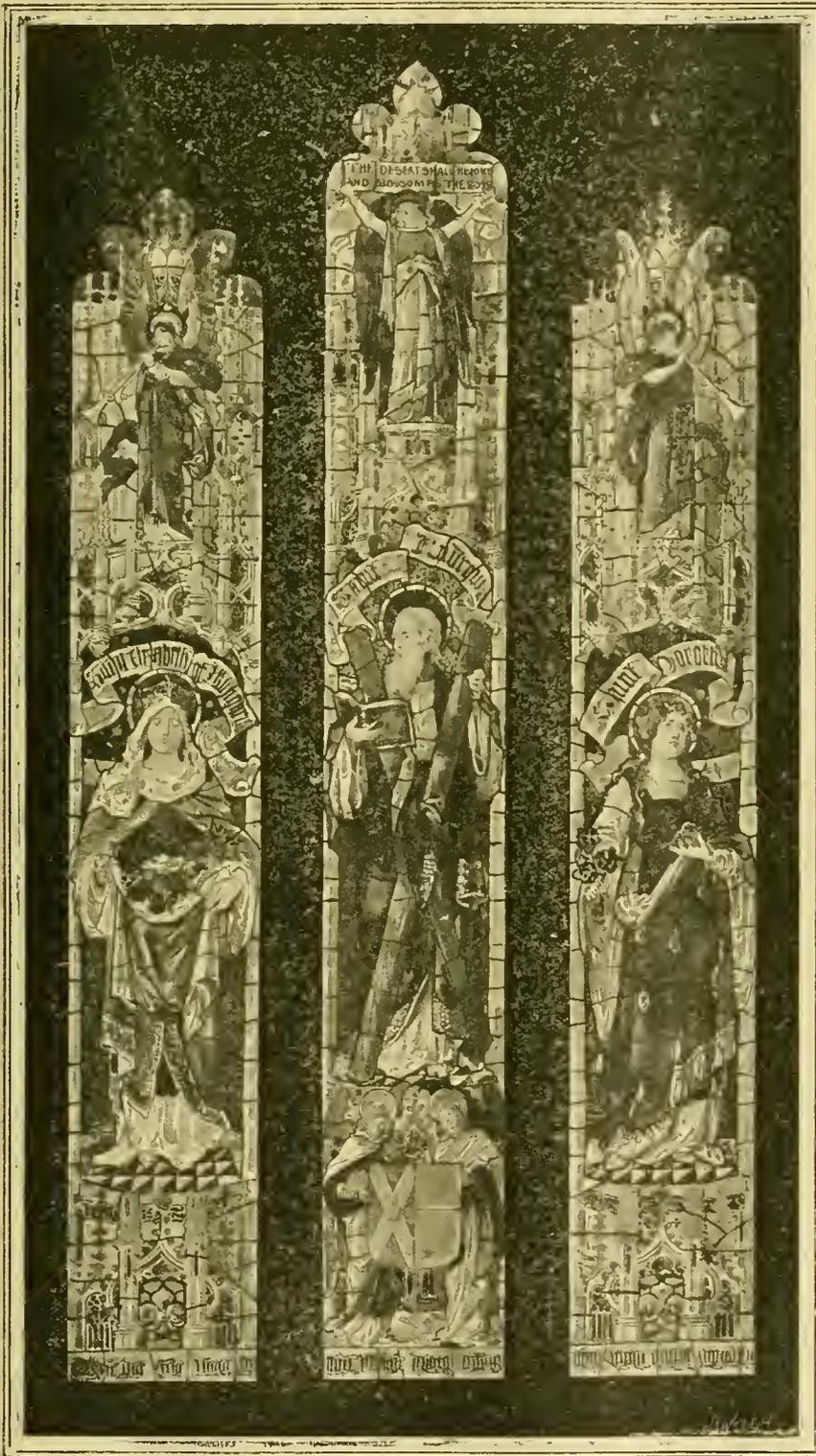


FIG. 95.—WINDOW ERECTED TO THE MEMORY OF THE LATE DEAN HOLE.

The window contains three lights, the centre one having the figure of St. Andrew (the patron saint of the church at Cauntton), while in the left light is St. Elizabeth of Hungary, and in the right one St. Dorothy. There are angels at the top of each of the lights, the one over the centre light bearing a scroll, upon which is inscribed "The desert shall rejoice and blossom as the

base of the window through the three lights: "To the glory of God, and in loving memory of Samuel Reynolds Hole, D.D., many years Vicar of this church, and late Dean of Rochester, this window is offered by parishioners and friends. 1905."

The work was designed and executed by Percy Bacon & Brothers, of London and Edinburgh.

to enumerate a selection of annuals, biennials, and perennials, but though I find no difficulty in making a good list of the first and the last, it is difficult to make a list of a dozen biennials that would be useful for exhibition purposes. In any case where there is a doubt the judges should be guided by the definitions as given in any of the standard botanical works. In any rules for judging that may be published, it would be difficult to give a full list of the plants belonging to each class. And again there is the difficulty with hybrids. Our garden varieties of Cinerarias as now grown can hardly be termed anything but annuals, yet years ago we had named varieties which were grown on from year to year. Then there are the Calceolarias, those usually termed herbaceous. No one ever thinks of treating these as anything else but annuals; or perhaps they might be classed as biennials, for they are sown one year and flowered the next. The earlier varieties were probably of a more woody habit, but as we have them now it would be difficult to regard them in any other way than as annuals. *A. H.*

THE WOBURN EXPERIMENTS ON PRUNING.—The Woburn experiments furnish the one record of real experiments on the subject that has appeared since I recorded mine in 1880, which have since been reproduced in *Quick Fruit Culture*, and confirm in a very remarkable manner everything I wrote against severe pruning and the restrictive system, only Woburn has not dealt with as many subjects as some of us have done. The following extract from the report in the *Estate Magazine* for September will illustrate my meaning:—

"As regards pruning generally, some surprising results were obtained. It is usually considered that growth follows the use of the knife, but in this case hard pruning proved to be inimical to growth. Moreover, the trees which were unpruned bore crops of three times the value of those on heavily-pruned trees, and 50 per cent. greater than on trees moderately pruned. The increased value depended nearly entirely on the increased weight of crop; but the absence of pruning did not, on the average, diminish the size of the fruits. In connection with this experiment the authors point out that the absence of pruning would probably produce less favourable results in the case of varieties which were weak growers; and they do not, on the strength of their results, advocate the omission of such pruning as may be necessary to shape a tree properly and prevent its branches from crossing and rubbing. This warning is very necessary, for in some cases the omission of pruning leads to trees overfruiting themselves, and becoming permanently stunted in growth. Summer pruning was not found to be of any value—rather the reverse, in fact. The experimenters remark that it generally results only in the growth of weak, unripened wood, which has to be removed in the following autumn."

J. Simpson.

PLANTS FOR CULTIVATION IN TUBS.—In addition to the plants mentioned by "X. Y. Z." on p. 225, there is *Hydrangea Hortensia*, which, I think, is one of the best subjects for cultivation in tubs, for when well grown the plants produce a fine effect. In these gardens we have several specimens over 5 feet high covered with large trusses of flowers. The lower branches are allowed to hang over the sides of the tub in sufficient numbers to partly cover them. All the protection this *Hydrangea* requires during winter is a sheltered position out-of-doors and a light covering in severe weather. *J. Murray, Sopley Park, Christchurch.*

HARDY CYCLAMEN.—On the lawn at Gunnersbury Park, Acton, are two beds or groups of these beautiful little hardy Cyclamen in the greatest profusion of bloom. These gems find a home in most gardens where beautiful hardy plants are appreciated, but generally they are only to be seen in small patches in the rock garden or suchlike position, and are often flowering only indifferently, so that to me the sight of a dense mass of them springing out of a velvety, green lawn at the base of a giant Elm tree was a delight. For distant and striking lawn effect in autumn, such masses as were here to be seen, with their refined shades of many colours (white predominating), produce so pleasant an impression on the mind as few other hardy flowers are capable of doing. One group was planted, as already mentioned, at the base of a

large Elm tree, the aspect being due south, but in such a position that the necessary shade so requisite to the successful growth of these plants was secured by the shadow of other lofty lawn trees growing near by. These I believe were planted eight or nine years ago, and Mr. Reynolds is of opinion that continued success is better secured by the planting of quite small tubers rather than larger ones. The natural soil is taken out to the depth of 2 feet and the void then filled with light soil such as peat and leaf-mould and old brick rubble in equal proportion. This material secures the aëration and warmth of the soil and perfect drainage—conditions which are imperative if success is to be attained. *O. T.*

THE FALLING OF ELM LIMBS IN SUMMER.—At p. 134, "E. M., South Plants," very kindly replied to my enquiry published on p. 119. He mentioned the falling of a limb 1 foot in diameter without warning and without the reason of high wind. He said that the leaves were quite healthy, and the branch devoid of dead twigs. All this, I believe, might be, but my doubt is whether the timber can ever be sound and alive when a limb falls. It seems to me likely that sound and living timber is able to bear all the natural strains that may be put upon it, and I am anxious to have evidence either for or against this view. The question therefore is whether the wood was wholly alive and sound at the point of fracture? Living or dead twigs intended to refer to only as evidence of probable life or death in the timber. *R. I. L.*

THE CATHERINE PEAR (See p. 240).—This is the most profitable early-ripening variety of Pear cultivated in this district, and those growers who have planted it in large numbers from year to year are now reaping their reward, for the old trees are fast dying out, and where young trees have not been planted there is nothing to take their place, for Doyenné d'Été and Citron des Carmes are not half so reliable varieties. Catherine was the only early Pear we marketed this year, and even it the fruits are not of high-class quality the public like them, and when the cultivator has several tons to sell in a season when Pears are scarce he is sure of making a good price. It has an advantage over other Pears also in a plentiful season, for it is the only variety of Pear that can be gathered when about half grown with a certainty that the fruits will ripen and not shrivel. Its free cropping qualities are remarkable, numbers of trees yielding 5 to 5 cwt. of fruit each. I may say that such varieties as Jargonelle, Louise Bonne of Jersey, Bauré d'Amanlis, Duchess Favourite, &c., are grown, and in comparison Catherine would buy the land where the other varieties would scarcely pay the rent. The Hazel [Hessle] only equals it in cropping, but as other better kinds ripen at the same season as Hessle, it sometimes is a slump on the market, whereas Catherine ripens at a season when fruiterers ask for Pears and never mention quality. *P. K. Derbyshire, Middlewich, Cheshire.*

MARKET GARDENING.

THE TRANSPLANTING OF CABBAGES.

The present is a good time to make plantations of good, strong growing plants of Carter's Heartwell or Enfield Market Cabbage in land which has been up to the present time cropped with Tomatos. The Cabbages will be fit for marketing and clearing off in time for the land being manured, ploughed, and harrowed in readiness for the planting of Tomatos at about the middle or end of the third week in May, 1906.

The first step to be taken after gathering the remaining portion of the ripe and ripening crop of fruits, and spreading them out on a stage under glass for a few days to colour, is to clear the land of the exhausted Tomato plants. Remove the plants to the burning rubbish-heap, and store away for future use the wires and stakes to which the plants were secured. The ground should then be ploughed and harrowed, and if there are any weeds let them be removed to the fire-heap. This

done, plant the Cabbages in rows 18 inches apart, and at the same distance from plant to plant in the rows, setting the plants in each succeeding row anglewise to those in the preceding one, thereby affording the plants more room to develop than would be the case had they been set opposite each other in the rows.

Where the plants are raised at home for the purpose indicated, as is generally the case, it may be found necessary to use a four or five-tined fork in order to get them up with plenty of fibre attached to the main roots. Prior to planting the roots should be dipped in a vessel containing earth mixed with water to the consistency of thick paint, into which a few handfuls of soot have been stirred. This adhering to the roots will render them distasteful to wireworms, grubs, and other creatures which abound in some soils, but especially so in land which has not been cultivated for some years. The "puddle" should be freshly stirred before dipping the roots of each fresh lot of plants; several thousand plants may be treated in the manner indicated in a few minutes. In planting insert the plants down to the first leaves, and make the soil moderately firm about the roots in doing so.

In the neighbourhood of many large cities and populous towns Cabbages and other winter and spring greens become a glut in the market in the months of March and early April, owing to the fact that farmers then clear off these vegetables in order to prepare the ground for other crops. Therefore in these circumstances breadths of Cabbages which become fit for marketing during the month of April and early part of May realise much better prices than are obtained for the earlier crops. *H. W. Ward, Lime House, Rayleigh, September.*

SOCIETIES.

THE ROYAL HORTICULTURAL.

SEPTEMBER 26. —On Tuesday last the Hall in Vincent Square was unusually full of exhibits, and three Societies were interested in them. The Royal Horticultural Society's Committees met as usual, a sub-committee from the National Dahlia Society joined a sub-committee of the Royal Horticultural Society for the examination of seedling Dahlias, and in addition the National Rose Society held a competitive exhibition of Roses, which in the extent of the display and the quality of the flowers must have astonished all who saw it. In the afternoon the Hall was so thronged with visitors that it became exceedingly difficult for them to move about and inspect the exhibits.

The ORCHID COMMITTEE recommended awards which included one First-class Certificate, one Botanical Certificate, and five Awards of Merit. A magnificent group of Orchids from Messrs. CHARLESWORTH & CO., Bradford, was awarded a Gold Medal.

The FLORAL COMMITTEE recommended a First-class Certificate to a variety of *Rosa sericea*, and Awards of Merit to *Chrysanthemum La Vestale* and *Cyrtanthus sanguineus glaucophyllus*. Seedling Dahlias were inspected by a joint committee composed of a deputation from the Royal Horticultural Society's Floral Committee and the National Dahlia Society, and awards were made to seventeen varieties.

The FRUIT AND VEGETABLE COMMITTEE made no award to a novelty; but a collection of pot-Vines and other fruits, from Messrs. T. RIVERS & SON, and an exhibit of the new Grape "Prince of Wales," from the gardens of H. S. BISCHOFFSHEIM, Esq., were noteworthy.

At the afternoon meeting of Fellows twelve new Fellows were elected, and Mr. Cooling, of Bath, read a paper on "Autumn Roses."

Floral Committee.

Present.—W. Marshall, Esq. (Chairman); and Messrs. C. T. Druery, Geo. Nicholson, H. B. May, Jas. Walker, J. F. McLeod, G. Reuthe, R. W. Wallace, Geo. Paul

Charles Jeffries, H. J. Cutbush, Chas. E. Pearson, J. T. Bennett-Poë, W. P. Thomson, W. J. James, Jno. Jennings, C. J. Salter, R. C. Notecutt, J. W. Barr, and R. Hooper Pearson.

Messrs. WM. PAUL & SON, Waltham Cross, Herts, showed an extensive collection of Roses, utilising baskets and Bamboo épergues for their display. The quality was not so good as is seen earlier in the season, which is to be expected, but the collection was nevertheless commendable and representative.

Messrs. W. & J. BROWN, Stamford and Peterborough, exhibited a collection of Roses, with plants of Clematis grata at the background. The latter were flowering nicely and upheld the good opinions formed of it at the time when it received the Award of Merit last season. Zonal Pelargoniums and others of the Cactus-flowering type, also found a place in the display.

Mr. L. R. RUSSELL, Richmond Nursery, Surrey, exhibited a batch of Clematis similar to that shown by them at the last meeting.

Messrs. JAS. VEITCH & SONS, Ltd., King's Road, Chelsea, displayed a group of Leonotis Leonurus, the Lion's-tail, whose tiers of orange-scarlet flowers made a bright feature; and grand specimens of Nerine Fothergilli major. The latter were in small pots, with as many as eight or ten inflorescences. We also noticed a new Cotoneaster with dark-red berries named C. appalanta (Silver Banksian Medal).

Messrs. WM. BULL & SONS, King's Road, Chelsea, presented the new green-and-yellow-leaved Dracena notabilis in flower, and Gloriosa grandiflora, with pure yellow flowers.

Messrs. J. PEED & SON, Mitcham Lane, Streatham, displayed a number of boxes containing flowers of tuberous rooting Begonias in both the single and the double varieties.

Mr. C. J. Salter, gr. to Mrs. HAYWOOD, Woodhatch Lodge, Reigate, showed a new Codium (Croton) named Miss Betty, a variety with dark green margins merging to a light yellow colour in the petioles, and in some of the leaves tinged with rose colour.

Messrs. CAITER PAGE & CO., 52 and 53, London Wall, London, E.C., showed Cactus Dahlias in vases, prettily relieved with trailing sprays of Ampelopsis and variegated Privet foliage. The quality throughout was excellent, size, colour and form being alike good. On another table the same firm displayed a number of Pompon Dahlias (Silver-gilt Banksian Medal).

Mr. CHAS. TURNER, The Royal Nurseries, Slough, put up a number of Pompon Dahlias, with a few of the Cactus type at the background. A very nice display of these seasonable flowers.

Messrs. CHEAL & SONS, Lowfield Nurseries, Crawley, showed Cactus and single Dahlias arranged in true exhibition style in pyramidal bunches. The single Dahlias were especially pleasing, and found many admirers. The Cactus flowers were also a very representative and well-grown lot of blooms (Bronze Flora Medal).

Messrs. WM. CUTBUSH & SON, Highgate, London, N., made a pretty display with Cactus Dahlias, having excellent flowers that were staged with good taste (Silver Banksian Medal).

Messrs. KEYNES, WILLIAMS & CO., Salisbury; Mr. H. SHOESMITH, Westfield, Woking; and Messrs. J. BURRELL & CO., Cambridge, showed a number of seedling Dahlias, some of which received Awards.

Mr. S. MORTIMER, Farnham, Surrey, showed eighteen new seedling Dahlias, fourteen of which were of the Cactus type. Two of the "show" varieties are noticed under "Awards."

Messrs. THOS. S. WARE, Ltd., Feltham, Middlesex, put up a well-arranged group of Dahlias on tiers of staging. The display embraced varieties of both the Cactus and the Pompon types of flowers (Silver Flora Medal).

Messrs. JAS. STREDWICK & SON, St. Leonards, showed many new Cactus Dahlias, exhibited in first class style. Many of the varieties shown have received Awards this season (Silver-gilt Flora Medal).

Messrs. W. WELLS & CO., Merstham, Surrey, showed a batch of summer-flowering Chrysanthemums. The flowers were all cut from the open ground, and were representative of the best coloured and most floriferous varieties. Market White, Dolly Prince, and Roi des lanc, are all good whites; Polly (bronze), The Champion (yellow), and Perle Rose are other commendable sorts (Bronze Flora Medal).

Messrs. R. H. BATH, Ltd., Floral Farms, Wisbech, put up a semi-circular group of pot plants of Chrysan-

themums of the decorative or market type. On an adjacent table the same firm displayed cut Chrysanthemums interspersed with vases containing Cactus Dahlias.

Mr. ERIC F. STICH, Royal Berkshire Nurseries, Maidenhead, displayed vases containing decorative Chrysanthemums cut from the open. The flowers were bright and of large size for the type.

Messrs. CANNELL & SONS, Swanley, Kent, showed a very handsome Sunflower under the name of Helianthus sparsifolia. It may best be described as a glorified form of H. Miss Mellish.

Messrs. R. WALLACE & CO., Kilnfield Gardens, Colchester, staged a batch of autumn-flowering bulbs and corms planted in a natural manner in cocoa-nut fibre and flowering well. Colchicum speciosum album was prominent, also C. cilicium. A batch of Sternbergia lutea major occupied the centre of the display. The graceful Kniphofia modesta was represented by several spikes of flowers. Other interesting plants were also shown.

Messrs. JAS. BACKHOUSE & SON, York, also showed Colchicums. They had the fine C. autumnale album in unusually good quality. The flowers of this variety are not only of largest size but of the purest white colour.

Messrs. GEO. BUNYARD & CO., Maidstone, Kent, displayed a collection of hardy flowers, among which were vases of bedding Chrysanthemums and some good rose-coloured forms of Anemone japonica. Messrs. BUNYARD also presented a hybrid Physalis, P. Bunyardii, the result of P. Franchetii & P. Alkekengi. The calyces are about intermediate in size between the parents and are of very bright-red colour. Leaves, flowers and ripe fruit were noticed on the same shoots, which are more graceful than those of P. Franchetii (Silver Banksian Medal).

Messrs. GEO. JACKMAN & SON, Woking Nursery, Surrey, showed hardy flowers and decorative Chrysanthemums (Silver Flora Medal).

Mr. M. PRICHARD, Christchurch, Hants, put up a group of hardy flowers, having in first-class condition examples of many of the best sorts now in season, such as improved forms of Aster Amellus, a grand batch of Kniphofias, Pyrethrums, &c. (Silver Banksian Medal).

Messrs. BARR & SONS, King Street, Covent Garden, showed a small but choice collection of hardy flowers.

Mr. G. H. SAGE, Richmond, Surrey, displayed four new Michaelmas Daisies. We admired the white variety labelled Snowdon.

Awards.

Cryanthus sanguineus glaucophyllus.—Several varieties of this species were shown by Mr. JAMES O'BRIEN, Marian, Harrow-on-the-Hill. They differed greatly in the size and form of the flowers, and to a less degree in colour also. One of the varieties had slightly glaucous foliage, a flower standing about 1 foot high and 3½ inches across, each segment being an inch in width. The flower was of regular form, suggestive of that of a Vallota, but with the customary recurving of the petals. The colour was rich orange-red (Award of Merit).

Chrysanthemum La Vestale.—An early-flowering border variety shown by Messrs. R. H. BATH, Ltd., Wisbech. The stature of the plants would appear to be about 3 feet. The whitish or exceedingly pale-pink coloured flowers are 4 inches across, and the centre florets are somewhat twisted. An attractive variety (Award of Merit).

Rosa sericea "Les Grandes Epines".—This extremely ornamental Rose, which was mentioned on p. 238 in our last issue as having received an award at the Edinburgh show, was exhibited by Messrs. PAUL & SON, Chesham. It produces small white flowers, but its decorative value consists in the brilliant red-coloured and silky-looking spines. It is a plant that will be sure to meet with appreciation from those who admire ornamental shrubs (First-class Certificate).

Dahlias.—Thirteen varieties of Dahlia were described in our last issue on p. 237 as having been inspected at Wisley by a sub-committee. Three marks were awarded to each in order to distinguish them as good garden or decorative Dahlias, and these marks were confirmed by the Committee. The marks are not synonymous with Awards of Merit, nor have the flowers been judged from the exhibition point of view.

Awards by the Floral Committee and National Dahlia Society's Committee.

DAHLIAS.

Upon this occasion a Committee of the National Dahlia Society, and a deputation from the Floral Committee of the Royal Horticultural Society, conferred together upon the Dahlia novelties submitted. Seventeen seedlings received recognition by the joint Committee, and in each case the First-class Certificate of the National Dahlia Society and the Award of Merit of the Royal Horticultural Society were awarded.

Mrs. G. Stevenson (Cactus).—A good "self-yellow," well up to exhibition standard, with finely-formed florets well incurved. From Mr. J. T. WEST, Brentwood, Essex.

Alight (Cactus).—A very notable flower, the predominant tint being of flame-orange. The florets are well formed and finely pointed. From Messrs. J. BURRELL & CO., Cambridge.

Fovius (Cactus).—This also came from Messrs. BURRELL. The well-shaped flower is coloured rosy-fawn, and is very distinct. It promises to prove a capital exhibition variety.

Ivanhoe (Cactus).—A shapely and showy flower, coloured pale orange and yellow.

Victorian (Fancy Cactus).—One of the striped section, to which we may apply provisionally the term "Fancy." The flower is of good size and form, and is coloured purple and maroon, with white at the base of the florets.

Primrose (Cactus).—A very pleasing yellow self flower, elegant in form, with finely incurved florets.

Mrs. Macmillan (Cactus). The predominant tone is a rich shade of rose, the centre being white or cream. The form is excellent.

The above four came from Messrs. JAS. STREDWICK & SON, Silverhill Park, St. Leonards-on-Sea.

Titus (Pompon Cactus).—There is a great probability that this new section, with its dainty and well-formed flowers, will be much in vogue in the near future for purposes of decoration. The above is coloured yellow at the base and is shaded with buff. From Messrs. J. BURRELL & CO., Cambridge.

Little Fred (Pompon Cactus).—A creamy-white flower, very good in form. From Mr. H. SHOESMITH, Woking.

Tom Tit (Pompon Cactus).—A pretty flower coloured rosy-pink. Exhibited by Messrs. JAS. STREDWICK & SON, St. Leonards-on-Sea.

Delicacy (Show).—A flower of moderate size, well-formed, and coloured rosy-peach with carmine tips.

Favourite (Show). The ground colour is soft yellow or chrome with buff shading on the more exposed parts of the flower. These two varieties came from Mr. S. MORTIMER, Rowledge Nurseries, Farnham, Surrey.

Peacemaker (Pompon).—Nearly snow-white and of perfectly moulded form. From Messrs. KEYNES, WILLIAMS & CO., Salisbury.

Kitty Barrett (Pompon).—A flower of exquisite form, yellow in colour, with rosy-tipped florets. From Mr. J. T. WEST, Brentwood, Essex.

Stramboli (Single).—Crimson-maroon, the florets conspicuously blotched with white at the tips. From Messrs. J. CHEAL & SONS, Crawley.

Veronique (Single).—Colour rosy-red with scarlet stripes. The flower is of good form.

Cynthia (Single).—A shapely, distinct and pleasing variety of a delicate tone of soft pink colour. The well-rounded florets and the uniform tone of colour all combine to make it a flower of much merit. These were exhibited by Mr. SEALE, Sevenoaks.

Orchid Committee.

Present: Harry J. Veitch, Esq. (in the Chair); and Messrs. Jas. O'Brien (Hon. Sec.), De B. Crawshay, J. Colman, W. A. Bilney, N. C. Cookson, H. A. Tracy, W. Boxall, W. H. Vonng, J. Charlesworth, J. Douglas, R. G. Thwaites, W. Cobb, H. Little, F. J. Thorne, F. Wellesley, and F. W. Moore.

There was a very fine show of Orchids. The splendid group, principally hybrids, for which Messrs. CHARLESWORTH & CO., Heaton, Bradford, were awarded a Gold Medal, was better than any group previously staged at this season. The centre was composed of about forty plants of the showy Cattleya x Iris, all beautiful, and scarcely two alike, their colours varying from cream-white with rose-coloured labellum to yellow with rose-

purple lip, and bronzy-yellow with variously tinted purple and crimson labellum. The best form, C. × Iris "His Majesty," secured the only First-class Certificate awarded (see Awards). At one end was a fine selection of good forms of *Lælio-Cattleya* × *callistoglossa*, some good and brightly coloured *Brassavola Digbyana* crosses, *Brasso-Lælia* × *White Lady* being a very pretty white variety. *Cattleya* × *Chamberlainiana* varieties were well represented; and at the other end of the group was a batch of the pretty *Cattleya* × *Germania* of various tints, L.C. × *Gottoiana*, L.C. × *luminosa*, L.C. × *Dominiana*, L.C. × *Aloyoue* (L. flava × C. Schilleriana), *Cattleya* × *Mrs. Pitt*, C. × *Elvina*, C. × F. W. Wigan, C. *Harrisoniana* alba, C. × *Adula* (bicolor × *Hardyana*), and other hybrid *Cattleyas* and *Lælio-Cattleyas*. Among a profusion of other good *Oreohids* were noted a nice specimen of *Ancistrochilus* (*Pachystoma*) *Thomsonianus* var. *Gentili*, with pretty white flowers with dark rose markings on the lip; *Miltonia Schröderiana* and other *Miltonias*; *Odontoglossum crispum* and the variety *Lehmanni*; O. × *Rolfeae*, *Oncidium incurvum* and the pure white form of it, and others.

Messrs. SANDER & SONS, St. Albans, were awarded a Silver Banksian Medal for a choice group, including good varieties of *Lælio-Cattleya* × *bletchleyensis*, L.C. × *Canhamiana*, L.C. × *The Pearl*, L.C. × *Antigone*, L.C. × *Herga* (C. *Gaskelliana* × L.C. *elegans*), L.C. × *Endymion* (C. *Gaskelliana* × L. *tenebrosa*), *Cattleya* × *Pittiana*, well flowered. The handsomest hybrid in the group was *Cattleya* × *Iris* "Sander's variety," a form of which received an Award of Merit at the last meeting. It has C. aurea for the seed-parent, crossed with a fine form of C. bicolor. The plant is very dwarf, and the flowers large, with bronzy sepals and petals and glowing ruby-crimson lip. C. *Gaskelliana* "Princess" is a nearly white form with slight purple marking in front of the yellow disc of the lip. C. *elongata* (*Alexandra*) and other uncommon species were included; also *Cypripedium* × *Annie Measures*, and a very fine form of *Cypripedium* O'Brienianum with curious greenish incurved dorsal sepal, yellowish at the margin, and broad decurved rose petals with some dark spotting at the base; lip tinged with rose. Among species were a good example of *Angraecum Ellisii*, *Cirrhopetalum refractum*, *Hemipilia calophylla*, with beautifully red-marbled leaves and spike of pretty flowers with light violet-coloured labellums.

Messrs. STANLEY & CO., Southgate, were awarded a Silver Banksian Medal for a good group, in which were some of the first of the autumn-flowering *Cattleya* *labiata*, good C. *Loddigesii*, C. bicolor, C. *Acklandiae*, *Odontoglossum grande*, O. *crispum*, O. *Harryanum*, *Dendrobium fornosum*, and other showy *Orchids*. At the back were sprays of a fine type of *Oncidium varicosum*, showing much variation both in the shape and habit of the plant, two specimens being very dwarf and bearing rich yellow flowers of unusually fine substance. Specially interesting was a very strong specimen of *Odontoglossum* × *Duvivierianum*, with a fine spike of six flowers. *Miltonia* × *Castanea*, Southgate variety (? *Regnelli* × *Clowesii*), like an enlarged *M. Clowesii*; and a singular *Epidendrum* ? *nocturnum*, with flower-stem and ovary 6 inches in length, bearing a curious flower with greenish sepals and petals, and long tridentate lip.

Messrs. HUGH LOW & CO., Enfield, staged a group, including *Cattleya Dowiana*, C. *Loddigesii* alba, *Cypripedium* × *Pollettianum superbum*, C. × *Ajax*, *Goodyera Rollissonii*, with pretty bronze and yellow leaves; the dwarf *Oncidium Harrisonianum*, and the fine yellow O. *oblongatum*, *Spathoglottis aurea*, *Vanda Kimballiana*, *Odontoglossum grande*, *Cologyne speciosa*, and *Miltonia candida grandiflora*.

LEOPOLD DE ROTHSCHILD, Esq., Gunnersbury House, Acton (gr., Mr. Hudson), showed *Dendrobium fornosum giganteum* "Gunnersbury House variety," bearing a fine truss of very large pure white flowers with yellow disc to the lip, all the segments being broad, and especially the petals, which were almost circular; also *Odontoglossum bictonense roseum*.

Major G. L. HOLFORD, C.I.E., C.V.O. (gr., Mr. Alexander), showed *Lælio-Cattleya* × *crispo-Hardyana* (which secured an Award of Merit), *Cattleya* × *Ashtoni la Belle* (*Warszewiczii* × *Harrisoniana*), and L.C. × *Berthe Fournier*.

JEREMIAH COLMAN, Esq., Gatton Park (gr., Mr. W. P. Bound), showed a fine form of *Lælio-Cattleya* × *Nysa* (L. *crispa* × C. *Warszewiczii*) from seeds sown on June 26, 1901; also two forms of *Cattleya* × *intermedio-Warszewiczii*, and the fine *Miltonia Regnelli* "Gatton Park variety" (see Awards).

Mr. H. A. TRACY, Twickenham, showed *Cypripedium* × *Herbert Goodson* (*Sanderianum* × *Youngianum*).—A fine hybrid with many of the attractive traits of C. *Sanderianum*. The plant had whitish-green leaves with darker markings and a stout spike of three large flowers. Dorsal sepal greenish-yellow, edged with rose-colour and bearing many dark chocolate dotted lines. Petals arched and long, showing the crenulation of C. *Sanderianum* on the upper edge, whitish tinged with rose and dotted with dark purple. Lip tinged with brown.

Sir Wm. MARRIOTT, Down House, Blandford (gr. Mr. Denny), sent a flower of *Cattleya* × *Ethel* (Rex × *Warszewiczii*).

Awards.

FIRST-CLASS CERTIFICATE.

Cattleya × *Iris* "His Majesty," from Messrs. CHARLESWORTH & CO., Heaton, Bradford.—The largest, best and brightest-coloured of Messrs. Charlesworth's fine hybrids of *Cattleya aurea* and C. bicolor. Sepals and petals broad and flat, fawn-yellow tinged with rose on the edges of the petals. Lip yellowish at the base, where it clips the fleshy white column, the isthmus and broad front lobe being of a glowing red-crimson with an orange shade.

AWARDS OF MERIT.

Lælio-Cattleya × *luminosa Rosita* (L. *tenebrosa* × C. aurea), from Messrs. CHARLESWORTH & CO.—A very fine flower with bright yellow sepals and petals, the sepals freckled with purple at the backs, and the petals marbled with rose-purple, the yellow veining showing through the darker colour. Lip claret-purple, veined with gold-colour at the base, and lighter rose-purple at the margin.

Lælio-Cattleya × *crispo-Hardyana* (L. *crispa* × C. × *Hardyana*), from Major G. L. HOLFORD, Westnort (gr., Mr. Alexander).—A fine flower of the L.C. × *Pallas* class, but larger. Sepals and petals silver-white tinted with lavender. Lip rich purple with gold lines from the base, the front being elongated, spreading, and crimped at the margin.

Miltonia Regnelli Gatton Park variety, from JEREMIAH COLMAN, Esq., Gatton Park, Reigate (gr., Mr. W. P. Bound).—A large and beautiful variety with light yellow sepals and petals, each with a small purple base, and broad, flat, purple labellum.

Cypripedium purpuratum Tracy's variety, from Mr. H. A. TRACY, Twickenham.—A very darkly-coloured form of the pretty and still uncommon species, the chief difference being in the broader white dorsal sepal striped with purple, and the darker rose-purple colour of the lip.

Cattleya × *Maronii Westfield variety* (C. *velutina* × C. *Dowiana aurea*), from FRANCIS WELLESLEY, Esq., Westfield, Woking (gr., Mr. Hopkins).—Flowers much larger than in the original. Sepals and petals golden-yellow with a slight bronze tint, the showy labellum yellow at the base, the blade veined with crimson, the more prominent lines being raised. A pretty and fragrant flower.

BOTANICAL CERTIFICATE.

Stenoglottis fimbriata, from Mrs. BRIGHTWEN, The Grove, Stanmore (gr., Mr. J. W. Odell).—A charming little South African terrestrial *Orchid*, with rosettes of dark-green leaves closely blotched with purple, lying close to the ground. From the centre of each of the eight crowns came an elegant spike of pretty white-and-lilac-coloured flowers, the spikes being 9 inches to a foot high, and bearing flowers on the upper two-thirds.

Fruit and Vegetable Committee.

Present: Geo. Bunyard, Esq. (Chairman); and Messrs. Jos. Cheal, A. Dean, H. Parr, E. Beckett, Geo. Kelf, H. Markham, J. Lyne, F. Q. Lane, J. Willard, Geo. Norman, J. Melndoe, O. Thomas, H. Somers Rivers, A. H. Pearson, and Geo. Reynolds.

Messrs. T. RIVERS & SON, Sawbridgeworth, Herts, made an imposing display of orchard-house fruit. Beautiful examples of pot Vines were at the background—Golden Queen, Black Alicante, Gros Maroc, &c., while bunches of Euckland Sweetwater, Madresfield Court, Black Alicante, and Muscat of Alexandria were staged on stands. A box of enormous fruits of Peasgood's Nonesuch Apples, coloured almost beyond recognition, and baskets of Cox's Orange Pippin and Ribston Pippin also found a place in the collection. The fruits of Cox's Orange Pippin were superb. Plums Late Orange, Golden Transparent, and President were also of excellent quality; while a single fruit of Marguerite Marillat Pear must have weighed more than one pound (Silver-gilt Knightian Medal).

From the gardens of the Duke of FIFE, East Sheen Lodge, East Sheen (gr. Mr. R. Mountford), came a commendable display of hardy fruit, totalling twenty-six dishes. The quality was uniformly good throughout, and a Silver-Gilt Banksian Medal was awarded. The best examples of Apples were Fearn's Pippin, Lady Sudeley, Gascoyne's Seedling, Bismarck, Lord Suffield and Cox's Orange Pippin. Among the Pears were good dishes of Pitmaston Duchess, Fondante de Cuerne and Brockworth Park. Mr. Mountford also presented a separate box of Fondante de Cuerne Pears to the notice of the Committee.

Mr. G. NORMAN, The Gardens, Hatfield House, Herts, staged four bunches of Black Hamburgh Grapes cut from seventeen-year-old Vines. The bunches were grown under ordinary treatment and on rods bearing as many as fourteen bunches of Grapes. The bunches were large, well-finished and of splendid flavour, and were awarded a Silver Knightian Medal.

A stand of four bunches of the new black Grape Prince of Wales was shown by H. L. BISCHOFFSHEIM, Esq., Warren House, Stanmore, Middlesex (gr. Mr. C. J. Ellis). The bunches were of large size, averaging 5½ lb. in weight, and were the best we have seen of this variety, which was distributed a few years since by Messrs. Jas. Veitch & Sons, Ltd. It was a sport from the variety Mrs. Pince, and Mr. Ellis stated that the Vine requires similar treatment to the other Muscat varieties. The fruit shown had been cut from Vines planted only eighteen months ago (Silver Knightian Medal).

Messrs. CANNELL & SONS, Swanley, Kent, showed a number of varieties of autumn-fruiting Raspberries. The fruits were exhibited growing on the canes. The kinds included Perpetual de Billard, Belle de Fontenay, Noir d'Automne, Golden Queen, and Surprise d'Automne, the two last named being yellow-fruiting varieties. Belle de Fontenay may be regarded as the best of the varieties.

Mr. G. HODDAY, Romford, Essex, displayed a splendid collection of well-grown vegetables. The group was put up in first-class style, and was very representative. It included Ailsa Craig and Excelsior Onions, Intermediate and Early Nantes Carrots, splendid Cauliflowers (Veitch's Autumn Giant and Early London), Runner Beans, coloured Potatoes, Tomatoes, Hollow-crown Parsnips (good), Marrows, Endive, Beet-roots, Lettuce, Globe Artichokes, Musseburg Leeks (good), Celery, &c. (Silver-gilt Knightian Medal).

The table near to those at which the Committee sits was, as usual, occupied by numerous individual dishes of fruits and vegetables submitted for awards, but none was given.

THE NATIONAL ROSE.

SEPTEMBER 26.—In conjunction with the usual fortnightly meeting of the Royal Horticultural Society the National Rose Society held its last show of the year, and considering the late period of the season the entries were unusually numerous, and the various exhibits of Roses of all kinds were of astonishing good quality, the Hybrid Teas, and Teas and Noisettes especially; the flowers from the Northern grower comparing most favourably with those from the South of England and from the North of Ireland.

NURSERYMEN.

For the best *Thirty-six Blooms, Distinct*.—1st, Messrs. COCKER & SONS, Nurseries, Aberdeen, with perfect flowers in every instance; and as especially fine blooms we may mention Suzanne de M. Rodocanachi, Captain Hayward, Prince Arthur, Maman Cochet, A. K. Williams, Lady Sheffield, Pharisae, and Comtesse de Ludre. 2nd, Messrs. ADAM & CRAIG-MILE, Nurseries, Aberdeen, with symmetrically perfect flowers, including A. Colomb, Comte Raimbaud, U. Brunner, C. Lefebvre, Madame J. Bonnair (an immense pink-coloured flower with cupped petals of a round shape, as is the entire bloom), Captain Hayward, and other favourite varieties. In this class in a box of flowers shown by the last-named exhibitor, a Silver Medal was awarded to a bloom of Mrs. J. Laing, it being the best Rose other than H.T., T. or Noisette. The 3rd prize fell to Mr. HUGH DICKSON, The Royal Nurseries, Belfast, whose stands contained excellent blooms of much substance; a Silver Medal was awarded to a bloom in this collection of Helen Quillot, a magnificent white Rose.

For the Best *Thirty-six Varieties Distinct*, in a space not exceeding 8 feet by 5 feet.—1st, Messrs. B. R. GAN & SONS, Colchester, the blooms being set up on a cone shaped stand. We noted Fairy Queen, Eugène Resal Beryl, Lady Roberts, Madame Falcot, Princesse de Sagan, White Maman Cochet, L'Idéal, &c. 2nd, J. BARRON, Esq., Belgrave, Leicester, for a well

selected pleasing collection of thirty-six varieties, mostly Teas and Tea Hybrids, although all classes were allowed. Very nice were the following M. Charles (a buff-pink-coloured bloom), Souvenir de Catherine Guillot (fawn-salmon in tint), M. Falcot, Lady Battersea, Clara Watson, Madame Ravary, Gustave Regis, and Liberty. The 3rd prize in this class was awarded to Messrs. J. JEFFERIES & SON, Worcester, the trusses being in this case set up in jar glasses or earthenware pots, and these being of ample space the effect produced was pleasing.

Eighteen Blooms, Distinct.—1st, Messrs. D. & W. TOLL, nurserymen, Dundee. This stand contained my fine blooms, including the varieties Mrs. E. Wyley, Rubens, Enchantress, Lady Roberts, Marchal el, G. Nabonand, and Souvenir de Madame Metral. Silver Medal was awarded the bloom of Marchal el as being the best Tea Rose in the show. 2nd, Messrs. ADAM & CRAIGMILE, Aberdeen, with a stand of blooms of Teas and Noisettes of medium size, but clear their tints and uninjured by weather or transit. 3rd, Mr. GEO. PRINCE, Longworth, Farringdon, with good flowers of well-known varieties.

For Twelve Distinct Varieties, Seven Blooms of each.—1st, Messrs. B. R. CANT & SON, The Old Rose Garden, Colchester. Very fine were White Maman Cochet, Mrs. Sharman Crawford, Bessie Brown, M. Dupuy, M. Frau K. Druschki, Maman Cochet and M. Mawley. 2nd, Mr. G. PRINCE, whose best blooms were Mrs. J. Laing, La France, Maman Cochet, M. Mawley, Mrs. Sharman Crawford, Frau Karl Druschki and Alf. Colomb. 3rd, Messrs. J. JEFFERIES & SON, Worcester. There were several other good displays, but owing to their not being shown according to the scheduled rules they were disqualified.

Twelve Blooms of any Rose to be Shown in a single class.—1st, J. JEFFERIES & SON, with fine massive blooms of Frau K. Druschki. 2nd, Mr. HUGH DICKSON, Royal Nurseries, Belfast, with J. E. Clark, a magnificent crimson-coloured H.T., fine, large, and massive specimens, with exquisite fragrance. This variety has been previously awarded the Silver Medal of the National Rose Society at the Metropolitan Show at Regent's Park. The 3rd prize was awarded to Messrs. GREGORY & SON, nurserymen, Portadown, for Frau K. Druschki, the blooms being large and full.

DECORATIVE ROSES.

For the best Thirty-six Varieties, Distinct.—1st, Mr. MATTOCK, New Headington, for a fine lot of clean, well-grown blooms, including Souvenir de C. Guillot, Mère, Sulphorea, Madame Charles, Papa Gontier, Lorraine, Peace, every bloom being perfect in form and fine in condition. 2nd, Messrs. FRANK CANT & CO., who had Lady Battersea, Gustave Regis, Corallina, Madame Abel Chatenay, Safrano, Peace, and Dr. Félix Guyon, among their best blooms. 3rd, Messrs. GREGORY & SON, Cheshunt, whose stand consisted of fine-sized blooms in bunches, with ample space between. Among the varieties shown were remarked Louis Dubreuil (a fine dark crimson bloom), Madame A. Mari, General Schablikine, Papillon, Miss Ann Teplitz, varieties not known to many of our exhibitors, but great acquisitions to our Rose-gardens.

Twelve Varieties Distinct.—1st, Mr. CHARLES TURNER, The Royal Nurseries, Slough, with fine large bouquets, and among them Mme. Antoine Mari, Mme. Charles, Papa Gontier, Mme. Jean Dupuy, Souv. de C. Guillot, and Prince de Bulgarie, &c. 2nd, Messrs. JEFFERIES & SON. In this stand of twelve bunches were capital blooms of Perle des Jardins, Papa Gontier, Mme. A. Chatenay, Enchantress, Mme. Inbard, &c.

For the Best Polyantha Roses Distinct.—1st, Messrs. B. R. CANT & SON for a pretty lot. We mention as being unique in tint Aschenbrödel, Agonnette, Schneewitchen, Mme. Levavasseur, Etoile de Marie Pavie, and Gloire de Polyantha. 2nd, Messrs. F. CANT & CO., Braiswick Nurseries, Colchester. These varieties mention may be made of Lamesch (a cover of crimson and yellow-colour), Eugénie Lamesch, Mme. E. A. Nolte (of a pinkish-cream tint), and Petite Constant. This was a class for nurserymen only, as we also the three following classes.

For the Best Representative Group of Roses in a space not exceeding 100 square feet.—1st, Mr. CHARLES TURNER, Slough, for a large corner group formed on the floor of the Hall. The blooms were stood in water and the beds placed in dwarf baskets elevated on pots, the groundwork being hidden with moss, and as the quantity of bloom was lavish the effect was all that could be wished. Between the larger baskets smaller bushes and pots of Roses were placed, and the whole was edged with Adiantum.

For the Best Cut Rose Blooms placed on staging in a space not exceeding 100 square feet. The 1st prize was awarded with it a Gold Medal. It was awarded to Mr. G. PRINCE for a very fine representative group of all kinds of roses. The exhibit was formed on wavy lines and contained many fine varieties in good condition, new and old favourites as well. The 2nd prize and a Silver-Gilt Medal were awarded to Messrs. JACKMAN & CO., Woking, for a group of Roses staged as a bank, the blooms being set out in vases. This group was of

considerable size and contained Roses of all classes and in most instances excellent of their kind. The front was bordered with low baskets filled with Roses, producing good effect. 3rd, Messrs. ALEXANDER DICKSON & SONS, Newtownards, who were likewise awarded a Silver Medal.

The best Representative Group on a stage not exceeding 60 square feet.—1st, Mr. J. MATTOCK, with large bunches of one variety each, and most of them of superior form and condition.

NEW ROSES, OPEN.

Rose Irish Elegance.—This is a seedling shown by Messrs. A. DICKSON & SONS, Newtownards, Co. Down. A single-flowered variety, 5 inches in diameter, of a salmon-rose tint, with a yellow stain at the base of the flower; anthers of a yellow colour. When the flowers are quite fully expanded they are clear pale pink in colour with lemon-coloured centre. This Rose was shown in some quantity (Gold Medal).

Rose Thérèse Benoit is of a pink-and-fawn colour, and possesses a filbert-shaped bud and cupped petals. The Committee desired to see it again. It came from Messrs. GARRAWAY & CO., nurserymen, of Clifton, Bristol.

Rose Countess of Gosford.—A H.T., faint pink in tint, full, and a filbert-shaped bud, suffused faintly with yellow. The Gold Medal of the Society was awarded to the exhibitors, S. MCGREY & SON, of Portadown.

A new seedling Rose named Dorothy Page Roberts, a beautiful H. T., large, fairly full, pink in colour, with a faint shade of buff, with petals reflexed at their tips, thus showing the lighter inner tint, was shown by Messrs. ALEX. DICKSON & SONS, Newtownards.

AMATEURS.

For the best Eighteen Blooms, Distinct.—1st, F. M. FLIGHT, Esq., Cornstiles, Twyford, for a stand of mostly fine blooms, the best being C. Testont, Beauty of Waltham, Frau Karl Druschki, Mrs. John Laing, Robert Duncan, Mildred Grant, Earl of Warwick, and others of that class. 2nd, CONWAY JONES, Esq., with a well-assorted stand, in which U. Brunner, Mrs. J. Laing, and Comtesse de Commendo were conspicuous. 3rd, Rev. J. H. PEMBERTON, Havering-atte-Bower, Essex.

The best Twelve Blooms, Distinct.—1st, ED. HOLLAND, Esq., Silverdale, Sutton, with a good stand, containing Marquise de Litta, C. Lefebvre, Gustave Piganneau, Bessie Brown, Mrs. J. Laing, &c. 2nd, the Rev. P. ROBERTS, Strathfieldsaye Rectory, Berks.

For the best Twelve Distinct Varieties, not fewer than three trusses of each.—1st, ALFRED TATE, Esq., Downside, Leatherhead, with an effective stepped stand of blooms, among which we noted Papa Gontier, Réve d'Or, Marie Van Houtte, White Maman Cochet, and Augustine Guinoisseau. 2nd, the Rev. J. H. PEMBERTON, Havering-atte-Bower.

There were classes for bowls of cut Roses, one of which was for exhibition flowers, and another for garden or decorative Roses. In nearly all cases bronzy-rose-coloured shoots and leaves were employed. Miss B. H. LANGTON, Raymead, Hendon, was 1st in the class for exhibition flowers; and Mrs. C. WILLIAMSON 1st in that in which garden or decorative flowers were used.

MARKETS.

COVENT GARDEN, September 27.

[We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Wednesday, by the kindness of several of the principal salesmen, who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the way in which they are packed, the supply in the market, and the demand, and they may fluctuate, not only from day to day, but often several times in one day. ED.]

Cut Foliage, &c.: Average Wholesale Prices.

s.d. s.d.	s.d. s.d.		
Ampelopsis leaves, per doz. bunches	1 6-2 0	Grasses, hardy, p. dozen bunches	2 0-3 0
Asparagus plumosus, long trails, each	0 3-0 6	Hardy foliage (various), per dozen bunches	2 0-4 0
— medium	1 0-1 6	Ivy leaves, bronze	1 6-2 0
— short sprays	0 9-1 8	— long trails, per bundle	1 0-2 0
— Sprengerii	0 8-1 0	— short green, doz. bunches	1 0-1 6
— tenuissimus	0 6-0 9	Moss, per gross	4 0-5 0
Adiantum cuneatum, doz. bunch.	4 0-6 0	Myrtle, per dozen bunches	2 0-4 0
Croton leaves, per bunch	0 9-1 6	Physalis, per doz. bunches	3 0-6 0
Cycas leaves, each	1 6-2 0	Smilax, p. dozen trails	4 0-6 0
Fern, English, p. dozen bunches	1 0-2 0	Viburnum Opulus with berries, p. dozen bunches	3 0-4 0
— French dozen bunches	3 0-4 0		

Cut Flowers, &c.: Average Wholesale Prices.

s.d. s.d.	s.d. s.d.		
Asters, 12 bunches	1 0-4 0	Marguerites, white, p. doz. bunches	2 0-3 0
Azalea mollis, per bunch	1 0 1 6	— yellow, dozen bunches	2 0-3 0
Bouvardia, per doz. bunches	6 0-8 0	Mignonette, doz. bunches	1 6-3 0
Calla aethiopia, pr. doz. blooms	3 0-4 0	Montbretias, doz. bunches	3 0-6 0
Carnations, per doz. blooms, best American vars.	2 0-4 0	Odontoglossum crispum, pr. doz. blooms	2 0-2 6
— smaller do.	0 6-1 0	— grande, p. doz. blooms	4 0-5 0
— Malmaisons	4 0-8 0	Paneratium, per doz. bunches	2 0-3 0
Cattleyas, p. doz. blooms	9 0-12 0	Pelargoniums, doz. bunches:	
Chrysanthemums, per doz. blooms	1 0-3 0	— Show	4 0-6 0
— small blooms, per doz. bchs.	2 0-6 0	— Zonal, double scarlet	3 0-6 0
Coreopsis, p. doz.	1 6-2 0	Roses, 12 blooms, bunches	1 0-3 0
Dahlias, per doz. bunches	1 0-2 0	— Niphets	1 0-3 0
Eucharis grandiflora, per dozen blooms	1 0-2 0	— Bridesmaid	1 0-2 0
Gaillardias, doz. bunches	2 0-3 0	— Kaiser in A.	2 0-3 0
Gardenias, per doz. blooms	1 0 1 6	— Victoria	2 0-3 0
Gladioli's Colville, p. doz. bunches	0 9-1 0	— General Jacqueminot	0 6-1 0
— hrenchleyensis, p. doz. spikes	0 6-0 9	— C. Mermet	1 0-2 0
Gypsophila, per dozen bunches	2 0-3 0	— Caroline Testout	1 0-2 0
Lilium auratum	1 6-2 6	— Liberty	1 6-2 0
— lancifolium, rubrum and album	1 0-2 0	— Mad. Chateau	2 0-3 0
— longiflorum	2 0-3 0	— Mrs. J. Laing	1 0-1 6
— tigrinum	1 0-1 6	— Sunrise	1 0-2 0
Lily of the Valley, p. doz. bunches	8 0-12 0	Statice, p. dozen bunches	1 6-2 6
— extra quality	15 0-21 0	Stephanotis, per doz. trusses	1 0-2 0
		Sweet Sultan, per doz. bunches	2 0-3 0
		Tuberose, per dozen blooms	0 2-0 3
		— on stems, per bunch	0 6-1 0
		Violets, 12 bunches	1 0-1 6

Plants in Pots, &c.: Average Wholesale Prices.

s.d. s.d.	s.d. s.d.		
Aralia Sieboldi, p. dozen	4 0-12 0	Euonymus, per dozen	4 0-9 0
— larger	12 0-15 0	Ferns, in thumbs, per 100	8 0-12 0
Araucaria excelsa, per dozen	16 0-30 0	— in 48's, p. doz.	4 0-10 0
Aspidistras, green, per doz.	21 0-30 0	— in 32's, p. doz.	10 0-16 0
— variegated, per doz.	30 0-42 0	Ficus elastica, p. doz.	9 0-16 0
Asparagus plumosus nanus, per doz.	9 0-12 0	— repens, per dozen	4 0-6 0
— Sprengerii, per dozen	6 0-9 0	Kentia Belmoreana, per doz.	12 0-16 0
— tenuissimus, per doz.	6 0-12 0	— Fosteriana, p. doz.	12 0-21 0
Asters, per dozen	3 0-6 0	Lataunia borbonica, per doz.	9 0-18 0
Bouvardias, per dozen	6 0-8 0	Lilium lancifolium, per dozen	4 0-8 0
Cannas, per doz.	6 0-8 0	Marguerites, white, per dozen	4 0-8 0
Chrysanthemums, per dozen	6 0-24 0	Pelargoniums, per dozen, zonal	3 0-5 0
— coronarium, double yellow, per dozen	3 0-5 0	— scarlet do.	3 0-4 0
Coleus, per dozen	2 6-4 0	Physalis, per doz.	16 0-24 0
Crotons, per doz.	12 0-30 0	Privet, golden, per dozen	5 0-12 0
Cocos Weddelliana, per doz.	12 0-30 0	Rose Madame Levavasseur, per dozen	10 0-12 0
Cyperus alternifolius, dozen	2 6-4 0	Selaginella, per dozen	3 0-5 0
Dracenas, dozen	9 0-24 0	Solanums, dozen	6 0-12 0
Erica gracilis, per dozen	12 0-15 0	Spiraea japonica, per dozen	9 0-10 0
Eulalia japonica variegata	12 0-18 0		

Fruit: Average Wholesale Prices

s.d. s.d.	s.d. s.d.		
Apples, American, per barrel	22 0-15 0	Melon Pears, per box	2 0-4 0
— French, per barrel	15 0-18 0	Nuts, Cobnuts, p. lb.	0 4 1/2-0 5 1/2
— cooking, per bushel	5 0-7 0	— Walnuts, Eng. fish p. bushel	12 0-14 0
— Dessert, per bushel	5 0 12 0	— Grenoble, per bag	7 0-8 0
Bananas, bunch	6 0-13 0	— Borre, p. bag	9 0 —
— Giants, per bunch	12 0-14 0	— French, p. sack	18 0-20 0
— Jamaica, per loose, per doz.	3 0-6 0	Oranges, Jamaica, per case	18 0-20 0
Blackberries, per peck	1 9-2 0	Peaches, A., per dozen	8 0-12 0
Figs, per dozen	1 6-2 0	— B., per doz.	4 0-6 0
Grapes, Alicante, per lb.	0 6-1 0	Pears, French, crate	5 0-12 0
— Madresfield Court, per lb.	2 6 —	— Californian, box	3 6-6 0
— Gros Maroc, per lb.	1 6-2 0	— English, per bushel	6 0-14 0
— Muscats, lb.	0 9-3 0	Pineapples, each	2 0-3 0
— Sweetwater, case	6 0-8 0	Plums, English, half-bushel:	
— Mercia, box	1 0-2 6	— Damsons	3 6 —
— Almeria, per barrel	10 0-14 0	— Prunes	7 0 —
Lemons, Naples, per case	30 0-40 0	— German Switzer	4 0 —
— Messina, case	16 0-20 0	— Bohemian	5 6 —
Melons, each	1 0-2 6	— Bullace	5 0 —
— Valencia, per case	6 0-7 0	Pomegranates, p. case	8 0-10 0
		Quinces, per case	10 0 —

Vegetables: Average Wholesale Prices.

s. d. s. d.		s. d. s. d.	
Artichokes, Green, French, p. doz.	2 6-3 0	Mushrooms (house) ver lb.	1 0-1 3
Aubergines, per dozen	2 6-3 0	— half-bushel	3 6-4 6
Beans, English, Scarlet Runners, bushel	0 9-1 6	— Buttons, lb.	1 3-1 6
Beetroot, bushel	1 3-1 6	Mustard and Cress, per doz. pun.	1 0-1 6
Cabbages, p. tally	2 6-3 6	Onions, Valencia, per case	6 0-7 0
— red, per doz.	1 6-2 0	— Dutch, bag	3 6-4 6
Carrots, new, doz. bunches	2 0-3 0	— English, bag	5 6-6 0
— cwt., unwashed	1 9-2 0	Parsley, 12 bunches	1 4-2 0
— bag, washed	2 6-3 0	Parsnips, per bag	2 6-3 0
Cauliflowers, doz.	1 0-1 9	Kadisbes, p. doz. bunches	0 8-1 0
Celery, English, doz. bundles	9 0-1 2 0	Salsify, per dozen bundles	2 6 —
Cucumbers, doz.	1 6-3 0	Sorrel, half bush.	1 0 —
— per flat	3 0-7 0	Spinach, p. bush.	2 0-2 6
Endive, per doz.	0 6-1 0	Tomatoes, English, per 12 lb.	2 6-3 0
Horseradish, foreign, p. dozen bundles	10 0-1 2 0	— seconds, 12 lb.	1 0 —
Indian Corn, doz.	1 0-2 0	— Jersey, 12 lb.	2 0-2 6
Mint, per dozen	1 6-2 0	— French, crate	2 0-3 6
Peas, 12 bundles	1 6-2 0	Turnips, doz. bun.	2 0-2 6
Lettuces, Cos, per dozen	1 0-1 6	— bags	2 0-2 6
		Vegetable Marrows, per tally	3 0 —
		Watercress, per doz. bunches	0 6 —

REMARKS.—Nectarines may now be said to be over, but Peaches are still arriving in considerable quantities; the best quality fruits realise good prices. Prices for English Tomatoes are firm at 3s. per dozen lb. for best quality fruits, with an average price of 2s. per dozen for ordinary produce. Both ripened and green Bananas are plentiful, consequently they realise low prices. English Walnuts are both plentiful and good. "Doubles" are worth from 6d. to 9d. per lb. Cobnuts are somewhat dearer in prices. Trade generally is quiet.

COVENT GARDEN FLOWER MARKET.

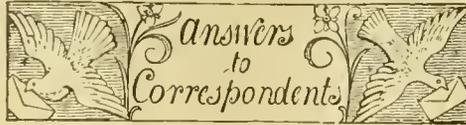
THERE is no great improvement in the trade for pot plants. Good Chrysanthemums in pots were never more plentiful; the best of these make very fair prices, but it is difficult to give definite figures, as many are cleared at low prices after the ordinary trade is over. Plants of *Erica gracilis* are of good quality, but there is not yet much trade for them or any Heaths. Solanums from several growers are also good; one salesman was offering his plants at 5s. per dozen, but this is not the average market price. Some well-flowered plants of *Rose Madame Levasseur* are now seen. Marguerites are good. Asters are still over plentiful, and good zonal Pelargoniums are still seen. In foliage plants some good *Codiaeums* (Crotons) are seen. *Turnfordensis* is a new variety with broad, golden markings. Ferns are over-abundant. Many growers send them in large quantities to make a clearance for other stock. Palms vary but little. *Latanias* are offered at low prices to clear, while for *Kentias*, *Cocos*, &c., there is little alteration in prices. Hardy evergreens and climbers are plentiful. *Clematis Jackmanii* in flower is very pleasing, also *Ampelopsis Veitchii* and other climbers. The old established firm, Mr. J. Fraser, of South Woodford, has recently taken stands in the Flower Market, and is sending in some useful climbers and other hardy plants, also *Solanums*, *Bouvardias*, &c.

CUT FLOWERS.

Complaints of dull trade are heard all round, but I think the fault is in the excessive supplies, for large quantities find purchasers. Prices are low. The very finest specimen blooms of *Chrysanthemums* do not make more than 2s. 6d. or thereabouts per dozen blooms, and many go out at a still lower price. Some of the flowers from the open ground are of very good quality, but many are inferior. Asters still arrive in large quantities; this morning I saw fairly good white Asters cleared at 1s. per box of about two dozen bunches. Roses are not quite so plentiful; there is a short supply of good white flowers. Supplies of best Carnations are also short, but small blooms are very abundant. Some very good Orchids are seen, including very fine *Odontoglossum grande*; best *Cattleyas* are scarce. *Eucharis*, *Pancreatium*, *Gardenias*, and *Tuberose* are all plentiful, also *Liliums*; the prices for these last-named keep up fairly well. Dahlias are seen in large quantities, and sell very slowly. *Michaelmas Daisies* of various sorts are abundant, as are also other hardy flowers. Violets vary much in quality, but we are now getting some of good sample. I have not seen any "Parmas" from France this season, but they should soon be arriving; also the imported blue variety. Autumnal-tinted hardy foliage is now good. *Quercus coccinea* is very bright in colour; leaves of *Ampelopsis Veitchii* are also highly coloured. There is quite a large trade in hardy foliage, but after the first frost it is unsatisfactory material to handle. A. H., Covent Garden, September 27.

ENQUIRY.

CARMICHAEL AZALEAS.—Can any reader tell me what are meant by "Carmichael" Azaleas? Where are such plants to be obtained? L.



ADDRESS: G. R. The Horticultural Directory and Year Book, 12, Mitre Court Chambers, Fleet Street, London, E.C. The Garden Annual, 17, Farnival Street, Holborn.

BEGONIA: W. E. P. The Begonia leaves have no organic disease. We suspect the trouble may have been caused by mites. Dip the plants into Tobacco-water.

CARNATIONS: T. R. P. None of the Carnations is known to us except Rob Roy, a rose-flaked variety which has nearly passed out of cultivation. It was sent out about twenty-five years ago. The other varieties are probably seedlings which have been exhibited under names, but have not become popular owing to their lacking sufficient merit.

CHRYSANTHEMUM-LEAVES: J. G. There is no trace of fungus or other disease. The injury is due to some check or scorching. The exact cause could only be determined after full knowledge of the treatment that has been afforded the plants.

CORRECTIONS: In the Orchid Committee report published in our issue for September 16, the Silver Banksian Medal recorded as given to Messrs. Low's group was awarded to that from Messrs. Stanley & Co, Southgate. On p. 240, col. i., for "insects" read "nematode worms."

CRAB-APPLES: J. G. It is necessary to include foliage when forwarding these fruits for naming.

DECAYING OAK-TREE: H. T. You do not give us any information as to the cause of the tree failing to grow. If you can find no insect pests and no signs of fungus disease, the presumption would be that the tree having obtained what nourishment and air there are within reach of the roots is now unable to continue in good health. If there are any hollow places in the trunk, cover them with sheets of lead to keep out rains.

FUNGUS: F. W. T. The specimens sent are insufficient to determine the species, but enough to show that it is a species of resupinate *Polyporus*, now called *Poria*. If it is over-running your woodwork in the manner you describe, it is acting like a dry rot, and will not cease till all the woodwork is destroyed. The white powder, resembling mildew, lying on the surface of everything doubtless consists of the discharged spores, the growth of which is fostered by damp and by the absence of a current of air. You should have sent a small specimen entire, or a portion of the margin, so that the botanical name could have been determined. It will not attack living plants. You should have affixed stamps to your communication. We had to pay extra for your package, which is unfair.

GRAPE: *Vitis*. We believe the Grape to be *Barbarossa*. *Barbarossa*, after being severely pruned, produces close bunches of medium size. The big and loose bunches sometimes seen at exhibitions are obtained by long spur pruning. Your fruit was presumably ripened in a mid-season house. We have seen *Barbarossa*, when growing in a second early (Hamburgh) house and pruned closely, produce bunches exactly similar to the specimen received. You should have sent some foliage along with the fruit.—A Constant Reader. The berries are over-ripe, and some of them are affected with the "spot" fungus, *Gloeosporium ampelophagum*, which has been illustrated and described frequently in these columns.

NAMES OF FRUITS: A. G. F. 1, Peasgood's None-such; 2, The Queen; 3, Williams' Favourite; 4, Warner's King; 5, Siberian Crab.—C. Best. 1, Eckliaville Seedling; 2, Warner's King; 3, Yorkshire Beauty; 4, Emperor Alexander; 5, Marie Benoist; 6, Fondante d'Automne.—Alfred Tidy. Apple, James Grieve.—J. Howells. The fruit was quite decayed on arrival.—A. H., Eaton. 1, Brownlee's Russet; 2, London Pip-

pin; 3, Roysl Russet; 4, Minchull Crab; 5, Baddow Pippin; 6, Lodgemore Nonpareil.—J. Williams. 1, Beurré Clairgeau; 2, B. Capiaumont; 3, Ribston Pippin; 4, Hunt's Pippin; 5, Claygate Pearmain; 6, Warner's King.—Mallard & Sons. Apple, Curl-tail Pippin.—A. F. 1, Jennett Moyle; 2, Golden Noble.—R. Wyken Pippin; 2, Stoke Pippin.—A. P. Apple Benoni.—W. W. Pear, Duchess of Oldenburgh.—Mac. Apple, Royal Shepherd.

NAMES OF PLANTS: C. M. L. *Luffa aegyptiaca*.—G. D. D. W. *Pyrus intermedia*, also known as *P. scandica*.—P. W. *P. terminalis*.—J. W. M. 1, *Gentiana Amarella*; 2, *Euphrasia officinalis*; 3, *Lycopodium clavatum*; 4, *L. alpinum*; 5, *Pyrus Aria*. We cannot help you to dispose of the seeds.—J. H. *Ionopsis testiculata*.—L. N. 1, *Codiaeum ruberrimum*; 2, *C. Queen Victoria*; 3, *C. Mooreanum*; 4, *C. variegatum*; 5, *C. undulatum*; 6, *C. Bachii*.—E. S. R. *Silphium perfoliatum*.—C. S. *Davallia bullata*, and *Epidendrum fragrans*.—X. Y. We do not undertake to name varieties of *Michaelmas Daisies* nor of any florists' flowers. Send them to one of the hardy plant nurserymen who has means of comparing them with growing specimens. Of the other specimens No. 1 is *Erica vagans*; 2, next week.

PEAR LEAVES: J. G. H. No fungus has developed, but probably the disfigurement is due to the commencement of Pear-scab, *Fusicladium dendriticum*, illustrated on p. 240 of the last issue.

POTATOS: G. B. The statement made to you that 28 lb. of Potatoes were obtained from 8½ ozs. of seed tubers may have been perfectly correct. But it is necessary to bear in mind [and we have frequently described the process in these columns] that in what is known as the "express" system of propagating Potatoes a start is made in warmth at some convenient time in the new year. By doing this the first sprouts afforded by the tubers can be removed and potted up, and another set of sprouts may be topped and the tops inserted as cuttings in other pots. Then these rooted cuttings and the old stools also are planted out in May, by which time many "sets" have been obtained. The grower may start with "eyes" also instead of with tubers if he wishes to do so. We do not know how much of this system you informally adopted. Look up your issue of the *Gardeners' Chronicle* for October 3, 1903, and on p. 234 you will find an illustrated article on the subject, which is also fully explained and illustrated in the *Calendar of Garden Operations* issued by our Publishing Department, price 7½d., post free.

POTATO-TUMOUR: W. R. Your Potatoes are suffering from the Potato-tumour, *Edomyces leproides*, several times noticed in this Journal. No remedy has been discovered. All diseased tubers should be burnt at once, and the ground sterilised to prevent an attack next year. I will be better not to plant Potatoes in the same soil again for two or three years to come.

SALVIA SPLENDENS: J. G. We have carefully examined the leaves, and cannot find a trace of any insect. The holes are probably caused by some fungus, though we cannot detect any in the specimens received.

SLIME FUNGUS: L. E. T. The slime fungus on your Strawberry plants is not a parasite, but will attach itself to anything which comes in its way. It is better picked off and burnt. It is called *Spumaria alba*.

WOOD-LICE: W. B. The usual method of eradicating the lice with pieces of Potato, Turnip or other food of which they are fond will be effective if followed up persistently. Hollow out the pieces of tuber and place them hollow side down in places where the lice are seen to congregate. Examine the baits frequently and destroy all the lice that are found in them.

COMMUNICATIONS RECEIVED.—E. H. W.—D. Inglis. H. T. M.—T. H.—W. H.—W. H. S.—L. G., Brussels. Bradley Bros.—R. H. D.—H. R. W.—H. W.—W. C. L. J. T.—L. E.—J. V.—A. E. B.—C. C.—G. W.—E. J. L. O. T.—H. W.—J. J. D.—A. W.—H. R.—A. W.—H. A.—H. B. J.—R. W. R.—E. R.—W. F. L., Millar. A. D. W.—Amos Perry—Hexham—J. D.—W. D. B. Swell—F. J.—B. S. A.—W. D. & S., Ltd.—L. C.—A. R.



THE
Gardeners' Chronicle

No. 980.—SATURDAY, October 7, 1905.

CONTENTS.

Annuals, what are? ...	268	Orchid notes and gleanings—	
Aucuba, grafting the ...	268	Ionopsis testiculata	259
Azaleas, Carmichael... ..	268	Orchid disease ...	259
Books, notices of—		Plants, new or noteworthy—	
Botanical Magazine ...	265	Primula pulverulenta ...	259
Publications received	260	Zygopetalum Binoti	258
Cattleya Harrisoniae ...	267	Potatoes in Mid-Lothian ...	268
Charities, gardening, and flower-shows ...	265	Prunus Boreiaea ...	265
Chinese vegetables, &c. Conference... ..	270	Rosa laevigata ...	269
Chrysanthemum literature, recent ...	264	Rosa sericea var. pteracantha ...	269
Colonial notes ...	267	Societies—	
Elm-limbs falling from tree ...	267	British Gardeners' Association ...	269
Figs in pots ...	257	National Chrysanthemum ...	270
Flowers in season ...	265	Royal Horticultural (Scientific Committee) ...	269
Fruit at Wrotham Park	268	Société Royale Liégeoise de Bruxelles ...	269
Fruit register—		Vitis Henryana ...	265
Apple Yellow Ingestre ...	260	Week's work, the—	
Peaches and Nectarines ...	260	Flower garden, the	262
Horticulture, technical ...	265	Fruits under glass...	263
Inula Royleana ...	265	Hardy fruit garden	263
Judging at flower-shows ...	268	Kitchen garden, the	263
Lachonalia liliiflora ...	259	Orchid houses, the	262
Nicotiana Sandera ...	262	Plants under glass	263
Nursery notes—			
Stormouth & Sons, J.	261		
Plant portraits... ..	265		

ILLUSTRATIONS.

Cattleya Harrisoniae ...	267
Fig Bourjassotte grise ...	258
Inula Royleana (Supplementary Illustration) ...	265
Lachonalia liliiflora ...	259
Rosa sericea var. pteracantha ...	269, 261

FIGS IN POTS.

THERE are few gardens in England in which the cultivation of Figs in pots receives greater care and attention, and is attended with more success than in Gunnersbury House and Gunnersbury Park Gardens. So greatly prized is this fruit here that endeavours are made to have a supply ready as early as possible in spring and as late as can be in winter; the result being that ripe Figs are produced for nine months or more out of the twelve.

In order to furnish this long succession of fruit, a large number of trees is provided, and these are arranged in various small batches for introduction into heat at different times in winter and spring, the first early trees being started on or about November 1, and others introduced at intervals of a month or six weeks, until the last batch of trees, which has been retarded in the coolest position available out-of-doors, or in open sheds where protection from frost can be afforded, is taken under glass towards the first week in May. Those trees put into heat on November 1 will furnish ripe fruit towards the middle or end of March, and the last batch introduced into heat will continue the supply after the successional ones until well on to Christmas.

One advantage pot trees have over those permanently planted out is that the supply of fruit under this system is less intermittent than is the case when the trees are

planted out in borders. Under the latter system the first early crop of fruit is often an uncertain quantity, and after it is over a long delay has to be endured before the second crop is ripe. By growing pot-trees in successional batches a continuous supply is obtained, and there is seldom a glut at any time. The fruits are not usually so large in size grown in this way as when planted out in borders, but they are of higher quality and sweeter flavour.

An inspection of late crops coming on at Gunnersbury Park suggested to me the thought that many more might wish to add this pleasant mode of fruit-growing to the other pleasures of their gardens, and also because the present is the time of the year to make a beginning. To those content with one set of trees from which two crops of fruit may be obtained in one year, a small glass-house, say to hold a dozen trees, would give a liberal and satisfactory return in the course of the summer, and after the crops have been gathered the trees could be turned out-of-doors, and the house utilised for the growth of some other crop during autumn and winter, as the Fig-trees would not be re-introduced until the following spring. If a new house has to be built, a span-roof structure would be best, and its size will be determined by the number of trees it is intended to grow; but if any other greenhouse, with provision for effective ventilation and heating, is available in the garden the Fig will succeed in such a structure very well. If continuous crops are required, as is the case at Gunnersbury, the question resolves itself into the providing of the necessary successional houses. The Fig-tree is the easiest of all fruit-trees to cultivate under glass, and one on the cultivation of which the amateur may venture with confidence, with the assurance that success will reward his efforts, provided only that the elementary

PRINCIPLES OF CULTURE

be faithfully observed and carried out. The Fig-tree in the first instance is raised from a cutting or a layer. This is a tedious business, and is better left in the hands of the nurseryman, who is a manufacturer of trees and provides the public with established specimens for a few shillings apiece such as it would take the amateur years to bring about. The present is a good time to order the trees for immediate delivery, and these should be about four years old, and well established with roots, and in condition to produce a decent crop of fruit next year.

Trees that are required to produce very early crops, say, by April 1, have to be educated up to this standard gradually, and the process takes some years to accomplish. Thus trees received from a nursery this autumn may be started into growth under glass on February 1, and ripe fruit should result in June. If it is intended that these trees should fruit earlier in succeeding years the only successful way of inducing them to do so is by starting them each year a month earlier. Thus, those started next year on February 1 will bear fruit in June. The same started the following year on January 1 will be ripe in May. The next time they may be started on December 1, and will ripen fruits late in April; the next time they may be started on November 1, and ripe fruits may be gathered about March 31. It would be useless to attempt to start young trees

just received from a nursery on November 1 next, expecting them to yield ripe fruits in the following March or April. The result would be disappointment and failure, as young Fig-trees require years of training in forcing to enable them to produce satisfactory early crops. Fig-trees like a long period of rest. After the fruit is gathered the trees should be placed in a warm, sunny position out-of-doors, and remain there until the autumn, when they should be placed in an open shed or some covered structure where they will have the advantage of abundance of fresh air and be protected from heavy rain and frost during winter. Whilst in this dormant state they should only receive enough water to prevent their roots from shrivelling, and very little will do this. The end of September is a good time for repotting the trees should they require it, but I may say that Fig-trees do not require repotting so frequently as do other fruit trees in pots. Too frequent potting of Fig-trees results in an excessive growth of wood and foliage, which is not so easy to ripen thoroughly as that produced under more restrictive conditions. As a rule, once in three or four years is often enough to repot a Fig-tree.

TOP-DRESSING.

Top-dressing is a very important item in the culture of all fruit-trees in pots, but is specially so in the case of the Fig-tree, which forms new roots rapidly when growth is active. Its root power is quite doubled by this application, and that at a time when it is most wanted, namely, in the summer when bearing heavy crops. I have found that it is best applied on two or three separate occasions, namely, the first time when the trees are introduced into heat. The drainage material should be examined in all cases, after having forked out with a pointed stick 2 or 3 inches of the surface soil, or until a good body of roots is reached.

The second time as soon as new roots are perceived on the surface of the first dressing. When finished the dressing will be about 2 inches higher than the rim of the pot, the outside consisting of the roughest pieces of turf, and forming, as it were, a wall to hold the added soil.

The next and final dressing should be applied in the same way as soon as the roots have taken full possession of the new soil. The top-dressing material should be pressed down hard with the ramming-stick. These repeated top-dressings will be filled in the course of the season with a great body of minute annual feeding roots, and when the time comes round for top dressing again, the inexperienced grower is sometimes perplexed as to what to do with these roots, and is tempted to place the next dressing on the top of the old one. This must not be done; the whole of the old dressing, including the roots that may be in it, should be removed to the same depth as in the previous year, namely, down to a good body of permanent roots, which are usually found 2 or 3 inches below the rim of the pot.

SOIL AND WATER.

The compost the Fig delights in most is a loam of medium texture, neither too heavy nor too light, adding to each barrowload of loam the following materials—half a bushel of old mortar rubble broken small, and one gallon of bone-meal, and the same quantity of

wood-ashes. No organic manure is recommended, the object being to encourage the production of abundance of roots, which can afterwards, when bearing heavy crops, be helped and stimulated by the application of manure-water. The soil for top-dressing should be the same as that for potting, with the addition of a little soft cow-manure, making it more plastic, and enabling it to adhere together better.

When the Fig is first introduced into heat, only sufficient water must be applied to keep the soil moderately moist, more being given gradually as growth advances, until in the height of the summer, when bearing heavy crops, two or even three waterings may be necessary. As regards manure-water, the best, in my opinion, is that procured from the stable or cow-yard. It should be applied in a diluted form (at

wards increasing it gradually as growth advances and daylight lengthens until 75° in the daytime is reached without the aid of sun, and from 65° to 70° at night. With sun-heat after the house has been closed in the afternoon the temperature may be allowed to rise as high as 85° or 88°; this is, of course, in the summer-time. The Fig loves moisture whilst it is growing, and this should be provided by copious syringing morning and afternoon—in the morning before breakfast, and in the afternoon at closing-time, damping the borders and floor in the meantime several times each day.

Fig-trees grown in pots require little or no pruning, as oftentimes they produce less growth in the current year than is wanted for fruit-bearing the following year. The summer pruning consists in disbudding any weak growths which are

and the atmosphere kept less moist. It usually takes three weeks from flowering time to seed-setting.

VARIETIES.

In the estimation of some, not the least of the advantages of growing this fruit in pots is the fact that as many varieties may be grown as there are trees. But to the beginner we should say, do not cultivate too many sorts, but begin by growing those varieties only which have been proved to be good growers, good croppers, and of fine flavour. Amongst these are the following:—St. John's (synonym Pingo-de-Mel): this is undoubtedly the best of all the varieties for early forcing, and to succeed this Brown Turkey is still the most reliable and best; and as companion to it, of a lighter colour, there is nothing better than the White Marseilles. The next to follow should be Bourjassotte grise (see fig. 96), Negro Largo, Violette Sepor, and for the latest crop D'Agén. O. T.

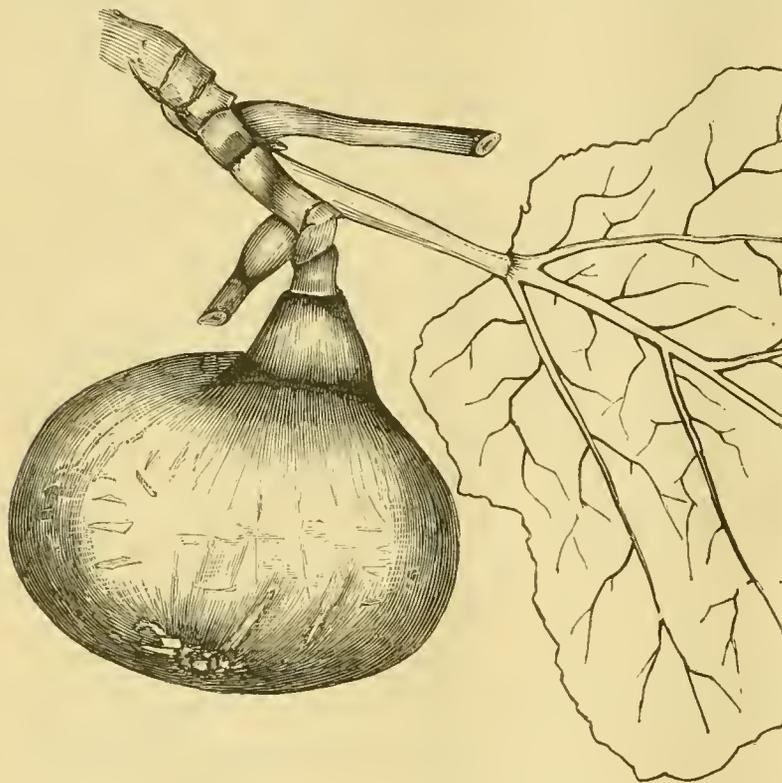


FIG. 96.—FIG BOURJASSOTTE GRISE.

least half as much clear water being added), and allowed to stand in a tank until it is quite clear before being applied. Trees bearing heavy crops of fruit should be afforded an application of this every other day whilst the fruits are swelling, giving clear water on alternate days. Next to this I favour Peruvian-guano—a good handful well mixed in three gallons of water being a safe quantity. Should worms be troublesome give an application of lime-water. Water must be added to the lime the night before it is used, so that it may be clear. Where plunging material in the shape of leaves can be provided a great advantage will be gained as less watering will be necessary and an extra rooting material provided.

SUMMER CULTURE.

The Fig must be excited into growth slowly at first, and a temperature of from 45° to 50° without sun-heat will be high enough for the first five or six weeks in winter, after-

not likely to develop during the summer into shoots strong enough to bear fruit the following season. The new shoots formed should be stopped at the fifth leaf if inclined to grow much longer than this, which they seldom do, and in which case no stopping is necessary. They practically require no pruning in winter, unless there happens to be any dead wood to be cut away. The first crop, which is always that most prized, is borne on the young shoots of last year's growth, and the second crop on the green shoots of the current year's growth.

THE SEEDING-TIME.

The Fig forms its seeds when it is the size of a small Walnut, and unless the seeds are properly developed the fruits will not swell to a good size, and be often deformed and the quality poor. The only way of finding out when the seed-forming time has come is by occasionally cutting fruit. The temperature should be lowered 5° whilst this process is going on, and more air admitted

NEW OR NOTEWORTHY PLANTS.

ZYGOPETALUM BINOTI, DE WILDEMAN.*

At the recent monthly meeting of the Royal Linnean Society of Brussels, Mr. Binot, of Petropolis (Brazil), exhibited a new species of *Zygopetalum* found in the neighbourhood of Petropolis with various specimens of *Colax* and *Zygopetalum*. This new species, *Zygopetalum Binoti*, is not a true *Zygopetalum*; it is probably a natural hybrid. The sepals and petals are green, and the lip is trilobed; this is not a character of a true *Zygopetalum*, but characterizes the genus *Colax*. The plant which flowered during the importations possesses three flower-spikes. The pseudo-bulbs are ovate, oblong, compressed, 8 cm. in length and 4 cm. in width. The pseudo-bulbs bear two linear lanceolate conduplicated leaves, 32 cm. long, and 4 cm. wide. The scapes are shorter than the leaves, racemose, and bear five to six flowers. The bracts are foliaceous, ovate, acute, and 1.5 to 2 cm. long. The flowers are 5 cm. in diameter. The sepals and petals are uniformly green, 2.5 cm. in length, and 7 to 10 mm. in width, the sepals being a little broader than the petals. The lip is trilobed, the middle lobe lanceolate, oblong 15 mm. long and 6 mm. broad, white tinged with yellowish-green, and with eight purple ridges at the base. The lateral lobes are reflexed, 5 mm. long and 2 mm. in width. The crest, horse-shoe-shaped, is ridged with six intervening furrows, and is tinged with purple. The column is subcylindric, 12 mm. in length, yellowish-white, the inside being purple, striated and punctated.

This description reminds us of *Zygocolax* ×, the artificial genus originated from various species of *Zygopetalum* and *Colax jugosus*, but the two species, *Zygocolax leopardinus*, Veitch (*Zygopetalum maxillare* × *Colax jugosus*) and *Zygocolax Veitchii*, Rolfe (*Zygopetalum Mackayii* crinitum × *Colax jugosus*) have much broader sepals and petals and a larger lip. We do not know the parents of the present species, consequently we hesitate to place this *Zygopetalum*

* *Zygopetalum Binoti*, De Wild., nov. spec.—Caulibus in pseudo-bulbos incrassatis 8 cm. longis et 4 cm. circ. latis. Scapi floriferi apyhyllii vaginati racemosi. Bractee foliaceae, ovatae acute, 1, 5–2 cm. longae. Floribus circ. 5 cm. diam.; sepalis et petalis similibus viridibus, circ. 2, 5 cm. longis et 7–10 mm. latis; labellum pediculae affixum trilobatum sessile; lobi laterales erecti subfalcati 5 mm. longi et 2 mm. lati, lobus medius lanceolato-oblongus 15 mm. longus et 6 mm. latus, alboluteus ad basium purpurato-striatus, densus crista transversa carinosa 8 instructus. Columna incurva subcylindrata circ. 12 mm. longa.—Brazil, Petropolis, 1905 (Pedro Binot!).

Binoti in the artificial genus *Zygocolax* ×. We may mention that the true *Zygotetium* has not a trilobed lip as our new and very interesting species shows. *E. De Wildeman, Brussels.*

*PRIMULA PULVERULENTA, Duthie.**

This extremely handsome plant, finer even than the now well-known *P. japonica*, has this year been successfully raised by Messrs. Veitch & Sons from seeds collected on the mountains of West Szechuan by Mr. E. H. Wilson, who found it growing abundantly in marshy ground at elevations between 8,000 and 10,000 feet. It had previously been collected in the same province by Henry (No. 8,879), and by Pratt (No. 356), whose specimens are now in the Kew herbarium. It resembles *P. japonica* in general habit, but it may at once be distinguished by its silvery farinose scape and inflorescence, and by the deep rose-purple or violet-coloured flowers. A more important diagnostic character will be found by an examination of the calyx, the lobes of which are longer and more gradually acuminate. *J. F. Duthie, Kew.*

ORCHID NOTES AND GLEANINGS.

ORCHID DISEASE.

In some Orchid nurseries in Germany and other countries the majority of the plants of *Vanda cœrulea* are just now suffering from a disease, the causes of which have hitherto been quite unknown. The leaves develop dark-brown blotches, which grow larger and larger, and at last bring about the destruction of the whole plant. Apart from the actual damage that occurs, the unsightly appearance of the plants attacked is a matter of no small importance. By the kindness of Mr. Beyrodt, of the well-known Orchid nursery at Marienfelde, near Berlin, I have been enabled to make some observations with regard to this disease. I found four different fructifying fungi on the diseased leaves that I examined. By inoculating healthy plants I discovered that one of them, a species of *Gloeosporium*, is the exciting agent of the disease now under consideration. It is to be assumed that the fungus has been imported, as fruits of this species have been found upon newly-obtained plants of *Vanda cœrulea*. The parasitical *Gloeosporium* that appears on *Vanda cœrulea* differs from other species of this genus that have hitherto been described in having more slender and narrower spores (conidia), and this inclines me to the opinion that this fungus is a new species. I therefore name it, in honour of Mr. Beyrodt, *Gloeosporium Beyrodtii*. This is its diagnosis:—

Gloeosporium Beyrodtii (Klitzing), a new species, appearing as a dense mass upon both sides of the leaves, sometimes running together; the stromata, which break out of the epidermis, are, when fully developed, from about 150 to 180 micromillimètres in size; pustules oblong, cushion-shaped; spore-masses waxy, from pale to reddish-yellow in colour. Hymenium smutty

* *Primula pulverulenta, Duthie.*—Rootstock short, stout. Leaves all radical, membranous, 6–16 inches long (including the petiole); limb obovate or oblanceolate, tapering below into the long winged petioles rounded at the apex, margins irregularly dentate, and often obscurely lobed, midrib and veins prominent beneath. Scape up to 3 feet in height, silvery-farinose, as also the pedicels and calyx; pedicels spreading, about $\frac{1}{2}$ inch long, elongating in fruit; bracts about as long as the pedicels (in flower), linear. Calyx equalling about two-thirds the length of the corolla tube, its tube thickly packed inside with white wax-like meal; lobes lanceolate, acuminate, valvate round the capsule after flowering. Corolla about 1 inch in diameter, deep rose-purple or violet, with an orange-brown eye; tube tinged with crimson; limb deeply divided, its base with ten minute inflexions, two under each lobe; lobes obovate. Capsule elliptic-oblong or subglobose.

in tint beneath. Conidiophores from 20 to 40 micromillimètres long and from 2 to 3 micromillimètres broad. Conidia hyaline 10 to 20 micromillimètres long, 2 to 4 micromillimètres broad, often curved like a sausage! I gave a fuller description in *Gartenflora*, 1905, p. 432. *H. Klitzing, Marienfelde, near Berlin.*

IONOPSIS TESTICULATA, Lindley.

Flowers of this singular little species were sent by Mr. J. Harding, gardener to C. Franck, Esq.,

LACHENALIA LILIIFLORA.

This distinct and pretty white *Lachenalia*, though described by Jacquin many years ago, seems never to have flowered in British gardens until recently, when it bloomed with Mr. James O'Brien at Harrow-on-the-Hill, whose daughter made the sketch from which the illustration (fig. 97) was prepared. The species known in gardens having tubularly-arranged segments or



FIG. 97.—LACHENALIA LILIIFLORA: FLOWERS WHITE.

Yatton Hall, near Bristol, who states that the plant was received from Jamaica. The plant is of tufted habit, with undeveloped pseudo-bulbs and terete acuminate leaves, resembling those of *Brassavola Perrinii*, and 4 to 5 inches in length. The inflorescence, about 6 inches in height, is wiry, branched and bearing numerous small whitish flowers, with rather elongated labellums, the blades of which are not broadly developed as in *Ionopsis paniculata*, the pretty lilac-and-white species more commonly seen in gardens.

flowers closely arranged, the present species comes as a novelty, pretty enough in itself, and likely to prove useful for hybridising with *L. aurea*, *L. pendula*, and other coloured varieties, and thus securing a new type with coloured and openly displayed flowers. It was collected in the Paarl district of South Africa, and like the other *Lachenalias* is a profusely-blooming cold greenhouse plant, requiring a dry resting season after flowering. Its leaves are dark green and pustulate.

THE ROSARY.

ROSA LÆVIGATA.

I wish to draw attention to this most lovely "evergreen" single-flowering Rose, particularly as single-flowering Roses are very great favourites. *Rosa lævigata* has been planted two years outside against a wall here, and is unscathed by frost, &c. One plant under glass planted three years ago produced three flowers, each of which was 6 inches across, of the purest white, and possessing a very delicate and peculiar perfume. The beauty of this Rose is not apparent until the flower is fully expanded, and then it is more like a lovely flower of *The Bride*, while *R. gigantea* is best seen in the bud or as partly-opened flowers. I can quite understand the appreciation expressed by "S. W. F." in the *Gardeners' Chronicle* three years ago when he had seen a good plant of this Rose in Devonshire. Another point is that the fine foliage of this Rose is immune from mildew, and is evergreen. *W. C. Leach, Allury Park Gardens, Guildford.*

FRUIT REGISTER.

APPLE YELLOW INGESTRE.

In some districts there have been heavy crops of this Apple in the present season, and the supplies in provincial and metropolitan markets have been larger than usual. It is often contended that the fruits are too small to render it a profitable variety to grow for sale, but the prices have been good this year, and the best samples in the shops are being sold at 3d. and 4d. per lb. The tree is very prolific and hardy, and in several seasons, when other Apples have been scarce, I have had good crops of Yellow Ingestre. As a standard on the free stock, it comes into bearing earlier than many other varieties, and on soils of medium strength the fruits possess a distinct and brisk flavour, which entitle it to the designation "first-rate" applied to it by some pomologists. Upon the heaviest and the lightest soils I have not found it so satisfactory, though it is more fitted for the former than the latter. In many markets and shops it is sold under the name "Golden Nob," a curious mistake, as the true "Golden Knob" is a late Russet Apple of good quality, but scarcely likely to be confounded with Ingestre. The companion Apple known as Red Ingestre is rarely seen, though both were Mr. T. A. Knight's seedlings and have been in cultivation over 100 years. It is said the varieties were raised from seeds obtained from the same fruit, as the result of one of the earliest crosses made between Apples, the varieties used being Golden Pippin and Orange Pippin. *L. Castle.*

SEPTEMBER AND OCTOBER PEACHES AND NECTARINES OF MODERN ORIGIN.

Assuming that scarcely any variety of Peach is worth eating after the middle of October in this country, I will jot down the names and characteristics of the best of the newer varieties, in view of early planting arrangements in and out-of-doors this autumn. The Nectarine Peach, having the smooth skin of a Nectarine, and melting, richly-flavoured flesh. It was obtained from a stone of *La Grande Noire* Nectarine. It is in season in the middle of September. *Radeliffe*, a pale-coloured Peach of excellent flavour; September and October. *Princess of Wales*, a very large, beautiful Peach, rich, melting; colour creamy-white with rose colour on the sunny side. *Lord Palmerston*, a seedling from the last named; in season till the end of September. One of the largest Peaches, colour creamy-white, and on the exposed side pink, flesh firm, melting; rich and abundant juice. In season at the latter half of September. A cling-stone unless fully ripe.

Lady Palmerston is another large, melting variety; handsome, with pale yellow flesh. This variety sprang from a stone of the Pine-Apple Nectarine, and is characterised with the flavour of that variety. It ripens at about the same date as the last named.

Of Nectarines desirable in the month of September mention may be made of *Byron*, a large-fruited, yellow-fleshed variety; *Victoria*, a roundish, oval fruit of a greenish-yellow tint, rich and sweet. The flavour is that of the *Stanwick*. It requires

ROSA SERICEA, LINDL., VAR. PTERACANTHA, FRANCIET.*

UNDER the name of *Rosa sericea* "*Les Grandes Épines*," this remarkable plant was exhibited at the last Royal Horticultural Society's meeting by Messrs. Paul & Son, of Cheshunt, on behalf of Messrs. Vilmorin, Andrieux et Cie, and was awarded a First-class Certificate. Previous to this it was exhibited at the recent international show at Edinburgh by the same firm, and received a Certificate of Merit. We have pre-

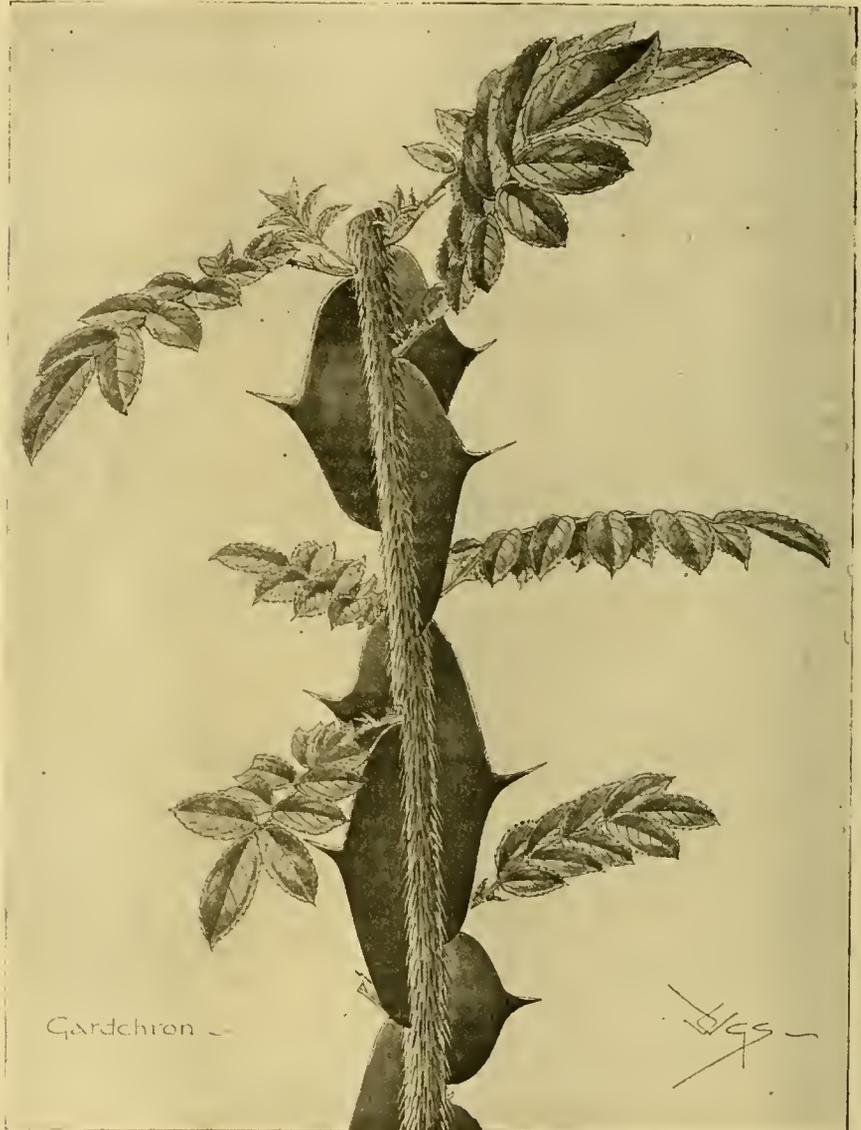


FIG. 98.—ROSA SERICEA VAR. PTERACANTHA: SPINES VERY LARGE, DECURRENT, TRANSLUCENT, BLOOD-RED.

From a specimen exhibited by Messrs. Paul and Son, Cheshunt, for MM. Vilmorin, Andrieux et Cie.

a fine warm summer and a position on a south wall to ripen it thoroughly out-of-doors, and is perhaps better adapted for culture under glass. Pine-Apple, a large fruit of almost oval shape and very richly flavoured. There is a large-fruited variety raised from Pine-Apple and named *Humboldt* that is worthy of a place as a late Nectarine. *F. M.*

PUBLICATIONS RECEIVED.—*School Gardening*, George Philip & Son, Ltd.—*Leaflets of the Board of Agriculture*, dealing with Dairy-farming, Bee-keeping, various Plant Diseases, and Insect Pests, &c.—*The Uses of British Plants*, by Rev. Professor Geo. Henslow, with copious illustrations: Lovell, Reeve & Co., Covent Garden, W.C.—*Gardening: a Guide for Amateurs in India*, by W. W. Johnson.—*Bulletins and Leaflets of the New Zealand Department of Agriculture*, dealing with various subjects—Cattle Breeding, Codlin Moth, three species of *Fr. & Filiz.*, Bee culture, Poultry-keeping, &c.

viously noted its exceedingly decorative character, and have now an opportunity of illustrating it. The extraordinary point about this plant is, as its name suggests, its enormously large, flat, decurrent prickles. These vary from 1 to 2½ inches in length, frequently extending the whole length of the internode. These prickles are thin, translucent, of a bright blood-red, becoming brown and woody with age. When young and viewed with the light passing through them they are very beautiful. The parts of the stem not covered with the large prickles are densely clothed with bristles, which are also of bright red colour when young. In habit of growth, leafage, shape, and colour of flowers this variety is very similar to the well-known type or species.

* *Rosa sericea*, J. D. Hook. in *Flor. Brit. India*, ii., p. 367. *Franchet Plant., Pélagay*, part 1. (1879), p. 220.

In fruit two forms of the variety are distinguishable, one with yellow and one with bright scarlet-coloured haws. These two forms come true from seed, and appear each to occupy its own particular geographical area. The form with orange-coloured fruit occurs in Eastern Szechuan and Western Hupeh, China; the form with red fruits in Western Szechuan and Yunnan. Both forms grow on bare, grassy, or scrub-clad mountain-sides, between 3,500 and 6,000 feet. The type itself is very common in the woods and thickets of the same regions, and extends up to 11,000 feet.

The plant with three varieties is included in

received this same plant from their collector, E. H. Wilson. The accompanying illustration (see fig. 99) shows Wilson's plant, which is now 9 feet high and 10 feet through, growing in Messrs. Veitch's Coombe Wood Nursery.

NURSERY NOTES.

MESSRS. J. STORMONTH & SONS,
KIRKBRIDE, CUMBERLAND.

AMONG the numerous nurseries now mainly devoted to the cultivation of hardy border and

land was added to the area under cultivation, until the firm is now well known to a wide circle of private and trade cultivators of the plants which are a speciality of the firm. The business is now conducted by Mr. J. Stormonth and Miss Stormonth, the son and daughter of the founder.

The nursery is situated in the rather quaint and picturesque little village of Kirkbride, on the Carlisle and Silloth branch of the North British Railway Company. On entering one is attracted by a group of neatly-arranged rockeries on either side of the roadway and containing a representative collection of good alpine flowers, which seem generally to do well here. This season, an unusually dry one for the district, has told on some of the more moisture-loving species, which, although but recently planted, were generally speaking in excellent health and condition.

The collection is, as has been said, a representative one, and on the rockeries and in the frames and nursery-beds I saw many good old and new plants. *Sempervivums* have been revelling in the sunshine of the summer, and such species as *rubicundum*, *obtusum*, *arachnoideum*, *Laggeni*, *Reginæ Amaliæ*, were very pleasing indeed to those who like these succulents. *Sedums* were also very happy, such as *dasyphyllum*, *obtusatum*, *obtusum*, and many more. There is also an excellent collection of alpine and other *Campanulas*. A favourite of the writer, *Campanula haylodgensis*, is in this nursery in unusually large numbers, and the stock of this *Campanula* is in excellent condition. It is very pleasing with its light blue flowers on its yellowish foliage. Here also were *C. pulla*, *C. turbinata pelviformis*, and the newer *C. t. Isabel* and *Riverslea*. *C. Stansfieldi*, a pretty light-coloured hybrid not yet well known, is also here. Both forms of *C. G. F. Wilson* were also good; while among others were *C. Raineri* and the fine one now becoming known as *C. pseudo-Raineri*, probably a hybrid. Among other bell-flowers were *C. glomerata* in several forms, some nice plants of selected *C. rotundifolia*, with *C. r. soldanellæflora* and a number more. One also observed in the rock-garden a fine plant of *Coronilla minima*, a species not easily retained in this country, but which apparently thrives well in the open at Kirkbride. Another nice plant, with a reputation for tenderness, in bloom was *Malvastrum Gilliesi*, also known as *Modiola geranioides*. The creeping *Veronica canescens* was doing well, and among other dwarf *Veronicas* were the pretty *V. Allioni*, *V. prostrata nana*, and some of the best of the dwarfer New Zealand shrubby species. An old plant less frequently seen than formerly in nurseries, but a good alpine, is the old double form of *Silene maritima*, whose white flowers trailing over a stone remind one of those of the old double white Pink. The *Ramondias* seem to do well here, and besides the ordinary *R. pyrenaica*, there is a quantity of the pretty white form, and of *R. serbica* and *R. s. Nathaliæ*, doing well also. There are a good number of the dwarfer *Potentillas*, including excellent plants of *P. nitida alba*, doing unusually well for this species, and the bright-coloured *P. Tonguei*—probably one of the hybrids raised in the forties, but referred by the *Index Kewensis* to *P. nepalensis*. *Mazus pumilio*, a troublesome subject with many, does well at Kirkbride at the base of a rockery. *Sisyrinchiums* are represented by *S. bermudianum*, *S. grandiflorum*, in both varieties; *S. striatum*, and the scarcer *S. bellum*.

The shy-flowering *Eriogonums* do not redeem their character for paucity of bloom at Kirkbride, but they are pretty rock-plants. Among those cultivated is the form of *E. Jamesii*, called *flavescens*. The important genus *Saxifraga* is remarkably well represented in its various sections, and the collection demands more time for its careful inspection. Glancing over my



FIG. 99.—*ROSA SERICEA* VAR. *PTERACANTHA*.
From a plant growing in Messrs. Veitch's Nursery at Coombe Wood.

Maurice de Vilmorin's *Fruticetum Vilmorinianum*, 1904, pp. 97-99, c. *ic*.

The plants illustrated differ from Franchet's type in being nearly glabrous and not woolly, but two specimens in the Kew Herbarium, collected in Manipur by Sir Geo. Watt in 1881-82, are exactly intermediate in degree of hairiness between the extreme forms. The specimens of Sir Geo. Watt's are of peculiar interest, inasmuch as they extend the distribution of this variety to the eastern frontier of India. Specimens of *Rosa sericea* itself, in the Kew Herbarium, show equally varying degrees of hairiness.

Messrs. Vilmorin's plants were raised from seed sent from Western China by Père Delavay in 1890. In 1900 Messrs. Veitch, of Chelsea,

alpine flowers, that of Messrs. Stormonth & Sons, at Kirkbride, Cumberland, is well known by name at least to cultivators of such flowers.

It had for some time been my intention to visit this nursery, but it was only in July last that an opportunity offered, with the result that I spent a very pleasant time among the many border and alpine flowers in the hands of the firm.

The business is an example of the many which have had small beginnings, but which have grown into considerable repute through the energy and enthusiasm of its owners. Some thirty years ago it was founded by the late Mr. Stormonth, in a very small way indeed, but year by year the business steadily increased, and more

notes, I may mention four forms of the favourite *S. Burseriana*—the type, major, grandiflora, and minor; *S. Ferdinandi* Coburgi; *S. cæsia*, Fortunei, Forsteri, Sturmiana, sancta, calyciflora, luteo-viridis, cochlearis, apiculata, with the favourite forms of the mossy and other sections too numerous to detail.

Primulas are also extensively cultivated, a strong feature being the number of plants of *P. denticulata* alba, with *P. Heeri*, *P. helvetica*, *P. scotica*, *P. frondosa*, *P. marginata*, and many more. The old double Primroses are in considerable numbers. These are cultivated in a broad trench in one of the fields. There is here a good lemon-coloured hybrid, raised at Kirkbride, between some unknown species and an *Auricula*. The Androsaces are in quantity, among them being *A. chamæjasme*, *A. villosa*, *A. Vitaliana*, *A. sarmentosa*, *A. s. Chumbyi*, *A. lanuginosa*, and *A. l. oculata*, with others of more or less difficulty of culture.

The alpine Dianthi are numerously cultivated, such as *D. calligonus*, *D. alpinus*, *D. a. albus*, *D. arenarius*, the true form of the hybrid *D. Atkinsoni*, *D. Napoleon III.*, and several more. Silenes are also grown, a good stock of *S. Elisabethæ* being seen, and plants of the double Catchfly, called by some *S. bryoides* fl.-pl., and by others *S. acaulis plenus*, being among them. It may be said that the collection is a thoroughly representative one, and that it also includes the best of the Anemones, Aubrietias, Arabises, Helianthemums, Artemisias, Anthemises, Alyssums, and the host of other plants now cultivated in the alpine-garden.

Shrubs suitable for the rock-garden and for small gardens are alone cultivated, and include several of the dwarfed Rhododendrons and Conifers. Roses are also grown.

The collection of border plants is a large one, noticeable being the number of plants giving flowers suitable for cutting, the firm supplying cut blooms for sale in Carlisle. Great breadths of Phloxes, Pyrethrums, Potentillas, Irises, *Monarda didyma* (of which there are three or four distinct varieties here), Scabiouses, Centaureas, such as the Montana forms, *C. macrocephala* and others; *Pæonias*, *Helleborus*, *Eryngiums*, *Coreopsis*, *Helianthus*, *Geums*, *Geraniums*, *Erodiums*, *Boronias*, *Heleniums*, *Poppies*, and all the most popular hardy flowers, besides many less frequently met with. A remarkable feature is the enormous stock of the double form of the Welsh Poppy, *Meconopsis cambrica*, which is quite a speciality at Kirkbride, whence thousands are sent away annually. A fine show in one of the fields was made by a large bed of *Iris Kæmpferi*, from plants originally imported direct from Japan.

It only remains to add that it is impossible to particularise the many good plants in this collection, which could only have been gathered together by one possessing a love of such hardy flowers apart from purely trade considerations—a trait not uncommon, however, among the members of the great nursery trade of the three kingdoms. *S. Arnott*.

CULTURAL MEMORANDA.

NICOTIANA SANDERÆ.

This plant has been quite a success with us. It branches very freely, and should be given plenty of space to develop. In order to get good specimens by the end of May the seed must be sown quite early in the year, or it is late in the summer before the plants begin to flower. Prick off and repot the young seedlings as occasion demands until they are in 7-inch pots. Such plants if well cared for before and after planting in their permanent quarters will commence to flower early in July. We have two

large beds of this annual, with the exception of a centre row of *N. sylvestris*, which latter we consider has shown up the new variety to advantage, as the colour of the flowers are rather dull when set out alone. Used as dot plants over an undergrowth of *Mesembryanthemum cordifolium* variegatum or White Alyssum, *N. Sanderæ* is very effective.

Many complain of the poor colour of some of the flowers, but we have only two plants out of our batch that merit this designation, and probably next year the seedsmen will have more decided colours to offer. The plants seed very freely, and we have gathered a considerable quantity during the latter part of September. Next season we intend growing it with *N. affinis*, thinking the two varieties will mix nicely together. *N. affinis* is a perennial with us, springing up all over the place when once planted in a bed, and we are wondering whether *N. Sanderæ* will do likewise. As yet the flowers are not nearly so sweet as those of *N. affinis*, nor as large, but these qualities may be obtained later by the cross-fertilisers. Owing to their sturdy habit the plants required no support before the exceptional gale in the first week in August, yet it is advisable not to place them in a very exposed position, as the growth is rather brittle. We hope to grow some plants in pots another year and keep them in a shady corner of the house, where the flowers should remain constantly open. *J. Mayne, Bicton, Devon.*

The Week's Work.

THE ORCHID HOUSES.

By W. H. YOUNG, Orchid Grower to Sir FREDERICK WIGAN, Bart., Clare Lawn, East Sheen, S.W.

House cleaning.—Light being so necessary to health and vigour in Orchids an early commencement should be made in cleaning the glass and woodwork both inside and out of those houses situated in more or less shaded positions. Houses exposed to the full light should be left until later or the blinds may have to be used on extra bright days, whereas the unwashed glass will afford sufficient shade and not obstruct too much light during dull weather. In preparing a compartment to be cleaned, remove all plants out of the reach of water, and if soft-soap be used some means should be adopted to prevent the dirty water running into the store tanks. When cleaning the shingle, keep a good look-out for slugs, snails, and other injurious subjects. If coal refuse is used on the lower stages a sprinkling of soot may advantageously be given to act as a deterrent to the above pests, and afford a fertiliser to the plants above. In my opinion coal refuse is the better moisture-holding material, for it offers less harbour to slugs, &c., and being dark in colour it affords a better ground-work for the effective display of the foliage of the plants. During the execution of this work all broken panes of glass should be replaced, and other necessary matters given attention.

Cleansing of Plants.—After the houses have been cleaned the plants will need attention. Wash the pots they are in and sponge the leaves, pseudo-bulbs, &c. Substitute clean pots for the dirty ones in use as stands. For sponging purposes no preparation is so satisfactory as warm water in which a little soft-soap has been dissolved. Insist on careful handling of the plants, for besides the harm that results from injury to the leaves the disfigurement caused thereby is a permanent eyesore for several years. In the re-arrangement let each be so placed that all the light available may reach that portion most in need of it. Plants with developing flower-spikes should be so arranged that the spikes will incline to the light. After any subsequent handling be careful to place a plant in the same position, or it may lose its symmetrical appearance.

Temperatures.—These will now have to be maintained in more or less degree by artificial

heat. The following figures should be approximated in accordance with the prevailing conditions outside:—*East Indian compartments*, morning 65°, noon 75°, night (about 10 P.M.) 70°; *Cattleya compartments*, morning 60, noon 68°, night 65°; *Intermediate compartments*, morning 55°, noon 60, night 58°; *Cool houses*, morning 50°, noon 55°, night 53°. It would be absurd to suggest that these figures should be adhered to under all conditions and every circumstance, for, as is commonly known, some houses would be too hot, and others too cold, even when the thermometer indicated the theoretically correct degree, and in such cases nothing but personal experience can teach one the proper course to pursue. The above temperatures are for present use, and should, as the winter approaches, be modified to suit the prevailing weather. The day temperatures also may rule higher with sun-heat, keeping the fires well in hand, but ready for use immediately more heat is required. The temperature in the mornings should always be low enough to allow of a rise soon after daylight, and should in no case have to be decreased on account of too much heat, few conditions being more conducive to ill-health in plant life than high night temperatures. Once again I would urge the advisability of utilising sun-heat whenever possible as an aid to the maintenance of the temperatures, only employing fire-heat for the purpose to the degree that is unavoidable.

THE FLOWER GARDEN.

By W. A. MILLER, Gardener to Lord HENRY C. BENTINCK, M.P., Underley Hall, Westmoreland.

Carnations.—It is advisable to pot up a proportionate number of layers, say 8 or 10 per cent. to provide a reserve stock from which to fill up vacancies that may occur in the beds that are planted. Use a compost consisting of turfy-loam, leaf-mould, and a sprinkling of sand. Pot firmly and place the plants in a cold frame in order that they may be sheltered from excessive rain and snow. Afford shade from bright sunshine for a few days, and afterwards let the plants be exposed to an abundance of light and air. Strong varieties may be planted in loamy soil in frames 6 inches apart. They will require to be lifted carefully next planting season. Use the Dutch-hoe on the surface of beds which have been planted recently, and keep a constant watch in case maggots get amongst the plants.

Abelia rupestris bears delicate pale pink-coloured flowers in autumn and thrives on a wall with a south aspect.

Leonotis Leonurus is a rather tender plant, but one worth trying in a warm corner in summer. Its whorls of showy bright flowers are very effective.

Shrubberies.—Before the deciduous shrubs lose their foliage, carefully examine the shrubberies and decide what transplanting, grubbing or similar operations are desirable. Judicious pruning is often necessary to prevent the strong-growing plants damaging rarer specimens. Let each shrub have sufficient space to display itself distinctly, thus preventing any appearance of confusion and choking. Remove any branches on choice varieties that are reverting to the type. Clear away any suckers starting from stocks, and keep the plant to one leader only, which will gather strength if the lateral branches are pruned.

Transplanting.—Evergreen shrubs and Conifers may be safely moved at the present time. Tie up the branches near the base with soft cord, and dig out a circular trench at a sufficient distance from the stem. In working from the trench towards the stem of the tree, remove the soil with a fork, preserving the roots as much as possible. Endeavour to lift a reasonable ball of earth intact with the roots. When the bush has been placed in position examine the roots, and make a clean cut where any portion has been broken. Spread them out evenly, working in amongst them some fine soil consisting chiefly of leaf-mould. If the soil is in good condition tread it very firmly as the work proceeds. Do not let the plants suffer from want of water, but make a "saucer" round the tree, and afford the roots a thorough soaking.

The Propagation of many deciduous shrubs may now be effected by cuttings of the current year's wood. Cut just below a joint, or in some instances with a heel of the previous year's growth. Make the cuttings 9 inches long, and insert them for two-thirds of their length firmly in the soil of a sheltered border. Forsythia suspensa, F. viridissima, Cornus sanguinea and the variegated form, C. alba Spaethii, many Willows, especially the golden-leaved variety; and Sambucus racemosa serratifolia foliis aureis, the best of the golden-leaved Elders, &c., may be thus treated; Cornus mas elegantissima is best grafted.

THE HARDY FRUIT GARDEN.

By W. H. CLARKE, Gardener to Sir WILLIAM PLOWDEN, Aston Rowant House, Oxon.

Root Pruning.—Trees growing too luxuriantly, and in consequence failing to produce satisfactory crops of fruit, should be root-pruned at the present time. This operation should be commenced as soon as the trees have been cleared of all their fruit. In the case of wall trees an examination of the soil should be made in order to determine if it is too dry for the operation, and if this is found to be the case a free watering should be given, and the tree allowed to remain a day or two before being root-pruned. Trees trained as bushes, pyramids, and cordons, also those trained on walls, usually require root-pruning at some period or another, and it often becomes necessary also in the case of standard-trained trees which are restricted to a limited space. The soil at the present time is generally in excellent condition for early root-pruning, and of sufficient warmth to favour and assist root action afterwards. Early root-pruning has the additional advantage of enabling large roots that have been severed to become callused over, and should a warm autumn follow small rootlets will be produced, thus enabling the tree to re-establish itself before winter, and often to fruit the following season. Large trees that have long been established should have one-half only of their roots pruned at one time, the remaining half can be similarly treated the following autumn. The operation of root-pruning is a simple one, but requires care. Commence by throwing out a trench at a distance of about 3 or 4 feet from the stem—the distance to be regulated by the size of the tree, gradually working in towards the stem with a garden-fork, while in some cases a small 3-tined fork is useful for the purpose. The loose soil should be thrown out with a spade, and the hole made sufficiently deep to enable any tap-roots growing in a perpendicular direction under the ball to be severed. The soil for a distance of from 2 feet to 2 feet 6 inches round about the stem should be left intact, and all strong-growing roots shortened to the latter distance, cutting the roots obliquely with a sharp knife from below upwards. In refilling the hole, consolidate the soil under the bole of the tree with a rammer, and well tread the soil generally as the work proceeds. Spread the roots horizontally at their proper depths, shorten with a clean cut any that have been broken or damaged, and place some prepared soil about them. If the soil is at all dry, a soaking of water should be given at once, following this by a mulching of manure containing plenty of straw-litter. In the case of stone-fruits, such as Apricots, &c., it is necessary to add a liberal mixture of old plaster or brick-rubble and lime siftings to the soil.

Crab Stocks.—Apples worked on this stock require severe root-pruning in order to keep the trees fruitful. The kind of stock can in most instances be determined by the degree of protrusion of the scion over the stock, this in trees worked upon the Paradise being very pronounced.

Pear Stocks.—Trees grafted upon the Pear stock require the same treatment as those upon the Crab, and unless they are severely root-pruned in cases of unfruitfulness, disappointing results will follow. Aged trees may sometimes be rejuvenated by the addition of fresh material about their roots, but in many cases, if in a debilitated condition, will not even then produce first-class fruit, and the grower will be repaid by planting young trees in their places, but not upon their exact sites.

PLANTS UNDER GLASS.

By A. BULLOCK, Gardener to E. J. WYTHES, Esq., Copped Hall, Epping, Essex.

Winter-flowering Carnations.—I have before remarked that the varieties America and Mrs. S. J. Brooke are two useful sorts, and can be relied upon to produce an abundance of flowers during the autumn and winter months. The earlier-propagated plants are beginning to develop their flowers, and their appearance generally justifies the good opinion I have of them. A judicious application of a fertiliser changed weekly is very beneficial, and among these I include Bentley's Carnation manure, Clay's Fertiliser, and a fish-manure. Unless it is desirable to hasten the flowers the plants should not be kept in a very moist or close atmosphere, for if other varieties are growing in the same house they would be likely to become weakly and drawn, with the result that the flowers would become small and the stems spindly. A temperature of 55° at night with a moderate circulation of air will keep the plants sturdy and strong, but the two varieties mentioned above may be kept at 60° by night, and receive an occasional syringing overhead, provided they are placed well to the light. At this season of the year some of the varieties have a tendency to throw a few short-stemmed flowers, which are often very poor and unsatisfactory, and should be removed. Only the strong vigorous shoots should be encouraged to bloom, and as the buds develop, the principal one only should be retained, care being exercised not to damage this when removing the side-buds. From old plants of last year a good quantity of flowers may be had, in addition to a supply of early cuttings, if they are picked over and placed in a gentle warmth. Cuttings propagated this month will make useful flowering plants in twelve months' time if the varieties named are selected.

Souvenir de la Malmaison.—It will be necessary now to keep a gentle warmth in the pipes in the house containing varieties of the Souvenir de la Malmaison type; but it is essential that there should be a free passage of air between the plants, and on bright, sunny days the stages should receive a good damping with water, choosing the morning for the operation, so that they may become dry again before night. An occasional examination should be made for red spider, any appearance of which must be dealt with at once. Afford water liberally to the roots while the weather is clear and open. Let plants that have not been recently potted be given an occasional sprinkling over the surface of the soil with either of the fertilisers mentioned above, always bearing in mind that little doses often applied are safe and effective.

FRUITS UNDER GLASS.

By F. JORDAN, Gardener to Dr. CORBET, Impney Hall Gardens, Droitwich.

The Orchard-house.—October is the best month in which to pot fruit-trees or top-dress those in pots, but the earliest varieties of Peaches and Nectarines, which are required for very early forcing, will have been potted some weeks ago. The house should now be cleaned and made ready for their reception, as it will soon be necessary to place the trees in position, although full ventilation can afterwards be applied, provided protection can be given when necessary. Care should be taken to select trees that are in pots of medium size, and on which the buds are in a plump condition, showing that the wood is perfectly matured. The most forward of the trees should be treated first, and it will be necessary to see that the roots are made thoroughly moist by watering them before they are turned out of the pots. A much richer compost is necessary for trees cultivated in pots than for those in borders. A suitable mixture is one composed of good fibrous loam four parts, lime-rubble and wood-ashes one part, and decayed horse-manure one part, with a liberal sprinkling of bone-meal and a little soot added. Mix these materials well together, and do not break up the loam very finely. See that the pots and crocks are made clean and dry before using them. Employ

plenty of drainage material, and pot each plant firmly, but not too deeply. Young trees intended to increase in size may be shifted into pots 2 inches larger in diameter than they are in at the present time, but in all cases over-potting should be avoided, for medium-sized pots filled with roots are much preferable to larger ones, as top-dressings of rich compost can be applied when the fruits are swelling. Old trees that should not be moved into larger pots should have a quantity of the soil picked away and the strongest roots pruned; they may then be put into pots of the same size as before. When the roots have been treated thus a good watering should be applied afterwards, and the trees syringed each day, affording them slight shade from sunshine if necessary. In a very short time new roots will have formed, and the trees will become established before the leaves fall. If the processes of disbudding and pinching have been properly carried out, very little pruning will now be necessary, but do not leave any young wood that will not be required for furnishing the trees. Attend to later trees as they become ready, bearing in mind that all potting operations should be completed by the end of the present month. Apple, Pear, and Plum-trees may be placed on a good ash bottom in some sheltered position out-of-doors, packing the spaces between the pots with Bracken or litter before severe frosts occur. The trees may remain there until they are required for placing in a moderate degree of warmth.

THE KITCHEN GARDEN.

By W. FYFE, Gardener to Lady WANTAGE, Lockinge Park, Wantage.

Winter Salads.—Lettuce plants raised from seeds sown early in August should now be in suitable condition for planting in pits or frames, or in a warm sheltered corner out-of-doors. During the dark days of winter the plants are very susceptible to "damping," and in order to avoid this as much as possible, allow them to be fully exposed to light, and plant them upon an open, well-drained bottom in a light, sandy loam. Keep the plants sturdy by allowing them plenty of room to develop, and ventilate the pits freely, removing the lights daily, and replacing them at night-time. The above remarks also apply to the culture of Endive, of which the broad-leaved Batavian is the best variety. Sow seeds of Mustard and Cress at the present time. Radishes intended for winter consumption must not be allowed to remain in a crowded condition.

Late Sown Carrots.—Carrots raised from seed sown during July should now be of a serviceable size for culinary purposes. This sowing is less liable to the attack from grub than if sown three months earlier. Early-sown Carrots often attain too large a size to be serviceable. Carrots that are allowed to remain in the ground to be drawn as required for consumption present that fresh appearance and brittle nature which are absent from roots that are stored.

Winter Spinach.—This useful winter vegetable should not be allowed to become crowded, therefore thin the plants early, and allow each individual plenty of room.

Spring Cabbage.—These since removal to their winter quarters have done well, owing to the ground being in good condition and to the frequent occurrence of showers when they were transplanted. They will soon be ready for "earthing-up." Where the plants are set out in shallow drills this is a simple process, all that is necessary being to make them firm by treading and then to draw the soil well up to and around them, by which means the plants will be kept firmly in the soil and prevented from being tossed about by autumn and winter winds.

Mushroom Beds may still be made in sheds, and may be constructed either flat or ridged-shaped. They will in all probability fail to yield crops during the winter, but if they are allowed to remain they will invariably produce an abundance of good Mushrooms during next spring. The beds must be well protected by a heavy covering of straw or litter.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Special Notice to Correspondents.—The Editor does not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editor does not hold himself responsible for any opinions expressed by his correspondents.

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY, Oct. 10. Royal Horticultural Society's Show of British-grown Fruit and Conference on Fruit-growing in the Royal Horticultural Hall, Vincent Square, Westminster (3 days). National Rose Society's Committee Meeting. Annual Dinner of United Horticultural Benevolent and Provident Association. Horticultural Club Meeting.

BALES FOR THE WEEK.

MONDAY TO FRIDAY NEXT—Dutch Bulbs, at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 10.30.
MONDAY NEXT—Annual Sale of Nursery Stock, at Sunningdale Nurseries, Windlesham, Surrey, by Protheroe & Morris, at 12.30.—Bulbs, Roses, Plants, &c., at Mr. Stevens's Rooms, 38, King Street, Covent Garden, W.C.
TUESDAY NEXT—Clearance Sale of Nursery Stock, at the Nurseries, Ash Vale, Aldershot, by order of Mr. H. Sleet, by Protheroe & Morris, at 12.
WEDNESDAY NEXT—Plants, Narcissus, &c., at 67 and 68, Cheapside, E.C., by Protheroe & Morris, at 5.—Annual Sale of Nursery Stock, at the Old Nursery, Spring Grove, Isleworth, by order of Mr. H. A'Bear, by Protheroe & Morris, at 12.—Bulbs, Roots, and Lily of the Valley, at Mr. Stevens's Rooms.
THURSDAY NEXT—Unreserved Sale of Orchids, Greenhouse Plants, &c., at Grenaby House, Sydenham Road, N. Croydon, by Protheroe & Morris, at 12.
THURSDAY AND FRIDAY NEXT—Great Annual Sale of Nursery Stock at the Tunbridge Wells Nurseries, Tunbridge Wells, by order of Messrs. T. Cripps & Sou, Ltd., by Protheroe & Morris, at 11.30.
(For further particulars see our Advertisement columns.)

AVERAGE TEMPERATURE for the ensuing week, deduced from observations of Forty-three Years at Chiswick—52.2°.

ACTUAL TEMPERATURES:—

LONDON.—Wednesday, Oct. 4 (6 P.M.): Max. 58°; Min. 51°.
Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—Thursday, Oct. 5 (10 A.M.): Bar., 29.6; Temp., 56°. Weather—Fair, with occasional bright sunshine.
PROVINCES.—Wednesday, Oct. 4 (6 P.M.): Max. 55°, Portsmouth; Min. 50°, N.E. of Scotland.

Recent Chrysanthemum Literature.

ON two previous occasions in the *Gardeners' Chronicle*, March 6, 1897, and August 24, 1901, Mr. HARMAN PAYNE referred to the recently-published literature on Chrysanthemums. Since the last contribution appeared it is curious to note, says Mr. PAYNE, that no matter where the flower is grown and shown, or to what degree of popularity it attains, the devotees of the famous autumn flower do not seem to feel the slightest interest in the scientific or literary phases of the subject, and do not offer any encouragement to horticultural writers and publishers to produce anything like a high-class monograph upon its history, literature, or culture. [We fear this remark applies to most other genera of cultivated plants. Ed.]

With very few exceptions, writes Mr. PAYNE, the whole range of Chrysanthemum literature includes, so far as independent treatises are concerned, nothing but sixpenny and shilling pamphlets, a very remarkable fact when we consider the way in which the flower has been grown in this country as well as elsewhere in Europe, and the enthusiastic reception accorded to it during the latter half of the nineteenth century. In most of the cases where a Chrysanthemum book has been published beyond the price already mentioned, the

venture has not been signalled by that success which one might reasonably have expected to attend it.

Chrysanthemum-growing, in spite of what many enthusiasts may say to the contrary, is in this country very largely a selfish and a money-making pursuit. The grower does not now love the flower for itself, but for what it will produce. He will spend his money freely to buy novelties that enable him to win gold medals, big money prizes and silver cups, but he cannot or will not afford anything beyond the merest trifle for the best book ever written on the flower which he cultivates with so much assiduity. The reader will not therefore be astonished to find that the record of the literary output since the last contribution on the subject, is one that does not contain the names of many books of exceptional merit.

The total number of new treatises from all sources published since the last article appeared is sixteen. Seven of these have appeared in England, four in France, three in America and two in Italy, and of these one of the Italian publications is particularly meritorious.

Dealing first with the English publications, *The Book of the "Mum" and how to Grow them to Perfection*, by E. H. POTTER, and the *Chrysanthemum and its Culture*, by THOMAS JOINSON, are inexpensive pamphlets. *Chrysanthemums and how to Grow them*, by J. B. WROE, is a handy little cultural manual of eighty-six pages, illustrated, and having special regard to the culture for exhibition. *Pictorial Practical Chrysanthemum-culture*, by WALTER P. WRIGHT, is a somewhat more pretentious work, is bound in cloth, runs into 128 pages, is very freely illustrated, and is described as a plain guide describing every branch of Chrysanthemum growing. A passing mention may here be given of two other little cultural guides which should have been referred to at the beginning of this paragraph, viz., *Chrysanthemums and How to Grow Them*, by E. HARRIS; and *Chrysanthemums*, by E. HASLER POTTER.

The most important English contribution to the literature of the Chrysanthemum is Mr. D. B. CRANE'S *Chrysanthemums for Garden and Greenhouse*, recently published. This is a handy cultural manual of one hundred and eighty pages, neatly bound in cloth, well printed, and containing a large number of illustrations. The special feature of this book is that it deals with the Chrysanthemum, not as an exhibition flower, but more as a decorative subject for use in the garden and greenhouse. Thus the early and semi-early varieties, so valuable at this season of the year in the garden, and which have been so greatly improved of late years, are very fully dealt with by the author, who has devoted much time to the study of them in every way. Among other headings we notice:—Stock-Plants for Propagation, Propagation by Cuttings and by Division, Early and Semi-early Varieties, Late-flowering Varieties, Diseases, Insects; the book concluding with a most comprehensive list of garden Chrysanthemums, followed by selected lists for various purposes.

In France, notwithstanding an ever-increasing enthusiasm for the culture of the Chrysanthemum and a considerable development of the exhibition fever, literary work outside the organs of the periodical gardening

press has not been of any great importance. *Les Différentes Cultures du Chrysanthème*, by the late HENRY L. DE VILMORIN, a work that has hitherto escaped notice in the English Press, no doubt because of its not being issued through one of the ordinary publishing houses, contains an interesting resumé of the history of the Chrysanthemum, besides much cultural matter. *Le Chrysanthème à Grande Fleur en pleine terre*, by EDMOND ROUCAÏROL, is a mere pamphlet, bearing no date and published locally. In *Maladies et Parasites du Chrysanthème*, by Dr. J. CHIFFLOT, of Lyons, together with the coloured plate issued with it, and which have both been already noticed in these columns, we have a valuable work for the practical grower, as with the aid of these two works insect and other pests can easily be identified, and the remedies are given. The last of the recent French treatises is M. ANATOLE CORDONNIER'S *Abrégé du Chrysanthème à la grande Fleur*, which, as its title implies, is an abridgment from M. CORDONNIER'S older and better known work, which has now run into five or six editions.

American authors have not been remarkable for literary activity in this special subject, and we have only to record the publication, last year, of *Smith's Chrysanthemum Manual*, by ELMER D. SMITH, formerly Secretary to the Chrysanthemum Society of America, a neatly printed little pamphlet of seventy-eight pages, in paper wrapper, illustrated, and of course intended primarily for Transatlantic cultivators. Particularly interesting are the *Proceedings* of the first annual meeting of the Chrysanthemum Society of America, which contains the text of papers read at the Chicago Convention in 1902; and also the *Proceedings* of the second annual meeting, held in New York in 1903, which (*inter alia*) contains a very exhaustive catalogue of Chrysanthemums cultivated in the States, a notice of which has already appeared in these pages.

We now pass to Italy, and should hardly have expected to find so important a new book on the Chrysanthemum as DARIO FORMILLI'S *Il crisantemo, storia, classificazione, descrizione e cultura*, published in Turin two years ago. A volume containing nearly 300 pages, with several coloured illustrations, and others in black-and-white, it seems to cover the whole field of literary, historical and cultural matter relating to the famous oriental Composite. It is unfortunate, however, that this author repeats the error that we have so often tried to correct, that BLANCHARD was the introducer of the large-flowering Chrysanthemum from China in 1789; the proper name was long ago well ascertained to be Blancard.

Of the other Italian book little can be said. It was not an original work, and was withdrawn from circulation. From Belgium, Holland, Germany, and Portugal, whence we had already had several contributions to the bibliography of the Chrysanthemum, nothing has appeared in the interval since Mr. PAYNE last wrote.

Periodical Chrysanthemum literature, to which reference was made in former contributions, appears to be in a bad way. *Les Annales de la Société des Chrysanthémistes du Nord de la France* were issued for a short time and then ceased, and it is believed that the Society has also ceased to exist. *Le Soleil d'Automne*, the monthly organ of the Swiss National Chrysanthemum Society, has



INULA ROYLEANA, YELLOW-FLOWERED, HARDY COMPOSITE; BRACTS CHOCOLATE-BROWN,
FROM MR. GUMBLETON'S GARDEN.



suffered a like fate, and probably the Society too. *Il Crisantemo*, the quarterly official Journal of the Italian National Chrysanthemum Society, has not been issued for about a year, but in this case the Society is still in active working. I have no doubt that the *Journal* of the Chrysanthemum section of the National Horticultural Society of France is still supplied to the Committee.

Le Chrysanthème, the official organ of the French National Chrysanthemum Society at Lyons, appears with unflinching regularity, and is well supplied with news by its many contributors. Recent numbers are rendered of increased interest by the inclusion of instalments of the Society's Official Catalogue of Chrysanthemums now grown in France.

INULA ROYLEANA* (see Supplementary Illustration).—A handsome border plant, if rather coarse, with the habit of *I. Helenium*, flowering according to Mr. GUMBLETON, the third year from seed. It is a stout herb 1 to 3 feet high, with the stems grooved, pubescent, or villous and glandular. Leaves obtuse, denticulate, glabrate, pubescent or villous above, sometimes thickly woolly beneath; radical-ovate or oblong with a long-winged petiole; cauline leaves variable, lyrate auricled at the base, with a conspicuous red midrib; heads very handsome, yellow, 3 to 4 inches in diameter on a stout, woolly or hirsute peduncle; bracts chocolate-brown, inner involucrel bracts slender acuminate. For the specimen whence our illustration by Mr. WORTHINGTON SMITH was taken, we are indebted to Mr. GUMBLETON, who thinks very highly of the species as a decorative plant. It is a native of the Western Himalaya, Kashmir, &c. HOOKER states that the roots are used to mix with those of *Saussurea Lappa*, a plant used for medicinal purposes in India, and supposed to have been the *Costus* of the ancients.

ROYAL HORTICULTURAL SOCIETY.—We may remind our readers of two important events that will take place at the Hall in Vincent Square during the present month. These are the great Fruit show to be held on Tuesday, Wednesday, and Thursday in next week, and the vegetable show on October 24.

"BOTANICAL MAGAZINE."—In the October number we find illustrations and descriptions of the following plants:—

Brachyglottis repanda, Forster, t. 8037; see *Gardeners' Chronicle*, 1895, i., p. 736, fig. 110. A hardy or half hardy shrubby Composite from New Zealand.

Skimmia japonica, Thunberg, t. 8038.—The true plant, as was pointed out in these columns in 1889, the plant commonly so-called, even now, being a Chinese plant, *S. Fortunei*, Masters.

Forsythia europæa, Degen, t. 8039.—The Albanian species referred to in the *Gardeners' Chronicle*, 1904, ii., p. 123, fig. 50. Mr. HEMSLEY points out that *F. Fortunei*, Lindley, in *Gardeners' Chronicle*, 1864, p. 412, and *F. Sieboldi*, Dippel, are varieties of *F. suspensa*; and *F. intermedia* × is a cross between *F. suspensa* and *F. viridissima*. The present plant is of more compact habit than *F. viridissima*, but as an ornamental plant is not equal to *F. suspensa*.

Colchicum hydrophilum, Siehe, in the *Gardeners' Chronicle*, 1901, vol. i., p. 102, fig. 43, t. 8040.—Allied to *C. libanoticum* of Ehrenberg, but with narrower perianth-segments.

Mormodes buccinator, Lindley, var. *aurantiaca*, Rolfe, t. 8041.—Differs from the type in its orange-coloured flowers.

* *Inula Royleana*, D.C., Prod. v., 464 (1836); J. D. Hook, *Flora Brit. India*, vol. iii., p. 292 (1882).

HELPING THE CHARITIES.—We are glad to hear from Mr. W. D. SKINNER, Hon. Secretary of the Woolton Chrysanthemum Society, that the Committee of that Society is desirous of helping the Gardeners' Royal Benevolent Institution. Believing that in their district, which is situated near to Liverpool, a concert in aid of the funds would not be likely to yield a profit, the Committee has passed a resolution recommending all winners of prizes at the annual show to devote 5 per cent. of their winnings for the purposes of the Charity. The Secretary adds that as fully 75 per cent. of the prize-winners were represented at the meeting, there is no doubt but that a considerable sum will be obtained on the day on which the prize-money is paid out. We are sure that the Secretaries of the Gardeners' Royal Benevolent Institution and the Royal Gardeners' Orphan Fund would be glad to hear from other Committees who may be willing to follow so excellent an example.

FLOWERS IN SEASON.—Michaelmas Daisies just now are very much in season, for they are met with everywhere, and no border of herbaceous plants is complete without some of the numerous forms and varieties of these easily cultivated and showy flowers. Probably the most decorative of all is *Aster Amellus*, of which Mr. AMOS PERRY, Winchmore Hill, N., sends us as many as fifteen distinct forms, many being decided improvements on the type. *A. Amellus Perry's Favourite* has mauve-pink-coloured blooms. The habit is most floriferous, and the individual flowers are large and of good form, the ligulate petals being broad in proportion. *A. A. Nancy Perry* possesses a beautiful shade of lavender-blue colour, and has much the same habit as *Perry's Favourite*. Profusion is also a beautiful variety, with flowers a fine shade of blue colour. One called *Bicolor* has the ligulate florets of two shades, the lighter shade being at the tips.

—Messrs. H. CANNELL & SONS, Swanley, have sent us specimens of the little-known Anemone type of *Dahlia*, in which the centre florets are quilled and form a cushion, as in *Chrysanthemums*. These flowers exhibit improvement, and are attractive. With these was a fine flower of *Dahlia Grand Duc Alexis*, illustrated in these columns, Oct. 6, 1894, p. 409. It will be remembered that all the florets in that variety are of considerable width, and each is rolled from the sides inwards towards the middle of the upper surface. Messrs. CANNELL state that since the date mentioned they have raised 10,000 seedlings, but have failed to obtain any satisfactory results until quite recently, when a variety of the same type but with golden-yellow-coloured flowers opened into bloom.

—From Mr. J. MAYNE, Bieton Gardens, Devonshire, we have received bunches of exquisite Violets of most of the varieties that were mentioned by our correspondent in his cultural article published in these pages on April 22 last, p. 244. The flowers received so fully prove the value of Mr. MAYNE's cultivation, that readers residing in localities having at all similar conditions to those existing in Devonshire would do well to adopt the same treatment. We may add that the variety *Comte de Brazza* does not flower well until January, and the *De Parma* is not yet in bloom.

VITIS (AMPELOPSIS) HENRYANA.*—Messrs. JAMES VEITCH & SONS send us sprays of *Vitis* (or *Ampelopsis*) *Henryana*, which they are justified in calling "magnificent." The habit is that of the common Virginian Creeper. The young foliage is rich scarlet, the older foliage has a bronzy tint like that of *Leea amabilis*. The leaf lobes, both in the young scarlet stage as well as in the adult forms, have a silvery band along the midrib and side branches.

* Hemsley, in *Journ. Linn. Soc.*, vol. xxiii., 132.

OTE HALL.—HERBERT WOODS, Esq., the tenant of the pretty estate illustrated in our last issue, reminds us that its owner is General TEMPLE GODMAN.

GARDENING TUITION IN STAFFORDSHIRE.—Recently, at the County Education Buildings, Stafford, the Countess of LICHFIELD distributed the prizes to the successful pupils in the practical gardening classes that the County Education Committee have conducted in various villages throughout the county. Mr. J. T. HORNER, Chairman of the Education Committee, presided, and there were present the Earl of DARTMOUTH, the Earl of LICHFIELD, Lord HATHERTON, Sir REGINALD HARDY, and others. The Chairman said the gardening classes were commenced in 1896. Ten were started in the year. In 1897 there were twenty, and in 1901 they had increased to thirty, which was the number now in existence. The classes were rendered possible by the wise forethought of the old Technical Institution Committee, who in 1894 established classes in horticulture for teachers, so that all along they had had a number of competent teachers. The present exhibition was limited to the evening classes owing to the want of room, and also to the fact that each pupil sowed the same seeds, making it possible to ascertain the merits of each. There were now sixty-four classes in connection with the elementary schools. Lady LICHFIELD distributed the prizes, which consisted of books.

PRUNUS BUREIANA (double-flowered variety).—Under this name, M. ANDRÉ describes and figures in the *Revue Horticole*, for August 16, a purple-leaved Plum with double flowers of a pale rosy-lilac colour. The tree is evidently a near ally of *Prunus cerasifera* var. *Pissardi*, but the leaves are larger, more acutely toothed, the peduncles shorter, the flowers themselves larger. It is a desirable addition to our spring-flowering shrubs.

THE EDINBURGH SHOW.—We are reminded by Mr. DAVID W. THOMSON, nurseryman, Edinburgh, that among the exhibits of Conifers on the roof of the Waverley Market there was one from his nursery composed of Conifers and cut shrubs from 4 feet to 9 feet in height. The other exhibitors of shrubs were Messrs. JAS. DICKSON & SONS, LITTLE & BALLANTYNE, and CUNNINGHAM, FRASER & Co. Mr. THOMSON's bright group of flowering plants in the hall itself was, as was stated in our report, awarded one of the three Gold Medals given by the Royal Horticultural Society.

ANNUAL DINNER.—As previously announced, the annual dinner of the United Horticultural Benefit and Provident Institution will take place on Tuesday next, at the Holborn Restaurant. Mr. W. MARSHALL will preside.

HORTICULTURAL CLUB.—The house dinners will be resumed on Tuesday next, October 10, at the Hotel Windsor. Mr. R. J. G. READ, C.E., will give an address on "Notes of Trees and Flowers in Visiting the United States," illustrated with lantern-slides.

PLANT PORTRAITS.

ROSE MME. JULES GROLEZ, H.T., Guillot.—*Rosen-Zeitung*, July. Buds pointed; petals deep rose-coloured, rolled back at the edges.

HYDRANGEA VESTITA VAR. PUBESCENS = H. BRETSCHEIDERI.—Hardy Chinese shrub. *Gartenwelt*, August 12.

SALIX COTTETII ×.—A supposed natural hybrid between *S. nigricans* and *S. retusa*. It forms a prostrate shrub well adapted for the rockery. *Gartenwelt*, August 12.

HELIANTHUS SALICIFOLIUS.—Remarkable for its long linear leaves and numerous, long-stalked, small, yellow flower-heads aggregated at the ends of the stems. *Revue de la Horticulture Belge*, September.

LEAVES FROM MY CHINESE NOTE-BOOK.

ON CHINESE CEREALS, VEGETABLES, AND CULINARY OIL-YIELDING PLANTS.

(Continued from p. 245.)

PULSE.

SINCE the Chinese are to such a large extent vegetarian, this is necessarily a most important crop. The common Pea (*Mé-wan-tzu*) and Broad Bean, with the Soy Bean (*Glycine hispida*) are the more important. The two former are winter crops in the valleys and summer crops in the highlands. The Soy Bean is everywhere a summer crop.

Peas and Broad Beans are eaten both fresh and dried. They are also ground into flour and made into vermicelli. The young shoots of the Pea are eaten as a vegetable. The Soy Bean (*Huang-tou*) is of even greater value than the preceding. It is planted everywhere—in fields by itself, around Rice and other fields, and as an under-crop to Maize and Sorghum. It yields seeds of three colours, viz.—yellow, green, and black. The Chinese distinguish three kinds of the yellow, and two kinds each of the green and black. These varieties yield a succession of Beans, the black being fully a month later than the others. This Bean is cooked and eaten as a vegetable, or ground into flour and made into vermicelli; preserved in salt it makes an excellent pickle. It is also extensively used in the manufacture of Soy sauce and Soy vinegar. A variety with small yellow seeds is largely employed for making Bean-curd.

Whilst in Central and Western China the Soy Bean is cultivated exclusively as a food-stuff, in Manchuria it is grown almost solely for its oil and for the refuse-cakes. From Newchuang, the port of Manchuria, there is an enormous export trade done in this "Bean-cake," which is in great demand as an agricultural fertiliser in all parts of China. Bean-oil, the culinary and illuminant oil of Manchuria, is replaced by Cabbage-oil (*Ts'ai-yu*) in the Central and Western Provinces of China. *Phaseolus Mungo* (*Lu-tou*) and *P. Mungo* var. *radiatus* (*Hung-ton*) are both summer crops. The seeds of the *Lu-tou* (Green Bean) are especially valued for their sprouts. To obtain these the Beans are put in jars with water and covered over. Under these conditions they quickly develop shoots a couple of inches or more long. These Bean-sprouts are highly esteemed as a vegetable. Of the *Hung-ton* (Red Bean) there are two or three varieties. The seeds of these are used as a vegetable, or ground into flour and employed for stuffing cakes and sweetmeats.

Arachis hypogea (*Hua-shèng*) is cultivated as much for food as for the oil it yields. It prefers very light soil, and is largely grown as a summer crop in alluvial areas. It occupies the ground from April till September. The seeds are roasted and eaten with great relish. They are also a favourite ingredient of confectionery. The oil which is expressed from the seeds is used largely to adulterate Cabbage-oil. The young shoots of this plant are eaten as a vegetable.

Ervum Lens (*Chin-mé-wan-tzu*) is cultivated as a winter crop, being commonly associated with Peas and Broad Beans. It is, however, by no means an extensive crop. The seeds are eaten cooked. Oil is occasionally expressed from the seeds and used for lighting purposes.

Dolichos Lablab (*Pien-tou*), of which there are several varieties, *Canavalia ensiformis*, *Phaseolus vulgaris* (*Yün-tou*), and *Vigna Catiang* are all commonly and extensively cultivated. Though the seeds of the first three are eaten, it is more for the pods, which are sliced, cooked, and eaten as a vegetable, that these plants are valued. The cylindrical pods of *Vigna Catiang* are from

1½ to 2 feet long, and about the thickness of a lead-pencil. Though the Chinese esteem it, I have found it only a very tasteless vegetable.

As a winter-crop in parts of the Yang-tsze Valley, *Melilotus macrorhizus* (*Yeh-hua-tsen*) is sparingly cultivated. The green shoots are sometimes eaten as a vegetable; the seeds are used medicinally for colds.

CABBAGE.

Brassica chinensis.—Of these the Chinese have their own peculiar varieties, all of them very different to those grown in this country. Their favourite variety, *Peh-ts'ai*, or Shantung Cabbage as we have styled it, is more like a huge *Cos Lettuce* than a Cabbage. This is grown everywhere, but attains its greatest perfection in the colder parts of China. In the Yang-tsze valley it is best when grown as a winter crop. Another striking variety is the *White-ribbed Cabbage* (*Kin-ta-ts'ai*), which is said to be peculiar to Szechuan. In addition to these the Chinese cultivate some half-a-dozen other varieties. These Cabbages are eaten fresh or are preserved by salting and drying in the sun. From a European standpoint none of the Chinese Cabbage is worth growing, being so very inferior in flavour to our own. The Roman Catholic Fathers have introduced the common European Cabbage, but though its culture has spread widely the Chinese much prefer their own varieties. Whilst the Chinese Cabbages are all really referable to *Brassica campestris* it is convenient to group them under *B. chinensis*.

As a winter crop green Kale (*Kan-kan-ts'ai*) and dark-red Kale (*Ts'ai-tai*) are cultivated throughout the Yang-tsze valley. The young shoots of *Brassica juncea* and *B. campestris* var. *oleifera* are also used in the same way as Kale.

CUCURBITS.

Gourds, &c.—The Chinese cultivate a great many of these for food, the whole family being known under the general name of *Kua*. Some are eaten raw, and others cooked. The male flowers, too, are eaten by the peasantry. The seeds of the *Water-Melon* are esteemed a great delicacy. These are slightly roasted, and are consumed in enormous quantities; no banquet is complete without them, and over their gossip in tea-shops or restaurants scholars and coolies alike regale themselves with these delicious morsels. Preserved in sugar these Melon-seeds also form a favourite sweetmeat.

As a summer crop throughout the Yang-tsze valley the following are commonly cultivated:—*Cucurbita citrullus* (*Hsi-kua*), *Cucumis Melo* (*Tien-kua*), *Cucurbita maxima* (*Nan-kua*), *Lagenaria vulgaris* var. *clavata* (*Hu-tzu-kua*), *Cucumis sativus* (*Huang-kua*), *Lagenaria leucantha* var. *longis* (*Ts'ai-kua*), *Cucurbita orifera* (*Sun-kua*), and *Benicasia cerifera* (*Tung-kua*). *Momordica Charantia* (*Ku-kua*) is eaten when young, and when old is used as medicine. *Luffa cylindrica* (*Ssu-kua*) is eaten when very young, when old the fibre is esteemed as medicine. *Lagenaria vulgaris* (*Hu-lu*) is cultivated for its hard shells, which are used for holding water, oil, wine, &c. In addition to the above several Gourds are cultivated for their ornamental fruits, which the Chinese use for decorative purposes.

ROOT CROPS.

Sweet Potatoes (*Batatas*).—In the valleys, plains, and low hills bordering these throughout the Yang-tsze valley and Yunnan, the Sweet Potato (*Ipomoea Batatas*) is the most important root crop. The crop is always cultivated on ridges. Roots are planted out in May, and cuttings from the shoots of these are inserted in July and early August and produce a fine crop in October and November. The crop from the old roots is ready in August. Sweet Potatoes are eaten boiled, baked, and fried in chips, and constitute a truly delicious dish. As they deteriorate by keeping

they are cut into slices, scalded, and then dried in the sun. The tubers and strips are also macerated in cold water, and the resultant starch dried and made into vermicelli. In Hupeh the Sweet Potato is known as the "Hung Shao," in Szechuan as the "Pen Shao."

Potatos.—In the mountainous districts the Sweet Potato is displaced by the Irish Potato, which has become a most important crop. It was introduced by the Roman Catholic Fathers at the time of a great famine some thirty-five years ago. Its culture has spread enormously, and though it is despised by the Rice eating Chinese of the plains it has become a staple article of food with the highland peasantry. In the valleys it is cultivated as a late winter crop; in the mountains as a summer crop. Its culture is unfortunately but little understood; it is always grown too thickly, and seldom if ever properly earthed-up. Both red and white-skinned varieties are cultivated, but the flavour is usually very poor. The Potatoes cultivated by the Buddhist priests on Mount Omi are celebrated, but the best I ever ate in China were grown by Sifan tribesfolk around Sung-pan.

Yams.—Three kinds of these are commonly cultivated—viz., *Dioscorea Batatas*, *D. alata*, and *D. Decaisneana*. The last is the *Ti-kua* of the Szechuanese. It yields Turnip-shaped tubers, which are eaten both raw and cooked. *Dioscorea alata*, the *Chieh-pan-shao*, has enormously large, flat, branching tubers, which, like those of *D. Batatas* (*Pai-shao*), are cooked and eaten. Around Ichang the tubers of another species (*D. zingiberensis*) are eaten. This species is known as the *Huang-chiang* (Yellow Ginger). The tuber is bitter, and is valued chiefly as a medicine. Chinese Yams do not equal the Sweet Potato in flavour, and are not so extensively grown.

White Turnips, both long and round, are cultivated everywhere, but the flavour is very poor. The so-called long red Turnip of the Chinese is really a Radish (*Raphanus sativus*). All three are cooked and eaten when fresh, or preserved by slicing and drying in the sun.

Brassica napus var. *esculenta* (*Ta'tou-ts'ai*) is very generally cultivated, but I met with it most frequently on the Chentu plain. The whole plant is pickled and eaten with rice. The Szechuanese also cultivate most excellent Kohl-rabi.

Colocasia antiquorum and *C. antiquorum* var. *Fontanesii* (*Kiang-tou*) are very extensively cultivated for their tubers, which are cooked and eaten in various ways. Both are grown on ridges in flooded ground. The petioles of the *Kiang-tou* are sliced, pickled, and eaten. The flavour of the tubers of these plants is similar to that of the Jerusalem Artichoke, but inferior.

Sagittaria sagittifolia (*T'zu-ku*) is cultivated in Szechuan and Yunnan, and the tubers are cooked and eaten in the same way as those of the *Colocasia*.

The tubers of *Scirpus tuberosus* (*P'ei-chi*) and the fruits of *Trapa natans* (*Ling-chio*), two very common aquatics, are esteemed valuable articles of food.

Nelumbium speciosum (*Lien-hua*) is cultivated for its seed and rhizome. Both are used as food, but being expensive are a luxury enjoyed only by the wealthy. The fibres of the rhizome are used medicinally.

Ginger (*Seng-chiang*) is very extensively cultivated. It is prepared for the table in various ways. From Canton, Ginger preserved in sugar is exported in quantity to this country.

Amorphophallus Konjac (*Mo-yü*) is sparingly cultivated throughout the Yang-tsze valley. The tubers are ground up with water and made into a curd-like compound. On Mount Omi this plant is more generally cultivated than elsewhere in the west.

CULTURE OF CATTLEYA HARRISONII.

GARDENERS who are called upon to supply choice flowers for cutting during the autumn should not overlook the above-named Cattleya. A few years ago my employer received about three dozen recently collected plants from South America. They did not come to us at what I think is the best time, viz., from the end of February to April, hence we did not pot them up until a month or more. Meanwhile we laid them out thinly on a stage in a house with an intermediate temperature, being careful not to let them have much moisture about them. At that time of the year (January) there was plenty of moisture in the atmosphere of all warm green-houses to prevent newly-imported Orchids suffering from the want of it. Before potting we cleared away all old shrivelled growths, sponged over the leaves, and then dipped the plants into a mixture of XL-All insecticide, prepared

I ought to say here that these notes are not written especially for Orchid-growers, but for that larger class who love choice flowers and are desirous to grow some at home without being in a position to make a speciality of their culture. As soon as the whole were potted up they were stood on a side stage in a span-roofed plant-stove, care being taken not to give them too much water at the roots, yet keeping the rooting medium fairly moist all along. In due time every plant broke into growth, many of them also giving us flower-spikes the following autumn. They have continued to do so each year since. As in the case of *Cattleya labiata* imported about the same time, there is considerable variation in the flowers as to colour and form. One great advantage they have is that they will keep fresh for quite three weeks after they are fully developed. The deeper-coloured varieties look charming when used for table decoration along with suitable foliage. I am sending you herewith a spike with eleven flowers upon it; we have had them

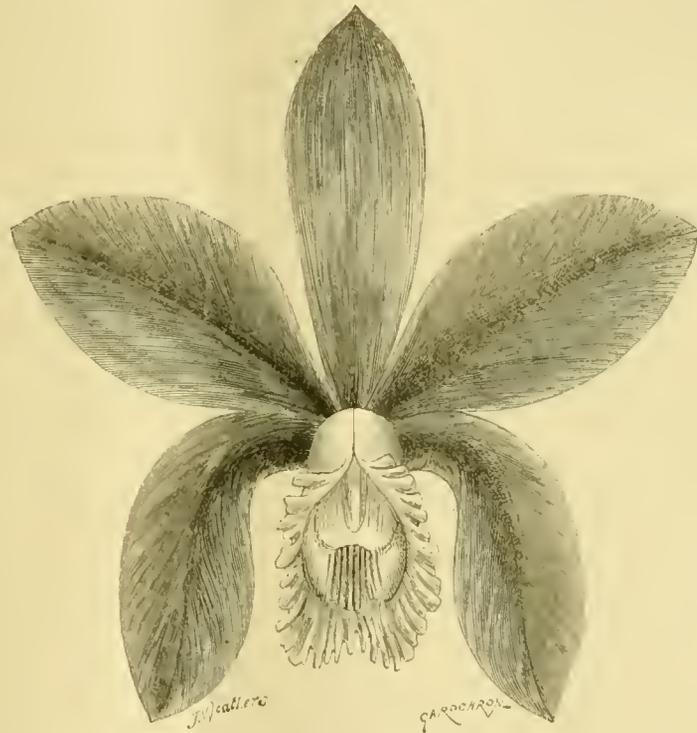


FIG. 100.—CATTLEYA HARRISONII.

according to the instructions on the bottles. Before they were quite dry they were dipped in a tub of clean rain-water and laid back on the stage. We then secured some very clean pots, each from 6 to 8 inches across, and made up our potting mixture, which consisted of tough fibrous peat two parts to one part of chopped sphagnum-moss, with a slight admixture of nodules of charcoal about the size of Hazel-nuts, the whole being well mixed together. We filled each pot to one-half of its depth with clean crocks, over which was put a layer of sphagnum, then the pots were filled up firmly with the potting mixture to nearly their tops, according to the thickness of the roots of the plant chosen to go into it, covering them up with more mixture as firmly as possible. In some cases where the growths were somewhat longer than usual, we inserted a piece of Elder-wood about 1 inch in diameter in each pot before the drainage was put in, allowing it to project from 9 to 12 inches. We then looped up the growths thereto, and have found the stakes very useful. Had we to begin again, we should put a piece of Elder-wood to each plant. We make use of this wood because it is disliked by insects, and we find the roots take to its bark very readily.

with seven and nine flowers, but not more. There is another spike on the same plant that has a similar number on it. Is this unusual? *H. J. Clayton, Grimston Gardens, Tadcaster.* [Our correspondent enclosed a magnificent spike of flowers. Ed.]

COLONIAL NOTES.

PORT, ELIZABETH.

We have here a specimen of the yellow form of *Aloe striata*, which is not common, and I have never seen it published anywhere. A few weeks back I saw flowering in the public park and gardens here some fine forms of *Aloe speciosa*. The species looks so quaint with the greyish-coloured buds and reddish opened flowers, especially as they often expand spirally and form a variegated inflorescence. There was also at this time a very fine plant of *Doryanthes Palmeri*, with an arching flower-scape some 8 feet long. This Australian giant, like many other vegetable forms from that continent, has made itself quite at home here.

The warm air, laden with the scent of *Freesia* in every garden great and small, makes

The bulbs of *Lilium tigrinum* (Chia-peh-ho) are highly esteemed, and occur both cultivated and wild. The white bulbs of this Lily are more expensive in China than in this country. Properly cooked these bulbs are not at all bad eating. They somewhat resemble an Onion, but are inferior in flavour.

Garlic (*Ts'ang*) (*Allium sativum*) and *Onions* (*Ts'ing*) (*A. cepa*) are cultivated extensively. Garlic is highly esteemed. Onions are eaten as "Spring Onions," large bulbs being absolutely unknown. *Allium fistulosum* is the Chinese Leek, and is very widely grown. The leaves are flattened and covered with earth to insure blanching. The blanched leaves (Chin-huang) are considered a delicacy. In the mountains *Allium odorum* (Chiu-tsai) and *A. chinense* are common. These are culled and eaten by the peasantry.

Szechuan, especially the more alluvial areas, produce remarkably fine Carrots. They are grown in large quantities and eaten with great relish.

Parsnips (Uen-shui) are cultivated, but the roots are seldom thicker than a pencil. The whole plant is cooked and eaten.

PLANTS YIELDING CULINARY OILS.

Although in Central and Western China quite a number of plants are grown for their oil, fully 75 per cent. of the oil used is the product of two members of the Cabbage family. After a careful investigation of the subject I have satisfied myself that the two plants in question are *Brassica juncea* var. *oleifera* and *B. campestris* var. *oleifera*. The latter is the Ta-yu-ts'ai of the Chinese, the former the Hsiao-yu-ts'ai or Ch'ing-yu. Both are loosely designated "Rape" by the foreigners resident in China; but in my wanderings in China I never met with the true Rape plant.

Throughout the entire Yang-tze valley during the winter months enormous areas are given over to the cultivation of these two plants. Though the Hsiao-yu-ts'ai is the earlier of the two, the other is the more extensively grown. These plants are in flower in February and March, and the crop is harvested in April. The seeds are crushed, steamed, and the oil expressed. In Szechuan this use of the oil as an illuminant equals its culinary value. It also enters very largely into the manufacture of Chinese candles.

Oil is also expressed from the seeds of *Arachis hypogaea*, *Papaver somniferum*, *Sunflower*, *Gossypium herbaceum*, *Glycine hispida*, other members of the Cabbage family, notably the Kales, and in the highlands *Linum usitatissimum*. These oils are all used for cooking and lighting purposes and for adulterating the more valuable 'Ts'ai-yu.' With the exception, however, of the ground-nut and Poppy, they are not much used.

In Hupeh and Szechuan *Sesamum indicum* is cultivated sparingly as a summer crop. In Yunnan its cultivation is more general. The oil from its seeds is very highly esteemed, and commands a high price in the market. It is known as the Hsiang-yu (fragrant oil), and is eaten raw mixed with cooked vegetables. From the seeds of *Perilla ocymoides* an oil similar to the above is expressed; it is used in salads. This plant is, however, but very sparingly cultivated.

In the mountainous parts of Szechuan the Walnut (*Juglans mandshurica*) is extremely common, but nearly always cultivated. From its seeds the peasants extract an oil used for culinary and lighting purposes, and also to adulterate the Ts'ai-yu. *E. H. Wilson.*

(To be continued.)

TRADE NOTE.

NURSERIES (LEAMINGTON) LIMITED.—This company has been registered with a capital of £500 in £1 shares, to acquire the business carried on at Ranelagh Street, Leamington, Warwick, by W. Wells, and to carry on the business of growers of Vines, Tomatos, fruit, flowers, and vegetables, nurserymen, market gardeners, &c. No initial public issue. Registered without articles of association.

one's thoughts turn to the spring at home, with the Freesias and Lachenalias making the flowering house look gay at that time. It does seem incongruous to have a bed of Narcissus "Sir Watkin" in flower with an edging of Freesias also in flower, and Barberton Daisies throwing a dash of red into the tiny landscape! *Harry Rajohn, care of J. A. Chabaud, Esq., Port Elizabeth, September 11.*

VEGETABLES.

POTATOS IN MID-LOTHIAN.

HAVING heard so much of the robustness of Scottish-grown Potatos, and seen in the South such ample evidences of that peculiarity, I naturally took occasion, when in Edinburgh recently, to have a look at the Potato fields. I was indebted to Mr. T. A. Scarlett, who is one of Scotland's great Potato-growers and merchants, for an invitation to go to North Leith, in conjunction with several other Potato men, to see his considerable breadths. His soil is a dark yet not heavy loam, and certainly suited Potatos well, as the vigorous tops on the late varieties and the capital root-produce on earlier ones showed. Although it was the second week in September, very few evidences of disease were anywhere to be seen in the leafage; indeed, in most cases the tops were luxuriantly green, and left the impression that growth would continue until autumn frosts brought a needful check. But not a root was lifted of any variety if ever so late but showed tubers of ample size for all purposes, indeed large tubers are far from being desired where such great quantities of tubers are sold for seed purposes. The culture bestowed was that usually adopted in fields, and in no case was there special effort to grow varieties exceptionally. Although much later, and therefore greener, the plant-growth did not anywhere excel what has been seen on ordinary good breadths in the South. Certainly the special robustness the Scotch tubers possess which renders them so valuable when planted in the South is not derived from exceptional culture or from the soil. Climate is doubtless the primary factor in bringing about a condition of growth which makes the Scotch-grown seed tubers so robust and profitable. Mr. Scarlett has a remarkably fine first early kidney in Mid-Lothian Early. He has also a superior second early that may be a good successor to Sir J. Llewelyn in Southern Queen, and in a kidney oddly named Peacemaker one of the most starchy or mealy of tubers when properly cooked. A big breadth of Moneymaker gives a later variety. This in its top bears a close resemblance to Eldorado; it was selected by Mr. Scarlett from Northern Star, and because this stock has never been artificially propagated every plant of many thousands comes strong and healthy. The tuber crop, judging by the few plants lifted, should be a very heavy one. Altogether some forty named varieties and several fine seedlings were seen.

With the party was Mr. Thompson, Potato agent for the Dalmeny estate, and that gentleman kindly gave a general invitation to visit the Dalmeny breadths next day.

At the Dalmeny Home Farm we were met by the bailiff, Mr. Sinclair, and we traversed huge breadths of the varieties associated with Dalmeny. First were 20 acres of Dalmeny Beauty, then came a very large breadth of Dalmeny Hero, and a further one of Dalmeny Regent. Next came other 20 acres of Dalmeny Acme, followed by Dalmeny Jewel, a Potato of exceptional excellence; then Dalmeny Radium, Dalmeny Early, and others. The last-named variety, quite ripe, was being lifted and stored in long narrow clamps for the winter. The soil is of a brown loam, apparently of fine quality; growth generally was healthy and luxuriant. In another direction extensive trials were being conducted to test the merits of manures. Generally the Potato crops were of the highest excellence. *A. D.*

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his Correspondents.)

FRUIT AT WROTHAM PARK.—The hailstorm of Sunday, July 9, will not be forgotten so long as this season's crop is in hand. Pears are very much disfigured. All Apples are damaged, and the pale-skinned varieties appear the worst. Keswicks not gathered are covered with blackspots. Morello Cherries escaped injury, and a very fine crop of particularly fine fruits is still hanging. Pears are a very heavy, regular crop. Plums were also good. Apples Newton Wonder, Ribston, and King of the Pippins are very fine on young, own-worked espalier trees. One old tree of the variety Bess Pool in the grass orchard is the largest tree of its kind I ever saw, and was literally loaded with fruits of good size. Cox's Orange Pippin also bears a good crop, among such others as Peasgood's Nonesuch, Mère de Ménage, &c. Mr. Markham called my attention to May Queen, a variety which is in season from February to May, describing it as one of his very best dessert Apples, never failing to produce a full crop. I can find no particulars of this variety, but Mr. Markham believes it to have been raised by Mr. Crump. Potato Up-to-Date was being lifted, and gave a very useful crop in good condition. In the vineries the crop of Black Hamburg Grapes has been much thinned for consumption; some bunches weigh from 3 to 4 lb. each. Muscat of Alexandria is the best hanging crop I have seen Mr. Markham produce. *Stephen Castle, September.*

GRAFTING THE MALE AUCUBA UPON THE FEMALE PLANT.—Your correspondent "F. M.," in your last issue, made a good suggestion when he recommended the practice of grafting the male Aucuba upon the female variety. I have long felt that some plan was necessary whereby the two sexes should be brought more closely together than it is possible for them to be when grown separately as distinct plants. It is possible, when the two sexes are borne together on one shrub, that their date of blooming would become simultaneous. In working them together, however, it would seem to be desirable that either green-leaved varieties or variegated-leaved varieties of the separate sexes only should be worked together, else if the green be worked upon any variegated form, the former would quickly outgrow the latter. This would be more particularly the case if the green or male variety were worked upon the female variegated one. The original male form is a most vigorous grower, and probably second to none as an ornamental evergreen shrub, but far too free-growing for normal variegated ones. Your correspondent suggested that they should be worked together as small plants in artificial warmth, in which matter there would perhaps be no difficulty. What has long exercised my mind, however, is whether it may not be possible, subject to such conditions as to the vigour or otherwise of varieties referred to above, to graft the male variety upon large existing female shrubs out-of-doors, after the manner in which old Apple and Pear-trees are grafted. If this could be done a far readier way of producing prompt results would be effected. Has any reader succeeded in grafting the two sexes under these conditions? *William Earley.*

JUDGING.—I should like to add a little to what I have already written on p. 204, as I consider the question of some importance to exhibitors generally. Now is the time to consider the matter, and endeavour by the aid of the Press to effect some improvements. Schedules will need to be overhauled and re-arranged ere long, and the subject must therefore be considered before it is too late. The question I raised of making point-judging (under Royal Horticultural Society's code) universal is not a difficult one to settle; it only needs to be intelligently adopted by all horticultural societies, and the judges to be asked to judge under the above rules, it would, I feel sure, help to do away with much of the mystery and confusion which at present exists, and should certainly tend to make for quality, in addition to giving greater satisfaction to exhibitors. The question raised by "H. C." on

p. 234 is an important one, but perhaps it is a rather more difficult problem to solve, being governed as it is by individual tastes, which we all know vary considerably. The following footnote appears in some schedules under the classes for groups of plants: "Quality and effect to be the leading features." This I commend to the notice of all schedule-makers. *Exhibitor.*

ANNUALS.—I am much obliged to you for inserting my letter signed "Amateur," about judging and exhibiting annuals, and also to your correspondents for their remarks upon it. I hope in future judges and exhibitors will bear in mind the definition of an annual, as given in the rules of the Royal Horticultural Society. The time is now drawing near when schedules will be revised for next year's shows. It would be well if all Horticultural Societies would frame their schedules according to the hints given by the Royal Horticultural Society, and also agree that the judging shall be according to the Society's rules. Three suggestions I have to make:—1, that in collections of flowers the word *kinds* should be used; 2, that in collections of flowers of the same *kind* the word *colours*; 3, that some limit be placed upon the size of the bunches; sometimes the vases are so massed together that the effect of any arrangement is lost. *Ernest Brown, The Rectory, Montgomery.*

RHODODENDRON IN FLOWER.—A deep-pink-coloured Rhododendron out-of-doors in my garden, which usually blooms at Christmas, is now full of flower in September. The year 1905 has been one of surprises, and this seems to me to be one of them. *Ch. Heygate, Roccliffe, Loughborough.*

ELM TREES.—On this estate, where there are many large Elm trees, limbs drop frequently. During July of this year, on a calm, wet night, when the leaves were heavy with moisture, a large limb, over a foot in diameter, broke off close to the main stem, completely spoiling the appearance of the tree; and early in September a similar accident befell another fine specimen. On this occasion the atmosphere was dry, with a slight wind blowing. In the former case the limb was perfectly sound, while in the latter an old wound had weakened the branch; but in most instances that have come under my notice the branches were quite healthy. *J. Murray, Sopley Park.*

"CARMICHAEL" AZALEAS.—Your correspondent "L." asks in the last issue, p. 256, for information upon these Azaleas. They were raised by the late Mr. Wm. Carmichael, who died on April 6, 1904, and interesting particulars of his life were published in the *Gardeners' Chronicle* on April 23, p. 267, and June 4, p. 357, of 1904. The first account of the Azaleas appeared in the *Gardeners' Chronicle* on March 9, 1878, p. 310—viz., "The new plants exhibited to-day—and all received those of the first-class—were Azalea 'William Carmichael,' clear purplish-rosy colour, one of the results of a cross with the well-known *A. amœna*, and now certificated as a decorative plant, from Mr. B. S. Williams. In B. S. Williams's *Choice Store and Greenhouse Plants*, vol. i, p. 216, appears the following:—"Azalea William Carmichael. Flowers rich carmine shaded with magenta; of good substance; a charming variety. Hybrid of *A. amœna*." Also in B. S. Williams & Sons *Plant Catalogue* for 1878, the variety Mrs. Carmichael is illustrated on p. 5, while a description of both varieties appeared on p. 9—viz., "Mrs. Carmichael.—The flowers of this variety are nearly as large as those of the parent Stella, and of a rich magenta shaded with crimson; the upper segments spotted with marginal black. This is a charming variety." "William Carmichael."—This is another charming variety rich carmine shaded with magenta, the upper segments beautifully spattered; flowers round, and of good substance. This variety has also a First-class Certificate." The latest that I can find about these plants is that they were offered in Messrs. Williams's *Plant Catalogue* for 1894, on p. 39, and I daresay they may still be offered by that firm. In F. W. Burbidge's *The Propagation and Improvement of Plants*, appears the following, in the chapter devoted to Ericaceous plants:—"Azaleas W. Carmichael and Mrs. Carmichael are varieties raised by Mr. Carmichael

and are the results of crossing *A. indica* Stella with the bright-purple early-flowering *A. amoena*. These hybrids made their appearance in 1875, and were sent out by Mr. B. S. Williams." *H. Smith, Royal Botanic Gardens, Edinburgh.*

SOCIETIES.

THE ROYAL HORTICULTURAL

Scientific Committee.

SEPTEMBER 26.—*Present:* Mr. G. Massee, V.M.H. (in the chair); Messrs. Worsley, Gordon, Gussow, Bowles, Saunders, Worsley, and Chittenden (Hon. Secretary).

Galls on Willow Leaves.—Mr. HOLMES sent some Willow leaves from Yeovil having galls upon them. Mr. SAUNDERS reported: "These galls are formed by the grub of a sawfly, *Nematus gallicola*. It is a very common insect, and makes galls on leaves of various kinds of Willow, *Salix fragilis*, *caprea*, *cinerea*, and *alba* being the species it mostly infests. The insect pupates in the ground. One point of interest about this gall is that it is of equal size on either side of the leaf, whereas most galls on leaves are formed almost entirely on one surface."

Cherry Sawfly.—Mr. SAUNDERS reported as follows upon this pest sent to the last meeting from Bournemouth: "The insects attacking the Cherry leaves are the grubs of the 'Cherry or Pear Sawfly' (*Eriocampa limacina*). The grubs are commonly known by the name of Cherry or Pear slugworms, according to the tree they are found on. When the grubs have attained their full growth they drop to the ground and bury themselves between 3 and 4 inches from the surface. The most certain way of destroying this insect is therefore to remove the soil under the trees to the depth of 3 or 4 inches, and burn it or bury it deeply. If this operation is carried out properly there should be no sawflies next year to lay their eggs on the leaves unless some come from a neighbour's garden. To destroy the grubs, the leaves should be sprayed with paraffin emulsion or 'Paris green' (Blundell's paste is the best), 1 oz. kept well mixed in 12 gallons of water. This should be applied in as fine a spray as possible, and the leaves not wetted so that they drip."

Stocks Dying.—Some Stocks in a very unhealthy condition with withered leaves and dropping flowers were shown at the last meeting from Canonbridge, N.B. Upon these Mr. SAUNDERS reports:—"I find in the soil in which the Stocks were growing a number of small worms belonging to the family *Enchytraëidae*, which would account for the condition of the plant, as these worms are very injurious to the roots of many plants. They may be killed by soaking the soil with lime-water. Plants in pots which are infested by these worms should be very carefully handled when on the potting-bench, to prevent any of the soil remaining on the bench, which might contaminate any fresh soil which might be there or placed there afterwards. The infested soil should be burnt or baked, or spread where poultry and other birds can scratch it over and pick out the worms."

Diseased Leaves of Sikkim Rhododendron.—Mr. SAUNDERS reports that these, shown at the last meeting, were evidently attacked by fungus, and were referred to Mr. Gussow for examination.

Double Peach.—Mr. WORSLEY showed a double fruit from a purple-leaved Peach which had been growing in the open in a dry place. Both parts of the fruit had split. Mr. GORDON observed that the splitting of Peaches appeared often to be the result of a sudden supply of water after a season of comparative drought. Other members remarked that the splitting of the fruit was usually accompanied by the imperfect formation of the stone. Mr. WORSLEY said that since giving a dressing of lime to his Peach-trees, he found that the stones were always well-formed, whereas before the stones were frequently imperfect.

Remarkable abundance of lenticels on Apple.—Mr. SAUNDERS drew attention to a shoot of Apple on which the lenticels were remarkably numerous and of large size. The trees which showed this peculiarity were growing in an orchard which had borne little fruit, but had produced much wood.

Brachystelma Barberæ.—Mr. F. W. MOORE, of the Royal Botanic Garden, Glasnevin, sent a specimen of this remarkable Aselepiad from South Africa.

Scilla hamorrhoidalis.—(Mr. WORSLEY showed this and the following plants from Isleworth.) This plant is a native in the Grand Canary, and is remarkable for its ornamental fruits.

Hymenocallis senegambica.—This is the only Old World member of its genus, and appears to be much more hardy than the American forms.

Pellionia Daveauana.—A plant remarkably like a Begonia, but belonging to the Urticaceæ. Well figured as *Begonia Daveauana* in *Rev. Hort.*, 1880, 290.

Variiegated Daisy.—Mr. WORSLEY also showed plants of *Bellis perennis* which had been cultivated by themselves for some years. When first transplanted they were variegated, but in the fresh soil regained their normal colour; they have now again become variegated. It was remarked that the variegation of plants appeared frequently to be due to the presence of a certain "enzyme" or ferment in the cells, but the means by which, and the conditions under which, this enzyme is produced do not appear to be accurately known.

Tritonia sp. nov.—Mr. WORSLEY also showed a plant which belongs apparently to an undescribed species, and for which he suggests the name of *T. Clusiana*. It appears to be nearly allied to *T. securigera* (= *Montbretia securigera*, Redouté; = *Gladiolus securiger*, Aiton), figured in the *Botanical Magazine*, t. 383, but "differs in having leaves twice as long and wide; no obtuse or other indentation on the outer spathe valves, which are longer than in Redouté's figure, while the flowers all face one way. The plant was collected in the district of Greytown, South Africa, by Mr. LAYTON, and was cultivated at Isleworth. It seems to form a link between *Tritonia* and *Antholyza*, being hooded as in the latter genus. The scentless flowers are produced in October from the new growth of September. The plant is about 1 foot high."

Disused Timber-trees.—A portion of an Oak branch attacked by *Poria vaporaria*, and a specimen of the fungus of the Beech (*Polyporus fomentarius*) were sent from Gerrards Cross. It was recommended in the latter case to cut out the fungus and dress the wounds with tar, and to remove all fallen and dead timber as a means of checking the spread of the disease.

Pyrus.—The *Pyrus* of which fruits were shown at the previous meeting by Dr. BONAVIA was determined to be *P. Niedwetzkyana*.

TRIAL OF CACTUS DAHLIAS.

A FURTHER inspection by a deputation from the Floral Committee of the Cactus Dahlias grown for trial at Wisley took place on September 28. As at the previous inspection on September 15, freedom of flowering and general effectiveness as a decorative plant were points duly considered when awarding marks to the individual varieties. Ten varieties received the high award of three marks, thus bringing the total number of varieties recommended by the Committee to twenty-three.

The following is a list of the varieties thus distinguished:—*Amos Perry* (Iobbies, Ltd.): the rich, scarlet-coloured flowers are borne on rigid stems well above the foliage. Height 4½ feet. *Cannell's Gem* (Veitch). In this variety the comparative thinness of the leafage is a good point, for it allows the bright scarlet-coloured flowers to be seen to advantage; it is very floriferous in habit. Height 3½ feet. *F. A. Hillesley* (Shoesmith). An excellent type of the exhibition Cactus Dahlia. The florets are narrow, pointed, and coloured crimson-scarlet, with cerise shading. Height 3½ feet. *King of Siam* (Chiswick stock).—A showy variety, the purple-crimson, well-formed flowers appearing to considerable advantage above the foliage. Height 3½ feet. *Mary* (Chiswick stock).—A flower of moderate proportions of the "Arachne" type, i.e., scarlet and white. The foliage is exceptionally sparse, with the result that an excellent effect is secured. The blossoms are produced on short, stiff stems, and are furnished with buds on each side, which make it valuable as a cut flower. Height 3½ feet. *Mrs. J. S. Brunton* (Mortimer).—A rich yellow self. A good type of the exhibition Dahlia, and probably the deepest yellow-coloured Dahlia in the trial. Height 3½ feet. *Mrs. John Barker* (Chiswick stock).—One of the largest-flowered varieties in the collection, which, however, does not detract from its value. Colour rosy-salmon. 3½ feet high. *Peace* (Chiswick stock).—A self cream-coloured flower, moderate in size, well-formed, erect and produced with great freedom on rigid stems. Height 3 feet. *Spotless Queen*.—A pure white

flower of medium size, very freely produced. An excellent kind either as a garden plant or for producing cut flowers. Height 2½ feet. *Standard Bear* (Veitch).—A showy variety of rich scarlet colour, the moderate-sized flowers being produced with much freedom. The habit is bushy and compact. Height 3 feet.

SOCIÉTÉ ROYALE LINNÉENNE DE BRUXELLES.

SEPT. 7.—The second meeting was held on the above date in the State Botanic Garden, Brussels. There were sixteen exhibitors with fifty-eight plants, seven groups of cut flowers, and three lots of vegetables.

The following awards were made:—

ORCHIDS.

Certificates of Merit unanimously to *Cattleya Iris* (*C. aurea* × *C. Leopoldi*); *C. Bowringiano-Schilleriana*, from M. F. LAMBEAU, Brussels.

Certificate of Merit to *Laelio-Cattleya Andreana* (*L. elegans* × *C. bicolor*), *L.-C. luminosa* (*C. aurea* × *L. tenebrosa*), *L.-C. eximia* var. *tenebrosa* (*L. purpurata* × *C. Warneri*), *L.-C. Bertha Fournier* (*L. elegans* Turneri × *C. aurea*), *L.-C. Andreana flamma*, from M. F. LAMBEAU, Brussels. *Laelia elegans*, *Cattleya* × *Hardyana*, from Madame MADOUX, Anderghem. *Cypripedium Nuyensii* (*C. Rothschildianum* × *C. Boxalli*) *C. Mahleræ* (*C. Lawrenceanum* × *C. Rothschildianum*) *C. argo-Youngi* (*C. Youngi* × *C. Argus*), *C. Spicer* *Curtisii* (*C. Curtisii* × *C. Spicerianum*), from W. DRAPS-DOM, Laeken. *Cypripedium callosum* *Sanderæ* *Cattleya Loddigesii* var. *C. × Firmin Lambau* (*C. Haywood* × *C. Charlesworthii*), from MM. DUCHESNE ET LANTHOINE, Watermael. *Laelia prestans alba*, *Cypripedium Sanderianum* var. *longipetalum*, and a group of *C. Elmeianum* (*C. insigne* *Chantini* × *C. Charlesworthii*), *C. Reygaerti* (*C. nitens* *Van Houttei* × *C. Lawrenceanum superbum*), *C. Reygaerti superbum*, *C. callo-veitchii* (*C. callosum* × *C. Veitchii*), *C. Elvira* (*C. Lecanum* × *C. callosum*), from M. STEPMAN DE MESSEMAECKER, Molembeek. *Cattleya Goossensii*, from M. DE BIEVRE, Laeken. *Brasso-Laelia Helen* (*Brassavola Digbyana* × *Laelia grandis tenebrosa*), *Cypripedium glaucophyllum latipetalum*, from M. PAUWELS, Meirelbeke.

Botanical Certificate to *Zygepetalum Binoti* × *De Wild.*, from M. BINOT, Petropolis (Brazil). See p. 258, ante.

Certificate of Merit to the groups of Orchids exhibited by Messrs. F. LAMBEAU and DUCHESNE ET LANTHOINE.

Honorary Mentions to *Cypripedium Madame Oerriethi*, from M. F. LAMBEAU. *Cattleya Gaskelliana* × *Laelia tenebrosa*, *C. Aclandie* × *C. Gaskelliana*, from Madame MADOUX. *Cypripedium Lawre-Mastersii* (*C. Mastersianum* × *C. Lawrenceanum*), from M. DRAPS-DOM. *Miltonia vaginalis*, *Calanthe veratrifolia*, from MM. DUCHESNE ET LANTHOINE. *Cattleya labiata Nephisto*, from M. DE LANGHE-VERVAENE.

MISCELLANEOUS PLANTS.

Certificates of Merit by acclamation with felicitations of the Jury to *Croton Fred. Sander*, from MM. SANDER ET FILS, Bruges. *Dracæna Drapsiana*, from M. DRAPS-DOM.

Certificate of Merit to *Dracæna Madame Draps-Dom*, from M. DRAPS-DOM. *Ficus diversifolia*, *Sansevieria Laurentii*, from the BOTANIC GARDEN, Brussels. *Begonia Rex* var. *Alphonse Lauwaert*, from M. LAUWAERT, Nivelles. *Musa Ensete*, from M. ZABURIAUX, Brussels. Botanical certificate to *Cyathæa canaliculata* var. *Congi*, of Dr. Christ (tree Fern from the Congo); *Raphia Laurentii*, *Encephalartos Lemarinellianus*, *Dorstenia psilura*, Bureau (Congo), from the Botanic Garden, Brussels.

CUT FLOWERS.

Certificate of Merit to the Cactus Dahlia *Charles de Meyer*, from M. DE MEYER, Nivelles. *Begonia marmorata picta* var. *Odette Bokx* (double flowers), from Madame BOKX, Meirelbeke.

Certificate of Merit with felicitations to *Chrysanthemum indicum* var. *Madame Draps-Dom* (large pure white flowers), from M. DRAPS-DOM. *L. G.*

BRITISH GARDENERS' ASSOCIATION.

SEPTEMBER 26.—This Association, which is confined to professional gardeners, continues to make steady progress. At the last meeting of the Executive Council, presided over by Mr. R. Hooper Pearson, eight new members were elected, bringing the total up to 683. As soon as the rules prepared by the solicitors have been settled in detail, they will be published, together with the names and addresses of all the members. At present members in various parts of the Kingdom have no means of knowing the British Gardeners' Association gardeners in their own neighbourhood, and it is hoped the list will be of great value in remedying this state of affairs. If every member would introduce at least one new member before the list is sent to the printer,

the Executive Council would feel greatly obliged. They also wish it to be as widely known as possible that there is no desire on the part of the British Gardeners' Association, nor has there ever been, to interfere between employers and their gardeners. The Association will be pleased to introduce professionally trained men of good character to the notice of ladies and gentlemen requiring capable men to take charge of their gardens. *J. W. Cothens, Secretary.*

BIRMINGHAM AND MIDLAND COUNTIES GARDENERS' MUTUAL IMPROVEMENT.

OCTOBER 2, 3.—An exhibition of early-flowering Chrysanthemums and Dahlias, arranged by the above Association, was held at the Botanical Gardens, Edgbaston, on the above dates, and proved a success. On the evening of the first day Professor Hillhouse, M.A., President of the Association, delivered a lecture on "The Natural History of the Chrysanthemum," illustrated by lantern-slides.

COMPETITIVE CLASSES.

For a group of Chrysanthemums, cut from plants growing in the open ground, and arranged for effect in a space of 12 feet by 4 feet, Messrs. GUNN & SONS, of Olton, won the 1st prize with an exceedingly pretty collection of flowers, arranged in vases and Bamboocanes, the most effective varieties being Goacher's Crimson, Roi des Blanc, Polly, Mrs. A. Wills, Golden Queen of the Earlies, and Market White. Messrs. IMPEY & SONS, Northfield, won the 2nd prize with a good exhibit.

In a class for six vases of a yellow Chrysanthemum, three sprays to each vase, Mr. C. H. HERBERT won the 1st prize with the variety Horace Martin. The same exhibitor won the 1st prize in a similar class for a crimson variety, showing Goacher's Crimson; and in another class for a white variety, showing Cranford White. The 1st prize in the class for a variety of any other colour was won by Mr. J. SCEANEY, Harborne.

In similar classes, in which only three vases of a variety were to be shown, the 1st prize-winners were as follows:—For a yellow variety Mr. G. STACEY Harborne, with Horace Martin; for a crimson variety Mr. R. USHER, Harborne; for a white variety Mr. R. USHER, Harborne, with Market White.

Mr. R. USHER, Harborne, also won 1st prize for six vases of Pompon Chrysanthemums, three sprays in each vase.

The best group of Chrysanthemums cut from plants growing in the open ground and arranged for effect in a space of 6 feet by 4 feet was shown by Mr. T. SCEANEY, Harborne.

In a class for a collection of Cactus or decorative Dahlias arranged for effect in a space of 10 feet by 3 feet, Mr. W. PEMBERTON, Bloxwich, Walsall, took the 1st prize with a well-arranged group, the best varieties being Minnie West, Thomas Parkins, George Gordon, Comet, Ajax, J. H. Jackson, Purple J. H. Jackson, Charm, and Mr. E. Mawley.

Mr. W. PEMBERTON had also the best collection of Dahlias to occupy a space of 6 feet by 4 feet.

HONORARY EXHIBITS.

Conspicuous amongst these was one from Messrs. BAKERS, of Wolverhampton, whose tastefully arranged exhibit of early-flowering Chrysanthemums and Dahlias, covering a space 52 by 4 feet, attracted much attention. A Certificate of Merit and Silver Medal of the Birmingham Botanical and Horticultural Society was awarded.

Messrs. SIMPSON & SONS, Birmingham, staged a very fine exhibit of Chrysanthemums, covering a space 30 by 4 feet, for which a Certificate of Merit and Bronze Medal of the Birmingham Botanical and Horticultural Society were awarded.

Mr. C. H. HERBERT staged a good exhibit of hardy flowers (Certificate of Merit). Messrs. GUNN & SONS, The Nurseries, Olton, staged a fine collection of Asters and Phlox (Certificate of Merit). Messrs. BICK BROTHERS, Acocks, staged an interesting collection of alpine plants (Certificate of Merit).

SCHEDULES RECEIVED.

STORE NEWINGTON AND DISTRICT CHRYSANTHEMUM SOCIETY'S Report and Schedule of Prizes for their exhibition to be held on Wednesday and Thursday, November 8, 9, 1905.

NEWPORT AND DISTRICT CHRYSANTHEMUM SOCIETY'S Seventeenth Annual Show to be held in the Gymnasium Athletic Grounds, Newport, Monmouth, on Thursday, November 16, 1905.

SHEFFIELD CHRYSANTHEMUM SOCIETY'S annual show, to be held in the Corn Exchange, Sheffield, on Friday and Saturday, November 10 and 11, 1905.

NATIONAL CHRYSANTHEMUM.

OCTOBER 4, 5.—The above Society's early autumn exhibition of Chrysanthemums was held on these dates at the Crystal Palace. The show was a decided success, the general opinion being that it was the best display of early-flowering Chrysanthemums held by the Society. This was in a large measure due to the many excellent non-competitive exhibits staged, and to the response of those growers who were invited to contribute examples to illustrate and supplement the various papers read at a conference on early-flowering Chrysanthemums, which was held during the afternoon and evening. The conference was largely attended by a representative gathering of persons interested in the Chrysanthemum, all the available seating-space in the King's Room being filled during the proceedings. We publish below extracts from the various papers read at the meeting.

The Society granted their Certificate to five new early-flowering varieties of Chrysanthemums.

OPEN CLASSES.

Class 1, which called for a group of Chrysanthemums mixed with suitable foliage plants, to occupy a semi-circular space measuring 12 feet by 6 feet, was represented by two exhibits, those from Messrs. JOHN PEED & SON, West Norwood, and Mr. R. FOSTER, Superintendent, Nunhead Cemetery, S.E., respectively, who won in the order named, Messrs. PEED being easily 1st.

Twenty-four Japanese Chrysanthemums in not fewer than Eighteen Varieties.—Not more than two flowers of one variety were allowed. Although the number of entries was but two they were both of high-class quality, and the 1st prize stand would be hard to surpass at this season of the year. It was staged by Mr. Geo. Halsey, gr. to Mrs. JEREMIAH LYON, Riddings Court, Caterham Valley. His varieties were Duchess of Sutherland, Australia, Bessie Godfrey, Gustave Henry, Madame C. Nagelmackers, Mrs. Geo. Mileham (splendid flower), Miss Elsie Fulton (excellent), Lord Alverstone, Mrs. Geo. Mileham, Miss Mildred Ware, Mafeking Hero, General Hutton, Henry Perkins, Mrs. T. W. Pockett (good bloom), Mrs. Greenfield, Mrs. A. R. Knight, M. Chenon de Leche, Mrs. H. Emmerton, Gustave Henry, and Marquis V. Venosta. Mr. J. Kirkwood, gr. to E. WORMALL, Esq., Grass Park House, Finchley, was the other exhibitor, and he was awarded 2nd prize. Miss Elsie Fulton, Godfrey's Pride, and Mrs. Geo. Mileham were notable flowers in this group.

Twelve Japanese Chrysanthemums in Distinct Varieties.—Three exhibitors staged in this class, a very excellent dozen flowers shown by Mr. HALSEY taking the 1st prize; Mr. W. HAMMOND, gr. to Mrs. M. LEWIS HILL, Woodside, Maidenhead, following 2nd, with Mr. H. PARR, gr. to F. A. BEVAN, Esq., Trent Park, Barnet, 3rd. Mr. HALSEY'S flowers were again of excellent quality. He had Duchess of Sutherland, Miss Elsie Fulton, Henry Perkins, Mrs. Greenfield, Miss Mildred Ware, Marquis V. Venosta, Bessie Godfrey, Mrs. Geo. Mileham (excellent example), Exmouth Crimson, Mrs. H. Emmerton, Gustave Henry, and Mons. Chenon de Leche. The 2nd prize exhibit was not far behind the 1st in quality, and the flowers were of large size, Mme. Gustave Henry being especially so.

Six Japanese Chrysanthemums in Distinct Varieties.—Two exhibitors only contested in this class—Mr. Mark Rayment, gr. to W. BEECH, Esq., North Ockendon, Romford, and Mr. F. BLACKITTLE, The Gardens, Parkside, Ravenscourt Park, W., who won in the order named. The examples were but mediocre in quality, the flowers generally being flat and lacking substance. Rayonant was shown well by Mr. BLACKITTLE.

Twelve Bunches of Early-flowering Pompon Chrysanthemums in not fewer than Eight Varieties.—This class was also contested by two growers only, and the flowers were but mediocre in quality. The 1st prize fell to Mr. D. B. CRANE, 4, Woodview Terrace, Archway Road, Highgate, whose best examples were Wm. Selly, Mrs. Cullingford, Orange Pet, and Alice Butcher. Mr. ERIC F. SUCH, Royal Berkshire Nursery, Maidenhead, was 2nd. He showed Bronze Pride and Madame E. Lefort well.

Two Vases of Large-flowering Chrysanthemums containing twelve Blooms in each vase with suitable Foliage.—Again the entries numbered two. The 1st prize was awarded to Mr. KIRKWOOD for a splendid display, the flowers being large, well-formed, and of bright appearance. Miss Elsie Fulton and Mrs. Geo. Mileham were prominent varieties in this exhibit. The arrangement was also in good taste. Mr. F. BLACKITTLE was 2nd.

EARLY-FLOWERING OR DECORATIVE CHRYSANTHEMUMS.

Two classes were open for displays of early-flowering Chrysanthemums, being for twelve bunches and for six bunches respectively. The prizes were given by Mr. William Sydenham, Tamworth. Six growers contested in the larger class, resulting in Mr. JOHN

SMELLIE, Pansy Gardens, Busby, near Glasgow, gaining the 1st prize with a splendid lot. There was not a weak vase in this group. As a selection we may mention Lillie (splendid vase of flowers), Polly (brunzy-yellow), and Improved Madame Marie Massec. Mr. D. B. CRANE was 2nd, but his flowers were not comparable to the 1st prize group; and Mr. J. EMBERSON, Grove Road Nursery, Walthamstow, 3rd.

In the smaller but similar class for six bunches, Mr. JOHN SMELLIE led with a bright display among nine competitors. He showed The Champion (yellow), Goacher's Crimson, Cranford White, and Nina Blick, in good form. Miss C. B. COLE, The Vineyard, Feltham, Middlesex, was 2nd; and Mr. FRANK BRAZIER, Ninehams Nursery, Caterham, 3rd.

CUT BLOOMS.

Six Bunches of Early-flowering Pompon Chrysanthemums in Distinct Varieties.—Mr. D. B. CRANE was 1st among four exhibitors, having neat, well-formed flowers of bright colours—Filberta, Orange Pet, Mr. Selly, Anastasia, &c. 2nd, Mr. ERIC F. SUCH, 3rd, Mrs. F. BREWSTER, 12, St. Peter's Street, Canterbury.

Six Bunches of Chrysanthemums from the Open, not Disbudded.—This class brought as many as seven contestants, which resulted in a good display. Mr. SMELLIE was again to the fore, eclipsing all other growers with a magnificent half-dozen vases of flowers, which embraced the varieties Lillie, Rose de Blanc (splendid), Jimmy, The Champion, James Bateman, and Thos. Baird. 2nd, Mr. FRANK BRAZIER; 3rd, Mr. E. F. SUCH.

Mr. Geo. Halsey, gr. to Mrs. JEREMIAH LYON, Riddings Court, Caterham Valley, staged the best vase of five yellow-coloured Japanese Chrysanthemums in the variety Bessie Godfrey—a really splendid exhibit.

The similar class for five white Japanese Chrysanthemums resulted in four entries, all of which were excellent. There was not much to choose between the various exhibits. The 1st prize was given to the variety Miss Elsie Fulton, staged by Mr. GEO. HALSEY, 2nd, Mr. Mark Rayment, gr. to W. BEECH, Esq., Romford, for examples of Miss A. Byron; 3rd, Mr. J. KIRKWOOD, who had the variety Miss Elsie Fulton.

The best vase of five Japanese blooms other than white or yellow was shown by Mr. G. HALSEY, who had the variety Mrs. Geo. Mileham in splendid form.

One Vase of Early-flowering Pompon Chrysanthemums with Suitable Foliage.—The best vase of flowers in this class was that shown by Mr. D. B. CRANE.

AMATEURS' CLASSES.

The Amateur Classes were not strongly represented. But one exhibit was seen in the class for twelve Japanese Chrysanthemums in distinct varieties. It was staged by Mr. C. Haselgrove, gr. to W. BRANDER, Esq., 13, Crescentwood Road, Sydenham Hill, S.E., and was awarded the 1st prize. Some notable flowers were Mrs. H. Emmerton, Alice Byron, Miss E. Douglas, Miss Elsie Fulton, and Mrs. Greenfield.

No exhibits were forthcoming in the class for twelve bunches of early-flowering Chrysanthemums in not fewer than eight varieties, but three growers entered in the similar class for twelve bunches of Japanese Chrysanthemums, and of these Mr. ANDREW HOGGAN, Strathyre, Busby, near Glasgow, had the best examples. He showed Polly, Mychett White, Nina Blick, Blushing Bride, Goacher's Crimson, Well's Massec, G. Grunnerwald, The Champion, Cranford White, and Mabel, in excellent condition. 2nd, Mr. D. B. CRANE. 3rd, Mr. TAYLOR, Finchley.

Twelve Bunches of Early-flowering Pomspons.—These were required to be shown in not fewer than six varieties, five flowers to comprise a bunch. Three entries were staged, but one grower was disqualified for not complying with the stipulations of the schedule. Mr. D. B. CRANE won with bright, well-formed examples of J. B. Davis, Yellow Lefort, Orange Pet, Miss Davis, Filberta, J. B. Duvoir, &c. 2nd, Mr. TAYLOR, East Finchley.

DECORATIVE CLASSES.

The table decorations arranged down the centre of the exhibition, as is usual, made a pleasing feature. Eight tables were arranged, that staged by Mr. D. B. CRANE being adjudged the best. It was composed of rustic stands lightly arranged with small yellow-coloured flowers of the Pompon type set off by autumn-tinted foliage. Miss C. B. COLE, The Vineyard, Feltham, was 2nd. The latter exhibitor arranged the best hand-basket of Chrysanthemums, the best basket of garden flowers other than Chrysanthemums and Roses, the best three epergnes of Chrysanthemums, and the best basket arranged with autumn berries and foliage. Miss JESSIE MARTIN, 9, Lancaster Road, South Norwood, had the best single epergne of Chrysanthemums.

NON-COMPETITIVE.

Messrs. H. Cannell & Sons, Swanley, staged a mixed group of Cannas, Celosias, Dahlias, and Chrysanthemums (Large Silver Medal) Mr. F. Brazier, nursery-

man, Caterham, showed a well-arranged group of Chrysanthemums, Dahlias, and hardy flowers (Large Silver Medal). Hobbies, Ltd., Dereham, Norfolk, had an extensive collection of Chrysanthemums, perennial Asters, and Roses (Gold Medal). Mr. David Russell, Brentwood, showed ornamental shrubs, Conifers, Clematis, &c. (Silver Medal). Mr. A. Basile, Woburn Park Gardens, Weybridge, had a commendable exhibit of Onions (Large Silver Medal). Mr. Wm. Sydenham, Tamworth, had a good display of Chrysanthemums, interspersed with perennial Asters (Silver-gilt Medal). Messrs. J. Cheal & Sons, Crawley, showed a collection of Dahlias of all types (Silver-gilt Medal). Messrs. J. Peed & Son, West Norwood, displayed exhibits of tuberous-rooting and of the Gloire de Lorraine type of Begonias (Silver Medal). Mr. R. H. Bath, Wisbech, showed an excellent collection of Chrysanthemums (Large Silver Medal). Messrs. G. & G. Adams, Tunbridge Wells, Kent, put up a good exhibit of Chrysanthemums and perennial Asters (Silver Medal). Messrs. W. Wells & Co., Merstham, Surrey, showed good Chrysanthemums, arranged well (Large Silver Medal). Messrs. Craig, Harrison, & Craig, Keston, Middlesex, displayed a commendable collection of Chrysanthemums in pots. Messrs. T. S. Ware, Ltd., Feltham, Middlesex, showed Chrysanthemums, Dahlias, and tuberous-rooting Begonias (Gold Medal). Mr. Norman Davis, Framfield Nurseries, Sussex, set up a beautiful group of Chrysanthemums and hardy flowers (Gold Medal). Mr. H. J. Jones, Lewisham, showed Chrysanthemums and perennial Asters (Silver-gilt Medal). Mr. Eric Such, Maidenhead, displayed some good Chrysanthemums (Silver-gilt Medal).

CERTIFICATED FLOWERS.

Perle Chatillonnaise.—Of the decorative type, with medium-sized salmon-buff-coloured flowers. Shown by Mr. R. H. BATH.

Goacher's Pink.—A seedling, somewhat resembling in habit the variety Goacher's Crimson. Height 3 feet. Very floriferous, the pink-coloured flowers opening early in September.

Harry.—A dwarf, free-flowering variety, with reddish-orange-coloured flowers.

The two last named were shown by Messrs. W. WELLS & Co.

Mucim.—A decorative Chrysanthemum with very bright reddish-crimson coloured flowers.

Money-maker.—An early Japanese Chrysanthemum with pure white flowers. Petals reflexed. Medium size, and one suitable for market purposes. The two last-named from Mr. H. J. JONES.

THE CONFERENCE.

THE HISTORY OF THE EARLY-FLOWERING CHRYSANTHEMUM.

BY C. HARMAN PAYNE.

"Early-flowering" Chrysanthemums are generally understood to include any variety of the race descended from *C. indicum* or *C. sinense* which, when grown in the open ground, will bloom, without having been disbudbed, before the ordinary exhibition varieties come into flower.

We know from the writings of Kämpfer, whose description of the flora of Japan has given us much interesting matter relating to the Chrysanthemum, that there were some varieties that bloomed at all seasons of the year when he visited that country. We know, too, that Thunberg, in his *Flora Japonica*, nearly a century later, tells us that the Chrysanthemum was much cultivated in the gardens of Japan and that "it blooms in the summer and autumn months." In China also early Chrysanthemums would appear to be known.

The mention of the Early Crimson and the Early Blush by Sabine in his papers, written in 1821—2, merely differentiated them from other Crimson and Blush varieties, and the term "Early" was only relative, for he divided the then known varieties into early, mid-season, and late, and distinctly limits the period of their blooming, when he says, "they contribute so much to the beauty of our gardens in a fine autumn, and of our conservatories in the months of November and December."

In 1850, M. Miellez, of Lille, is reported to have distributed some varieties that bloomed in the beginning of August, and others that followed in September and October. It is not, however, until two years later that we have any record of the first Early Flowering Chrysanthemum making its appearance in his country.

In the *Midland Florist* of 1852 we read, "One of the great drawbacks to the enjoyment of these beautiful autumn flowers (Chrysanthemums) has been the late season at which they bloom. We are glad to find that a new variety (originated in Italy) has been introduced, which is very considerably earlier than the Chinese varieties already in cultivation." A description of the flower is appended and the name of Henderson given to it. The next introduction soon

followed, Annie Henderson, a dwarf variety of bright canary-yellow, blooming in the month of August.

In 1861 in *L'Illustration Horticole* was issued the first coloured plate of Early-flowering Chrysanthemums (vol. viii., pl. 272). In the same volume (pl. 298) is another illustration of early varieties raised by M. Lebois. Mr. John Salter, the father of the Chrysanthemum in England, published his work, *The Chrysanthemum: Its History and Culture*, in 1865.

In 1869 *Sonr Mélanie* was sent out by Lebois. In the summer of 1879 Madame Castex Desgranges was discovered by Mr. Robert Parker, of Tooting. The origin of this famous variety was due to M. L. Boncharlat, aîné, of Lyons, in 1873-4. In December, 1873, Mr. Henry Taylor reported in the columns of the *Gardeners' Magazine* on a trial of summer-flowering varieties. After several small displays had been held at the Crystal Palace, the National Chrysanthemum Society decided in 1886 to hold its first exhibition of early-flowering varieties at the Royal Aquarium, which was continued till the year 1898.

EARLY CHRYSANTHEMUMS.

BY E. F. SUCH.

There are several types of the Early-Flowering Chrysanthemum, the principal being the Japanese. We must, however, include the Pompon. The Early Single Varieties are at present but few; they are, however, likely to become exceedingly popular. Cuttings of the Early-Flowering Chrysanthemums should be inserted during February and March; they then make good plants for putting out in April and May.

In preparing the ground for the plants it is desirable to have it dug two spits deep, or as deeply as possible; but in doing this I do not advise bringing the bottom spit to the top if it be of a clayey nature. The soil should be enriched with a little well-decayed manure, but too liberal treatment tends to develop coarse growth.

May is undoubtedly the best time to plant. A late April planting in a warm and less open position answers admirably when an early batch of plants, well hardened off, can be had for the purpose. In cold and exposed situations, planting should be deferred until the third week of May.

Varieties differ very considerably in vigour and hardness. In the Marie Masee group we have representatives of what a border Chrysanthemum should be. The plants are robust, branching in growth, rarely if ever exceeding a height of 3 feet, and remarkably profuse in flowering. The stronger-growing varieties should be planted 3 feet apart either way. As a rule the Japanese varieties are represented by larger plants than the Pommions, therefore for the latter, with but few exceptions, a space of 2½ feet is sufficient. Plant firmly, and in exposed situations give the young plants a small stake for support.

Do not make the mistake of severely disbudbing, as the early-flowering varieties are better if left to develop in a natural manner. The more recent introductions have flowers on long footstalks, so that the need of disbudbing is scarcely felt.

Water must, of course, be given; but it is advisable that the plants be kept rather dry than be over-watered. Feeding is not to be recommended until the buds are well set.

EARLY CHRYSANTHEMUMS FOR TOWN GARDENS.

BY EDELBERT F. HAWES.

The increasing popularity of early-flowering Chrysanthemums is no doubt due largely to the fact that they may be grown in any well-prepared border during the entire year. It is essential to ensure thorough drainage in all wet soils. In naturally dry soils, where the subsoil consists of gravel or other porous layers, nothing further than good trenching and manuring are required.

Immediately after flowering is over, if any old plants or stools are available, these should be planted out on a well-drained border. When possible, it is best to allow the old stems and growths to remain on the plant during the winter, as this not only provides a more liberal supply of food by transmission from the stem to its base and roots during the winter, but also serves as protection from cold winds.

About the end of March or early in April, according to the season, the stems should be cut down to within 6 inches of the soil, and, as the growth of each variety advances, either cuttings or single offshoots with a portion of root attached may be taken from the stools. If a cold frame is available the cuttings should be placed therein in either pots or boxes, according to the means at hand and the quantity grown. A porous compost is necessary, and although protection from cold and drying winds is of great advantage at this period, "coddling" should be avoided. In a few weeks time the young plants will be rooted, and after careful attention they may be transferred to the open ground, and planted in the positions selected during April or early May.

For ordinary culture it is advisable not to pinch or disbud these early varieties, but to let them grow naturally.

Mr. NORMAN also contributed a paper on Early Chrysanthemums for town gardens.

DECORATIVE VALUE OF EARLY CHRYSANTHEMUMS.

BY GEORGE GORDON, V.M.H.

If I were asked to specify in the fewest possible words the special merits of the blooms of early Chrysanthemums, I should say their merits consisted in the distinct and attractive colours they afford, the length of time they retain their freshness when cut, and the facility with which they can be artistically arranged. I might also add the comparative ease with which abundant supplies may be obtained even by those who have a limited space only for indulging their taste for plant-culture.

In the cultivation of Chrysanthemums for the supply of blooms for decorative purposes in a cut state, it is not wise to be unduly prejudiced in favour of either naturally grown or disbudbed flowers. The sprays of small and medium-sized blooms and the single blooms of comparatively large size have each their uses, and those who have supplies of both will be able to produce more beautiful and diversified effects than will those who have a supply of one only. Excessively large blooms are not desirable, and as is well-known the varieties belonging to the early section do not with moderate disbudbing and ordinary culture produce blooms of an ungainly size. I would suggest that where considerable quantities of blooms are required a border or bed, proportionate to the requirements, should be set apart for them in the kitchen-garden. When the plants growing in mixed borders are cut from to any considerable extent, the appearance of the border, is to some extent spoilt. An endeavour should be made to maintain the flower garden attractive for as long a time as possible after the ordinary summer flowers are past their best.

In the selection of varieties, preference should be given to those belonging to the Japanese section, with distinct colours that appear to advantage under the influence of artificial light and have blooms with long, stiff, wiry stems.

CHRYSANTHEMUMS FOR THE GARDEN.

BY D. B. CRANE.

The Early-flowering Chrysanthemums will always be valued because of their value for brightening the outdoor gardens in the late summer and during the autumn months.

Contrary to the generally accepted practice, the early sorts should not be propagated before the turn of the year, the only advantage of propagating earlier being that of producing plants of much larger size than those that are developed from the later propagation. It may also have the tendency to encourage the plants to come into flower rather earlier.

Cuttings dibbled in light sandy soil in March, invariably root quickly, and if they be grown on steadily right away from the time they first became rooted, beautiful plants for placing out in their flowering quarters in May seldom fail to develop. They should be inserted in boxes or round the edge of small pots, but the former should be preferred, as quite a large number may be raised in boxes with little or no trouble, and the plants are so easily handled.

A temperature of about 45° is ample in which to propagate these plants, and under such conditions, within three weeks most of the cuttings will have rooted.

Place the plants, immediately subsequent to their becoming rooted, in specially-prepared soil in cold frames.

Rooted cuttings should be planted-out firmly about 3 inches apart, both between the rows and the plants themselves. After being kept close for a few days, air should be admitted, and the quantity increased from time to time until the frame-lights may be entirely removed. This of course should take place when all danger of severe frosts is over, or when the weather is sufficiently genial to allow one to do so during the day, drawing the frame-lights across at night, until the period of planting-out takes place.

For the past eighteen years it has been my practice to plant outdoors in the third week in May, as by this time the danger of really severe frosts is past, and cold and cutting winds are invariably an experience of the past. Planting out in May should be done in prepared quarters, but on no account should the soil be of a rich character. Rich soil promotes rank growth.

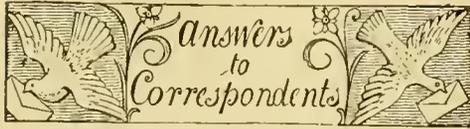
The Japanese sorts should be planted about 3 feet apart, and the Pommions 6 inches to a foot less.

Firm planting is essential. Staking should be done at once, and subsequently, as the plants attain larger proportions, large Hazel-stakes or stout Bamboo canes inserted for their support.

Only in long periods of drought is it necessary to water the plants, and then they should have a copious

supply on each occasion. As soon as the buds are formed the plants may be treated to an application of liquid-manure. This should be weak at first, and the strength gradually increased until the maximum is attained. Plants treated in this way are kept dwarf and sturdy, and the application of manure-water has the effect of causing the buds to develop satisfactorily, and good flowers to evolve quickly.

(For Gardeners' Debating Societies, see p. xii.)



BEECH TREES: A. E. B. From the information you have supplied, we have no doubt but that the tree is attacked by a fungus, which will probably prove fatal. Cut away some of the bark and send us a piece of the fungus that is most likely to be found there.

BOOKS: Bedfordshire Seed Company. *Sweet Violets and Pansies*, edited by E. T. Cook. The price without postage is 3s. 6d. There are no coloured plates. Apply to our Publishing Department.

CACTUS DAHLIA ZOE: B. This variety obtained a Certificate from the National Dahlia Society when exhibited by Messrs. J. Burrell & Co., Cambridge, on September 7.

CATTELEYA BICOLOR PREGNENSIS: J. W., Geneva. The species varies very much in tint, but we do not remember seeing a variety with the peculiar copper-brown tint on the sepals and petals shown in the specimen you send. If the colour is constant the variety is distinct.

CATTELEYA LABIATA: A. J. H. We have often seen similar instances of what is called by some "trilabella" in most of the sections of large-flowered Cattleya, and the variation has proved tolerably constant.

CONIFERS: J. G. G. The death and fall of the branches is a natural process, not due to fungus or insects. In some seasons the branch shedding is more obvious than at others. Sometimes we have seen the whole tree thus disfigured, and thought it would die, but by next spring it had recovered itself.

CHRYSANTHEMUM: F. J. R. Send to some grower. We cannot undertake to name varieties.

CIRCULATION IN PLANTS: C. C. Your requirements are extensive, many columns would be required to supply them. All we can do is to advise you to procure Sorauer's *Popular Treatise on the Physiology of Plants* (Longmans). Probably our Publisher can supply you.

CYCLAMEN: C. H. The grub is that of one of the weevils. They are most destructive. Insert pieces of Carrot in the beds, and endeavour to catch the grubs as they are eating the toothsome morsels.

ERYNGIUM ROOTS: F. L. The specimens were packed in cotton-wool, which is the worst possible material for the purpose. They would have been better packed in sphagnum or other moss. The only fungus found was the *Penicillium* upon the surface, the roots being dry and shrivelled. The tubercles appear to be of the nature of galls, containing nematode worms and other organisms.

GARDENER'S NOTICE: H. D., Portsmouth. You do not tell us all the circumstances, or what agreement you made when entering upon your situation. From what you state we are of opinion that you are at least entitled to one month's wages, but we do not know what your employer's views may be.

GRAPES: A Constant Reader. Any berries that show the least trace of disease should be cut away and destroyed by burning as soon as it can be detected. Next season let the young shoots and leaves be dredged with flowers-of-sulphur, repeating the process at intervals of about ten days if the disease appears likely to spread. A small quantity of quicklime may be mixed with the sulphur on the second application, and the quantity of lime should be increased on each successive application until the proportions of lime and sulphur are nearly

equal, always keeping just a little more sulphur than lime. Mr. Masee, in his *Text-book of Plant Diseases*, further states that it has been found of service to thoroughly wet the branches with a solution of sulphate of iron when the Vine is resting. The use of rich stable-manure in excessive quantities would be likely to render the Vines more susceptible to this and most other diseases.

FUNGUS ON GRASS: Correspondent. The fungus is *Puccinia graminis*, the same as that which causes the "Rust" disease of Wheat. The fungus passes certain stages of its life on different host plants, one of which is the *Berberis*. If these plants are eliminated the disease has little chance of perpetuating itself.

INSECTS ON CHRYSANTHEMUMS: E. Y. The insect attacking your Chrysanthemums is the Cuckoo-spit or Frog-hopper (*Aphrophora spumaria*). Dust the plants with Hellebore powder.

NAMES OF FRUITS: C. B. 1, Emperor Alexander; 2, Old Hawthornden; 3, Pott's Seedling; 4, Lord Lennox; 5, Lord Burghley; 6, Sea Eagle.—J. D. Cox's Pomona.—A. Williams. Apple Yorkshire Beauty.—D. R. & Sons. 1, Wiltshire Defiance; 2, Norfolk Beeding; 3, Lady Henniker; 4, Old Hawthornden; 5, not recognised; 7, Warner's King; Pears: 1, Brockworth Park; 3, Conseiller de la Cour; 4, Beurré d'Amanlis.—Swett. 1, Maltster; 2, King of the Pippins; others not recognised. The small and badly-grown Plum was all pulp on receipt. You should not pick Plums in the same receptacle with Apples.—G. S. 1, Not recognised; it is probably a local variety; 2, Pott's Seedling.—F. James. Nouveau Poiteau.—Subscriber. 1, Easter Beurré; 2, Winter Nelis; 3, Doyenné du Comice; 4, Conseiller de la Cour; 5, Beurré d'Amanlis.—B. S. A. 1, Gratioli of Jersey; 2, decayed on arrival; 3, Marie Louise; 4, Madame Treyve; 5, Kerry Pippin; 6, Lord Suffield.—W. Leath. 1, Winter Windsor; 2, Doyenné Gris; 3, Fondante de Curne; 4, Marie Louise d'Uccle; 5, not recognised; 6, Beurré Rance; 1, Maltster; 2, King of the Pippins; 3, White Nonpareil; 4, Winter Greening; 5, Sturmer Pippin; 6, Northern Greening.—B. J. S. Plum Reine Claude Violette; Peach Stirling Castle; 1, Apple Lord Suffield; 2, Domino; 3, Pear Autumn Bergamot.

NAMES OF PLANTS: X Y. 2, *Comptonia asplenifolia*—C. W. B. *Lycium chinense*.—Correspondent, Stockton-on-Tees (no letter). *Clivia nobilis*.—A. M. *Helenium pumilum* and *Rhus typhina*, if a straggling shrub.—A. W. A hybrid *Clematis* which we cannot name.—Dublin. 1, *Abies Pinsapo*; 2, *Spiræa Thunbergii*; 3, *Rhus typhina*; 4, *Polygonum cuspidatum*; 5, *Veronica Traversi*; 6, *Fabiana imbricata*; 7, *Pavia rubra*. We have sent the stamps to the Gardeners' Orphan Fund.—E. B. *Funkia subcordata* (*grandiflora*).—C. B., Baintree. *Odontoglossum Lindleyanum*.—W. P. *Ceropegia Woodii*.—G. L. 1, *Crinum americanum*; 2, 2, *Adiantum tenerum*; 3, A. Williamsii; 4, A. Capillus-Veneris variety; 5, A. decorum; 6, *Aspidium trifoliatum*.—A. B. R. 1, *Asplenium lucidum*; 2, *Oncidium Wentworthianum*; 3, *Odontoglossum aspidorhinum*; 4, *Masdevallia coriacea*; 5, *Pleurothallis rubens*; 6, *Pteris longifolia*.—A. Y. L. The small form of *Epidendrum umbellatum*, figured in the *Botanical Magazine*, t. 2030. Introduced from Jamaica in 1793 by Vice-Admiral William Bligh in H.M.S. *Providence*. Much larger forms are known in gardens.—V. Z. 1, *Epidendrum diffusum*; 2, *Lelia longipes*; 3, *Oncidium spilopterum*.—A. S., Stratford. *Ceanothus azureus*. You had better plant the Iris out, and if they have been grown in pots under shelter, place a few dry leaves over the crowns after planting.—H. H. 1, *Polygonum molle*; 2, *Sedum Telephium*; 3, *Adonis autumnalis*; 4, *Hibiscus syriacus*.—J. B. S. *Acer Negundo*.—*Philomathus*. 1, *Chrysanthemum segetum*; 2, *Matricaria inodora*.—L. C. 1, *Juniperus virginiana*; 2, *Buddleia nivea*; 3, *Corydalis lutea*; 4, *Tamarix gallica*; 5, *Jacobiua*, if rose-coloured *J. carnea*, if yellow *J. chrysocephala*; 6, *Begonia* sp.—G. H. S. 6, *Cratægus coccinea*.

NYPHÆA: V. The rhizome and roots are crowded with fungus-mycelium, of what kind is not determinable in the absence of fruit, but evidently it is a true parasite. In all probability the soil or the water, or both, are infected, and a thorough clear out and a fresh start appear to be the only things to be done.

PALM LEAF: Grateful, Salop. The Palm-leaf shows no evidence of fungus-disease. The spots appear to have been caused by some detail in the cultivation afforded the plants.

PEACHES: G. W. M. Your gardener's six fruits of Lady Palmerston Peach weighing 9 oz. each which he sent to table last Sunday were good specimens, but not remarkable from the point of view of mere size. In these pages there appeared a note on August 27, 1881, describing fruits of the variety Dr. Hogg, one of which weighed as much as 18½ oz., and several were 15 oz. and 16 oz. each.

PELARGONIUM: E. B. R. The leaves have been punctured by some insect, perhaps green-fly, perhaps mite. Try washing the leaves with tobacco-water and afterwards with clear water. We cannot name the *Tropæolum* without seeing the foliage.

PUFF BALL: H. A. Your fungus is called *Scleroderma vulgare*. Interior black when fully mature. It is poisonous.

SITUATION IN WEST OR CENTRAL AFRICA: Forward. Apply to Secretary for the Colonies, and advertise in these columns.

THE STORING OF CARROTS: Winter Store. Difficulty is sometimes experienced in keeping Carrots in good condition for winter use after they have been stored in a covering of sand or coal ashes, in a position where frost will not penetrate, even when the roots were not lifted until the bronzed and purple foliage showed them to be fully mature, and the foliage was cut off as close to the crown as possible, without cutting into the skin; the following practice may in such a case be given a trial. Place upon the floor of an open shed some bundles of Pea sticks or faggots, so that a free circulation of air may pass between the floor and the Carrots. Cover with dry silver-sand similar to that used for potting purposes, and in sufficient quantity to prevent the Carrots from being affected by sudden changes of temperature. The faggots may also be used in the open or under a north wall, but in such positions dry straw or preferably dry Fern must be used as a thatch. It is well to allow the Carrots to lie a day or two on the ground in heaps, after having been carefully lifted and covered with their own foliage, so as to prevent the possibility of their getting heated afterwards. Whatever may be the mode of storing, the roots should not be put together in great bulk. If any considerable degree of heat is generated it will destroy the flavour, and be soon afterwards followed by decay. In soils where maggots do not destroy the roots they are best left in the ground during the winter months and in severe weather covered with litter, cocoa-nut fibre, refuse, or ashes. In market gardens dry sheds are much used as stores.

VIOLETS: W. P. N. It is impossible to examine your Violets microscopically when the foliage is so covered with soil, as it was when received here. If the leaves have to be washed first before examination any mould there may have been would be cleared away. There is every appearance of the American spot disease, but the presence of grit prevents examination.

WOOD FROM NECTARINE-TREE: H. F., Ripley. There is no fungus disease present. Probably the mischief will be found if the roots are examined.

COMMUNICATIONS RECEIVED.—R. W. R.—W. T. G. L.—A. Y. L.—D. & R.—W. C. L.—W. B.—F. G. B.—E. Y.—Miss K. H.—O. S.—W. M. N.—W. D.—K. R.—C. J. E. (photograph)—W. D. & Sons, Ltd.—B. A.—W. Priest—N. L.—L. P.—H. R.—J. M. Brussels—H. C. M.—A. P.—E. A. H.—W. C.—F. J.—E. H. J.—O. T.—W. A. C.—W. F.—W. W.—W. A. M.—W. H. C.—G. D.—S. C.—A. B.—T. Coomber—J. J. W.—E. H. W.—K. B.—Press Association—U. D., Berlin—Sir T. L.

(For Markets and Weather, see pp. x. & xii.)

THE
Gardeners' Chronicle

No. 981.—SATURDAY, October 14, 1905.

CONTENTS.

Apple Coronation ...	280	Oversea supplies ...	281
Apples, bruised ...	281	Peach Duke of York, 278; P. Late Devonian, 278; P. Walburton Admirable ..	282
Books, notices of—		Pea, Gladstone... ..	283
The Book of Garden Design ...	275	Plant portraits... ..	283
The Uses of British Plants ...	280	Plants, new or noteworthy—	
China, plant collecting in ...	277	Buddleia nivea ...	275
Clematis flammula, with scented and scentless flowers ...	282	Reading University College, horticulture at ...	280
Cordylone with striped leaves ...	280	Rock Garden—	
Elm-limbs falling from trees ...	282	Ixiochlorion montanum ...	276
Fruit growing, a conference on ...	284	Shot-hole fungus, the Societies—	282
Fruit show at Westminster, the 280, 283, and Supp. pages		British Gardeners' Association ...	286
Fig-trees planted out	277	Glasgow Seed and Nursery Assistants' Association... ..	287
Grape Prince of Wales	277, 282	Horticultural Club, Manchester and North of England	287
Green, Mr. W. H., presentation to ...	281	Orchid ...	287
Hardy flower garden—		Royal Horticultural (and Supplement)	283
Cyclamen ...	282	United Horticultural Benefit and Provident (Annual Dinner) ...	287
Jimson Weed, the ...	282	Trees and shrubs ...	276
Nicotiana Sanderae ...	282	Vines, cleaning ...	282
Obituary—		Wasps attacking fruit	281
Bidgood, John ...	287	Week's work, the 278, 279	
Moon, Henry George	287	West Dean Park, Sussex ...	273
Orchid notes and gleanings—			
Houlletia Brocklehurstiana ...	275		
Laelio-Cattleya x Hermione Westfield var	275		

ILLUSTRATIONS.

Apple Coronation ...	281
Buddleia nivea ...	275
Codlin moth, the ...	279
Flower-border in the gardens at West Dean...	273
Grape Prince of Wales ...	277
Pears: Louise Bonne of Jersey, 283; Marie Louise, 285; Madame Treyve, p. ii., Supp.; Marie Louise d'Uccle, p. iii., Supp.	
Portrait of the late Henry George Moon ...	287
View of the residence and grounds at West Dean Park, Sussex (Supplementary Illustration).	
Winter moth, the ...	279

WEST DEAN PARK.

[See Supplementary Illustration, and Fig. 101.]

WEST DEAN is the seat of William D. James, Esq., and is situated in a beautiful part of the county of Sussex, between Midhurst and Chichester. The London, Brighton, and South Coast Railway from Midhurst to Chichester being but a single line, the journey from London to Singleton, which is the station for West Dean, occupies considerable time, and it is better, in some instances, for passengers returning from Singleton to go further south to Chichester, where they can join fast express trains to London. It is fourteen years ago since Mr. James purchased this estate, consisting of 10,000 acres of land, which for the most part is well wooded and charmingly undulated. The mansion was built during the reign of James I., mainly of flint, but the building has been considerably altered and enlarged before and since Mr. James came into possession. A delightful view of grass and woodland scenery is obtained upon looking from the front of the mansion which faces the south. The ground slopes upwards very abruptly from the back or north side of the mansion, as shown in the Supplementary Illustration, and immediately in front of the house there is little else than grass land, the attractive gardens stretching mainly away on the east side. The Singleton hills, north of the house, are well wooded, and provide abundant shelter for the West Dean gardens.

The park, which is 400 acres in extent, contains many fine specimens of Beech, Wych Elm, Lime, and an exceptionally handsome specimen of the Horse-Chestnut, which is one of the largest we have ever seen. The house is approached by a broad drive, which winds through the park, and at the front-door there is a large square area covered with gravel, and margined by the grass of the park. On the gravel during summer huge specimens of an exceedingly bright scarlet-coloured Pelargonium named Universe are arranged with other plants in tubs and pots. The effect of the colour of the Pelargoniums is very rich, even when seen from a considerable distance. The walls of the house are being covered with choice creepers, planted by the present gardener,

of Gladiolus of the gandavensis type are planted in March, and these make a gorgeous display in August and September, a season when otherwise the beds would be dull.

Lilies of many species are cultivated well, and are massed together in considerable numbers. The somewhat light soil suits them admirably. Lillium Henryi, planted but four years, has covered a space of more than 20 feet by 10 feet, and the flower-spikes attain a height of 10 feet. We counted on one stem as many as twenty-four flowers. L. excelsum, with its pale yellow-coloured flowers, covers a space of 30 feet by 10 feet. The very choicest of herbaceous Phloxes grouped in hundreds in large beds afford a magnificent display in their season.

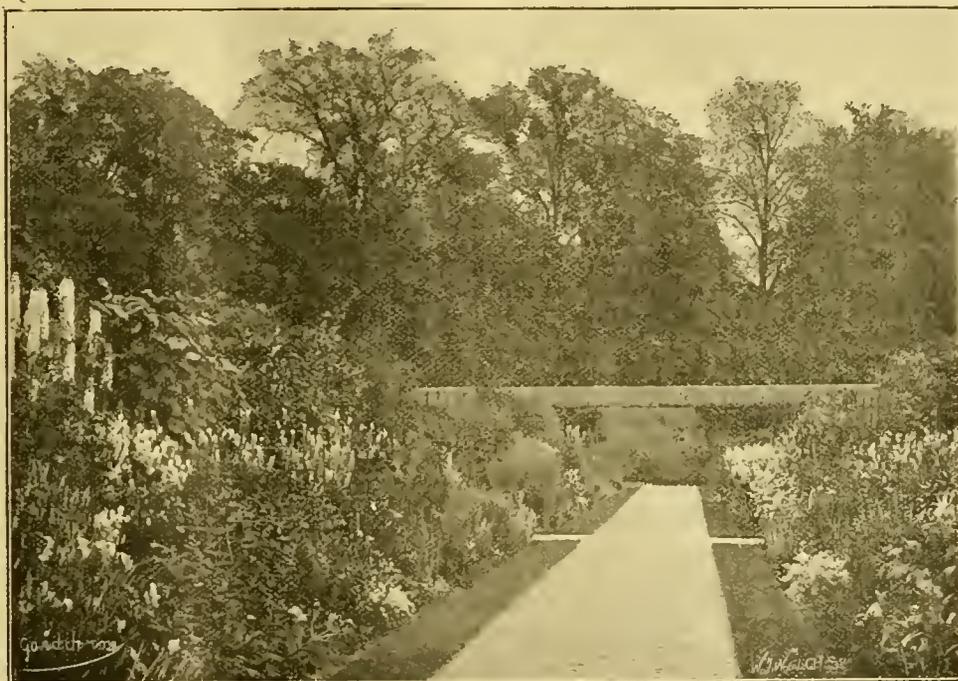


FIG. 101.—VIEW OF SOME FLOWER-BORDERS IN THE GARDENS AT WEST DEAN.

Mr. W. H. Smith, which will very greatly improve its appearance.

The pleasure-grounds extend over 60 acres of land at least, and they have been designed and planted with the view of obtaining such effects as are furnished by masses of colour. The lawns are ornamented with many specimens of choice trees, including Conifers. Cedrus libani and C. atlantica glauca are extra fine. A specimen of the English Yew, which is 40 feet in height and as much as 18 yards in diameter, is noteworthy. Two instances of the Fern-leaved Beech, 30 feet high and 40 feet in diameter, a Tulip-tree (Liriodendron tulipiferum), 60 feet in height; a grand specimen of Cupressus macrocarpa, and a tree of Ginkgo biloba, are others among the more remarkable trees. Rhus Cotinus, growing in front of evergreens, is one of the most conspicuous shrubs when in flower. The King has visited West Dean on many occasions, and a specimen of Cedrus atlantica glauca planted by His Majesty on the lawn marks a visit he paid in 1903. We have already said that efforts are made to obtain large patches of colour. In the beds of herbaceous Peonies quantities

It was very noticeable that the Peonies were planted together in unusually large quantities, so that during their season of flowering the collection must be one of great interest, for the choicest varieties were acquired of the tree species, and of the herbaceous type. In one instance the types were intermixed in the border, the plants in one row being of the tree or mountain type, and those in the next row of the herbaceous species.

In beds cut out of the grass we noticed some effective combinations at West Dean; for instance groups of Turner's Crimson Rambler Rose were planted at distances of 6 feet apart, and trained to poles, the intervening space being filled with Lavender. Brightly-coloured Golden Elder in the centre of a large bed was margined with golden-coloured Privet. Acer Negundo variegatum occupied another bed by itself, and being near to a dense Yew hedge was very effective. Prunus and Purple Hazel, Cornus Spaethii and Crimson Rambler Roses associated together were attractive.

Heliotrope President Carnot is cultivated in the form of large standards, which are used

among other purposes for planting in a bed, which measures 20 feet in length. They are mixed with Ivy-leaved Pelargonium Madame Crousse. Specimen plants of Calceolaria amplexicaulis growing a yard apart last season had under them a blue carpet formed of Viola variety Lady Tweedmouth. An effective method of training Wichuraiana Roses was noticed in an oval shaped bed measuring 14 feet by 12 feet. Seven plants were in this bed, and the stout growths were trained up poles 6 feet in height, the remaining shoots being employed to carpet the bed under the specimens. Even when the plants are not in flower beds like this have a pleasing effect, but during the blossoming period they are irresistibly attractive. There is a Rose-garden of some extent. In the centre is a large circular bed, with numerous other beds, some round, others half-moon-shaped, around it. In most instances one bed is filled with one variety of Rose, such as Mrs. W. J. Grant, Papa Gontier, and Liberty, which produce a profuse and brilliant display of flowers.

Not far from the house is a Laburnum avenue or archway 70 yards long, 12 feet wide, and about 7 feet high. The Laburnums are trained over the top, and the racemes hang down through the archway, making a glorious display of gold colour for the entire length. The effect is that of a golden arch, and the flowers are just above one's head when walking through the archway. The sides are of Ivy, and altogether the arch is one of the most novel we have seen, and it is one that may be recommended for imitation in other gardens where pergolas are to be constructed.

BAMBOO AND WATER GARDEN.

Not far away from this spot flows a small stream, known locally as the River Lavant, and an informal Bamboo-garden and a semi-wild garden have been made on a site that was formerly a thick wood. There is thus an ample supply of specimen forest trees, and these have been judiciously thinned and grubbed out by the present gardener four years ago to admit sufficient light for the species that were to be planted. The undergrowth was cleared away and the stream diverted for the purpose of getting a better effect. In such manner was the foundation laid for what is now one of the most charming features at West Dean. In the part devoted to Bamboos occur specimens of *B. Metake* 25 feet in diameter and proportionately high; *B. palmata*, *Arundinaria aurea*, 15 feet high and as much through; *A. nitida*, 12 feet across; *Bambusa elegans*, *Arundinaria stricta*, *Bambusa Khasyana*, 15 by 15 feet, one of the most graceful in character and as hardy as any; *Arundinaria falcata*, *Bambusa gracilis*, and *B. Veitchii* all show the suitability of the site by the luxuriant growth one and all are making. This semi-wild garden is some 200 yards long and about 50 yards wide, quite irregular in outline. Masses of plants at all likely to flourish in such a site are encouraged. For instance, *Polygonum cuspidatum*, *P. sachalinense*, hardy Ferns in quantity, Foxgloves, Narcissus, autumn Crocus (*Colchicums*), Cyclamens, Spiraeas, Anemones, *Calceolaria Childsii*, *Veronica prostrata* and other species, *Scillas*, *Crinum Powellii*, *Hel-*

bores, *Valerian*, *Aubrietias*, *Primula japonica*, Poppies, *Verbenas*, *Iris* in variety, especially *I. Kämpferii*, *Campanulas*, *Potentillas*, *Dielytra*, *Aquilegias*, *Lupinus*, *Phormium tenax* 8 feet high and in flower—all these and numerous other subjects are utilised with effect. It is, indeed, a charming part of the garden. The informal, zig-zag stepping-stones and ground-rockery with the *Saxifragas* and other low-growing plants creeping around and over the stones, being under the feet as one is walking, afford a delightful contrast to the brighter flower-beds near to the house.

Herbaceous flowering plants in the kitchen garden borders are numerous and choice; they are massed together for producing flowers for cutting.

THE FRUIT GARDEN.

Fruit-trees, both in the open garden and under glass, are cultivated with great success. In addition to standard and pyramidal trees, espalier and bush-trained Apple-trees are a feature, producing fruits of extra quality and size. Plums are cultivated against walls having west and north aspects; such varieties as Kirke's Victoria and Pond's Seedling yield the best crops. The garden being so near to trees and plantations, it has been found necessary to protect many of the trees by wire-netting to save the buds in spring from the birds. Gooseberries as standards, also Currants and Plums, the Japanese Wineberry and the Loganberry, which are appreciated highly, all find a place here.

Melons are grown in considerable numbers; such varieties as Sutton's Superlative, Hero of Lockinge and Perfection are favourites. Early in the season the Melon plants are trained as cordons, as these produce a crop most quickly. Of Grapes there are excellent crops of Muscat of Alexandria, Black Alicante, and other varieties. Indoor Cherries constitute a considerable crop, of which Black Tartarian and Bigarreau are favourite varieties. Peaches and Nectarines are, as in most gardens, among the principal fruit crops; many of the trees are grown in pots, and we counted as many as ninety fruits of the Nectarine Peach on one tree. In one house the Peach-trees are trained on trellises extending cross-wise, instead of lengthways, and the results are very satisfactory by this system, which of course provides a greater fruiting area. We have remarked on previous occasions that in districts in the South of England where in ordinary seasons no difficulty is experienced in getting Peach trees thoroughly to mature their growth, and especially on soils overlying chalk or gravel, this system of planting should be more often adopted. This view has been endorsed by numerous correspondents (See *Gardeners' Chronicle*, November 22, November 29, December 6, and December 20, 1902).

In one house there is a combination of Vines and Peaches, and the Black Alicante and Lady Downe's Grapes appear to suffer no ill effects from their companionship with the Peach trees on the back wall.

Figs have a house devoted to their culture. Tomatos are produced in very large quantities. Autocrat Peas are grown under glass to yield an extra late crop, and they succeed splendidly in lowhouses which are just suited for the purpose.

THE PLANT HOUSES.

These are remarkably well stocked with choice and well-grown specimens. Mr Smith, who for some years was foreman to Mr. Jennings at Ascot Gardens, Leighton Buzzard, is a capital plantsman, and he can hardly help making the cultivation of Carnations a speciality. His employers are particularly fond of this flower, therefore there need be no surprise when one sees the enormous number of plants of all sections, indoors and out-of-doors. The *Souvenir de la Malmaison* varieties are cultivated with exceptional success, and it may be remembered that a batch of excellent plants was exhibited from these gardens at the last Temple show. In June last we saw in one of the houses at West Dean a plant of a variety of Carnation named Lady Wolverton, which we may almost describe as being a perfect specimen. The variety has large flowers of deep salmon-pink colour, petals very slightly fringed, and possessing a non-splitting calyx. The plant was growing in a pot 12 inches in diameter, had good foliage to the base, and bore fifty-one flowers. As many as 1,000 plants of the variety Princess of Wales alone are grown, and 500 plants of Cecilia. Other varieties include Miss Alexander James, the yellow Malmaison, Lady Hermione, and a large batch of Mrs. H. J. Jones, which is valued greatly. The season of flowering at West Dean for this type of Carnation extends from early in March until the end of July. Fully 1,000 plants of tree varieties are also grown, and they include such sorts as Mrs. S. J. Brooks, Mrs. Moore, Empress of Germany, Lucifer, America, Fair Maid, Mrs. Lawson, Winter Cheer, President Carnot, and Phœbus. *Coleus thyrsoideus* has been welcomed here as a good winter-flowering plant. The plants are rooted in June, and being grown close to the glass constantly in low-roofed houses they remain of low stature and of sturdy habit. Cyclamens—Sutton's Giant White especially—*Begonias Gloire de Lorraine* and the variety Turnford Hall in extremely small pots for the size of the plants; *Streptocarpus*, *Exacum affine*, *Crinum Moorei*, and *Carex variegata*, *Schizanthus*, *Cannas*, *Primulas*, *Chrysanthemums*, &c., are grown well and numerous. *Madame de Bussey Heliotropes* as standards are especially fine.

Among other plants is a collection of Orchids, in which most of the showier genera are represented by good specimens.

There is another garden besides those already referred to, and it is of great interest in the spring of the year. Briefly it consists of a pinetum and American garden, in which the Conifers and Rhododendrons, *Kalmias* and such like plants are growing together rather than as specimen trees. The number of Rhododendrons is enormous, and as one walks through the grass-covered paths that intersect the garden in many places, the effect that is seen reminds one of the pleasure-grounds at Bagshot Park. Of course there are many deciduous trees also, and the flowering Ash particularly is very effective when its inflorescences can be seen overhanging some of the paths. This garden, which is half a mile at least from the pleasure-grounds, is situated on a very steep slope, and is frequently thrown open to the public.

West Dean, we are glad to add, possesses a capital bothy for the housing of the young

men. This has been erected during the time Mr. Smith has been charged with the management of the gardens, and the building embraces all the accommodation and hygienic conditions desirable.

There is sufficient evidence throughout of the interest Mr. and Mrs. James have for all pertaining to the pursuit of gardening.

NEW OR NOTEWORTHY PLANTS.

BUDDLEIA NIVEA, DUTHIE.*

A VERY distinct species, easily recognised by the pure white woolly pubescence which clothes the under surface of the leaves and the spike-like branches of the inflorescence. This handsome shrub was found by Mr. E. H. Wilson on mountain slopes in Western Szechuan, at elevations between 7,000 and 8,000 feet. Its bright purple flowers are shown to great advantage against the white-silvery pubescence. It has been introduced into cultivation by Messrs. Jas. Veitch & Sons, to whom we are indebted for the specimen from which our illustration (fig. 102) was taken. *J. F. Duthie, Kew.*

ORCHID NOTES AND GLEANINGS.

HOULLETIA BROCKLEHURSTIANA.

FLOWERS of this handsome old species, which was probably better represented in gardens sixty years ago than it is at the present time, are kindly sent by Mr. H. Haddon, gr. to J. Neale, Esq., Lynwood, Penarth, who states that "the plant has two spikes of ten and six flowers from the same bulb." The flower, which is strongly clove-scented, is 3 inches across. The colour is yellowish tinged with red-brown, the sepals being densely speckled with a darker red tint. The base of the lip is white, studded with blackish warts, and with a narrow curved horn on each side. The front lobe is trowel-shaped, and covered with blackish-purple, raised markings. It is an ornamental plant, with broad oblong-lanceolate leaves often 2 feet in length, and it thrives well in an intermediate or Cattleya-house with the same treatment as *Maxillarias*.

LÆLIO-CATTELEYA × HERMIONE, WESTFIELD VARIETY.

The crosses between *Lælia Perrini* and the large-flowered *Cattleyas* are among the brightest and most useful of autumn-flowering Orchids, and their freeness to flower is an additional good trait. *L.-C. × Hermione* (*C. Luddemanniana* × *L. Perrini*) is one of the most beautiful, and the present variety both in size and colour may claim to be the finest of the class. It bloomed with Francis Wellesley, Esq., Westfield, Woking (gr., Mr. Hopkins), who kindly forwards a flower. The

expanded petals measure 7 inches from tip to tip; each petal being nearly 2 inches wide. The sepals and petals are bright rose coloured (the veining being darkest), with a silver-white base. The base of the lip is white, delicately lined with purple, the disc sulphur-yellow, and the edge of the crimped side-lobes and the whole of the front ruby-crimson, shading to violet towards the centre.

well as much artistic feeling for his subject. He has considerable contempt for the so-called garden architect, the spoiler of many gardens in this country, and points out the common failures and short-comings of the landscape gardener of the present day, his love of artificial features in bricks and mortar, his senseless cutting up of broad expanses of turf by flowerbeds and borders, his ridiculous treatment of

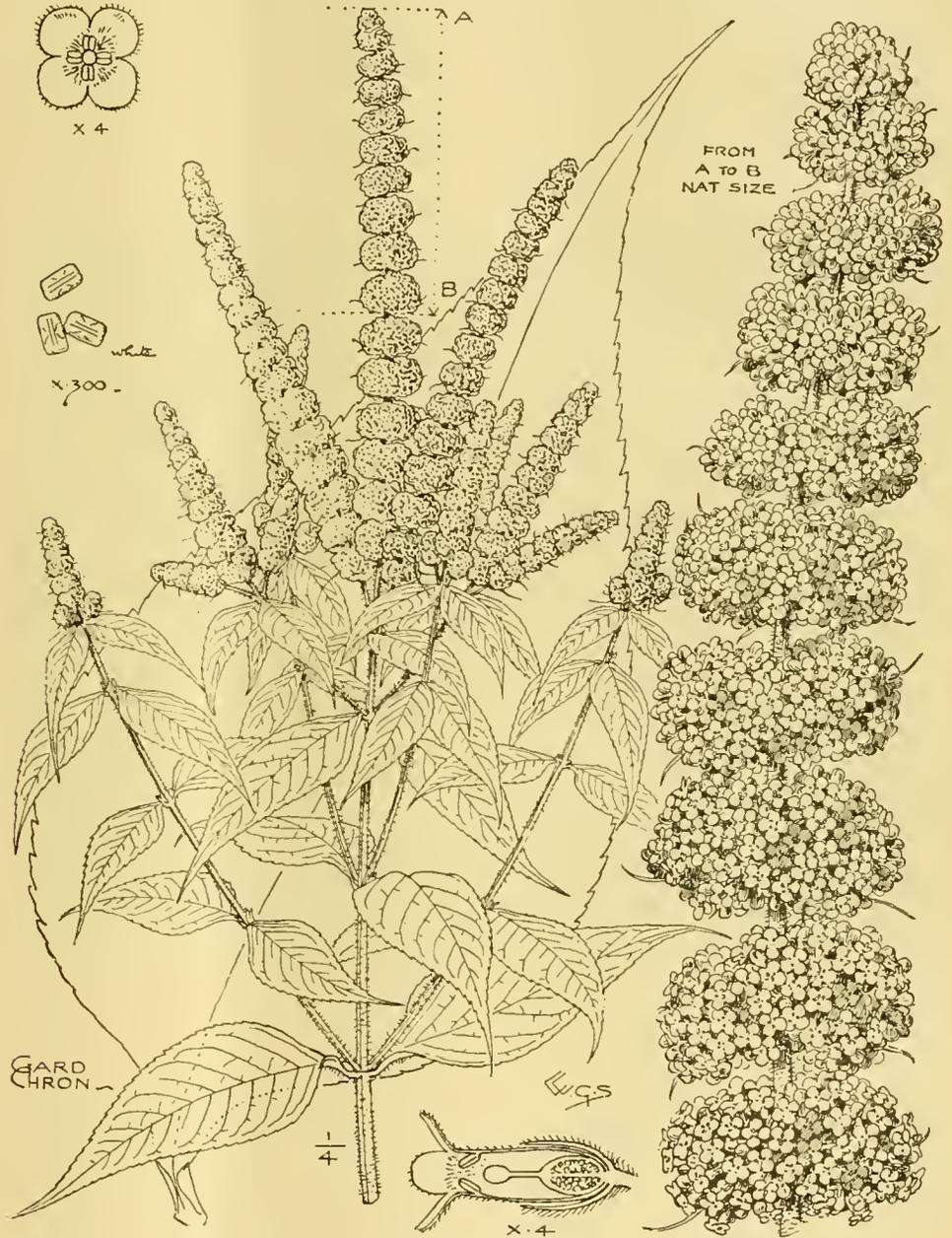


FIG. 102.—BUDDLEIA NIVEA.

Showing purple flowers and the curiously shaped pollen-grains, the latter magn. 350 diam. (W. G. Smith.)

BOOK NOTICE.

THE BOOK OF GARDEN DESIGN. By Charles Thonger. (Published by John Lane: The Bodley Head, London and New York.)

OF books on gardens there is no end, and we may assume from the constant stream issuing from the press that the demand is sufficient to encourage writers in their production. This, the latest which has appeared, is apparently the work of a gardening amateur, possessed of good taste in most matters appertaining to laying-out new and re-modelling old gardens; and with an extensive knowledge of trees, shrubs, and hardy flowering plants, as

streams, lakes, and water generally, his formation of needless walks, and his all too sparing use of the abundant deciduous flowering shrubs and trees ready to his hand, and in his want of repose in his designs. The author casts doubt on the dictum of many writers on the subject of laying-out, that we should turn to nature as the best guide in the art, and least of all thoroughly wild nature, seeing that a garden even of the most natural kind must be far removed from the efforts of nature. Moreover, the maker of a garden should be a gardener with abundance of gardening knowledge, otherwise his labours will fail in affording gratification to himself and friends, or to those who will come after him. He must be capable of looking ahead, and of conceiving what

* *Buddleia nivea, Duthie.*—A medium-sized shrub. Branchlets, under surface of leaves and inflorescence densely clothed with pure white woolly pubescence; branchlets cylindrical or more or less flattened at the nodes. *Leaves* opposite, petioled, 4 to 9 inches long, and 1½ to 4 inches in breadth, falcately ovate-lanceolate, acuminate, rounded or subuneate at the base, glabrous above except on the midrib, densely clothed beneath with white woolly pubescence; margins coarsely serrate, the teeth with callous tips; midrib stout; main lateral nerves many, spreading almost at a right angle, ultimate nerves forming conspicuous reticulations; petioles ¼ to ½ in. long, grooved above. *Flowers* cymose on the spike-like branches of a terminal panicle, shortly pedicelled, or the central ones of each cluster sessile. *Floral leaves* ½ to 1 inch long, obliquely ovate-acuminate, or the uppermost linear; bracteoles linear, often exceeding the flowers. *Calyx* densely woolly outside, nearly glabrous within; lobes triangular, one-third the length of the tube. *Corolla* purple or lilac, 3 lin. long; tube tomentose outside (except at the base), glabrous within; lobes spreading, subquadrate, slightly emarginate at the apex, edges undulate, ciliate. *Stamens* attached to the upper part of the corolla-tube, and protected by a ring of white hairs, *Capsule* tomentose, exserted from the marcescent corolla.

the aspect of the place will be, say in thirty, fifty, or a hundred years, and of estimating the effects of changes in the dimensions of the trees and shrubs he is now planting.

Nothing remains for any length of time at the same stage, and the necessary alterations caused by and resulting from this inevitable state of growth and decay, afford the possessor of a garden some of his greatest pleasures.

"To a certain extent the good designer is born, not made, but much may be done by intelligent study and a real fondness for the work to make up for any lack of natural ability in this direction." The uselessness of stock-plans and patterns is insisted on, these only leading to monotonous sameness in gardens all over the country. Many useful remarks are made on the formation and directions of garden paths, and on the evils resulting from attempting too much on small areas. Clipped hedges and topiary objects are wholly condemned, the author acknowledging, however, the importance of the first-named objects in some old gardens which cannot be overlooked. In connection therewith he has a slash at the "office designer, whose thought is less for the true beauty of the living plant than for the elegant completeness of his deftly drawn plan." We think that for an inner hedge in a garden, *Thuja plicata-gigantea* is a better plant than the darksome Yew, requiring less pruning, being of a livelier tint and possessing a less severe outline. If anything the author favours the natural grouping of trees, either as isolated clumps or boundary plantations, and the designer should have a hand in their disposal, even if they are situated outside the boundaries of the garden, the beauty of certain gardens consisting not so much in their own attractiveness as on the views to be obtained from them.

There are useful hints to be found in the chapter dealing with the planting of specimen trees and other matters. The kitchen garden and orchard come in for a chapter to themselves as befits their importance, the latter being the worn-out one much too often found in old estates, a thing of beauty probably, but of little value for its fruit.

The author has some useful observations on the use of water in garden design, which chiefly indicate, however, what to avoid. Still, it will serve a purpose if it prevent the perpetration of some common errors. No mention is made of the depth of the surrounding banks; of the inadvisability of planting trees and large-growing shrubs on the south side of lakes and streams; of suitable waterside trees; or of the means of filling and emptying lakes and ponds, or their construction—rather important items all of them.

The book concludes with lists of hardy herbaceous perennials; the plants of the rockery, aquatic and bog-gardens; of flowering trees and shrubs, evergreens, climbers, Roses, Clematis, &c.—none of them, however, so complete as they might be, owing, as the author tells his readers, to the exigencies of space.

Should another edition be published, the author should enlist the services of a botanist or of a horticultural editor in revising the names of the various species of plants included in his lists, specific names being spelled in some cases with a capital letter when there is the best of reasons for employing the body type; whilst the popular names, always a snare to the unwary, need in some instances correcting. In spite of these small lapses the book is a suggestive one for the amateur-gardener or owner of a small estate who is about to lay out or improve his garden.

THE ROCK GARDEN.

IXIOLIRION MONTANUM.

THIS *Ixiolirion* is an improvement on *I. tataricum*. The two were grown side by side, and *I. montanum* proved superior in all respects. The flower-stems were 28 inches in height, against 14 inches in *I. tataricum*, and some of the flower-scapes held twelve blossoms, whereas the latter in no case bore more than six. The flowers of *I. montanum* were also rather larger, measuring $1\frac{1}{2}$ inch across. The purple-blue colour was the same in both cases. The *Ixiolirions*, which are natives of the mountainous districts of Asia Minor, appear fairly hardy, and are pretty in the rock garden or in the border when in flower. They succeed best in very gritty compost, but should be planted fully 4 inches deep. Where the flower-scapes are not cut off after the blossoms have withered, self-sown seedlings sometimes spring up around the old plants. *S. W. Fitzherbert.*

TREES AND SHRUBS.

AILANTHUS VILMORINIANA.

AMONG the many interesting new trees and shrubs in the fruticetum of Monsieur Maurice de Vilmorin at Les Barres, not the least noteworthy is this new species of *Ailanthus*. A small plant was acquired for the Kew collection last spring, and this has grown so well during the past season that we are now enabled to see how it differs from *A. glandulosa* and to judge of its merits. It is, indeed, very distinct from the latter in more than one respect. The most noticeable character, perhaps, is the presence of short spiny excrescences on the bark. Another is the thick pubescence on the under side of the leaflets. In *A. glandulosa* the under surface is shining green, but in this new species the pubescence is so plentiful as to make it dull. The leaflets have the pair of gland-tipped lobes at the base (one on each side) which are seen also in *A. glandulosa*, and which serve to distinguish these two trees from all other hardy trees with pinnate leaves. For the rest, M. de Vilmorin's *Ailanthus* promises to be quite as beautiful an ornament to our gardens as the older species, if not more so. It is interesting to note that, according to Père Farges, a decoction of the bark is useful for curing the cutaneous eruptions caused by handling the poisonous *Rhus vernicifera*. The species is a native of the Szechuen Province of China.

ERICA MULTIFLORA.

This is by no means an uncommon plant in the nurseries and gardens of this country, but it is nearly always grown under the name of *Erica vagans alba*. It is indeed a near ally of *E. vagans*, "the Cornish Heath," but is not a native of any part of the British Isles. In habit it is compact and tufted, and never develops the spreading character that is seen in *E. vagans*. It does not appear to grow much above 1 foot in height, its foliage being of a rich green colour, against which, at this season of the year, the short racemes of white or pale pink flowers are seen to advantage. It commences to flower in July, and continues to do so till the middle of October. In places where Heaths thrive, and where a dwarf evergreen shrub is required to flower in the latter part of the year, this species may be strongly recommended. Once planted and established it needs no more attention than an annual removal of the old flowers, and even this is not absolutely necessary.

CARYA TOMENOSA.

It is not easy to understand why the Hickories as a whole have been so little planted in English parks and gardens. They are assuredly in the

very first rank among ornamental-foliaged hardy trees. With regard to the particular species under notice, it is not easy to mention one more striking in appearance, although it is scarcely ever planted. There are a few specimens to be seen in the Arboretum at Kew, which show the species to be one of the noblest of pinnate-leaved trees. They are not old trees, being 25 to 30 feet high, and possibly more aged specimens would have smaller foliage; but in their present state their leaves are strikingly large. There are two and a half pairs of leaflets to each leaf, and the terminal one, which is the largest, is from 12 to 15 inches in length by about half as much in width, the entire leaf being 2 feet long. The leaflets are downy beneath, especially on the veins, and are somewhat triangular in outline, pointed, and have serrated margins. At the end of the present month the foliage turns from dark green to a beautiful yellow—one of the richest and brightest yellows to be seen among autumn leaf-tints. The trees are then extraordinarily beautiful, giving such a combination of leaf-form and vivid colouring as is rarely seen in our hardy trees. *W. J. E.*

PLANE TREES.

It will generally be conceded that Plane-trees have been magnificent this year in the metropolis, the abundant rains having given an impetus to the growth of leaf and shoot beyond what is usual, and likewise kept the leaves free from dust and sooty deposits. There is no doubt of the various forms of *Platanus acerifolia* being the best of all trees for planting in the avenues, wide roads, squares, and parks of the metropolis. *P. orientalis*, of stately habit and wide-spreading branches, is the most admired as a shade tree. *F. M.*

CHOISYA TERNATA.

Although this free-flowering evergreen shrub is generally cultivated in the greenhouse it is quite hardy in the western counties, and immense bushes are to be seen standing in the open in many gardens. The foliage alone is effective; its rich glossy leaves showing up well in any position, but the plants are specially attractive when in full flower. It is at its best in July, but given a warm summer it produces numerous heads of flowers again towards the end of September. We have to use the knife pretty freely, as the plant grows with great vigour in good soil; but if planted in the turf growth is not so robust, and pruning is unnecessary, although it flowers freely. The plant may be easily increased at this date, either by cuttings made of half-ripened wood or by layers in the open. The cuttings can be set out in handlights or cold pits, and protected from severe weather in districts where the plant is not perfectly hardy. It may also be propagated by cuttings in early spring, over a gentle bottom heat in a close frame or under bell-glasses. The plant having been introduced from Mexico in the year 1825, it is commonly known as the Mexican Orange-blossom. Under pot culture a little peat, leaf-mould, and coarse sand added to the loam will suit the shrub. After the new growth has well advanced the plant should be stood in the open, so that the growth will thoroughly ripen before winter.

COTONEASTER BACILLARIS.

Like the newer variety *C. angustifolia* this is one of the best of the genus, making a fine display with its large bunches of scarlet berries during the autumn and early winter. The plant is of upright growth, growing and fruiting freely in the arboretum here, and when planted on the grass as an isolated specimen it shows to better advantage than when planted in shrubby borders. *Cotoneasters* are easily raised from seed sown in spring or layered in autumn; they may also be grafted on *C. vulgaris*, and, I believe, are some-

THE FOOD PLANTS OF JAPAN.—Mr. UNGER is contributing to the *Deutsche Japan Post* a series of articles in German on the food plants of Japan, a subject on which he has special opportunities of obtaining information.

times grafted on the Hawthorn, as well as on the common Quince. *J. Mayne, Bicton Gardens, Devonshire, September 29.*

[Excellent specimens of both plants were sent by our correspondent. Ed.]

LEAVES FROM MY CHINESE NOTE BOOK.

(Continued from p. 267.)

MISCELLANEOUS VEGETABLES.

Under this heading I shall group a large number of plants used as food in various ways. Some are wild, but most are cultivated, and many of them are strange and novel to Europeans.

Brijals (Solanum melongena).—This handsome if tasteless fruit is largely cultivated as a vegetable. The Chinese distinguish at least five varieties by their colour, shape, and time of maturing. Some of them are truly enormous, often weighing 2½ lb. and measuring a foot in length. They are in the markets from June till October. The Tomato has been introduced by foreigners, and in Yunnan is frequently met with semi-wild as an escape. The Chinese, so far as my observations go, do not eat it themselves.

Capsicum annum (Chillies).—Both long and round varieties of these are extensively cultivated. The "long" variety is particularly happy in the dry, hot valleys of the Tung and Min rivers, and is grown as an article of export for other parts of China. The round (heart-shaped) form is cultivated in the plains, and especially the plain of Chentu. These Capsicums constitute the most important relish used by the Chinese. In a green state they are fried and eaten with Rice and Cabbage. When ripe they are pounded up in a mortar and with water added form a sauce. Roasted and ground into meal they are used for seasoning purposes. The whole fruits are boiled in oil to impart to it their pungent flavour. Oil so treated will keep indefinitely.

The true Chinese Pepper (*Hua-chiao*) is the fruit of *Zanthoxylum Bungei* ground up. This thorny shrub is cultivated everywhere in small quantities, but it is only in the Min valley that I have noted it extensively grown for export.

Bamboo Shoots.—The young shoots of *Phyllostachys mitis* are eaten both fresh, dried, and salted. These Bamboo-shoots cooked as a vegetable or made into a salad are very fair eating, but it is ridiculous to compare them with Asparagus, as some writers have done.

In Southern China and Tonkin the young shoots of the "male" Bamboo (*Bambusa vulgaris*) are eaten. These are also an article of export to other parts of China, and can usually be bought in a dried state in most of the large cities. In mountainous districts the young succulent shoots of different species of Bamboo are eaten. In the west, one of the commonest of these is the lovely *Arundinaria nitida*.

Celery (Ch'ing ts'ai) and *Lettuce (U'sen)* are commonly cultivated. The Celery is never bleached, and it is the stem of the Lettuce more than the leaves that is in request. The leaves and young shoots of the following plants are used as vegetables:—*Cedrela sinensis*, *Pistacia chinensis* (*Huan-nien-ya*), *Chrysanthemum segetum* (*Tung-hao*), *Malva parviflora* (*Mao-tung-han-ts'ai*), *M. verticillata* (*Tung-han-ts'ai*), *Chenopodium album* (*Hui-t'ien-han*), *Triglochin chenopodioides* (*Yeh-han-ts'ai*), *Ipomea aquatica* (*Weng-ts'ai*), *Anaphalis contorta* (*Tak'ing-ming-ts'ai*), *Coriandrum sativum* (*Yen-ts'ai*), *Taraxacum officinale* (*Ku-ts'ai*), *Beta vulgaris* (*T'ien-ts'ai*), *Lactuca scariola* (*Wò-sheng-ts'ai*), *Spinacea oleracea* (*Po-ts'ai*), *Crepis japonica* (*Huang-hua-ts'ai*), *Basella rubra* (*Juan Chiang-tzu*), *Celosia argentea* (*Chi-kung-hua*) and *Amaranthus paniculatus* (*Ya kn*). *Zizania aquatica* (*Kao-sèn*) is very generally cultivated. Its succulent stem and very young inflorescence are

cooked and eaten as a vegetable. From a European standpoint it is really very good eating. From the rhizome of *Pteris aquilina* an arrowroot-like substance called *Chieh-fen* is prepared. In the mountains the young shoots of this Fern are eaten by the peasantry. From the thick woody root of *Pueraria Thunbergiana* a similar "arrowroot" to the above is prepared. It is, however, in very little request, save in times of scarcity. The roots of *Potentilla discolor* and *P. multifida* are also occasionally used for preparing a food-stuff similar to the above.

The flowers of *Lilium leucanthum* (*Yeh-peh-ho*) and *Hemerocallis flava* (*Huang-hua-ts'ai*) are eaten. The same is also true of the yellow Pea-like flowers of *Caragana Chamlagu*. The seed of *Plantago major* (*Ch'e-ch'ien-ts'ao*) enter into the composition of a jelly (*liang-fèn*) used in summer.

shape, of a jet-black colour, and they carry a good "bloom." The flavour is decidedly of the Muscat type.

The culture afforded the variety here has been similar to that given to the variety Mrs. Pince, from which it is a sport. The canes are growing on their own roots, and I do not think inarching it on any other variety could possibly improve it. It has a strong constitution, and its great value is shown by young canes carrying bunches as shown in the illustration (fig. 103) eighteen months from the time of planting, and also from having carried a couple of bunches each the first season. The fruit travels well, and keeps in good condition for several months after being cut. I believe it to be the finest Grape put into commerce during the last twenty years. *C. J. Ellis, Warren House Gardens, Stunmore.*



[From a photograph by C. H. Park.]

FIG. 103.—BLACK GRAPE PRINCE OF WALES.

As exhibited at the Royal Horticultural Society's Meeting on September 23. (See Text.)

The Chinese are very fond of several kinds of fungi, and distinguish quite a number of edible kinds. Amongst their favourites are *Hirneola polytricha*, *Cantharellus cibarius*, *Agaricus campestris*, and *Tricholoma gambosa*.

Seaweed (*Porphyra vulgaris*) is imported in quantity from Japan, and is on sale in the shops of all the larger towns and villages. From this seaweed the Chinese prepare a very nutritious jelly. *E. H. W.*

(To be continued.)

FRUIT REGISTER.

GRAPE PRINCE OF WALES.

From two canes planted in March, 1904, in pots in a newly-made border six bunches of equal proportion were cut on September 26, 1905. Four of these were shown before the Fruit Committee on that date. The Grapes were grown for the express purpose of testing the value of the variety, and as it proved to be of considerable merit, other canes were planted in new borders made last spring.

I intend showing the fruit again to the Fruit Committee at a later date to prove its keeping qualities. The berries are large in size, oval in

ASSISTING AGED FIG-TREES.

As large and rich borders are not conducive to the fruitfulness of Fig-trees, they may be planted with success in very cramped positions relative to their rooting space, and in positions in which both the Peach and Nectarine would fail. Indeed if there is sufficient soil for the tree to establish itself, as between a flagged pathway and the back wall of a forcing-house, it may be maintained for years in the best fruiting condition by means of what are termed their stem-roots. Roots are readily developed from the stems of Fig-trees when they are covered with soil or manure, and it is these feeders that keep the trees fruitful.

Having to deal with a tree growing in such a position, and one in which there was practically no root run, the stem was treated in this manner, with the result that full crops of fine fruits were secured annually. Wire netting was placed round the stem and secured to the wall, enclosing a space about a foot in diameter. This was filled with pieces of turfy loam, cow manure, and old mortar, the whole being rammed quite firm. The covered portion of the stem emitted roots freely in the compost, and each season developed a mass of feeders. Manure-

water was freely poured into this while the crop of fruit was swelling, and by autumn the surface was quite covered with roots. The wire netting was removed the following spring, and the mass of roots considerably reduced, after which the wire was replaced together with fresh compost. This may be well termed root restriction, but it evidently suited the requirements of the Fig tree, and the method is both easy and simple. *R. Parker.*

PEACH LATE DEVONIAN.

This fine Peach is worthy a place amongst the many varieties now in commerce. It is, however, not so late in fruiting as the name implies. A tree planted against a south wall in these gardens (Oxon) three seasons ago has almost filled its allotted space, its constitution and growth being robust, and its fructification free. It ripens its fruits here about the same time as that excellent and reliable kind Barrington, and is in season from the middle to the end of September. The fruit is greenish-yellow on the wall side, with a bright crimson colour on the side facing the sun, the skin being thin and the flesh juicy and melting, with a pale yellow tinge. The flesh parts easily from the stone, thus enhancing its value. One characteristic of this Peach is its early period of blooming, the flowers being large and showy. The leaves possess round glands, and are slightly serrated at the margins. *W. H. Clarke.*

— "F. M." does well to call attention to the best late varieties of Peaches and Nectarines, but he has not mentioned Late Devonian, a comparatively new variety, distributed by Messrs. R. Veitch & Son, of Exeter. This I consider to be a very fine Peach for ripening at the latter end of September or early in October, according to the locality. *James Mayne, Bickton, Devon, October 7.* [Our correspondent enclosed two fruits which had been gathered a fortnight previously, nevertheless they were good specimens, and retained excellent flavour for the season. *ED.*]

PEACH DUKE OF YORK.

During the short period I have grown this variety it has proved itself of excellent constitution, and one likely to become a valuable addition to early-fruiting varieties of Peaches. Fruit produced in an early house in May of this year was of medium size and brightly coloured on the side next the sun, the flavour being excellent. As it is the result of a cross between Early Rivers Nectarine and Alexander Peach, its precocity is easily accounted for, and from my knowledge of it so far, it is not affected by bud-dropping. *W. H. Clarke, Aston Rowant, Oxon.*

The Week's Work.

FRUITS UNDER GLASS.

By F. JORDAN, Gardener to DR. CORBET, Impney Hall Gardens, Droitwich.

Cucumbers.—Autumn-fruiting plants now in full bearing should be encouraged to develop as much healthy growth as possible. Pay careful attention to ventilation and to atmospheric conditions generally. Avoid overcropping the plants at this season, or they will soon become exhausted. Remove any damaged leaves before they decay, and keep the growths properly thinned by frequently stopping the lateral growths. Very little if any direct syringing of the plants will be necessary, as damping the beds and paths will provide sufficient moisture. Increased fire-heat will be necessary as the nights become colder, and should the bottom-heat be supplied by hot-water-pipes alone care must be taken that the plants do not suffer from dryness at the roots. Apply light top-dressings of a rich compost, which should be warmed to the temperature of the house before application, as the roots appear on the surface of the soil, in preference to giving large supplies of liquid-manure at this season. Houses con-

taining Cucumbers that were planted at the end of last month for supplying fruits during the winter season should be freely ventilated on all favourable occasions, for the purpose of encouraging healthy and sturdy growth. Pinch the shoots, but not too severely, and remove all fruits and male blossoms as they appear until a reasonable period before the fruits are required; but the plants must be cropped with moderation. Cover the pits at night to economise fire-heat, and see that the glass is kept clean and the plants free from red-spider and other pests.

Strawberries.—The earliest potted plants will by now have finished their growths, and their crowns will be ripening fast. Moderate feeding may still be given if required to the end of this month. Allow the plants plenty of room and keep the pots clear of weeds to facilitate the ripening of the roots as well as of the crowns. The whole batch of plants will be benefited by being overhauled occasionally and given as much room as possible, so that light and air may pass freely amongst them. Later plants are still making growth and will continue to do so with the present mild weather. Avoid too late feeding, as nothing will be gained by encouraging late and gross growths which will not be enabled to ripen thoroughly. St. Joseph or other late fruiting varieties which are still cropping should, as the fruits show signs of ripening, be placed in a cool-house, and be allowed a freer circulation of air. Plants which are swelling their fruits will require liberal supplies of liquid-manure, or the fruits will be of small size.

Winter Tomatos.—These plants should now be given more warmth, with less moisture and ventilation generally. A warm and moderately dry atmosphere should be maintained for the setting and swelling of the fruits, and the blooms should be pollinated daily with a soft brush. Later houses of summer Tomatos will continue to supply good fruits for some time if the plants are liberally fed, their side growths removed as they appear, and the plants kept clean.

THE ORCHID HOUSES.

By W. H. YOUNG, Orchid Grower to Sir FREDERICK WIGAN, Bart., Clare Lawn, East Sheen, S.W.

Cymbidiums.—Such species and hybrids as *C. Lowianum*, *C. giganteum*, *C. grandiflorum*, *C. Mastersii*, *C. eburneum*, *C. × Tracyanum*, *C. × Winnianum*, *C. × eburneo-Lowianum*, and *C. × Wiganianum*, are all slowly developing their spikes. Fortunately these may all be grown together in a cool compartment, but should the house in which they have passed the summer be deficient now in natural heat and light, it will be advisable to remove such plants as *C. grandiflorum*, *C. × Tracyanum*, and *C. eburneo-Lowianum* to a cool compartment having a more open aspect. Cymbidiums need very careful and restricted watering through the winter, though absolute dryness at the roots must not be permitted. Pot-bound plants of *C. Lowianum* and *C. giganteum* will derive benefit from an occasional dose of weak liquid farmyard-manure, though if the latter be of a doubtful character it should not be applied. *C. Devonianum* and *C. tigrinum* should be placed in a position near to the roof-glass in a cool house, so that their slowly-developing growths will not become thin and drawn. These two species thrive best when the water supply is limited to just sufficient to keep the rooting medium moist. The new *C. Sanderæ* and *C. Sanderi* with the old but recently-reintroduced *C. Huttoni*, will pass through the winter best in a house having an atmospheric temperature a trifle lower than that of a Cattleya-house, but in other respects they should be treated similarly to the others, especially in regard to the water supply. Sponge the leaves occasionally, and otherwise keep the plants clean and free from insect pests.

Cattleya labiata, &c.—This showy Cattleya is now in flower, and a word of warning may be given against allowing the expanded blooms to remain on the plants until the flowers decay. Cattleyas probably suffer more than any Orchid from exhaustion due to the development of flowers, and to prevent this they should be removed soon after they are fully expanded. Another source of trouble with this particular Cattleya occurs when the

sheaths decay, for these, if not cut clean off at their base next to the apex of the bulbs, set up decay in the latter. The plants should be induced to rest immediately after flowering by gradually decreasing the water supply, until only sufficient is applied to prevent shrivelling in the younger pseudo-bulbs. They should occupy a position in the Cattleya-house, where there is the most warmth and least atmospheric moisture. *C. Lawrenceana* being a late grower, should be placed in the lightest and hottest position available in the East Indian-house, returning the plants to a light and warm part of the Cattleya-house as soon as their pseudo-bulbs have finished growth. Be very cautious in applying water if the materials do not dry very readily.

Miscellaneous.—The *Thunias* should ere this have been removed indoors and been placed in a cool, light position further to ripen their bulbous stems. As soon as the leaves have fallen no more water is needed, and if space be limited, they may be laid under a stage out of reach of drip, draughts and too much fire-heat. *Bletia hyacinthina* also may be laid beneath a stage in a cool house and have no water applied until early in the new year. *Stenoglottis longifolia* soon after it has flowered loses its leaves and needs keeping dry at the root, and in a cool position. In applying water to *Ceogyne cristata* care must be taken not to wet the advancing scapes, or they may damp off. A medium supply is now needed, as the pseudo-bulbs have almost finished growths. *Vanda cœrulea* after flowering should be placed in a light position in a house having an intermediate temperature, and the water supply must be greatly diminished.

PLANTS UNDER GLASS.

By A. BULLOCK, Gardener to E. J. WYTHES, Esq., Copped Hall, Epping, Essex.

Nerine Fothergilli.—Plants that have passed out of bloom should be encouraged to make strong growth in order that the bulbs may be capable of flowering another season. Let those bulbs that have flowered be placed on a shelf near the light in a house having a warm, moist atmosphere, and where they can be frequently syringed overhead. The plants are liable to attacks of thrip, and if this pest is present dip them in Quassia-extract and fumigate the house several times until it is destroyed. Afford the plants copious waterings with diluted sheep-manure water, and continue with it until growth is well established.

Hippeastrums (Amaryllis).—Do not entirely withhold water from the roots until bulbs that have flowered have become completely mature and ripened. At the same time most of the bulbs will by now be in a condition to be stored away underneath the stages of a house where the atmospheric temperature is not allowed to fall below 45°. In this position they may remain with safety for a long time without requiring attention. Plants raised from seeds that have not flowered will require to be kept in a growing condition. They should be placed in the lightest position obtainable, and a little weak manure-water may be applied to the roots. Keep the plants free from thrips by fumigating them occasionally. Let the atmospheric temperature at night be about 55° in the structure containing these young plants.

Cyclamen.—Plants that are developing their flowers should be afforded a position in full light, and where a little artificial heat can be employed during dull, damp weather. Avoid having an excess of moisture in the atmosphere, as this condition tends to cause damping of the flowers and foliage. On all favourable occasions admit sufficient air to cause a circulation. A temperature by night of 55° will be suitable. Seedlings that were raised as advised in an August Calendar (see p. 129) should be placed on a shelf as near to the light as possible in an atmospheric temperature that is 60° at night. This position is an essential one and ensures the bulbs developing vigorously, and prevents them damping off.

Herbaceous Calceolarias.—Plants that were raised in July should be strong and sturdy by the present time. Protection from frost must be afforded, but admit air on all favourable occasions

in order to keep the atmosphere in a suitable condition. A light shading will be necessary on very bright days only.

Primulas and Cinerarias.—If these can be afforded the protection of a good brick pit they should be allowed to remain there for some time longer yet, as the conditions of light are more favourable to them there than if removed to a house. Remove any decayed foliage, and stir the surface of the material forming the base on which the plants are stood. On all favourable occasions allow a circulation of air among them.

THE KITCHEN GARDEN.

By W. FYFE, Gardener to Lady WANTAGE, Lockinge Park, Wantage.

Rhubarb.—The supply of Apples being short this season forced Rhubarb will be valuable. Now that the leaves are fast dying down, I am lifting some of the roots and leaving them for a week or two fully exposed to the influence of the weather, as experience has proved when forcing for an early supply that quicker and better results are secured after the stools have been submitted to this treatment. At this season of the year the roots should be started into growth in a temperature of 55° either in a greenhouse or in a Mushroom-house, and where light is excluded, as this will assist growth. Place the clumps close together and sprinkle a little fine soil between them. Use tepid water when watering.

Turnips.—Compared with early sowings the securing of a crop at this season of the year is a much less tedious task. The depredations of birds and other pests are much less troublesome, and the showery weather is more favourable to growth. The practice of making frequent sowings as advised during September has the advantage of ensuring a constant supply of young and tender roots. Even at this late season another sowing can be made, for should the roots not prove of sufficient size for culinary purposes the tops will be useful in the springtime as a green vegetable.

Cauliflowers.—Veitch's Autumn Giant Cauliflowers are now in the best possible condition. This variety, with Early London and Walcheren, followed by Veitch's Self protecting and Sutton's Michaelmas White Broccoli, furnish a plentiful supply of this useful winter vegetable. Protection must be afforded the plants in the event of frost to prevent the heads becoming injured. This can be carried out in many ways and before the heads have attained too large a size. They can either be removed to frames or open sheds, or relaid in the open where protection can be provided, but whatever practice is followed the plants must not be crowded closely together.

Box Edgings.—Few plant, if any, are better adapted for forming an edging to beds and borders than Box; its dense habit of growth, dark green foliage, and the readiness with which it withstands severe clipping make it especially valuable. September and October are suitable months for replanting or renovating such dwarf varieties as *suffruticosa*, and no harm will be occasioned by pulling the plants well to pieces to ensure the work being done uniformly and well. Cuttings from 6 to 8 inches long, inserted to half their length in a fine sandy soil and made firm, will soon develop roots and form a nice edging of even thickness. When these edgings are found to be harbouring insect pests, use air-slacked lime freely, which will soon disperse them.

THE HARDY FRUIT GARDEN.

By W. H. CLARKE, Gardener to Sir WILLIAM PLOWDEN, Aston Rowant House, Oxon.

Grubs in Apples and Pears.—These are either the grubs of the Codlin-moth (*Carpocapsa pomonella*) or of the Winter-moth (*Cheimatobia brumata*). The former is one of the most disastrous insects to both the Apple and the Pear. The female deposits an egg in the inside of the calyx, and the grub when hatched commences to gnaw its way to the centre of the fruit. The larvæ increase in size, and when fully grown attack the "pips" of the fruit, which in consequence soon falls to the ground (fig. 104). The grub leaves the fruit at this stage, and on finding the tree ascends the stem, where it selects a position in which to secrete

itself. This it does under some projecting bark or burrows into a safe hiding-place amongst the lichen, where, spinning a cocoon, in a short time it becomes transformed into a chrysalis, and in which it remains until it emerges as the perfect moth to commence the egg-laying process in the spring.

The Winter Moth (fig. 105) is even more disastrous than the "Apple-maggot," and indiscriminately attacks the expanding buds and flowers of the Apple, Pear, Plum, Cherry, and other fruit-trees. This moth changes from the chrysalid state at this season of the year, and ascends the stems of the trees during the months of October, November,

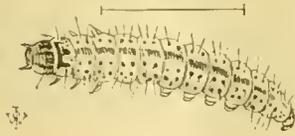
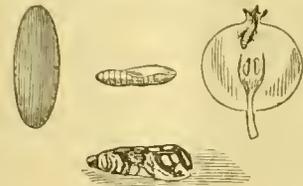
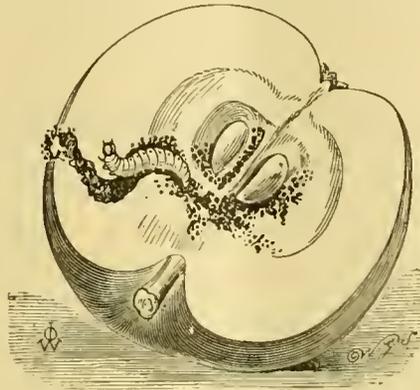


FIG. 104.—THE CODLIN MOTH IN VARIOUS STAGES OF GROWTH.

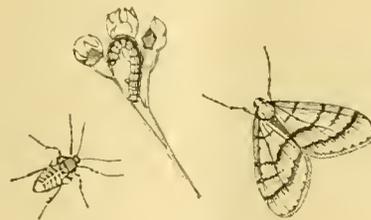


FIG. 105.—THE WINTER MOTH.

December, and sometimes in the spring, for the purpose of depositing its eggs in the crevices of the bark and on the buds and shoots throughout the tree, a favourite place being on the ends of freshly-pruned shoots. As a preventive against this moth ascending the stems of the trees diverse methods can be adopted, probably the most universal and successful being the placing of greased bands round the stems. These bands—which may be composed of either brown, oiled, or grease-proof paper—should be tied firmly about the stem, allowing the edge of the paper to project somewhat. Any interstices between the paper and bark of the tree should be filled up with clay, after which the whole band should be smeared with one of the many advertised dressings for the purpose, or one composed of equal

parts of soft-soap and tallow, with a small proportion of resin. Old standard trees may have a thick coating placed round the bark at about 1 foot from the ground-level. It is necessary to examine and grease the bands frequently to prevent them from becoming dry, otherwise the female moths, whose wings are useless for flight, shown at the right hand of fig. 105, will creep over the bands to carry out their work of destruction. Preparations which contain strong soda, potash or tarry substances, injurious when applied directly to the bark, must be used over paper or even over hay-bands.

Stakes supporting young trees are a ready means of ascent for these insects, but tarring these supports is a cheap and efficient remedy. Collect all fallen fruits daily; select any fit for culinary purposes, and give the worthless ones to the pigs. Frequent hoeings round about the trees, and where possible the keeping of fowls to devour the grubs, all help to keep these pests in check.

THE FLOWER GARDEN.

By W. A. MILLER, Gardener to Lord HENRY C. BENTINCK, M.P., Underley Hall, Westmoreland.

Pelargoniums.—If it is desired to save the old plants of any scarce varieties, they should be lifted whilst still undamaged by frost. Do not bruise the stem, but trim off the large leaves and reduce the roots. Plant five or six plants firmly round the sides of an 8-inch pot, and afford them an atmospheric temperature of 60° for a few weeks. When established they can be moved into a cool house and kept rather dry all the winter.

Winter Bedding.—The filling of the beds after their summer occupants have been cleared away will provide considerable work. Wall-flowers should be moved with as much soil adhering to the roots as possible, and be planted in a rich loamy soil. They like dry positions and are good plants for cultivating in vases and baskets. *Myosotis Victoria* is one of the best forms of Forget-me-not, growing into compact bushes and producing flowers of large size. *M. rupicola* is very dwarf and requires extra good drainage. *M. dissitiflora* and *M. sylvestris* will thrive anywhere. Varieties of *Bellis perennis* (Daisies) are old favourites for massing together. *Alice* is a good pink-flowered variety. *Arabis albida fl.-pl.* is a splendid free-flowering variety. *Alyssum saxatile* and *Aubrietias* are easy to grow. The above three associate well together. Sturdy Carnation plants that can be spared from this year's flowering quarter will transplant successfully, and when planted close make a fine effect all winter with their glaucous foliage. *Saxifraga cordifolia* set out in large beds produces a good patch of bronzy colour all winter, and large panicles of flowers in spring. Other indispensable subjects are *Cerastium tomentosum*, *Polyanthus*, *Ajuga reptans*, dwarf *Phlox*, *Valeriana Phu aurea*, *Dactylis glomerata*, *Iberis*, *Vincas*.

Conifers and Hardy Evergreen Shrubs are well adapted for filling beds and for providing central plants for other beds. Dwarf, bushy plants are most useful, and the stock of many varieties can be maintained by propagating the plants. *Cryptomeria elegans*, *Cupressus Lawsoniana*, and many of its varieties, such as *Allumi*, *Triomphe de Boskoop*, and *Smith's Golden*; *Retinospora squarrosa*, *R. sulphurea*, *R. plumosa aurea*, and *Junipers*. The following shrubs provide effective colour—*Box*, *Yews*, *Tree Ivies*, *Aucubas*, *Berberis*, *Euonymus radicans variegata*, *Osmanthus ilicifolius*; and in sheltered places *Ilex cassine*.

Bulbs.—Hyacinths require a rich, light, well-drained soil. Plant the bulbs 5 inches deep and 9 inches apart from each other, using beards to stand on whilst doing the work. If the bulbs are placed amongst plants which will provide a ground-cover, the bulbs may be placed at greater distances from each other. Tulips require similar conditions, but may be planted more closely together. Crocuses, *Chionodoxa Lucillæ*, and *Scillas* thrive in sandy loam enriched with well-decomposed manure. Plant at 3 inches apart and cover the bulbs with 4 inches deep of soil. When planting Anemones place some sharp sand about the roots, which should be planted 3 inches deep. *Erythronium dens-canis*, *Triteleia uniflora*, and *Galanthus* should be planted 4 inches deep.

APPOINTMENTS FOR THE ENSUING WEEK.

WEDNESDAY, Oct. 12. (Royal Botanic Society's Show at Regent's Park.)

SALES FOR THE WEEK.

MONDAY to FRIDAY NEXT—Dutch Bulbs, at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 10.30.
MONDAY and TUESDAY NEXT—Sale of Nursery Stock at The Nursery, Blackhorse Road, St. John's, Woking, by order of Mr. J. Holdforth, by Protheroe & Morris, at 12 o'clock each day.
MONDAY and WEDNESDAY NEXT—Roses, Lilies, and other Bulbs, at Stevens's Rooms, King Street, Covent Garden, W.C.
WEDNESDAY NEXT—Sale of Nursery Stock, Palms, &c., at the Nursery, Castle Road, Southsea, by order of Mr. T. J. Short, by Protheroe & Morris, at 12 o'clock.—Liliums, Miscellaneous Bulbs, Palms, and Plants, at 67 and 68, Cheapside, E.C., by Protheroe & Morris, at 5.30 o'clock.
THURSDAY NEXT—Sale of Nursery Stock at the Royal Gardens, Hampton Court, by order of Mr. J. Naylor, by Protheroe & Morris, at 12 o'clock.
FRIDAY NEXT—Sale of General Nursery Stock at Hoop Lane Nursery, Golders Green, Hendon, by order of Miss Dowie, by Protheroe & Morris, at 12 o'clock.—Orchids in large variety, at 67 and 68, Cheapside, E.C., by Protheroe & Morris, at 12.30 o'clock.

(For further particulars see our Advertisement columns.)

AVERAGE TEMPERATURE for the ensuing week, deduced from observations of Forty-three Years at Chiswick—50.3°.

ACTUAL TEMPERATURES—
LONDON,—Wednesday, Oct. 11 (6 P.M.): Max. 56°; Min. 49°.
 Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—Thursday, Oct. 12 (10 A.M.): Bar., 30.3; Temp., 52°. Weather—Fair, but dull.
PROVINCES,—Wednesday, Oct. 11 (6 P.M.): Max. 59°, Portsmouth; Min. 50°, E. coast of Ireland.

The Great Fruit Show.

No one would think, from a mere inspection of the Fruit Show held at the Royal Horticultural Society's Hall this week, that there was any scarcity of home-grown fruit this year. No one would doubt our ability to produce as fine fruit in this country as can be produced elsewhere under like conditions. And yet it would be a mistake to suppose that our home-grown supplies this year are anything like proportionate to the demand or equal to an average crop; and it would be a still greater mistake to suppose that we could get as good fruit at an ordinary greengrocer's shop as was shown on the exhibition table. Such displays as those of Tuesday, Wednesday, and Thursday last are in that sense misleading. They show what can be done rather than what is done. Fruit-shows at best are rather monotonous—almost as much so as Rose shows; but even as of late years considerable improvement has been manifested by showing Roses under more pictorial and natural conditions than heretofore, so surely it would be possible to infuse a little more variety and taste in grouping fruits than was attempted on this occasion. So far as we saw there was evidence of excellent culture, but nothing novel, nothing of special interest. The fruit itself was not so abundant as last year. So far from the cellars having to be utilised, this time there were patches of board bare save for a covering of green baize. How one longed for a few Palms or Ferns or Chrysanthemums—anything to break the serried mounds of Apples and Pears. The quality throughout, as we have said, left little to be desired. The pot trees of Messrs. RIVERS and those from Messrs. BUNYARD were excellent, and the separate fruits shown by Messrs. RIVERS indicated high culture and ceaseless care. The system of labelling has been greatly improved. Each card now

indicates not only the name of the exhibitor and the number of the class, but also the specific nature of the class. The increased comfort to the reporter is incalculable, and even the convenience of the ordinary visitor is greatly enhanced by this method. As usual, the officials were most obliging and did their work in a manner that insured general commendation.

Of the Conference, which extended over three days, we can only speak here in general terms. On Tuesday Sir TREVOR LAWRENCE presided, and papers were read by Messrs. BUNYARD and CHEAL on the best ways of competing with the foreigner. The measures proposed have been set forth again and again, but, as was remarked, the most obvious truths require to be continually repeated before any impression is made upon apathy and long-established custom. Co-operation, organisation, grading, packing—we have heard of these panaceas over and over again, but there seems to be nothing to do but to go on "hammering," as someone said at the meeting, till improvement takes place. Mr. CHEAL's list of sorts to be grown generally may be usefully compared with the votes which we published last year from every county in these islands. Mr. CHEAL's Canadian experiences are also useful, especially as regards spraying, which is done much more systematically than with us, and Mr. CHEAL tells us it pays. The necessity of adopting means for securing the fertilisation of the flowers by the introduction of other varieties was also alluded to, and the fact that Apples and Pears are occasionally apt, like Strawberries, to be dioecious should also be borne in mind. We have throughout done our best to keep our readers informed as to the practice in the United States and Canada, but Mr. CHEAL's personal experience will, we hope, be more effectual.

Much more help is afforded in those countries by means of Government stations and experimental gardens than with us, though it would be an omission not to mention with due acknowledgment the help that Lord ONSLOW and his successors at the Board of Agriculture have of late years afforded. Still, much more is needed, and we may hope rather than expect that our successors may see such a station with Government aid established at Wisley for the common benefit.

Other speakers dealt with the question of packing, but as the Conference is proceeding as these pages are passing through the press, our report must necessarily be much condensed; and a note on the proceedings on Thursday must be deferred till our next issue.

APPLE "CORONATION."—This variety of dessert Apple (see fig. 108) was awarded an Award of Merit by the Royal Horticultural Society's Fruit and Vegetable Committee in 1902, and was again shown by Mr. PYNE at the recent exhibition at Edinburgh, when the Royal Caledonian Horticultural Society awarded it a First-class Certificate of Merit. The fruit is round and of good form, with a skin of yellow-ground-colour, streaked and blotched with red, the streaks on the side next to the sun being more or less confluent. Stalk, very short and thick, set in a large, wide, and almost regular-formed cavity, but having a small swelling on one side. The cavity is entirely green or partly covered with russet. Eye partially open, with short segments, in a

wide, rather shallow basin-like depression, which is very slightly ribbed. The fruit has soft flesh and rich mellow flavour. It appears to be in season at about the middle of September, and is best eaten at that time when still moist and refreshing.

UNIVERSITY COLLEGE, READING.—From a prospectus before us we learn that the work of the Horticultural Department consists in:—

1. The training of men and women in the practice and science of horticulture. In addition to the regular course of instruction held in the College laboratories and at the garden, short courses of lectures are given in the neighbouring counties.
2. The contribution to horticultural knowledge by experiments in the manuring of crops, the improvement of plants by breeding, the testing of new varieties, and the prevention of plant diseases. During the present year the department is carrying out, in co-operation with the National Potato Society, tests as to the relative values of the chief varieties of Potatoes.
3. Advising on matters appertaining to the practice of horticulture. The department gives expert advice as to the laying out and maintenance of gardens, the management of orchards, the use of artificial manures, and the remedies to be employed in dealing with plant diseases.

DIRECTOR.

FREDERICK KEEBLE, M.A., Gonville and Caius College, Cambridge.

LECTURERS.

Horticultural Botany.—FREDERICK KEEBLE, M.A.; B. J. AUSTIN, F.L.S.

Horticulture.—CHARLES FOSTER, F.R.H.S. (Instructor in Practical Horticulture); B. P. J. MURRELL, Associate of University College, Reading, F.R.H.S.

Horticultural Chemistry.—C. M. LUXMOORE, D.Sc., F.I.C.; E. K. HANSON, M.A., A.I.C.

Entomology.—THEODORE T. GROOM, M.A., D.Sc., F.G.S. *Bee-keeping.*—J. D. WOODLEY. *Book-keeping.*—HERBERT TAYLOR, F.I.P.S.

REGISTRAR.

FRANCIS H. WRIGHT, to whom all communications should be addressed.

GARDENERS' ROYAL BENEVOLENT INSTITUTION.—The Committee acknowledge with thanks the receipt of £10 from the Rev. W. WILKS, M.A., being the amount of offertories at the Harvest Festival Services in Shirley Church, on the 1st inst.

"THE USES OF BRITISH PLANTS."—Prof. HENSLOW has published, through LOVELL, REEVE & Co., a short treatise on the uses of British plants, beginning with the Traveller's Joy (*Clematis*) and ending with the Couch Grass (*Triticum repens*). The book is illustrated by some 288 woodcuts, taken from BENTHAM's *Illustrations to British Plants*. That there is need for a diffusion of knowledge concerning good and evil plants is illustrated by a fact which has recently come under our notice—where some plants of *Aconitum Napellus* were actually growing in the midst of the Parsley bed!

CORDYLIN (DRACÆNA) BRUANTI, VARIETATED FORM.—In the *Revue de l'Horticulture Belge* for the present month is a coloured figure of a particularly handsome *Dracæna*. The ordinary form is cultivated by the thousand in Ghent, and is very largely exported. Madame BUYSSÉ, of Meirelbeke, has had the good fortune to secure a variety with the leaves elegantly striped with white. At a recent meeting at Brussels it received a Diploma of Honour.

THE ECLIPSE.—M. BUREAU noted in the Department of the Loire Inférieure during the recent eclipse of the sun that *Acacia dealbata* growing in the open air was particularly sensitive to the diminution of the light, its leaflets assuming the position they usually affect during the night, and gradually resuming their normal position as the eclipse passed off. Other plants were much less sensitive.

FLOWERS IN SEASON.—Messrs. J. PEED & SONS, Norwood Road, West Norwood, have sent us some cut flowers of tuberous-rooted Begonias, as cut from plants growing in the open ground. They represent a strain raised for use in bedding, and the flowers are of considerable size and substance, and they have stout stems. The colours are good, particularly one coloured an orange shade of scarlet.

OVERSEA SUPPLIES: SEPTEMBER.—The Trade and Navigation Returns issued by the Board of Trade for the month of September are again of a highly favourable character, the value of the imports being £2,658,642 in excess of that for the same period of last year. The figures stand: September, 1904, £43,074,006, against £45,732,648 for September, 1905. There is no necessity for discriminating between the items or classes of imports; sufficient for us are the values as above given. There is one forlorn little item—that of fresh flowers—which may be transferred to this place. The value of the flowers imported last month was £536, as against £557 for the same month last year—a decrease of £21. A little item from Bermuda may interest some of our bulb-growing readers. The authorities in Bermuda are striving to purge this bulb market of worthless stuff by levying a high tariff duty, now in operation. Our friends the Japanese are stated to have been in the habit of placing queer products on the market as bulbs of *Lilium longiflorum*. The new duty is £10 per 1,000 bulbs, which may have the desired "clearing" effect. Our oversea-supplying friends located between Sable Island and Vancouver—a long stretch—have always horticultural news of interest for their friends on this side of the Atlantic. Experimental farms on this extensive locality noted furnish good reading for both grower and gardener. The latter will learn that experiments in the perfecting of bulbs have been quite successful under the application of a double layer of green manure—that the Phlox is now being grown to great perfection—that varieties of all kinds of fruits are being reduced in number, and perfection in fruiting in the shortest time is the aim of experimenters—so as to get the best fruit with the least sun-warmth. Also the wholesale growth of hardy trees and shrubs for the supply of all manner of cultivators is being rapidly pushed on. As soon as fit the young plants are ploughed up, examined as to condition, and started for their destination. The plant-plough is stated to be a great success, some million and a quarter having been provided at the last "plant harvest" [?]. It is pleasant to think that whilst one set of folk are doing their best to denude the land of tree-life, others are busily employed in the work of restoration. The following is our usual summary table of fruit and vegetable imports for September:—

IMPORTS—SEPTEMBER.	1904.	1905.	Difference.
Fruits, raw—	£	£	£
Apples	117,856	100,316	—17,540
Apricots and Peaches	1,525	944	—581
Grapes	183,012	156,309	—26,703
Pears	119,276	112,104	—7,172
Plums	28,809	55,390	+26,581
Vegetables, raw—			
Onions ... ..bush.	98,411	108,076	+11,665
Potatoes ... ..cwt.	46,002	22,324	—23,678
Tomatoes	86,673	79,028	—7,645
Total of all others ...	340,100	361,607	+21,507
Gross total, including varieties of fruits and vegetables not enumerated in this Table	1,019,664	996,128	—23,536

EXPORTS.—In conclusion, we append the figures relating to the exports for the past month, which amounted to £29,850,460—the value of British and

Irish manufactures—as against £25,928,659 for the same period last year, an increase of £3,421,801. The value of foreign and colonial export business for last month was £5,521,237, against £4,771,996 for the corresponding period last year, or an increase of £749,241.

WASPS.—Mr. FREDERICK ROEMER, of Quedlinburgh, with respect to the recent correspondence in the *Gardeners' Chronicle* concerning "Wasps Eating Fruit," calls the attention of fruit-growers to the attraction possessed by *Sicyos angulata* and *Bryonia alba* for wasps and hornets. Mr. ROEMER, like most other growers, has suffered severely in past years from the ravages of these insects, which show a particular liking for the thin-skinned, early-ripening Grapes. About 500 feet from the Vines *Sicyos angulata* and *Bryonia alba* have lately been planted in Mr. ROEMER'S nursery. From the time at which the plants began to flower they proved an irresistible temptation to

their sucker-like white roots can be moved and replanted if required. In the first year the Bryony attains to a height of from 6 to 9 feet, and one of from 16 to 26 feet in the following year. The plants retain their fresh, green foliage till late autumn, when they are thickly covered with small, shiny, black berries. The plants are thoroughly hardy.

BRUISED APPLES.—The careless manner in which Apples are gathered and packed is a subject of comment at most fruit congresses, but in spite of the preachers and the teaching of experience, the same careless indifference still prevails all too extensively. The bruises afford an excellent opportunity for fungus spores to develop and hasten the rotting of the fruits. Even where this does not happen the fruits become discoloured and unsightly. A note of M. WARCOLLIER, in the *Comptes Rendus* for August 21, supplies the explanation of the brown colour and of the phenomena which ac-

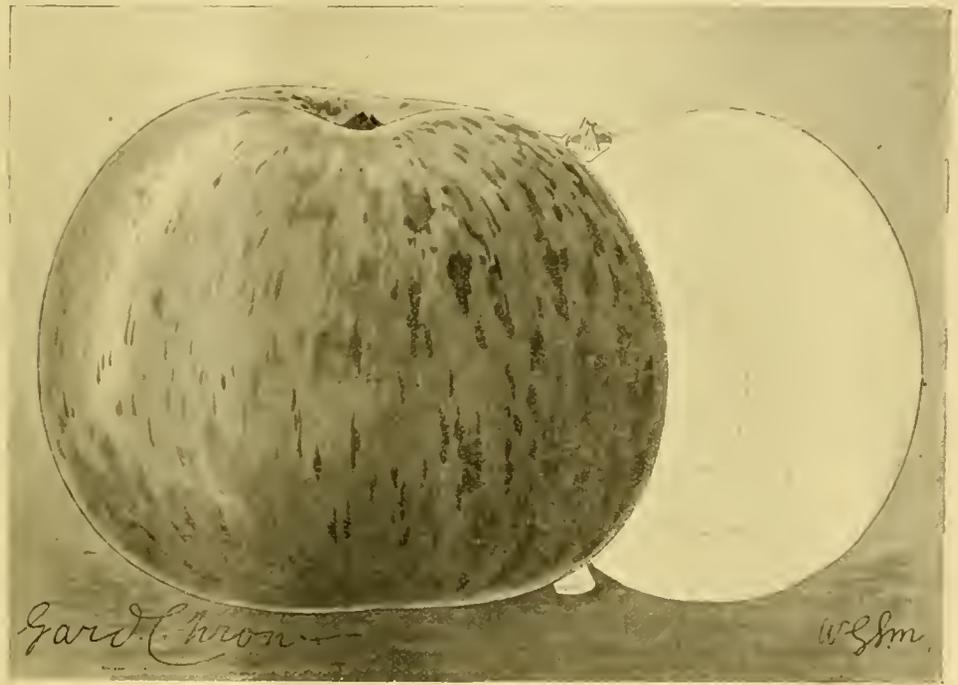


FIG. 108.—DESSERT APPLE, CORONATION. (SEE P. 280.)

wasps and hornets. Among the Grapes it had hitherto been no uncommon thing to see ten or fifteen wasps busily engaged upon one fruit, but they now turned their attention instead to the Gourds and Bryony plants, and large quantities of the pests were caught in traps hung to the branches. The plants are ornamental and grow with rapidity. The seeds of *Sicyos* may be sown in spring or autumn in the open ground at the spot at which the plants are wanted. Seedlings also produce rapid growth. The young plants are fairly hardy and need no special care beyond the application of liquid-manure in times of drought. *Sicyos* does not produce palatable fruits. The seeds are flat, oval to round in shape, from a quarter to half an inch long, and a quarter of an inch wide. They grow in clusters of from four to ten. *Bryonia alba* is a perennial trailing plant, also well adapted, thanks to its extraordinarily rapid growth, for the covering of hedges, verandahs, walls and arbours. The Bryony will naturally only attract the wasps so long as it remains in bloom, which is from the middle of June to the middle of July. Seeds can be sown in early spring or autumn in the open ground. The young plants bear transplanting very well, and in the spring of the following year

company it. When an Apple is thus bruised the tannin becomes oxydised, the tissues change colour, and the ripening processes are checked by the action of the tannin; the starch, which should be changed into sugar and other substances, remaining unaffected, and thus in point of flavour, keeping qualities, and especially of cider-production, there is on the whole a great loss which might be avoided by more careful handling. The extra expense entailed would, as M. WARCOLLIER shows, be much more than compensated for by the superior quality of the fruit.

PRESENTATION.—We are informed that on Saturday, October 7, at Mr. H. B. MAY'S Dyson's Lane nurseries, Mr. W. H. GREEN, who is leaving the firm, was presented with a marble clock, given him by the employes as a token of their respect. Mr. GREEN, who for several years has held the position of manager at these nurseries, writes our correspondent, was highly respected by those who worked with him, and a feeling of regret that he is now leaving is felt by all.

PUBLICATIONS RECEIVED.—From the Imperial Department of Agriculture for the West Indies: *Reports on the Botanic Station, Agricultural School and Experiment Plots, Dominica, 1904-5*. The gardens have been kept in good condition, and very useful work is being carried on at the Station and in the

plots.—Reports on the Botanic Station, Economic Experiments, and Agricultural Education, Antigua, 1904-5. Useful work was done. A number of interesting species were planted out. Much of the Curator's time was occupied in visits to various plots of Clifton to give advice to the cultivators. Great good was done in this way, and the work was fully appreciated. The year was exceptionally dry. Mr. A. H. Kirby performed the duties of Acting Curator until April, 1904. Mr. W. H. Patterson arrived from Kew in April, and took up the duties of Curator. In January, 1905, he was transferred to St. Vincent, and M. A. J. Jordan was transferred to Antigua.—From Cambridge University Department of Agriculture, Guide to Experiments conducted at Burgoyne's (University) Farm, Impington, and at other centres.—The Transvaal Agricultural Journal, July. Contents: Nursery Treatment of Deodar in Jaunsar, Germination of Cupressus macrocarpa, Cotton-growing, Bananas, Papaw, &c.—Agricultural Journal of the Cape of Good Hope, September. Contents: Extra-tropical Forestry (continued), by D. E. Hutchins; Rural Cape Colony, Co-operation in Agriculture, &c.—U.S. Department of Agriculture, Bureau of Plant Industry. Bulletin No. 81, Evolution of Cellular Structures, by O. F. Cook and Walter T. Swingle.—Bulletin du Jardin Botanique de l'Etat, Bruxelles, May.—Bulletin de la Société Botanique de France, 1902.

FOREIGN CORRESPONDENCE.

JIMSON WEED.

In the *Gardeners' Chronicle* for June 17, p. 386, appeared an enquiry as to "Jimson Weed." *Datura Stramonium* answers to this name in most of the United States from New Jersey southward. It is very common in waste places, in rich soil becoming a rank and evil-smelling weed. It is quite likely, as your correspondent "J. E. P." enquires, that insects have a great objection to the odour, but of this no information is at hand.

In Bailey's *Cyclopaedia of Horticulture* the following account of the plant is given, though he does not give the name of the book containing the statement regarding the "curious results": "Daturas contain strong narcotics. Large doses are poisonous, small doses medicinal. Separate preparations of *Stramonium* leaves and seeds are commonly sold in drug stores. *D. Stramonium* is the Thorn Apple or Jamestown Weed, the latter name being corrupted into Jimson Weed. Its foul rank herbage and large epiny fruits are often seen in rubbish heaps. At the first successful settlement in America, Jamestown, Virginia, 1607, it is said that the men ate these Thorn Apples with curious results. Captain John Smith's account of their mad antics is very entertaining. It has been conjectured that this same plant was used by the priests at Delphi to produce oracular ravings."

If the plant is of any value as an antidote for plant-lice the same would be a cheap insecticide here. E. O. Orpet, Lancaster, Mass., U.S.A., September 12, 1905.

HARDY FLOWER GARDEN.

HARDY CYCLAMENS.

In a recent note on the above plants, "O. T." remarks that young corms are best suited for planting, and I fully endorse this practice, although it is, perhaps, not well known or appreciated. Very old corms of *C. repandum* (*hederifolium*) attain to a great size when left undisturbed for years; and I have repeatedly endeavoured to transplant corms of this species almost as large as a dinner-plate, with little or no success. The failure has taken place although the plants were judiciously lifted when in a dormant condition, carefully packed, and replanted in about forty-eight hours, but in several instances not the slightest growth was made afterwards. These same corms had for years previously flowered abundantly. After all, perhaps this is but evidence of the need or desirability for raising these plants from seeds more frequently than is now the case, for by this means an abundant stock of plants of youthful vigour is secured. It is quite a common feature of collected corms of these Cyclamen to remain dormant, so far as top-growth is concerned, for a whole year after being planted. E. H. Jenkins.

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his Correspondents.)

THE CLEANING OF VINES.—The season is approaching when the cleaning and preparing of Vines for another season will be engaging the attention of gardeners. In this, as in many other garden operations, different methods will be practised by different growers. For instance, some growers will remove all the bark from the rods before washing them by scraping them with a knife, while others will be careful to preserve all the bark possible. To my mind the first-mentioned method appears to be most injurious to the health and growth of the Vines, and should never be practised. The bark is provided by Nature, and if it serves no other purpose, it certainly forms a protection for the channels within, through which the food of the plant must pass, and to remove it exposes the vessels to the risk of injury. In addition it is possible that some of the conducting channels are injured during the process of scraping. Often upon examination of the rods after scraping it will be seen that the knife has been used much too hard, and in places not a particle of bark is found. This must surely be injurious rather than beneficial to the Vines. It is urged by some that it is the best means of cleansing the rods of mealy-bug, and this is the only thing which can be said in its favour. I maintain that bug can be combated by careful attention without removing the bark year by year, and it is better to give more time and attention to eradicating this pest than to subject the Vines to the injurious process of scraping. Another practice which often follows the removal of the bark is painting the rods over with a mixture of clay, soot, lime, &c. I do not think this is in any way beneficial to the Vines, but it provides a hiding-place for mealy-bug, as after it becomes dry it cracks from the rods, and thus furnishes many crevices in which bug and other insects may lurk. The rods should be thoroughly washed with some approved insecticide, but the bark should be carefully preserved. I am confident that Grapes of higher quality can be grown by this method than by removing Nature's covering year by year. A. B.

GRAPE PRINCE OF WALES (see also p. 277). This variety, judging by the excellent bunches I recently saw at the Warren Gardens, Stanmore, promises to make a useful addition to our vineries. It is a handsome-looking Grape, with nice berries, that develop a most perfect bloom, and the bunches are of good shape. It is in addition a prolific bearer, and the berries set freely. Mr. Ellis, the gardener, showed me several bunches on quite young Vines that were looking in the best possible condition. W. A. Cook, Leonardslée Gardens.

CLEMATIS FLAMMULA.—I send you two bunches of *Clematis flammula* gathered from two distinct plants; the flowers of one are scented, those of the other are not. Both are seedlings, but from different sowings. What is the reason why one is scented and the other is not? Wm. Brooks.

ELM TREES.—I read with interest "R. I. L.'s" remarks on the falling of Elm limbs in summer. We have here three fine Elms from which large branches have fallen during the past few weeks, and, as your correspondent states, without warning and in the absence of high winds. In each case the branches were more than a foot in diameter, one of them being 1 foot 10 inches, and in each case the branches have been perfectly healthy at the point of fracture. The leaves too were remarkably healthy, and as there was a marked absence of dead twigs for such fine old trees, I think we must look for some other cause than unseasonable timber when a limb falls. I have noticed that most of the forest trees here, especially Elms, have made long growths and large, healthy leaves during the past season, and I am wondering whether the main limbs have made a corresponding growth. If they have not, the balance of growth has been unequal, from which cause the branches have been unable to bear the extra natural weight put upon them. Unfortunately Elms are not the

only trees which have suffered here during the past season, for on August 6, during a very calm evening, a branch of a large Beech tree fell without any warning. On examination I found the whole limb was perfectly healthy, and at the point of fracture, but it was carrying an over-abundant crop of nuts, which as they matured became heavy, and their weight I believe caused the limb to fall. George Dance, The Gardens, South Lytchett Manor.

WALBURTON ADMIRABLE PEACH.—I do not think any of the newer kinds of late Peaches are equal to this variety if the test is based on flavour. Even if judged by appearance, there is something very characteristic and desirable about a dish of good fruits of Walburton Admirable when seen about the middle or end of September. For many years an old tree of this variety, growing on a warm wall facing to the south, furnished nice fruit about the season I mention. This old tree was removed, and I decided to supplant it by the variety Sea Eagle. The latter has fruited very well, both on the wall and also in a late Peach-house, to which I afterwards removed it, and while the fruits are of a good size and colour, they are more fitted for kitchen use than for dessert purposes, unless it be for their appearance on the table. I shall replace this tree and another of the same type this autumn with Walburton Admirable. H. J. C. Grimston, Tadcastles.

SHOT-HOLE FUNGUS.—In June, 1903, the Peach trees in the orchard houses here were attacked with Shot-hole fungus, when all the fruit and most of the leaves dropped off. I sent you some leaves and fruit to make sure that it was this fungus, and we began spraying them with the mixture recommended in the *Gardeners' Chronicle* of June 20 of the same year, and continued to do so every fourteen days until autumn. During the winter the houses were carefully cleaned, the trees washed, and the surface soil removed and replaced with fresh soil. We began spraying with the same mixture as soon as the buds began to swell in the following spring, and continued to do so every fourteen days, but with no good results, the fruit and leaves falling off the same as in the previous year. We thought of clearing the trees out and replanting, when we procured one of Campbell's Sulphur Vaporiser, and used it several times during the autumn, again cleaning the houses as in the previous year. When the buds began to swell this year we started with the sulphur vaporiser, and continued using it every fourteen days, with the best results, no fungus appearing and a nice crop of Peaches set and ripened. We left off vaporising just before the fruit began to colour. The trees are now in perfect health, and the wood is ripening, and there is every prospect of a good crop next year. We continued the spraying in one house, but the other houses are free from the fungus. We also used it in our vineries for red spider with better results than by sulphuring the pipes. W. Priest, Eglinton Gardens, Kilwinning.

NICOTIANA SANDERÆ.—This plant has been employed here this summer in different ways, and with some success. Planted among Abutilon Thompsoni 5 feet high in a large bed in partial shade besides that afforded by the Abutilons, it has attained to almost the same height, and the bright ruby-pink flowers mingling amongst the yellow-and-green Abutilons have made a charming picture, which has been noted by many gardeners visiting here. During the very hot weather the plants in this bed have stood erect, and showed not the slightest sign of drooping, nor have the flowers closed or failed to expand. Another patch also planted in a position where the plants obtained the shade of a group of trees during mid-day was an equal success. They were planted out in the second week in June, and have presented a mass of flower until quite recently. In another bed that was fully exposed to the whole day's sunshine there has been a notable difference. The plants have drooped during mid-day, but during early morning and evening they have been as erect and fresh as the others. I have never found the flowers close during sunshine (though they flag as does the leaf), but I would not recommend planting it in a position exposed to the full sunshine. There are many

ways and means of employing this plant to good effect. That we can obtain a mass of colour of such a brilliant hue for several months together from plants that can easily be raised from seed during the late spring months and planted out in early summer without the aid of much glass protection is a boon. C. J. Ellis, Warren House Gardens, Stanmore.

SUTTON'S SELECTED GLADSTONE PEA.—This variety is one of the best for autumn. I have supplied the kitchen for several weeks past with Peas, a sample of which I enclose you for inspection [Nice shapely, well-filled pods. Ed.], and I expect to gather similar produce well into November. Our kitchen-garden is well exposed, and the

SOCIETIES.

British-Grown Fruits at the Royal Horticultural Hall.

(See also pp. i. to iv. of the Supplement.)

DIVISION VI.

SINGLE DISHES OF FRUIT GROWN IN THE OPEN AIR.

CHOICE DESSERT APPLES.

These classes were open to gardeners and amateurs only. Quality, colour, and finish in the fruits were considered before size in making the awards. The entries were not so numerous as at last year's show,

Among nine entries, the dish shown by R. J. LAMBERT, Esq., Dance Hill, Oxshott (gr., Mr. G. D. Reid), was easily 1st, the fruits being of that exquisite and mellow shade of colour seen in orchard-house fruit. 2nd, Capt. FARWELL, The Priory, Burnham, Bucks (gr., Mr. W. Hutt).

Cornish Aromatic.—Two dishes were presented, Hon. Justice SWINFEN EADY, Oatlands Lodge, Weybridge (gr., Mr. J. Lock), taking the 1st prize with a grand half-dozen of fruits. 2nd, Col. ARCHER HOUBLON.

Cox's Orange Pippin.—This popular variety was shown by no fewer than eighteen growers. The specimens were very diverse in quality, but there was little

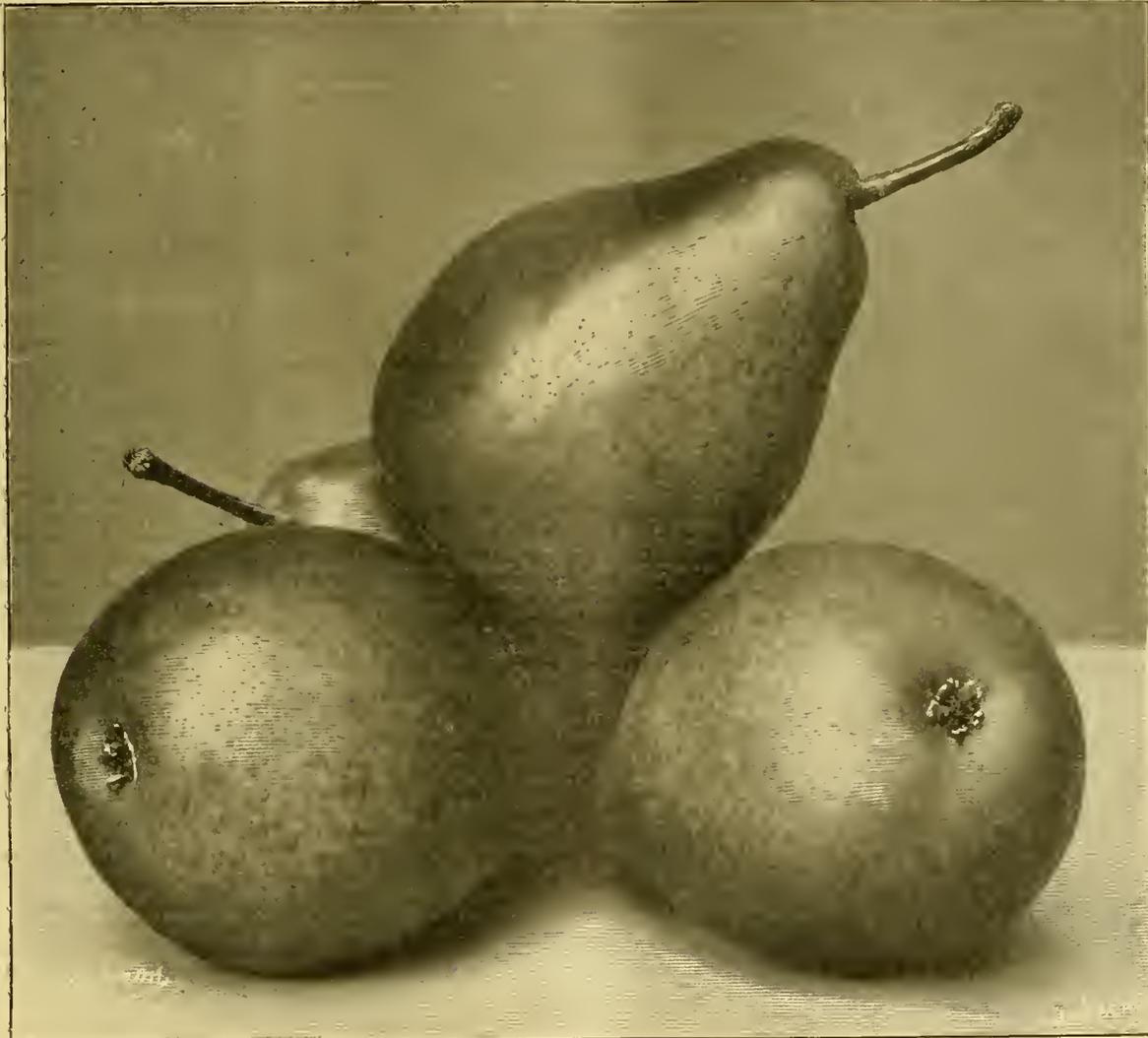


FIG. 109.—PEAR LOUISE BONNE OF JERSEY.

ground consists of about 2 feet deep of heavy, cold soil on a sandstone bottom. Out of the many varieties of Peas, the most suitable for our soil for autumn use are Selected Gladstone and Autocrat, although at the moment of penning this note I am gathering good dishes of produce from Improved Dr. McLean, but its constitution is not so robust as that of the two former named. My latest sowing of Peas, from which I am now gathering, was made on June 26, and the three varieties mentioned are all about 4 feet in height. A. R. Pearce, The Gables, Kenilworth.

PLANT PORTRAITS.

CLEMATIS BUCHANIANA, D. C. Syst. i., 140; Henry in *Revue Horticole*, September 16.—Half-hardy climber.

EUPHORBIA FULGENS.—A very old friend, better known as *E. jacquiniiflora*, which is occasionally seen now as a market-plant. It is a stove plant of easy culture.—*Revue Horticole*, September 16.

but the quality was good throughout, the fruits generally being well coloured and excellently finished.

Adam's Pearmain.—Seven dishes were staged, the best being that shown by Captain FARWELL, The Priory, Burnham, Bucks (gr., Mr. W. Hutt). 2nd, the Executors of J. K. D. WINGFIELD-DIGBY, Sherborne Castle, Dorset (gr., Mr. T. Turton).

Allington Pippin.—This comparatively new variety was shown by no fewer than ten exhibitors. The 1st prize was awarded to Mrs. H. ST. V. AMES, Cote House, Westbury-on-Trym, Bristol (gr., Mr. W. H. Bannister), whose fruits were not the largest in size, but were the most refined and evenly matched. 2nd, Mr. N. R. PAGE, Marine Parade, Clacton-on-Sea.

American Mother.—Four growers competed, the 1st prize being secured by J. B. FORTESCUE, Esq., Dropmore, Maidenhead (gr., Mr. C. Page). 2nd, Mr. A. W. METCALFE, Luton Hoo, Luton, Beds.

Blenheim Pippin.—The schedule required fruits of high colour that would pass through a 3-inch ring.

to choose between the six best dishes. The premier fruits were shown by Rev. G. H. ENGLEHEART, Dinton, Salisbury; followed by Lord POLTIMORE, Poltimore Park, Exeter, 2nd.

Duke of Devonshire.—WALTER A. VOSS, Esq., Eastwood Road, Rayleigh, won among three exhibitors of this variety.

Egremont Russet.—Four growers entered, the best dish being that shown by J. B. FORTESCUE, Esq. 2nd, Mr. JOHN LEE.

James Grieve.—Two dishes only were seen, E. S. HANBURY, Esq., Polcs, Ware (gr., Mr. T. W. Church), securing the 1st prize.

King of the Pippins.—This old variety was represented by eight entries, a grand half-dozen fruits belonging to Mr. J. HOWARD, Benham Park Gardens, Newbury, taking the 1st place. 2nd, Captain FARWELL.

Lord Hindlip.—Mr. JOHN WOOTTEN, Byford, Hereford, showed the only dish of this variety, which was worthily awarded the 1st prize.

country there is, of course, an important element in foreign competition which is not really competitive in this case, because the fruit could not be grown in England. But the total of all sorts imported during 1904 represents a value of £10,237,000, four-and-a-half millions of which at least could have been grown in this country. Of course, we cannot grow Bananas, representing £1,382,000; nor can we grow Oranges, £2,193,000. With regard to Bananas, I do not know whether any of you have a personal acquaintance with Sir Alfred Jones. He is a most energetic man, and I happen to know what took place on the question of the importation of Bananas. Travelling on one of his Company's steamships, the Elder Dempster line, he landed at the Canaries. He looked round and said to himself it was a place where Bananas could be grown. He took on lease a large area, and planted Bananas. When the time came he told the people of Liverpool he wanted them to establish places to sell the Bananas at a penny apiece. They said they could not possibly do it, and that they could get 2d. or 3d. each for them. At the proper time he sent for forty or fifty costermongers who sold at a penny apiece, and obviously put those who wanted 2d. apiece out of the market. Then the Liverpool people said the costermongers obstructed the traffic, but Sir Alfred Jones sent for a learned K.C., who established the right of the costermongers to sell. I mention this only to show what energy will do, and now the trade in Bananas is well established. In this country we have our troubles, due to climatic influences, to contend with. Last year, in the greater part of the South of England, we got plenty of Apples and Pears, but this year we have a comparatively poor supply. I may say that on the whole the Exhibition, whether we refer to amateurs or to those who make the growing of fruit more or less a business concern, is eminently satisfactory.

When I was a boy you could not buy a pound of Muscat Grapes under 12s. or 15s., or even more. Now we can get excellent Muscats at 2s. 6d. a pound. That merely shows you what can be done in hot-houses in this country, and I only refer to this matter to emphasise the importance of fruit as a food supply. You can see in the fruit in the Hall below what a valuable adjunct it is to our national reserve of food, and it has really come to this, that the fruit-growing interests of this country form a very important national industry, and I think the more we can do to further these home industries the better we shall be doing our duty to our country.

I should just like to refer for a moment to the report of the Committee on the Fruit Industry of Great Britain. It is an alarming-looking document, but it costs only 4½d., and I venture to recommend it to the earnest perusal of all who are interested in the fruit industry, and if the recommendations contained in that report were carried out, we should find the fruit industry in this country placed upon a satisfactory basis all round. I am sorry to say that the recommendations are forty in number, and knowing what usually happens to recommendations of Committees, they are not very likely to be all adopted; but still there is a large number which fairly claim thoughtful consideration. I now call upon Mr. Bunyard to read his paper.

FOREIGN COMPETITION AND HOW TO MEET IT. BEST VARIETIES TO GROW.

Mr. GEO. BUNYARD at the outset spoke of the altered conditions of import. At one time fruit came to this country in sailing vessels, but the introduction of steam had entirely altered the aspect of affairs. Fruit could reach this country now in far less time than formerly, and could now be brought from America, the Canaries, South Africa, California, &c. The home fruit trade was consequently to a large extent displaced. There was the enormous development in the Banana and Orange trade. It was very unusual to have Oranges till just before Christmas, and Bananas were scarcely ever seen. Besides that, they had to remember that the soft-fruit trade (Raspberries, Strawberries, and Gooseberries) was being replaced by the importation of a large quantity of pulp into this country. On the Continent the small growers took every advantage of co-operation in sending their goods to a central depot, placing the small grower on equal terms with the big men.

To meet the foreigner, organisation was therefore necessary. The small grower should try for the retail trade now that the railway companies found boxes and offered special rates. As to package, they had

been hammering at the subject for a long time past. There seemed to be a disposition on the part of the buyers rather to favour the old-fashioned baskets. He wished they could introduce the non-returnable boxes, which could be made for a reasonable price. He mentioned this because there was always a difficulty in getting "empties" back. There was no doubt that if the best dessert Apples and Pears were put up in boxes they would obtain a much better price than at present. He advised the culture of Pears on the

The best sorts to grow included of early dessert Apples to pick and consume from the tree—Gladstone, Quarrenden, Ingestre, Ben's Red, Duchess's Favourite; store for a short time—King of Pippins, Worcester Pearmain, James Grieve; for October to Christmas—Cox's Orange Pippin, Allington Pippin, Christmas Pearmain; after Christmas—Cockle's Pippin, Beauman's Reinette, Gascoyne's Scarlet Seedling.

Culinary Apples to sell from the tree included—White Transparent, Julien, Grenadier, Early Victoria, Pott's



FIG. 110.—PEAR MARIE LOUISE.

Quince - stock, and Apples on the Paradise - stock. Pears should be cultivated on the Quince stock where the soil was suitable. They might be put in 6 feet apart, which would mean 1,200 plants to the acre, and they would give good results if properly taken care of. The trees should not be fed with manures unless they were carrying a crop of fruit. There was a mistake in planting trees in large blocks of one kind together. The Americans had taught them that in this way there could not be proper cross-fertilisation. In that case a crop could only be got on the trees at the outside, and not on those in the middle of the plantation.

Seedling, Ecklinville; in September and October—Warner's King, Lord Derby, Tower of Glamis, Bismarck, Norfolk Beauty, Lane's Prince Albert; after Christmas, Blenheim Orange, Bramley's Seedling, Newton Wonder, Wellington (where soil suits), Northern Greening, Winter Queen, Alfriston, Hambling's Seedling.

Pears (standard)—Hessel, Fertility, Crawford, Pitmaston Duchess, Williams' Bon Chrétien; and for growing on the Quince stock—Williams' Bon Chrétien, Dr. Jules Guyot, Conference, Louise Bonne, Doyenné du Comice, Beurré Hardy, Beurré Superfin, Van Graft.

Plums.—River's Prolific, Orleans, Belle de Louvain, Victoria, Pond's Seedling, Monarch, Deniston's Superb, Jefferson's, King of Damsons, Worcester Damson.

Cherries.—Early Rivers, Waterloo Heart, Black Eagle, Black Heart, Tartarian, The Noble, Beaumann's May, Kentish Bigarreau, Bigarreau Napoleon, Kentish Red Cherry, and Morellos.

Gooseberries, &c.—Crown Bob, Whinham's Industry, Keepsake, Whitesmith, Lancer, and High Sheriff.

Currants.—Knight's Early or Scotch, New Red Dutch, Black Boskoop Giant, Lee's Prolific, Naples, and Baldwin's Black.

Raspberries.—Superlative, Norwich, Hornet.

Strawberries.—Sir J. Paxton, Royal Sovereign, Elton Pine, and Eleanor.

PAPER BY MR. JOSEPH CHEAL.

Mr. JOS. CHEAL impressed upon growers the proper preparation of the soil if they were to compete successfully with the foreigner. A small quantity of land properly looked after would give far better results than a larger quantity if neglected. These might seem commonplace, but it is absolutely necessary to repeat them over and over again. To compete with the foreigner our native produce must be of the first-class quality. Ground for cultivation must be properly chosen and properly attended to.

Eight of the best dessert *Apples* were—Duchess of Bath, Blenheim Orange, Claygate Pearmain, Cox's Orange Pippin, Duchess of Gloucester, Mannington Pearmain, King of the Pippins. There were twelve cool cooking *Apples*—viz., Bismarck, Golden Noble, Newton Wonder, Lane's Prince Albert, Stirling Castle, Lord Grosvenor, Ecklinville, Lord Derby, Pott's Seedling, Jubilee, Warner's King, Bramley's Seedling.

Pears.—Doyenné Boussoch, Doyenné du Comice, Duchess d'Angoulême, Pitmaston Dnebess, Marie Louise d'Uccle, Durondeau, Williams' Bon Chrétien, Beurré Hardy, Beurré Superfin, Fertility.

Plums.—Cox's Emperor, Green Gage, Jefferson, Victoria, Monarch, Czar, Early Prolific and Denniston's Superb.

Mr. CHEAL emphasised the importance of keeping the trees and plantation quite clean. There would be no success without. The ground should be well forked and all grass turned in. It was astonishing how quickly the trees would respond, especially after a little top-dressing. In Canada this was largely practised, and spraying was practically compulsory. Over-crowding was a great evil.

As to packing, the fruit should be placed in boxes with a little tissue-paper. By this means the fruit could be sent direct to the retailer, and so on to the consumer, without being handled, and he had known it so packed to fetch high prices. It paid far better to have the first quality alone than to mix it with seconds and thirds. Railway Companies were awakening to the fact that they must make better provision for the conveyance of small consignments of fruit. A few varieties and a continuous supply of each were essential nowadays for customers, and this was where the Canadians excelled. He considered that our own Government might extend a helping hand to the industry, as was done by the Canadian Government, by assisting experiments dealing with the various varieties and with practical instruction in cultivation.

GRADING AND PACKING.

Mr. James Harper, Mr. Herbert Pantin, and Dr. Goethe (Darmstadt) dealt with the subject of grading and packing.

Mr. HARPER said the subject was exceedingly important. Attention had been forced to improved methods of grading and packing by the superior work of other fruit-growing countries, and it had come to this, that the home grower who desired to make his fruit-growing pay must devote more time and attention to the subject if he wants to hold a place in the home market against foreign competitors. There was no question as to the home-grown produce being equal, if not superior to most of that imported. If the home grower would turn his attention to growing fewer sorts, and these of better quality and more even in size, he might be able to get a much better return than at present. His watchword should be "quality, not quantity," and eventually he would render much of the present importations unnecessary. Much good had been done in Ireland by the issue of a pamphlet of instructions by the Department of Agriculture and Technical Instruction for Ireland. The general opinion was that those growers who had

adopted the cheap non-returnable boxes and barrels for marketing all best quality fruit, especially Apples, had been successful in getting better prices in the Irish and English markets. Careful grading had also been productive of higher prices. The one and two dozen "flats" or boxes for the very best dessert and cooking Apples had been decidedly popular with the best buyers of the choicest fruit. The use of punnets for Strawberries and Raspberries where they were to be used for eating promised to become almost universal in Ireland. He advocated a standard of non-returnable packages for the benefit of the user. To the retailer they saved time; the salesman had no trouble or expense with "empties;" the carriers—railways more especially—did not want to be bothered with empties, and the grower was conforming to the trend of the times. Fruit culture was already being looked upon as perhaps the most promising field for effort in agriculture. Produce had only to be marketed in an up-to-date, businesslike manner to render success certain, and to resolve sanguine hopes into tangible realities.

Mr. HERBERT PANTIN said, as importers of box-boards, he found a steady increase in the number of small packages despatched by fruit-growers. It was well known that fruit suffered in quality every time it was handled. In the case of Plums it was well known that when one fruit was damaged it started the whole box to decay. The fruit must breathe, and the Plums should therefore be packed in one layer in shallow boxes.

Dr. GOETHE, who was unable to be present, said in his paper, fresh fruit was always more remunerative than bottled or preserved fruit provided the prices for fresh fruit were not allowed to fall below a certain standard. That danger could be avoided by careful storage. Profits from the sale of fresh fruit depended on large quantities of the varieties most appreciated and most in demand being available for market. Small quantities of fruits of different sizes and varieties did not pay. Strawberries should be gathered in the early morning, as they lost flavour in the warm part of the day. Gooseberries should be gathered before quite ripe, otherwise they become mouldy, and Currants should be allowed to become as ripe as possible, so as to allow the natural sugar of the fruit to counteract as far as possible its natural acidity. Apricots were best gathered in dry weather in the morning, so that only the ripest fruit was taken, and the picking should be continued for several days. Apricots were extremely perishable, and should be gathered two or three days before fully ripe if for transport purposes.

The Chairman said he could bear testimony to the great difficulty of picking fruit. He lived only 25 miles from London, yet it was difficult to get Peaches on the table in London entirely free from bruises. But the result would be different if only proper appliances were used, as exceedingly fine fruit came from the Cape of Good Hope, Canada, &c., and was landed in this country in a first-rate condition. He would suggest that Japanese paper would be excellent for packing. It was very tough and pliable. He liked to favour home industries, but in these days they might consider the Japanese industry as one of them.

Rev. G. H. ENGLEHEART said the question of Government support was very lightly touched upon. He was speaking to a Member of Parliament who said it was largely due to the English character that the Government did not do more. The people did not care for paternal Government. There was a great deal in that. There was no doubt that success in all departments had been largely initiated by individual effort. He himself had taken a little orchard in South Wiltshire, but there were in the district many old and derelict farms, and these were the breeding-grounds for all kinds of pests—asylums for the American Blight and Codlin moth, and so far as he could see it would take several years to do away with them. He thought the old sharp line between agriculture and horticulture should be broken down, and that the Minister of Agriculture ought to give to these orchards a helping hand, placing penalties and restrictions upon these asylums of pests.

The CHAIRMAN said the Minister of Agriculture was also the Minister for Horticulture.

Mr. H. F. GETTING said careful study should be made of the time of blossoming of different varieties. Unless that was done they would not get the advantage of cross-fertilisation. It had been said that salesmen were in favour of using boxes. He did not think that was the case generally. They greatly depreciated the sale of boxes of fruit, and only took it up because they wished to confine their clients to themselves. It was a difficult matter to recommend varieties of good

fruit for growing in this country. A great deal of harm had been done by recommending certain varieties because the conditions were not the same in all districts. The Ecklinville Seedling was good for many districts, but in parts of Worcestershire it would not grow at all. A grower had had to cut down some very fine trees simply because they would not bear. What was needed for a continuous supply of Apples for the English market was cool storage.

Mr. F. W. MOORE, Dublin, said good and well-grown fruit was what was wanted. No one would deny that better Apples were grown in the British Isles than in America. More bad American Apples were sold in this country than bad English Apples, and he was always sorry when he saw people buy the bruised, mucky stuff from America while discarding our own fruit. The fault was thrown upon the railway companies. They were called upon to carry all kinds of things, and at rates that would not pay. Bad stuff should never be sent to the market. If the railway companies were guaranteed a constant supply from a given centre they would meet the trader fairly, and reduce their rates. Any quantity of Lord Grosvenor and Lane's Prince Alberts could be sold at good prices. In the matter, at any rate, of Government assistance they were progressive. As to the protection of trees, he urged that constant spraying was necessary, otherwise pests would always be there. That was where we were so far behind the Americans. The small grower had the advantage, and his experience, not only in Ireland, but elsewhere, had been that better fruit was sent to market by the comparatively small growers. It was an industry for small growers, and would prove most prosperous if worked on the right lines. If they liked they could easily meet foreign competition.

The best varietis to grow in Ireland were Lane's Prince Albert, Bramley's Seedling, and Newton Wonder.

Mr. JOHN CROOK said certain trees were prone to canker. He did not wonder that some varieties were absolute failures, whereas the Annie Elizabeth was a perfect success. He believed they would never do what they wished until the people were better educated. They were muddling on and making great mistakes.

Mr. BUNYARD, replying on the discussion, said he had omitted one thing. When grafting Apples on the Paradise stock and Pears on the Quince stock, so many failures were made because the junction was not put below the surface of the soil. When above the soil the juncture was restricted, whereas if under the ground the juncture swelled. He had been reading in the *Westminster Gazette* the report of an interview with Mr. Garcia, of Covent Garden, who stated that foreign fruit was carried at such a cheap rate in this country that a 5 per cent. duty would strangle the trade! Well, why should not the foreign trade be traded? and why should these people not pay something for the upkeep of our army and navy (The President: "And the Royal Horticultural Society")? Something ought to be done. He would not keep the fruit out of this country, but the time had come when something should be done for the home growers. People talked about agriculture as if it were a worn-out industry. It was still the largest industry in the country, and yet it was allowed to suffer by the importation of pulp from Belgium! Why should not the Belgian pay duty? We had to pay duty for sugar. As to the best varieties he agreed with a great deal said by Mr. Cheal, and had omitted from his own paper several varieties. He would say it was impossible to fully succeed unless each grower could have a trial plantation of say half-an-acre, and after experiment use his own judgment.

A question was put as to what should be done where the junction in grafting would be above the ground.

Mr. BUNYARD: In that case earth it up.

On Wednesday a communication was read by Mr. THEOBALD on the Insect-pests of Fruit-trees, but further notice of this and other papers read as these pages are passing through the press, must be deferred until our next issue.

(To be continued.)

BRITISH GARDENERS' ASSOCIATION.

PLYMOUTH AND DISTRICT BRANCH.

SEPTEMBER 30.—In connection with this branch a Mutual Improvement Society has been formed, and the first meeting was held in the Working Men's Hall, Plympton, on the above date. Mr. A. J. G. Chalice, of the South Devon Nurseries, Plympton, presided. Mr. H. Ruse, of Brookfield, Crown Hill, read an instructive paper on "Gardens and Gardeners," dealing with some very ancient gardens and methods of cultivation, also of the changes that have taken place in tastes for plants, and in the planting and growing of different species, also of past and present gardeners. He concluded a very instructive paper by making a special appeal to all gardeners to join the British Gardeners' Association and its Mutual Improvement Society. N. S. E. C.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

SEPTEMBER 28.—There was a capital display of plants at the meeting held on the above date. Groups of Orchids were shown by Messrs. J. CYPHER & SONS, E. ROGERSON, Esq., to whom Silver Medals were awarded. Messrs. SANDER & SONS and J. COWAN & Co., Ltd., received Bronze Medals for groups. Votes of Thanks were awarded to Messrs. O. O. WRIGLEY and W. THOMPSON, also for exhibits.

A. ASHWORTH, Esq., Wilmslow, exhibited *Dendrobium Phalaenopsis Schröderianum* var. *hololeuca*, a white form, which has already been certificated, also a form called "Lee's var."

A. WARBURTON, Esq., Haslingden, exhibited *Cypripedium Fairrieanum*, the first shown in Lancashire, and received a First-class Certificate. *C. × Germain Opois*, a very fine hybrid with *Fairrieanum* as one of its parents, also received a First-class Certificate. *C. × Baron Schröder* was shown from the same collection.

Dr. HODGKINSON, Wilmslow, exhibited a hybrid between *Cattleya Eldorado × C. aurea*, and called *C. × "Lady Ingram"* (Award of Merit).

J. CYPHER & SONS exhibited an interesting hybrid between *Cymbidium Lowianum* and a *Phaius* (species or variety not stated). This was awarded a First-class Certificate. *P. W.*

UNITED HORTICULTURAL BENEFIT AND PROVIDENT.

(ANNUAL DINNER.)

OCTOBER 10.—The nineteenth Anniversary Dinner took place at the Holborn Restaurant on Tuesday evening last, and there were present upwards of 100 members and friends. The Chairman was Mr. W. Marshall, Chairman of the Floral Committee of the Royal Horticultural Society, who was associated with the management of the United Horticultural Benefit and Provident Society immediately after its foundation. The Chairman was supported on the right hand by Mr. W. A. Bilney, and on the left by Mr. H. B. May. In proposing the toast of the evening, Mr. Marshall stated that the Society numbered 1,200 members, and that 105 new members had been enrolled during the present year. The Society had invested funds to the amount of £24,000. Under such circumstances he (the Chairman) would not indulge in any criticism, but would say to the Committee, Continue to do as you are doing. Mr. Marshall then related some interesting particulars concerning the early history of the Society and the reasons that led to its inauguration. It was interesting to learn that the Society was not in the first place intended to be a benefit society, but that it was started under the title of the London Society of Florists and Pomologists, and in direct opposition to the Royal Horticultural Society. The Council of the latter Society had got into trouble towards the end of the year 1864 by its persistence in requiring the Fruit and Floral Committees to meet on Saturdays, the day on which the shows were held. The members of the Committees protested that the day was a most inconvenient one, and eventually they resigned in a body. In these circumstances a meeting was called by an advertisement signed by the late Shirley Hibberd, J. Newton, and J. Croup. The meeting took place at 37, Arundel Street, Strand, and the London Society of Florists and Pomologists was founded at that meeting. There was no further meeting until the following March, and in the meantime the Royal Horticultural Society had settled the difference with their Committees by making Wednesday their show day instead of Saturday. At the second meeting the question of a Benefit Fund was introduced, and it became henceforth the chief object of the new Society, whose title was at once changed to that of the United Horticultural Society. Mr. Marshall mentioned many details that cannot be given here on account of the pressure upon our space. The question of raising funds led to the holding of exhibitions for the purpose, and considerable money was thus obtained. In one case where the Society held a show jointly with another Society in the Guildhall, Mr. Marshall was the means of making an arrangement by which the other Society was to have all the receipts, and guarantee to the United Horticultural Society the sum of £400, of which £300 was counted their share of the proceeds from the show, and £100 for expenses. The result was a capital exhibition, but it was financially a failure, and Mr. Marshall had some difficulty in getting the cheque for £400, which, however, was forthcoming in the end. Mr. Marshall's success in this matter, and his help in framing the rules, led the Committee of that time to present him with an illuminated address, which was shown at the Dinner. But we must refrain from further following Mr. Marshall's interesting story and merely add that he handed over to the Treasurer a proof copy of the first rules of the Society, also a copy of the balance sheet for the year 1868, a remarkable balance sheet, indeed, for it showed receipts equal to about £480, and there was no expenditure at all!

Mr. C. H. Curtis, Chairman of Committee, responded for the Society, and stated that the Com-

mittee had on the previous evening made an important investment, which would make the amount of invested funds £27,953. If the Society were to be dissolved at the present time there would be a sum of £27 available for each member. He read an interesting letter from Mr. Baker, Membrand Gardens, Plymouth, which was a striking testimony to the value of Mr. Marshall's services to the Society in its infancy.

The toast of the "Honorary and Life Members" was proposed by Mr. W. Taylor, and responded to by Mr. W. A. Bilney and Mr. E. A. Bunyard. Mr. H. B. May proposed the toast of "The Chairman," and other toasts included that of "The Visitors," proposed by Mr. Jas. Hudson (Treasurer), and responded to by Mr. Geo. Gordon and Mr. Strugnell; and "The Press," proposed by Mr. E. F. Hawes, and responded to by Mr. R. Hooper Pearson.

The musical part of the programme was carried out by the Kew Glee Singers.

GLASGOW SEED AND NURSERY ASSISTANTS' ASSOCIATION.

OCTOBER 2.—The inaugural meeting of this Association was held in Robertson's Rooms, West Nile Street, Glasgow, on the above date, Mr. Wm. Leighton in the



THE LATE HENRY GEORGE MOON.

chair. After an address from the Chairman, Mr. J. H. Parker moved "That the time had now arrived when an association in connection with the [Glasgow] seed trade should be formed," and this being the unanimous wish of the assembly, the business of appointing office-bearers was proceeded with. The following were appointed:—Hon. President, A. Cross, Esq., M.P.; President, Mr. Wm. Leighton; Vice-Presidents, Messrs. J. Cairns and J. H. Parker; Treasurer, Mr. T. B. Kerr; Secretary, Mr. J. Dobson. It is intended that lectures dealing with subjects of interest to the members should from time to time be delivered, and in all probability outings will be arranged during the summer months.

GARDENERS' DEBATING SOCIETIES.

CARDIFF GARDENERS.—The session 1905-6 was opened at the Sandringham Hotel, Cardiff, on Tuesday, October 3. Mr. F. G. Treseder presided. Mr. Shaddick, representative of the Bristol Gardeners' Association, delivered an instructive lecture on *Codiaeums* (*Crotons*), and the discussion was taken up by a large number of members. A special prize of five shillings was offered by Mr. R. Mayne for the best two dishes of dessert Apples and two dishes of Pears. This was won by Mr. J. Dinwoodie, who was also awarded a First-class Certificate for a dish of Pears var. *Catalpa*, the premier pear weighing 27 ounces. Mr. R. Mayne was awarded a First-class Certificate for a fine specimen of *Miltonia*

candida. Mr. C. E. Collier was awarded a Second-class Certificate for a non-competitive collection of four dishes of Apples. Several new members were enrolled.

CROYDON AND DISTRICT HORTICULTURAL.—The members of this Society met at their rooms, Sunflower Temperance Hotel, on Tuesday, 3rd inst., when a "discussion" night was held, and this proved very instructive. Various inquiries were made, and received due attention under their separate headings. Among other exhibits at the meeting, Messrs. J. R. Box & Co., nurserymen, West Croydon, staged twenty-two varieties of *Michaelmas* Daisies.

SCHEDULES RECEIVED.

SPALDING POTATO EXHIBITION, to be held in the Corn Exchange, Spalding, on Tuesday, November 2, 1905.

WOOLTON AND DISTRICT CHRYSANTHEMUM SOCIETY'S Exhibition, to be held in the Church Hall, Woolton, on Wednesday, November 22, 1905.

HANLEY CHRYSANTHEMUM SOCIETY'S Show, to be held in the Towa Hall, Hanley, on Wednesday and Thursday, November 1 and 2, 1905.

Obituary.

HENRY GEORGE MOON.—The news of the death of this accomplished artist on the 6th inst. at St. Albans will be received with profound regret. For some time past he had been in failing health, but his death in his forty-ninth year is sadly premature. He was born on February 18, 1857, the eldest son of Henry Moon, a Parliamentary Agent of Westminster. For many years he was a student at the Birkbeck and St. Martin's Schools of Art, and was for some years thereafter in a solicitor's office; but Art had greater charms than Law, and about 1880 he joined the Art department of *The Garden*.

He first came to St. Albans in 1884 and visited Mr. Sander's Orchid nurseries to make drawings for Mr. Wm. Robinson, who was then publishing *The English Flower Garden*, &c., and in 1885 was asked by Mr. Sander to illustrate the *Reichenbachia*, a magnificent work on Orchids which came out in 1886 and continued until 1890. Much of his spare time was given to the study of landscape painting on the Norfolk Broads, &c., and at Gravetye, Mr. Robinson's country place in Sussex, he was often accompanied by Mr. W. E. Norton, an American painter, who greatly influenced him in his early studies, and to whom he attributed much of his success in art.

In the autumn of 1892 deceased first came to live in St. Albans, and he much appreciated being nearer the country, making frequent excursions to places in the neighbourhood.

In January, 1894, he married Mr. F. Sander's only daughter, and continued to live in St. Albans, devoting himself more and more to landscape painting. It was a difficult thing to get him to send to picture exhibitions, but he always had a few works on view at Messrs. Obach's galleries. [As a judge his opinion was valued, and he was frequently called upon to criticise at the London Sketching Clubs—the "Langholm," the "Gilbert Garrett," "Polytechnic," "Birkbeck," &c. There are many young artists who owe him a debt of gratitude for helping them in their difficulties, and those who had the pleasure of his acquaintance will mourn the loss of an amiable and accomplished friend.

JOHN BIDGOOD.—It is with great regret that we have to announce the death of Mr. J. Bidgood, at Bournemouth, on October 6, from blood-poisoning. He was in his fifty-third year. A keen and enthusiastic botanist, geologist and bacteriologist, his scientific researches brought him in close contact with horticulture in various branches.

Latterly Mr. Bidgood devoted his attention to colour in flowers, Orchids being selected as suitable subjects for his researches. It will be remembered that the first lecture given in the new Hall of the Royal Horticultural Society was given by Mr. Bidgood on this subject. He was a member of the Scientific Committee of the above Society, and the *Journal* of the Society includes several articles from his pen. Closely connected with educational subjects in his own town, Gateshead, and also in Newcastle-on-Tyne, he was widely respected, and his genial manner will be greatly missed.

The funeral took place at Gateshead Cemetery on Tuesday, the 10th inst. The staff and pupils of the Secondary School, of which the late gentleman was the Head, were present, also the Educational Committee of the town and a large gathering of closely-connected friends.

ANSWERS TO CORRESPONDENTS.

CARNATIONS: *Correspondent.* From the appearance of the leaves we believe the plants to be suffering from eelworms, and in that case all you can do is to make a fresh start, employing soil obtained from another source, or soil sterilized by baking. Send us some of the roots for examination.

CHRYSANTHEMUMS DISEASED: *Anxious.* We find traces of the "rust" disease on our plants. Spray the plants with a weak solution of permanganate of potash.

CINERARIA: *J. G.* We find some root aphides. The only thing we can recommend is to bake the soil and start afresh. Mealy bugs do affect the roots, but these are not mealy bugs.

CREEPERS: *H. C. M.* These will succeed if planted in tubs, as you suggest, providing they receive due attention in the matter of watering. With respect to the size of the tub, this is largely a matter of convenience. You can use one large receptacle or several smaller ones; we do not, however, advise the use of those measuring less than 18 inches each way. Amongst the hardiest and most freely-growing climbing plants for town are the Ivy, Virginian-Creeper, Wistaria, Forsythia suspensa, and the common Jasmine. Ivy is undoubtedly the better plant for covering large surfaces quickly. The varieties sold by nurserymen under the names canariensis, algeriensis, and Rœgnieriana are suitable for covering large spaces. "Gold" and "silver" variegated varieties and the cut-leaved forms should be employed only when the space to be covered is of moderate extent.

DAHLIAS: *D. R.* We find numerous insects, among them mites like the bulb-mite, if not the same. We do not know the conditions under which the plants have been grown, and what has favoured the development of the insects.

GRAPE: *A. W.* You cannot expect us to name a rotten bunch of Grapes packed in a thin cardboard box and smashed in the post.

GRAPES DISEASED: *C. F. C.* The berries are attacked by the "spot" disease (*Gloeosporium ampelophagum*). Burn the affected berries, and next spring spray the Vines with Bordeaux-mixture when the berries are about to set.

HELIXINE SOLEIROLI: *J. M.* You are right in supposing your specimen to be one of this plant. The only other name by which the species has been known, so far as we are aware, is *Parietaria lusitanica*, but it is not mentioned under either name in the work you mention, nor in the recently published supplement.

IVY GROWING ON WALNUT-TREE, YEW, SCOTCH FIR, &c.: *A. P.* No tree is improved in condition by the presence of Ivy upon it, although in appearance it may become more picturesque. In the end the tree is usually killed by the Ivy, but it may not be until many years have elapsed. You should not only cut the Ivy off at the base but remove it from the tree, because otherwise it would continue to live for a considerable period.

MARKET MEASURES: *L. F.* In Covent Garden Market a bushel of Pears weighs from 56 lb. to 60 lb.; of Apples 41 lb. to 48 lb.; of Plums, 56 lb. to 60 lb.; and of Potatoes, 56 lb. In Worcester a "pot" of Plums weighs 72 lb.; of Pears, 72 lb.; and Apples, 64 lb. A Midland "strike" of fruit is generally equal to about 14 lb. Some day we may hope for uniformity of practice, but it seems a long way off.

NAMES OF FRUITS: *Persica.* Peach Lord Palmerston, a useless variety in most localities.—*X. Y. Z.* 1, King of Tomkins County. You sent two specimens under No. 2. One is Small's Admirable, the other with yellow flesh is Forfar; 4, Greames Pippin.—*G. H. S.* 1, Scarlet Golden Pippin; 2, Wellington; 3, Waltham Abbey Seedling; 4, not recognised; 5, Knight's Monarch.—*B. H.* 1, Alfriston; 2, Blenheim Pippin; 3, Cellini; 4, Stirling Castle; 5, Waltham Abbey Seedling; 6, Adam's Pearmain; 7, Minchull Crab; 8, Dutch Codlin; 9, Sturmer Pippin; 10, Dean's Codlin.—*J. C. W.* 1, Sheep's Nose; 2, Green Tiffing.—*J. E. Reynolds.* a, Hornmead's Pearmain; n, Winter Strawberry.

—*Belmont Castle.* You greatly overtax our good nature and should in consequence send us a contribution for the Gardeners' Orphan Fund. 1, Easter Beurré; 3, Durondeau; 4, Marie Benoist; 5, Beurré Sterckmans; 6, Marie Louise; 7, Joséphine de Malines; 9, Beurré Bachelier; 10, Vicar of Winkfield; 11, Glou Morceau; 12, Conseiller de la Cour; 13, Duchesse d'Angoulême; a, Small's Admirable; b, White Melrose; c, Minchull Crab; d, Ribston Pippin; e, Blenheim Pippin; f, Ribston Pippin; g, Yellow Ingestre; h, Baldwin; i, Waltham Abbey Seedling; j and k, Ribston Pippin; l, Blenheim Pippin; m, Royal Russet; n, Fearn's Pippin; o, Scarlet Golden Pippin; p, Brown-lees Russet; q, r, and t, Wellington; s, Royal Russet.—*R. H. C.* 1, Brockworth Park; 2, Neveuau Poiteau; 3, Comte de Lamy; 4, Thompson's; 5, Conseiller de la Cour; 6, Duchesse d'Angoulême; 7, Beurré Superfin; 8, Fondante d'Automne; 9, Comte de Flandres; 10, Beurré Diel; 11, B. Hardy; 12, B. Bachelier.—*R. J.* 1, De Laval; 2, Chaumontel; 3, Triomphe de Jodoigne; 4, King Harry; 5, Lord Lennox; 6, Cheshunt Pippin.—*N. S. Pear Beurré Hardy.*—*F. H. Doyenné du Comice.*—*W. T.* Kindly send fruits that are a little less ripe. These were decayed at the core.

NAMES OF PLANTS: *W. C. L.* *Origanum Dictamnus.*—*F. G. B.* 1, *Hydrangea Hortensia* var.; 2, *Chamærops humilis.*—*M. Buysman, Holland.* 1, *Tinantia fugax*; 2, *Talinum triangulare.*—*O. S.* 1, *Vitis antarctica*; 2, *Euonymus europæus*; 3, *Heeria rosea* var. *alba*; 4, *Lotus Bertholetii*; 5, *Begonia President Carnot*; 6, *B. maculata Wightii.*—*A. Y. L.* *Epidendrum longicolle*, a near ally of *Epidendrum necturum.*—*J. S.* 1, *Gesneria elongata*; 2, *Cupressus funebris*; 3, *Asparagus plumosus*, with cristate growth; 4, *Adiantum Capillus-Veneris Mariesii*; 5, *Euonymus macrophyllus argenteus*; 6, *Cedraium (Creton) trilobum.*—*W. T. G. Z.* *Stenotaphrum americanum* and *Strobilanthes Dyerianus.*—*A. R. A.* *Eria stellata* and *Oncidium (Palumbina) candidum.*—*E. H. B.* *Escallonia montevidensis.*—*R. A. B.* 1, *Miltonia* × *Binotii*; 2, *Oncidium spilopterum*; 3, *Lycaste leucantha*; 4, *Camaridium ochroleucum*; 5, *Selaginella caesia*; 6, *Adiantum formosum.*—*T. B., Bute.* *Cattleya Eldorado alba* syn. *C. E. Wallisii.*—*Turo.* 1, *Oncidium incurvum*; 2, *Odontoglossum Lindleyanum*; 3, *Stelis ophroglossoides.*—*G. B.* *Escallonia rubra*, illustrated in the *Botanical Magazine*, t. 2890.—*Horticult.* 1, Creeper *Rhus Toxicodendron* (poisonous); 3, drooping tree, perhaps *Picea morinda*; 2, from a "tree that droops down a lot." You puzzle us; 4, a variegated form of Lawson's Cypress; 5, *Thuja* (?); 6, *Retinospora squarrosa.* Why send such miserable scraps? Our time is precious.—*J. S.* *Silene Schafta.*—*F. B.* *Cycas revoluta*, as far as we can tell without foliage. It is a female inflorescence.—*H. R. G.* 1, *Saxifraga hypnoides*; 2, *Cotyledon* sp.; 3, *Pinus parviflora*; 4, *Cupressus nootkatensis*; 5, *C. Lawsoniana*; 6, *C. L.* var.—*H. J.* *Centaurea calcitrapa.*

NECTARINE-ROOTS: *H. F.* The numerous swellings on the roots are root-galls, caused by a beetle. You did well in destroying the tree, as the roots were in a bad condition generally, and were not of a sufficiently fibrous nature to produce satisfactory results.

PELARGONIUM LEAVES: *J. W.* Your leaves have been injured, probably as the result of insect punctures. Spray with some approved insecticide.

PINKS: *B. A.* The dividing of old Pinks is an unsatisfactory method of increasing the stock, but it is sometimes done in October. It is much better to layer a fresh stock in July, and failing this the next best way is to propagate by pipings in June. Pinks may also be raised from seeds sown early in spring.

STOCKS FOR FRUIT-TREES AND ROSES: *E. D. H.* Before purchasing imported fruit-stocks the buyer should obtain a guarantee that they are true to name, otherwise much disappointment may follow. Varieties of fruits require to be worked on the stocks most suitable to the particular variety, and unless these stocks can be got perfectly true the varieties budded

or grafted upon them will fail to give the best results, and in some cases will not grow at all. A practised hand used to the handling of fruit-stocks can discover if a particular stock is true to description. There are in this country nurserymen who make a speciality of stocks for fruit-trees, and such stocks having been grown in our native soil they can be lifted and transplanted without the necessity of "bedding" them for a season, as is requisite in some foreign importations. It is generally known what stocks are in request, and these are produced in large quantities. Three or four kinds of stock are used for the purpose of budding and grafting Roses—the Manetti, the seedling and cutting Briar, and the De la Grifferaie. These may be easily distinguished from each other. Large quantities of the seedling Briar are imported each season, this stock suiting all sections of Roses. Where, however, the Manetti is used for hybrid perpetuals, and the De la Grifferaie for such strong-growing Tea Roses as *Gloire de Dijon*, *Maréchal Niel*, *Wm. Allan Richardson*, &c., the stocks can be obtained in large quantities from many of our nurserymen, who grow these by thousands for supplying the trade. As cuttings of these make roots so readily, "E. D. H." might raise his own stock from the growing tops of the stocks to be budded next summer. If such tops be taken off during the month of November, and they are made and planted by piece-work or by the thousand, the cost of production will be very little.

STORING CARROTS: *D.* In respect to the advice published last week, there were no words accidentally omitted. Experience has proved that the sand does not pass through the wood to the extent you suggest, and sufficient space is left for ventilation, the purpose intended. In a short time you may, if you wish, visit a place where the system is practised, and if you will look at the same roots in the months of March and April you will be likely to admit that the results of this method are satisfactory. In many instances greater difficulty is experienced in storing Carrots than in that of storing Beet-root.

TARRED STAGING: *E. A. H.* The injury is most likely due to the tar and paraffin, but if rather more ventilation can be afforded it may be found that no further harm will be caused.

TOMATO-STEM DISEASED: *Correspondent.* The injury has been caused in the first instance by some boring insect that has eaten its way through the centre of the stem near the region of the "collar." This has set up decay in the stem and roots. Turn out the soil, and next season obtain fresh loam from another source, or sterilise the old soil by baking.

VIOLET LEAVES: *A. G.* We find no trace of fungus disease, but red-spider is present on the leaves in abundance. Spray the plants with tobacco-water or some harmless insecticide.

WALNUTS: *W. Cotterell.* Thoroughly dry the nuts by laying them on a boarded floor, and turn them over frequently until after the sweating period is past. They may then be put into bags, and shaken to and fro by two persons, one at each end of a bag. This should be done two or three times each week. Sometimes it is necessary to rub each nut with a dry cloth if they have been allowed to get mouldy during the time they were sweating. Do not put them in the fruit-room until they have been thoroughly dried, and only then if there is no other suitable place in which to store them.

COMMUNICATIONS RECEIVED.—*Harrison Weir*—*Wm. C.*—*Société Nationale d'Horticulture de France.*—*G. H. W. Barr & Sons*—*A. B. R.*—*Dr. Bonavia.*—*F. S.*—*C. R.* (next week)—*I. W. S. & Sons*—*F. W. T.*—*L. E. T.*—*A. P.*—*J. M.*—*D. E.*—*J. C. B.*—*A. F. R.*—*British Commission for Milan Exhibition*—*W. W. P.*—*W. J. T.*—*Powell Wood-Process Syndicate, Ltd.*—*Headley Gardeners' Society*—*W. H. S.*—*F. W. T.*—*J. M.*—*A. S.*—*F. S.*—*S. H. Y.*—*Office of High Commissioner for Canada*—*R. H.*—*E. H. W.*—*F. J.*—*A. D. R.*—*Rev. Williamson*—*W. H.*—*Kew*—*W. M.*—*J. M.* (2s. for Gardeners' Orphan Fund)—*British and Foreign Sailors' Society*—*W. McN.* (3s. for Gardeners' Orphan Fund).

BRITISH-GROWN FRUITS AT THE ROYAL HORTICULTURAL HALL.

(OCTOBER 10, 11, 12, 1905.)

IT was not to be expected that the Royal Horticultural Society's Show of British-grown Fruits this year would be as rich in hardy fruits as was the case in 1904. The present year was good in its early promise, but spring frosts and persistent cold weather ruined much of the fruit-blossom, and a poor fruit-crop took the place of the expected abundant one, as the tabulated returns published in this journal only too well showed. Still, in the appearance of the Vincent Square Hall the only evidence noted of poor crops this season was the paucity of the exhibits as compared with those of last year. Large size, fine colour, and freedom from blemish were everywhere apparent in the fruit that was shown. The collections of hardy fruits and of orchard-house fruits staged by nurserymen in classes specially restricted to tradesmen were on the whole most interesting, and they occupied a very large proportion of the space that was brought into requisition for this exhibition, which was less in extent than was necessary last year.

Of indoor fruits, Grapes were represented in greatest numbers, and there were probably more bunches shown than were staged in 1904. At the same time it could hardly be claimed that the Grapes in the Royal Horticultural Hall represented the best culture in this country. In other words, we think that better bunches could be found in private gardens than were seen in this exhibition, and generally those shown were not so good as the Grapes we saw at Shrewsbury in August or at Edinburgh in September. Last year the Royal Horticultural Society had no exhibit in either of the two largest classes exclusively for collections of Grapes, and this year, although the classes were represented, there was no competition in either of them. The reason may probably be due to the fact that the conveyance of large quantities of Grapes to and from exhibitions is a costly matter, and therefore the prize money will have to be increased if Grapes equal to those shown in the provinces are to be seen in London.

Of Peaches and Nectarines there were good examples, although the season is so late, and among Apples grown indoors the fruits of Cox's Orange Pippin, from the EARL OF LONDESBOROUGH, and Messrs. RIVERS & SON, also those of Ribston Pippin shown by Lord HARRINGTON's gardener, Mr. J. H. Goodacre, will be remembered for some time.

Mr. S. T. Wright, Mr. Frank Reader, and the Society's officials generally, carried out the arrangements very satisfactorily and afforded all the particulars the public or press could have desired.

DIVISION I.**FRUITS GROWN UNDER GLASS OR OTHERWISE.***(Open to Gardeners and Amateurs only.)*

Nine Dishes of Ripe Dessert Fruit.—The Earl of HARRINGTON, Elvaston Castle, Derby (gr., Mr. J. H. Goodacre), who has won so many 1st prizes this season, was awarded the 1st prize in the largest class for a collection of ripe dessert fruit. His Grapes were excellent bunches of Muscat of Alexandria, and three bunches of Black Alicante scarcely so good. These latter were not sufficiently well coloured. Ribston Apples were superb from every point of view, and Cox's Orange Pippin were very good, though smaller in size than the specimens shown in the 1st prize exhibit in Class 2. Peaches Sea Eagle and Golden Eagle were very good, also Souvenir du Congrès and Doyenné du Comice Pears, and Countess Melon. The 2nd prize was awarded to Lord BIDDULPH, Ledbury Park, Ledbury (gr. Mr. J. Dawes). He had heavy bunches of well-coloured Black Alicante, also small, rather thin bunches of well-coloured Muscat of Alexandria Grapes, Allington Pippin Apple, Pitmaston Duchess Pear, and a seedling Melon. The unusual number of four dishes of Peaches and Nectarines were included, the varieties being Humboldt and Victoria Nectarines, and Glad-

stone and Late Admirable Peaches. 3rd, the Hon. Mr. Justice SWINFEN EADY, Oatlands Lodge, Weybridge (gr. Mr. J. Lock).

Six Dishes of Ripe Dessert Fruits.—In this class there were three exhibits, the best coming from the Earl of LONDESBOROUGH, Londesborough Gardens, Market Weighton (gr. Mr. J. C. McPherson). His Grapes were not of unusual weight, but the berries were perfectly coloured and of good quality, Gros Colmar being particularly free from blemish. The Muscat of Alexandria were much stronger than the specimens of Gros Colmar from the point of view of size, and the berries were well-coloured, which made it the more regrettable that the result of handling was apparent on some from which the bloom had been partly rubbed away. Excellent and very pretty examples of Doyenné du Comice Pears were shown, and even more wonderful specimens of Cox's Orange Pippin Apple. Princess of Wales was shown well in six examples, and the remaining "dish" was one of a seedling variety of Melon. The 2nd prize was awarded to Sir MARCUS SAMUEL, Bart., The Mote, Maidstone (gr., Mr. W. H. Bacon). This exhibitor showed Muscat of Alexandria and Appley Towers Grapes, the latter black variety in place of the Gros Colmar staged by the winner of the 1st prize. The other fruits were Pitmaston Duchess Pear, Wealthy Apple, Lady Palmerston Peach, and Golden Drop Plum. 3rd, Lady TATE, Park Hill Gardens, Streatham Common (gr., Mr. W. Howe).

GRAPES.

If exact comparisons could be made of the Grapes exhibited at the Royal Horticultural Show last year with those shown this year, it would probably be found that on the whole they were slightly better now than then, but there were more bunches shown, for it may be remembered that last year there was no exhibit in the classes for six varieties and four varieties respectively.

Six Distinct Varieties, Three Bunches of Each.—There was only one exhibit in this class, and it was from J. W. FLEMING, Esq., Chilworth Manor, Romsey, Hants (gr., Mr. W. Mitchell). He showed the varieties Black Hamburg, Mrs. Pince, Gros Maroc, Muscat of Alexandria, Lady Downe's, and Madresfield Court. The Black Hamburg, though not extra heavy, were excellent in colour, and perfectly plump and fresh. Generally the exhibit was one of considerable merit, though the bunches were all of moderate size only.

Four Varieties, Distinct.—In this class the varieties had to be selected from Madresfield Court, Mrs. Pince, Muscat Hamburg, Muscat of Alexandria, Canon Hall Muscat, Mrs. Pearson, and Dr. Hogg. The 1st prize was awarded to the only exhibitor, C. BAYER, Esq., Tewkesbury Lodge, Forest Hill, London, S.E. (gr., Mr. W. Taylor); he had the varieties Mrs. Pince, Muscat of Alexandria, Madresfield Court, Mrs. Pearson, and Black Hamburg, which were of commendable merit in each instance.

In the following classes three bunches were required of a particular variety:—

Black Hamburg.—There were four entries in this class, and the 1st prize was awarded to J. W. FLEMING, Esq., for moderately-heavy bunches, with large, handsomely-coloured berries. 2nd, Col. ARCHER HOUBLON, Hallingbury Place Bishop's Stortford (gr., Mr. W. Harrison); and 3rd, the Earl of HARRINGTON, who had bunches quite twice as heavy as those which gained the 2nd prize, but lacking colour.

Mrs. Pince.—The exhibits in this class were only three in number, and those awarded the 1st and 2nd prizes were distinctly above the average weight for this variety, which, as is well known, is not the easiest to colour perfectly. The 1st prize bunches from J. W. FLEMING, Esq., were much superior in point of colour, and the berries were of larger size than those shown by W. COOPER, Esq., Whittlebury Lodge, Towcester (gr., Mr. E. J. Squibbs), who obtained the 2nd prize. At the same time, we have seen exhibited on former occasions examples of this good-flavoured Grape in which the coveted colour and bloom were better developed.

Black Alicante.—Of five exhibits in this class, the one selected for the 1st prize was shown by GEORGE

C. RAPHAEL, Esq., Castle Hill, Englefield Green (gr., Mr. H. H. Brown). These were perfectly finished examples of moderate weight, and having berries of satisfactory size. 2nd, W. COOPER, Esq.; and 3rd, Lady TATE, Streatham Common (gr., Mr. W. Howe).

Madresfield Court.—There were four exhibits of this handsome variety, and the best were from J. W. FLEMING, Esq. The 2nd prize was awarded to C. BAYER, Esq., for very highly-coloured bunches, but lacking in weight and in size of berry. 3rd, Colonel ARCHER HOUBLON, Hallingbury Place, Bishops Stortford.

Any Black Grape not mentioned above.—This class was filled much better than was the case last year. The variety awarded 1st prize was Gros Maroc, shown by Colonel ARCHER HOUBLON; these were remarkable for extra size in berry and extra good colour and finish. The 2nd prize was awarded to J. W. FLEMING, Esq., for an exhibit of the same variety; and Lady Downe's, as shown by GEO. C. RAPHAEL, Esq., Castle Hill, Englefield Green (gr., Mr. H. H. Brown), was placed 3rd. The variety Appley Towers was also shown in this class.

Muscat of Alexandria.—This was one of the best contested classes, there being eight exhibits, most of which were of very good merit. The 1st prize was awarded to three finely shaped bunches of good weight, shown by the Earl of HARRINGTON. They were almost perfect in regard to shape, and were heavy individually, but they contained a number of weak berries and the colour was uneven. The 2nd prize was awarded to Major HIBBERT, Ashby St. Ledgers, Rugby (gr., Mr. Wm. Camm). The bunches in this exhibit were lacking in form, but they were of good weight, and all the berries were not only well-coloured and of good size, but they were in perfect condition at the time they were shown. Some adverse criticisms were expressed in respect to the award in this class, and we feel bound to admit that in our opinion they were justified. 3rd, C. BAYER, Esq.

Any other White Grape.—The variety Mrs. Pearson was awarded the 1st prize in this class, as shown by MAX MICHAELS, Esq., Tandridge Court, Oxted. The berries were rather small, but otherwise, and especially in colour of berry and form of bunch, the exhibit was first-rate. The same variety, exhibited with much larger bunches and berries, but less highly coloured, was awarded the 2nd prize. These were shown by E. ASCHERSON, Esq., Pett Place, Charing, Kent (gr., Mr. J. Pitts). 3rd, C. BAYER, Esq.

COLLECTIONS OF HARDY FRUITS.

This class was for exhibits of hardy fruits to be arranged on spaces not exceeding 12 by 3 feet. The collections were each to consist of thirty dishes of fruit, distinct, grown entirely in the open, not more than twelve varieties of Apples or eight varieties of Pears. Equal 1st prizes were awarded to two exhibitors in this class. A collection from Lord BIDDULPH, Ledbury Park (gr., Mr. J. Dawes), was exceedingly rich in Peaches and Nectarines. Of Peaches there were Gladstone, Late Admirable, Sea Eagle, Barrington, Walburton, Prince of Wales, and Raymaekers; and of Nectarines, Albert Victor and Humboldt; President and Coe's Golden Drop Plums were good, and Apples and Pears were of commendable quality. The other 1st prize exhibit in the class was one from Major POWELL COTTON, Quex Park, Birchington (gr., Mr. J. Cornford). In this case the soft fruits shown consisted of Peaches—Sea Eagle, Golden Eagle, and Gladstone; Golden Drop, Grand Duke, and another variety of Plum, and Cheshire Damsons. Pears and Apples were good, and with a dish of Figs and another of Walnuts, they completed the exhibit. 2nd, Sir MARCUS SAMUEL, Bt., The Mote, Maidstone.

DIVISION II.**OPEN TO NURSERYMEN ONLY.**

Collection of Orchard-house Fruit and Trees, to occupy a space of 24 feet by 6 feet staging.—The 1st prize was awarded Messrs. T. RIVERS & SON, Sawbridge-worth, Herts, for a varied collection, the major portion of which consisted of Pears and Apples, the rest consisting of Peaches and Plums. Most of the trees were fairly cropped, and among the Pears there were noted

small trees under 5 feet high of Doyenné du Comice, Uvedale's St. Germain, Pitmaston Duchess, Durondeau, Marie Louise, and Beurré Bachelier. There were taller trees of Pitmaston Duchess, Magnate, Marie Louise, and St. Edmunds (Rivers); tall trees were noted of Cox's Pomona, Gascoyne's Scarlet and Emperor Alexander Apples; of Plum-trees, the varieties were Late Orange, President, and Grand Duke. One Cherry, Guigne de Winckler, graced the exhibit. The fruit shown in baskets and trays included magnificent specimens of Apples Cox's Orange Pippin, King of Tomkins County, The Queen, Peasgood's Nonesuch, Belle Dubois, Gascoyne's Scarlet, Wealthy, Lady Henniker, Emperor Alexander, Ribston Pippin, and Bijou. The gathered Pears were Louise Bonne of Jersey, Pitmaston Duchess, Magnate, Duchesse d'Angoulême, Beurré d'Anjou, Parrot,

Grape-vines in pots were noticed. The fruits shown in dishes, trays, &c., consisted of about sixty distinct varieties. Very fine, unblemished Apples were observed in Bismarck, Sandringham, Reinette du Canada, Twentyounce, Gascoyne's Scarlet, Bow Hill, Cox's Pomona, Baron Wolseley (a large oblate fruit), Newton Wonder, Cox's Orange Pippin, King of Tomkins County, Emperor Alexander, Calville Rouge, Précoce, Belle Dubois, Peasgood's Nonesuch, Byford Wonder (a flattish, large green culinary fruit), Ribston Pippin, Washington, Allington Pippin (of high colour), Cornish Gilliflower, The Queen, Stirling Castle, and McIndoe's Russet. The Pears consisted of Beurré Alexander Lucas (a fine lot), Verulam, Beurré Baltet Père, Beurré Bosc (very large), Doyenné Boussoch (extremely good), as were those of Beurré Diel, Beurré Jean Van Geert (a long tapering fruit ripening to a

Egremont Russet, Calville Rouge Précoce, May Queen, Duchess's Favourite, Golden Reinette, Summer Golden Pippin, Christmas Pearmain, Prince Edward, Mrs. Phillimore, Sanspareil, Reinette Superfin, Mother, and Cox's Orange Pippin.

Culinary Apples of merit were New Red Hawthornden, Emperor Alexander, The Queen, Royal Jubilee, Blenheim Pippin, Golden Noble, Lord Suffield, Annie Elizabeth, Hambling's Seedling, Maltster, Waltham Abbey Seedling, Red Hawthornden, Cox's Pomona, Baron Wolseley, Gold Medal, Withington Fillbasket, Lane's Prince Albert, Stirling Castle, Peasgood's Nonesuch, Lord Derby, Twenty-ounce, Emperor Alexander, New Winter Nonesuch, The Queen, and Belle de Boskoop.

The Pears shown consisted of Catillac, Beurré Fonqueray, Fondante de Cuern, Doyenné du Comice, Émile d'Heyst, Pitmaston Duchess, Fondante Ferriott, Princess, Beurré Hardy, Marguerite de Marrillat, Knight's Monarch, Directeur Hardy, Gilgil, Beurré Superfin, Glout Morceau, Conseiller de la Cour, Eyewood Bergamotte, Dr. Joubert, and Joséphine de Malines. The collection gave one an idea of what the land in the Maidstone district is capable of producing. The 2nd prize in this class fell to another Kentish firm, that of Messrs. CANNELL & SONS, of Swanley and Eynsford. Here the fruits were but little inferior in quality or number of varieties to the winning collection. We observed almost the same varieties, the same high colour and clearness of skin, denoting a suitable soil, good climate, and attention to the use of fungicides and insecticides. Very fine specimens of culinary Apples were observed in Cox's Pomona, Bismarck, Bramley's Seedling, Emperor Alexander, Belle de Pontoise, Lord Burleigh, Norfolk Beefing, The Queen, Peasgood's Nonesuch, Ecklinville Seedling, Warner's King, Gascoyne's Scarlet, Pott's Seedling, and Cellini. Of dessert varieties, very fine examples were noted of Cox's Orange Pippin, Duchess's Favourite, Duke of Devonshire, Wealthy, Allington Pearmain, American Mother, Bess Pool, Yellow Ingestre, Titowka, Lady Sudeley, Col. Vaughan, Court Pendu Plat, King of Pippins, Ribston Pippin, &c. Of Pears, we noted Alexander Lucas, Vicar of Winkfield, Bishop's Thumb (a seldom observed variety), Pitmaston Duchess, Hampshire Bergamotte, Beurré Hardy, Marie Louise, Durondeau, and British Queen. Red and White Currants, also Raspberries, Nuts of kids, and Quinces were likewise shown in this collection.

Fruit Grown Out-of-Doors, shown on tabling measuring 16 by 6 feet.—The 1st prize in this class was taken by Mr. JOHN BASHAM, Fair Oaks Nurseries, Bassaleg, Newport, Monmouth, for a collection of fruits of Apples and Pears of great size and varied tints generally. The finest, taking size as the first consideration, were Newton Wonder, Ecklinville Seedling, Bramley's Seedling, Warner's King, Peasgood's Nonesuch, Gascoyne's Scarlet, British Queen, Lord Derby, The Queen, Hoary Morning, New Hawthornden, Lane's Prince Albert, Blenheim Pippin, Allington Pippin, Sandringham, Tower of Glamis, &c. Most of the above, although of fine size, and in many cases of high colour, are not always of fine quality or heavy bearers. Dessert Apples included May Queen, Cox's Orange Pippin, King of the Pippins, Braddick's Nonpareil, Titowka, Tamplin *syn.* Cissy, British Queen, and Radford Beauty. Of Pears mention may be made of Louise Bonne of Jersey, Princess, Beurré Fonqueray, Conference, Forelle, Beurré Bachelier, B. Bosc, Doyenné du Comice, Bonne d'Ezée, Doyenné Boussoch, Marie Benoist, Beurré Diel, &c. The Hogg Memorial Medal for fruit was awarded this exhibit.

The 2nd prize fell to the KING'S ACRE NURSERIES, Ltd., Hereford, with an excellent lot of Apples shown in conical heaps in round, flat baskets, the fruits in many varieties being of high colouring. There were observed in fine condition the varieties Wealthy, Newton Wonder, Lord Hindlip, Lord Grosvenor, Peasgood's Nonesuch, King's Acre Bountiful (a new fruit of 1904, a large culinary variety of good cooking quality, flowering at the same time as Royal Jubilee, the rind pale green in colour), Frogmore Prolific, Lord Derby, Lane's Prince Albert, Bismarck, Emperor Alexander, Crimson Costard, Royal Jubilee, Allington Pippin, Lady Henniker, and Hambling Seedling. Pears were not numerous.

The 3rd prize was awarded to Messrs. PAUL & SON, The Old Nurseries, Cheshunt, Herts, for a collection consisting of Pears and Apples, of which many of the varieties were of great merit. We noted the varieties Miles' Cross, Transparent de



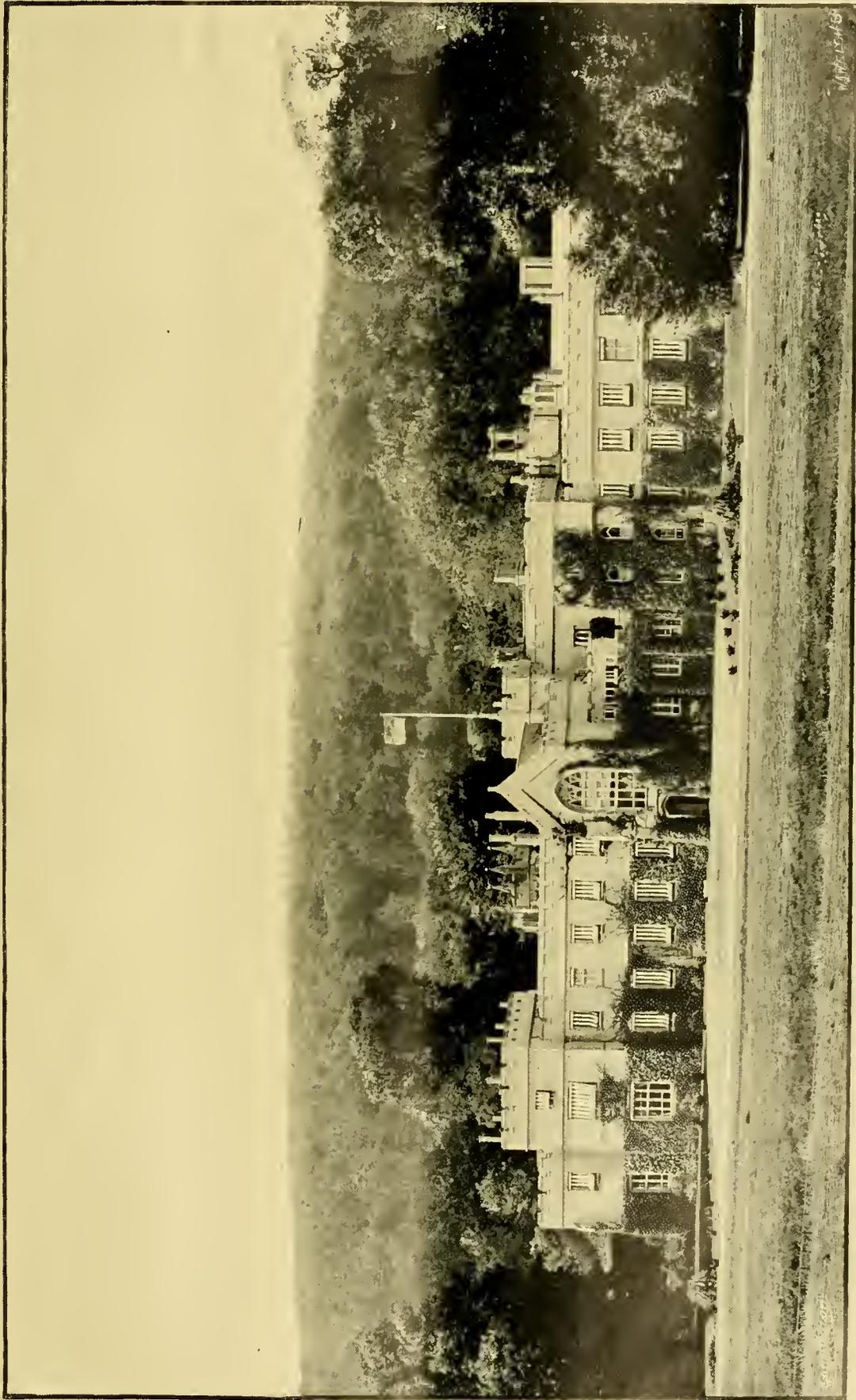
FIG. 106.—PEAR MADAME TREYVE.

Durondeau, Beurré Fonqueray, Doyenné du Comice, Conference, Marie Louise d'Uccle, Marie Louise, and St. Luke (Rivers). The Plums were Coe's Golden Drop, President, Grand Duke, and Late Orange. The only Peach was Golden Eagle, a yellow-fleshed variety with a very downy skin. The whole collection was illustrative of the perfection to which the glass-house culture of hardy fruit has been brought by the firm which originated the so-called "orchard-house system." As show fruits they could hardly be excelled. The novelties shown were Pears St. Luke (Rivers), and Parrot (Rivers). The 2nd prize was awarded to Messrs. G. BUNYARD & Co., Ltd., Royal Nurseries, Maidstone, whose exhibit consisted of Pears and Apples chiefly. Of Pears in pots there were President Drouard, Doyenné du Comice, Marie Louise, Catillac (of very fine size), President Osmanville (a fine, elongated fruit), Emile d'Heyst, Duchesse de Bordeaux, Beurré Diel, Durondeau, Charles Ernest (a large Pear of massive proportions), Le Lectier, &c. The Apple-trees in pots were Emperor Alexander, Prince Edward, Hornhead's Pearmain, Gascoyne's Seedling, Wismer's Dessert (a handsome highly-coloured American table variety in use in the month of August). The showy variety Paroquet was noted on a small tree. Among Plums were fine fruits of President. A few

rosy-yellow tint), Chas Ernest, Marie Louise, Winter Windsor, Pitmaston Duchess (of great size), Doyenné du Comice, Uvedale's St. Germain (of enormous size), Directeur Hardy, Glout Morceau, Durondeau, Joséphine de Malines, Conseiller de Malines, Princess, Beurré Dumont, Nouvelle Fulvie, Belle des Arbres, Ramilies, Winter Nelis, Beurré Superfin, White Doyenné, and Catillac. A dish each of Coe's Golden Drop Plum and Golden Eagle Peach were observed. These two collections were the only ones shown, and the trees only required more space to exhibit them with better effect.

FRUIT GROWN ENTIRELY OUT-OF-DOORS.

The 1st prize in the class for a collection covering 24 feet by 6 feet of tabling was awarded to Messrs. G. BUNYARD & Co., Ltd. The dishes numbered 175, and the fruits were large, clear in the skin, and well developed, and the best for culinary and dessert uses were as follows. Taking the latter first, we may instance Barnack Beauty, St. Edmund's Pippin, Swedish Reinette (a pretty crimson-coloured Apple of middle-size), Hereford Scarlet Pearmain, Autumn Pearmain, Pomme de Neige, Reinette d'Osabruck, Washington, Wadhurst Pippin, Cobham, Paroquet, Gravenstein, Barchard's Seedling, Winter Ribston, Fearn's Pippin,



THE MANSION, WEST DEAN, NEAR CHICHESTER, THE RESIDENCE OF W. D. JAMES, ESQ.

Croncels, Jolly Miller, Bismarck, Lord Derby, Adam's Pearmain, Col. Vaughan, Wealthy, Cox's Orange Pippin, New Northern Greening, Lane's Prince Albert, Tom Putt, Warner's King, King of Pippins, Newton Wonder, Sandringham, Washington, Duke of Devonshire, Allington Pearmain, Lady Henniker, Bramley's Seedling, Dutch Mignonne, and Oldenburgh. Of Pears there were good examples of Beurré Baltet Père, Pitmaston Duchess, Beurré Boussoch, B. Bachelier, Gansell's Late, and Beurré Superfin.

A large and representative collection of Apples and Pears came from Messrs. J. CHEAL & SONS, Lowfield Nurseries, Crawley.

Messrs. S. SPOONER & SONS, Hounslow, had a capital exhibit in Class 15, in which we observed fruits of Bedfordshire Foundling, Hanwell Souring, Silver Russet, Barchard's Seedling, Universal, Margil, &c.

Messrs. LAXTON BROS., Bedford, showed thirty big baskets of different varieties of Apples, about eighty small baskets and dishes, and twenty dishes of Pears, mostly noteworthy produce.

DIVISION III.

(Open to Market Growers only)

The market growers were this year allotted a division to themselves, but their response hardly justified this innovation. Two classes were open to them, the one requiring a table space measuring 18 feet by 6 feet, being filled with market fruits, and the other was a smaller but similar class, the space to be filled by each exhibitor measuring 12 feet by 6 feet. Mr. W. POUPART, Marsh Farm, Twickenham, staged a collection of Apples and Pears in the larger class that would have done credit to a nurseryman. Indeed, his specimens were excellent and of the quality that one rarely finds in Covent Garden Market, and it was given the 1st prize. They were displayed in the best style for exhibition and in a similar manner to those in the nurserymen's classes. Specially good were Apples Cox's Orange Pippin, Emperor Alexander, Chas. Ross, (grand specimens), Gascoyne's Scarlet, Peasgood's Nonesuch, Beauty of Kent and Pott's Seedling. Durondeau and other varieties of Pears were also excellent. The Council awarded this exhibit a Silver-Gilt Knightian Medal.

The WALPOLE ORCHARD CO., Walpole, Wisbech, Cambridge, also staged an exhibit in the larger class. It consisted of packed boxes of Apples, all graded carefully, and a dozen dishes of good market varieties, such as Worcester Pearmain, Warner's King, Lane's Prince Albert, Blenheim Pippin, &c.

In the smaller class the only exhibit was one from Messrs. W. J. LORJOIT & SONS, Heston Farm, Hounslow. It consisted of boxes of Apples and Pears, which were packed as for transit, wood-wool being freely used as packing material. The fruit consisted of well-graded examples of Apples Ribston Pippin, Tower of Glamis, Bismarck, King Pippin, Lane's Prince Albert, &c.; and of Pears Doyenné du Comice, Beurré Bachelier, Conference, and Durondeau. This exhibit was awarded the 2nd prize and a Silver Knightian Medal.

DIVISION IV.

FRUITS GROWN ENTIRELY IN THE OPEN AIR
(EXCEPT CLASS 31).

(Open to Gardeners and Amateurs only.)

APPLES.

Twenty-four Dishes of Dessert and Cooking Apples, Sixteen Cooking and Eight Dessert.—There were six entries, the quality being good all through. There was little to choose between the 1st and 2nd prize exhibits. The former was staged by Lieut.-Col. BORTON, Hunton, Kent (gr. Mr. C. Crane), his fruit being somewhat heavier than those in the 2nd prize collection. Among the dessert varieties were good examples of Allington Pippin, James Grieve, Cox's Orange Pippin and Ribston Pippin. The cooking varieties were especially good, being not only of large size, but of excellent finish. Peasgood's Nonesuch, Warner's King, Bismarck, Tyler's Kernel and Emperor Alexander were among his best dishes. The 2nd prize was taken by Lord BIDDULPH OF LEDBURY, Ledbury Park, Ledbury (gr., Mr. Jas. Dawes). The fruit showed excellent finish throughout. The dessert examples were all highly coloured, Cox's Orange Pippin, King of Pippins, and Rival especially so. Among the kitchen varieties was a splendid dish of Warner's King. The 3rd prize was awarded Mrs. HAYWOOD, Woodhatch Lodge, Reigate (gr., Mr. C. J. Salter). Some good produce was staged by this exhibitor.

Mr. H. WHITELEY, 18, Endsleigh Place, Torquay, had a collection of Apples gathered from trees planted in February, 1903. Most of the trees were on the

Paradise Stock, and are trained as pyramids. The fruit was very good considering the exhibit was from an amateur, who had cultivated the trees entirely without other help.

Eighteen Dishes of Apples, in Distinct Varieties, to include Twelve Cooking and Six Dessert kinds.—Four growers contested in this class, the 1st prize going to a splendid collection staged by Mr. T. CHALLIS, V.M.H., gr. to the Earl of PEMBROKE, Wilton House, Salisbury. The fruit in this exhibit showed remarkable colour and finish throughout, the culinary fruit having almost as much colour and refinement as the dessert varieties. The best dishes were (dessert) Cox's Orange Pippin, Blenheim Pippin (grand dish), Allington Pippin, (culinary), Bramley's Seedling, Lane's Prince Albert (splendid finish), Peasgood's Nonesuch, Bismarck, and Newton Wonder. 2nd, E. ASCHERSON, Esq., Pett Place, Charing, Kent (gr., Mr. J. Pitts). This collection did not approach the 1st prize group in quality, but some good, useful fruit was seen, notably Striped Beefing, Peasgood's Nonesuch, Stone's Seed-

Albert, Lord Derby, and Sandringham, were also shown in splendid condition. The 2nd prize was awarded Lieut.-Col. BORTON, Hunton, Kent (gr., Mr. C. Crane). The fruit was below that of the 1st prize group in size, but was equally refined and finished.

Six Dishes of Dessert Apples.—A similar number of competitors contested this class as in the former. The fruit generally showed excellence of finish, although the colour was perhaps not quite so intense as was seen last season. The premier prize fell to Lieut.-Col. BORTON for an even-sized, well-finished lot, among which the varieties American Mother, Baumann's Red Winter Reinette, and Gascoyne's Scarlet furnished plenty of colour. Egremont Russet was also shown well. W. COOPER, Esq., Whittlebury Lodge, Towcester (gr., Mr. G. J. Squibbs), secured the 2nd place for neat and well-grown if small specimens.

PEARS.

Eighteen Dishes of Dessert Pears in Distinct Varieties.—Three growers entered in this fairly extensive



FIG. 107.—PEAR MARIE LOUISE D'UCCLE.

ling, and Brownlee's Russet. 3rd, Duke of HAMILTON, Merley House, Wimborne (gr., Mr. J. Stevenson).

Twelve Dishes of Apples in distinct Varieties.—The collections were to include eight culinary and four dessert varieties. The entries numbered five, the premier place being awarded to the Rt. Hon. W. H. LONG, M.P., Rood Ashton, Trowbridge (gr., Mr. Strugnell). Quality and finish were the features of the 1st prize group. Cox's Orange Pippin, Blenheim Pippin, Jas. Grieve, Allington Pippin, Sandringham, Warner's King, Peasgood's Nonesuch, and Rambour Franc, were notable examples. The 2nd prize was secured by C. A. MORRIS FIELD, Esq., Ashurst Park, Tunbridge Wells (gr., Mr. J. R. Allan). Good produce was also shown by Mr. Allan, but was somewhat lacking in refinement. Among the more notable dishes were those of Warner's King, Emperor Alexander, and Allington Pippin. 3rd, H. PARTRIDGE, Esq., Castle Hill, Bletchingley (gr., Mr. J. W. Barks).

Six Dishes of Culinary Apples in distinct Varieties.—Seven collections were staged in this class, the winning collection coming from JOHN R. DE C. BOSCAWEN, Esq., Tregye, Perranwell, Cornwall. The variety Frogmore Prolific was as refined in appearance as any dessert variety. Bismarck, Lane's Prince

class, and each entry secured a prize. The 1st place was awarded Lord BIDDULPH OF LEDBURY, who had a representative collection in good form. Most of the examples shown were in suitable condition for the dessert table, notably Durondeau, Directeur Hardy, Fondante d'Automne, Beurré Superfin, Doyenné de Merode, Souvenir du Congrès, Conference and Doyenné du Comice; examples of Pitmaston Duchess were of large size. The 2nd prize was awarded Sir MARCUS SAMUEL, Bart., The Mote, Maidstone (gr., Mr. W. H. Bacon). Here again some notable fruit was seen, the majority being in suitable condition for the table, Durondeau, Triomphe de Vienne, Directeur Hardy, Beurré Superfin, Beurré Hardy (splendid), and Beurré Jean van Geert were some of the more notable dishes. 3rd, Major POWELL-COTTON, Quex Park, Isle of Thanet (gr., Mr. J. Cornford).

Twelve Dishes of Dessert Pears in Distinct Varieties.—But two entries were seen in this class, the best being shown by Mr. A. BASILE, Woburn Park Gardens, Weybridge; the 2nd prize being awarded the other collection, which was shown by Lieut.-Col. BORTON, Hunton, Kent (gr., Mr. C. Crane). There could be no two opinions as to the merits of the two displays. The 1st prize twelve may be described as superb—Pitmaston

Duchess, Duchesse d'Angoulême, Marguerite Marillat, Princess, Beurré Fouquieray, Durondeau, and Counseiller de la Cour, were the strongest dishes. Col. BORTON's group contained good examples of Louise Bonne of Jersey, and Doyenné du Comice.

Nine Dishes of Dessert Varieties of Pears.—But one exhibit was presented in this class, and it was awarded the 1st prize. It was shown by Rt. Hon. W. H. LONG, Trowbridge (gr., Mr. W. Strugnell). The exhibit comprised a good, even-balanced lot of fruit, notable dishes being Beurré Baltet Père, Marie Louise, and Beurré Bosc.

Six Dishes of Dessert Varieties of Pears in Distinct Kinds.—Three growers contested in this class, the 1st prize being secured by ALFRED BENSON, Esq., Upper Gatton Park, Merstham (gr., Mr. W. Mancey). His specimens were of large size, the more notable dishes being Louise Bonne of Jersey, Durondeau, and Pitmaston Duchess. 2nd, C. G. B. MARSHAM, Esq., Beech Lees, Sevenoaks (gr., Mr. R. Edwards). This collection was not far behind the 1st prize group for excellence. We remarked an especially fine dish of Gansel's Bergamot in this display.

Three Dishes of Steeping Pears.—Major POWELL COTTON was the only exhibitor in this class, and he was awarded the 1st prize. His varieties were Catillac, General Todleben, and Beurré Clairgenu.

PEACHES AND NECTARINES.

The best dish of Peaches from the open-air came from the gardens of the Earl of HARRINGTON, Elvaston, Derby (gr., Mr. J. H. Goodacre), the variety being Barrington. Mr. R. ALDENHAM, Babraham Gardens, Cambridge, was 2nd with the variety Sea Eagle.

The best dish of Nectarines was shown by H. A. ATTENBOROUGH, Esq., Catesby House, Daventry (gr., Mr. A. Child), who had small but exquisitely finished examples of the variety Pineapple. 2nd, Lord BIDULPH, of Ledbury, with the same variety.

PLUMS.

The display of Plums generally was not equal to that of last year. The 1st prize was awarded for three dishes of these fruits grown under glass, in which there was but one entry, that from Lord HOWARD DE WALDEN, Audley End, Saffron Walden (gr., Mr. J. Vert), who showed President, Coc's Violet, and Coc's Golden Drop.

Three Dishes of Plums in Distinct Varieties.—Six growers contested, the best being those shown by the Marquis of NORTHAMPTON, Castle Ashby (gr., Mr. A. R. Searle), who had the varieties Reine Claude de Bavay, Monarch, and Coc's Golden Drop. 2nd, Lord BIDDULPH of LEDBURY (gr., Mr. J. Dawes), with Monarch, Coc's Golden Drop, and President.

Major HIBBERT, Ashby St. Ledgers, Rugby (gr., Mr. Wm. Camm), staged the best dish of the variety Coc's Golden Drop out of eleven exhibits.

Lord HOWARD DE WALDEN had the best dish of any other dessert variety of Plum, staging a magnificent dish of the variety Decaisne. 2nd, J. E. CRISP, Esq., 61, Chelsham Road, South Croydon, with the small Ickworth Impératrice.

The best dish of cooking Plums was shown by F. BIBBY, Esq., Hardwicke Grange, near Shrewsbury (gr. Mr. J. Taylor). The variety was Monarch, and the size of the fruit shown was in correspondence with the name.

Grapes grown out-of-doors.—Only one basket of Grapes from the open was shown. It was exhibited by G. E. CRISP, Esq., 61, Chelsham Road, South Croydon, and consisted of fairly good examples of the variety Black Cluster. The basket contained about 6 lb. weight of fruit. It was awarded the 1st prize.

CHERRIES.

The best Cherries were those staged by J. B. FORTESCUE, Esq., Dropmore (gr. Mr. C. Page). Three growers entered in the class for Cherries, and all staged examples of the Morello, but all were mediocre in quality.

DIVISION V.

SPECIAL DISTRICT COUNTY CLASSES.

(Open to Gardeners and Amateurs only.)

In this Division prizes were offered to exhibitors in groups of counties for six dishes of Apples (distinct), four cooking and two dessert, and for six dishes of dessert Pears.

OPEN ONLY TO KENT GROWERS.

Apples.—The 1st prize was won by C. G. B. MARSHAM, Esq., Beech Lees, Sevenoaks (gr. Mr. R.

Edwards), for a very superior collection consisting of Striped Beefing (of great size for this variety), Warner's King, Bramley's Seedling, Cox's Pomona (large and grand in colour), Blenheim Orange Pippin, and Allington Pippin. 2nd, Mr. W. J. CHASTON, 34, Homesdale Road, Bromley, Kent, (for Peasgood's Nonesuch, Warner's King (of great size), Lane's Prince Albert, Newton Wonder, Cox's Orange Pippin, and King of the Pippins).

Pears.—The 1st prize for Pears was also won by C. G. B. MARSHAM, Esq., who had excellent dishes of Pitmaston Duchess, Gansel's Bergamotte, Beurré Superfin, Durondeau, Doyenné du Comice, and Beurré Bachelier, the last-named being perfect specimens. 2nd, Mr. E. PHILLIPS, East Street, Sittingbourne, for Pitmaston Duchess, Conseiller de la Cour, Louise Bonne of Jersey, Doyenné du Comice, Beurré Diel, and B. Bachelier, all rather smaller than those in the preceding exhibit.

OPEN TO GROWERS IN SURREY, SUSSEX, HANTS, DORSET, SOMERSET, DEVON, AND CORNWALL.

Apples.—This was a large class, and the various fruits were of great size for their varieties. The 1st prize fell to a Dorset grower, Mr. T. Turner, gr. to the EXORS. of J. K. D. WINGFIELD-DIGBY, Esq., Sherborne Castle, the varieties being Peasgood's Nonesuch, Warner's King, Mère de Ménage, Gloria Mundi, Cox's Orange Pippin, and Ribston Pippin. 2nd, MAX MICHAELIS, Esq., Tandridge Court, Oxted (gr., Mr. J. Simmons), the varieties consisting of Peasgood's Nonesuch, Blenheim Orange, Beauty of Kent, and Lord Derby, and as Dessert fruits Ribston and Cox's Orange Pippins. 3rd, Lord GRIMTHORPE, Wood Lee, Virginia Water (gr., Mr. G. Baskett), (the fruits of Blenheim Orange, Cox's Orange, and Sandringham being very fine produce.

Pears.—The exhibits consisted of some of the finest specimens in the Hall. The winner of the 1st prize was Mr. W. A. COOK, gr., Leonardslee, Horsham, who had Pitmaston Duchess, Marie Benoist, Doyenné du Comice, Doyenné Boussoch, Duchess d'Angoulême, and Durondeau. 2nd, EXORS. of J. K. D. WINGFIELD-DIGBY (gr., Mr. T. Turton), with Marie Benoist, Beurré Bachelier, Doyenné Boussoch, Doyenné du Comice, Durondeau, and Beurré Superfin, the whole forming a very excellent lot of fruit. Two other exhibits were shown in this class.

OPEN TO GROWERS IN WILTS, GLOUCESTER, OXFORD, BUCKS, BEDS, HERTS, AND MIDDLESEX.

Apples.—1st, J. B. FORTESCUE, Esq., Dropmore, Maidenhead (gr., Mr. C. Page). The finest dishes in this competitor's exhibit were of Peasgood's Nonesuch, Loddington Seedling (a rare variety at this show), Gloria Mundi, Cox's Orange Pippin, and Wealthy. 2nd, E. S. HANBURY, Esq., The Poles, Ware (gr., Mr. F. W. Church), with fine fruits of Tower of Glamis, Warner's King, King of Tomkins County, and Cox's Orange Pippin. There were four other entries.

Pears.—1st, J. WESTMACOTT, Esq., Wedbury, Ware, Herts (gr., Mr. G. Gumbrell), with Pitmaston Duchess, Duchesse d'Angoulême, Doyenné du Comice, Beurré Diel (all very fine and large fruits), Brown Beurré, and Durondeau. 2nd, Captain FARWELL, The Priory, Burnham, Bucks (gr., Mr. W. Hunt), with large and fine fruits of Beurré Baltet, Pitmaston Duchess, and Marie Benoist. Five other exhibits were found in this competition, some highly-coloured Doyenné Boussoch, and Beurré Hardy being shown by Mrs. H. AMES, Cote House, Westbury-on-Trim (gr. Mr. Bannister).

OPEN TO GROWERS IN ESSEX, SUFFOLK, NORFOLK, CAMBRIDGE, HUNTINGDON AND RUTLAND.

Pears.—1st, Col. the Hon. C. HARBORD, Gunton Park, Norwich (gr. Mr. W. Allan), with very fine fruit of Durondeau and Marie Louise d'Uccle, Marie Louise and Pitmaston Duchess, smaller fruits being those of Doyenné du Comice, and Emile d'Heyst. 2nd, Col. ARCHER HOUBLON, Hallingbury Place, Bishops Stortford (gr. Mr. W. Harrison), with Pitmaston Duchess, Beurré Diel, Madame Treyve and Doyenné du Comice as the finest specimens. One other lot was shown.

Apples.—These fruits were well shown by Col. ARCHER HOUBLON, who 'secured 1st prize' with large, well developed specimens of Peasgood's Nonesuch, Lady Henuiker, Hambling's Seedling, Warner's King, Washington, and King of Tomkins County. 2nd, Mr. NICHOLAS R. PAGE, Marine Parade, Clacton. This

exhibit contained very large and bright-coloured examples of the varieties Emperor Alexander, Pomona, and Peasgood's Nonesuch.

OPEN TO GROWERS IN LINCOLN, NORTHAMPTON, WARWICK, LEICESTER, NOTTS, DERRY, STAFFS., SHROPSHIRE, AND CHESHIRE.

Apples.—Mr. JOHN LEE, Kingscroft, Higher Bebbington, Cheshire, was 1st with large fruits of Peasgood's Nonesuch, Warner's King, Gascoyne's Scarlet, Tyler's Kernel, Ribston and Cox's Orange Pippins. These fruits were taken from pyramid and bush trees five to seven years old. 2nd, H. G. WADLOW, Esq., Marylands, Dogsthorp, Peterborough, who had excellent Peasgood's Nonesuch, Bismarck, and Blenheim Orange.

Pears.—1st, Major HIBBERT, Ashby St. Ledgers Rugby (gr., Mr. W. Camm). The fruit tabled by this exhibitor was of large size and clear in the skin. It consisted of Souvenir du Congrès, Doyenné du Comice, Beurré Superfin, Durondeau, Beurré Bachelier, and Pitmaston Duchess. 2nd, F. BIBBY, Esq., Hardwick Grange, near Shrewsbury (gr., Mr. J. Taylor).

FOR GROWERS IN WORCESTER, HEREFORD, MONMOUTH, GLAMORGAN, CARMARTHEN, AND PEMBROKE.

Apples.—1st, JOHN H. WOOLTON, Esq., Burford, Hereford, with very fine large examples of Warner's King, Peasgood's Nonesuch, Mère de Ménage, Stirling Castle, Allington, and Cox's Orange Pippin. 2nd, E. W. CADDICK, Esq., Caradoc, Ross, Hereford, with fine Nonesuch, Tyler's Kernel, Warner's King, and Newton Wonder; Jefferson and Cox's Orange Pippin being the dessert varieties.

Pears.—The 1st prize for Pears fell to H. L. LUTWYCHE, Esq., Kynaston, Ross, Herefordshire, whose fruits of Souvenir du Congrès, Duchesse d'Angoulême, Doyenné du Comice, Gansel's Bergamotte, Doyenné Boussoch, and Mme. Treyve were extremely fine specimens. 2nd, W. E. HYDE, Esq., The Holt, Ledbury, Hereford, whose examples of Doyenné du Comice, Doyenné Boussoch, Pitmaston Duchess, Marie Louise, and Durondeau, were as good as any in the show.

FOR GROWERS IN WALES, EXCEPTING IN GLAMORGAN, CARMARTHEN, AND PEMBROKE. SIX DISHES, DISTINCT.

Pears.—1st, Col. CORNWALLIS WEST with excellent Beurré Hardy, B. Bachelier, Duchesse d'Angoulême, Doyenné du Comice, &c.

Apples.—1st, Col. CORNWALLIS WEST, Ruthin Castle, N. Wales (gr., Mr. H. Forder), with large, clean fruits of Alfriston, Eckliuville Seedling, Mère de Ménage, and Warner's King; and as dessert varieties Ribston Pippin and Cox's Orange Pippin.

OPEN ONLY TO GROWERS IN SCOTLAND.

Apples.—The 1st prize in this competition was awarded to C. WEBSTER, Esq., Gordon Castle, Fochabers, N.B. The culinary varieties were Gold Medal (a green, flat-formed fruit), Byford Wonder, Peasgood's Nonesuch, and Northern Dumping; the dessert fruits were Benoni and Worcester Pearmain. The 2nd prize fell to Mr. JOHN STEWART, gr., Castle Douglas, N.B., who had King of Tomkins County, Kerry Pippin, Lord Derby, Ecklinville Seedling, and Warner's King.

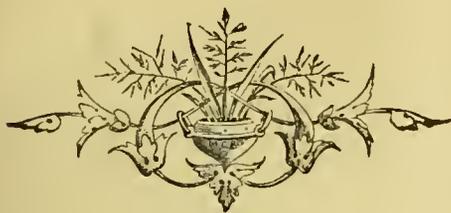
Pears.—1st for six fruits and varieties, C. WEBSTER, Esq., Gordon Castle. Among the varieties shown were Pitmaston Duchess, Marguerite Marillat, Triomphe de Vienne, Durondeau, Louise Bonne of Jersey, and Doyenné du Comice. The 2nd prize in this class fell to Mr. J. DAY, gr., Galloway House, Carlisle, Wigtownshire, with fine large Pitmaston Duchess, Duchesse d'Angoulême, Fondante de Thirriot, Beurré Bachelier, &c.

A CLASS OPEN TO GROWERS IN IRELAND.

Apples.—1st, W. KAVANAGH, Esq., Borris House, Borris, Co. Carlow (gr., Mr. F. Browne). The culinary Apples in this exhibit were large, and clear in the rind, and included the varieties Lord Suffield, Ecklinville Seedling, Peasgood's Nonesuch, and Lane's Prince Albert. Worcester Pearmain and Cox's Orange Pippin were the dessert varieties in this exhibit.

Pears.—1st, W. KAVANAGH, Esq., Borris House, with very fair examples of Pitmaston Duchess, Jersey Gratioli, Nec Plus Meuris, and Joséphine de Malines.

(For continuation of Report, see p. 283.)



THE

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CONTENTS.

Books, notices of—	Obituary—	
Beautiful bulbous plants ... 294	Dobbie, James ... 297	
Chrysanthemum show, a children's ... 297	Gillekens, M. ... 298	
Clematis flammula, with scented and scentless flowers ... 297	Gollan, William ... 298	
Cotoneaster bacillaris Florida garden, a, in the rainy season ... 289	Leach, W. C. ... 298	
Frost, early, in Devon ... 297	Plants suitable for the Midland Counties ... 304	
Fruit-growing, a conference on ... 296	Plants new or noteworthy—	
Grape Prince of Wales Gunton Park ... 296	<i>Rubus inominatus</i> ... 290	
Judging at the recent fruit show ... 297	Potatoes, a lecture on ... 293	
"Laurent" Prize, the Lillium giganteum ... 296	Royal Botanic Society, gift of plants to the ... 296	
Mealy-bug in vineries, introducing ... 294, 297	Societies—	
Merton Hall, Norfolk ... 294	Gardeners' Debating ... 303	
M. Hardy, Mr. Peter, presentation to ... 298	Horticultural Club ... 303	
Nelson centenary, the Newstead, Mr. Robert, presentation to ... 297	Royal Horticultural (Science) Committee ... 298	
Palm, a purple-coloured ... 297	Suburban garden, an interesting ... 293	
	Tulips, florists' forms of ... 301	
	Vine, re-ovating ... 292	
	Week's work, the—	
	Flower garden, the ... 294	
	Fruits under glass ... 295	
	Hardy fruit garden ... 295	
	Kitchen garden, the ... 295	
	Orchid houses, the ... 295	
	Plants under glass ... 294	
	Wilson, Mr. E. H. ... 296	

ILLUSTRATIONS.

American Blight, or woolly Aphis ... 299
Apple-blossom weevil, the ... 298
Currants buds affected with the mite ... 298
Flower-beds illustrative of the Nelson Centenary ... 292
Lilium giganteum in the Clarkson Nurseries, Wisbech (Supplementary illustration)
Fear-midge, the ... 299
<i>Rubus inominatus</i> ... 291
View in a suburban garden at Edgbaston ... 293

A FLORIDA FLOWER-GARDEN IN THE RAINY SEASON.

IT is the latter part of August, we have now fairly entered the second half of the rainy season, which usually begins early in June, and ends in the latter part of October. The rain at this time of the year is not continuous, and people are preparing to make their hay for the winter—Beggart-weed and Crab-grass hay. But we are never sure of a sudden downpour, not even during the brightest days. The soft breezes blow, the air is balmy and salubrious, the young mocking-birds are singing from all sides, and the stranger is apt to make the remark that there will be certainly no rain to-day. But suddenly a few white clouds accumulate above us. In the distance the thunder rolls, and a heavy wind begins to blow. In a very short time the whole sky is covered with dark, low-hanging, quickly-passing clouds. We observe the rain in the distance in long perpendicular streaks—but it may not strike us; there may be a heavy fall only a quarter of a mile away, and not a drop falls in our locality. As a rule, however, we may expect a shower every day, never during the night, while the rainy season lasts. Usually it announces itself by a heavy wind. We observe its approach at a distance of a mile or more as a white,

misty mass; we hear its roaring, and usually we have sufficient time, when in the Orange grove or in the Caladium and Alocasia garden on the lake's edge, to seek shelter in the houses. No coat and no umbrella can protect us against such a deluge. Presently the rain comes nearer and nearer like a wall. It does not rain—it pours! The character of such a rain is totally different from a rain in the rest of this country. The first drops fall. They are enormous, heavy like hailstones, one being sufficient to spatter over the circumference of a plate. The shower roars, so that people cannot hear each other without shouting. When such a rain is accompanied by a high wind no roofing seems able to shut out the cataract. Another peculiarity is that it appears to rain at the same time from all directions, so that even on the different verandahs we do not find shelter. Objects but a short distance away become invisible behind the heavy curtain of falling water. As I have already stated such rains may occur almost every day during the rainy season, but there are frequent pauses of a day or two and even a week. These daily showers are, as a rule, of short duration, lasting only an hour or two, and the thunder and lightning are not nearly so heavy as farther north, though the whole atmosphere seems to be saturated with electricity. After the rain is over the air is always remarkably cool and clear, often too cool for us to spend our evenings on the verandah.

The summer-time in Florida is much more congenial and much cooler than the same season in the northern parts of our country, where days and nights are often exceedingly hot, and where no breeze moderates the heat. The early morning hours and particularly the evenings and nights are perfection. The nights have a splendour that seems strange to northern eyes. The countless numbers of stars are very bright, very impressive. The cool breezes charged with the strange and strong perfumes of the most deliciously fragrant flowers from the old and new world tropics, the outlines of the Palms and Magnolias frequently covered with masses of pure white blossoms of the Moonflower (*Ipomoea bonanox*, and *I. grandiflora*), the night song of the mocking-birds, only now and then heard at this season of the year, combine with other minor details to make this a land of idyllic loveliness. I would not like to miss the rainy season of Florida, because it is the time when nature is in all her beauty, in her tropical dressing, in her most effective form. It is never oppressively hot, never too dry, and the nights are always delightfully cool. The lover of nature never grows weary of the glorious Florida summer.

Among shrubs the Indian Lilac or Grape Myrtle (*Lagerstrœmia indica*) is the glory of the rainy season. The abundance of its flower trusses, their large size and lasting quality, the brightness of their colours, the long flowering period from early June to late August, and the fine form and dense growth of the specimens, combine to make the Indian Lilac a most valuable adjunct to our sub-tropical gardens. The landscape effect produced by large specimens in full bloom is indescribably brilliant. Its only fault is its deciduous character. A dense and broad specimen in my garden of the light rose-coloured variety, standing among

a group of Magnolias (*M. grandiflora*), Wax Myrtles, Cypresses (*Cupressus torulosa*, *C. lusitanica*, *C. sempervirens*), Hollies, Gardenias, *Michelia fuscata*, *Illicium religiosum*, Oleanders, Myrtles, Palms, and Cycads has a most charming appearance when in flower, adding beauty and brightness to the dark and glaucous colours of the evergreens. There are white, rose-coloured, scarlet, and purple varieties in my collection. The flowers are slightly fragrant.

The many large specimens of *Magnolia grandiflora* are now swarming with birds, mostly mocking-birds, blue jays, thrashers, red-cockaded woodpeckers, and the noisy throngs of fish-crows. These birds are all very fond of the aromatic, oily fruit of these trees, which just begins to ripen in abundance. The fruit-cones, in many varieties of a conspicuous red colour, burst their cells, and the glossy red seeds are displayed to our eyes. Palms and Cycads are now in the full vigour of their growth. Our indigenous species (*Zamia pumila* and *Z. floridana*) are perfectly hardy, forming in time dense masses of elegant, glossy foliage. *Cycas revoluta* and *Dioon edule* are also perfectly adapted to soil and climate. *Zamia furfuracea* and *Ceratozamia mexicana* succeed with a little protection. *Cycas siamensis*, which I raised from seed, is as hardy as the common species, and *C. circinalis* endured a temperature of 19° F. last winter, losing only a part of its foliage. The lower part of the trunk was banked with sand and the top was covered with bunches of Spanish Moss (*Tillandsia usneoides*). *Cycas revoluta* just begins to ripen its large, somewhat flat, orange-scarlet seeds in great abundance. Like the eggs in a nest, they are snugly hid underneath the woolly incurved tops of the leafy points, the petioles of which carry on both sides at their base the showy fruit. We can only enjoy the beauty of these closely packed bright-red seeds when bending the dome-shaped top of leafy fruits asunder. This is the first time that I have the opportunity of admiring perfect fruit on my large specimens. Two male plants flowered at the same time with two female specimens. I shook the pollen in my hand and sprinkled it over the female cones, with the result that I shall be able to gather some 400 or 500 perfect seeds.

Along the verandah the bright-yellow bell-shaped blossoms of several species of *Allamanda*, the rosy-red flower-clusters of *Antigonon leptopus*, the blooms of the white and blue *Thunbergia* (*T. grandiflora* and *T. fragrans*), together with *Maréchal Niel*, Gold of Ophir, *Chromatella*, *Lamarque*, and Woodland Margaret Roses have been produced in great abundance from the beginning of June, but never in such a profusion as now. Only the Roses made a pause during June. *Jacobinia coccinea* on the side of the house has made such vigorous growth that it is now fully 6 feet high, each shoot being terminated by a large spike of glossy scarlet flowers, individually small, but extremely effective in masses. On one side of this grows a vigorous *Solanum Rantonnetii*, the deep purple flowers of which pervade the air with a very pleasant perfume. On the same side of the house grows a large *Brunfelsia confertiflora*, which never has been entirely out of bloom since the first days of January.

Last year I planted several tubers of *Gloriosa superba* near a dense specimen of *Artabotrys odoratissimus* and an equally large *Tibouchina semidecandra* (*Pleroma macrantha*), both growing side by side in front of the house. The flowers of the *Artabotrys*, here called the Ylang-ylang, are not very showy, being brownish in colour, but they exhale a very strong and delicious fragrance, the very ideal of perfumes; and the Pear-shaped fruits, the size of a small Plum, which ripen in abundance in favourable seasons, are also very aromatic. The *Gloriosa* has climbed up into it, and its vigorous shoots have attained a length of over 10 feet. But here it is not as showy and effective as in the *Pleroma* near by, where the bright yellow and orange-red colour of its scores of flowers mingle with the velvety deep green leaves and the very beautiful glossy purple blossoms of the *Pleroma*.

*Crinum*s have been for many years my favourites, and they appear everywhere around the house and in the garden. The collection consists of about thirty different species, and about ten hybrids. They are always in bloom from late in March to late in November, but they are at their best at present, and their strong and delicious perfume pervades the garden day and night. The most intense as well as the most gratifying fragrance is exhaled by *Crinum amabile*, of which about twenty large specimens are now in bloom. Some of the plants are 8 and 10 feet in diameter and 5 feet high, facing fountains of luxuriant tropical foliage. Their flower-scapes are as thick as the wrist, 4 to 5 feet high, and of a purplish-crimson colour, carrying huge umbels of glossy purplish-crimson buds, which open in succession, the inside of the expanded blossoms being whitish-rose. *C. angustum* almost reaches the same proportions; the flowers, however, are smaller, and the buds and scapes are of a greyish brown colour. *C. asiaticum sinicum*, the St. John's Lily, is also a veritable giant, its white, narrow-petalled flowers exhaling a strong Vanilla-like odour. I have quite a number of crosses between this species and *C. scabrum*, *C. Moorei*, *C. zeylanicum*, and *C. longifolium*. The following species are now in bloom around my study: *Crinum zeylanicum*, *C. fimbriatulum*, *C. grande*, *C. erubescens*, *C. erubescens nicaraguense*, *C. Kunthianum*, *C. Commelyni*, *C. "Elsworthii,"* *C. "cappedum,"* a fine hybrid between *C. asiaticum sinicum*, *C. americanum*, and *C. longifolium* (capense). With moderate attention most of these *Crinum*s grow to an enormous size. Being freely found, with *Hippeastrum equestre*, in every dooryard, the everyday Floridian does not care much for them—the "Lilies," as they are called by him. They are all at their best and most redolent in the evening, filling the air with a most delicious perfume.

The strongest and finest fragrance of the night, however, is that of the night-blooming *Jasmines* (*Cestrum nocturnum* and *C. Parqui*). The stranger is enraptured by this perfume, which fills the entire garden and its environments, and he always refers to it in superlatives. The Moonflower, clambering over a tall Bamboo near my study, is also in bloom, and its large pure white flowers are strongly fragrant. During moonlit nights these fairy-like blossoms, produced in enormous masses, are particularly charming. Many of the true *Jasmines* are overpoweringly sweet, and beds of *Cosmos*, particularly *C. "Klondike,"* lights up the garden wonderfully by its large golden-yellow blossoms. The night-blooming *Cereus* (*C. nycticalus*) clambers up the trunks of Palms and spreads considerably in their crowns, where its ivory urns are laid open to the moonlight, while a myriad of crickets chirp in one continuous jubilee.

The different species of *Cocos* Palms push up flower-spikes after flower-spikes, and their often

enormous bunches of fruit, strongly and agreeably fragrant, are ripening continually. The fruit bunches of *Cocos* *Datil* often weigh 50 lb., and I have counted as many as 1,025 large Plum-like, juicy fruits in one cluster. *C. Gaertneri* has matured bunches containing as many as 1,100 fruits, weighing from 25 to 35 lb. *C. Bonnetti*, *C. Blumenavia*, *C. Yatay*, *C. eriospatha*, *C. campestris*, and *C. "Normanbyana"* are all in bearing at present, and in almost all cases the fruit is very aromatic and edible. It varies in size from that of a Pea (*C. campestris*) to that of a large Plum (*C. Datil*). *Cocos australis* and a number of unnamed kinds also mature fruit-clusters, but they are much smaller, their stems are shorter and more delicate, and the fruit is only loosely arranged in the bunches. These hardy species of the genus *Cocos* form the most beautiful and elegant specimen Palms of our subtropical gardens. They are all rapid growers, and begin to bloom and fruit at an age of five or six years. They are far superior in beauty and gracefulness to the *Phoenix* and *Sabal* species in my collection. My specimens were all raised from seeds which I received from southern Brazil, Paraguay, Uruguay, and Argentina, ten to fifteen years ago. Many have formed trunks 5 to 6 feet high. The foliage of the majority of species is of a beautiful bluish-green colour, and in one unnamed species it is entirely silvery-white. I do not think that the names as given above are in all cases correct. The nomenclature of garden Palms in this country is mostly in a chaotic condition.

The most interesting and delightful part of my garden is situated near the lake, the edge of which is adorned with magnificent foliage plants, such as *Papyrus antiquorum*, *Thalia divaricata*, *Colocasia esculenta*, *Heliconia Bihai*, *Xanthosoma sagittifolium*, *Maranta arundinacea*, *Canna*, and others. Here the soil is constantly moist, rich and loose, and just suited for most members of the *Araceæ* and *Scitamineæ*. The charm of my *Caladium*-bed, occupying about 3,000 square feet, is indescribable. There are about 5,000 plants in 400 different varieties planted out. Many of the plants have attained a height of from 4 to 6 feet. I often have admired these most magnificent foliage plants in pots when in the north, and I have grown them in my greenhouse, but I never dreamed of the beauty and brilliancy as displayed here in the open air in the half-shade of my lath-house. The beauty of flowers is not of long duration; the brilliancy and the indescribable varied hues of the *Caladium*s, however, last from the beginning of April until November, and even December. They are far superior to flowers in many respects, changing their colours continually and growing more beautiful and brilliant from day to day. In the early morning hours when the dew-drops lie on the leaves like thousands of pearls and diamonds, and in the evening when the after-glow of the setting sun is reflected from the often immense leaves, they form such a glorious sight that no pen and no pencil can do them justice, and we have the feeling of being in an earthly paradise. There is a lustre in the foliage of many kinds; even the varieties mainly of a green colour show golden and metallic hues under different lights that cannot be found in any other foliage plant. I have *Alocasias* and *Colocasias*, *Marantas* and *Phryniums*, *Heliconias* and *Payllotenioms*, and many other foliage plants growing near them, even among them, but there is absolutely nothing that can compare with them. They outlive all in the beauty of their forms, in the distribution, variety and brilliancy of colour, in vigour of growth, and in bushy and symmetrical habit. Last year I obtained a small tuber of the variety *Caladium Reine Victoria*. It was well cared for. In December, when I took it up, it

had formed an enormous tuber, the size and form of a soup-plate. When I cut it up this spring I obtained over a hundred pieces, each provided with an eye. *C. Lord Derby*, *C. Orphee*, *C. Clio* and others had attained almost as large a size.

In the early morning hours the perfume of the flowering *Alocasias* is quite strong, but is more aromatic than pleasant. The *Colocasias*, such as *C. esculenta*, *C. Fontanesii*, and *C. illustris* push up incredible numbers of conspicuous yellowish blossoms, which exhale a strong and rather unpleasant odour, most disagreeable early in the morning. *Xanthosomas* are also flowering, particularly *Xanthosoma violaceum* and *X. sagittifolium* and its many varieties, but their odour is subdued by the delicious and strong fragrance wafted from the large beds of *Hedychium coronarium* and *H. flavosum* in full bloom at present. The much-advertised "Red-stemmed *Caladium*" is nothing but a fine and vigorous form of *X. violaceum*.

One of the most imposing of *Aroids* in my collection, a scenic plant of the first quality, is *Colocasia "grandis,"* with large, shell-like leaves (30 by 22 inches) of a satiny-green colour with golden and bronze lustre and bluish sheen. The shape of the leaves is not flat but bowl-like. Its growth is very dense, forming a fine symmetrical specimen 6 feet high and 4 or 5 feet in diameter. Near it stands a huge specimen of *Xanthosoma robustum* fully 8 feet high, one of the most beautiful and refined foliage plants I ever have seen. The flowers are produced in great abundance, and they are powerfully and deliciously fragrant, but not so when they are fading. This has been largely advertised as the "Flowering *Caladium*" and as *Caladium "New Century."* It was introduced in immense quantities from Central America a few years ago as a new species. An account of its flowering at Kew was first published in the *Gardeners' Chronicle*, vol. iv, Third Series (1888), p. 621. *H. Nehrling, Florida.*

NEW OR NOTEWORTHY PLANTS.

RUBUS INNOMINATUS.*

This decorative species is one of Mr. Wilson's introductions to Messrs. Veitch's establishment from the mountains of Central China. It is of vigorous growth, making shoots 6 to 8 feet long in a season. The stems are densely clad with a short, velvety pubescence, with small and relatively few scattered prickles. The leaves on the barren shoots are usually pinnately five-foliolate, and on the fertile shoots usually only three-foliolate. The leaflets are large, ovate, acute, sub-cordate at base, with dentate margins; the terminal leaflet being much the longer and occasionally trilobate. Stipule erect, 1 inch long, filiform, with villose margins. Upper surface of leaves dark green with few scattered hairs, the underside covered with greyish-white felt. The flowers, which are borne in large, thyrsoid panicles 1 to 1½ foot in length, are insignificant, with sepals glabrous or more or less covered with stipitate glands. In September the plant is furnished with panicles of orange-red-coloured fruits which have an agreeable sub-acid flavour. In the accompanying illustration (fig. 112) the artist has shown too many fruits ripe at one and the same moment.

The species was originally described by S. Le M. Moore in the *Journal of Botany*, 1875, p. 226, from a fragmentary and abnormal specimen collected at Kukiang (China) by Shearer. Subsequently Dr. Henry collected it near Ichang (Central China), but so different were these specimens that Hemsley, in the *Index Floræ Sinensis*, p. 231, described them as a new species under the name of *R. Kuntzeanus*. He however notes the close

* *Rubus innominatus*, Spencer Moore, in *Journal of Botany*, August, 1875, p. 226. s.d. *R. Kuntzeanus*, Hemsley, *id supra*.

affinity with Moore's plant, and suggested that his plant may possibly be only an eglandular trifoliate variety. As shown above, both these

"BRITISH TREES."—We have already spoken of the illustrations to this work by Mr. VICAR COLE. To our thinking they are truer to nature than

germination of the Acorn are accurately represented, and greatly add to the interest of the book to nature-students. Messrs. HUTCHINSON

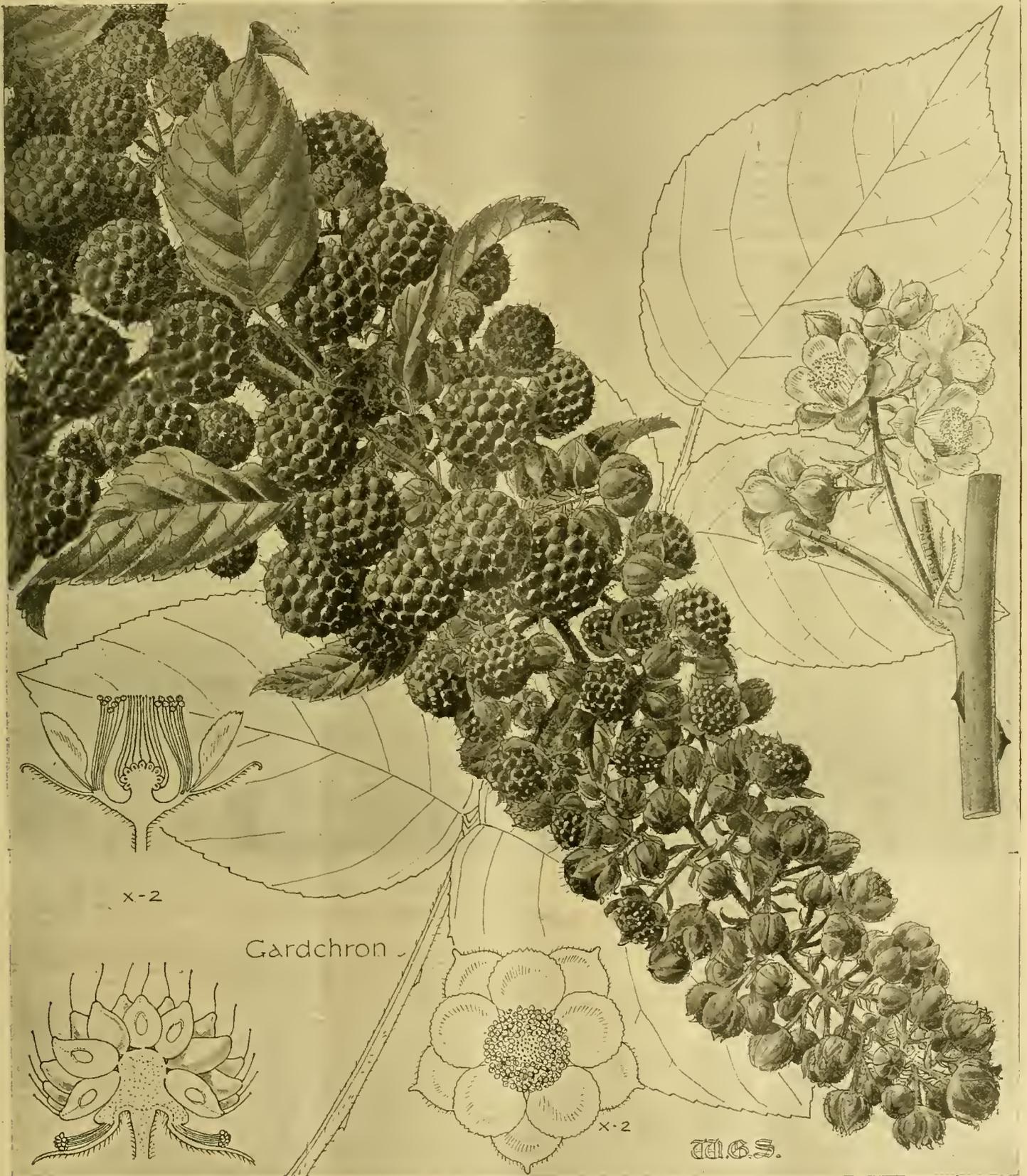


FIG. 112.—RUBUS INNOMINATUS: FRUIT SPIKE AND FLORAL DETAILS. (SEE P. 290.)

characters break down, and on specimens of Messrs. Veitch's plant being shown to Mr. Hemsley he at one agreed that his and Moore's plants were one and the same thing.

many artistic representations. It is easy to see what is meant, which is not always the case with impressionist drawings. Attention is also given to points of detail—thus, the several stages of

& Co. are the publishers. Part V. is devoted to the Oak. The text is intended rather for the use of the general public than for the professed botanist.

THE NELSON CENTENARY.

THE flower-beds in the Darlington Public Park, of which an illustration is given at fig. 113, are doubly interesting at the present time, for they not only represent examples of neatly kept carpet bedding, but they also serve to remind us of the celebrations which are taking place during the present week to mark the centenary of the death of the greatest English admiral.

For many years the terrace along the bank of the Skerne in Darlington Public Park has been devoted to carpet bedding, many unique and attractive designs having appeared thereon year after year. The Diamond Jubilee of the late Queen was celebrated by a striking likeness of Queen Victoria in 1836, and one of Her Majesty in 1897, who recognised the tribute by having a complimentary letter sent to the curator and parks' superintendant, Mr. J.

CULTURAL MEMORANDA.

RENOVATING VINES.

GROWERS who desire to renovate their Vines should lose no time in making preparations for carrying out this work. Vines which have borne heavy crops of fruit for several years, and which now show signs of exhaustion, should be attended to first. By removing the top layer of soil annually to the depth of several inches, dressing heavily with bone-meal, and replacing the worn-out soil with a fresh, suitable compost, much help is afforded the Vines to maintain their vigour and productiveness. Sometimes these dressings fail to have the desired effect, and something more has to be done, such as by destroying the old Vines and replanting with fresh young canes previously prepared for the purpose, or by lifting the roots entirely and relaying them

trench is next refilled with the new soil, the roots being kept damp and relayed at their proper depths, after we have cut off their damaged ends with a clean cut. In the case of long, bare roots, in order to induce them to make fibres, incisions are made both right and left with the knife at about 10 inches apart along the whole length of the roots similar to those usually made when layering Carnations. The soil with which the roots are recovered is made moderately firm, more or less according to the state and nature of the compost.

The bed is made up a few inches higher than the desired height to allow of the new soil sinking. When this has been completed the whole of the border is given a gentle watering with tepid water, and then a slight mulching of short manure is applied. The Vines are kept well shaded, syringed overhead three or four times daily, the house closed and the temperature slightly raised until the Vines have sufficiently



[From a photograph by Sy Lucy H. Wood, Darlington.]

FIG. 113.—FLORAL TRIBUTES TO THE MEMORY OF NELSON.

Morrison. Other designs, including portraits of the present King and Queen in the coronation year, have attracted great attention. This year Mr. Morrison, again topical, commemorates the Nelson and Trafalgar centenary by three bold and striking pictures worked out in carpet bedding. One is an excellent portrait of our great admiral, within a life-buoy planted with *Antennaria*, and the famous signal, "England expects every man to do his duty," done in *Pyrethrum*. The groundwork is composed of the pretty *Herniaria glabra*, and the portrait is an effective and harmonious blending of *Mesembryanthemum*, *Pyrethrum*, *Echeverias*, *Alternanthera*, dwarf blue *Lobelia* and *Iresine*; the large numerals 1805—1905 are picked out in *Pyrethrum*. Another picture represents *H. M. S. Victory* very boldly, the ropes and masts being composed of small, neat *Echeverias*. The third design shows Nelson and Wellington hand-in-hand and at full length. All the designs are very realistic, and will please a large section of the community.

at various depths in new soil. This latter plan I have practised at different times with excellent results. October is the best month in which to carry out the work. My method of procedure is to prepare sufficient soil for the undertaking, keeping it well covered with a tarpaulin to avoid saturation from rain. Next a deep trench is dug at the farthest point from the rods to the full depth of the border, and the soil gradually removed towards the stems, every precaution being taken to avoid damaging the roots more than is inevitable, clearing away the soil as the work proceeds. After all the old soil has been removed and the main roots are made secure by tying and fixing to stakes or to the rods of the Vines, the glass is heavily shaded in bright weather with mats or layers of canvas.

The drainage is next examined and put in good order, a point of first importance to the welfare of the Vines. After the drainage has been made complete, turves are placed close together with their grass sides downwards. The

recovered from this severe treatment. Air is then more freely admitted and the shading gradually dispensed with.

After old Vines have been lifted and replanted it is not prudent to force them too early and hard the succeeding season, nor should they be cropped heavily, but the growth of young rods between the old canes to supplement root-action should be encouraged. In the case of aged Vines the complete destruction of which is not desired, the better plan is to train-in young rods, as these furnish much better and heavier crops of Grapes than older canes. I always retain a few young rods annually to replace those that have fruited for two or three seasons, and am more than satisfied with the practice and results. A good compost for Vines is composed of ten cartloads of sweet turfy loam, 4 or 5 cwt. of $\frac{1}{2}$ -inch bones, two cartloads of old mortar-rubble, one cartload of wood-ashes, and one cartload of horse-manure, the whole well mixed together. H. Markham, Wrotham Park, Barnet.

A SUBURBAN GARDEN.

THE garden represented in the illustration at fig. 114, situated in Westfield Road, Edgbaston, about two and a half miles from the centre of Birmingham, contains a small but choice selection of hardy plants. Originally pasture land, and about an acre in extent, Mr. F. M. Mole, the present owner, took it in hand twenty-five years ago as a hobby, and he has succeeded in making the site into the most interesting of the small gardens in the suburbs of Birmingham.

on a south-east border by Azaleas, Berberis, Spiræas, Daphnes, &c. Specimen Hollies 12 feet high on the east and north sides of the pool are a feature. Mr. Mole takes a special pride in these green-leaved Hollies, and until recently pruned every specimen himself. They are perfect pyramids, and screen the plants growing on the surface of the pool from winds.

Thousands of bulbs, principally Crocuses and Snowdrops, are planted on a piece of flat grass land covering a quarter of an acre in the centre

of every plant in his garden, and in order to give the latter additional educational value special iron labels, with name, origin, and other particulars, are attached to most of the permanent plants. Mr. Mole is a generous supporter of Midland horticulture. He takes great interest in the Birmingham Botanical Gardens, and for many years was an active member of its committee of management.

In an adjoining garden Mr. Mole, senior, has also cultivated pyramidal Hollies in every choice variety obtainable, the variegated varieties being

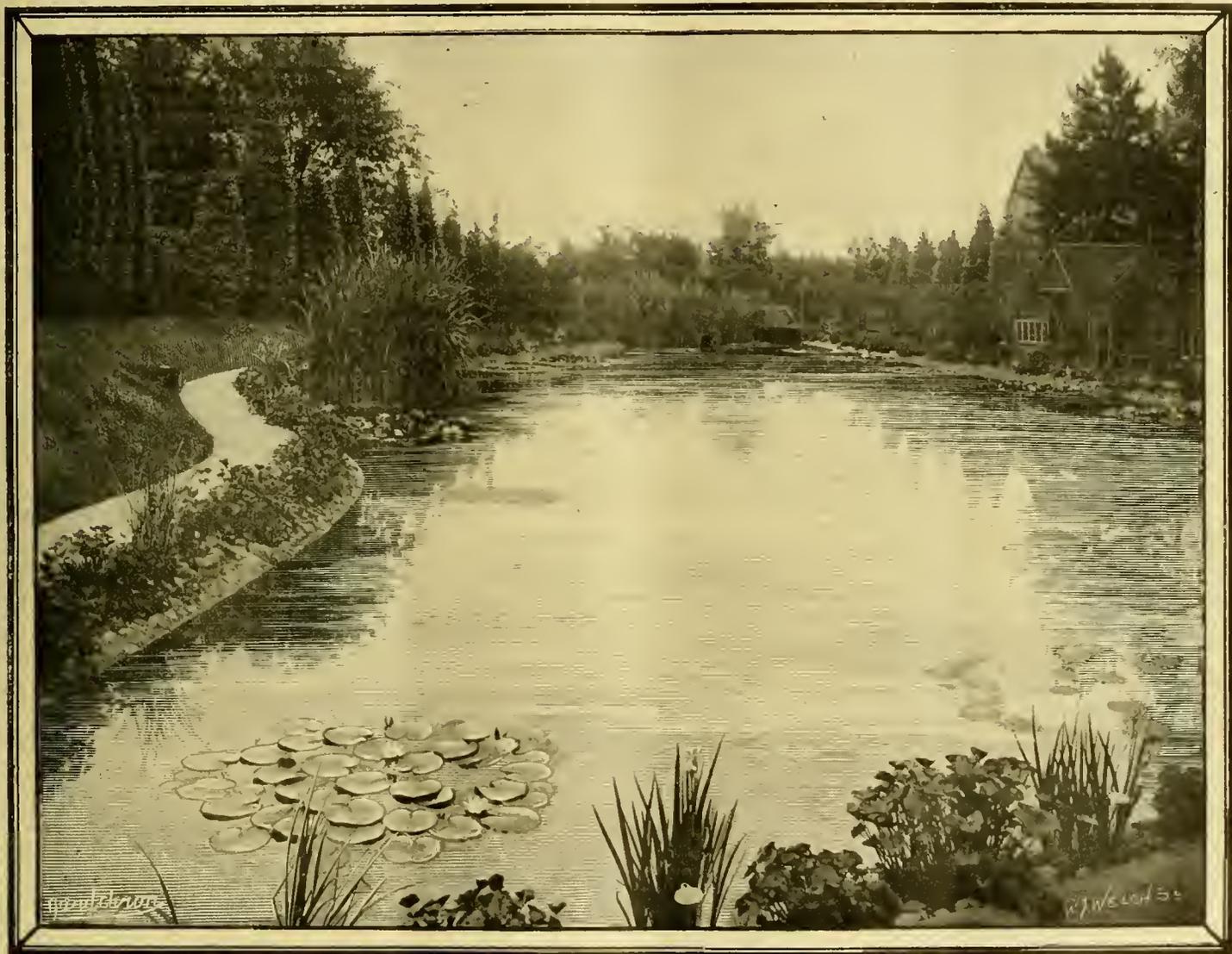


FIG. 114.—VIEW IN A SUBURBAN GARDEN AT EDGBASTON, BIRMINGHAM.

In a pool in the south-west corner (see fig. 114), hybrid *Nymphæas* and other aquatics grow freely and flower profusely. Out of a collection of upwards of a dozen varieties of Water-Lilies, Mr. Mole considers the undermentioned best adapted for gardens similarly placed to his own. They are *Nymphæa Marliacea chromatella*, *N. Signoreti*, *N. Laydekeri rosea*, and *N. L. lilacea*.

An exceedingly pretty effect along the sides of the pool is created by the use of such plants as *Spiræa palmata* and *S. p. alba*, *Caltha palustris* and its double-flowered variety; also *Arundo conspicua* and *Eulalia*s.

In a narrow border parallel with the pool along the boundary fence having a south-west aspect, Japanese Irises, *Fritillarias*, *Helleborus*, &c., grow luxuriantly. Shrubs are represented

of the garden, and during the flowering season invitations to see the display are issued to friends interested in spring gardening.

Pear-tree culture is studied, and the skilfully-trained trees on walls facing to the south and east demonstrate what can be done in suburban gardens under proper treatment. The following varieties of Pears have produced good crops this season: *Doyenné du Comice*, *Marie Louise*, *Fondante d'Automne*, and *Beurré Diel*. Of Apples the varieties *Annie Elizabeth* and *Bismarck* (the last-named as a bush tree) have likewise fruited well.

Like the Hollies, the fruit trees until a year or two ago were pruned and trained by Mr. Mole, who also keeps a record of the effects of weather, &c., on the trees, date of flowering, setting and ripening of the fruit, &c. He knows the history

quite unusual specimens. Both gardens are remarkable for the testimony they bear to Mr. Mole's love for plants, which is of such a practical type that all the leisure time his large business permits him has been devoted to the personal training of his much-prized specimens. We have seldom visited a small garden that was so full of interest, or an amateur gardener whose enthusiasm was more apparent, or his efforts better directed.

LUTHER BURBANK. — The California State Board of Trade recently held a banquet in San Francisco in honour of the great hybridist. Many of the officials of the State and University were present.

MERTON HALL, NORFOLK.

LILIUM GIGANTEUM.—Probably in no other part of the kingdom could such a show of *Lilium giganteum* be seen as it was the writer's privilege to see during the summer at Merton Hall, the Norfolk seat of Lord Walsingham.

Merton, or Meretown as it was anciently known, is situated about 2 miles south of the small market-town of Watton, and being off the main line is not generally known by the number of visitors who yearly find on East Anglian rivers and broads a delightful holiday. The special object of my visit was to see the plants of *Lilium giganteum* in bloom, and they were indeed a remarkable sight, there being hundreds of the glorious spikes of flowers, varying in height from 8 to 12 feet. Growing in large clumps on the sides of the woodland paths, the stately stems backed by masses of hybrid *Rhododendrons*, which had themselves but a few days previously made an equally brave show of other colours, they formed a sight not readily to be forgotten.

The stock is increased by raising annually a batch of seedlings, and they seem to be quite easily reproduced in this manner. The seed is sown in March, and it does not show itself until the following year. The seedling plants remain in the bed for three or four years, when they are either pricked-out into nursery beds or planted permanently.

On the south side of a shady path a border is retained for raising the seedlings, and from this bed hundreds of young plants are taken annually for transplanting all over the woods, where they readily establish themselves, probably not being seen by the gardener or anyone else for a year or more after planting. It is impossible to accurately estimate the number of plants seen in this seed-border, but certainly it contained many thousands, varying in age from last year's seedlings to plants five years old.

They are as a rule permanently planted out when about five years old, and they do not flower until eight years old at the earliest; but it is far better, I was informed, to plant at this age, as older plants are not found to establish themselves so readily. The soil in which these Lilies were seen is of sandy peat, and it is evidently exactly what they like.

In a lake situated to the south of the Hall many beautiful *Nymphæas* were noted in full bloom; the varieties included *N. chromatella*, *N. sulphurea*, *N. Marliacea rosea*, *N. Leydeckeri fulgens*, *N. Marliacea carnea*, *N. odorata alba*, and a glorious show of the old white variety. Seen in the full sunshine, these formed a delightful sight.

Broad herbaceous borders of different designs on each side of the Hall were making a brave show of colour, all the best varieties being included. Crimson Rambler and Leuchstern Roses and other climbing plants were in full bloom on a bold pergola in the garden on the east side of the Hall.

KITCHEN GARDEN.

In the kitchen garden, which is at some distance from the Hall, evidence of careful cultivation was to be seen on every hand. What struck an ordinary Englishman as peculiar was to see Yams growing as a general crop; the growth is somewhat similar to that of a Scarlet Runner Bean, and the plants are trained in a like manner. I was told they always yield well.

Another unique feature was the hedges used as divisions in the outer kitchen garden (the walled garden is 1 acre in extent, and the outer garden is about $4\frac{1}{2}$ acres); the divisions are formed by trimly-cut hedges of Scotch and Spruce Fir, about 8 feet high, and cut square on the top. I was informed they had been planted over fifty years, and they are to-day quite dense at the bottom, and form splendid protection, quite equal to that afforded by Yew or Beech.

In addition to the usual flowering plants grown for decorative purposes, Lord Walsingham has added to his collection many uncommon plants of great beauty; included among these I saw *Cleome speciosa*, a half-hardy annual with bright rose-coloured flowers, a suitable subject for small pots. *Angelonia integerrima*, also growing in a greenhouse, having flowers somewhat resembling those of a Snapdragon in shape, but quite distinct in growth, is very attractive, and well worth growing.

In the shrubberies which surround the kitchen-garden *Cytisus elongatus* was in full bloom; this is a hardy variety; the flowers are bright yellow, somewhat resembling those of *Cytisus racemosus*. The plants thrive well under trees, and form glorious sheets of colour; but lest anyone should be tempted to plant it largely in woods it should be said that rabbits are especially fond of this shrub. In protected shrubberies it is an excellent plant for flowering in summer.

In the fruit department good crops of Muscat and other Grapes were seen, and a very choice lot of stove Orchids and foliage plants, and splendid Ferns.

For many years a large batch of winter-flowering and *Souvenir de la Malmaison* Carnations has been grown, and about four years ago two span-roofed houses were erected solely for them. By the appearance of the plants now potted-on an equally good display will again be furnished.

In the park and skirting the roads as we drove about, some fine specimen Oaks were pointed out. Time did not allow for further seeing the woods, but everything seen testified to the excellent attention and skill devoted to them by Mr. W. Riddell, the courteous head-gardener, liberally encouraged by Lord Walsingham, who is always most willing to adopt anything which makes for the improvement of his splendid estate. *Norvic.*

BOOK NOTICE.

BEAUTIFUL BULBOUS PLANTS. By John Weathers, F.R.H.S. (Simpkin, Marshall, Hamilton, Kent & Co., Stationers' Hall Court, E.C.)

This publication appears at an opportune season. It is a book of handy size, and deals with bulbous plants for culture in the open air. The writer explains the cultivation and propagation of these useful plants, and mentions the ways in which they can be most effectively arranged. The pages before us are occupied with such important details as soils and manures, depth of planting, lifting and storing, culture in grass, under trees, in cool houses, and in window boxes. Insect and fungoid diseases are mentioned also. The volume contains several rather crudely coloured plates, illustrative of over 100 kinds of bulbous plants. They possess the advantage of representing species and forms which are not commonly figured in works of this character, and are in consequence less hackneyed than usual. The flowers are fairly well represented, but no guide to their relative size is given. For instance, the Snowdrops on one page are nearly as large as the Madonna Lilies and the Gladioli in other parts of the book, and it is not mentioned how much the latter are reduced in size to bring them into the compass of the picture.

The book will be found useful for reference, and the hints on cultivation should be studied by the amateur and beginner. The nature and function of bulbs in general and of the so called contractile roots are explained, and display a more accurate knowledge of plant-structure than is common in works of this character.

We quite agree with Mr. Weathers' views on the advantage for effect's sake of planting numbers of some particular kinds in masses; but effect is not everything; variety and specially interest have also to be considered, and the gardener must judge for himself whether he wishes to produce broad colour effects or variety, interest, and individual charm.

The Week's Work.

THE FLOWER GARDEN.

By W. A. MILLER, Gardener to Lord Henry C. BENTINCK, M.P., Underley Hall, Westmoreland.

Roses.—New beds of Roses may now be formed. It will be necessary to stir the soil for at least a depth of 2 feet before planting, and should the subsoil be not of a sufficiently porous nature to allow thorough drainage, it must be provided by means of pipes covered with rubble, as success in Rose-growing greatly depends on perfect drainage. Select the top spit of soil from an old pasture, and with this incorporate some manure. The roughest portions of this mixture should be placed in the trench to a depth of about two-thirds, the finer portions being used for the upper third of the trench, where it will be about the roots of the plants. Allow the whole to settle before planting, which should be commenced at the end of the present month if the soil is in suitable condition. Shorten the longer growths of Roses in beds, in order to prevent their becoming broken by wind. Remove suckers from budded stocks. Cuttings of Manetti and Briar Roses should now be inserted.

Storing Tender Plants.—*Heliotropes*, *Fuchsias*, *Plumbagos*, *Francoa ramosa*, *Eucalyptus*, *Agaves*, *Sempervivum*, and similar tender plants will require storing into their winter quarters. Tuberous-rooting *Begonias* affected by frost should have about half their growth removed. Dig up the tubers with a fork, shake off some of the soil, and spread them in a dry, airy, frost-proof shed. Move the tubers occasionally, and when they are thoroughly dry and the growths fall off readily, pack them in layers in barrels, &c., placing some dry leaf-mould or cocoa fibre between each layer. Store them in a cellar or in a shed in which a temperature about 50° can be maintained. Fibrous-rooted *Begonias* are easily raised from seed. Directly *Dahlias* are damaged by frost sever the stems about 12 inches above the tubers. Lift the tubers and pack them closely on a shelf in an atmosphere which is free from damp or frost. *Cannas*, *Salvia patens*, *Commelina cœlestis*, and *Marvel of Peru* should be similarly treated. The lifting of *Gladioli* must be proceeded with directly the foliage is properly ripened and before severe frosts occur. Destroy all plants affected with disease. Spread the corms in an airy loft, and when they are thoroughly ripened remove the top growth and store the corms in paper bags.

Cuttings of Bedding Plants.—Examine the frames containing cuttings of *Calceolarias*, *Gazanias*, and *Violas*, and make good any blank spaces.

Cuttings of many Hardy Plants may still be inserted in cold frames. *Acœna Buchananii*, *A. inermis*, &c., are easily propagated by division, as are also *Achilleas*, *Antennarias*, and *Aubrietias*. Dibble the pieces in a sandy mixture in a frame. *Veronica prostrata* is easily increased by cuttings, and is useful for planting about the steps in a rock-garden. *Hypericum Androsænum aureum*, *H. oblongifolium*, *H. Moserianum*, *H. M. tricolor* and *H. M. reptans* are all useful subjects for the flower-garden, the two last-named varieties forming excellent wall plants.

PLANTS UNDER GLASS.

By A. BULLOCK, Gardener to E. J. WYTHES, Esq., Copped Hall, Epping, Essex.

Jacobinia chrysocephala and *J. coccinea*.—These plants are now forming their flower-trusses. Great care in their culture is necessary in order to obtain the best results. All the light that is available should be afforded them, and if the staging on which the plants are placed is far removed from the glass other temporary stages should be employed, or the plants should be raised on pots or bricks. Any traces of mealy-bug must be eradicated at once by the same means as was advised for stove foliage plants in the Calendar for September 30. Judicious feeding of the roots with liquid sheep-manure will produce beneficial results, but artificial manures are better avoided. The employment of artificial heat will be necessary to maintain a temperature at night of 65°, and this will necessitate occasional syringings with clear water overhead, but this must be done early in the daytime in order to allow the plants to become dry

before night. A humid atmosphere, which is very essential to good culture, can be maintained by damping the staging and the walks.

Coleus thyrsoides.—Artificial heat must be given these plants as soon their flowering spikes appear. A temperature of 60° by night will suit them. If a higher temperature than this is maintained the plants soon become "leggy." Copious supplies of diluted sheep manure-water or soakage from the farmyard should be applied in preference to artificial manure.

Moschosma riparium and *Eupatorium petiolare* will need similar treatment to *Coleus thyrsoides*.

Begonia Gloire de Sceaux.—A 10 inch pot should be the largest receptacle used for growing specimen plants of this *Begonia*, which should now be in suitable condition for their final shift. If the plants are allowed to become pot-bound before being put into larger pots they will not root readily into the new soil, in which case they are likely to decay at the collar. When potting keep the top of the ball of the plant level with the surface of the new soil.

THE ORCHID HOUSES.

By W. H. YOUNG, Orchid Grower to Sir FREDERICK WIGAN, Bart., Clare Lawn, East Sheen, S.W.

Mexican Lælias.—Plants of the *L. anceps* section having their flower-spikes partially developed, should be so arranged that the tips will not touch the glass. To free them from dirt and other undesirable matter, draw a wet sponge along them occasionally. The plants do not require large supplies of water when the pseudo-bulbs have attained their full size. Prolonged drought must not be permitted until the flowers have expanded. Admit abundance of fresh air to the house whenever the conditions out-of-doors are favourable and allow a little ventilation always at night. Plants of the *L. autumnalis* section, including *L. Gouldei*, *L. furfuracea*, *L. albida*, &c., fail when subjected to an atmosphere that is close and moist, yet they need a moderate amount of moisture at the roots and in the atmosphere when making roots or developing their pseudo-bulbs. Subject the plants to a very long and complete rest as soon as the flowering season is passed. *L. rubescens* needs similar treatment to plants of the *L. anceps* group, with a rather warmer atmosphere. *L. majalis* should need no further waterings until next season, exposing the plants to all the light and air obtainable in a cool intermediate-house. *L. cinnabarina* and most hybrids of which *L. cinnabarina* is one of the parents remain in best condition if subjected to rather long periods of drought, applying water however before there is much shrivelling of the pseudo-bulbs. The plants should be exposed to all the light obtainable in the coolest part of a *Cattleya*-house. *L. harppophylla* requires cooler conditions and not quite such dry treatment as *L. cinnabarina*, but a good rest must follow the completion of growth. *L. longipes*, *L. Lucasiana*, and others of this type, with *L. flava* and *L. Cowanii*, thrive best in shallow baskets or pans, suspended near to the roof-glass at the cool part of a *Cattleya*-house, and subjected to a very dry treatment when once the pseudo-bulbs are fully grown.

Lælia Perrinii, &c.—This species is a useful autumn-flowering *Lælia* which has been utilised in producing several good hybrids. It succeeds under similar conditions to *L. crispa*, and must not be given much water at the roots at any season of the year. Whether grown in pots or baskets repotting should only be done when absolutely necessary, but a little fresh material may be afforded as a top-dressing when new roots are expected. A position in the central part of a *Cattleya*-house is generally suitable for this species. All hybrids from *L. Perrinii* should have a thorough resting when growth is completed, and *L.-C. Hermione*, of which *Cattleya Ludde-manniana* was one of the parents, should be kept moderately dry when growing and not making roots. *L. superbiens*, owing to its long rhizomes, has to be grown in an elongated basket, which may be suspended near the apex of the roof of the *Cattleya* house. When the plants are making roots they need a good supply of water, but when growth has ceased very dry conditions are essential. Should any flower-spikes be in course of development, a small weight may be attached

to them to keep them away from the glass. If this be done it will not be necessary to lower the plant. There is one good hybrid in which *L. superbiens* was one parent, and *Cattleya Mossie* the other, named *L.-C. Cholleltiana* which succeeds well in a leaf mixture, and staged at the warm end of the *Cattleya*-house. Water should be applied very sparingly the season through.

Ontoglossum citrosimum.—As the pseudo-bulbs near completion, let the supply of water be much diminished, reducing it to the vanishing-point as they mature. During the winter suspend the plants in a light part of the *Cattleya* house, where the amount of atmospherical moisture present will tend to keep the pseudo-bulbs in a firm condition. A little wrinkling of the surface caused by drought at the base is of no consequence if the pseudo-bulbs have been well matured, as this will vanish when the roots are soaked in water after the flower-spikes have appeared in the young growths.

THE KITCHEN GARDEN.

By W. FYFE, Gardener to Lady WANTAGE, Lockinge Park, Wantage.

Storing Beetroot.—The main crop of Beetroot should be lifted with a fork at about the end of October. Frost in no way improves this important vegetable, and if the roots are broken or scratched during lifting the coloured juice escapes in cooking, rendering the vegetable unpalatable and useless. For the same reason it is better not to cut off the leaves with a sharp knife, but to rather twist them off close to the crown with the hand. Store the roots in an open shed, and cover them with sand in sufficient quantity to keep away frost. This material will also prevent them from becoming dry, and will keep the roots cool. If a shed is not available, Beetroots may be stored in the same manner as Potatoes, covered with Fern, or straw and soil, with sufficient ventilation provided at the top of the mound for the escape of moisture.

Carrots should not be stored like Beetroot and Potatoes in pits, but when dry should be placed in an open shed and covered with sand, and in the event of sharp frost with dry Fern or straw. These vegetables are the better for not being stored in great bulk, nor in such a manner as to be subjected to sudden changes of temperature.

Turnips.—When Turnips have reached a desirable size they should be lifted and stored, for if they are allowed to remain in the ground after this period they become woolly. Later successional batches will still continue to grow and should be left in the ground. Embrace the opportunity dry weather affords to draw the soil well over the roots with a hoe.

Slacys tuberifera.—These keep well if left in the ground, for they are quite hardy, and if they be lifted and stored the chances are that when the temperature of the store exceeds 50° decay will take place. If the tubers are left in the ground cover the soil with long litter.

Chicory.—Lift the roots according to the demand and place them close together in light soil in the Mushroom-house. When the young growths are about 6 inches in length they are in the best possible condition for the table.

FRUITS UNDER GLASS.

By F. JORDAN, Gardener to Dr. CORBET, Impney Hall Gardens, Droitwich.

Pines.—Smooth Cayenne and other late varieties of Pineapples, the fruits of which are now swelling, should be allowed a night temperature of 70°, with an additional 10° or 15° during the daytime, according to the weather. The plants require careful attention in the matter of watering at this season, and it will be better to feed them with dry manures or weak guano-water in preference to stable liquid-manure. Less damping and syringing in the houses will be necessary as the days shorten, and the application of moisture should be regulated by the conditions of the outside atmosphere. Advantage should always be taken of bright days on which to damp the paths and sprinkle the surface of the beds with tepid water. Wherever practicable cover the pits at night-time, for the purpose of econo-

mising fire-heat, as excessive artificial heat greatly reduces the moisture necessary for the plants. Crops of Pineapples generally should now receive less heat and moisture. Plants of earliest Queens, which are now in their resting stage, will require very little if any water, especially if the material in which they are plunged is in a moist condition. A night temperature of 58° to 60°, or lower in very cold weather, with about 70° during the daytime, will be found suitable. Maintain a steady bottom heat of 70° to 75°, and allow a free circulation of air on all favourable occasions. Plants intended for later forcing may still be allowed to develop a little growth, and can be more freely supplied with water and atmospherical moisture generally than resting plants. Damp the paths and beds somewhat freely with tepid water on fine days until growth is finished.

Suckers.—The more forward of these should not be encouraged to grow much after this date, and should be given water sufficient only to maintain the plants in a healthy condition. Late-potted suckers should by this time have filled their pots with roots. Plants plunged near the hot-water-pipes must not be allowed to become dry at their roots. Allow the plants as much light and air as possible, and cover the pits at night should sharp frosts appear imminent.

Late Grapes.—Late-ripening Grapes should by this time have perfected their development, but should any require finishing the pipes must be kept sufficiently warm, so that a constant-circulation of fresh air can be given on favourable occasions. A moderate watering applied during a fine bright morning may also be of some assistance to the surface roots. Place a dry mulching over the border shortly after watering to keep the soil damp. Pinch out any late laterals, and admit as much light and air to the interior of the house as possible, but take care to collect any decayed leaves as they fall.

THE HARDY FRUIT GARDEN.

By W. H. CLARKE, Gardener to Sir WILLIAM PLOWDEN, Aston Rowant House, Oxon.

Peach and Nectarine-trees.—Examine all late-fruited trees from which the fruit has been gathered, and remove the unnecessary shoots, so that light and air may have free access to every shoot. Any tree that has not fruited satisfactorily, but has made extra strong growth, may be entirely lifted and replanted—not necessarily on the same site if a more favourable position can be found. A tree which has failed to grow satisfactorily in one position will sometimes improve and fruit successfully after its removal to a fresh site. In cold localities, where fruits of the varieties Gladstone, Salway, and Golden Eagle may be still upon the trees, the fruits should be exposed to all light possible; a few frame-lights may be placed in front of the trees. On cold nights a double thickness of tiffany or mats will protect them from frost and damp.

Plums.—We have fruits of a few varieties still hanging on wall trees. Shrivelling seems to increase the saccharine matter in the fruits, but care must be taken that they do not commence to decay. Pay daily attention to gathering, and should wet weather set in all the crop must be taken to the fruit-room immediately.

Hardy Vines.—This has been a bad season for the ripening of these Grapes out-of-doors, and where bunches are still hanging they cannot be expected to ripen. Cut each bunch with 8 inches of wood attached, and bottle them in the same way that hothouse Grapes are done, but place them in a warmer and dryer atmosphere, that maturation may be quick. All the spur-growths throughout the Vine should be shortened to three or four leaves.

Apples and Pears.—Many late kinds will now require to be gathered. Let the utmost care be exercised in the handling of them. Place all large and perfect fruits by themselves, as they will keep longest, the small, inferior, and damaged fruits being placed elsewhere for present use. Much damage is done to fruits by throwing them into baskets, which are quite unsuited for the purpose; flat baskets are best, and the sides and bottom can be lined with some soft material, such as hay or wood-wool.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Special Notice to Correspondents.—The Editor does not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editor does not hold himself responsible for any opinions expressed by his correspondents.

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY, OCT. 24. — Royal Horticultural Society's Committees Meet, and Vegetable Show at the Royal Horticultural Hall, Vincent Square, Westminster. British Gardeners' Association Executive Committee Meet.

SALES FOR THE WEEK.

MONDAY to FRIDAY NEXT—Dutch Bulbs, at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 10.30.
MONDAY and TUESDAY NEXT—Unreserved Sale of Nursery Stock at The Arthur's Bridge Nursery, Woking, by order of Messrs. W. Spooner & Son, by Protheroe & Morris, at 12.30.
MONDAY NEXT—Bulbs, Roses, and Plants, at Stevens's Rooms, King Street, Covent Garden, W.C.
WEDNESDAY NEXT—Palms, Azaleas, Rhododendrons, Camellias, Roses, &c., at 67 and 68, Cheapside, E.C., by Protheroe & Morris, at 5 o'clock. — Bulbs, Roses, &c., at Stevens's Rooms, King Street, Covent Garden, W.C.
WEDNESDAY, THURSDAY, and FRIDAY NEXT—Thirty-first Annual Sale of Nursery Stock at Hollamby's Nurseries, Groombridge, Tunbridge Wells, by Protheroe & Morris, at 11.30 o'clock.

(For further particulars see our Advertisement columns.)

AVERAGE TEMPERATURE for the ensuing week, deduced from observations of Forty-three Years at Chiswick—48°.

ACTUAL TEMPERATURES:—

LONDON.—Wednesday, Oct. 18 (6 P.M.): Max. 56°; Min. 37°.
Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—Thursday, Oct. 19 (10 A.M.): Bar., 30.1; Temp., 46°. Weather—Bright sunshine.
PROVINCES.—Wednesday, Oct. 18 (6 P.M.): Max. 49°, Cornwall; Min. 37°, Scotland, E.

The Fruit Conference.

It is always a question whether the results to general horticulture of exhibitions bear any satisfactory relation to the time, ability, and money expended in their management. The benefit to individual traders and to prize-winners is not to be gainsaid, nor can there be any question as to the interest and pleasure derived by a considerable section of the visitors. But apart from these it may well be doubted if the progressive advance of horticultural knowledge is materially promoted by the ordinary "show." The case is altered when a well-arranged conference is held in connection with the exhibition. The congresses and conferences held at Chiswick resulted in permanent benefit to horticultural knowledge, and the records of those meetings will be available long after all recollection of the shows held in connection with them has passed away. From this point of view the meetings held at the Royal Horticultural Society last week under the auspices of that body and of the National Fruit Growers' Federation, are of great importance. We were able last week to give a full report of the Show and of the initial proceedings of the Conference, which was held at the same time that this journal was passing through the press. In our present issue we are enabled to publish a pretty full account of the subjects brought forward, and of the discussions that ensued. From them it will be seen how varied and how vitally important were the subjects treated of. One of the speakers, indeed, boldly asserted that such "conferences were

of no use at all." There are probably few who will endorse that opinion entirely, however much they may be disappointed at the apparently meagre results of such discussions. The same sense of disappointment is often experienced by the organs of the Press, who do their best to make known and to disseminate information, which apparently is not acted on, if at all, till long after it has been made known. The necessity for continued "hammering" at a subject was indeed dilated on at the meeting.

It is not surprising that Mr. SPENCER PICKERING's results, as detailed fully in the reports of the Woburn Experimental Fruit Farm, should be received with some surprise by the practical men present. His results, if substantiated by further experiments, in some respects run counter to all that generations of experienced practitioners have taught us as to the planting of trees. Nevertheless there are the facts, explain them how we may. Mr. PICKERING is so experienced and careful an observer that his observations must be received with the greatest respect, and not lightly treated because they happen to be at variance with established practice.

Another matter of importance is that of co-operation or concerted action. What is the good of one grower taking pains to keep his trees clean and free from insect or fungus pests, if his neighbour remains passive? In the same manner many of the grievances under which small growers labour in marketing their produce and obtaining a reasonable price for it would be removed by a co-operative system, such as our Danish and Dutch competitors have adopted with such beneficial results to themselves and, we must add, with such advantage to the British consumer. The contributions of Mr. BOSCAWEN and of Sir ALBERT ROLLIT on subjects on which they are such acknowledged authorities will be read with the attention they deserve.

The Conference, we take it, is a useful supplement to the Report of the Departmental Commission already alluded to, which has done much to make clear exactly the grievances under which the fruit industry suffers. If it had done nothing else, that alone would entitle the Commission and the Royal Horticultural Society to the thanks of the community for the opportunity afforded of making clear the requirements of the growers and distributors of fruit. It remains now to concert measures which shall meet those requirements, and remove so far as possible all artificial restrictions on the progress of the industry. To devise such measures is surely not beyond the wit of man.

LILIUM GIGANTEUM (see Supplementary Illustration and p. 294).—This stately Lily was introduced from the Himalayas as far back as 1852. Although it cannot be regarded as hardy generally, it will succeed out-of-doors in many localities. The flowers are white, slightly tinged with green on the outside and with purple in the throat. The bulbs are as large as a good-sized Apple, with fleshy, ovate, sub-patulous scales. The accompanying note is from Mr. G. W. MILLER, Clarkson Nurseries, Wisbech, who obligingly furnished us with the photograph: "The photograph represents a group of *Lilium giganteum* in a corner of the Clarkson Nurseries, Wisbech, where several hundred plants of this Lily are growing freely in different parts of the grounds. I started

growing *L. giganteum* as pot plants in houses many years ago, but they did not succeed well; however, on growing them outside without any shelter I find them perfectly hardy, and they have done remarkably well. The fine flower-spikes sometimes attain a height of from 8 to 10 feet, with as many as eighteen flowers on some spikes. The strong and pleasant odour of the flowers can often be detected 50 yards from the beds. Although they do well in prepared beds of peat and sand, they also succeed well here in ordinary soil without any special preparation."

THE LAURENT PRIZE.—Soon after the death of M. LAURENT, from fever contracted in the Congo, it was decided to perpetuate his memory by the foundation of a prize to be awarded by the Royal Academy of Belgium, so that the name of M. LAURENT might be associated after his death, as during his life, with the progress of science. The Honorary President is Baron VAN DER BRUGGEN, Minister of Agriculture; the President, Count KERCHOVE DE DENTERGHEM; and the Treasurer, M. L. GENTIL, of the Botanic Garden, Brussels.

MR. E. H. WILSON.—Among botanical collectors few have been more successful than Mr. WILSON, whose notes on his adventurous journey in Central and Western China are appearing in our columns. For some time after his return he has been engaged in the nurseries of Messrs. VEITCH at Combe Wood, supervising the culture of the numerous rarities and interesting plants that he has been successful in introducing to that establishment, and in arranging and distributing his extensive collections. Many of Mr. WILSON's introductions have been described and illustrated in our columns, and the tale is by no means exhausted. Mr. WILSON is now seeking another appointment, where his extensive knowledge of plants and their cultivation would be available. We trust Mr. WILSON may speedily be installed in a post commensurate with his abilities and personal qualifications.

ROYAL BOTANIC SOCIETY.—The valuable collection of succulent plants made during his travels abroad by the late Rev. H. G. TORRE, of Norton Curlieu, Warwickshire, has, says the *Times*, been presented to the Royal Botanic Society. It comprises some 1,600 specimens of the most ornamental of the class, such as Agaves, Aloes, Echeverias, Crassulas and Mesembryanthemums. The rockery in the large conservatory has been reconstructed for their accommodation and display.

GUNTON PARK.—The *Estate Magazine* for October has a bright article on Gunton Park, its woods and gardens, with of course a complimentary allusion to Mr. ALLEN and his Strawberries. The estate is managed by Colonel HARBORD, a sympathetic and progressive landlord. The grounds are thrown open to the public on Thursdays.

NATIONAL POTATO SOCIETY.—Mr. WALTER P. WRIGHT, Hon. Secretary of the National Potato Society, will deliver a lecture on Potatoes at the Horticultural Hall, Vincent Square, Westminster, on Tuesday, October 24, in connection with the Vegetable Show of the Royal Horticultural Society. The National Potato Society's Show will be held in the same building on Thursday and Friday, November 23 and 24.

THE EDINBURGH SHOW.—A large number of gardeners and florists of Aberdeen and the surrounding districts have presented Mr. PETER M' HARDY, of the firm of Messrs. BEN REID & Co., Ltd., with a travelling bag and umbrella, as a token of their appreciation for the excellent manner in which he discharged the duties of secretary of the gardeners' and florists' excursion to Edinburgh, on the occasion of the International Horticultural Show.



LILIUM GIGANTEUM, IN MR. G. W. MILLER'S NURSERY AT WISBECH.

MR. NEWSTEAD.—Lady GROSVENOR recently made a presentation to our correspondent, Mr. ROBERT NEWSTEAD, formerly Curator of the Grosvenor Museum, Chester, and now on the staff of the Liverpool School of Tropical Medicine. The gift consisted of a life-size carbon portrait of himself and a purse of over 200 guineas, subscribed for by his many friends in warm appreciation of his services to the Grosvenor Museum and the cause of science generally. Mr. NEWSTEAD began his career as a gardener, has distinguished himself in the study of insects injurious to crops, and is the author of the standard work on the Coccidæ.

THE "EVENING NEWS" CHRYSANTHEMUM LEAGUE—This show was held at the Royal Horticultural Society's Hall on Saturday the 14th inst. It was estimated that upwards of 25,000 persons gained admission, while fully 10,000 went away without getting into the building. Of the children's show not much can be said. There were some good examples of what may be done in a London garden, but mostly the plants were not in flower. We understand that about 7,000 plants had been distributed, and a large proportion of these were submitted for judgment. There were twelve different varieties distributed, and these formed distinct classes, so that each variety was judged separately. A large number of the trade firms supported the show. The plants were supplied by Messrs. Cragg, Harrison & Cragg, of Heston, who were largely responsible for the arrangements on Saturday, which, under Mr. Harrison's management, were well carried out. The firm also filled up all vacant spaces and decorated the platform. Among exhibitors were Messrs. Wills & Segar, Norman Davis, H. J. Jones, James Carter & Co., Barr & Sons, T. R. Russell, T. S. Ware & Co., Ltd., J. Hill & Son, H. Evans & Sons, P. Ladds, W. Cull, Hobbies, Ltd., Wells & Co., and others.

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his Correspondents.)

LIVISTONA MARIE.—The name of this Palm is a crux for the botanist. F. v. Mueller identified this Palm at first with his *L. Leichhardtii*; then he called it *L. Marieæ*. Afterwards he gave a full description, but this was based upon two different Palms, one from Central Australia, the other from N.W. Australia. Afterwards he separated the N.W. Australian plant from the Central Australian one, and called the N.W. Australian *L. Alfredi*. In this last memoir, of which I have only seen an extract in the *Botanisches Centralblatt*, he for the first time says that the leaves at the early age of the plant are of a "rich bronzy colour." Afterwards Drude published a critical investigation of the Australian species of *Livistona*. He showed that the seeds of *L. Alfredi* are the largest of all Australian species, about five or six times as heavy as those of *L. Marieæ*, and almost nine times heavier than those of *L. Leichhardtii*. The bronze colour of the young plants of *L. Marieæ* is not always to be found. I received about ten years ago seeds of *L. Marieæ*; the young plants raised from them were glaucous, and had only purple margins to the leaves. They were characterised beside this by having prickles on the margins. Afterwards the fan-shaped leaves retained this character, the outer margins being beset with short prickles. The photograph of the Kew plant of the purple-leaved Palm shows the same character. So I think that the *Livistona Marieæ* F. v. Mueller varies like other purple-leaved Palms, i.e., *Latania Commersonii*, *L. Lodigesii*, *Dictyosperma rubra*, better known under the name *Areca rubra*, &c, some specimens having bronzy to purple-coloured leaves, others having more or less glaucous leaves, but both afterwards having glaucous leaves when full-grown. At all events the specimens as well as the photograph of the Kew plant submitted to me for inspection represent the true *Livistona Marieæ* F. v. Mueller. The purple colour generally indi-

cates that the plants are from a wet climate, whilst the glaucous colour indicates a dry climate. The Palm glen of the MacDonnell Ranges certainly had in former times a much wetter climate, hence the red colour of the young plants. The glaucous leaves are an adaptation to the dryer climate. Dr. Udo Dammer, Dahlem, Berlin.

GRAPE PRINCE OF WALES.—From what I know of this Grape, and from the specimens so well illustrated on p. 277, I should think there is a great future before this variety. Prince of Wales is destined to take the place of Mrs. Pince, which is exhibited worse and worse each year. It is indeed an exception now to see a well-coloured example of this variety. Although at the recent Edinburgh Show Mrs. Pince was exhibited seven times, it could not be said there was a single perfect example. Mr. Ellis states that he thinks the Prince is the finest Grape put into commerce during the last twenty years. This might easily be, for only three varieties I know of those distributed in that period deserve even a mention. These are Lady Hastings, Appley Towers and Lady Hutt. The first of the trio is undoubtedly an exceedingly good-flavoured Grape, but unfortunately its constitution is so delicate that no one but Mr. Shingler seems able to manage the variety well. Appley Towers is an exhibition Grape, producing good bunches and berries, which with reasonable treatment colours easily, but as to its flavour it can hardly be classed, for instance, with Madresfield Court. The new seedling black Grapes shown by Mr. Bradshaw at Edinburgh, the result of a cross between Black Hamburg and Mrs. Pince, and referred to by myself in the *Gardeners' Chronicle*, p. 243, will be heard of again, as I am positive it possesses merit. E. M.

—As Prince of Wales seems to be a late or good keeping Grape it was perhaps unfortunate the variety was not so regarded, and the bunches allowed to hang on the vines till November. That those shown by Mr. Ellis on September 26 possessed good flavour, and that members of the Fruit Committee were much impressed by it even then, there is no doubt; but if presented as a late Grape it was shown too early. It is therefore satisfactory to learn that it is to be seen by the Committee again. So many new Grapes have proved indifferent after trial, it is no matter for wonder if the Committee wish to make no further mistakes. A. D. [In Mr. Ellis's note last week on first line "in" pots should have read "from" pots. ED.]

COTONEASTERS.—May I inform your correspondent, J. Mayne, p. 276, that *Cotoneaster angustifolia* is a true species, and that the berries of *C. bacillaris* are not scarlet, but of dark brown or blackish colour. *C. angustifolia* has not yet been sufficiently tried in this country to enable us to say that it is one of the best of the genus, for there are some very beautiful species other than those named by Mr. Mayne. T.

THE JUDGING AT THE ROYAL HORTICULTURAL SOCIETY'S FRUIT SHOW.—The remarks in the *Gardeners' Chronicle* report in reference to the 1st prize exhibit of Muscat of Alexandria Grapes were deserved. The judges seemed to have been led away by the symmetry and size of the bunches, but had they given a closer examination they must have noticed that some of the underneath berries were apparently rotten. In fact, the bunches gave one the impression of having been knocking about for some time at other shows; certainly they were wanting in that splendid finish that was so apparent in the 2nd prize exhibit. Before awarding the Sherwood Cup prize I wonder if the judges examined Messrs. Bunyard's collection of 172 dishes of Apples and Pears grown entirely out-of-doors? In my opinion this collection was the finest exhibit in the show: and bearing in mind that we want to encourage fruit-growing for the million, I cannot understand why pot-growing of hardy fruits should be encouraged at the expense (in this case) of *bonâ fide* outdoor-grown fruit. Messrs. Bunyard had 172 dishes of fruit, and every one perfect for size and finish,

grown under the most difficult circumstances of any fruit that is exhibited. I have never found it very difficult to produce good fruits under glass, but given plenty of house-room and other requirements, one can go to bed and sleep in peace, knowing full well that no wind can blow off the fruits or birds destroy them. I have been an exhibitor of pot-grown fruit and of fruit grown out-of-doors, and know from experience it is much easier to produce fruit in pots than it is to grow and exhibit fruit from the open. J. G. W.

EARLY FROST.—An unusually severe frost for October was recorded here this morning, the temperature being as low as 20°, or equal to 12° of frost, which is more than we get throughout the winter in most seasons. As we were not anticipating such severe weather we have suffered somewhat badly. Usually we can trust such plants as *Salvias*, *Eupatoriums*, *Azaleas*, and many other species of a half-hardy nature out-of-doors quite up to the end of the month. Most of the fruit had been harvested, but Peas, Beans, Marrows, &c., are now destroyed. James Mayne, Bilton Gardens, Devon.

WARNING TO GRAPE GROWERS.—May I call the attention of readers of the *Gardeners' Chronicle* to the enormous quantity of mealy bug imported into this country on Banana fruits, as these are often packed into Grape flats that are used for our home-grown Grapes, and the bugs may thus be conveyed to vineries? W. T. L.

CLEMATIS FLAMMULA.—Your correspondent, "Wm. Brooks," complains that one of his seedlings lacks the delicious perfume that is usually found in the above *Clematis*. It may be that he has one of the types of *C. flammula* or *C. viticella venosa*, which we have here under that name, with flowers very similar to *C. flammula*, though lacking the delicious scent of the latter; but the foliage of *C. venosa* is much larger and quite distinct from *C. flammula* and the plant is a much stronger grower. If "W. B." will send me a spray of flowers with foliage attached of each, I will compare them with ours here, and send you the result. It is generally the custom to only prune back *C. flammula* to within a few inches of the old wood, but we have a plant here that is pruned to the ground each winter, and the new growth flowers very freely towards September. James Mayne, Bilton, East Budleigh, Devonshire.

Obituary.

JAMES DOBBIE.—We regret to record the death of this well-known nurseryman, which took place at his residence, Clifton, Upper Craigmare, Rothesay, on the 13th inst., at the patriarchal age of eighty-eight years. For the long period of over sixty years the name of James Dobbie has been intimately associated with horticulture in Scotland. Like many others who attain to a high position in the horticultural world, Mr. Dobbie was not, says the *Buteman*, to use a common phrase, "brought up to the business."

In 1840, while located at his native town of Gordon, in Berwickshire, he began to take an interest in growing flowers, and soon after was a competitor to be reckoned with in the competitions of the local flower shows. One of the greatest triumphs of his early days was attained in the year 1850, when he carried off four 1st prizes, two in the open class and two in those for amateurs, for Pansies, at a great show held in Berwick-on-Tweed in connection with the Highland and Agricultural Society. Mr. Dobbie's principal opponent in these days was the well-known Dr. Stuart, of Chirnside, who latterly did so much good and original work with *Violas* and *Polyanthus*. Removing to Renfrew he continued the cultivation of his favourite subjects as assiduously as ever, being specially successful in the local competitions, and at Glasgow and Paisley with Leeks, Onions, Pansies, *Phloxes*, *Marigolds*, &c. He was one of the first in Scotland to practise the plan of raising Onions in heat, and afterwards transplanting them to where they were to be grown—a process

which is now invariably followed by growers for exhibition. Mr. Dobbie was during all these years saving and selecting the special strains of vegetables and flowers with which he was so successful in the competitions, and he had so many inquiries for supplies that in 1865 he resolved to establish a business as a florist and seedsman. This business was originally intended for a son who had had special training for the same; but unfortunately he died, and in 1866 Mr. Dobbie resigned his official appointment and went into the business himself. He worked along quite original lines, confining himself largely to supplying the wants of competitors and exhibitors with select stocks of flowers and vegetables. In 1875 Mr. Dobbie removed the headquarters of his business from Renfrew to Rothesay, where it has been so largely developed and become so well known. In 1887 the business was sold to Mr. William Cuthbertson, who had been Mr. Dobbie's chief assistant for many years. Mr. Cuthbertson immediately associated himself with Mr. Robert Fife as a partner, and latterly with Mr. Archibald M. Burnie, and under the name of Dobbie & Co. they have made the business what it is to-day—one of the first of its kind in this country.

Although Mr. Dobbie retired in 1887, he continued to grow, in his retirement at Craigmore, specimens of all his favourite flowers, continuing to select and improve the strains to the last. Mr. Dobbie was a man of strong and marked individuality, gifted with great determination. Up to 1880 he was a constant exhibitor at the leading shows in Scotland, and occasionally at important shows in England. His contemporaries of those days were men like John Downie, R. B. Laird, John Laing, William Paul, William Campbell, Charles Turner, Charles Hooper, George Goodall, William Dickson, and James Grieve, all of whom, except the last, have been removed from this world. Mr. Dobbie was very largely influenced in his horticultural work by what might be termed the ideas of the old-fashioned class of florists. Form and outline were to him everything. What he did and what his firm has since done for many of our flowers and vegetables is too well known to need repetition here.

WILLIAM GOLLAM.—We regret to hear of the death of Mr. William Gollam, the Superintendent of the Government Gardens, Lucknow. He died from typhoid fever on the 12th inst. Mr. Gollam was, we believe, originally in the Edinburgh Botanic Garden, whence he went to the Saharunpore Botanic Garden.

M. GILLEKENS.—We are sorry to have to announce the death, in his seventy-third year, of M. Gillekens, late Director of the School of Horticulture at Vilvorde. The death occurred suddenly on the 9th inst. M. Gillekens was well known and highly respected as a cultivator, and as the author of sundry treatises on practical horticulture. He was a familiar figure at the great Belgian horticultural meetings.

WILLIAM CHARLES LEACH.—We deeply regret to have to record the death of Mr. W. C. Leach, gardener to the Duke of Northumberland, Albury Park, Guildford, which occurred very suddenly at his residence in Albury Park. Mr. Leach had suffered occasionally from weak action of the heart. On Saturday evening, the 14th inst., he was suddenly seized with faintness, and a few hours afterwards passed away. Mr. Leach, who, we believe, was for some years gardener to Sir A. Hodgson, and previously foreman under Mr. Ingram at Alnwick Castle, Northumberland, was gardener at Albury Park for upwards of twenty years. During that time he has made considerable alterations and improvements in the gardens, pleasure-grounds and terraces. He was highly esteemed by the late

Duke and Duchess of Northumberland, and by the present Duke and Duchess, as well as by a large circle of friends and neighbours in Albury and the surrounding neighbourhood.

For many years he was a frequent exhibitor at the Royal Horticultural and other London shows, and was a frequent contributor to the *Gardeners' Chronicle*, his last communication having appeared on p. 260 in the issue for October 7. He was the first to flower *Rosa gigantea* in the open garden in England. Two flowers only were produced in 1903, and the first flower was no less than 6 inches across. In February of 1904 the same plant bore about a dozen beautiful flowers, the largest being a little more than 5 inches in diameter. It bloomed again last season, and will no doubt now continue to do so. The flower was exhibited at the Royal Horticultural Society's meeting, and received a First-class Certificate in addition to a Botanical Certificate. Mr. Leach had been awarded many other certificates, but none he appreciated so highly as those awarded to this very rare and interesting Rose.

The gardener at Albury previous to Mr. Leach's appointment was the late Mr. Kemp, who was well known as a cultivator and exhibitor of plants.

SOCIETIES.

THE ROYAL HORTICULTURAL. Scientific Committee.

Present: Dr. M. T. Masters, F.R.S. (in the chair). Dr. A. B. Rendle, Messrs. Worsley, Bowles, Odell, Saunders, O'Brien, Veitch, Sutton, Holmes, Massee, Gussow, and Chittenden (Hon. Secretary). Visitor, Mr. Spencer Pickering, F.R.S.

Asparagus plumosus fasciatus.—Mr. O'BRIEN showed a specimen of *Asparagus plumosus fasciatus* and cristate, a peculiarity seldom met with in this species, although common in *A. officinalis*.

Cyrtanthus Bulbs, &c.—Mr. O'Brien also showed a bulb belonging to the section *Gastronema* of *Cyrtanthus*, which had been kept dry through the normal growing season. It had made an effort to grow by producing small bulbs at the end of the stolons. He also showed flowers of *Nerine venusta* (*N. sarniensis*) and *N. O'Brieni*.

Gourd Diseased.—Mr. ODELL showed a variety of Gourd (*Cucurbita pepo* var.) which was attacked by a fungus, which Mr. MASSEE stated to be *Gloeosporium sanguinolentum*, and which caused the appearance of numerous red spots on the surface of the Gourd. No other variety but this had been attacked.

Decaying Potatoes.—Mr. VEITCH showed samples of Potato which had been dug early, and packed so that air could not freely circulate. The outer part of each was quite rotten, and the decay was rapidly spreading. It was thought that the Potatoes when they were dug were already diseased, and that the conditions under which they had been stored caused the disease to develop rapidly and spread decay.

Ants Imported with Fruit.—Mr. HOLMES showed some ants which had been imported with Bananas. Mr. SAUNDERS will report on them.

Green Duhlu.—Mr. HOLMES also showed specimens of this, which had a few coloured florets intermixed with the green parts. Dr. MASTERS took the specimens to examine further.

Apple-tree Diseased.—Dr. LEWIS JONES sent a shoot of Cox's Orange Pippin attacked by the canker fungus, *Nectria ditissima*.

Plants for Naming.—Mr. C. WATNEY, of Watford, sent a splendid specimen of *Pinus Coulteri* from a tree 60 to 70 feet, having a girth of 9 feet 6 inches at 5 feet from the ground, the heaviest cone of which weighed 3 lb. (*P. Coulteri* is figured in *Gardeners' Chronicle*, 1885, March, p. 415, figs. 73, 74). Mr. WATNEY also sent a specimen of *Plumieria bicolor* (*Botanical Register*, t. 489).

Beech-trees Diseased.—Specimens of diseased Beech came from Gerrards Cross, which Mr. MASSEE undertook to examine.

CONFERENCE ON FRUIT-GROWING.

(Continued from p. 286.)

OCTOBER 11.—The Conference held under the auspices of the Royal Horticultural Society and of the National Fruit Growers' Federation, in connection with the great Fruit Show reported in our last issue, was resumed on the above date in the Royal Horticultural Hall. Mr. F. S. W. CORNWALLIS, President of the Royal Agricultural Society of England, presided at the morning session.

FUNGOID AND INSECT PESTS.

The first subject for discussion was "Fungoid and Insect Pests and How to Meet Them."

The CHAIRMAN in opening the proceedings, after some preliminary remarks, said: This morning we

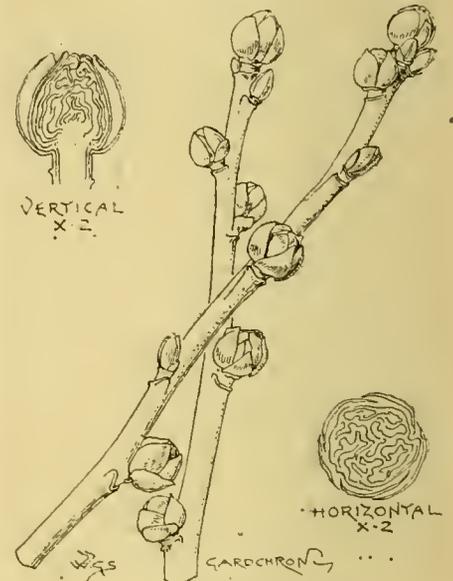


FIG. 115.—BLACK CURRANT BUDS AFFECTED WITH THE MITE.

have a paper on fungoid and insect pests—pests which do great damage to us as fruit growers, and any information we can obtain for dealing with these pests will be of great value to us. One of the things which occurs to my mind is the black fungus. This has been a source of great mischief to us in the Maidstone district. Then there is the Black

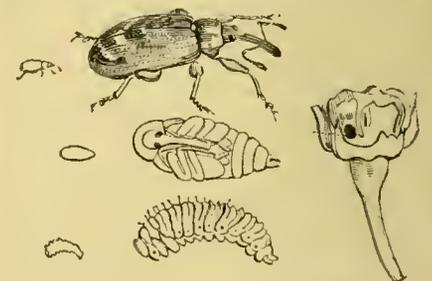


FIG. 116.—APPLE-BLOSSOM WEEVIL. Showing grub, chrysalis, and perfect insect.

currant-mite (fig. 115), which has worked such havoc. What we have to do is to learn all we can individually about these pests, and then as fruit growers apply our knowledge collectively, so that the good done by the individual may be imparted for the good of the whole community. The discussion may also show whether or not we think legislation is possible by our combined acts. I was in the room yesterday, and I gathered that some who read the report of the Committee on Fruit Growing thought the time was hardly ripe for legislation on the subject. We may to-day be able to agree upon some of the lines on which we could work for legislation—if we are agreed that legislation is desirable. With regard to the compulsory spraying of trees, one feels that we have a precedent in connection with agriculture. We have compulsory sheep-dipping—very much on all fours with tree-spraying. At present in certain scheduled areas the law compels people to dip their flocks. If it is found desirable in one case, there is no reason why the principle should not be extended to the growing of fruit. Then we have another pre-

cellent in the fact that cattle imported into this country have to be killed on landing. That I think is an analogous case to the demand which has been made in some quarters for inspection and the destruction of diseased fruit trees and other things, such as barrels, that are introducing pests into this country.

mussel-scale was not always readily detected unless the trees were carefully examined, because the scale covering the insect assumed the colour of the bark. The treatment was best carried out by spraying, unless the attack was very severe, and then nothing but scrubbing would do any good. Caustic wash was of very slight use, as it had little penetrating qualities, and so did not get at the eggs during the winter months. Nor could it be used with sufficient strength to burn through the scale without doing serious harm to the tree. There was no doubt that paraffin was the only certain remedy for this and other pests. But it had to be used with considerable care, as no one could tell the effect it has unless used in a very diluted condition.

The Apple-sucker was really only a serious pest in Herefordshire, Worcestershire, and Kent, but had undoubtedly increased during the last twelve years. Its life history was well known. The eggs were laid in the autumn on the Apple-trees. They hatched out irregularly in the spring, the larvae very soon entered the buds and were completely protected by them, and the adult insects lived unprotected on the trees from July until they deposited their eggs in September and October, and even November. The usual treatment had been spraying with Quassia and soft-soap or paraffin in emulsion when the young were hatching out. The best results had been with Quassia and soft-soap, but at best it was only likely to lessen the amount of attack, for this wash must come in contact with the actual insects to kill them, and as they did not all incubate at once they must keep on spraying for at least two weeks entirely to eradicate them. This, of course, would be impossible on a large acreage. An emulsion of paraffin would kill many of the winged insects and thus could prevent egg-laying. This would prove to be the best means of attacking this insidious enemy.

The world-wide woolly aphis or so-called American-blight (fig. 118) had been very evident this year, and had done much harm to both Apple and Pear-trees. The treatment was best carried out in autumn, after the crop was picked, when a good spraying of strong soft-soap solution would soon destroy the lice.

For practical purposes one might place all orchard aphides under one category. They smothered Apples, Plums, Cherries, Currants, and Gooseberries. The Pear was perhaps the least subject to their attack. The sexual forms which deposited eggs in October and November could be successfully attacked in those months by spraying, and so prevent the trees being attacked in the following year. By this autumnal spraying they could destroy aphids, Apple-sucker, and mussel-scale all at once, and at the time they could use a strong paraffin emulsion, as the leaves could not then be harmed. At no other time could they cope with them collectively.

The winter-moth could be subdued by grease-banding. This would not, however, be effectual with the winged females, and the only remedy there would be spraying with arsenites, but Paris green is said to have failed. On the other hand arsenate of lead has not been found to harm foliage or blossom in the least, even at a much greater strength than is required to kill the larvae.

The Codlin-moth was another pest and called for special comment. Spraying must be done soon after the blossom fell, and a young plantation might be kept clean by examining in winter and killing the insect.

But what was the good of going on and discovering remedies if we kept introducing swarms of these pests from abroad. American, Canadian, Portuguese and other Apples were sent over to this country which swarmed with Codlin-maggots. They could be found on the lids and bottoms of barrels when opened, and so get distributed all over the country. No other country would allow such things to happen. Only last year cargoes of Portuguese Apples were destroyed in Natal owing to their being infected with the maggot. A few confiscated cargoes here would soon stop the importation of what was often refuse fruit not fit for sale in the countries from which it came.

The Apple-blossom weevil was not of such wide distribution, but it was most annoying. The insects should be shaken off, and the trees kept clean by winter washing. The Currant-fly, too, often defoliated the Gooseberry and the Currant. Complete removal of the surface-soil from beneath the bush in winter was about the only complete panacea, and filling in the ground with fresh earth.

Professor THEOBALD then discussed the relative merits of vegetable or mineral insecticides. Among the former he mentioned Tobacco, Hellebore, and

Pyrethrum, and said he had obtained excellent results with Tobacco wash. If Tobacco could be obtained very cheaply for the purpose, and free from duty, it would prove a most effective general insect-killer, and had the advantage of being quite harmless to vegetation.

Mr. F. SMITH (Loddington, Maidstone) dealt with the winter-moth and small ermine-moth. He said he had ceased to band trees for winter-moth, except large orchard-trees, finding it much better to wash anything within reach, as many caterpillars besides the winter-moth infested Apple-trees. He had found arsenate of lead was very effectual, and had discarded Paris-green and London-purple. The small ermine-moth was best hand-picked off small trees, or it might be treated with lead wash. Having dealt with the ravages of many other pests, he said he thought birds were often credited with more good qualities than they deserved. Sunflowers in sufficient quantities were best to lure the birds from the fruit, as they preferred the Sunflower.

FUNGUS DISEASES.

Mr. GEO. MASSEE, F.L.S., V.M.I. (Kew), dealt with fungi. Speaking generally, he said that growers should not slacken because their neighbours did. If they did their best they would benefit, for the accounts that fungus travelled thousands of miles had not been proved. By means of coloured plates he showed his audience what results fungus left behind, and said, generally speaking, spraying was the only preventive.

Mr. CECIL WARBURTON, M.A., Zoologist to the Royal Agricultural Society, spoke of the Black Currant gall-mite and the Pear midge, and said that the greatest care was needed, as even the nurserymen quite innocently might send out affected plants. Four years ago a whole district in Arragh was infected by importations of Black Currants from England and Scotland. The Pear midge and the Black Currant pest needed constant vigilance. What was done in America was to dress the trees with kainit, but he did not know with what results.

In the discussion which followed Mr. WARBURTON was asked whether a person who owned some beautiful Currants could assume that they would still be safe in three years' time?

Mr. WARBURTON said he could not answer that without knowing the parents they were cut from. If the parents were infected it was almost certain the young ones would be. Their own healthy appearance did not count.

Mr. WALTER WRIGHT said he had a number of Black Currants which were unaffected, and the best of them was the Boskoop Giant, which he obtained some four years ago.

Mr. BUNYARD said he introduced that variety twelve or fourteen years ago. It had proved an extraordinary bearer, and was practically free from the mite.

Mr. SPENCER PICKERING, F.R.S., said he agreed with Prof. Theobald as to the efficacy of pure paraffin, which destroyed practically the whole of the eggs. But different results were obtained with different trees and neighbouring trees. He considered the Professor's suggestion in favour of vegetable poisons a very valuable one. He would like to know whether there was any hope of modifying the attack of fungi?

Mr. MASSEE said he thought there was every hope, judging from what had been done already.

LAND TENURE AND RATING.

In the afternoon the Conference resumed work under the Chairmanship of Mr. ARTHUR S. T. GRIFFITHS-BOŚCÁWEN, M.P., when the subject of land tenure and rating difficulties was discussed.

The CHAIRMAN, in opening, said:—The branch subject, or rather I should say the branches of the subject—because the question of land tenure and the question of rating are two distinct questions—the two branches we are discussing this afternoon might appear somewhat dry and dull after the interesting discussion which I had the pleasure of hearing this morning, and that which I am informed you had yesterday afternoon. But they are both very important questions for the future development of our industry, and therefore they are questions which we ought to consider, and upon which we ought to try to come to some right conclusions. I am one of those—and I gained my experience from the fact that it was my privilege to preside over the Government Committee last year—I am one of those who believe that a great and further expansion in our fruit-growing industry is possible. I think that for two reasons. I think the public demand for fruit is a

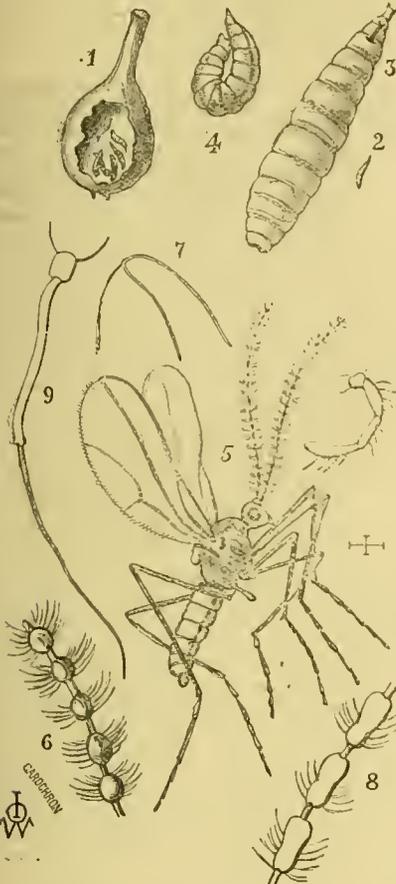


FIG. 117.—THE PEAR MITE.

1, young Pear with grubs; 2, 3, 4, grubs; 5, per cent insect magnified; 6-9, details of structure.

Professor F. V. THEOBALD, M.A., South-Eastern Agricultural College, Wye, then read a paper on the subject. He said he would refer to only a few of our most serious pests, which had a more than local status. The number of insect enemies that the fruit-grower

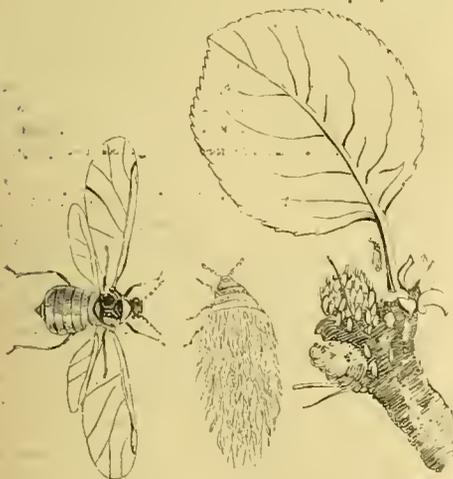


FIG. 118.—AMERICAN BLIGHT OR WOOLLY APHIS.

in this country had was enormous. The most harmful insect pests of fruit were the mussel-scale, the Apple-sucker, a number of plant-lice, the winter-moth, and tortricids, the Codlin-moth, the Apple-blossom-weevil, and the sawfly, together with the Pear-midge and the Currant gall-mite. [Some of these were illustrated in our last issue, while others, figs. 115-118, are shown in the present number. ED.] The presence of the

growing one; and secondly, I believe that if certain difficulties which the grower in this country has to encounter at the present time were removed, we might produce in this country a great deal of the fruit which is now imported from abroad. But if there is to be an expansion of the industry two conditions are certainly necessary. In the first place we must be able to obtain all that we require for the purpose of fruit-growing, and in the second place we must take care that the occupiers of such land are not unfairly treated in the way of taxation, whether it be imperial taxation or local taxation; and that they should be placed upon the footing of equality with the occupiers of land used for other purposes. For that reason, therefore, if we are to have any expansion of the industry, as I firmly believe we shall have, the solution of these two questions is most important. The question of Land Tenure is undoubtedly an exceedingly difficult one. It must be remembered that land under fruit, especially land where fruit is cultivated, and where there has been a great expenditure of capital, that land is in a different position to the land where you have ordinary farming. In the case of ordinary farming in this country a great many of the improvements are permanent improvements, and are done by the landlord. In the case of the fruit-grower it is quite different, and to him the value of the land might be trebled, or quadrupled, or even multiplied five times. No improvement which the fruit-grower can make can be described as absolutely permanent, or at all events of a lasting kind, so that where you have the case of landlord and tenant it is easy to see that a great part of the value of the land under fruit is entirely made by the tenants, and the real difficulty is that we have to so adjust the questions of landlord and tenant that the tenant is made secure in his own improvements, and at the same time see that nothing is done to make the terms so onerous to the landlord that he will be unwilling to let his land for the cultivation of fruit. I do not doubt myself, and I think it was also the view of the Committee over which I had the honour to preside, that the ideal system for fruit-cultivation is ownership. If every fruit-grower was the owner of his land we should not have our present great difficulties, and the Committee unanimously recommended that if anything could be done in the way of encouraging small holdings by legislation or otherwise it would be most desirable to do so. But we cannot expect that system to prevail generally, although in some cases it does prevail and to great advantage. I need only mention the Wisbech district of Cambridgeshire, where there has been a most remarkable expansion of fruit-growing secured largely by the fact that the growers have been able to purchase their holdings. But we cannot expect that system to prevail everywhere, and so we ought to try to secure that, in the case of tenancies, those tenancies should be fair to both parties. Now we have to meet a great many difficulties. In the first place, the law on this matter is a particularly obscure law. I am bound to say that neither the landlords, tenants, nor some of the land agents seemed at all to know what the law really was. In the next place, we find that the law is made up of the Agricultural Holdings Acts, modified in the case of market gardens, which apparently can be made to include every kind of plantation by the Market Gardeners' Compensation Act, which secures to the tenant full compensation for what he has expended on the plantation on the determination of the tenancy. The object of that law was to do justice to the tenant. But the operation of that law has been most deterrent upon landowners, who fear that they may be called upon on a sudden termination of the tenancy to find a very large sum of money for the fruit upon the land, which either they cannot work at a profit, or that they cannot find another tenant to take over. The Parliamentary Committee considered that that had a deterrent effect upon the letting of the land, and therefore upon the expansion of the industry. It would not do for me as Chairman to enter fully into the question, but I think myself we must try to find some mitigation of the present operation of the law. The Committee over which I presided made one or two suggestions. We felt that the real difficulty was the question of valuation. It was said by some that when a tenancy came to an end the compensation was to be determined by what was the value to the incoming tenant. It was said also that such large amounts were demanded that sometimes it was impossible to get an incoming tenant. What is necessary is to take such steps as shall afford a fair valuation, not merely to the outgoing tenant but to

the incoming tenant. We suggested that it would be an advantage if the Board of Agriculture, or that Sub-Department of the Board dealing with fruit, which we are all happy to see established, were to appoint certain valuers expert in fruit valuation, who could determine from time to time upon what particular principle and methods the valuation of fruit plantations should be carried out. We thought also that to meet the difficulty of landowners being frequently called upon suddenly to find a very large sum of money to pay the outgoing tenant, the State should be empowered, under proper conditions, to lend the money to the landowners for the purpose of providing the necessary cash. We also thought, looking to the interests of the tenant, that the compensation Act should be made retrospective in its operation. It appears to me that there is no doubt whatever when Parliament passed the Market Gardeners' Compensation Act that it was the intention of the legislature that it should be retrospective, and that it should apply to the case of all market gardens which existed before the Act passed, and to all improvements which had been made in those gardens before the passing of the Act; and as a matter of fact it was so understood, and for a time compensation was actually paid on that basis. But in certain cases which were taken to the House of Lords, it was decided that though the Act was retrospective in the sense that it would apply to market gardens existing before the Act passed, it was only to apply in the case of improvements since the Act passed, and the result is that you have a real grievance. The man who made improvements just before the passing of the Act does not get any compensation, whereas the man living next door, who made his improvements immediately after the passing of the Act gets full compensation. Under the Evesham system the valuation as between landlord and tenant is practically avoided altogether, the incoming tenant paying the outgoing tenant. That might be a solution of the difficulty. I do not know how far these suggestions meet the views of the meeting. Turning to the question of rating and taxation—because I think in calling the subject for this afternoon "Rating Difficulties" we are rather limiting it—there are difficulties in connection with Imperial taxation as much as there are in connection with local rating. We find that at the present time fruit plantations are not fairly treated. In the first place, for the purpose of Income-tax, an ordinary farm pays on one-third of the annual rent. That is not the case with a fruit plantation, because in the latter Income-tax is paid, not upon one-third of the rent, but upon the whole gross profits. We think this unfair. It used to be the case with Hop-gardens, but it was in that case abolished, and we think it ought to be abolished in the case of market gardens. It is no doubt the fact that when fruit-growers have to deal directly with the local authorities the latter are in the habit of increasing their assessments. We think that is a great grievance, because when the fruit is first planted, so far from the value being increased for the first year, there is not an increase in the value, and thus the industry is handicapped, and people are deterred from going into it. The Departmental Committee therefore suggested that in the assessment of fruit-plantations the assessment should not be raised immediately, but that in the case of small fruit, which comes into bearing most quickly, a period of five years should elapse, in the case of mixed plantations seven years, and in the case of orchards twelve years. We thought this would meet the grievance very fairly. Then in the case of glass-houses the rating is very unfair. It is absurd that for glass-houses, which depreciate, as everybody knows, exceedingly quickly, only the same amount of deductions should be allowed for repairs as in the case of an ordinary dwelling-house, namely, one-sixth. To suppose that an ordinary dwelling-house deteriorates and wants renewing as often as a glass-house is absurd. There can be no doubt that in the case of a glasshouse an extra sixth or an extra something should be allowed in order to arrive at a fair value. Then in regard to local taxation glasshouses are very unfairly treated, in the fact that they are not allowed to come under the provisions of the Agricultural Rates Act, but are treated as buildings. Under that Act agricultural land pays only on one-half, and buildings pay the full amount. Glasshouses do not stand to the fruit plantation in the same position as an ordinary farm building does to an ordinary farm. The glasshouse is the shelter under which part of the produce is really grown, and it ought to come under the head of land instead of buildings. The Committee felt that that was another special grievance which ought to be dealt

with, and we recommended that in the case of glass-houses the Agricultural Rates Act should be made to apply. I am very well aware that on both these questions a great deal of controversy is likely to be aroused. I do not suppose for a moment, especially on the question of land tenure, that we shall in any way be unanimous, but I do hope that we shall have an interesting and instructive discussion, and I believe that upon the right solution of these questions depends largely the possibility of extending this industry, to the great advantage of the country generally.

Mr. CECIL HOOPER, F.S.I., then read a paper on the subject. He said that land tenure in relation to fruit-culture was more intricate than in ordinary farming, and consequently it was more difficult to arrive at justice between landlord and tenant. In former days there existed a more paternal spirit between the landlord and the tenant and between the farmer and his men than now generally existed. The present conditions were partly due to greater class independence and to the severer struggle for existence. The British farmer and fruit-grower now needed to be given every facility to make their business profitable, when produce similar to what they grew might be brought in free from any country to the same markets at which the grower sold his produce, to the flour-mill in his neighbourhood or to the shops in his village. If a landowner did not wish fruit-trees or bushes planted on his land, he certainly had a right to prohibit them being planted; but it was unjust and despicable to want another man to plant his land with fruit, thereby to raise the value of the land for sale or rental, and yet to shelter himself from paying compensation, to add insult to injury, by making the tenant pay for the cost of his lease and his landlord's counterpart. If the landlord was to pay compensation, however, he should in fairness have a voice as to the extent of such planting. He had also the right to claim that the land should be kept properly cultivated and not neglected previous to the end of the lease, for if weeds got among the roots of trees and bushes, they were difficult to clear out, and in doing this the plants were disturbed injuriously. He considered that every holding at January 1, 1896, should participate in the benefits of the Compensation Act. The cost of a farm should be either shared between landlord and tenant, or (as the stipulations in the lease were chiefly to the advantage of the landlord in agriculture) should be borne by the landlord, and the tenant should not be made to pay all the expenses.

He also heartily agreed with the recommendations of the Fruit Committee of the Board of Agriculture on this subject. The poor-rate pressed unduly heavily upon the farmer. Land was really the raw material, it was the equivalent to the farmer of wool to the cloth manufacturer, or corn to the miller. Farmers paid very much more poor-rate in proportion to income than did merchants, professional men, manufacturers and persons with private incomes. He considered that the poor-rate should, like the sanitary rate, be only payable at one-quarter rate on agricultural land, instead of at one-half; that the farm buildings should be included with the agricultural land, and should not be assessed with the dwelling-house. Motor-cars (excluding those of doctors) should be specially rated for the repairs of roads. It was for the good of the nation itself that all unnecessary hindrances be removed, and that the farmer was given fair-play in every direction.

Mr. S. H. COWPER COLES, F.S.I., followed on the same subject, taking the land agents' point of view. It was, he said, very easy to air grievances of both the parties, but he took it that the desire of all that fair-play should be given to the landlord as well as to the tenant. Among other things, he considered the "retrospective" proposal absolutely fair, and he hoped that some uniformity of the law would be arrived at.

Mr. LANGRIDGE, who gave evidence before the Fruit Committee, said he fully believed that the intention of that Committee was to do injury to neither party.

Mr. A. H. MATTHEWS, Secretary Central Chambers of Agriculture, regretted that the Committee's recommendations on the question of taxation were made apparently in the belief that the Agricultural Rates Act was to be permanent. He wanted all such matters as the poor-rate, education-rate, and the highway-rate—to which glass-houses were rated—to be made national charges instead of local.

Mr. EDWIN VINSON said he personally was indebted to Col. Long, M.P., for the Compensation Act, as he had received £1,200, which he would not otherwise have recovered.

Mr. W. J. LOBJOIT (Heston) said the difficulty they had to face was the fact that landlords did not like to let land for fruit-growing purposes. Gardeners should not be allowed to be forced to be contracted out of the Act. On the question of rating there were so many astonishing anomalies that even contiguous buildings, exactly alike, were differently rated.

Mr. MARTIN (Evesham) said the chief reason of the success of the Compensation Act was that the outgoing tenant found the incoming tenant. He had recently disposed of a 100-acre farm under the Act, so he spoke from experience. As to the methods of the overseers in the Evesham district, he said they charged him on the ground that he had made £700 profit, and he had the utmost difficulty in persuading them that he actually that year made a loss of that amount.

The CHAIRMAN in closing the discussion said the various members of the Fruit Committee might feel very satisfied that the discussion had generally supported their recommendations. As to the deterrent effect upon landlords, he said it was the object of the Committee to mitigate the present conditions in that direction as much as possible. The Committee did not deal with the questions as in any way final, but as practical men they sought to deal with the questions which were before the country at the moment.

RAILWAY GRIEVANCES.

The Conference was resumed on Thursday, Oct. 12.

Sir ALBERT ROLLIT, M.P., presided in the morning when "Railway Grievances" were discussed.

Mr. W. W. BERRY, Faversham, at the outset read an interesting paper. He said the question of transport was one of the greatest moment to all traders, and especially to those who dealt in perishable merchandise. It was often contended on behalf of the railway companies that as the quantity of goods consigned increased, they could afford to reduce the rates charged for the carriage of them.

If that were the case then fruit-growers certainly had good claims upon them for consideration, as the industry was one which was increasing in spite of grave difficulties. There could be no doubt that a revision of the existing work of classification would be advantageous. Such a revision might be effected by means of meetings between the fruit-growers and the companies, with the assistance of the Board of Trade or the Board of Agriculture in case of any failure to agree. It was doubtful whether the abolition of owner's risk rates would be satisfactory to growers generally. There appeared to be no reason why the growers should not have the alternative of two rates, provided that the rates at company's risk were reasonable in the interests not only of the companies but of the growers, and that if the railway companies adhered to the present owner's risk conditions, provision should be made for ensuring in all cases a full and proper abatement. Another grievance was the preference given by the railway companies to foreign produce, while they had not gone out of their way to encourage any branch of home agricultural traffic. If the companies would adopt similar tactics with reference to the fruit industry they would find their reward, and the growers and consumers also would benefit. Yet many questions must remain for determination by the Railway Commissioners, and there should be a right of appeal against any rate deemed to be unreasonable, instead of an appeal only where a rate had been increased or where it was unduly high. He strongly protested against the suggestion of the Departmental Committee that the companies should provide special waggons. If they asked for any such concessions they would never get reduced rates. Nor did they want accommodation or consideration in any way for their business, other than cheap rates and quick transit. As to the rates he had taken out a few comparisons. For grain and flour in two-ton lots over a distance of 144 miles the rate was 8s., whereas for Plums in two-ton lots, delivered, the rate was 23s. 4d. for 140 miles. He gave many similar instances, and said, seeing that the growers had no storage as in the case of flour, it was unreasonable to extort such charges from them.

Mr. JOHN IDIENS (Evesham) followed with a paper. He had not come, he said, to tell them that the railway companies were the worst enemies to the Evesham growers. He was pleased to be able to look upon them as their best friends. Since the inauguration of the National Fruit Growers' Association, they had been able to meet the railway managers on common ground, and they had been enabled to ven-

tilate their grievances. It was just as well that fruit growers should recognise the fact that railway companies were trading concerns like their own, and when they came to consider that the average earnings on their ordinary stock only amounted to about 3 per cent., they could not expect them to carry their produce to all parts of the Kingdom by express trains at rates unremunerative to their shareholders. He had never known fruit fit for market purposes wasted, as had been said, owing to the fault of railway companies. It was pretty generally agreed that 75 per cent. of the fruit grown in British grass-orchards was small and common, undersized fruit, and not good enough to-day to send to any market to compete with the better-graded fruit that found its way into our markets. What was good enough ten years ago for British markets would not do to-day. The railway rates from Evesham were fair and reasonable, with some few exceptions, and only a revision of the classification was needed to bring them up to present requirements. All the British grower asked for at the hands of the railway companies was fair play and reasonable rates. Among other things, it should be remembered that the companies had to provide for empty packages being returned long distances, which must be a loss to them.

A Member: They are paid for it.

Mr. IDIENS, No.

Mr. BERRY: Yes, they are, and at a very high rate too.

Mr. IDIENS said, when they knew that the best fruit had recently averaged from £25 to £30 a ton, they could scarcely ask the railway companies to charge the same rates as for flour.

Mr. GEO. MONRO (President of the National Federation of Trades Association) read a paper on the same subject, as representing the salesmen. They felt that their industry did not get the treatment it deserved. Their Association rose out of the action of the railway companies combining and introducing the vexed question of owner's risk, and refusing liability in cases of damage and late delivery where they used to pay claims, and in all cases making it more difficult to get fair treatment and suitable service. The classification generally of horticultural produce was unfair to the trade, and the Federation had decided to approach Parliament on the subject, especially as their trade was not represented when the railway companies got the present rates approved by Parliament, with the result that they obtained power to charge what were now fancy rates. But the companies were often injurious to their own interests, and as in the case of the traffic from Jersey, they did not think it worth while to take off the iniquitous shipping charge of 1d. per basket on all produce, which brought in about £10,000 a year, until the traders found they could be independent of the companies. It was no use for landlords to grant cheap rents if railway companies could step in and impose extra rates. Much greater facilities were given to the trade in France and Germany, while the railway companies in America and Canada realised that it was to their interest to study fruit-growers and agriculture generally. Traders wanted to see railway companies paying good dividends, and that could only be done by encouraging an industry and not by stifling it.

Mr. F. T. GODDARD (Solicitor to the National Federation of Trades' Associations) next addressed the Conference. He said that 3 per cent. interest mentioned by Mr. Idiens must not be regarded as the only return to the railway companies. It might appear so in their accounts, but it did not represent the real figure, owing to the way the accounts were kept. Turning to the railway grievances he asked what was the cause. The first great cause was the fact simply and solely of the method which had been adopted for many years in the system of management. The idea of railways always used to be that the officers should rise from the bottom. That, he contended, was wrong. The custom of the present day was to appoint men from outside, and two of the best instances of the promotion of professional men to such positions were Mr. Gibb and Mr. Ingles. Many people might say, "Why do we not see improvements come quicker?" Unfortunately concerted action on the part of the railway companies tended to bring even a good company down to the level of the worst in the matter of management. This had hampered those in authority, and it would require quite a genius to clean the Augean stable. The second cause was that the Legislature unfortunately started railway companies straight off as a monopoly, and it was not

recognised at the time what that might mean. Monopoly was founded very much on the idea of competition, but that idea had gone under since railway companies had combined, and were bound to work down to practically the lowest. The next cause was the litigation whereby traders found themselves compelled to employ expert counsel to meet expert counsel on the other side, and that was prohibitive except in the case of some public-spirited traders who would rather be ruined than be unjustly treated. Except in such cases litigation had been of slight use. Then, of course, there was the question of carriers' liability, complicated by the decisions of the House of Lords, and up to the present moment a satisfactory conclusion as to what was the law had not been arrived at. As to the remedies, conferences were of no use. They needed the law made clearer in order that the Courts might decide cases without trouble. Parliament should take up a question of such real and practical importance to everybody in this country. The traders needed reasonable rates, reasonable conditions of carriage, reasonable facilities, and power to reclassify any article. The companies should have the power to temporarily lower rates in case of merchandise, and again to raise them when necessary. There had been many suggestions as to tribunals, departmental committees, arbitrations, and things of that sort. His experience was that they were unsatisfactory and troublesome and did not suit traders. He felt it was very much better for the traders to have their Federation, and to let that body fight their battles. It saved money in the end, and although it was not so good for the lawyers it was the better way of doing it.

Mr. ROBT. PIPER (Worthing) said it was evident from what had been stated that their grievances were real. Railway companies thought that their interests and the interests of the growers were opposed. That was altogether wrong. Their interests were on parallel lines, and if the companies would only acknowledge that, their exchequer, instead of being reduced, would be increased. But railway companies would do nothing until forced, and the motor services would quickly bring them to their senses.

Mr. BOSCAWEN, M.P., said the subject undoubtedly is a very difficult one, and is of the greatest importance to the future of the industry. As I have had opportunities of seeing both sides of the question, I would venture to make one or two suggestions as to how this subject ought to be approached by growers and the trade generally. It is absolutely true that the trade has grievances against the railway companies, and we should try to remedy those grievances where we can; but I wish to caution all people engaged in the trade against taking up an attitude hostile to the railway companies. I am not suggesting that this has been done in the very temperate speeches we have heard to-day; but I have heard a great deal of evidence given by some people who take the line that railway companies are their natural enemies. I would caution them against that attitude because I do not think it is a fair attitude, and it is no good overstating your case if you wish to get redress. So far as the discussion to-day has gone, there is only one sentence that I would take exception to. I cannot agree with Mr. Berry in the statement that while railway companies have gone a long way to develop imports, they have done very little to develop facilities for home produce. When we see what the Great Western and the Midland have done in building new stations and sidings and providing special works, we must feel that these companies are now endeavouring to meet the trade—not out of benevolence, but in self-interest. Of course, neither Mr. Berry nor I live on the Great Western or the Midland, but I think even the South-Eastern and Chatham are waking up lately. What are our grievances, and where ought we to seek remedies? Taking them through and through, and having regard to the nature of the services, the rates are not unduly high. By passenger train fruit sent 200 miles works out at three-tenths of a penny per lb. Where Plums are sent 200 miles, the fare works out at one-eighth of a penny per lb. Such rates cannot be said to be unduly high. The real grievance is that they are based on no principle. The classification in many cases is entirely wrong. The fact is, that since that classification was made the fruit trade has grown enormously, and the present conditions are entirely different to what they were when the Act and the classification were made. And that being so, what we should seek to do is not so much to go about asserting that rates are too high, but we should try to remove the anomalies of the

rates, which undoubtedly press hardly upon our particular produce. The Committee hesitated to recommend a statutory revision because we were not a large trade, and if classification were reopened on one question it would have to be done in all. Those of us in Parliament and are interested in the trade would be prepared to support a statutory revision, but traders should try to get it done if possible without going to Parliament, and that could be brought about under the Act of 1888. Companies have altered the classification, and have assisted the traders in getting the alteration made. Aluminium at first was put in Class 5, but it was altered to Class 3. Go to Parliament if you will, but in the meantime try and get any glaring anomalies in your classification removed under the provisions of the Act of 1888 by the assistance of the Board of Trade. If you cannot get that assistance you would have a much stronger case when you go to Parliament. But a question of far more importance than rates is prompt delivery, because fruit is the most perishable of all articles, and you want to get into the markets early. It is in prompt delivery I think that the companies fail most, and you have got to press for some better remedy than you have at the present time. I do not quite know what means we have of enforcing this prompt delivery. You will have to get some entirely new definition of the liability on the part of railway companies, or you will have to get some system whereby they can be fined for every instance of lateness. Owner's risk is a perfectly absurd thing. You have to get proof of wilful misconduct on the part of railway officials. It is almost impossible to prove that unless there has been pilfering, and I would therefore suggest the substitution of the words "culpable negligence." It would be better if there were no owner's risk rates at all. There should be only one system of rates—company's risk rates—but they must be reduced to such a figure as would simply add to the present owner's risk rates sufficient to cover the liability of the company. I would suggest that 5 per cent. be added to owner's risk rates, that the rate be made a company's rate, and that there be only one such rate for the future. If you availed yourselves of your power of going before the Board of Trade to show what you considered unreasonable you would be able without litigation to remove some of the grievances from which you suffer. To meet the combination of the railways there ought to be a Government official to watch over the proceedings of the railways, and to report to Parliament. I agree that the companies should have the power to temporarily lower their rates. They do so in the case of excursions, why should they not do so when there is a glut of fruit, which would otherwise rot on the ground? Parliament will not let them do it, because before they again raised the rate they would have to show a reason why they should do it. I cannot agree with Mr. Berry about the special waggons. What we asked for in our report was not special refrigerator waggons. What we did say was that unsuitable waggons ought not to be used. Speaking generally, I would ask you to try to carry out some of the suggestions which you will find set out in detail in our report, and to bring all the pressure you can to get your grievances removed without going to Parliament. But if the grievances cannot be removed in that way you must go to Parliament. But I believe a great deal can be done without absolute Parliamentary action, and I ask your Federation to take this opportunity of working on the lines I have suggested.

Miss CROOKS spoke of her experience when she was head of Lady Warwick's Cottage Garden Market, and the prohibitive charges made by railway companies for the carriage of small parcels. They had obtained very few reductions, and everything was sent at the owner's risk rate. Of course if the produce went all right nothing was heard, but when a customer complained that a consignment had not arrived in good condition they got no redress from the companies. She agreed that conferences were of no use at all, and that they should take their grievances to Parliament.

Mr. C. BETTISON (Leeds) did not agree that his part of the country had a good service from Worcester. He did not think Mr. Idiens spoke for the majority of the growers—in fact, one would think that he held a brief from the railway companies for concessions received.

Mr. IDIENS denied that he had received any concessions, as suggested. He contended that the rates were fair and reasonable. When Mr. Boseawen was in the district he was told by the traders that everything was fairly satisfactory.

Mr. THWAITES, Covent Garden, denied that fruit had reached £30 a ton. He did not think a £25 average would be found.

Mr. CECEL HOOPER said there was one hardship in owner's risk, and that was the loss from packages. Consignments often arrived short and no claim could be sustained as they could not prove wilful neglect against the company. They had to lose the whole consignment before they could sustain a claim.

Mr. PERCY V. COOKE, Vice-President of the Jersey Growers' Association, also alluded to the charge of one penny per package once made by the G.W. and L. & S.W. Companies. The time had come when, especially in the flower business, the owner's risk should be abolished.

Sir ALBERT ROLLIT, M.P.: I should like to say, as a member of the Council of the Royal Horticultural Society, that I think it is doing a very good work in holding these frequent shows, and these Conferences in connection with them, and certainly the debate which has taken place to-day, reasonable in tone, is an illustration of the value of which I have been speaking. We have had a real Conference—not a Conference with the railway companies, to which reference has been made. I think the Conference will bear good fruit, if not in legislation, at any rate in some re-arrangement by which the undoubted grievances of the traders will, I hope, be reduced. I am encouraged by Mr. Berry's remarks in reference to myself. He has reminded me that in 1888 I took an active part in connection with the railway legislation of that day. In fact, I moved for the Committee in the House, and carried it, which was the precedent for the Act of 1888. That is now many years ago, and a great many things have happened since then, and if any legislator believes that what we did fifteen years ago suffices for to-day, that is misreading the history of our modern life. We have moved with the times, and I think the occasion has arisen for further legislation. This Conference will be of value, especially to traders, but I hope that it may also be of advantage to the railway companies themselves. I quite acknowledge the joint interest we have with the railway companies. The motto of the trader in all forms should be "Live and let live," and we want the railway companies to let us live. We are not the enemies of the railway companies in any sense of the term. We believe we have a joint interest, and that the joint interest should be on the lines of progress and development, not of stragulation, restriction, and want of facilities. I remember a railway representative saying in the House of Commons that a reasonable rate was what a trade could bear without breaking. But those days are passed, and we shall not be content to submit ourselves to similar conditions again. We wish the railway companies to realise what greater facilities and greater cheapness mean to the prosperity of the companies themselves, and the sooner the railway companies realise this the sooner it will be better for their shareholders. We hear a great deal of the want of facilities and unpunctuality, and we hear also a great deal of grumbling against the motor, but the motor, whatever harm it may do in the suburban districts to individuals, will teach the companies lessons. One thing, I think, seems beyond question. As Mr. Boseawen has said, we need relief from rates, which undoubtedly are most excessive, and we have heard of a barrel of fruit costing as much to send from London to Glasgow as to bring from New York to this country. As a shipowner I know that water transit is not so expensive as land transit, but it is not one-fifteenth less! Another thing which I think is clear is that a preference is given to the foreigner. I am not going to deal with the fiscal question, but there is one thing about which we hold one opinion, and that is we do not intend to give a preference to foreigners in these matters. I think some reform may be effected there. Fortunately for them the foreigners have advantages we do not enjoy. They have State railways, and are not encumbered with the immense cost of construction and the purchase of land at an excessive cost, nor have they to suffer from watered capitals as exist in this country unfortunately. Twenty years ago we had an opportunity to make our railways State railways, but we let the opportunity pass, and it may never recur except at the cost of enormous millions, which the taxpayer would never submit to. Rates and conditions, however, are the crux of our Conference. Mr. Vincent Hill once said that Parliament fixes the rates. Parliament does nothing of the sort. Parliament very roughly names the

maximum rates, and that is a very different thing. That is a general rule which, if it were applied in every instance, would not last for a month. It is a mere general rule so that there shall not be any great excess. Parliament does not fix the rates. It is competition. Railway companies who have a monopoly have fixed the rates, and unfortunately legislation has been very much to the disadvantage of the trader. At first, railway companies as carriers of goods were common carriers, with all the obligations of common carriers, even to the extent of assuring perishable articles. Then the Railway and Canal Traffic Act was passed, which required that all their conditions should be reasonable. And then came a case in which it was decided that where there was an alternative rate offered to the trader he was bound by the special contract, even though the conditions might be unreasonable, and that is the source of all our difficulty to-day. The owner's risk contract works the greatest injustice to the trader. Five per cent. on the owner's risk would probably be enough to pay the company (Mr. HERVEY: A great deal too much). We have known cases where fifty per cent. has been charged. The railway companies could afford to carry at what is the present owner's risk charge, plus five per cent., but in some cases they get fifty per cent., or an excess of forty-five per cent., and that is monstrous. Take other conditions which have been made, non-liability for loss of markets and injury to goods. I have seen conditions by which the companies' servants could eat perishable produce ("So they do"), and not be liable! How are we to try to meet that? My own opinion is that present legislation is incapable of meeting it. I believe myself that in many cases you would be better off without even the maximum rates. If you revert to the original common law the conditions and charges should be reasonable. Now you have got from myself and others an extension of the County Court jurisdiction in all your districts up to £100, it would be very easy for a tribunal to say whether a particular rate or a particular condition is reasonable or not, and you could do it at no great expense. There are other points upon which it would be interesting to touch. While we are discussing these rates do not let us forget that there are many other things which are very material in the conduct of our business. If we are asking the companies to be up-to-date, let us take care that we are up-to-date. Let us take care, in dealing with the railway companies, that they cannot complain of bad package. And now a word about another point. The presentation of fruit to the purchaser is a matter of infinite importance in your own interests. Upon the whole I think the presentation of fruit abroad is more likely to tempt the purchaser than in this country. In the next place, knowledge is the basis of modern business, and we need technical education applied to the fruit trade. A knowledge of vegetable physiology, plant-food, manures, proper varieties—they are all of vast importance; and I say that education should tell more of the railways of to-day than of the Roman roads of the past. After all, the great security for persons engaged in the fruit trade is an active belief in what is, in my opinion, the great feature of the century—namely, the value of organised and systematic effort on the part of traders. I have always done my best with the Chambers of Commerce with that object, and I believe the more you get into connection with Chambers of Commerce and similar institutions for the purpose of conferring and acting together the better for you. Why has the trade of Denmark been so successful? It is owing to organisation and the collective system, and owing to care in the matters of transport and presentation that their produce, representing 30 millions a year, comes into this country. We have practically the same climate and similar conditions, and by a properly organised system a great deal of that produce could be raised profitably in this country. Of course there may be other questions, but let us get to know more about these things, and in that way we shall in the end, owing to our national character, beat and outclass the foreigner. Some one asked Members of Parliament to help them. It is a difficult thing for Members of Parliament to render help in the present condition of Parliamentary affairs. What is wanted is a consolidation of our Railway Acts. They are buried in great volumes so that no one can read them, and everyone is assumed to know the law, and is punished if he does not abide by it. I hope the Conference will forward the interests of your most important trade.

EXPERIMENTAL FRUIT-FARMS.

The Conference re-assembled in the afternoon, when Colonel LONG, M.P., President of the National Fruit Growers' Federation, occupied the chair; and the subject for discussion was the "Distribution of Information in connection with the proposed establishment of an Experimental Fruit Farm by the Board of Agriculture, and its possible extension for demonstration of Commercial Fruit Growing."

The CHAIRMAN said that the subject that afternoon was rather a new one. He drew attention to the suggestion of the Parliamentary Committee that a Bureau of Information should be established, because it might scarcely appear to come under the head of what they were discussing. As a matter of fact, he thought the establishment of such a department would form a connecting link between the theoretical and the practical. Travelling experts going through the country would come in contact with men practically engaged in the trade, and they would assist the Department to work out the answers to the questions put to them. No doubt many difficulties would thus be cleared up. And it should be remembered that the Experimental Department would not have to wait while their plantations grew up, because they would be able to try experiments with fruit and blossoms from other varieties, and give really authoritative decisions as to which varieties were best for different purposes. Foreign governments had devoted a great deal of money and trouble to solving certain questions which traders could find neither the time nor the money to solve. In England for a great many centuries we had always gone on the principle of allowing people engaged in a trade to thrash matters out for themselves, as it would strengthen their characters. That was all very well in the past, but now the foreign governments were stepping in and giving an advantage to their producers, our Government should do something for our own growers.

Mr. SPENCER PICKERING, F.R.S., Director of the Woburn Experimental Fruit Farm, then read his paper. However necessary a central station might be, it must, he said, always be remembered (indeed, it was never forgotten by those who sought a cheap method of discrediting the results obtained there) that the conditions of soil, position, and climate in one locality could never be reproduced exactly in any other, and that the results might not consequently be of general application. Many of the results at Woburn had shown the same, and even the most elementary and widely accepted views as to horticultural practice required investigation, if not revision. For instance, no more effective way, short of violent destruction, existed of injuring a newly-planted tree than by growing grass over its roots, and this fact alone was sufficient to account for all the miserable specimens of trees which were to be found throughout the country in ordinary farm orchards. Again results had proved that in the same soil in which manure was of vital importance to one kind of fruit, it might represent so much money thrown away with another kind. With the Apple-trees at Woburn manure, whether artificial or natural, had had practically no effect whatever during the first ten years since planting, the unmanured trees being, as regards growth, vigour, and cropping, indistinguishable from those which had been heavily dressed every year. On the other hand, in the case of Gooseberries, Currants, and Raspberries, manure, and especially dung, was of such paramount importance that those plants which had not been dunged had been practically exterminated. Thus it had been proved that Apple-trees carelessly planted in entrenched ground, not trimming the roots, bundling the roots together into a small hole, and stamping the earth roughly down upon them, had done far better than trees planted alternately with them, but in the so-called proper way. On lifting them the reason became apparent. It was found that the check given to the roots of the trees by the maltreatment in transplanting had been sufficient to prevent those roots from developing properly. In the case of the wrongly-planted trees, the roots died, but there was sufficient vigour in the tree to force into growth dormant buds higher up in the stem, and these had formed a new root system, each root of which, never having received any check to its growth by transplanting, grew more vigorously than the old roots, which had been planted under the best conditions. Much criticism—and proper criticism—would follow he was sure! But it would be difficult to find a more striking instance than that afforded by these results on

planting of the necessity for investigation, even in matters of the most elementary horticultural practice. Properly organised investigation at a station specially fitted for the purpose was now the only way in which new knowledge could be gained with the economy of time and money which was essential to the fruit-growers of England, if they were to hold their own in the present keen competition with other nations.

Mr. PICKERING illustrated his deeply interesting paper by the aid of lantern-slides.

Mr. W. A. MACKINNON, late of the Canadian Government Fruit Division, followed with a paper in which he spoke of the efforts of the Canadian Government to assist the traders of the country by means of experimental farms. Cheap railway excursions were also organised by local or county agricultural societies for the purpose of visiting the farms and studying the results of various experiments. Then there were the free issue of bulletins, conventions, experimental shipments, educational exhibits, samples by mail, and model commercial orchards. Everything was done to encourage and direct the growers.

Mr. H. F. GETTING (Ross) also read a paper. He alluded to what was done in other countries, and asked what had our own Government done? There were County Council lecturers on fruit-growing, but with all due deference, they were not the men wanted. Fruit-growers did not want bare statements repeated again and again without any practical proofs to back them. It was essentially a work that should be carried on by the Government.

In the discussion,

Mr. BUNTARD said the experiments at Woburn had knocked the wind out of him as an old nurseryman, and had entirely gone against all the principles he had been advocating for the last fifty years; but he should be afraid to advise that trees should be planted in the way described. As to the number of varieties of Apples, he would be only too glad to get rid of many of them; but growers had to cater for their customers. As to grass, there could be no doubt that it took out of the soil an immense amount of nutriment, which ought to be replaced, or the ground would be impoverished. An experimental farm would no doubt clear up many things.

Mr. JOS. CHEAL said they could learn much from young Canada, and he had always advocated the desirability of the establishment of experimental farms. As to the grass, he said the results might be due to the extraordinary radiation from grass compared with cultivated land.

Mr. MARTIN (Toddington Orchard Co) hoped they would have one of the farms in Gloucestershire.

The CHAIRMAN asked Mr. Martin how he had managed to destroy not only living pests, but frosts.

Mr. MARTIN said he got the idea from California, where they lost not only their crops but their trees. There they had a hundred specially constructed lamps to the acre, each lamp holding a gallon of oil, and burning four hours. They lighted a third of the lamps. He experimented on 1 acre at a time when a 9° frost was on. The temperature rose to 1° above freezing—a rise of 10°—and the fruit was entirely saved at a cost of 30s. for the night.

Mr. PICKERING asked whether it would be owing to the smoke the lamps made.

Mr. MARTIN replied that it was owing to the heat alone. A current of warm air was created.

The CHAIRMAN in closing the discussion expressed the hope that a sub-department of the Board of Agriculture would be charged with the care of their industry.

After hearty votes of thanks had been accorded to all who had taken part, and to the Royal Horticultural Society for the excellent arrangement they had made for the Conference, the proceedings terminated.

THE HORTICULTURAL CLUB.

OCTOBER 10.—The monthly house dinners of this Club were resumed at the Hotel Windsor on the above date, under the chairmanship of Mr. Charles E. Pearson, Sir J. T. D. Lewelyn, the President of the Club, being unable to attend until later.

An interesting lecture, entitled "Notes on Trees and Flowers in America," and illustrated by lantern-slides, was subsequently given by Mr. R. J. G. Read, one of the Club members. Although the bulk of the slides exhibited related rather to the engineering side of Mr. Read's experience than to the botanical or horticultural departments, which constitute his hobby, his remarks about the various plants and trees which appeared in

the numerous views gave abundant evidence of keen observation. Starting with a plan of New York city, with its twin rivers the Hudson and East Rivers, a series of following slides gave a vivid idea of the immense traffic thereon, and of those extraordinary structures known as skyscrapers, which have been evolved by an environment of limited space, high ground rents and need for great and concentrated business accommodation. A view of Broadway, with the sewer-pipes temporarily suspended in the air to facilitate the construction of new subterranean roadways, afforded a characteristic glimpse of American "cuteness" in overcoming difficulties, while a fine view of the celebrated Flat-iron building inspired the hope in all æsthetic minds that London may long be spared from the outcome of such soaring architectural *tours de force*.

Some views of the Central Park led us back to Nature by examples of natural rock outcroppings clothed with beautiful vegetation, and artificialised as little as possible compatible with well-kept paths and approaches. Leaving New York and ascending the Hudson River, some grand views were shown, affording an agreeable contrast in the shape of rugged cliffs and wooded heights to the crowded city streets and bare architectural cliffs previously shown. A series of views of Niagara appropriately followed, including views of some of the immense engineering works devoted to the utilisation of the water power for the benefit of mankind. Similar work was also displayed in connection with other great falls in Canada, in which connection it is to be hoped that the love of the magnificently picturesque may not eventually be entirely subjected to utilitarian plans. Views of Chicago and of the St. Louis Exhibition followed, in the latter of which, unfortunately, the Horticultural Department was so far away in the background as to give no idea of its extent; the general effect, however, was most imposing.

The views embraced a number of the most remarkable bridges in the States and in Canada, and a view of the St. Louis Botanical Gardens, showing a very fine specimen of the Victoria Regia Lily growing in a tank in the open, which, with the presence of humming-birds in the vicinity, as seen by Mr. Read, points to a warmer climate than we should have anticipated in that latitude.

GARDENERS' DEBATING SOCIETIES.

HEADLEY GARDENERS.—An interesting paper on "Marie Louise Violets and their Culture" was read to the members of the above Society recently, by Mr. W. Gill, of Wimbledon Park. The lecturer gave full details regarding the soil and situation required, the method of treatment adopted by himself in growing these flowers, manuring, the prevention and cure of Violet smut and the ravages of red spider. Some splendid specimen blossoms were exhibited. Mr. T. Beeson showed several plants of *Laurus nobilis*, which had a peculiarly burnt appearance and a long discussion ensued as to whether this injury was due to climatic conditions or to a fungoid growth. *H. A.*

BATH GARDENERS' SELF-HELP AND DEBATING.—The usual fortnightly meeting was held at the Foresters' Hall, Bath, on Monday, October 9. Mr. T. Parrott, presiding over a large and enthusiastic attendance. The display of exhibits was the largest that has ever been held in connection with the Society noteworthy among them being a fine collection of Apples, exhibited by Mr. C. Adlam; also Mr. H. Roper's collection of Apples and Pears included twenty-eight dishes, the background being well set off with some beautiful vases of *Chrysothoemum* blooms. Mr. F. Hooper discussed the subject of stone-fruits in a very able manner, demonstrating practically how grafting and budding should be done. He also referred to Apples. An interesting debate followed. Eleven new members were elected.

SCHEDULES RECEIVED.

SHEFFIELD CHRYSANTHEMUM SOCIETY'S Exhibition to be held in the Corn Exchange, Sheffield, on Friday and Saturday, November 10 and 11, 1905.

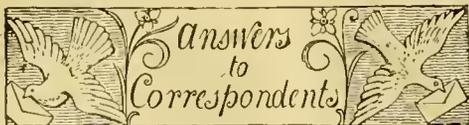
BRISTOL CHRYSANTHEMUM SOCIETY'S Exhibition in the Colston Hall, Bristol, on Wednesday and Thursday, November 15 and 16, 1905.

TRADE NOTE.

Mr. H. B. MAY.—As there is an impression that Mr. H. B. May is removing from Dyson's Lane Nurseries, he has desired us to say that this refers to one department of the business only, which is now established under more favourable conditions at his new premises, Endlebury Nursery, Chingford, Essex. Mr. May's general business will as heretofore be conducted at Dyson's Lane Nurseries, Upper Edmonton, where all communications should be addressed.

ENQUIRY.

CAN any reader name a builder of green-houses that erects roofs having a grooved line between each pane? Ours are in want of repair. *A. R.*



EDITOR AND PUBLISHER.—Our Correspondents would obviate delay in obtaining answers to their communications, and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all communications relating to financial matters and to advertisements should be addressed to the PUBLISHER; and that all communications intended for publication, or referring to the Literary department, and all plants to be named, should be directed to the EDITOR. The two departments, Publishing and Editorial, are quite distinct, and much unnecessary delay and confusion arise when letters are misdirected.

APPLE ROYAL GEORGE: *J. W. T.* This variety is described in Barron's *British Apples* as being a large, conical, angular, purplish-red-coloured fruit, with soft, white coloured flesh. It is a culinary variety of the first quality, ripening about midseason. It was shown at the Apple Conference of 1883 by Mr. R. H. Poynter, nurseryman, of Taunton. We do not find the variety mentioned in Dr. Hogg's *Fruit Manual*, nor can we trace any synonyms.

BEGONIAS: *J. P.* The swellings on the roots are caused by microscopic eelworms introduced with the soil used for potting. Turn out the soil and bake it before using it again. Be careful where you get new soil from.

BOOKS: *Clio. Roses in Pots*, by William Paul, eighth edition, from our Publishing Department, price 2s. post free.

CARNATION: *W. G. W.* On cutting open the stem at the base we find it partially rotten and with evidence of some insect grub having made a burrow in the tissue. We cannot find any insect, but you should look out for some grubs.

CARNATION SEEDLING: *H. and S.* The flower is very attractive by reason of the clear, red colour, and the distinct white margin on the petals. We do not remember to have seen a variety of the Souvenir de la Malmaison type quite like this one. In other respects than colouring the flower is very faulty, but on further cultivation the plants may produce better specimens.

CELERY: *L. E. T.* We can detect no sign of fungus at the roots, although there are indications of disease on the leaves. The "heart" and stem of the plant were found to be quite healthy. We can only suggest that the roots may have received a check from the strongly acid character of the drainage used as liquid-manure.

DISINFECTANTS: *A. E. J.* Nearly all those you mention are poisonous to plants if applied in sufficient strength, some of them being exceedingly dangerous. We cannot tell you of anything that you could put in the water that would be certain to neutralise the poisons, and it would be better to prevent them from getting into the manure-water, or else cease to use the latter.

FELLOWSHIP OF THE ROYAL HORTICULTURAL SOCIETY: *A. L. E.* Anyone interested in horticulture is eligible for election as Fellow. Forms for proposing new Fellows may be obtained from the office, Vincent Square, Westminster. The lowest subscription is one guinea a year, with an entrance fee of one guinea. *Bona-fide* gardeners earning their living by gardening and persons living permanently abroad are exempted from the payment of the entrance fee.

FOREIGN NURSERYMEN: *E. A. B.* In Paris there is the well-known firm of Vilmorin, Ardrieux et Cie, and at Baumschulenweg, near Berlin, that of L. Sjöth, one of the best tree nurseries on the Continent.

GARDENER'S AGREEMENT: *J. H.* Your agreement was to go as gardener for a month on trial. After the employer had engaged another man to take the position there was no need for the trial, which would be thus meaningless. In these circumstances we think the employer should give you one month's money at the rate he had agreed to pay you.

GARDENERS' NOTICE: *H. D., Portsmouth.* The second agreement as to 25s. per week appears to have been a verbal one. It will be better for you to consult a solicitor, especially as your employer might attempt to raise a counter-claim.

GLOSSARY OF BOTANIC TERMS: *G. H. F.* We do not know the book you mention. Get Mr. Daydon Jackson's work, *A Glossary of Botanic Terms*, published by Messrs. Duckworth & Co.

GRAPES AND THE XL-ALL VAPORISER: *W. S.* We should prefer to remove the Chrysanthemums to another structure before subjecting them to vapour containing nicotine. Such vapour could hardly improve Grapes that are ripe or nearly ripe.

NAMES OF FRUITS: *W. Barnett.* 1, Court Pendu Plat; 2, Mère de Ménage; 3, Northern Greening; 4, Round Winter Nonesuch; 5, Sweet Lading.—*F. L.* 1, Adam's Pearmain; 2, Deux Ans; 3, Alfriston.—*L. & M.* We cannot recognise such miserable, poor fruits.—*S. & S. Marie Louise d'Ucele.*—*A. F. Coventry.* 1, Barcelona Pearmain; 2, Gipsy King.—*Neil.* 1, Lord Derby; 2, Warner's King; 3, Royal George; 4, Wadhurst Pippin; 5, Tower of Glamis.—*W. G.* 1, Crimson Quoining; 2, Bachelor's Glory.—*J. N. H. W.* 1, Cullen; 2, Balchin's Pearmain; 3, Lord Lennox.—*T. H. Harraway.* 1, Bramley's Seedling; 2, Bascher's Pearmain.—*D. R. S.* 1, Flower of Herts; 2, Flower of Kent; 3, Royal Red Streak.—*J. B. C.* 1, Kerry Pippin; 2, Greames' Pippin; 3, Dutch Codlin; 4, Beurré Diel; 5, not recognised.—*D. E.* 1, King Harry; 2, Newton Wonder; 3, Gilliflower (not Cornish); 4, Duchess Favourite; 5, Dummelow's Seedling (Wellington); 6, Pitmaston Pine.—*J. M.* 1, Blenheim Pippin; 2, Alfriston; 3, Reinette très-tardive; 4, Benwell's Pearmain; 5, Flower of Kent; 6, Brenchley Pippin; Pear, Spanish Warden [Bon Chrétien d'Automne].

NAMES OF PLANTS: *A. K.* 1, Apparently a vigorous shoot of an Amelanchier; 2, Abies concolor var.; 3, Nyssa biflora; 4, Symphoricarpos microphyllus.—*A. F. B.* Anchusa sempervirens.—*A. W.* Rubus phoenicolasius.—*A. C. B.* 1, Cephalotaxus pedunculata var. fastigiata; we never heard of the name Podocarpus australis; 2, Cupressus funebris, China; 3, Cupressus torulosa, West Himalaya.—*S. W. F.* 1, Tacsonia mixta var. quitensis; 2, Tacsonia mollissima.—*W. R.* 1, Monarda didyma; 2, Helenium autumnale; 3, Aster Novi-Belgii; 4, Rudbeckia Neumannii (of gardens); 5, Helenium pumilum var.; 6, Chrysanthemum serotinum.—*Ruellia.* 1, Ruellia Portellæ; 2, not recognised, send again when in flower.—*N. A.* 1, Gomesa recurva; 2, Maxillaria sanguinea; 3, Odontoglossum Wallisii.—*A. Y. L.* Brassavola nodosa.—*R. J. B.* Probably Phytolacca decandra.

ONION: *McG.* Your query as to the priority in commerce or of raising of Onions Ailsa Craig and Cranston's Excelsior is one that might puzzle even the traditional Philadelphia lawyer. Whilst claimants declare each of these Onions to have had diverse origins, there remains the unquestioned fact that out of any one stock, no matter under which name sown, both "varieties" appear. Take the broader yet deep bulbs, and you have Ailsa Craig. Select those rather narrower and deeper, and you have Excelsior. Ailsa Craig has been christened with a score of other names, but grow them how you will, they all become Ailsa Craig, or if preferred as being of prior claim, Excelsior. That we have under either name a really grand Onion there can be no doubt. Exhibitors of Onions find it specially so, as it commonly furnishes at exhibitions two and even three varieties.

PEARS: *Gardener, Manchester.* The following varieties of Pears are recommended for exposed situations in the midlands and more northern latitudes: Doyenné d'Été, Citron des Carmes, Jargonelle, Williams' Bon Chrétien, Beurré d'Amanlis, Louise Bonne of Jersey, Hessele, Comte de Lumy, Jersey Gratioli, Red Doyenné, Thompson's, Knight's Monarch, Duchesse d'Angoulême, Marie Louise, Beurré Diel, and Beurré Rance. The four last named varieties require to be planted against walls. With regard to

the varieties you name, and of which you require descriptions, we are not able to discover what you mean by "Catellias" or by "Beaumont." Ne Plus Mouris is of medium size, and ripe from January to March. The tree is a great bearer of late dessert Pears of good flavour. It should be grafted on the Quince stock and be planted against a wall. Beurré Clairgeau is a very large and handsome fruit, but not of first-class quality. The tree is a good bearer. The fruit ripens in November. Catillac is one of the best culinary Pears, and is in use from December to April. The tree is hardy, of vigorous habit, and a good bearer, succeeding well either on the Pear or on the Quince stock. It should be grown as a standard.

TULIPS FOR EXHIBITION: *C. R.* The best treatise on the Tulip is a shilling book, *Gardening for Amateurs*, by the Rev. F. D. Horner, M.A., third edition (no date). There is no publisher's name, but we understand that a copy can be obtained post free for 1s. 1½d. from Mr. J. Douglas, florist, Great Bookham, Surrey. The florists' Tulip is divided into six sections or classes: 1, *Flamed Bizarres*.—These have a yellow ground flamed with red, very dark, almost black, and chestnut-brown. 2, *Feathered Bizarres*.—These have similar colours, but the yellow grounds are marked or pencilled on the margin, whereas the flamed flowers have a heavy "beam" of colour in the centre of the petals. 3, *Flamed Byblæmens*.—These have a white ground marked with lilac, purple, and very deep black-purple colour. 4, *Feathered Byblæmens*.—Similar in colour, but with feathered instead of flamed petals. 5, *Flamed Roses*.—These are flamed with rose and scarlet colours on the pure white ground. 6, *Feathered Roses*.—These have a white ground, and are flamed with rose and scarlet colours. There are three more classes of what are termed breeders. *Bizarres*—Yellow selfs. *Byblæmens*.—Lilac and light to deepest purple selfs. *Roses*.—Rose and scarlet selfs. They are termed "breeders" because in the course of a few years these self-coloured flowers become flamed or feathered, and pass out of the breeder state. The self flowers become distributed into various collections. For instance take Dr. Hardy (bizarre) as an illustration; it may break into the feathered or flamed state in one or in half-a-dozen gardens, but the "rectified" flowers are not all of equal merit, hence the different breaks are termed strains: Douglas's strain, Horner's strain, or Barlow's strain; therefore it is easy to see that a person may possess a flamed Dr. Hardy, and it may be a poor strain; while his neighbour may also have a flamed Dr. Hardy, and it may be a very fine strain; so that an exhibitor who is anxious to win a high position must possess the best strains. In the cutting you send us from the schedule there are classes for "Fancy" or Border Tulips. The border Tulips are the Darwin section. The name "Fancy" is not recognised in any Tulip Society, and the term "Darwin" was invented by a Haarlem florist, Mr. Krelage. Dame Élégante, white, and Elegans lutea, could only win amongst what in the schedule are termed "Fancies."

VINE: *R. H., Dumfries.* The cause of such sudden death could only be determined after examination of the Vine, and the conditions in which it had been cultivated. At the same time it would have been useful to send us some of the roots, also stem and leaves, for inspection.

VIOLETS DISEASED: *W. P. N.* The plants are undoubtedly attacked with fungus, which may have been introduced with the new stock.

COMMUNICATIONS RECEIVED.—A. J. J. H. (we have not time to decipher your illegible communication)—G. Summers (letter has been forwarded)—H. C. M.—C. J. S. (thanks for 3s. for the Gardeners' Orphan Fund) Dr. Bonavia (with thanks)—De B. Crawshaw—W. E. G.—W. P. W.—W. G. S.—R. A. R.—C. E. P.—F. W. Church (many thanks)—W. B.—J. J. D. J.—G. K.—subscriber—C. J. S.—A. E. L.—A. S.—Battersea Borough Council—A. D.—E. J. B.—A. A. O.—C. O. W.—E. M.—F. J.—C. T. D.—A. C. S.—W. B. G.—W. C.—H. J. C.—G. S.—G. F. H.—K. A. N. Co.—G. W. (many thanks)—W. H.—T. C.—W. P. H.—A. J. S. (next week)—Enquirer—S. H. Y.—G. S.—Old Subscriber—R. W. R.—H. K.—W. J.—Cecil.

(For Markets and Weather, see pp. x. and xii.)



THE
Gardeners' Chronicle

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CONTENTS.

Afforestation of waste spaces ...	313	Physalis, a hybrid ...	315
Ampelopsis, a new ...	309	Plant diseases ...	312
Books, notices of—		Plants, new or noteworthy—	
Bulletin de la Société Française d'Horticulture de Londres ...	310	Gentiana Lawrencei ...	307
Stone Gardens ...	310	Tricuspidarias ...	306
The Fungus Flora of Yorkshire ...	309	Potatos, a lecture on—	318
British Science Guild ...	313	Potatos, warty disease of ...	308
Florida, gardening in ...	314	Rating appeal, a ...	314
Forestry at Cambridge ...	312	Societies—	
Forestry, Belgian ...	307	Gardeners' Debating Manchester & North of England Orchid National Chrysanthemum ...	319
Frost, the recent ...	314	Royal Botanic ...	319
Fruit conference, the recent ...	312	Royal Horticultural ...	315
Fruit culture for profit ...	314	Trees in Kingsway ...	313
Gooseberry disease, a new ...	305	Vegetables at Westminster ...	317
Kew notes ...	308	Week's work, the—	
Lockinge, the gardens at ...	312	Flower garden, the ...	311
Macowan, Dr., resignation of ...	313	Fruits under glass... Hardy fruit garden ...	310
Nelson's monument decorated ...	313	Kitchen garden ...	310
Nicotiana Sanderae ...	313	Orchid houses, the ...	310
Obituary—		Plants under glass ...	311
D'Ombra, Rev. H. H. ...	319	Wye Agricultural College ...	313

ILLUSTRATIONS.

Gentiana Lawrencei ...	307
Lockinge Park, view in the grounds at (Supplementary Illustration)	
Physalis, a hybrid ...	315
Potatos affected with the "warty" disease ...	308
Vitis Heeryana, leaves of ...	309

**THE PRESENT DANGER
THREATENING GOOSEBERRY
GROWERS IN ENGLAND.**

IN the year 1900, in recording the fact of the appearance, in a garden in county Antrim, Ireland, of the American Gooseberry-mildew, *Sphaerotheca mors-uvæ* (Schweinitz, Berkeley and Curtis)—the first appearance of the fungus in Europe—I wrote: * "This new Gooseberry disease, which has just appeared in Ireland, is capable of causing the most serious damage on a large scale. It is therefore a matter of economic importance that steps should be taken to stamp out, if possible, the disease at once."

In 1902, when pointing out that the disease had appeared in several fresh localities in Ireland, and had been reported from two places in Russia, I wrote again: † "It may be well here to draw attention to the serious economic danger with which European fruit-farmers will be confronted if the American Gooseberry-mildew is allowed to establish itself in Europe. In every case where the disease has appeared it has assumed a serious character, and tends to recur annually in increasing severity; and there is no doubt that Gooseberry growers in Europe are now face to face with a dangerous enemy."

* Journal of the Royal Horticultural Society, xxv., 139 (1900).

† L.C., xxvi, 778; and xxvii., 596 (1902)

Finally, in 1905 I recorded the continued increase of the disease, pointing out that it was now established in Ireland in nine localities in six counties, and that it was now reported from Russia in ten districts, and from Denmark in two localities. I wrote: * "At the risk of repetition I cannot refrain from urging here that vigorous steps should be taken at once by the authorities to stamp out this disease in Ireland. . . . Undoubtedly the first step that should be taken with the object of eradicating the disease in Ireland is the examination, by an expert, of the nurseries in the affected districts, as the existence of any such nursery gardens containing affected stock must serve as permanent and prolific centres of infection. There is no reason why, if the destruction of the infected stock in nurseries and the burning of diseased bushes in private gardens are carried out, the disease should not be entirely extirpated from Ireland. But the possibility of the complete eradication of the disease diminishes as each year passes, bringing with it the establishment of the mildew in fresh localities. Already the list of affected areas has grown dangerously long, and the agricultural authorities will incur a grave responsibility if they neglect to take prompt and energetic measures to stamp out the disease."

The following extract from a Bulletin of the New York Agricultural Experiment Station, dealing with the cultivation of the Gooseberry in the United States, and prepared by Professor S. A. Beach, will show at once the nature and the reality of the danger now confronting Gooseberry-growers in England: "The one great hindrance to the cultivation of European Gooseberries in this country is their susceptibility to attacks of the mildew, *Sphaerotheca mors-uvæ*. From the standpoint of the American fruit-grower Gooseberries fall into two classes, those which suffer from the mildew and those which do not. The former class includes all European varieties and their American-grown seedlings, or in other words, all varieties of the species *Ribes Grossularia*, Linnæus. The latter class includes the cultivated varieties of the native American species, *R. oxycanthoides*, L., and *R. cynosbati*, L., and some hybrids between them and the European species. On account of their liability to serious attacks of mildew, European Gooseberries should not be planted for commercial purposes, except by those who are prepared to contend with that disease." In a letter Professor Beach wrote to me as follows:—"In general it may be said that because of the ravages of this disease varieties of *Ribes Grossularia* are not grown to any considerable extent in commercial plantations in this country. Those who have tried them have generally abandoned the attempt. It is safe to say that were it not for the danger of loss from attacks of Gooseberry-mildew the European varieties would be largely planted in this country in commercial plantations, but because of the ravages of this disease efforts to grow them on a commercial scale are usually soon abandoned."

Now, during last June, the disease was discovered in Sweden. Professor J. Eriksson, the eminent mycologist of Stockholm, at once called the attention of the authorities to it, and immediately the matter was

* Journal of the R.H.S., xxix., 102 (1905).

energetically dealt with by the Swedish Government. In a publication dealing with the subject, just received from Professor Eriksson, he repeats very emphatically the warning which I had previously given as to the danger of the situation, and expresses very clearly and forcibly his views as to the manner in which such introduced diseases as the present should be dealt with. Professor Eriksson shows further the advisability of creating an International Bureau of Plant Pathology, which would deal with such questions as the control and prevention of certain plant diseases. The opinions of so great an authority as Professor Eriksson on the subject should be widely known, and with the object of drawing the attention of all those concerned in plant-culture to the matter, I propose to give (in translation) the following extracts from Professor Eriksson's article, entitled, "Is it wise to postpone again and again the initiation of an organised international attempt to combat plant diseases? A question addressed to the authorities concerned in plant-culture in Europe":—

"Will the European culture of the Gooseberry be able to maintain in the future the high position which it has hitherto possessed? We have good reason to ask this question, now that it is known that the American Gooseberry-mildew has at length appeared in Europe.

The almost simultaneous appearance of the disease in widely separated localities in different European countries, as well as the rapid spread of the disease wherever it has become naturalised, reminds one naturally of the earlier immigration of the Potato-fungus (*Phytophthora infestans*, de Bary) and the Vine-mildew (*Oidium Tuckeri*, Berkeley) in the middle of the forties, of that of the Hollyhock-rust (*Puccinia Malvacearum*, Montagne) in the beginning of the seventies, and of that of the False Mildew of the Vine (*Peronospora viticola*, de By.) at the end of the seventies. All these species of fungi since their appearance have never ceased to carry on their destructive work. What will be the results attending the present immigration of the Gooseberry-mildew no one can safely predict. But the historical examples cited above call upon us to pay special attention to this new invader and to take strenuous measures against it.

If we ask what has been done in the present case to check the disease, the answer will be essentially as follows: In those countries where the disease has been observed, a few scientifically interested investigators have collected information about the occurrence of the fungus in these countries, and have recommended measures for combating it. In the accounts which have been published, the estates where the disease has occurred are specified, and the extent of the outbreak of the disease in each place is described. The statements are, apparently, for the most part based on written communications from the owners of the gardens. It appears that only in exceptional cases has an experienced specialist visited the infected area in order to investigate the virulence of the disease on the spot and its distribution in the neighbourhood. The authorities have neither instituted an investigation to ascertain in what manner the disease came into the country, nor have they put into operation any organised regu-

lations with the object of strenuously combating the disease. It even appears as though they would gladly allow the veil of secrecy to rest as long as possible over the manner of the introduction of the disease. While the names of all the estates where the disease has been observed are conscientiously given, the names of the nurseries from which the diseased plants came are all carefully omitted, even in the cases where the names of these nurseries have been ascertained, just as though the protection of private business-interests had been considered of more importance than the safeguarding of the public good.

Unfortunately the protective work had been commenced too late and carried out too imperfectly. Thus, if the highest authority connected with plant culture in Ireland had sent an expert in the summer of 1900 (immediately the first news came of the occurrence of the disease in a garden there) to the locality, to carry out the necessary investigations on the spot, and to employ strong remedies against the pest, then we should probably have at once learnt both the distribution of the disease at that time, and also its source of introduction. And if at the beginning the nursery or nurseries had been discovered from which the fungus had proceeded, we should at any rate have been able to find out to what other gardens similar plants had been sold by those nurseries. We should thus have definitely ascertained the entire distribution of the disease, and we should have been able, by means of the rapid destruction of all infected plants, to suppress the disease from the first. The contingent loss to the various private owners would, of course, have had to be borne by the State.

Where then is one to seek for the true reason of the indecision and lack of plan with which the authorities have met the disease, if not in the faulty organisation of the existing institutions for the protection against diseases of this kind? The requirements in matters of this kind have for a long time been spoken of and written about. It has already been recognised that a well-planned and well-arranged attempt undertaken by the various countries to combat the diseases and enemies of cultivated plants is absolutely necessary if we wish to see some limit put to the ever-increasing effects of these ravagers, and if we wish to have the power of saving for mankind the millions lost yearly through these diseases. At the great International Congress in Vienna in 1890, at the Hague in 1891, in Paris in 1900, in Rome in 1903, and again in Rome in 1905, in the Assembly of Delegates for the founding of an International Agricultural Institute, much was written, and said, and resolved, and always to the advancement of the subject—and yet what, as a matter of fact, has been accomplished? Practically nothing.

If immediately after the Paris Congress of 1900, one of the European Governments had taken up the matter in earnest on the lines laid down at that time, we should certainly not have had to stand dismayed and without remedies in the face of an invasion such as the present one. We should also have known what ought to be done, and Europe would certainly not stand, as is now the case, before the discouraging prospect of seeing another of her important branches of

plant-culture so seriously threatened, even if it is not already irretrievably undermined.

In Sweden, immediately after the discovery of the first infected area, the strongest steps were taken by the authorities concerned, in order if possible to stop the pest in its progress. The Royal Swedish Academy of Agriculture at once circulated through the kingdom a pamphlet, in which the notice of the public was directed to the new enemy, and the necessary instructions were given for dealing with it.

Further, the Royal Swedish Government has decreed a temporary prohibition against the import of foreign Gooseberry-plants and Gooseberries.

I cannot help seeing, in the immigration of the Gooseberry-pest mentioned above into our previously-exempt region of the world, a powerful warning which should induce those who have the power and perceive the responsibility not to put off longer or indefinitely the creation of a systematic international work for the combating of plant-diseases. Much preliminary work in the matter has already been settled. It is now only necessary that a European Government should take up the matter in earnest, and carry it to a speedy and successful solution.*

In conclusion I would point out that Gooseberry Growers in England may best realise the danger threatening them by visiting a Hop-garden overrun by the Hop-mildew, or a Rose-garden where there is an epidemic of Rose-mildew. The American Gooseberry-mildew is a species* very closely related to the Hop and Rose-mildews, and would flourish no less vigorously than do these in the English climate. Where it has occurred in Ireland it has often caused the wholesale destruction of the Gooseberry crop. It is not too much to say that if once it is allowed to gain a foothold in the Gooseberry-growing districts of England, it will never be completely expelled.

So long as the disease is allowed to flourish in Ireland, it menaces the English grower. English Gooseberry growers should demand of the authorities the prohibition of uncontrolled importation of Gooseberries into England or Ireland, and they should demand further that every means be taken to stamp out the disease in Ireland. It has already been ascertained that the mildew has been introduced into Ireland by diseased stock imported into nurseries from America; further action in the matter lies beyond the power of the individual, and must be undertaken by the Government, possibly with international assistance. Resolutions have already been passed by the Vegetable Pathological Section at the International Agricultural Congresses, and these should form the basis for international procedure.

In those countries in which the Government most fully recognises the economic importance of vegetable pathology, as in the United States, New Zealand, and Sweden, the adoption of precautionary measures for the avoidance of fungus diseases has been enforced by legislation. In such countries the passing of Acts framed to prevent the

introduction into the country of certain plant-diseases have safeguarded the interests of the agriculturist and horticulturist in the same way as those of the animal-breeder have for a long time been protected by the various Acts prohibiting imports of diseased or suspected animals. *E. S. Salmon, F.L.S., F.R.H.S.*

[We are sorry to say we have recently received some badly infected specimens, but from what source we do not know.—Ed.]

NEW OR NOTEWORTHY PLANTS.

THE TRICUSPIDARIAS.

WHEN Mr. H. J. Elwes, F.R.S., was in Chili in 1901, he collected bulbs, tubers, and seeds of many interesting plants, a set of which he presented to Kew. Among them were seeds of a "white-flowered shrub," from which plants were raised, and this year one of the plants flowered in the Temperate-house. It proves to be a second species of *Tricuspidaria*, better known in gardens as *Crinodendron*, and on careful comparison with the specimens in the herbarium it is found to be unquestionably *T. dependens*, Ruiz. and Pavon., whilst the plant figured in the *Botanical Magazine*, t. 7160 (1891), is *T. lanceolata*, Miquel in *Linnaea*, xv. (1852), p. 650. So far as I can ascertain this is the first time that the white-flowered species has been introduced into English gardens, and as it is likely to become a popular shrub in gardens where Chilian plants thrive we may as well begin by getting its name right. Already it is flowering in the garden of Colonel Tremayne at Carelew, near Falmouth, and I hear of its doing well in Ireland. At Kew it has formed an *Escallonia*-like shrub 5 feet high, but so far it has not flowered so freely as it does in Chili, dried specimens showing shoots with numerous axillary flowers, forming quite a cluster on the short-noded branchlets. The names and synonymy of the two species are as follows:—

T. LANCEOLATA, Miquel (*T. dependens*, Hort.; *T. hexopetala*, Turczaninow; *T. Patagua*, Miers; *Crinodendron Hookerianum*, Miers; *C. Patagua*, Cavanilles).—A shrub or small tree attaining the height of 30 feet in Chili, where it is common; branchlets, petioles, peduncles and calyx pubescent, more or less horizontal in habit; leaves narrow, 3 to 5 inches long, serrulate, with strong nerves beneath; flowers axillary, solitary, pendulous; peduncle 2 to 3 inches long, green with red speckles; sepals pubescent, greenish-red; corolla urn-shaped, over an inch long, very fleshy, grooved, blood-red. The buds are formed months before the flowers are fully developed. The plant has been in cultivation for at least twenty-five years, and it is now fairly well known. It requires the same conditions under cultivation as *Lapageria rosea*.

T. DEPENDENS, Ruiz. and Pavon.—A shrub 7 feet or more high, glabrous in all its parts; branches, petioles, and peduncles dull red; the branches sub-erect; leaves varying from 1 to 3 inches, oblong or obovate, crenate, pale green below. Flowers axillary along the branches, clustered on the ends of the branchlets, horizontal rather than pendulous; peduncle 1 to 2 inches long; calyx small, toothed; corolla cup-shaped, $\frac{3}{4}$ inch long, composed of five fleshy white petals, each with three teeth at the apex; ovary triangular, glabrous. This plant has grown very freely in the Temperate-house at Kew along with Himalayan *Rhododendrons*, *Desfontainea*, &c.; it is therefore probable that where the conditions of temperature and moisture are suitable it will form a serviceable shrub for the open air. *W. Watson.*

* I have given a full description of the fungus (with figures), together with an account of its method of attack, and the best preventive measures to be taken, in vol. xxv. of the *Journal of the Royal Horticultural Society*, p. 139, and in the succeeding volumes.

GENTIANA LAWRENCEI.*

A HANDSOME Gentian, brought into cultivation by Herr Max Leichtlin, of Baden-Baden. The specimens from which the description given below is drawn flowered in the garden of Sir Trevor Lawrence at Burford, Dorking, to whom we are indebted for the specimens here illustrated (fig. 119). The original seeds were collected by M. Jules Brocherel on a journey into Mongolia from Lake Baikal. *Gentiana ornata*, its nearest ally, is a native of the Eastern Himalaya and South-West China. *Gentiana ternifolia*, Franchet, is another ally which comes from Yunnan; *Gentiana tetraphylla*, Kusnezow, and *G. hexaphylla*, Maximowicz, are allies growing in Szechuan. The whole group

cultivation prior to the introduction of *G. Lawrencei*.

The flowers of *G. Lawrencei* are $1\frac{3}{4}$ inch long, upright, and blue above, the lower part of the tube being pale, with dark blue lines. They stand solitary on the ends of ascending narrow-leaved branches. *J. H. Burkill, Calcutta.*

FORESTRY.

BELGIAN FORESTRY.

(Continued from p. 182.)

SYLVICULTURAL METHODS.—In the last article on Belgian Forestry a short general account of

the felling of the old crop. The method now adopted is to regenerate under a fairly good canopy, and in groups or clumps. Specimens of both methods were seen in the forest of Soignes, near Brussels. With the old method the ground was being planted up with Scots Pine to begin with, and after these had attained a height of 8 or 10 feet, Oak and Beech were being introduced in the form of large transplants; but the result was not altogether satisfactory. The idea was that the Pines would protect the hardwoods from late frosts, to which the locality is very subject; but the hardwoods used were evidently too large to get properly established, and many were dead or dying, while they were quite as liable to be damaged by frost as if planted from the first.

The group system of regeneration was very successful, and will eventually result in giving the forest a more natural appearance, very much resembling what is often found in the Beech woods on the Chiltern Hills. It is possible, however, that the returns may not be so good with this system as with one which deals with larger areas stocked with crops of uniform ages, as, for instance, what is known as the compartment system. This particular forest, which is one of the finest Beech forests in the country, or even in Europe, was originally planted on land containing a growth of Birch, Willows, and other indigenous plants. The trees were put in about 7 feet apart, the natural growth acting as nurses for the first few years. In the best parts of it magnificent stems with a total height of 100 to 120 feet and with about 80 feet of clear stem may be found, and the stock of timber per acre often amounts to 8,000 to 10,000 cubic feet.

In the case of Spruce, Scots Pine, and other trees, planting is always adopted. Plants are put in with a planting-iron or spade specially adapted for the purpose; and in general the method does not differ greatly from pit-planting in this country. Where damage from game is feared, thick planting (2 to 3 feet apart) is preferred; but in other cases the plants are put in rather wider than is usually considered desirable with us. On the whole, however, planting is carefully done, and plants more than three years old are rarely used. Where peat or turf cover the surface, it is either removed altogether in lines or patches when thin, or, in the case of thick peat, it is broken up two years in advance. On a high peat moor adjoining the forest of Hertogenwald, the soil was prepared for Spruce by taking out shallow ditches, and depositing the peat from these in rows of low mounds on the interspaces. Three-year-old Spruce plants were ultimately planted on the mounds, the roots of each plant receiving a handful of artificially manured soil at the time of planting. Various methods had been tried, and the above was found to be most successful on the whole.

Another interesting form of soil preparation for Scots Pine was seen near Villers la Ville, where a crop of this tree, about thirty years of age, and growing on pure sand, was being grubbed up by the roots by an arrangement of pulleys on sheer legs. It was stated this could be done at a small profit, owing to the gain in material obtained as compared with felling in the usual way, while other and more important advantages were the absence of Pine-weevils, and the stirring up and clearing of the ground, which allowed the use of small plants in replanting. A feature of the soil in this forest was the difference repeatedly occurring on south and west, from that on north and east slopes. On the former poor sand prevailed, permitting nothing but easily satisfied Conifers to be grown, while on the latter a covering of good loam produced Oak, Ash, and other hardwoods to perfection.

One of the most instructive examples of reclamation of waste land by means of planting was



FIG. 119.—GENTIANA LAWRENCEI: FLOWERS DEEP BLUE.

consists of plants with showy flowers, but *G. ornata* is the only one which has been in

* *Gentiana Lawrencei*, Burkill, species nova.—*G. ornata*, Wallich, valde affinis foliis autem elongatis distinguitur. Planta perennis diffuse caespitosa. Caulis plures, subdecumbentes, nec angulati, ad 10 cm. longi. Folia nitentia, arcuata, per paria vaginato-connata, infima 5 mm. longa, supra 20 mm. longa, 2 mm. lata, acutissima; vagina 3 mm. longa. Calycis tubus 13 mm. longus, margine membranaceo integer; dentes quinque foliis supremis persimiles, parum inaequales, 14–18 mm. longi. Corollae tubus 40 mm. longus, infra albidus et atro-coeruleo-striatus, faucibus coeruleis: lobi deltoideo-ovati, acuti, late coerulei, 5 mm. longi, 4 mm. lati; plicarum lobi late deltoidei, 2 mm. longi, 4 mm. lati, margine subintegri. Filamenta 30–32 mm. longa, ad corollam infra medium annexa, violacea. Ovarium 12 mm. longum; stipes basi mellifluus fere 20 mm. longus; stylus 1 mm. longus; stigmata 8 mm. longa.

the condition and extent of the woodlands was given. A few particulars of the methods of regeneration and other practical work carried out in the woods may now be mentioned.

Natural regeneration is only trusted to in the case of Beech, and only then when there is every appearance of a successful issue. The old method was to leave about twenty seed-bearing trees standing at the final felling of the crop, but it was found that these trees became stag-headed, and their bark became scorched by direct exposure to the sun. Before anything like a full crop of seedlings appeared, therefore, the ground was covered with a rank growth of weeds and rubbish, and planting, which finally had to be resorted to, was a more difficult matter than if it had been carried out immediately after

seen in the communal woods of Rochefort. The soil here was simply loose limestone rubble, producing naturally nothing but a thin growth of grass worth about 1s. per acre. The high-lying part of this land was planted about thirty years ago with Scots and Austrian Pines, practically the only trees which could exist there. After twenty years under Pines the ground is planted or sown with Beech, and the gradual accumulation of humus will in time enable a Beech forest, worth from ten to twenty shillings per acre as a going concern, to exist on what was practically worthless land. As regards contour and the nature of the soil and herbage this land resembles as nearly as possible that found on the Cotswolds, and which is generally considered so difficult to deal with from a forestry point of view. An interesting fact brought out was the testimony of old inhabitants that the deposit of dew in the adjoining fields had been greatly increased since the planting of the woods, probably due to their acting as obstacles to wind currents. *A. C. Forbes.*

(To be continued.)

WARTY DISEASE OF POTATOS.

I RECENTLY received from Mr. Charles Golding, of Tamworth, a Potato affected with this disease. It was dug up from a garden there, where such a thing had never been seen before. The garden, he says, is formed of "an ordinary light soil with a gravel bottom, and is on a slightly elevated piece of ground."

The appearance presented is seen in fig. 120. The warty outgrowth measured about $1\frac{1}{2}$ inch across by nearly 1 inch in height. It was composed of a great number of rounded and wrinkled convolutions of a brownish-green colour, ultimately becoming blackish.

On cutting a section the interior was seen to be composed of the ordinary cells of the Potato, rather smaller perhaps than usual, but full of the normal starch grains. The mass had begun to grow at an "eye," and was not attached to the Potato except at the centre of its base. Many of the cells were discoloured, and this was found on microscopical examination to be due to an immense number of brown spores embedded in them. Each spore occupied one cell, and they usually occurred in groups of twenty or more (fig. 121A).

The spores were oval, densely granular within, smooth outside, but sometimes closely invested with the brown angular remnants of the host-cell in which they had been formed. They measured on the average 50 by 40 μ , but varied from 30 to 70 μ in length. When young they were smaller and colourless; when mature, bright chestnut-brown (fig. 121B). Occasionally a large guttula or oil-drop was seen in the centre, and they reminded one singularly of the teleutospores of *Uromyces*. I was not able to see them attached to any mycelium, but there were found in the neighbourhood some branched colourless unseptate hyphæ, which were occasionally swollen at irregular intervals.

The fungus is doubtless the *Phycomycetous* fungus called by Schilberszky *Chrysophlyctis endobiotica*, and is evidently allied to *Urophyctis pulposa*, Schröter, which causes large, round, warty growths on Mangolds and other *Chenopodiaceæ*. These species belong to that section of the *Phycomycetes* which includes *Chytridium*, and both have been referred to (*Edomyces leproides*, Trabut, but *U. pulposa* is described as having several resting-spores in each parenchyma-cell of the host, instead of one only as in the fungus here described, and also has an empty basal cell usually attached to each spore.

C. endobiotica gains admission to the Potato at the "eye," and causes a kind of gall-like tumour by stimulating the neighbouring cells to hyper-

trophied growth. If Potatoes are planted next year in the same soil, they will inevitably be attacked, as the spores described are resting-spores and are able to survive exposure to the frosts. If this potato-parasite were the same as that of Mangolds, as is still maintained by some, then it would be injurious to plant Beet or Mangolds on the same ground for at least a couple of years; but if they are different, as seems certain, then no harm would result. I should be glad if anyone who finds specimens of the warts on Mangolds would send them to me at the address given below.

This disease was not certainly known in England until 1900, though previously (in 1896)

harm to Potato crops in Cheshire and North Wales. The disease-resisting power of the Potato must have deteriorated in later years. There can be little doubt that this tendency will manifest itself still further, unless strenuous efforts are made to combat it by continually raising from seed new and stronger varieties.

I have visited some gardens at Sutton Coldfield Warwickshire, in which the disease is very prevalent. It seems that it was introduced three or four years ago with some "seed" suspected to have come from Germany. Since then it has occurred every year with gradually increasing virulence. This year very few Potatoes on the ground have escaped; among the infected sorts

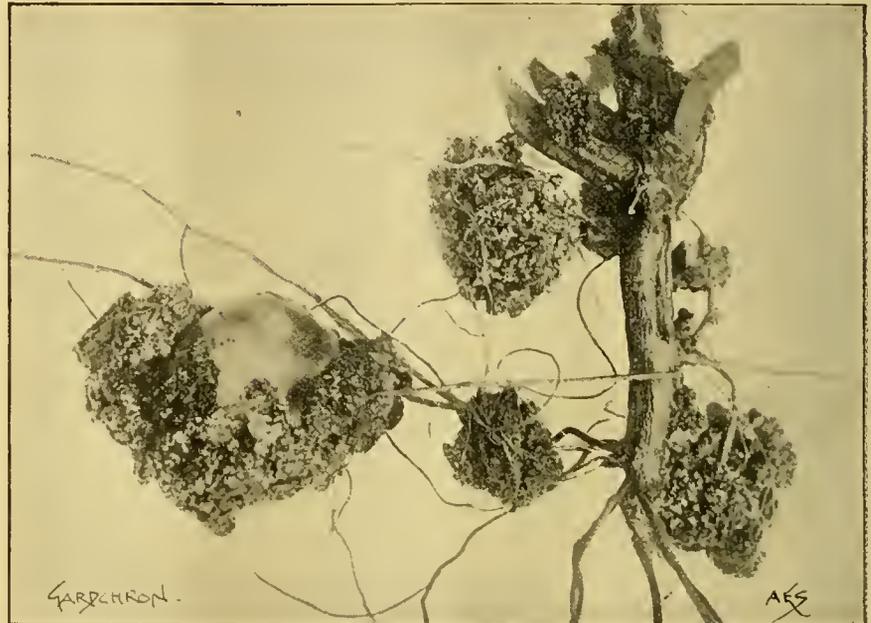


FIG. 120.—POTATO TUBER AFFECTED WITH WARTY DISEASE.

reported on the continent; and the Mangold tumour was not noticed in Ireland till 1903, though reported from Algiers as long ago as

being Evergood, Up-to-Date, and King Edward VII., all badly attacked. Though Beet-root is grown upon the same ground, no tumours have been noticed upon that crop. The disease has now spread to all the neighbouring villages.

A comparison of the various outgrowths seen on these specimens makes it clear that they are composed of the shoots growing from the "eyes," which, instead of remaining dormant till next year, are stimulated to premature growth by the presence of the fungus. They vary in size from that of a pea to a tumour as large as the Potato itself; in fact, often the whole Potato (probably attacked when very young) becomes transformed into a huge irregular warty mass, which sometimes shows above-ground, and then becomes green, as the tubers themselves do under such circumstances. *W. B. Groves, 53, Linwood Road, Handsworth, Birmingham.*

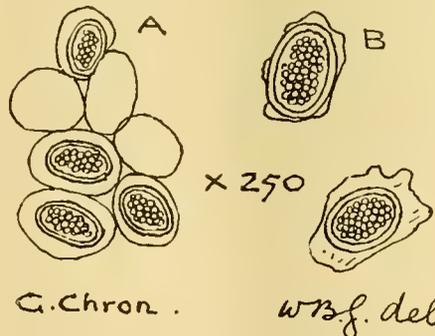


FIG. 121.—

- A, Cells of tumour, four containing resting spores, the others full of starch grains (not shown).
B, Ripe resting-spores, enveloped in the remains of the cell, which is brown and shrivelled.

1894, and possibly detected in England in 1901, it is therefore evident that our list of parasites on cultivated crops is still increasing.

A correspondent, "R. N.," in the *Gardeners' Chronicle* for December 19, 1903, says that he thinks he saw this growth at Upwell, Cambs, about 1878, but he is not sure, since at that time it was regarded as a curiosity, not as a disease. Since then, however, it has done considerable

KEW NOTES.
DASYLIRION QUADRANGULATUM, *Screno Watson*.—This gigantic Liliaceous plant, with its stout, pole-like inflorescence reaching to the roof, is now a feature in the Succulent-house. The plant is probably the finest specimen of the species in this country. It has a cylindrical trunk measuring 2 feet in height and 1 foot in diameter. From the top of the trunk arise a number of slender, horny four-angled leaves, the oldest being 7 feet in length, and rather less than half an inch wide in their broadest part. The erect, spike-like panicle is 14 feet in height, and presents a

stately appearance. The leaves, which have large, sheathing bases, are gradually reduced in size as they ascend from the base of the flower-stem upwards, until they are ultimately reduced to large, prominent brown bracts that are produced in close succession to the top of the inflorescence. The plant is a native of Mexico.

¶ *XANTHORRHEA QUADRANGULATA*, F. Mueller.
 One of the "Grass Gum" trees of Australia, *Xanthorrhœa quadrangulata*, is also flowering in the Succulent-house. There are about fifteen species belonging to this genus, though few are under cultivation in this country, those that are being practically confined to botanical gardens.

The stamens are white, very slender, and comparatively long; the anthers are light yellow in colour. A period of about six weeks is necessary to develop all the flowers on the spike, and the inflorescence remains on the plant for about a year after opening. W. H.

VITIS (AMPELOPSIS) HENRYANA.*

(SEE FIG. 122.)

MESSRS. JAS. VEITCH & SONS lately forwarded us a spray of an *Ampelopsis*, which they justly qualified as magnificent. In appearance it is

NOTICES OF BOOKS.

THE FUNGUS FLORA OF YORKSHIRE. By G. Masee and C. Crossland. (London: S. Brown & Sons, Faringdon Avenue.)

We can imagine some purists objecting to the use of the word "Flora" in connection with fungi. If the objection be that the fungi have no flowers in the ordinary sense, it may be replied that, in some cases at least, as much or more is known of the reproductive processes in fungi than in the so-styled higher plants.

In some instances, too, we seem to know too much, if that be possible. At any rate, it is



FIG. 122.—VITIS HENRYANA: LEAVES RICHLY COLOURED, WITH CENTRAL WHITISH STRIPES.

Xanthorrhœas are very ornamental plants, and are excellent subjects for subtropical bedding. In their native habitat they attain to a great age, as may be seen by the fine stems exhibited in the wood museum at Kew.

The plant now flowering has a stem measuring 5 feet in height and about 9 inches in diameter. From the top of the stem arises a tuft of glaucous, grass-like leaves, which are quadrangular in shape, from which circumstance the specific name is derived. The stiff, erect spike of small flowers is developed from the centre of the crown of leaves, and in general appearance is very similar to the inflorescence of the common Bulrush. The spike measures nearly 6 feet in height; the small greenish-white flowers open from below upwards.

very much like the old Virginian-creeper, but the colour is even more gorgeous, and the nerves in the centre of each leaflet is marked by a puberulous silvery band, which greatly adds to the effectiveness of the plant. The colour of the young leaves is brilliant translucent scarlet, passing as the leaves get older into rich carmine, and ultimately into ruddy-bronze with the silvery marking before mentioned.

The plant is a native of Hupeh and Ichang, Central China, where it was discovered by Dr. Henry, and whence it was introduced to Messrs. Veitch's nurseries by Mr. E. H. Wilson. It is, we believe, quite hardy.

* *Vitis Henryana*, Hemsley, in *Journ. Linn. Soc.*, vol. xxxiii., 132.

embarrassing to find that a species we thought we knew at least by name is now found to have no right to a separate appellation at all. Thus *Tubercularia vulgaris* is now shown to be the conidial stage of *Nectria cinnabarina*, and *Fusarium Solani* is one stage in the life-history of *Nectria Solani*. That species is indeed polymorphous, for in one stage it is a *Monosporium*, in another a *Fusarium*, and in a third a *Cephalosporium*. Such instances as these render the preparation of such a list as we have before us one of peculiar difficulty. It is, we are told, a summary of the information obtained in fourteen successive annual "forays" in various parts of the county, added to a large number of records made by individual collectors.

The total number of records for the county amounts to 16,700, and the number of species to 2,626, or more than half the total number known to be native to Britain, viz., 5,000 species. Valuable as the present enumeration is, the compilers are far from considering it complete. Paucity of records from any given district implies lack of investigation rather than absence of fungi. At any rate the student is here provided with an excellent list which will serve as the nucleus around which further information may in future be concentrated. We specially want more information as to the life-history of the several species. If this requirement be difficult of attainment except by the trained student with all the appropriate means at his disposal, the investigation of the conditions under which the fungi make their appearance is more within the competence of any observant naturalist. The question of the degree of citizenship is also a matter for consideration. Thus, we find *Lepiota limphora* enumerated from several localities, but in each case from a greenhouse. From an ordinary "Flora" such plants would either be excluded or they would be marked as aliens. In any case it would be desirable to specify the original home of the species, and point out the probable means by which it gained access to greenhouses and ferneries. The list bears all the marks of accuracy and careful compilation, and reflects credit on the Union of Yorkshire Naturalists, under whose auspices it has been published, and who have by so doing rendered a conspicuous service to botanical science.

STONE GARDENS: with Practical Hints on the Paving and Planting of them, together with Thirteen Original Designs, and a Plan of the Vestal Virgins' Atrium in Rome. By Rose Haig Thomas. (Simpkin, Marshall, Hamilton, Kent & Co.)

The title of this book is sufficiently indicative of the nature of its contents, though we rather demur to such structures as it is intended to illustrate being called gardens. The designs are such as might emanate from an architect's office. Some of our readers will remember Mr. Nesfield's designs carried out in crushed brick, coloured glass, and other similar material, which were eventually laughed out of existence.

A garden of paving-stones arranged in formal devices might be acceptable in a Persian desert where no plants would grow, but would scarcely find favour in the eyes of those who look on gardens as places in which to grow plants. Some of the simpler designs might be useful in terrace gardens of a rigidly formal character, and the directions for planting are judicious. The names of plants, however, present peculiarities of spelling, which indicate the necessity in a future edition of having the proofs read by some one conversant with the technicalities of botanical science.

BULLETIN DE LA SOCIÉTÉ FRANÇAISE D'HORTICULTURE DE LONDRES.

This interesting annual publication is somewhat late this year in making its appearance, but it is nevertheless just as welcome as ever. We are pleased to notice the continued stream of prosperity that seems to flow towards the Society, and the sympathetic help that it draws towards itself from both sides of the Channel. English and French gardeners were perhaps never on better terms than they are to-day, although the relations have always been cordial. The Society usefully helps any gardener who wishes to take advantage of the opportunities offered, and from a language point of view alone there is no doubt that there are more French horticulturists who know English, and more English horticulturists who know French, than there were a generation or two ago.

We notice a capital portrait of M. Philippe de Vilmorin, who presided at the Society's annual dinner last January, and also the accompanying biographical sketch by M. George Schneider, the devoted and genial President of the Society. The contents are much the same as usual—viz., lists of members, financial statement, library catalogue, reports of the monthly meetings, and papers read by the members. Financially and numerically progress has again been made, and we do not wonder at the large measure of support given by many of the leading nurserymen and horticulturists on both sides of the Channel to so deserving an institution, whose watchword is undoubtedly peace and goodwill to all men on earth.

The Week's Work.

THE ORCHID HOUSES.

By W. H. YOUNG, Orchid Grower to Sir FREDERICK WIGAN, Bart., Clare Lawn, East Sheen, S.W.

Resting Orchids.—All pseudo-bulbous Orchids at some season of the year pass a long or a short period in a dormant state, this period generally coinciding with the dry season of the country of which they are natives. The pseudo-bulbs and stout leathery leaves providing a reserve store of water and liquid nutriment, whilst the conditions are unfavourable to growth. Fortunately in most instances the resting period is during our winter season, when the absence of light and the necessary use of artificial heat produce conditions in which new growth is undesirable. In the native habitats of these plants the circumstances are favourable to the process of ripening and resting the previously made growths, but in our Orchid-houses the conditions being artificial are less perfect, and some of the essentials are altogether lacking. For instance *Dendrobiums* in their natural home are subjected to much light and heat during their resting period, whilst here there is very little light and the degree of heat varies much. But knowing the needs of the different plants, one has to make the most of cultural devices, employing them with carefulness and common sense. Most growers recognise the fact that as much or more knowledge and forethought have to be expended on the successful resting of many Orchids as are required during the growing season. Light we cannot give [What about the electric light?], but heat, atmosphere, and moisture can be modified almost as we think desirable, and it is in the giving or withholding of these that success or failure is brought about. Moderation is necessary to success, though in or near large towns light is often so deficient that success cannot be assured even when the other essentials are fulfilled. The supply of water presents the greatest of difficulties when the occasion demands its application, for the quantity to apply and the method of giving it are questions requiring great consideration. In the case of *Cattleyas* and *Lælias* it is not altogether prudent to withhold water until shrivelling is apparent, but just sufficient to prevent this should be given just at the time when shrivelling is anticipated, and not before. Also, in the case of the deciduous *Dendrobiums*, though no active life be visible, water at the right moment is needed to keep them from harm. With these and other deciduous Orchids water, however, is rarely needed when the pseudo-bulbs have become thoroughly matured. The resting of *Aërides*, *Vandas*, *Angraecums*, *Saccolabiums*, and other similar subjects depends more on experience than on any easily perceived signs in the plants themselves, as they have no pseudo-bulbs for the cultivator to study, and if the leaves are allowed to shrivel at all no amount of watering will retrieve their health. Much sphagnum-moss should not be allowed to remain about their base at this season, and no attempt at keeping it alive should be made after the tips of the Orchid roots have become sealed. *Bulbophyllums*, *Cirrhopetalums*, *Erias*, *Cœlogynes*, and such-like plants, should all, when growth has ceased, be carefully examined, and if any doubt arises as to the wisdom of giving water, its application should be deferred for another day or two.

Drip from the Bars, Laps of the Glass, &c.—When this falls on any plant it is almost sure to

have a deleterious effect, and when detected the plant should be moved at once. If the houses are not provided with "drip-proof" bars and rafters, it is a wise plan to remove early in the morning any condensed moisture that may have accumulated during the night, using for this purpose a sponge attached to the end of a suitable stake. Should moisture condense on the leaves and remain there well into the morning, it is evident there is too much evaporation at night and not sufficient circulation of air and heat to dispel it. In such a case means should be adopted to effect a remedy.

FRUITS UNDER GLASS.

By F. JORDAN, Gardener to Dr. CORBET, Impney Hall Gardens, Droitwich.

Peaches.—Early houses should now be cleaned and painted, and the plants should receive any pruning deemed necessary. Old wood that can be spared, and that was overlooked after the trees were cleared of fruit, and any old snags should be removed. Do not shorten any fruiting wood on either Peach or Nectarine-trees, unless it be for the purpose of equalising the balance of growth, although this should have been regulated during the growing season by pinching the points of the strongest shoots. The ties of the trees should be removed, and the plants carefully washed with a solution of Gishurst Compound, 5 oz. to a gallon of water, or with some other approved insecticide. This treatment is more efficacious than that of using mixtures of clay, soot, &c., for eradicating red-spider or brown-scale. Thoroughly cleanse the house, wash the walls with hot lime-wash, and top-dress the borders. If any new trees are to be planted, this work should be pushed forward. Large trees from outside walls which were specially prepared for the houses by being root-pruned last season will have developed good roots, and be in a suitable condition for removal. Newly-planted trees should have their main branches tied loosely until the soil is settled down, but the smaller shoots should not be tied until later. Avoid tying the shoots tightly, as this restricts growth and checks the circulation of the sap. Remove the surface soil down to the roots of established trees and apply a top-dressing of fairly strong loam, lime-rubble, and wood-ashes, giving old trees and any that require it a good sprinkling of bone-meal. Keep the atmosphere of the house as cool as possible with free ventilation until the time arrives for starting the trees into growth. Do not permit other plants in the houses.

Succession Houses.—The old fruiting-wood must be removed from the trees and proper attention given to watering and syringing. As the wood matures the leaves must be allowed to fall naturally. Any root-pruning or renovating of trees in these and later houses should be attended to as opportunities occur, and this work should be finished before the leaves fall, according to the directions given in the Calendar of September 16. Afford all trees a good watering before they are lited or root-pruned, and another good soaking when this is finished, in order to settle the soil well amongst the roots. A few maiden trees of moderate growth should be selected annually, according to demand, from some good nursery to hold in readiness for the purpose of replacing old or unsatisfactory trees.

THE KITCHEN GARDEN.

By W. FYFE, Gardener to Lady WANTAGE, Lockinge Park, Wantage.

Asparagus.—The top growths should not be cut off as soon as they turn yellow, but should be allowed to become quite withered first. The middle of November will generally be found sufficiently early to remove them from the bed. No weeds, however, should be permitted to grow, as they tend to exclude light from the crown of the plants, and are injurious from every point of view. It is essential that the crowns should become perfectly matured. The application of heavy dressings of decayed farmyard manure at this season would keep the beds in a rather dark and cold condition during the winter months, and therefore it is preferable to apply droppings from the stables collected as for Mushroom-beds,

as these are light, rich and warm. Spread these^o over the beds to a depth of about 2 inches thick. In addition to this top-dressing, a dressing of chemical manure, as prepared for Asparagus by Willis, Brothers, Harpenden, may be given at the rate of $\frac{1}{2}$ lb. to the square yard, repeating this application again in spring.

French Beans.—As there have been 10°, 11° and 12° of frost in the third week of October, these tender plants have needed a considerable degree of protection, but owing to bright warm sunshine during the day it was also necessary to admit air freely to the structure. Batches of French Beans that have been removed to heated pits or houses, should be kept near to the glass in a temperature which falls to 65° at night. Before and after the plants have flowered, afford them occasional syringings with tepid water to destroy red-spider.

Leeks.—Draw several inches deep of soil around the stems of Leeks intended for use during winter, in order to blanch the stems and bring them into suitable condition. Those that will not be used until spring should not be earthed up before the commencement of the new year. Leeks which have grown to a very large size seldom keep well.

Mushrooms.—If in any of the beds the heat has declined below 70°, cover them with some hay or straw, but if the surface appears dry apply water at a temperature of 80° before making the covering. The practice of applying water to beds before the Mushrooms appear is not to be commended, moisture in the atmosphere being much preferable. Collect material for making beds to come into bearing in January.

Autumn Onions.—A plantation may now be made in order that the plants may have time to become established before the weather is more severe. If plants from this sowing are scarce, let seeds be sown in a few boxes, which can be placed in cold frames for the winter. Good plants may thus be raised for the making of plantations in spring. The Queen and Ailsa Craig are good varieties for this purpose, being of quick growth and good quality.

PLANTS UNDER GLASS.

By A. BULLOCK, Gardener to E. J. WYTHES, Esq., Copped Hall, Epping, Essex.

Temperatures.—Owing to the occurrence at present of bright sunshine by day and sharp frosts at night there is need for much more artificial heat than is usual at this season of the year, but in order to reduce the amount of fireheat required, advantage should be taken to conserve as much of solar heat as possible by closing the structures early in the afternoon.

Stove Foliage Plants.—Let the temperature in the plant stove be reduced to 65° by night, but in other respects treat the plants as advised in a recent Calendar.

Dodalanthus parvus.—This useful plant may be had in bloom at different seasons, and if grouped among other subjects with brighter-coloured flowers the contrast is pleasing. Plants may be raised from seeds or by cuttings, but for raising plants to flower late in the season the former method is preferable. Let the plants now coming into bloom be given the advantage of a warm atmosphere, and afford the roots an occasional application of manure-water obtained from the soaking of sheep-droppings.

Hymenocallis macrostephana having fully developed its foliage, it should be removed to a structure where the atmospheric temperature is not allowed to fall below 55° at night. The plants require less water at the roots than formerly, but an occasional application will be necessary.

Clerodendron fullax.—Plants intended for furnishing a supply of cuttings in early spring should be rested in a cool-house and kept comparatively dry at the roots for some time previous to being started into growth.

Begonia.—Afford those plants of *B. corallina* and *President Carnot* that have passed out of flower a period of rest by placing them in a cooler atmosphere, where the temperature at night will be 55°. Keep them moderately dry, but afford an occasional application of much-diluted

sheep-manure water. No attempt should be made to produce sufficient drought to cause the foliage to wither. Cuttings of *B. Haageana* may be rooted at almost any time. This *Begonia* is useful when grown as a pot-plant; but, as I have remarked before, in order to see them to the best advantage, the plants should be grown on a wall together with Ferns.

Flowers during Winter.—In order to maintain a supply of flowers towards the end of the year it will be necessary to introduce to the forcing pits batches of plants each week or fortnightly, as the case requires. Such plants are *Freesias*, *Roman Hyacinths*, &c. Examine occasionally the bulbs that have been plunged in ashes and are intended for forcing purposes. Examine occasionally *Cinerarias* and *Primulas* that are still in cold frames, and remove any decayed foliage.

THE HARDY FRUIT GARDEN.

By W. H. CLARKE, Gardener to Sir WILLIAM PLOWDEN, Aston Rowant House, Oxon.

Strawberry Beds.—Remove any runners which have been formed, and clear the beds of weeds. If there are any cess-pits to be emptied let the contents be poured between the rows. Hoe the surface of the ground between the plants in new plantations, and if young plants have still to be put out no further delay should be permitted. Plants growing in 6-inch or 5-inch pots will produce a good crop of fruit next year if planted at once.

Autumn-fruiting Strawberries.—The varieties *St. Antoine de Padoue*, *Oregon*, and *St. Joseph* will yield ripe fruits for some time longer if protected with a hand-light or bell-glass, otherwise a box frame may be placed over them to keep off rains. Keep a sharp look-out for slugs. Plants of these varieties grown in pots for supplying fruits from now onward to Christmas should be placed in frames and protected from frost, removing a few plants into warmth as occasion demands to ripen the fruits. By such means some really first-rate fruits can be obtained.

Budding.—Examine buds that were worked during the present year and remove the ligatures, not leaving them until spring. Any stocks on which the buds have failed to grow may be grafted next spring.

Morello Cherries.—The pruning and retying of these trees should be proceeded with as soon as possible, for if these operations are undertaken before the cold and wet weather prevails they can be performed more expeditiously and with greater comfort to the operator. The trees should first be entirely removed from the wall or wires, during which operation all shoots which have borne fruit during the current year, and that are not required for extension purposes, should be removed with a sharp knife. Young trees often require some of their fruiting shoots to be retained, because growths formed from these are required for covering the wall. After all unnecessary and superfluous growths have been removed, the trees should be thoroughly cleansed with Gishurst's Compound, applied according to the instructions supplied with the preparation. The prunings and leaves should be raked up and burnt, in order to destroy as far as possible any traces of black and green-fly or other lurking pests. In securing the trees to the walls clean shreds, nails, and string must be used. Train the growths made during summer evenly and thinly at about 4 inches apart, radiating them so as to form a perfect fan-shaped tree from the main stem.

Pruning Gooseberry Bushes.—In gardens where Gooseberries are grown extensively and provided efficient means of protecting the buds from birds can be given, pruning is best undertaken early in the season. Two methods of pruning Gooseberries are employed, and these are practised according to whether large fruits are required or an abundance of berries for use when in a green state. If the former are desired, the growths must be thinned out and shortened severely, but they may be allowed to grow much more thickly together when it is intended to use the berries in a green condition. At the present time the leading shoots require to be shortened to half their length, and the spur-

shoots proceeding from the main branches shortened in the thicker portions of the plant to one or two inches, leaving them longer in those parts of the bushes where a space requires to be filled. Train the bush so that the centre is open to air and light, and in no case allow the branches to become crowded and thus hinder the operator when gathering the fruits.

Protecting Gooseberries from Birds.—In these gardens a single wire supported by stakes is run over the tops of the bushes. This wire keeps the fish-netting away from the shoots and protects the buds from birds. Other devices that can be employed for protecting the buds from birds are those of placing cotton between the bushes by means of the patent garden webber, and of tying the branches of the bushes together so that the bullfinch and house-sparrow cannot work amongst the shoots.

Gooseberry Cuttings.—Shoots 9 to 12 inches long, and from which all but three or four of the top buds have been removed to prevent the formation of suckers, should now be inserted in the ground for two-thirds of their length. Make the ground about them firm with the heel of the boot.

THE FLOWER GARDEN.

By W. A. MILLER, Gardener to Lord HENRY C. BENTINCK, M.P., Underley Hall, Westmoreland.

Lobelia fulgens "Firefly" and other varieties have very bright scarlet flowers that look well seen in a mass. When grown in a deep rich soil containing much humus, the plants develop flowering growths over 4 feet long, 2 feet of which is clothed with flowers. This species of *Lobelia* is only half-hardy, consequently the plants must be taken up when the blooms are destroyed by frost, and stored in a dry frost-proof structure. Reduce the flowering spikes to 12 inches, after which lift the clumps with as much soil as possible adhering, and place them close together in boxes or in frames. Fill up the spaces between the roots with leaf-mould. The frame should be provided with means for obtaining artificial heat in order that a minimum temperature of 50° can be maintained. Very little water will be required by the plants during the winter season, but do not allow them to become too dry. Remove the old stems as they die down. *L. cardinalis* and *L. siphilitica* are hardier species than the above, but thrive well if afforded similar treatment.

Early-flowering Chrysanthemums.—The plants should be lifted when flowering is over. Choose "stools" showing a plentiful supply of suckers, and place these thickly in boxes for wintering in a cool structure.

Asters.—The choicer sorts of Starworts can be propagated at this season both by root division and by cuttings. Insert the cuttings or the stolons in a cold frame in a compost made of sandy loam and leaf-soil. *Chrysanthemum latifolium*, *C. maximum* and their varieties may be increased in the same manner as *Michaelmas Daisies*.

Vase Plants.—Summer occupants of vases, such as *Agapanthus umbellatus*, *Yucca recurva*, *Dracæna australis*, *Agaves*, &c., should now be housed for the winter. The first-mentioned plant has a mass of fleshy roots, and when carefully lifted can be stowed under stages or in a frost-proof shed or cellar. The vases can now be filled with Wall-flowers, *Saxifragas* (*Megaseas*), *Tellima grandiflora*, *Iberis*, *Helianthemums*, &c. Some of the hardier shrubs, such as *Mahonias*, *Ivies*, &c., are also useful for furnishing vases in winter.

Daffodils can still be planted in grass and under trees. Strew the bulbs so that they fall in groups that will appear natural when flowering. Cut the turf with a 2½-inch wide bulb-planter, and if the soil under the turf is of poor quality or stones are abundant, make the hole 4 or 5 in. deep with a trowel, and put in some rich compost (riddled potting-bench soil is admirable for the purpose), next insert the bulb, finally adding more soil, and replacing the sod. When planted the top of the bulb should be 2 to 3 inches below the surface of the turf. Choose free-blooming and strong-growing varieties for planting. Early-flowering varieties, such as *N. mimus*, are suitable for planting on lawns which are required to be mown early in the season.

APPOINTMENTS for NOVEMBER.

		National Chrysanthemum Society's Exhibition at the Crystal Palace (3 days).
		Hanley Chrysanthemum Show (2 days).
WEDNESDAY, Nov. 1		Cambridge Chrysanthemum Show (2 days).
		Brixton and District Horticultural Society's Show.
		Kent County Chrysanthemum Society's Exhibition (2 days).
THURSDAY, Nov. 2		Colechester Autumn Show.
		Torquay Autumn Flower Show.
		Spalding Potato Exhibition.
FRIDAY, Nov. 3		Derby Chrysanthemum Show (2 days).
SATURDAY, Nov. 4		Société Française d'Horticulture de Londres meet.
		Brighton Chrysanthemum Show (2 days).
		Royal Horticultural Society's Committees meet.
		National Rose Committee meets.
		Croydon Chrysanthemum Show (2 days).
		Belfast Horticultural Show (2 days).
TUESDAY, Nov. 7		Birmingham and Midland Counties' Chrysanthemum Exhibition (3 days).
		West of England Chrysanthemum Show at Plymouth (2 days).
		Highgate Chrysanthemum Show (3 days).
		Bournemouth Chrysanthemum Show (2 days).
WEDNESDAY, Nov. 8		Cardiff Chrysanthemum Show (2 days).
		Ascot Chrysanthemum Show (2 days).
		Stoke Newington and District Chrysanthemum Show (2 days).
		Sheffield Chrysanthemum Show (2 days).
		Eccles, Pendleton and District Chrysanthemum Show (2 days).
		Nottingham and Notts Chrysanthemum Show (2 days).
FRIDAY, Nov. 10		Bradford Chrysanthemum Show (2 days).
		Leicester Chrysanthemum and Fruit Show (2 days).
		Huddersfield and District Chrysanthemum Show (2 days).
		Stockport and District Chrysanthemum Show.
SATURDAY, Nov. 11		Burton-on-Trent Chrysanthemum Exhibition.
		South Shields and Northern Counties' Chrysanthemum Show (2 days).
TUESDAY, Nov. 14		Ijevics Chrysanthemum Show.
		Autumn Flower Show at Winchester (2 days).
		Royal Botanic Society's Show at Regent's Park.
		York Chrysanthemum Show (3 days).
WEDNESDAY, Nov. 15		Liverpool Chrysanthemum Show (2 days).
		Chester Paxton Society's Annual Exhibition (2 days).
		Buxton and District Chrysanthemum Show.
		Bristol Chrysanthemum Exhibition (2 days).
THURSDAY, Nov. 16		Edinburgh Chrysanthemum Show (3 days).
		Barnsley Chrysanthemum Show (2 days).
		Newport Chrysanthemum Show.
		Bradford and District Chrysanthemum Show (2 days).
FRIDAY, Nov. 17		Aberdeen Chrysanthemum Exhibition (2 days).
		Bolton Horticultural and Chrysanthemum Show (2 days).
SATURDAY, Nov. 18		Cheetham Hill, Broughton, and Crumpsall Flower Show.
TUESDAY, Nov. 21		Royal Horticultural Society's Committees meet.
		Leeds Paxton Society's Exhibition (2 days).
WEDNESDAY, Nov. 22		Woolton and District Chrysanthemum Show.
THURSDAY, Nov. 23		National Potato Society's Exhibition in the Royal Horticultural Hall (2 days).
FRIDAY, Nov. 24		Royal Botanic Society meet.

AVERAGE TEMPERATURE for the ensuing week, deduced from observations of Forty-three Years at Chiswick—45°.

ACTUAL TEMPERATURES:—

LONDON.—Wednesday, Oct. 25 (6 P.M.): Max. 47°; Min. 35°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—Thursday, Oct. 26 (10 A.M.): Bar., 30.3; Temp., 42°. Weather—Dull and foggy.

PROVINCES.—Wednesday, Oct. 25 (6 P.M.): Max. 47°, N. of Ireland; Min. 41°, N.E. Coast of England

SALES FOR THE WEEK.

MONDAY to FRIDAY NEXT—
Dutch Bulbs, at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 10.30.
MONDAY and TUESDAY NEXT—
Sale of Nursery Stock, at Cart House Lane Nursery, Woking, by order of Mr. R. Collyer, by Protheroe & Morris, at 12 o'clock.
MONDAY and WEDNESDAY NEXT—
Roses, Bulbs, Lilies, &c., at Stevens's Rooms, King Street, Covent Garden, W.C.
WEDNESDAY NEXT—
Seventh Annual Sale of Nursery Stock, at Shortlands Nursery, Shortlands, Kent, by order of Mr. J. B. Bryant, by Protheroe & Morris, at 11 o'clock.—
Liliums from Japan, Spiraeeas, Narcissus, Lily of the Valley, &c., at 3; Palms, Azaleas, Rhododendrons, Roses, &c., at 5, at 67 and 68, Cheapside, E.C., by Protheroe & Morris.
FRIDAY NEXT—
Imported and Established Orchids, at 67 and 68, Cheapside, E.C., by Protheroe & Morris, at 12.30.
(For further particulars see our Advertisement columns.)

PROFESSOR ERIKSSON, of

Plant Diseases. Stockholm, writes to us urging the necessity of establishing some sort of common action on the part of the several Governments with a view to the prevention and arrest of plant diseases.

Professor ERIKSSON takes as an example the case of the Gooseberry fungus (*Sphaerotheca mors uvae*), alluded to in another column. This pest has for more than half a century played havoc with the best sorts of Gooseberries imported into America.

In consequence of the prevalence of this disease American growers are only able to raise Gooseberries from the native *Ribes oxycanthoides* and *R. cynosbati*. These fruits are far inferior to those obtained from the European *Ribes grossularia*.

The fungus appeared first in 1900 in Ireland. It has steadily increased, and has now spread to Russia, Denmark and in a minor degree to Sweden, Norway and Germany. It recalls only too forcibly the Potato disease, Hollyhock rust, the Oidium and Peronospora of Vines, neither of which has wholly died out. Practically nothing has been done to check the progress of this comparatively new pest. No regulations exist to compel the publication of the names of the nurseries in which the diseased plants are located, and any measures taken to exterminate the fungus are started too late and carried out too half-heartedly to be of any use.

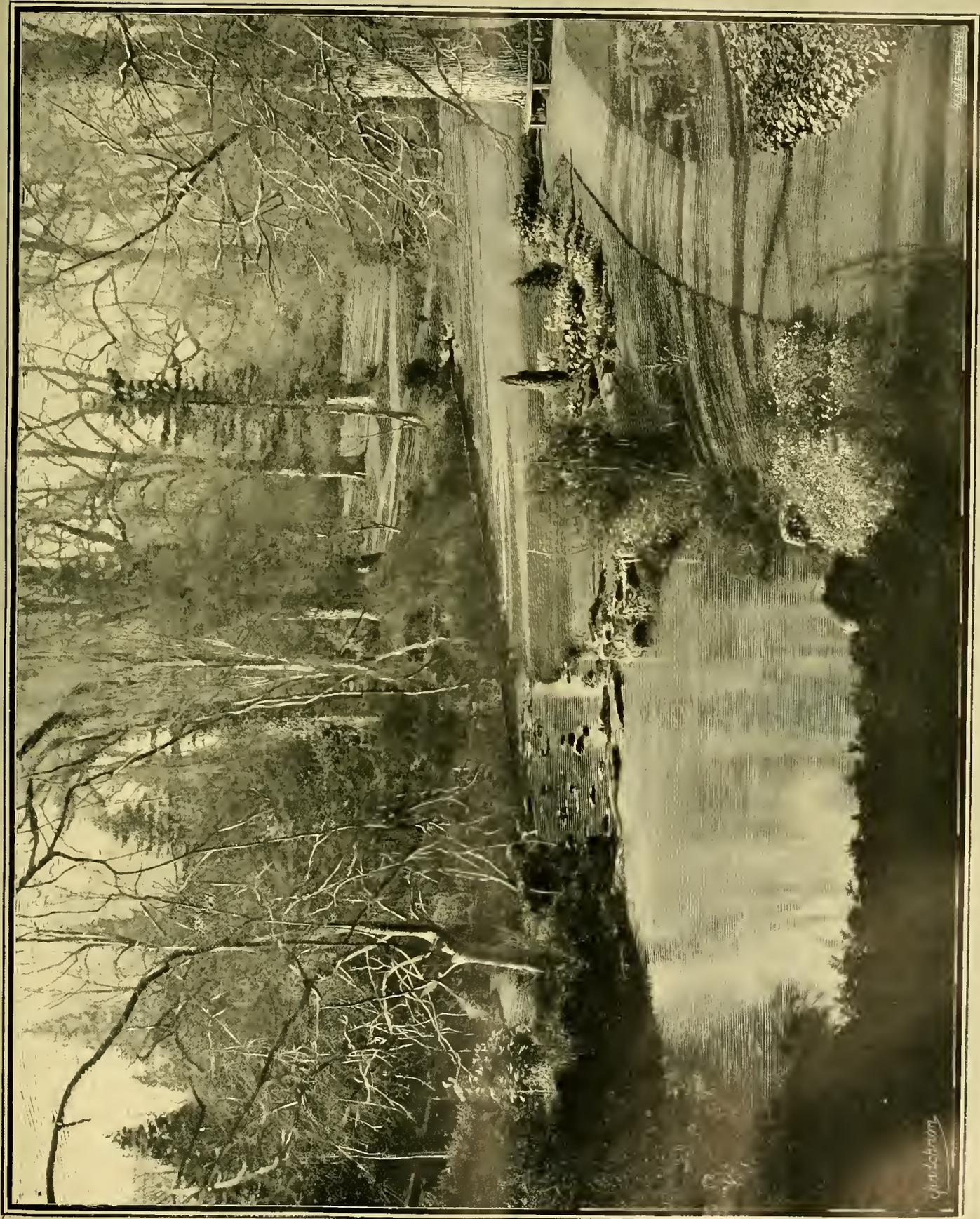
The necessity for State interference in such a matter as this has long been acknowledged, and at various Congresses since 1890 schemes have been suggested, talked over, and resolutions made, with no result. In Sweden the most strenuous regulations are drawn up by experts immediately upon the appearance of a pest, such as the Gooseberry fungus. They are printed upon leaflets which are circulated throughout the country. These direct public attention to the disease and instructions are given concerning the means for checking it, under the authority of the Royal Agricultural Academy of Sweden. Moreover, the Swedish government has for the time being forbidden the importation of foreign Gooseberry plants and fruits. If the other European governments would combine in similar work we should soon enjoy an almost entire freedom from pests of this sort, and the millions that are now lost to growers every year would be saved. Mr. SALMON, who has made a special study of the fungus, has furnished us with an article on the subject (see p 305). In the meantime we do not think that at the present time the disease is very prevalent in this country; but that being the case it is the more incumbent on us to be on the alert to prevent its extension while there is yet time.

A VIEW AT LOCKINGE.—The Supplementary Illustration to the present issue represents a scene in Lady WANTAGE's garden at Lockinge Park, Wantage, Berkshire. The stream of water depicted runs at only a short distance from the mansion, and, in association with the undulating character of the ground on one of the banks, it has been made a very interesting feature. At the base of the picture is a rustic bridge covered thickly with hardy Ferns. The view shown was taken in the spring of the year, and the leaves having fallen from the trees, the sun's rays have shone through the branches, with the result that the variations in light and shade are very marked. Every suitable portion of ground near to the water has been planted by Mr. FIFE, the gardener at Lockinge and writer of one of our weekly Calendars, with flowering bulbs, many of which are shown to be in bloom.

LINNEAN SOCIETY.—The first meeting of the Society for the forthcoming session will be held on Thursday, November 2, at 8 P.M., when the Rev. G. HENSLOW will read a paper entitled—"Plant Ecology, interpreted by Direct Response to the Conditions of Life."

THE RECENT CONFERENCE ON FRUIT-CULTURE.—Sir ALBERT ROLLIT writes:—"I have read in the *Gardeners' Chronicle* your report of the Conferences in connection with the fruit show of the Royal Horticultural Society at Westminster, and as a member of the Council of the Society and one of the Conference chairmen, I feel indebted for the accuracy of your account of our proceedings, including my own observations, and for your appreciative comments, all of which must be of great service to horticulture and to the trade. I observe from your report that during one of the discussions, at which I was not present, Mr. MARTIN, of the Toddington Orchard Co., said "he got the idea of saving his fruits from frost from California, where they lost not only their crops but their trees. There they had a hundred specially constructed lamps to the acre, each lamp holding a gallon of oil, and burning four hours. They lighted a third of the lamps. He experimented on one acre at a time when a 9° frost was on. The temperature rose to 1° above freezing—a rise of 10°—and the fruit was entirely saved at a cost of 30s. for the night." Then "Mr. PICKERING asked whether this rise would not be owing to the smoke the lamps made"; and Mr. MARTIN replied that it "was owing to the heat alone. A current of warm air was created." I have seen a similar plan in Florida applied to the culture of Pineapples in the open. There, faggot fires are kept ready to be lighted among the growing Pines, which are also protected against the effect of radiation by an open horizontal lattice-work, the open sections being about 1 foot square. Thus the fruits of labour and capital are saved for the market, and the cold conquered, instead of causing cruel consequences, as in the horticultural story: "Very cold last night, gardener." "Yes, master, cruel cold—four degrees below Nero!"

FORESTRY INSTRUCTION AT CAMBRIDGE.—The syndicate appointed to consider the desirability of establishing in the University a diploma in Forestry have, says the *Times*, issued a report, in which they give in detail the inquiries they have made and the officials they have consulted. The Governor of Ceylon states that there is in Ceylon a need for trained forestry officers. The Lieutenant-Governor of the Transvaal, Sir HENRY BLAKE, writes after consultation with the Conservator of Forests that the scientific part of the education which men will receive at Cambridge will be invaluable, but thinks arrangements should be made for the practical work to be undertaken abroad. From letters addressed to the various



VIEW IN THE PARK AT LOCKINGE, BERKS, THE RESIDENCE OF LADY WANTAGE.

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Bursars of colleges at Cambridge, it appears that several colleges might be able materially to assist forestry instruction in the University by placing woods and plantations at the disposal of teachers in forestry. Landowners in the eastern counties have been approached, and several have offered considerable areas of woodland for demonstration purposes. There are over 1,000 acres of woods within an hour by rail from Cambridge, chiefly in the Newmarket district, but there are over 200 acres near North Road Station, within a few miles, and within easy reach are the Woburn Woods of the Duke of Bedford, and the Crown Woods in Northamptonshire. The syndicate is of opinion that a diploma in forestry should be established, open only to graduates of the University.

THE BRITISH SCIENCE GUILD.—The Lord Mayor has consented to preside at the inaugural meeting of the British Science Guild, at the Mansion House, on October 30, at 4.15 P.M., when the following officers will be proposed, including numerous Vice-Presidents:—President: The Right Hon. R. B. HALDANE, M.P., K.C. Chairman of Committees: Sir NORMAN LOCKYER, K.C.B., F.R.S. Vice-Chairmen: Sir WILLIAM ABNEY, K.C.B., F.R.S.; Sir LAUDER BRUNTON, F.R.S.; the Hon. Sir JOHN COCKBURN, K.C.M.G.; Sir GILBERT PARKER, M.P. A large General Committee will also be proposed for election, including the names of the present Organising Committee. The direct promotion of natural knowledge is stated to be outside its sphere. Its purpose is to stimulate, not so much the acquisition of scientific knowledge, as the appreciation of its value, and the advantage of employing the methods of scientific enquiry, the study of cause and effect, in affairs of every kind. Such methods are not less applicable to the problems which confront the statesman, the official, the merchant, the manufacturer, the soldier, and the schoolmaster, than to those of the chemist or the biologist; and the value of a scientific education lies in the cultivation which it gives of the power to grasp and apply the principles of investigation employed in the laboratory to the problems which modern life presents in peace or war. Communications may be addressed to the Honorary Secretary of the British Science Guild, 16, Penywern Road, London, S.W.

SOUTH-EASTERN AGRICULTURAL COLLEGE, KENT.—A meeting of the Governors of the College was held at the Westminster Palace Hotel on Monday, October 23, Lord ASHCOMBE, Chairman, presiding. The report of the Principal (Mr. M. J. R. DUNSTAN) stated that one hundred students, the largest number yet recorded, were now attending the College, an increase of twelve on the number for last session. The special points in the report were the commencement of the building extension, a gymnasium and college hall being included, thanks to an anonymous donor of £1,000; the increase of the College farm to 400 acres; the lengthening of the Diploma courses to three years; the appointment of a mycologist to investigate the fungus diseases of Hops, fruit, and farm crops; the recently held summer course for elementary schoolmasters, and the appointment by the Colonial Office of Mr. E. G. CHAMBERLAINE, a College student, as Agricultural Normal Master in British Guiana.

TREES IN KINGSWAY.—On the recommendation of the Improvements Committee, it was resolved to authorise an expenditure not exceeding £300 in connection with the planting of trees in Kingsway and Aldwych. Up to the present 124 trees have been planted in those thoroughfares, and it is calculated that 116 will be necessary to complete the work. The total cost of purchasing and planting the 240 trees and providing iron tree-guards will be £825.

CAPE OF GOOD HOPE.—Botanists will learn with great regret of the resignation of Dr. MACOWAN as Government Botanist and Curator of the Government Herbarium on account of advancing age. We understand that the post will not be filled up, but that Miss TRELEAVEN, who has had ten years' experience in the herbarium, will be entrusted with its future conservation.

THE NELSON CENTENARY.—Celebrations have been more or less in evidence all over the Empire during the past week, and an interesting display was seen in Trafalgar Square on October 21 around the monument of the famous Admiral. Apart from the flags, including the historical signal, the decorations were wholly floral. The plinth of the column was entwined by Messrs. GEO. W. BELLGROVE & Co., Hammersmith, with a festoon of Portuguese Laurel, which did duty for the true Laurel of the ancients (*Laurus nobilis*), and this terminated beneath the capital in a circle. Wreaths of *Cerasus lauro-Cerasus* were hung at either corner of the capital and of the base, while festoons of the same evergreen were carried from the latter to the statues of the lions at the corners. The steps were furnished with *Chrysanthemums*, *Ericas*, *Euonymus*, and other evergreens, with here and there a plant of the true Laurel. Pyramidal Conifers also found a place on the steps. The base of the column and the centre of the steps were almost hidden by numerous wreaths and other floral tributes, which were mainly of large proportions, but cannot be described as of the best taste. There were, however, some notable designs. *Chrysanthemums* figured largely, while the ground-works of the designs were in almost all instances composed of the common garden Laurel-Cherry. One wreath of enormous proportions was formed with Roses, with the letter "N" in blue Violets in the centre. It came from the DEVON ROSERY AND FRUIT FARM, Ltd., Torquay. An anchor of white *Chrysanthemums*, with encircling ropes of scarlet *Pelargoniums* in a wreath of the true Laurel, came from Manchester, and was well designed. A design in the form of an anchor worked in blue Violets, with the stock of white *Chrysanthemums*, was another good device. A very large floral anchor was sent by J. C. WHITE, Esq. It was a bold design and a replica of the old-fashioned type of anchor, with large ringbolt and stock and broad flanges. The whole was formed of a bronze variety of pompon *Chrysanthemum* with larger yellow *Chrysanthemums* interspersed. The Bath Club of the Navy League, in addition to a large wreath to the memory of Nelson, sent a charming wreath in red, white and blue colours, which were furnished by scarlet *Pelargoniums*, white *Chrysanthemums* and Violets. It was offered to the memory of the Spanish and French sailors who fell at Trafalgar. The Navy League also contributed a wreath to the memory of our gallant foes at Trafalgar. A charming wreath came from the Queensland United Service Institution. It was small but one of the prettiest among the many, being composed of pure white *Chrysanthemums* with a knot of *Codiaeums* (*Crotons*), foliage, *Cycad*, &c., at the base. The Royal Society of St. George sent a wreath of *Laurus nobilis* with a cross of red Roses, ribbons, &c. It looked splendid at the distance of the barrier, but, alas, a closer inspection revealed the flowers to be artificial, though even an experienced eye was almost deceived. The Royal Navy Club sent an oval device with margin of Bay Laurel and a flat centre of white *Chrysanthemums*, on which was worked in Violets the inscription, "A Tribute to the Memory of NELSON." Among many more wreaths were two from New Zealand. These were enclosed in ice, and naturally attracted much attention from the crowd of spectators.

PUBLICATIONS RECEIVED.—From the Board of Agriculture and Fisheries. Leaflets No. 128. *Advice to Beginners in Bee-keeping*. No. 130. *A Mushroom Disease (Hyponoxys perniciosa)*. No. 139. *The Felted Beech Coccus (Cryptococcus fagi)*. No. 141. *The Preparation of Honey for Market*. No. 143. *The Turnip Midge (Melophorus rugosus)*. No. 147. *Fences and Hedges*. No. 149. *Threshing of Barley*. No. 153. *Storing Turnips*.—*Proceedings of the Agri-Horticultural Society of Madras*, April to June. Contents: Garavonica Cottons, two remarkable new hybrid Cottons raised by Dr. Thomasi in North Queensland; Kidney Cotton (parent of one of the above plants), Koli-Rabi, &c.—City of Boston: Department of Parks. *Annual Report of the Board of Commissioners*, to January 31, 1905. Much improvement was made at the several parks and playgrounds, but want of funds has somewhat hindered operations.—*Journal de la Société d'Horticulture du Japon*, August 5. With articles in Japanese and many coloured and uncoloured illustrations.

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his Correspondents.)

NICOTIANA SANDERÆ.—The cross predicted for the improvement of *Nicotiana Sanderæ* has been successfully obtained by Messrs. Cayeux et Leclerc, Marchands Grainiers, 8, Quai de la Mégisserie, Paris, who have raised seedlings from a cross between *N. Sanderæ* and *N. affinis* with much larger flowers than those of *N. Sanderæ*, and in many varied shades of colour. They have exhibited these at one of the meetings of the National Society of Horticulture of France, and obtained for them an Award of Merit. They intend offering seeds of this strain this autumn for next summer's bloom, when I hope to grow it instead of *N. Sanderæ*. Another fine hybrid form has been obtained at the Versailles National Garden by the Director of that establishment by crossing *N. sylvestris* with a red-flowered sort, probably *N. Forgetiana*. The product is a form of the tall-growing *sylvestris* with striped flowers. This is figured in the *Revue Horticole*, and should be very pretty, but will not be obtainable till some one else raises a similar cross. *W. E. Gumbleton*.

— We have about three dozen fine pot plants, all of which are now throwing up strong spikes of flower, ranging from 3 to 4 feet in height, and judging from their present habit they will be useful for furnishing the conservatory next month. The side shoots branching from the main flower-stem are quite 18 inches in length, and there are eighteen to twenty of these on some of the plants. The seed was sown in March, and the plants have been grown in a frame facing to the south, where a light shade has been afforded them during the brightest hours of the day. Unfortunately there is much variation in colour amongst them, from nearly white to the colour we were led to expect in *Nicotiana Sanderæ*. When the colour has been properly fixed this plant will undoubtedly be very valuable for blooming during the months of November and December, as the flowers at present expanded remain open all day. *A. C. Smith, Lydhurst Gardens, Haywards Heath*.

AFFORESTATION.—The suggestion of the Rev. W. Carlisle, of the Church Army, in the *Evening Standard*, that a national system of tree-planting in England would be at once the means of utilising waste spaces profitably and bringing men back to the land, leads us to revert to the lecture of Dr. Henry on this subject, given at the Horticultural Club on April 8 last, as bearing out the Rev. W. Carlisle's contention. The simple fact that in the Landes district of France an absolute waste, capable only of sustaining a few sheep and a few shepherds and their families, has been transformed by judicious and far-seeing Government action into valuable forest land, which has brought no less than £10,000,000 into the national exchequer since its afforestation commenced some forty years ago, affords a more striking example of what can be done. Nor is it merely a matter of revenue to the State, for the entire district is now dotted with thriving and populous villages and towns, supported not merely by the raw timber industry, but by a thousand-and-one offshoots in the shape of manufactured articles and bye-products, involving many trades and many kinds of labour. Here we have an absolute proof of the Rev. W. Carlisle's argument, and the only question left is whether climatal or soil conditions stand in the way of

such schemes and enterprises on this side the Channel. With this aspect of the case Dr. Henry dealt exhaustively, proving by many lantern illustrations, and also by forestal maps and descriptions of geological conditions, that both the peat-bogs of Ireland and the wastes of England, Scotland, and Wales are capable of becoming forest land of like character, the determining factor being always and only a minimum rainfall of 20 inches, which can be relied upon everywhere in Great Britain, while the nature of the soil, whether rocky or peaty, makes little difference. One essential point, however, in the economical execution of such an enterprise would appear to be an altogether different system of forest culture than is here adopted. The æsthetic aspect of the individual trees is entirely ignored in the continental cases, the trees being allowed to grow as closely together as possible, so that there is bare passage-way between them, until they reach a merchantable size for many purposes, when they are then thinned out. Meanwhile they have formed tall, slender trunks, devoid—and this is a material point—of all side branches with their attendant knots, and consequent blemishes in the eyes of the wood expert and wood worker. Furthermore, it is obvious that in this way, area for area, far more wood is grown, and thus the fullest possible benefit is derived both ways. Such forests are systematically thinned and cleared on successive lines, and in the clearings it is left to the seedlings to re-establish the former growth by leaving them absolutely undisturbed for several years, the next step being the elimination of the undesirable and defectives, the balance being left in the closely-congregated condition described to form a fresh crop of good timber. Here surely is an invaluable object-lesson for those whose desire it is to re-people the land and relieve the urban pressure and distress. Emigration is preached as the only panacea, while millions of acres of land, available for afforestation on continental lines, are lying waste at home, and as in the case of the Landes formerly, are only supporting on starved conditions a sparse, poverty-stricken, and discontented peasantry. Dr. Henry's paper will doubtless appear in the forthcoming volume of the *Journal of the Royal Horticultural Society*, and it is devoutly to be hoped that those who have the same object in view will study it, and the continental data upon which it was presumably partly based, as well as upon personal observation, and then put their heads together to see if some practical result cannot be arrived at. True, the proper starting of such a scheme on a fair scale means money, and some years of waiting for a return, but in view of the actual and not merely theoretical results which have been obtained elsewhere, it is difficult to believe that the money could not be found, especially as probably far more than the needed amount would be uselessly squandered in bolstering up futile schemes for the supposed benefit of the unemployed in the same period of waiting for a secure return in the shape of redeemed land and increased or rather created prosperity. It seems indeed little less than a scandal that a nation like Great Britain should in this direction, as in many others of a kindred nature, not only does not take the initiative in such enterprises, but fails also to profit by the experience gained therein elsewhere and within range of easy study, while all the time it is abundantly obvious that they would constitute a radical cure for many of the evils resulting from unduly crowded populations and lack of profitable employment. From Dublin to Killarney, for instance, there is one unbroken stretch of waste land capable of such redemption and consequent occupation by thousands of contented labourers for every poverty-stricken family now struggling thereon. Such land can be but of little worth as it is, but under the altered conditions would immensely increase in value by virtue of its products, to say nothing of the other contingent advantages cited, which are in every way infinitely greater. *Chas. T. Druery, V.M.H., F.L.S.*

GARDENING IN FLORIDA.—There is in the last issue of the *Gardeners' Chronicle* a most realistic description of a Florida lake-side garden, which should be, as it was to myself, most interesting to horticulturists. I shall never

forget the pleasure of a visit a year or two ago to Florida, whose flora and fruits, with its Orange groves, justify its name as the garden of the world. This, having seen many of the great gardens of the Old and New Worlds, is, I think, quite as deserved as the fame of the hanging gardens of Damascus, which were to me disappointing. But happily for our people, our park-gardening is now bad to beat, and makes London almost a "garden city." *Albert K. Rollit, Powlett Lodge, Twickenham, October 22, 1905.*

FRUIT CULTURE FOR PROFIT.—As a constant reader of your journal, I have perused with interest the papers read by Messrs. Geo. Bunyard and J. Cheal at the Fruit Conference. Having gained a 3rd prize for twenty-four distinct varieties of Apples shown at the Royal Horticultural Society's show last year (1904) my experience may not be without interest to some of your readers who may contemplate planting orchards for profit. Doubtless very much may be done by closely following the advice as to cultivation, spraying, &c., set forth by these experienced men, to improve the quality of our fruit, growth of our trees, &c., but I do not think we can ever hope to compete against the foreigner mainly owing to the uncertainty of our English climate. I suppose that this year there is not a quarter of an average crop of Apples, owing to the frosts of May 21 and 22. My orchard of 1,500 fine bush-trees, twelve to fifteen years old, with a few standards of older growth, was completely devastated by the frosts mentioned, half a bushel of Apples being the total crop. In 1894 we had an experience exactly similar, two severe frosts on May 20 and 21 killing almost every Apple, Pear, and Plum. My produce for that year was one Apple! The year 1904 was the only one in which I had a good crop, but unfortunately the fruit was attacked by mildew early in August, rendering three-quarters of the whole unmarketable. Tons were given to the pigs or were allowed to rot on the ground. I have since learned that allowing the fruits to rot was very harmful, and am now taking all measures I can to counteract its ill effects under the advice set forth by the Board of Agriculture. I can prove by my books that during the fifteen years that have passed since the bush-trees were planted I have had no return on my capital, the fruit sold not paying the annual labour bill; and I have not included my own work, for I have done all my own pruning. I notice Messrs. Bunyard and Cheal both advocate the use of shallow boxes for one, two, or three dozen Apples, as the case may be; but are the public prepared to pay for them? If any of your readers can give me the cost of boxes, and their experience with them, I shall feel grateful. *C. O. Walter, Ickleton House, Wantage, Berks.*

THE WEATHER.—The sudden spell of unusually cold weather seems to be fairly general throughout the country. Here we have had frost on eight consecutive nights, 9° being registered on three occasions. Fortunately all vegetation was dry and hard, so that beyond the inevitable killing of the foliage of all bedding plants and tender kitchen-garden crops no damage appears to have been done. I cannot remember such a dry and fine October. To date we have not had an inch of rain. *A. C. Bartlett, Penearrow Gardens, Cornwall, October 24.*

—The 8° of frost which we had here on the night of the 16th inst. caused much injury to our Chrysanthemums, destroying all the open and opening flowers. This was at a time, too, when there happened to be a good demand for white flowers. I am afraid it will destroy my $\frac{2}{3}$ acre of plants, which were meant to afford supplies of fine good blooms well into the third week in November, of such good varieties as Soleil d'Octobre, Source d'Or (yellow and bronze), Lizzie Adcock, &c. A big loss. *H. W. W., Essex.*

—Much damage has been done here by the unexpected frost, for many tender plants were still outside. Some fine old standard Heliotropes seventeen years old which were planted out, with stems 3 inches in diameter and heads 6 feet through, with branches sweeping to the ground, are quite dead. The frost registered from

October 15 to October 23 inclusive was as follows:—12°, 6°, 7°, 9°, 11°, 14°, 11°, 13°, 11°. *Fredk. Bedford, Straffan House Gardens, Straffan Station, Co. Kildare, October 24.*

DRIP.—In reply to "A. R." (see p. 303) he should write to W. Duncan Tucker, horticultural builder, of South Tottenham. He would send him particulars of Tucker's Anti-Drip Roof Bars, which provide a grooved channel for carrying away any condensation. The channel in this particular bar is formed a certain distance from the glass, enabling it to be cleaned from dust, and leaves sufficient space for painting. *D. Swain, 19, Firs Avenue, Muswell Hill, N.*

LAW NOTE.

GLASS-HOUSE ASSESSMENT. RATING APPEAL.

A. M. Kemsley and the Rochford Union Assessment Committee.

At the Chelmsford Quarter Sessions on the 18th and 19th inst., an appeal was made by Arthur Mills Kemsley, of Great Wakering, Essex, against the Poor-rate Assessment of £450 gross and £300 rateable, upon thirty-eight glass-houses, boilers, stokeholes, water supply and packing-sheds, erected by him upon a portion of his farm in the parish of North Shoebury.

Mr. HUMPHREYS, counsel for the appellant, in his opening remarks stated that the appellant was the owner of Crouchman's Farm, comprising an area of about 63 acres, 4 acres 3 roods 4 perches of which were assessed in connection with the nursery business, and of this area nearly 3 acres were covered by glass-houses, packing-sheds, and stokeholes. The glass-houses, thirty-eight in number, had been erected in 1897, 1898 and 1902, at a cost of about £5,268, but they had depreciated in value since that date, and he asked that the assessment should be amended to £187 10s. gross and to £125 rateable. One additional glasshouse, erected since the property was valued on behalf of the respondent Union, but before the rate appealed against was made, was treated by the respondents as being included in the rate.

Expert evidence was then called.

Mr. A. LEE ROGER, Manager for Mr. W. Duncan Tucker, Horticultural Builder, estimated the present structural value of the thirty-eight glasshouses, with the heating apparatus thereto, sheds, &c., at £3,422, and that the same would cost £4,472 to erect at the present time.

Mr. C. P. KINNELL, of Messrs. C. P. Kinnell & Co., hot-water engineers, had made an inspection of the heating apparatus and fittings and boilers, and valued the same at £966 18s. The boilers had depreciated very much owing to the action of the water. He estimated their cost at the present time new at £1,100.

Mr. P. MICHAEL FARADAY, of Messrs. Faraday & Rodgers, rating surveyor, of Chancery Lane, stated that he accepted Mr. A. Lee Rogers' figures as to the present structural value of the property, and estimated the present annual value of the glass-houses at £171 gross and £114 rateable. The properties depreciated very much each year, and in his opinion £114 would be a fair rental for a tenant to pay, he doing ordinary repairs.

Mr. J. B. SLADE, of the firm of Protheroe & Merris, was next called. He stated that he had been instructed by Mr. Kemsley to make a valuation of his property, and had also been consulted by a large number of the growers throughout the Union. He had taken their cases before the Assessment Committee, but had failed to obtain any adequate relief. Mr. Kemsley's thirty-eight glasshouses (excluding the one recently erected) comprised a total length of 5,375 feet fitted with about 24,956 feet of 4 and 5-inch hot-water piping, driven by fifteen tubular boilers in five stokeholes, two packing-

sheds, well with two vertical boilers, two pulse-meters, tanks, and water-service pipes and fittings. The additional house was 120 feet 6 inches in length by 30 feet in width, with 2-inch outer walls, and was fitted with about 532 feet of 4-inch piping. He estimated the present structural value of the thirty-eight houses at £3,758, and of the additional house, £150. He had formed his estimate of the rateable value of the property first, and this he considered should be fixed at £125; to this he added the customary allowance for buildings of this character, which would make the gross annual value £187 19s. He did not consider that the one-third allowance off the gross value was a sufficient sum, as glass-houses decreased in value considerably every year, particularly after the first few years, and became practically worthless in about twenty years. A sinking-fund of 3 per cent. should, in his opinion, be allowed in addition to the usual one-third.

Mr. AVONBY then addressed the Bench for the respondents. The Justices were bound to take Mr. Kemsley into account as a hypothetical tenant and to consider what rent he would be prepared to give for the property. With regard to the question of structural value, he contended that the value of the buildings should be taken at what they would cost to erect, and that their present capital value could not be taken into consideration. He would call evidence in support of his case.

Mr. T. DINWIDDY, of Messrs. Dinwiddy & Sons, valuers for the Assessment Committee, was first called. He had valued the whole of the glass-houses throughout the Union, and fixed Mr. Kemsley's property at £463 gross and £309 rateable. This was reduced on appeal to £450 gross and £300 rateable. A new house which had been erected was not built when he made his valuation. He had revised his figures, and estimated the rateable value at £333 and the gross annual value at £499. The structural value he put down at £6,500. Of the fifty-two horticultural properties which he had valued in the Union only two small ones were rented by the occupants.

Mr. H. TRUSTRAM EVE, of J. R. Eve & Son, of Bedford, was next called. He considered these houses the best he had ever valued, and he estimated the present rateable value of the property, including the new house recently erected, at the sum of £411 10s., and the gross annual value at £561 10s. In forming his opinion he had taken Mr. Kemsley into consideration as a possible tenant.

Mr. J. T. WHITE, of Bedford, estimated that the whole of the buildings, with the heating apparatus and fittings and water service, could not be replaced under £6,800. He had not formed any opinion as to the present structural value.

Mr. CONSTAM, in summing up evidence for the respondents, contended that the structural value is the value at which the buildings could be replaced, and what the Court must look at is replacement or the amount for which they could be erected to-day by a contractor.

Mr. HUMPHREYS then addressed the Court briefly.

The Justices allowed the appeal, and reduced the assessment to £360 gross and £240 rateable, to include the new house, with costs to the appellants.

NAMES.—Whilst wincing under the reproaches of those who complain of botanical nomenclature, it is consolatory to find that others are in the same position as ourselves. The *Pharmaceutical Journal*, for instance, recently alluded to a process for the preparation of a substance known as "Metaiodinorthoxyquinolinanansulfonic acid."

We should not like to inscribe many labels with that name.

BUNYARD'S PHYSALIS.

At fig. 123 is shown part of a fruiting spray of a hybrid *Physalis* exhibited by Messrs. Geo. Bunyard & Co., Royal Nurseries, Maidstone, and raised from a cross effected between *P. Francheti* and *P. Alkekengi*. The coloured calyces are much less in size than those of *P. Francheti*, and in general appearance the hybrid is about intermediate between the parents. When the growths are cut and the calyces fully coloured, the leaves are still in a fresh condition, and for this reason as well as for the less stiff character of

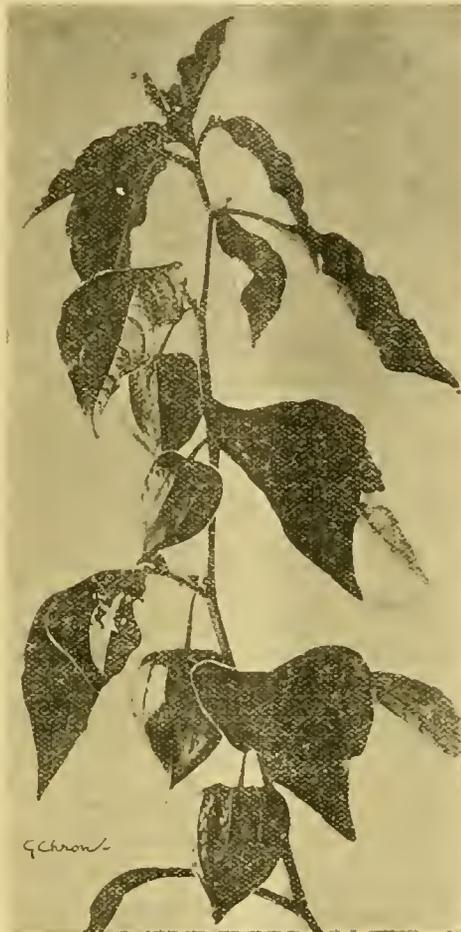


FIG. 123.—BUNYARD'S PHYSALIS.

the shoots as compared with *P. Francheti*, the hybrid may be more valued for use in decorative purposes.

SOCIETIES.

THE ROYAL HORTICULTURAL.

OCTOBER 24.—The usual fortnightly meeting of the Royal Horticultural Society on Tuesday last, at the Hall in Vincent Square, was accompanied by a competitive show of vegetables which failed to satisfy expectations. It was urged by some that the prizes offered for competition were insufficient to recompense the exhibitor for the trouble and expense involved in bringing vegetables to Westminster, and it is likely that this was one reason for the small number of exhibitors who took part in making the display.

Apart from the vegetables, the FRUIT AND VEGETABLE COMMITTEE had little of special interest before them, and this body made no awards to novelties other than Potatoes.

Of Orchids there was an excellent show, and novelties were very numerous and good, especially a new species of *Oncidium*. The awards recommended by this Committee included one First-class Certificate and eleven Awards of Merit.

The FLORAL COMMITTEE was largely concerned with *Chrysanthemums* and *Carnations*, to which several awards were made. The only other plant so distinguished was the old Mexican species *Antigonon leptopus*.

In the afternoon eighteen new Fellows were elected, and Mr. W. P. WRIGHT read a paper on the subject of Potatoes.

Floral Committee.

Present: W. Marshall, Esq. (Chairman), and Messrs. Jas. Walker, W. Cuthbertson, H. J. Jones, W. P. Thomson, E. H. Jenkins, W. J. James, C. T. Drury, H. B. May, C. E. Shea, C. R. Fielder, W. Bain, Chas. Jeffries, Chas. Dixon, R. C. Notcutt, W. Howe, R. Hooper Pearson, C. J. Salter, E. T. Cook, H. J. Cutbush, Jno. Jennings, Rev. F. Page Roberts, Ed. Mawley, and James Hudson.

J. T. BENNETT-POË, Esq., V.M.H., 29, Ashley Place, S.W., showed a batch of *Nerine* hybrids. Great diversity of form and colour was seen in the varieties. The best noted were those labelled *N. sarniensiscorusca pallida*, with good-sized flowers of light-scarlet colour; *N. Miss Willmott*, a variety with large flowers of deep orange-scarlet colour, and a crimson-maroon-coloured hybrid *atro-rubens* × *elegans carminata* (Silver Banksian Medal).

Mr. C. ENGLEMAN, Honeybrook Nurseries, Saffron Walden, Essex, showed a few pot-plants of Tree *Carnations*.

Messrs. GEO. BUNYARD & Co., Maidstone, again showed their new hybrid *Physalis* (see fig. 123).

Messrs. JOHN PEED & SON, West Norwood, put up an extensive collection of flowering *Begonias* of the varieties *Mrs. Leopold de Rothschild*, *Turnford Hall*, and *compacta*.

Messrs. JAS. VEITCH & SONS, King's Road, Chelsea, contributed a bright display of winter-flowering *Begonias*. Arranged at the background were small Palms, Ferns, &c., with *Salvia Pitcheri* and *Leonotis Leonurus*, the two last named being in flower. The *Begonias* were dwarf, freely-flowering specimens. *B. Ideala* and *Mrs. Neal* are excellent varieties of this type of *Begonia* (Silver Flora Medal).

Mr. E. DEAN, Woodvale, South Norwood, staged a batch of plants of *Primula Forbesii*, which carried numerous flower-spikes, but the individual "pips" were small.

Mr. H. B. MAY, Dyson's Lane Nurseries, Upper Edmonton, showed an extensive group of Ferns and greenhouse flowering plants—*Bouvardias*, *Statice profusa*, improved forms of *Veronicas Hendersoni* and *speciosa*, &c. The *Bouvardias* were very noteworthy (Silver Flora Medal).

Messrs. W. BULL & SONS, King's Road, Chelsea, showed a small batch of stove and greenhouse foliage plants. *Grevillea Banksii* was noticed in flower.

Mr. AMOS PERRY, Hardy Plant Nurseries, Winchmore Hill, London, N., showed two dozen well-flowered plants of *Saxifraga Fortunei*, with a number of plants of *Chaenostoma hispidum* arranged as an edging to the group.

Messrs. WM. CUTBUSH & SON, Highgate, London, N., showed hardy flowers, with a few *Chrysanthemums* in pots, and some well berried plants of *Skimmia sinensis*. Mention must also be made of dwarf pyramidal-trained *Hollies* with berries (Bronze Flora Medal).

Messrs. HUGH LOW & Co., Enfield Nurseries, Highgate, staged a miscellaneous collection of plants and flowers. They had, among other things, *Clorodendron fallax* in good form, *Begonia Gloire de Lorraine*, *Bougainvillea spectabilis*, *Acacia platyptera*, a collection of *Eriacs*, including the beautiful *E. gracilis nivalis*, coloured *Dracanas*, small plants of *Cercis japonica* in fruit, and some remarkably good *Carnations*.

J. GURNEY-FOWLER, Esq., Glebelands, Essex (gr. Mr. Davis), showed a number of pot plants of *Capsicums* that were literally covered with fruits, which much resembled the small *Chilies* used in conserving pickles, &c. (Silver Banksian Medal).

Mr. L. R. RUSSELL, Richmond, Surrey, brought a quantity of berried plants of *Aucuba vera* and *Skimmia Fortunei*. The plants were not more than a foot in height, and made a very bright show with their pleasing scarlet berries.

Mr. E. POTTEN, Camden Nursery, Cranbrook, Kent, displayed a number of pot plants of a form of *Cupressus Lawsoniana*, named *Potteni*.

Sir H. B. SAMUELSON, Lt., Braywick Grove, Maidenhead (gr. Mr. A. Tidy), staged a dozen plants of *Cyclamen*.

CHRYSANTHEMUMS.

Messrs. H. CANNELL & SONS, Swanley, Kent, showed bunches of Zonal Pelargoniums in the style and quality for which this firm is famous. Adjoining the Pelargoniums were vases containing single blooms of Japanese Chrysanthemums. The display included such handsome varieties as Rosy Morn, Amateur Conseil, Sappho, Mrs. T. Dunn, Mrs. A. T. Miller, Beatrice May, &c. Some large flowers of the single-flowered type found a place in the collection, one labelled Autumn Glory being of a good clear yellow colour and of commendable form (Silver-gilt Flora Medal).

W. G. RIGDEN, Esq., Queenswood, Englefield Green, Egham, showed a new incurved Chrysanthemum named Maud Fowes.

Messrs. W. WELLS & CO., Merstham, Surrey, staged four exhibition boxes containing large blooms of Japanese Chrysanthemums, at the back of which were bamboo eperges containing examples of the charming single type of these flowers. The exhibition blooms were a meritorious lot, the best examples being Mrs. D. Willis James, E. J. Brooks (grand flowers), A. L. Stevens, Sappho, Madame Gustave Henri, Valerie Greenham. Several unnamed seedlings were included in the display. Among the singles were such fine varieties as Merstham Beauty, Mrs. C. Curtis, Distinction, and Early Queen.

Seedling Chrysanthemums were also shown by Mr. H. PERKINS, Greenlands, Henley-on-Thames; Mr. W. J. GODFREY, Mr. Mileham, gr. to A. T. MILLER, Esq., Emlyn House, Leatherhead; Mr. H. J. JONES, Rycroft Nurseries, Lewisham, and Mr. FAIRWEATHER, Bifrons, Canterbury.

Awards.

AWARDS OF MERIT

were recommended to the following plants:—

Antigonon leptopus (see illustration in *Gardeners' Chronicle*, June 29, 1895, p. 797).—This is an old Polygonaceous climbing plant or trailer, which was introduced to this country from Mexico in 1868. The flowers are of rich rose colour, and when produced freely as in the specimen shown by Lieut.-Col. BASIL SPRAGGE, Hoddon Castle, Ecclefechan, N.B., they are exceedingly attractive. The plant is not common in English gardens, and it appears that some cultivators have ceased to grow it because it will not produce flowers if grown out-of-doors during summer, and is rather shy even indoors. Nevertheless, the species is very well worth cultivation by those having a large warm greenhouse or stove, where the plant may ramble freely and have its growths well exposed to the sunlight.

Chrysanthemum Mrs. Frank Penn.—A large Japanese flower of a deep yellow colour. The florets are not extremely long, and they droop but little. In shade of colour the flowers are rather deeper than other yellow exhibition varieties. Shown by Mr. FAIRWEATHER, Canterbury.

C. Mrs. A. T. Miller.—A white Japanese incurved flower, with broad florets having spoon-shaped tips. A flower of considerable promise. Shown by Mr. H. J. JONES, Hither Green Nurseries, Lewisham.

C. Mrs. R. Hooper Pearson.—A large but refined yellow Japanese flower, with broad drooping florets of great length. The colour is deep golden-yellow, and on later buds considerable bronze colour is developed in the centre florets.

C. Norman Davis.—A crimson-coloured Japanese flower with bronze reverse, which shows to a considerable extent. The two varieties above were shown by Mr. NORMAN DAVIS, Framfield Nurseries, near Uckfield.

C. Rimmel.—A single-flowered variety, coloured yellow. The flowers have more than one row of florets, and are scarcely refined; but the habit is very free, and the variety will make one of considerable value for use in decorations. Shown by Messrs. H. CANNELL & SONS, Swanley.

C. Terra-cotta Soleil d'Octobre.—Like Bronze Soleil d'Octobre, this variety is a sport from the well-known yellow October-flowering variety, and is a shade of colour that will meet with appreciation. Shown by Messrs. G. PRICKETT & SONS, Tottenham.

Carnation The Cardinal.—A very deeply-coloured crimson Tree Carnation with fringed petals. Shown by Mr. C. ENGELMANN, Saffron Walden.

C. Victory.—A good tree variety, with flowers having a yellow ground and edged with deep-rose colour. Shown by Messrs. GEO. BOYES & Co., Leicester.

Orchid Committee.

Present: J. Gurney Fowler, Esq. (in the Chair) and Messrs. Jas. O'Brien (Hon. Sec.), De B. Crawshaw, W. A. Bilney, E. Ashworth, R. G. Thwaites, J. Colman, J. Charlesworth, A. A. McBean, H. Ballantine, G. F. Moore, W. H. White, F. J. Thorne, J. W. Odell, H. A. Tracy, W. H. Young, W. Boxall, F. W. Ashton, F. Wellesley, and H. J. Veitch.

There was quite a revival in Orchid exhibits, and a fine show was the result, the Committee voting one First-class Certificate, nine Awards of Merit, and two Botanical Certificates.

Baron Sir H. SCHRÖDER, The Dell, Egham (gr., Mr. H. Ballantine), was awarded a Silver-gilt Flora Medal for a group of great variety and interest. The group was made up of fine Cattleyas, including showy varieties of *C. labiata*, *C. × Mantini nobilior* (one specimen bearing three spikes of thirty flowers), *C. Bowringiana* (one of the original masses obtained in 1888), good *C. Dowiana aurea*, and others. Among them were many graceful sprays of *Dendrobium Phalænopsis*, *Odontoglossum crispum*, *O. grande*, and its variety *aureum*. Specially fine among the *Cypripediums* was a pan of *C. × Maudiae* "The Dell" variety, with three very large and finely-formed flowers of a clear emerald-green and white; others were two plants of *C. Fairrieanum*, *C. purpuratum*, *C. × Baron Schröder*, *C. × H. Ballantine*, *C. × Deedmannianum*, and a pretty hybrid resembling *C. × triumphans*. The most remarkable plant was a sturdy specimen of the large and curiously-formed *Angraecum infundibulare* with large white labellum and remarkable spur.

JEREMIAH COLMAN, Esq., Gatton Park (gr., Mr. W. P. Bound), secured a Silver-gilt Flora Medal for a very fine group. At one end was a batch of *Cypripedium × Arthurianum* of a very large type; another of a number of *C. insigne Sandere*, all propagated from a plant with four leaves since 1900; good *Cattleya labiata*, including a plant of the blue-tinted *C. l. cœrulea*. A batch of *Laelia pumila* and *L. præstans* occupied the centre, and included some very richly coloured forms, and the white *L. præstans* Gatton Park variety, which has a slate-blue front to the lip, &c.

Messrs. CHARLESWORTH & Co., Heaton, Bradford, again staged one of their fine groups of showy hybrids, which secured a Silver-gilt Flora Medal. The best of the hybrids were *Cattleya × Iris*, *C. × Vulcan*, *C. × Fernand Denis*, *C. × Weedoniensis* var. *Kubelik*, *Laelio-Cattleya × Haroldiana*, the pretty *L. C. × Aleyone* (*L. flava × C. Schilleriana*), and other *Laelio-Cattleyas*; hybrids of *Brassavola Digbyana*, *Masdevallia × Imogen*, and others. The species were represented by several *Vanda cœrulea*, good *Cypripedium insigne*, *Odontoglossum crispum* (one nicely spotted variety), good *Dendrobium Phalænopsis*, including a white form; and various others.

Messrs. STANLEY & Co., Southgate, were awarded a Silver Flora Medal for a group containing very good forms of *Cattleya labiata*, two of them named "Dawn" and "Coldreyi" having white sepals and petals, the disc of the lip yellow, and with rose-pink markings on the front. At the back of the group were fine sprays of *Oncidium varicosum*.

Sir TREVOR LAWRENCE, Bart., Burford (gr., Mr. W. H. White), showed a fine basket of the vermilion-scarlet *Habenaria militaris*; an interesting collection of *Miltonias*, including *M. candida grandiflora* and its variety *violacea*; *M. Clowesii*, *M. Regnelli superba*, *M. × Binotii*, *M. × Lamarckiana*, and others, all being finely grown and flowered.

Messrs. SANDER & SONS, St. Albans, showed *Cymbidium × Gammieannum* with four spikes of pretty yellowish flowers striped with red-brown; *Cypripedium insigne* "D. S. Brown," a massive and finely marked variety; *Vanda Sanderiana*, &c.

Messrs. HUGH LOW & Co., Enfield, staged a group in which were good *Dendrobium Phalænopsis*, *Cypripedium × Baron Schroder*, *C. insigne* varieties, *C. × Henry Graves*, *Laelio-Cattleya × Lady Rothschild*, the singular *Epidendrum floribundum*, and several hybrid *Miltonias*, together with a selection of *Dendrobium Phalænopsis Schröderianum*.

The Right Hon. Lord ROTHSCHILD, Tring Park (gr., Mr. A. Dye), showed a cut inflorescence of *Laelio-Cattleya × luminosa superba*, a large flower with purple-veined petals and rich claret-purple lip.

J. GURNEY FOWLER, Esq., Glebelands, South Woodford (gr., Mr. J. Davis), sent *Cattleya × Lord Nelson* (*Harrisoniana × Mossie picta*), *Cypripedium × bingleyense Aeneas*, and the new and pretty *Cymbidium × Maggie Fowler* (see Awards).

The Right Hon. the Earl of TANKERVILLE, Chillingham Castle, Northumberland, showed *Sophræ-Lælia × heatonensis* of a bright purplish-red colour, and *Cypripedium × Lord Ossulston*.

W. M. APPLETON, Esq., Weston-super-Mare, sent two varieties of *Laelio-Cattleya × blethleyensis*, and *Cypripedium Charlesworthii* Weston variety.

ELIJAH ASHWORTH, Esq., Harefield Hall, Wilmslow (gr., Mr. Holbrook), showed *Dendrobium Phalænopsis* var. *E. Ashworth*, and *D. P. alba*.

C. J. LUCAS, Esq., Warnham Court, Horsham (gr., Mr. Duncan), sent *Laelio-Cattleya × Duncani* (*L. C. × Gottoiana × C. × Hardyana*).

FRANCIS WELLESLEY, Esq., Westfield, Woking (gr., Mr. Hopkins), showed *Cypripedium × Hopkinsianum* (*bellatulum × Mastersianum*), a good cream-white flower tinged and densely spotted with purple; a plant of *C. tonsum* Westfield variety with six flowers; *C. × De Vere* (*Charlesworthii × aureum*, *C. × Baron Schröder* var. *punctatum*; *C. × Gaston Bulteel* (? *Harrisonianum superbum × Fairrieanum*), a very distinct hybrid.

J. BUCHANAN, Esq., Savington Park, Petworth (gr., Mr. Ely), showed a selection of hybrid *Cypripediums*.

Mrs. COLLINGWOOD, Lilburn Tower, Alnwick (gr., Mr. Lovett), sent a spike of *Dendrobium Statterianum*.

C. K. WILD, Esq., Eltham (gr., Mr. Usher), sent *Cattleya Bowringiana*.

A. E. BAINBRIDGE, Esq., Lynwood, Newcastle (gr., Mr. Bell), again sent the *Odontoglossum grande* Lynwood variety brought to the Hall a fortnight ago, when there was no meeting. The plant had two spikes of eight and seven flowers.

Sir JOHN EDWARDS-MOSS, Bart., sent a flower of a variety of *Cattleya aurea* with much yellow on the lip.

F. G. GLEDSTANES, Esq., Taplow (gr., Mr. Milson), sent a good specimen of *Vanda Sanderiana*.

E. LOWTHER, Esq., Tindels Park, Bristol, showed *Oncidium pretextum Gravesianum*.

Awards.

FIRST-CLASS CERTIFICATE.

Oncidium Leopoldianum, from ELIJAH ASHWORTH, Esq., Harefield Hall, Wilmslow (gr., Mr. Holbrook), a very handsome and remarkable species not previously shown. The plant has the habit of the *O. macranthum* section, and bore a long flexuose, branched inflorescence of many flowers. The flowers, which are about an inch and a half across have nearly equal, broadly ovate sepals and petals, white near the margin and light rose in the middle, a broad labellum, with a nearly circular purplish-crimson blade, and yellow callus on a light ground at the base. The flowers bear a slight resemblance to those of the hybrid *Odontonia × Laressii*, but are much handsomer; a very remarkable species nearest to *Oncidium corynephorum* Lindley, only known by dried specimens.

AWARDS OF MERIT.

Cypripedium × Germaine Opotz (*Madame Coffinet × Fairrieanum*), from FRANCIS WELLESLEY, Esq. (gr. Mr. Hopkins).—A very massive and beautifully marked hybrid, pronounced by many to be the finest *Fairrieanum* cross. Upper sepal broad and flat, white above, greenish-yellow on the lower half, all but the margin having fine spotted lines of dark-purple. Petals and lip broad and finely displayed, yellowish tinged with purple, the petals having dark-purple spots at the base.

Cypripedium × G. G. Whitelegue (*Euryale × bellatulum*), from Messrs. SANDER & SONS.—A fine addition to the *C. bellatulum* crosses of the *C. William Lloyd* class. Flowers tinted with rose and spotted with chocolate-purple.

Cymbidium × Maggie Fowler (*gigantum × elegans*), from J. GURNEY FOWLER, Esq. (gr., Mr. J. Davis).—A very elegant and charmingly-coloured natural hybrid, with flowers nearest to those of *C. gigantum*. Flowers cream-white, with closely arranged lines of light reddish-brown on the sepals and petals, and blotches of the same colour on the lip. The flowers are also very fragrant.

Cattleya × Lord Rothschild var. *Fairy Queen* (*Gaskelliana alba × Dowiana aurea*), from Messrs. CHARLESWORTH & Co.—A very pretty and finely-formed flower; white with a yellow disc to the lip, and an irregular band of rose-purple in front.

Cattleya × Marie Henriette de Wavrin (*Loddigesii × Rex*), from the Marquis DE WAVRIN, Chateau de Rousele, Belgium (gr., Mr. De Geest).—An attractive

and floriferous hybrid with creamy-white flowers, having an orange-coloured disc to the lip, in front of which is a narrow purple blotch.

Cypripedium × *Lord Ossulston* (*Leeanum virginale* × *Charlesworthii* album), from the Right Hon. the Earl of TANKERVILLE.—Resembling an albino of *C. Charlesworthii*, the fine dorsal sepal being pure white with a small greenish base.

Masdevallia cucullata, from JEREMIAH COLMAN, Esq., Gatton Park (gr., Mr. W. P. Bound).—Flowers dark claret-purple, each being furnished with a hooded bract. The finely-grown plant had six flowers.

Dendrobium Phalenopsis "*Miss Louisa Deane*," from G. F. MOORE, Esq., Bourton-on-the-Water (gr., Mr. Page).—A model flower, bluish-white with clear pale rose markings on the lip.

Laelio-Cattleya × *Clive Appleton's variety*, from W. M. APPLETON, Esq., resembling a good form of *L.C.* × *Ingrami*. Sepals and petals rose coloured; lip deep claret-purple, with gold lines at the base (Botanical Certificate).

Epidendrum tricolor, from Sir TREVOR LAWRENCE, Bart. (gr., W. H. White).—A very singular species of slender growth, and bearing a dense raceme of pretty creamy-white flowers with red labellums.

Scaphytm multiflora, from Sir TREVOR LAWRENCE, Bart.—Inflorescence branched; flowers greenish.

Fruit and Vegetable Committee.

Present: Geo. Banyard, Esq. (in the Chair); and Messrs. John Wright, Jos. Cheal, W. Bates, J. McIndoe, S. Mortimer, A. Dean, W. Pope, H. Parr, W. Pyfe, H. J. Wright, Geo. Kelf, H. Somers Rivers, W. H. Divers, G. Reynolds, Ed. Beckett, John Lyne, F. Q. Lane, J. Jaques, Geo. Norman, J. Willard, O. Thomas, H. Foster, W. Poupert, and A. H. Pearson.

From Mr. J. H. RIDGEWELL, The Gardens, Histon, Cambridge, were shown specimens of a vegetable obtained from crossing the Winnigstadt Cabbage with Cambridge Champion Brussels-Sprout, the Cabbage being the seed-bearer. The plants produce large, very hard Cabbages, almost equal to Winnigstadt, and sprouts grow from the axil of every leaf also. It is an attempt to get two crops from the one plant, and may possibly be favoured by some amateurs. In any case the progeny is intermediate between the parents.

The Chinese Cabbage, *Brassica sinensis* variety "*Pet-sai Improved*," was shown by JAS. BROWN, Esq., Knoekbex, Kirkeudbright, N.B. (gr., Mr. T. Bennett), who exhibited several "heads." These had an appearance more like that of a Lettuce than of a Cabbage. Each leaf had a broad white stem and veins, but there was very little "heart" development, and as shown this vegetable would not appear to be of great use in this country as a variety of Cabbage. A description of the several varieties of this Cabbage was published in the *Gardeners' Chronicle* for May 19, 1888, p. 619, also a few particulars of its behaviour under cultivation at Kew, where it has been since the year 1887. (See also notes in the *Gardeners' Chronicle*, December 16, 1899, p. 457, and December 23, 1899, p. 474.)

Several seedling Apples were shown for the Committee's inspection, also tubers of a large Potato named Glory of the West. These latter were shown by Messrs. GARAWAY & Co., Bristol. No award was made to any of these, or to a seedling Melon from another exhibitor.

Messrs. HUGH LOW & Co., Enfield Nurseries, Highgate, staged a collection of about forty dishes of Apples and Pears. The display included some good Apples, the varieties Chas. Ross and Allington Pippin being magnificent specimens. We also noticed good dishes of Mère de Menage, Norfolk Beauty, Jas. Grieve and Gascoyne's Scarlet. The remainder of the Apples and the Pears did not call for any special mention (Silver Banksian Medal).

Mr. JAS. LAWSON, Superintendent of the Practical Department at the Horticultural College, Swanley, staged two dozen seedling Melons. They were all of the yellow, reticulated-skinned type, and showed good culture, the fruits being well finished and of splendid colour (Silver Banksian Medal).

Mr. ROBT. HOLMES, Tuckwood Farm, Norwich, showed a variety of Rhubarb named Burbank's Crimson Winter. There appeared to be nothing remarkable about the petioles, which were small, save that they are in season at a time when there is little demand for Rhubarb.

Messrs. VILMORIN, Andrieux et Cie, 4, Quai de la Mégisserie, Paris, sent a collection of Potatoes com-

prising eighteen kinds, and said to be the more popular varieties in France. They were an incongruous-looking lot of tubers, misshapen, small, scabbed, many with deep-seated "eyes," and such as in this country would not find favour. However, they had yellow flesh, and the Superintendent was requested by the Committee to have them cooked and report on their culinary merits.

Messrs. DOBBIE & Co., Rothesay, sent three new Potatoes, named respectively Table Talk, Dalmeny Early, and The Provost. They were recommended by the Committee for trial at Wisley.

Mr. T. A. SCARLETT, Market Street, Edinburgh, brought four Potatoes for Certificate, including a black kidney Potato named Trochie Grant. This variety is said to have been grown continuously since 1745, and that no tuber has ever been known to contract disease.

Messrs. H. CANNELL & SONS, Swanley, showed fifteen heads of Cabbage Cannell's Reliance, pointed, full hearted, and having but little waste leaf. They were of medium size.

AWARDS.

The following varieties of Potatoes received an Award of Merit after trial at Wisley, and after the Committee had tasted them when cooked:—The Gardener (SINCLAIR), Dalhousie Seedling (KENT & BRYDON), Duchess of Cornwall (DOBBIE & WILLIAMSON), and Forbes's Sensation (FORBES).

The following variety was highly commended:—Forbes's Marvel (FORBES).

THE VEGETABLE SHOW.

The show of vegetables was of much less extent than was expected. The collections of vegetables formed the chief centre of attraction to the visitors, especially to the professional class. Extravagance in the size of the productions shown was not much in evidence, if we except the Parsnips, Celery, Potatoes, and Cauliflowers. Some of the Parsnips were 3 feet long, tapering like Carrots, and such roots are most wasteful in use, the lower half being too watery to be edible. Celery was too gross and hard to be pleasant eating to most persons; and of what use are Potato tubers weighing three-quarters of a pound and measuring 6 inches in length, or Cauliflowers 9 inches in diameter?

Collection of Vegetables arranged on a space of not more than 60 square feet. Open to the Trade only.—1st, Messrs. CANNELL & SONS, Swanley, Kent. The whole of the exhibit was embedded in Parsley-leaves, including the bank at the rear of the exhibit. Into this last were inserted thirty-six heads of Cannell's Autumn Giant Cauliflower, the bank topped with heads of Kales in variety. In the front were placed dishes of Potatoes to the number of twenty-two, among which were very nice, not over large tubers of Sutton's Discovery, Schoolmaster, Early Puritan, Up-to-Date, Windsor Castle, Early Bird, The Factor, and Snowdrop in white varieties, and of coloured, Edgecote Purple, Early American Rose, Herd Laddie, Pink Perfection, Professor Wolthmann, Flouball, and selected Russet, all capital produce for such land as that at Eynsford, where these and the other vegetables were grown. The specimens of Ailsa Craig, Selected Giant, and Cranston's Excelsior Onions were very good, as were Cannell's Winner, New Red, and Market Favourite Carrots. There were also Beetroots, Turnips, Brussels-Sprouts, and Parsnips (Silver-gilt Knightian Medal).

Collection of Vegetables arranged on a space of not more than 20 feet, open to the Trade only.—1st, Messrs. J. CHEAL & SONS, Lowfield, Crawley, with a varied collection, extra good being Potatoes Up-to-Date, Ninetyfold, Triumph, Windsor Castle and Sir J. D. T. Dlewelyn; Carrots, Scarlet Model, Early Shorthorn, French Shorthorn, Early Nantes, St. Valery and Champion Scarlet Horn. Excellent Turnip-rooted Beets, and Onions of a useful size, viz., James's, Keeping and specimen bulbs of Magnum Bonum and Cocoonut were likewise shown. A nice Cabbage-Lettuce named Continuity was observed. Cauliflowers Autumn Giant and Mammoth were shown too large for ordinary table use. The Wroxton and Dwarf Gem Brussels-Sprouts were of moderate size and firm. There were also Leeks, Parsnips and Tomatos (Silver Knightian Medal).

Collection covering not more than 36 feet (Amateurs and Gardeners).—1st, Right Hon. Lord ALDENHAM (gr., Mr. E. Beckett), Aldenham House, Elstree. This was a very superior collection and most varied. Celery Aldenham Perfection and Carter's Solid Ivory were both very good, the first-named more especially; Cabbage Winnigstadt and Early Dwarf Uhm Savoy, and the various forms of Autumn Giant Cauliflowers

were the purest white; Lettuce Giant Cos was good for the season, as were the Turnip-rooted and long-rooted Beets. Canadian Wonder, French and Runner Peas, Scarlet Wonder, Ailsa Craig, Holborn Exhibition, and Carter's Record Onions were of the largest size. Some fine, long, red Carrots, and such Potatoes as Sir J. D. Dlewelyn, Breeze, The Dean, Windsor Castle, Cigarette and Goldfinder, house-grown Mushrooms and Tomatos in variety, Salsafy, Cardiff Castle, and Carter's Ideal Cucumbers were as good as possible. The Maltese Parsnips were of very fine growth and clear in the skin, and ran less to a taper than some others we noted. Scorzenera roots were rather above the usual size; Distinction and Stagshorn Lettuces, and the various Capiteums, and *Stachys tuberosa* (Crosnes) the Endives, Carter's Model and Batavian were well worthy of notice for their perfect blanching.

Collection to occupy not more than twenty-four feet (Amateurs and Gardeners).—1st, JOHN KERR, Esq., M.P., Gaddesden Place, Hemel Hempstead (gr., Mr. H. Folkes). This was a very fine exhibit and as varied in its contents as is possible at this date. Very fine Carrots were remarked in Carter's Red Elephant, Golden Ball, James, Intermediate, and Long Red Surrey; Veitch's Red-Topped Parsnip, a neat-looking bulb; Carter's Lily were looking nice, and slightly bigger bulbs; Champion Runner and Canadian Wonder (Red Flageolet) Beans were very fine. The only Pea shown was Aristocrat, and the pods appeared to have been touched by frost. Onions were of the giant kinds, and Shallots and Garlic were of unusual size. The Tomatos Duke of York, Trophy, Sunbeam, and Perfection were unsurpassable. The Potatoes numbered six dishes, and there were Lettuces, Capsicums, Artichokes, &c., in the exhibit. The Veitch Memorial Medal goes with the 1st prize in this class. 2nd, the Earl of WILTON, Hackwood Park, Hants (gr., Mr. J. Bowerman). In this exhibit the finest things were the Tomatos Lord Roberts, Hackwood Success, Eclipse, and Perfection; the Ailsa Craig and Excelsior Onions, Blood-red Beets, The Factor, Up-to-Date and Satisfaction Potatoes; the Lyons and International Leeks, the Rochford, and Rival Cucumbers, Gladiator Peas, Runner Beans, Wroxton Brussels-Sprouts, Michaelmas White Cauliflowers, and Scarlet Perfection and Snowball Turnips. The specimens of Tender-and-True Parsnips ran too much to useless tail ends. The Model, a short-horn variety, and Matchless Carrots; Wright's Giant Celery, and Flower of Spring Cabbage left nothing to be desired.

OPEN TO GARDENERS AND AMATEURS ONLY.

Twenty-four Dwarf or Climbing Beans.—1st, Mr. E. BECKETT, with Canadian Wonder. 2nd, H. PARTRIDGE, Esq., Castle Hill, Bletchingley (gr., Mr. J. W. Barks), with the same variety.

Twenty-four Scarlet or White Runner Beans.—1st, Mr. E. BECKETT, with Runner Bean Carter's Scarlet Emperor, the pods 12 inches in length. 2nd, Mr. J. BOWERMAN, with Hackwood Success, having rather shorter pods than the foregoing.

Six Round Beets.—1st, Mr. W. POPE, gr., Highclere Castle, Newbury. 2nd, Mr. E. BECKETT, with roots of much larger size.

Six Beets.—Of long-rooted Beet there were seven lots shown, and the 1st prize fell to Mr. E. BECKETT; 2nd to Mr. S. Cole, gr. to Lord SPENCER, Althorpe Park, Northampton. Mr. H. FOLKES had the best green-topped Beet, and Mr. E. BECKETT had 2nd prize.

Three Heads of Borecole.—1st, Mr. E. BECKETT, with Sutton's A1, a variety having a much-curved leaf. 2nd, Mr. J. W. BARKS.

Three Heads of Cauliflowers or Autumn Broccoli.—1st, Mr. E. BECKETT, with Autumn Mammoth Cauliflowers. 2nd, Mr. S. COLE. 3rd, Mr. H. FOLKES, with Sutton's Autumn Broccoli, very large and very compact in the eurd.

Three Stems of Brussels-Sprouts.—1st, Mr. E. BECKETT, with Dwarf Gem, a small hard sprout on a 2-foot-high stem. 2nd, Mr. H. FOLKES, with Exhibition, which has as short a stem as the foregoing, but the sprouts are more loose in form.

One Dish of Sixty Sprouts.—1st, Mr. BOWERMAN; 2nd, Mr. W. POPE, both showing the variety Exhibition.

Three Heads of White Cabbage.—1st, Mr. E. BECKETT, with Improved Winnigstadt. 2nd, Mr. J. W. BARKS with Ellam's Dwarf.

Three Heads of Savoys.—In this class Mr. HOBDAV was 1st with very large and compact Drumhead Savoys; whilst Mr. E. BECKETT was 2nd with a strain of Dwarf Green-curved.

Six Stump-rooted Carrots.—1st, Mr. H. FOLKES, with Carter's Golden Ball. 2nd, Mr. E. BECKETT, with Sutton's Favourite, of large size.

Six Long-rooted Carrots.—The prizes were taken in the order of their names by Messrs. H. FOLKES, W. POPE, and J. RUSHBROOKE, Esq.

Three Heads of Celery, Red.—In many instances the produce was either too grossly grown or imperfectly blanched, and the prizes were awarded to those heads which in some instances had begun to start the flower-head. 1st, WALPOLE GREENWELL, Esq., Marden Park, Godstone (gr., Mr. W. Lintott). 2nd, Mr. H. FOLKES.

Three Heads of White Celery.—1st, J. RUSHBROOKE, Esq., with well-blanched heads, which had started to push up the flower-stalk. 2nd, Mr. W. POPE, very good produce. 3rd, Mr. H. FOLKES, well blanched, but too coarse.

One Brace of Cucumbers.—1st, Mr. E. BECKETT, with fruits of Carter's Ideal, a dark green, spineless variety, nearly 2 feet in length. 2nd, Mr. J. W. BARKS.

Six Leeks.—1st, Mr. E. BECKETT, with finely blanched stems of Perfection. 2nd, Mr. G. HOBDAV.

Mr. E. BECKETT was 1st for Cabbage Lettuce (three) with Ideal (Sutton's), and he took a 1st prize for the only dish of Mushrooms shown.

Six Onions, White or Brown.—1st, Mr. J. BOWERMAN with enormous and shapely bulbs of Ailsa Craig. 2nd, Mr. G. HOBDAV, with bulbs quite as large, but suffering from an indifferent setting.

Six Red-skinned Onions.—1st, Mr. E. BECKETT, with Crimson Globe; and Mr. T. W. HERBERT 2nd with Blood Red.

Mr. E. BECKETT took 1st prize for Pickling Onions with the variety Queen.

Parsnips.—Of the exhibits of six Parsnips, five showed the long Carrot form, Mr. S. COLE was 1st; Mr. H. FOLKES 2nd, and Mr. G. HOBDAV 3rd. The produce in every case was smooth and free from side rootlets, and several of the roots measured 3 feet in length.

Peas.—Mr. E. BECKETT was 1st for a dish of twenty-five pods of Peas with the variety Gladstone; and Mr. T. W. HERBERT had 2nd prize for Autoerac.

Potatos.—Three dishes of Potatos, six tubers each, distinct. 1st, Mr. T. W. HERBERT, with the varieties Up-to-Date, Cole's Favourite, and Sir J. D. Llewelyn.

One Dish of Tomatos, six Fruits.—1st, Mr. W. POPE, with Sutton's Perfection. 2nd, Mr. W. LINTOTT, with Best-of-All.

Six Yellow-fleshed Turnips.—1st, Mr. E. BECKETT, with Sutton's Perfection.

Two Vegetable-Marrows.—1st, Mr. E. BECKETT, with Sutton's Perfection, a small, almost globular fruit; dark green with light green stripes.

There were also classes for Artichokes, Colewort, Red Cabbage, Celeriac, Endive, Shallots, Salsafy, and Spinach.

Collection of Saladings, Distinct.—1st, Mr. E. BECKETT, whose collection consisted of two Cucumbers, three of Carter's Oval Band, a variety of Batavian Endive, three heads of Lettuce Distinction, some heads of Chicory, punnets of Mustard and Cress, Radish Delicatess, Sunrise Red Tomato, and Perfection Beet.

Collections of Pot-herbs were shown by Mr. E. BECKETT and one other gardener. Mr. BECKETT gave the botanical as well as the English names.

Collections of Eighteen Varieties of Potatos, Open only to the Trade.—No 1st prize was awarded, but a 2nd prize fell to Mr. R. W. GREEN, Wisbech, for produce grown in a wholesale manner, and under the usual conditions of field cultivation. The collection included Eldorado, Sir John Llewelyn, Duke of York, the last two being first earlies; Challenge, Snowdrop, and Royal Kidney, second earlies; King Edward VII., Evergood, Goodfellow, Langworthy, The Factor, Chas. Fidler, and Green's Favourite main crop varieties (Silver Knightian Medal).

Collection of Twelve Varieties of Potatos, Six Tubers of each.—1st, Mr. S. COLE (gr. Althorpe Park, Northamptonshire), with tubers grown under garden conditions. All were of large size, and carefully selected tubers, shown with clean skins. We may name the rounds, Duchess of Norfolk, Sensation, Duchess of Cornwall and Up-to-Date; and the kidneys, Discovery, Duchess of Buccleuch, King Edward VII., Factor and Supreme. 2nd, Mr. W. POPE (gr. at Highclere), a good exhibit of not over large tubers, and comprising several novelties, all more or less of the kidney shape.

Lecture on Potatos.

At the meeting held in the lecture-room during the afternoon, under the Chairmanship of Mr. Alex. Dean, and subsequently of Mr. G. Masec, Mr. Walter P. Wright, Hon. Secretary of the National Potato Society, delivered a lecture on Potatos. At the outset he deprecated the idea that the formation of the National Potato Society had as the object of its formation the placing of large varieties of this vegetable before the public. Mere size of tuber was of very little importance compared with other qualities, such as flavour, cropping capabilities, and hardness to resist disease. Unfortunately large size cannot be combined with high flavour, and growers have scarcely succeeded in obtaining a happy medium between the two. When varieties are first introduced they may possess certain good points, but when improvement is undertaken in other directions they often lose some of their original desirable features. However, improvement is possible, as is seen in that sterling variety Up-to-Date, which, although when first introduced was only deemed a variety suitable for field culture, has since lost its coarseness, and has become an excellent table Potato. Although many persons consider the interest in these vegetables to have abated, it is not so, although the days of the "boom" are now at an end.

THE SIX BEST-FLAVOURED POTATOS.

One of the first points to consider in a Potato is flavour, and it may be advisable to tabulate the six varieties that in the lecturer's opinion are pre-eminent in this respect. These were:—

The Factor.—A variety that may be described as one of the section represented by Up-to-Date, and with relatively large tubers.

Golden Wonder.—This variety resembles the well known Main-crop in general habit of growth. The flavour is of perfect quality. At present the stock is small, consequently the prices for it are high.

Peacemaker.—This was shown last year, when much was said as to its merits, and these have been fully confirmed in the lecturer's experience. It is of the Up-to-Date section, and is not a heavy cropper.

Windsor Castle.—Although this variety has not proved a good disease-resisting Potato and is somewhat a light cropper, it is worthy a place in the garden for its good flavour.

Up-to-Date.—The lecturer included this sterling variety in his list of the six best-flavoured Potatos and one that has improved with age. It closely resembles Duchess of Cornwall, thus in small gardens both these need not be grown.

Langworthy.—This variety was raised in the North of Scotland, but was not known to any extent for some years. Its chief fault is its light cropping capabilities.

EARLY POTATOS.

With regard to varieties for use early in the season, the time of ripening will of course differ according to the soil, climate, &c., in which they are grown. The lecturer therefore did not furnish a list of the more suitable for every locality, but gave the result in his own garden. He had found May Queen the very earliest Potato with himself, his garden being situated in Kent, and composed of a strong clayey loam overlying clay. Duke of York followed May Queen. The yellow skin of this variety caused the public to discard it, but it was nevertheless an excellent Potato. Of the newer varieties, Midlothian Early promises to become a good and standard variety for early digging. Sharpe's Express was also mentioned.

The next class he had to deal with was the so-called second earlies, and of these he would mention Sir John Llewelyn, by no means the earliest Potato; Royal Kidney, a heavy cropper, and valuable in almost every respect; and Nobleman. As a main crop variety he would recommend any of the Up-to-Date section, which includes The Factor, Duchess of Cornwall, Dalmeny Beauty (a good cropper and of excellent flavour), The Highlander, and Sensation. The better plan for selecting one or more varieties as maincrops is to study the gardens in the district and find out what kinds furnish the best results, as a variety which succeeds in one locality is often a failure in another.

Points influencing cropping and flavour include thoroughly good seed, which is essential. Seed Potatos are treated in a most irrational manner. All seed Potatos should be "greened" and all boxed. Seed tubers taken from the clamp are often shrivelled and weakened by growths pushing, &c. The better plan is to use

whole tubers for seed purposes, and any weighing less than 2 oz. are not to be recommended. However, good results can be obtained from portions of cut tubers, provided they are large enough, but the practice is desirable. From experiments at Reading harm followed the use of cut tubers to two varieties only, these being Sir John Llewelyn and Conquest.

MANURES.

When manuring land for Potatos place the manure well under the ground, and at quite 1 foot in depth; also place artificial manure well under the soil. Scabbing is largely the result of contact with manure. Farmyard manure is excellent for this crop, a suitable dressing being two barrowloads to a square rod of land. A good artificial manure is composed of 4 lb. superphosphate, 1 lb. steamed bone-flour, and 2 lb. sulphate of potash to the rod. It is better applied late in the winter, during January or February. An excellent plan is to draw the furrows weeks before planting, and to spread the artificial manure along the rows. Infinitely better results are obtained by this treatment.

DISEASES.

The question of disease is a most important one to the Potato cultivator. With regard to disease-proof varieties these probably do not exist, but it may be recorded that of all the varieties noted the two best disease-resisting were Sutton's Discovery and Findlater's Evergood. Of Discovery, it may be remarked that the growth is rampant; in fact, the plant does not know when to cease growing and mature. However, it cooks remarkably well, and is not a bad cropper. Of Evergood it has been remarked that a more suitable name would be "Nevergood" or "Everbad." However, this variety must not be condemned too hastily, for many such as Evergood have become valuable acquisitions.

The chief diseases of the Potato are those due to fungus attacks. The most disastrous are the blight (*Phytophthora infestans*), the eurl (*Nectria Solani*), and the black-scab or rot. With regard to these, the most virulent is the eurl. This is an old disease that has made rapid strides of late years. Probably the hot, dry seasons of recent years have lessened the cycle of growth in the tuber and favoured the disease. Thus we find that Scottish stocks of seed-tubers are superior to our own; this may be due to the cooler climate, with the consequence that the tubers are more or less immature and unripe, for it has been proved at Reading that unripened or immature seed gave the best results in vigour and in growth.

As a preventive against black-rot the lecturer recommended dusting the tubers with flowers-of-sulphur. A dusting with lime when in the seed-boxes will also do good; it will dry and absorb moisture present—a necessary condition for the development of fungus growths.

Raising new varieties from the true seed is always interesting, as the offspring always differs very materially from their parents. It is claimed that Up-to-Date does not bear fruit, but that it does so occasionally is proved by its being one of the parents of Sutton's Superlative, also of The Factor. With regard to Northern Star it must not be condemned too soon, as such excessive vigour as this variety shows often becomes toned down later, and results in a valuable acquisition. With regard to the best varieties for furnishing the largest percentage of show Potatos, one early, the other late, he mentioned Sir John Llewelyn and Up-to-Date.

In the discussion which followed, Mr. DEAL mentioned the interesting fact that a seedling raised during 1904 produced over 9 lb. weight of tubers, and the plant measured 13 feet in circumference.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

OCTOBER 12.—A magnificent display of plants was made at the meeting on the above date, which might be called the opening meeting of the autumn session. The hall was filled with plants, and there was a good attendance of members.

G. W. LAW-SCHOFIELD, Esq., Rawtenstall (gr. Mr. Shill), exhibited one of the finest groups of Orchids yet shown at the Society's meetings. The plants consisted principally of *Cypripediums*, species, varieties and hybrids. All these plants, notably a fine lot of *Cypripedium insigne* var. *Sanderæ*, were fine examples of cultivation. At either end of the group was staged a batch of that most useful plant *Cattleya labiata* var. *autumnalis*. A Gold Medal was awarded for the group.

Messrs. CHARLESWORTH & Co., Bradford, also made a very good display of plants, nearly all hybrids. A

charming form of *Cattleya granulosa* named *C. g. var. aurifera* was specially noticed. Some beautiful forms of *Cattleya* × *Iris* and many varieties of *Cattleya* × *Mantini*, also a pure white form of *Cattleya Harrisonae*, made a beautiful *ensemble* (Silver-gilt Medal).

Messrs. J. CYPHER & SONS, Cheltenham, exhibited charming forms of *Dendrobium Phalenopsis* var. *Schrodere*, rare *Cypripediums*, some grand forms of *Phalenopsis Rimstadiana*, &c. (Silver Medal).

Messrs. SANDER & SONS, St. Albans, staged a good collection of plants, including a few charming hybrids.

Messrs. A. J. KEELING & SONS exhibited a small group of plants, *Cypripedium Fairrieanum* being particularly noted in this group.

FIRST-CLASS CERTIFICATES

were awarded to *Cattleya* × *Mrs. J. Whiteley Leemann's* var., from J. LEEMANN, Esq.; *C. granulosa* var. *aurifera* and *C. Harrisonae* var. *alba*, from Messrs. CHARLESWORTH & CO.

AWARDS OF MERIT

were awarded to *Cypripedium* × *Hoyleanum* var. *superba*, from Messrs. JOHN COWAN & CO., Ltd.; *Lelio-Cattleya* × *Ella*, from Z. A. WARD, Esq.; *Cattleya* × *Lady Ingram* var. *inversa*, from J. LEEMANN, Esq.; *Cypripedium* × *grandiflorum*, from Messrs. H. LOW & CO.; and *C. Niobe Westonbirt* var., from S. GRATRIX, Esq.

In the report of the meeting held on September 28, the plant shown by A. WARBURTON, Esq., and which received a First-class Certificate, should have been described as *Cypripedium* × *Germaine Opoix* var. *Gaston Bultel*. P. W.

ROYAL BOTANIC.

OCTOBER 18.—The autumn exhibition was held on this date. The displays were not numerous, and several growers of Dahlias and other herbaceous flowers who had intended exhibiting were unable to do so owing to the early advent of frost. The gardens appeared in excellent condition. The large conservatory, which was bright with a display of Chrysanthemums and Michaelmas Daisies, afforded an additional attraction. In this structure is the new rock-garden, that has been planted with some of the plants given by the late Rev. H. G. Torre. The Royal Botanic Society staged an exhibit of economic plants.

Mr. ERIC F. SUCH, Royal Berkshire Nurseries, Maidenhead, staged a collection of decorative Chrysanthemums interspersed with perennial Asters and relieved at intervals with spikes of *Cortaderia*, *Phytolalis Alkekengi*, &c. Mr. SUCH staged a new Chrysanthemum, "Coral Queen," the flowers of which were somewhat of a coral shade of colour (Silver-gilt Medal).

Messrs. JOHN PEED & SONS, West Norwood, London, set up a large batch of well-grown pot-plants of *Begonias* *Gloire de Lorraine* and *Turnford Hall* (Silver-gilt Medal).

Mr. R. H. BATH, Floral Farms, Wisbech, presented a collection of Chrysanthemums, relieved with trusses of perennial Asters, the whole being staged in Bamboo épergnes and vases. The new Chrysanthemum *Perle Chatillonnaise* was prominent (Large Silver-gilt Medal).

Miss ADAMSON, South Villa, Regent's Park (gr., Mr. Geo. Kelf), staged an imposing exhibit of stove and greenhouse plants. The collection occupied a considerable portion of the corridor, and was composed of well-grown plants of *Begonias*, *Codiaeums* (Crotons), Ferns, Palms, *Dieffenbachias*, *Selaginellas*, and similar ornamental foliage plants, suitably relieved with Chrysanthemums and flowering *Begonias* (Gold Medal).

Miss ADAMSON was also awarded a Silver-gilt Medal for four stands of *Black Alicante* grapes. These fruits were remarkably well finished for produce grown in such an environment as Regent's Park.

Mr. S. MORTIMER, nurseryman, Rowledge, Farnham, Surrey, showed Tree Carnations. He had some of the best varieties of these flowers, including *Miss Alice Roosevelt*, whose blush-rose-coloured flowers are as handsome as those of a "Malmaison" Carnation; *Lilian Pond*, an excellent white variety; and *Fair Maid*, also white (Large Silver-gilt Medal).

NATIONAL CHRYSANTHEMUM.

OCTOBER 23.—The Executive Committee held its usual monthly meeting at Carr's Restaurant, Strand, on Monday last, when the Chair was taken by Mr. Thomas Bevan. Mr. Gerald R. Dean, the Secretary for the time being, presented an interim statement of accounts, which showed a satisfactory balance in hand. It was also reported that the prize-money awarded at the October show was rather less in amount than that actually offered in the Schedule.

A sub-committee of six members was then elected to carry out the arrangements for the Society's annual dinner, which it was resolved should be held on Tuesday, November 28 next, at the Holborn Restaurant (Royal Venetian Chamber). The President, Mr. C. E. Shea, has promised to occupy the chair on that occasion. With regard to the November show, stewards were appointed to assist in the necessary details of organisation, the following gentlemen being

elected:—Messrs. Prikett, Want, Foster, Gilks, Simpson, Wooderson, Cuthbert, and Oliver.

Mr. C. H. Curtis reported on the recent Conference on early-flowering Chrysanthemums that was held on the first day of the October show. At the afternoon meeting there was a large attendance, and in the evening the number of persons present was also satisfactory. The papers were all in the printer's hands, and he hoped they would shortly be published in independent form. If this plan were adopted he proposed that the booklet containing the record of the Conference should be supplied to members gratis, but that a small charge should be made for it to outsiders.

Mr. Witty wished to know what the National Chrysanthemum Society was going to do in connection with the great International Chrysanthemum Show to be held in Paris on November 4. The Foreign Secretary, Mr. Harman Payne, replied that the officers and the Society were giving five Medals to be placed at the disposal of the jury, that a deputation from the National Chrysanthemum Society would visit the show, and that the gentlemen composing the deputation had been invited to serve on the jury.

Mr. Hiehle was warmly welcomed by the Chairman on his first attendance as delegate from the French Horticultural Society of London, which is now affiliated to the National Chrysanthemum Society.

Obituary.

REV. H. H. D'OMBRAIN.—As these pages are passing through the press, news has reached us of the death, on Monday last, of the Rev. H. H.



THE LATE REV. H. H. D'OMBRAIN.

D'Ombrain, aged 87 years. Deceased, who was Vicar of Westwell, Kent, was for very many years Secretary of the National Rose Society, of which he was also one of the founders. As "Wild Rose," Mr. D'Ombrain was a frequent contributor to these pages over a long series of years. We must defer further remarks on the deceased florist until our next issue.

GARDENERS' DEBATING SOCIETIES.

READING AND DISTRICT GARDENERS.—The usual fortnightly meeting was held on Monday, the 9th inst., and was largely attended. Mr. W. J. Townsend occupying the chair. The subject for the evening was "Experimental Hybridisation of the Rose as practised by the late Lord Penzance and the Lecturer," Mr. G. Baskett. Wood Lea Gardens, Virginia Water, described in a most interesting manner the principal crosses carried out during the fifteen years he was with his late employer. He also gave descriptions of the varieties of Roses used as parents, information with regard to the obtaining of pollen, the preparation of the blooms (seed bearers), seed sowing, and the suitable stock for budding.

BRIXTON, STREATHAM AND CLAPHAM HORTICULTURAL.—At the meeting of this Society, held on October 19, a paper on the Chrysanthemum was given by Mr. Gover, of Messrs. Peed & Son. Mr. Bryan presided. Mr. Gover said that individual varieties of Chrysanthemums in the matters of the taking the buds, stopping, &c., required special treatment, which will also vary according to the season. To prolong the freshness of any blooms they should be cut early in the morning, and the leaves from the stalk removed immediately. J. M. B.

LOUGHBOROUGH AND DISTRICT GARDENERS.—The usual fortnightly meeting of the members of this Association was held in the Town Hall, Loughborough, on Tuesday the 17th inst. Mr. J. T. Smith presided. There was a good attendance of members to hear Mr. J. D. Pearsons' lecture upon "Daffodils and Narcissus." At the outset of the address the lecturer referred to the classification of the Daffodils. Where these bulbs were planted in mixed borders, the production of bold clumps of massive appearance should be the aim of the cultivator. They should be inserted from 4 to 8 inches deep. Soils and preparation of the sites were fully described in a practical manner. Organic manures were to be avoided. Wood ashes, bone meal, or basic slag were the best manures for these bulbs. Bulbs planted on cultivated land require periodical lifting to obtain success, three years being the outside limit of time to permit bulbs to remain without replanting. On grass the bulbs will succeed for years without disturbance. All bulbs requiring replanting should be lifted in June and replanted in September, commencing with the *Poeticus* section, following with the short cup section, and finishing with the trumpet varieties. The subject of diseases was also referred to. D. R. P.

BOURNEMOUTH AND DISTRICT GARDENERS.—The meeting of the above Association held recently assumed the form of a concert arranged by the Committee in aid of the Royal Gardeners' Orphan Fund. About 100 members and their wives and friends were present. Mr. Charles Stewart, Dean Nurseries, presided, and he explained the objects of the Fund, and asked for a liberal collection. A capital programme of a miscellaneous character was listened to by an appreciative audience. The collection realised £2 10s.

CROYDON AND DISTRICT HORTICULTURAL.—A lecture on "The Wild Flowers and Gardens of Japan" was given by Mr. Reginald Farrer to the members of this Society on Tuesday the 17th inst. The lecture was the outcome of Mr. Farrer's own experiences in the land of the Chrysanthemum. In Japan one meets with a style in gardening entirely unique, and what would otherwise be a barren waste is beautified by a charming arrangement of dwarf trees, shrubs, and comparatively few flowers. Their garden is an exact representation of a famous landscape of great magnitude, reduced to only a few yards of space, yet fashioned in accuracy and true perspective of the scene copied.

REDHILL, REIGATE, AND DISTRICT GARDENERS.—The above Society held their fortnightly meeting on Tuesday, October 17, Mr. W. P. Bound in the Chair. Mr. Wells, the well known Chrysanthemum grower, read a paper on the "Cultivation and Value of the Early-flowering Chrysanthemum." The lecturer gave a long list of early-flowering varieties, also the best methods of their culture. Some of the varieties should be grown in a natural way and without budding, while others needed to be disbudded. Mr. Wells made reference to the now very popular single forms and to their value from a decorative point of view. A special invitation was given to the members to visit the Merstham Nurseries, where many thousands of Chrysanthemums of all kinds are in flower at the present time. F. C. L.

CHELMSFORD GARDENERS.—At the meeting of this Society, held on October 20, a paper on "Iris-es" was read by Mr. Mallett, of Colchester. The lecturer showed examples of the roots of the various Irises, and detailed their requirements as to soil and situation. It was claimed that the Iris rivalled in form and colour the more expensive and troublesome Orchid. Mr. Mallett anticipated that the Japanese Irises will be extensively planted in the near future. The commoner varieties of Iris can be forced into bloom in February and March with ease. It was suggested that Spanish Irises should be planted in dry situations, and the English varieties in damper parts of the garden. W. E. S.

SCHEDULES RECEIVED.

WEST OF ENGLAND CHRYSANTHEMUM SOCIETY'S Exhibition, to be held in the Plymouth Guildhall and Square, on Tuesday and Wednesday, November 7 and 8, 1905.

WANTAGE CHRYSANTHEMUM AND FRUIT SOCIETY'S Fifth Annual Exhibition, to be held in the Victoria Cross Gallery, Wantage, on Tuesday, November 2, 1905.

THE NORTH LONSDALE ROSE SOCIETY, in conjunction with the National Sweet Pea Society, will hold an Exhibition of Sweet Peas at Ulverston, on Friday, July 20, 1905.

CHESTER PAXTON SOCIETY'S Annual Exhibition of Fruits and Chrysanthemums, to be held in the Town Hall, Chester, on Wednesday and Thursday, November 15, 16, 1905. Hon. Sec., Mr. G. P. Miln, Grosvenor Museum, Chester.

WEST OF ENGLAND CHRYSANTHEMUM SOCIETY'S Exhibition, to be held in the Plymouth Guildhall and Square, on Tuesday and Wednesday, November 7 and 8, 1905. Hon. Sec., Mr. Chas. Wilson, 4 North Hill, Plymouth.

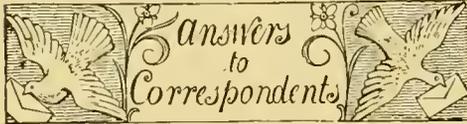
PARIS.—An international exhibition of Chrysanthemums and of fruits will be opened on Nov. 4. A luncheon will be offered to the jury on the day mentioned, and in the evening a reception, to which ladies are invited, will be held in the rooms of the National Horticultural Society of France, 84, Rue de Grenelle. The Pomological Congress will open on November 6 at 9 A.M.; and at 11 30 A.M. the meeting of the Nursery and Seed Trade Association of France.

GARDENING APPOINTMENTS.

- Mr. R. H. COCKBURN, late of Luffness, and of Messrs. Methven's Nurseries, Edinburgh, as Gardener to Sir CHARLES CAYZER, Bart., M.P., Gartmore House, Perthshire.
- Mr. JNO. HAGGETT, for some time Gardener to H. L. C. BRASSEY, Esq., Apethorpe Hall, Walsford, Northants, as Gardener to the Right Hon. the Earl of GUILFORD, Waldershare Park, Dover, Kent.
- Mr. J. C. LUNNON, for the past two years Foreman at Beechwood Park, Dunstable, as Gardener to Dr. HILLIER, The Cell, Markyate, Herts.
- Mr. WELCOME J. HATFIELD, for the past six and a half years as Second in Thwaite House Gardens, Cottingham, East Yorks, as Gardener to D. H. THORNTON, Esq., Oakroyd Hall, Birkenshaw, Bradford.
- Mr. S. J. HUSSEY, for the last three and a half years in the Gardens at Dumbleton Hall, Evesham, and previously in the Gardens of the late T. W. WENLEY, Esq., The Uplands, Selby Hill, as Gardener to R. E. S. THOMAS, Esq., Wormington Grange, Broadway, Worcestershire.

ENQUIRY.

CLIFTON.—A subscriber wishes to know the average minimum temperature of Clifton in mid-winter.



APPLES DISQUALIFIED: A. B. The whole question as to what constitutes a dessert or a culinary variety of Apple is arbitrary. Many persons may consider a variety valuable for dessert purposes which others would regard as only suitable for the kitchen. But there are some varieties of Apples which are unquestionably suitable either for dessert or for culinary purposes, and of these we may instance Blenheim Pippin. Gascoyne's Scarlet would, in our opinion, also come under this category; indeed, it is included in both the lists of dessert and of culinary varieties in the schedule of the recent fruit show of the Royal Horticultural Society. Therefore, unless the schedule of the particular society, at which this variety was shown by your friend, stipulates to the contrary, he was, in our opinion, justified in exhibiting Gascoyne's Scarlet as a culinary Apple. The fruits of Annie Elizabeth which you send are affected with a fungus (*Fusicladium dendriticum*). Burn all the diseased fruits and spray the trees with the Bordeaux-mixture first as the flower-buds begin to open in spring again, when the petals of the blossom are falling, and lastly when the fruits are of the size of Peas or slightly larger.

ARRANGING PLANTS FOR EFFECT AT AN EXHIBITION: E. J. B. We believe that it is generally understood that groups of miscellaneous plants are arranged by the exhibitor or his assistants, but in most schedules there is nothing to prevent the exhibitor employing a temporary assistant. If the idea is that the exhibitor or his regular staff shall do the work, words should be inserted in the schedule to that effect, for failing this an exhibitor might employ a skilled florist for the purpose.

ARUMS DISEASED: W. N. The plants are attacked by the "soft rot" disease of *Callas*. See p. 9 in our issue for January 7, 1905.

CARNATIONS DISEASED: A. D. The diseased appearance of the leaves is due to the presence of caterpillars. These pests are microscopic in size, and cannot be seen with the naked eye. You must thoroughly sterilize the soil in which the plants are grown by baking it. Burn all the diseased plants, and if the plants are grown outside, select a fresh site in the garden for planting.

DAFFODILS AND OTHER PLANTS FOR A PARTIALLY SHADED SITUATION: S. H. Y. You give no particulars as to the site in which you intend to grow the Daffodils and other plants, whether beneath the shade of trees or that of a house or wall, neither do you inform us if it is a border or grass-land. One of the best plants for a shaded situation is the Periwinkle *Vinca major*. We have seen this succeed beneath the shade of trees as a carpet to Narcissi, Bluebells, Snowflakes (*Leucojum*), Winter Aconite (*Eranthis hyemalis*), Anemones, &c., and the whole bordered with *Hypericum calycinum* and an

edging of clipped Ivy. The list you send contains plants of widely different habits. Some are annuals, others are perennials; some are tall-growing subjects and others again do not attain more than a foot or so in height. Probably you would find the following species the more suitable of those you mention:—*Achillea ptarmica* fl. pl., *Anemone japonica*, *Campanula persicifolia*, *Heuchera sanguinea*, and *Scilla campanulata*.

ECHEVERIAS: C. J. S. These plants will require very little water during the winter, but should not be subjected to absolute drought. Alternantheras require considerable warmth, and must be watered occasionally. Alonsoas are propagated by seeds, which may be sown in March, and by cuttings taken in August.

FERN FRONDS: *Subscriber*. The Ferns are infested with thrips, and are in poor condition generally. It will be best to cut away the fronds and let the plants make a fresh start.

GARDENERS' ORPHAN FUND: W. A. Many thanks for 10s. received. The sum has been placed in our collecting box.

GLOXINIA: W. D. C. Not better than others already in cultivation.

GOOSEBERRY MILDEW: *Question*. "Enquirer" will be grateful for advice as to whether a course of treatment with ammoniacal copper carbonate in spring, and with sulphate copper now is likely to be worth trying for disease on enclosed shoot from Gooseberry. Every bush in a large plantation is mildewed, and unless success is likely to follow, the owner objects to the expense of the experiment.

—*Answer*: The fungus sent is the American Gooseberry-mildew (*Sphaerotheca mors-uvæ* [Schweinitz], Berkley and Curtis). The young wood is covered with the persistent mycelium of the fungus, in which countless numbers of perithecia or spore-cases are embedded. This is the winter form of fruit; each perithecium contains eight ascospores, which carry the fungus in a dormant condition over the winter months. About May or June the ascospores will be set free, and germinating on the berries and leaves will produce the conidial or summer form of fruit, which is a white powdery mildew. This conidial stage can be controlled by spraying with potassium sulphide (1 ounce to 2 gallons of water). It is doubtful if the winter stage could be destroyed by fungicides; the diseased young wood should be cut off and burnt. In the present case it would be well to burn the whole plantation, and not replant in the same ground for a season or two. The present disease is illustrated and fully described in vol. xxv. of the *Journal of the Royal Horticultural Society*, p. 139 (1900), and succeeding volumes. (Will you kindly send your name and address, not necessarily for publication?).

INSECTS DESTROYING ROOTS OF DENDROBIUM: E. Young. Not the Dendrobium beetle, but the larval stage of a comparatively large exotic beetle belonging to the Elateridae, and related to the common wireworm. The pest was in all probability imported with the plants. You might possibly trap the insects by placing a few thick slices of Carrot or Mangold round the plant, and in order to protect the flowering stems, tie barriers of cotton-wool round them.

INSECTS ON CHRYSANTHEMUMS: R. W. Rickards. A species of plant bug belonging to the Anthoridae, probably *Anthocoris nemorum*, but the specimens were immature. You could reduce their number by shaking the plants over a tarred tray or cloth; but if the plants are not in bloom fumigate with Tobacco-smoke, as the insects readily succumb to the fumes.

INSECTS ON CINERARIAS: A. F. R. Not the larval form of *Forficula*, but immature stages of the common greenhouse thrips. Fumigate occasionally, and do not allow the atmosphere to become too dry.

LOBELIA: G. K. C. A temperature of 45° at night will be sufficient. Do not afford much water during the winter, but keep the roots just moist.

NAMES OF FRUITS: W. J. G. Quarrenden Apple.—W. H. 1, Prince Napoleon; 2, Glou Mor-

ceau; 3, Beurré Diel; 4, Marie Louise; 5, Doyenné Boussoch; 6, Fondante d'Automne; 7, Beurré de Capiaumont; 8, Chaumontel.—C. W. S. Thompson's, a most delicious Pear.—*Ruella*. 1, Court pendu Plat; 2, Lord Raglan; 3, Fondante de Malines; 4, Autumn Josephine.—H. B. 1, Marie Louise; 2, Aston Town; 3, Winter Thorn; 4, Beurré Diel; 5, Gansel's Bergamot.—*Wheeler & Son*. 4, Herefordshire Red Streak; 5, Cat's Head; 6, Round Winter Nonesuch.—H. B. Apple Alfriston.

NAMES OF PLANTS: E. C. C. D. *Gentiana pneumonanthe*.—*Cecili*. *Rhamnus catharticus* (not poisonous).—A. J. P. 1, *Codiaeum* (Croton) *undulatum*; 2, unrecognised, possibly a seedling variety.—*Old Subscriber*. *Mirabilis Jalapa*, the red flower; *Abelia triflora*, the shrub.—G. H. P. 1, *Cattleya labiata*; 2, *Acalypha Macfeeana*; 3, *Abutilon Savitzii*; 4, *Diacena Godseffiana*; 5, *Strobilanthes Dyeriana*; 6, *Nephrolepis exaltata*.—V. A. R. 1, *Masdevallia amabilis*; 2, *Restrepia maculata*; 3, *Oncidium barbatum*; 4, *Pleurothallis macroblepharis*; 5, *Selaginella Wildenovi*; 6, *Pteris longifolia*.—*Correspondent*. 1, *Vernonia Andersoni* var.; 2, *V. salicifolia*; 3, *V. epacrioides*; 4, *V. glauca cœrulea*; 5, *Diplopappus chrysophyllus*; 6, *Vernonia diosmaefolia*; 7, *V. pinguaefolia*; 8, *V. cupressoides*.—H. C. Parkwood. 1, *Liquidambar orientalis*; 2, *Acer rubrum*.—*Collector*. It is impossible to name your plants in the seedling stage. No. 2 is probably an *Abutilon*. No. 3 is a *Solanum*. Send again when the plants are in flower.—*Land*. 1, *Chenopodium Draba*; 4, *Carlina vulgaris*; 5, *Sisymbrium Sophia*.

PAPER FOR GLAZING: H. C. The address of the firm is Willesden Paper and Canvas Works, Ltd., Willesden Junction, London, N.W.

PELARGONIUMS INJURED BY INSECTS: J. S. The insects you sent were a species of plant bug (*Phytocorus viridis*). Dust the infested plants with Pyrethrum powder; this is a better form of insecticide than Keating's insect powder. It should be applied in dry weather. "The white frothy stuff" on the *Tamarix* is caused by *Philaenus spumarius*, and has nothing whatever to do with the occurrence of the first-named insect on the *Pelargoniums*; it is highly probable, however, that the *Tamarix* may harbour both insects.

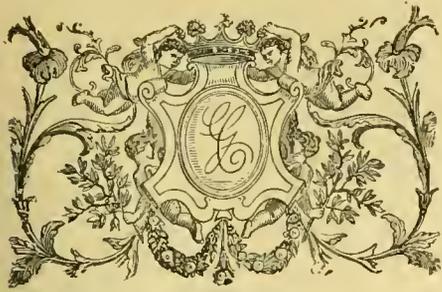
SLUG: G. S. The specimen you send is not a slug, but one of the leeches.

TESTIMONIALS: *One in Doubt*. An employer is not obliged to give his servant a testimonial, but should he do so, the law expects him to furnish one that is truthful.

VIOLETS DISEASED: *Anxious* and F. L. The plants are attacked by a fungus, *Ascochyta violæ*. Spray them with potassium sulphide, 1 ounce to 3 gallons of water, every fortnight. Select new soil for a future plantation, and obtain fresh plants from a distance.

WATER LILIES INJURED BY INSECTS: J. C. The leaves are attacked by a somewhat uncommon beetle (*Galeruca nymphaea*). As it would be practically impossible to apply an insecticide owing to the nature of the habitat, we fear that your only course is to capture the insects by placing a water-net under the leaves and dislodging the insects. We find no traces of insects on the foliage from the Lime tree.

COMMUNICATIONS RECEIVED.—E. S. S.—H. COVEY.—C. C.—R. L. C. (letter will follow).—Udo Dammer.—S. W. T.—D. E. H., Cape Town.—E. J. A., Cambridge.—A. W.—W. D. C.—L. C., Orleans (your letter has been forwarded).—J. C. & Co.—MacG.—A. A. H.—J. R. J.—A. Berger, La Mortola—J. W.—A. E. S.—H. W. W.—W. R. F. (with thanks)—G. W. B. & Co.—R. N.—G. H.—Cecil—W. J.—Enquirer—H. K.—J. P.—King's Acres Nurseries, Ltd.—W. J. H.—De B. Crawshaw—A. S.—B. S. W.—F. J. C.—G. W. F. Michigan—H. M.—F. M.—J. A. Mc. (Mexico)—A. D. W.—F. J.—E. H. J.—J. R. J.—C. Ruse—A. C. B.—W. H. C. E. J. A.—W. D. C.—Hon Walter R.—Sir A. K. R.—T. H.—W. H. J. P.—C. W. S.—B. P.—W. Y. N.—J. P. A.—T. T.—W. D. & Sons—W. E. B.—Horticult.—R. P.—R. W. R.—S. W.



THE

Gardeners' Chronicle

No. 934.—SATURDAY, November 4, 1905.

CONTENTS.

Apples, packing ...	331	Orchid notes and gleanings ...	324
Books, notices of—		Oxford Botanic Gardens ...	321
Poultry-farming ...	326	Plant ecology ...	329
The Four Gardens ...	326	Plant food in soils, formation of ...	321
British Gardeners' Association ...	329	Plants new or noteworthy—	
Carnations, winter flowering ...	331	Ismene festalis × ...	322
China, plant-collecting in ...	323	Spiraea pachystachys × ...	322
Chinese plants ...	330	Potato Exhibition, the Coming ...	329
Chrysanthemums ...	330	Puff-ball, fascination in a Rock garden — The Galanthus octobrensis ...	325
Cook, Mr. T. H. ...	329	Science Guild, British ...	328
Cotoneaster frigida and C. bacillaris ...	331	Seeds, colour in ...	331
D'Ombra, the late Rev. ...	328	Seeds, the vitality of, when buried ...	329
Dracenas, ornamental ...	330	Selborne Society, the ...	330
Drip in glasshouses ...	331	Societies—	
Elms in Kensington Gardens ...	331	National Chrysanthemum ...	332
Fruit buds developed on an injured shoot ...	331	National Rose ...	329
Jordan, Mr. F. ...	327	Royal Horticultural ...	329
Kew notes ...	325	Scientific Committee ...	332
Kitchener, Lord, as a gardener ...	329	Tobacco, Turkish ...	330
Magnolia glauca ...	325	Week's work, the—	
Obituary—		Flower garden, the ...	326
Armiston, George ...	332	Fruits under glass ...	326
Mitchell, James ...	335	Hardy fruit garden ...	327
Phillips, William ...	331	Kitchen garden, the ...	327
Odontoglossum with abnormal inflorescence ...	329	Orchid houses, the ...	327
Onions, Ailsa Craig and Excelsior ...	329	Plants under glass ...	327
		Yucca filamentosa ...	325

ILLUSTRATIONS.

Lilium myriophyllum (Supplementary Illustration) ...	324
Odontoglossum × Lambeauianum ...	331
Portrait of the late William Phillips ...	326
Puff-ball with confluent growth ...	326
Spiraea pachystachys ...	322

THE BOTANIC GARDEN, OXFORD.

PLANT-LOVERS may always pay a profitable visit to the Oxford Botanic Gardens. On a recent inspection I was chiefly concerned with the trees, and though the collection is necessarily a small one, several fine old specimens command attention, both on account of their size and beauty. Near the main entrance, one of the most conspicuous trees is a grand *Sophora japonica*, its widely-spreading branches covering a space of 30 yards in diameter; the stem is fully 6 feet in diameter, and from this arise five large limbs, each one of which is equal in size to an average tree. This *Sophora* has evidently thriven well, as it has done in other gardens where the soil is not of remarkable depth or richness, and it is regrettable that the tree has not been more frequently planted in parks. The foliage is attractive and very distinct in tint, often with quite a bluish shade, and the flowers are produced abundantly. Loudon reproduced a statement made by Du Hamel concerning this tree, to the effect that the peculiar odour of the bark causes colic in those engaged in pruning the shoots in a green state; but I have never heard it confirmed here, and in an ordinary way very little pruning would be needed, so that circumstance, if true, should not be a deterrent to intending planters.

Another unusually handsome tree is the

cut-leaved Beech, *Fagus sylvatica* var. *apenniifolia* which is about 50 feet high, finely proportioned, with widely spreading branches. It is in healthy, vigorous growth, with abundance of its elegantly cut long, narrow leaves, which are scarcely recognisable as Beech foliage. This is one of the finest examples of the variety known to me, and well shows what a useful addition it is to the list of ornamental deciduous trees, yet it is too seldom seen. Like the typical species, it will thrive in town parks with ordinary care; but I know some trees, which have been planted long enough to make good specimens, that are poor, stunted examples, owing to their being overcrowded or overshadowed by other trees. Loudon adopted the name *heterophylla* for the variety, which has been adopted in the Kew arboretum; while the names *comptoniæfolia*, *incisa*, *laciniata*, and *salicifolia* are all considered as referring to the same form.

Fraxinus excelsior var. *parvifolia* is the name borne by a vigorous and graceful tree, which must be nearly 60 feet in height, the branches spreading freely, and well clothed with long leaves distinguished by narrow pinnæ. A good deal of confusion exists amongst the varieties of the common Ash in nurseries and gardens, and the variety under notice has puzzled me somewhat as regards the nomenclature. No form of *F. excelsior* is given in the Kew list with the name *parvifolia*, nor have I succeeded in finding one in the garden itself, but there is one named *angustifolia*, which was also described by Loudon. *F. parvifolia* is given as a species in the Kew list and in Loudon's work, but as far as I have been able to judge, the Oxford variety is distinct from both these. In fact, it very closely resembles several large trees on one of the islands in Victoria Park, East London; they are about the same size and apparent age as the Oxford Ash, and all have been grafted at 3 or 4 feet above the ground. The variations of the common Ash are numerous. I have notes of twenty-eight well-marked forms at Kew, and as there are at least twenty-four synonyms for these, any attempt at identification is difficult without careful comparison of leaves in different stages.

The Hop Hornbeam, *Ostrya carpinifolia*, is represented at Oxford by one of the largest and oldest trees in public gardens. It is a distinct tree, of free growth when raised from seed, but it appears to have been the custom early in the last century (according to Loudon) to graft this *Ostrya* upon the common Hornbeam (*Carpinus Betulus*), and as the stock has seldom kept space with the scion, it no doubt accounts for the stunted state of some old trees. The specimen at Oxford is rendered more remarkable by the huge clusters of Mistletoe growing upon the branches; there are nearly twenty of these tufts, and the plant seems particularly happy. I do not remember ever seeing this parasite growing upon the *Ostrya* or the Common Hornbeam elsewhere.

The herbaceous plants and the various inmates of the glasshouse are very attractive and interesting, and the whole condition of the garden is creditable to the management. *R. Lewis Castle.*

FORMATION OF PLANT-FOOD IN SOILS.

(Continued from p. 212.)

ONE of the most important of the practical problems presented for solution by agricultural and horticultural chemistry is, according to Professor H. D. Wiley, the conservation of plant-food. With an abundance of plant-food and a favouring climate it is difficult to place a limit to the power of the earth for supporting life. In this connection it may be of interest to refer to the favourable action of lime in a great many soils in regard to its power of increasing the ability of a soil to hold the soluble plant-foods and prevent their removal by water. This favourable action is particularly shown in many soils by the power of lime to increase their capacity for holding potash.

The manner in which rain-water continually acts upon the soil in the removal of certain soluble plant-foods has been strikingly demonstrated at the Rothamsted Experimental Station. It might be inferred from this that all cultivated soils exposed continually to rainfalls or frequent heavy waterings would soon be exhausted of all valuable soluble plant-food. But it is well known that certain constituents of the soil have the faculty of absorbing and retaining materials which are soluble in water under ordinary conditions. It must not be forgotten also that the rain-water which descends upon the earth is not pure. Rain-water and snow bring to the land a certain amount of valuable plant-food. Not only do they absorb and hold in solution ammonia and nitric acid, which may be formed by the electrical discharges in the air, but they also collect and bring to the surface of the earth vast quantities of meteoric dust containing valuable fertilising principles. The rainfall at Rothamsted has been found to contain 7.26 lb. of nitrogen per acre, equal to 46½ lb. of nitrate of soda, with almost 6 lb. of sulphuric acid per acre; while in the vicinity of manufacturing towns, Glasgow for instance, as much as 70 lb. of sulphuric acid per acre has been found in the rain-water during one year only. The average of many experiments on the continent gives 10.18 lb. of nitrogen per acre. Thus we have constantly entering the soil water which contains more or less of the materials necessary to plant-growth. The economies of nature, therefore, are so happily adjusted as to provide a means of gradually returning in some form or other, to the needs of the cultivator of the soil, the plant-food which has been apparently removed.

In the economy of nature there is no such thing as absolute and permanent waste of any valuable material; for example, we are inclined to look upon the sea as devoid of useful vegetable growth, but the gardens of the sea are no less fully stocked with economic plants than are the gardens of the land. The sea-weeds of all genera and species are constantly separating valuable materials from the waters of the ocean and placing them again in organic form. The analyses of several varieties of sea-weed show that in the green state they are quite equal in point of plant-food ingredients to the best farm-yard manure. In fact in Jersey the Potato-growers depend very largely upon sea-weed for their supply of available plant-food. The extent of cultivated lands bordering on the sea is so great as to render the commercial importance of this matter of the highest degree of interest.

But sea-weeds and other vegetable products of the sea are not the only vehicles in which the plant-food that is soluble in the waters of the ocean may be returned to the uses of man. The animal life of the ocean is not less important than that of the land. In the animal economy of the ocean are gathered immense quantities of valuable food material which are thus placed in a condition to be at least in part restored to the land in the form of manure. Relatively, phosphoric acid and nitrogen are restored in much

greater quantities than potash. The composition of fish in general shows that relatively larger quantities of phosphoric acid and nitrogen are found than of potash. It is thus demonstrated that the ordinary fishes of the ocean collect especially the two great elements of plant-food, phosphorus and nitrogen.

Through the ages of the past the rich stores of plant-food have been steadily removed from our gardens and fields, and apparently for ever lost.

return to organic life shows the patience rather than the wastefulness of nature.

Professor Wiley remarks that as a result of this general review of the migrations of plant-food, the reassuring conclusion is reached that there is no danger whatever of the ultimate consumption or waste of the materials on which we live, or that are required for the production of crops. Circumscribed localities, where once luxuriant crops grew, may through carelessness

At the Rothamsted Agricultural Station it has been found in one field, where a portion of land was left in a wild condition for twenty-five years, that there has been an accumulation of nitrogen equal to 100 lb. per acre per annum in the top 27 inches of soil, and in another field left to itself for a corresponding period a gain of 25 lb. per acre per year in the top 27 inches. So great an accumulation of nitrogen is manifestly difficult to account for in the present state of our knowledge, but the facts show conclusively that fertility does not diminish when land is left in a state of permanent grass, as in a prairie, but that the formation of plant-food is continually going on, even in soils that are constantly under cultivation. *J. J. Willis, Harpenden.*

NEW OR NOTEWORTHY PLANTS.

SPIRÆA PACHYSTACHYS.*

FROM Mr. Gumbleton's garden we have received a specimen of this new hybrid Spiræa. Mr. Gumbleton obtained his plant from Herr Sprenger, of Naples. It is said to be the result of a cross between *S. corymbosa* and *S. Douglasi*. The flowers are densely crowded in terminal corymbs, and are of a pinkish purple colour. It has the great merit of flowering a second time in the autumn, both on the young shoots from the base and from side-shoots of stems which flowered in early summer.

ISMENE FESTALIS ×

(A BIGENERIC HYBRID WITH ELISENA).†

It is now nearly eleven years since I first had an opportunity of examining the fruit of *Elisena* (*Ismene*) *longipetala*, and I expressed in your columns my opinion that it was impossible any longer to separate the two genera. Herbert, who is responsible for the genus *Elisena*, had never seen any living or dead plant belonging thereto, for he tells us that the genus was only known in his day by a single drawing and description by Ruiz of a garden plant. Mr. Baker, when he compiled his *Handbook of the Amaryllidææ*, had not seen the ripe fruit. Hence *Elisena* was, until recently, rather a name for something imperfectly known than a botanical fact. Thus I was not surprised when I succeeded in crossing the two genera, and in producing the stately and beautiful plant exhibited at the last Temple show.

Some years ago Col. Trevor Clarke recorded the same hybrid, which Mr. Baker identified with the *Ismene deflexa* of Herbert in *Bot. Reg.*, 1839, Misc. No. 142. However, the hybrid raised by me differs materially from this latter species, although they have also some points in common. One of the parents (*Ismene calathina*) has such an extended geographic range in the warmer parts of America that the varieties comprised within this one species differ considerably from each other, so that great differences must also be expected in the hybrid offspring thereof, according to parentage. The female parent of my hybrid was a specially fine form of *I. calathina*, raised from seed in this

* *SPIRÆA* × *PACHYSTACHYS*. Hort. Sprenger.

† *Ismene festalis* ×—Leaf-stem $\frac{1}{2}$ foot high, from the upper two-thirds of which issue nine leaves, between 2 and 3 feet in length, by from 2 to $2\frac{1}{2}$ inches or more in width. Scape central, solid, sharply two-edged, 4 feet high, bearing a sessile (or nearly sessile) umbel of four flowers carried horizontally, and expanding successively. Flowers pure white, with a small clearly-defined green base, 6 inches (or under) across. Almost as strongly fragrant as is *calathina*. Tube curved, $1\frac{1}{2}$ inch long. Segments curved, 4 to $4\frac{1}{2}$ inches long, the inner $\frac{1}{2}$ inch wide, the outer more deeply channelled and $\frac{3}{4}$ inch wide. Cup at first perfect but becoming longitudinally oblong, at first $2\frac{1}{4}$ inches in diameter, then 2 by $2\frac{1}{2}$ inches, length 2 inches, toothed as in *calathina*, but the teeth ultimately reflexed. Stamens projecting $1\frac{1}{4}$ inch (or less) beyond the cup, at first converging, but ultimately variably disposed, and the three upper suddenly refracted downwards and inwards. Anthers $\frac{1}{4}$ inch long. Pollen yellow. Style stout, exerted 3 inches beyond the orifice of the cup. Stigma obscurely capitate. Ovaries and ovules normal in appearance, but the plant is apparently a sterile mule.—A. Worsley.

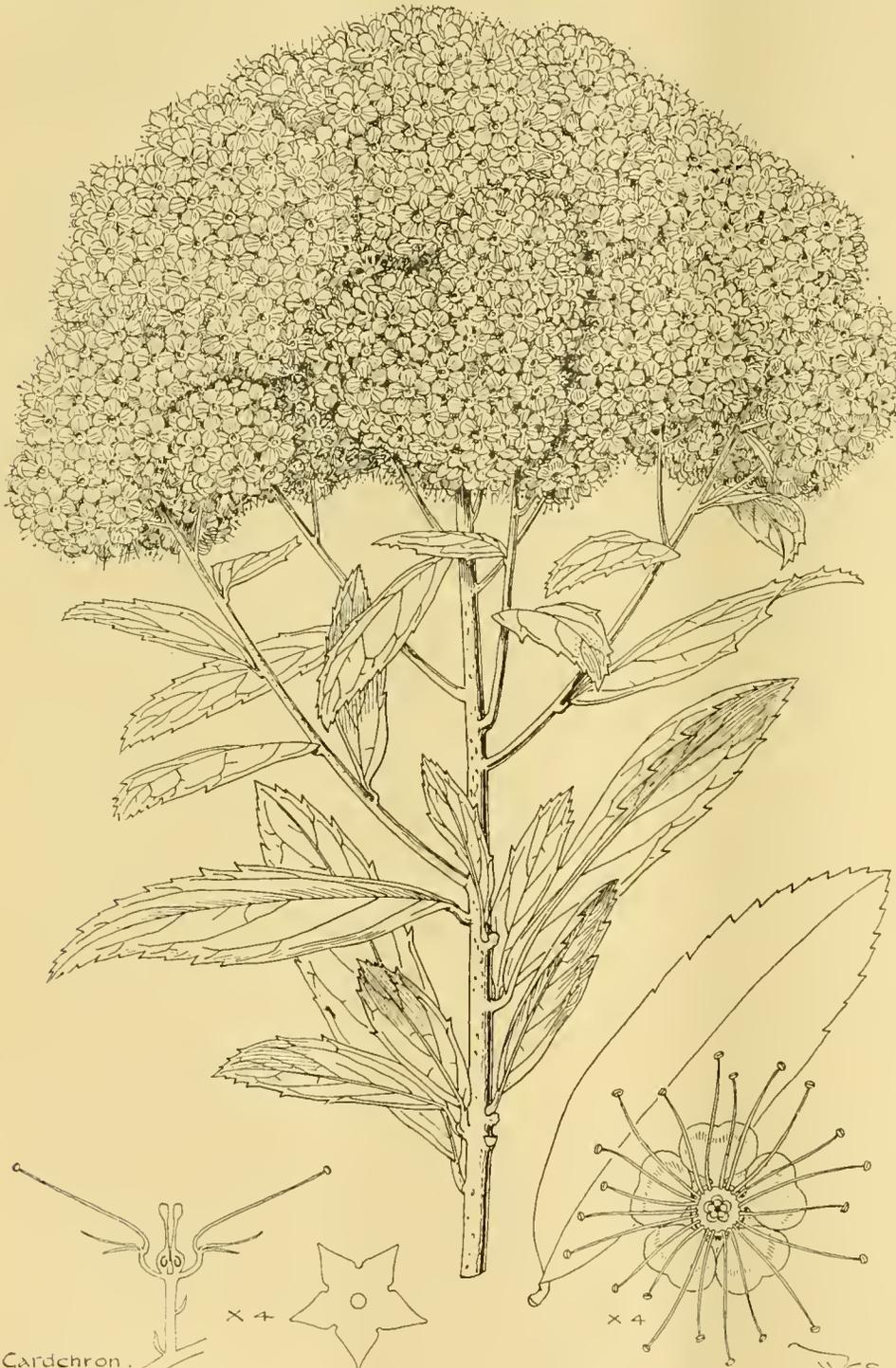


FIG. 125.—*SPIRÆA PACHYSTACHYS*: COLOUR OF FLOWERS A PINKISH SHADE OF PURPLE.

But in point of fact no particle of this food has been actually destroyed; for electricity, decomposition, and the activity of certain micro-organisms found in the soil and in the rootlets of leguminous plants are able to recover and again make the apparently lost substances available for use.

The fact that a few thousand years may supervene before the particle of plant-food that is carried off to-day in crop or by waste may

or ignorance become sterile, but the great source of supply is not exhausted. In fact, as the rocks decay and nitrifying organisms increase, the store of plant-food at the disposal of vegetation may continue to be formed, and thus accumulate in the soil. When we join with this the fact that the skill of man in growing crops is rapidly increasing, we find no danger ahead in respect of the quantity of human food which may be produced.

garden, and the male an imported *E. longipetala*. From the moment of germination the hybrids showed extraordinary vigour, and flowered just three years after impregnation, the usual period in *I. calathina* being four or five years under similar conditions. At the time of flowering the plants had attained a height of 4 feet above ground-level.

Of the six divergent characters displayed by the parents, the hybrid resembled the female in one, the male in two, and in the remaining three was fairly equipoised between the two. Roughly speaking, the foliage and inflorescence (with the exception of the cup) resembled the male more nearly than the female, and the hybrid is superior in beauty to either parent.

It is interesting to observe that all the hybrid *Ismenes* yet raised have been raised from one species—viz., *calathina*. These are, (1) *festalis*; (2) *sulphurea* [\times *Amancaes*]; and (3) *macrostephana* [\times *Hymenocallis speciosa*]. All are beautiful and easy to cultivate, if their simple requirements are granted them. *A. Worsley*.

HERBACEOUS BORDER.

AUTUMN OR LATE-FLOWERING PHLOX.

PHLOX DECUSSATA is very easily cultivated, a good depth of soil, with a liberal supply of well-decayed manure, and a good top-dressing of manure applied during the summer months, being all that is necessary to produce fine spikes of flowers. The propagation of these plants can be effected either from seed or from cuttings. Propagation from seed is very interesting, and often produces good results. The seed when well ripened should be sown at once in boxes or in pans in some good open loam, and lightly covered with fine sandy soil. The young seedlings, if sown in a warm greenhouse or in a hot-bed, will make their appearance in February or March. They should be planted out as soon as they are large enough to handle, and kept in a close atmosphere for a short time, when they should be gradually hardened off. They will flower the same year, but not until the second year will they be at their best. Seed saved from the varieties described below will almost be certain to give good results. Cuttings can be taken at all seasons of the year; but I find by experience that spring cuttings are the best, and root freely in a cold frame. Care must be paid to the watering and shading, and, when rooted, the plants may be placed directly in the open, and in many cases they will produce good spikes of flower in the late autumn. Propagation by division is a very simple method; it consists simply of dividing the old roots into small pieces, which is best done when the plants are beginning to grow. It is advisable to sprinkle the crowns lightly with lime in order to protect them from injury by snails, which often completely destroy the young shoots.

After carefully studying the qualities of several hundreds of varieties, I have chosen the following as the most desirable ones to possess:—

Anatole le Braz, flower with a purple-violet-coloured centre, shading to lilac at the edges; *Antonin Mercie*, centre half of flower white, the margin greyish-lilac; *Croix de Lorraine*, rich carmine, with rays of pure white colour; *Dewet*, colour coppery-rose, carmine centre and yellow eye; *Daniel Lesueur*, light violet centre and white edges; *D. Bois*, cherry-coloured flowers, shaded purple; *Edouard Lockroy*, velvety-violet, enormous flowers; *Etna*, bright orange-red, maroon centre; *Eclatant*, bronzy-scarlet, with purple eye; *Faust*, white, with rosy eye, a very fine flower; *François de Neufchateau*, greyish-rose coloured, with a metallic-copper shade and purple eye; *Hermione*, pure white, perfect shaped flowers; *Henry Regnault*, brilliant carmine-lake; *Louis Blanc*, violet, with white eye;

Lady of the Lake, very light salmon, with a purple centre; *Martinique*, light rose coloured with a large "eye"; *Maximilian*, orange-scarlet, very fine indeed; *Matilda Serac*, colour pure white; *Offenbach*, a light shade of violet-mauve, with a white centre; *Pierre Loti*, deep salmon, tinted rose; *Richesse*, clear magenta colour, with a carmine eye; *Sylphide*, a pure white variety of dwarf habit; *Salvator Rosa*, lilac coloured, with large white centre; *Tragédie*, colour blood-red, with a darker centre. *J. Edington, Nether Green, Sheffield*.

LEAVES FROM MY CHINESE NOTE-BOOK.

(Continued from p. 277.)

MOUNT OMI.

THIS sacred and lofty eminence is situated in long. 103° 41' E., lat. 29° 32' N., one day's journey west of the city of Kiating. It rises sheer from the plain (alt. 1,300 feet) to a height of nearly 11,000 feet. From the city of Kiating a magnificent view of the mountain is obtainable in clear weather, the mirage of the plain seeming to lend it additional height.

Viewed from a distance, it has been aptly likened to a "crouching lion decapitated close to the shoulders, the fore-feet remaining in position." The down-cleft surface forms a fearful, well-nigh vertical precipice considerably over a mile in height. Mount Omi is one of the three sacred mountains of China,* the origin of its sacred character being lost in antiquity. It was in a monastery here that the patriarch P'u (a historical personage) served Buddha during the Chin dynasty (A.D. 265—313). P'u-hsien P'u-sa, its patron saint, descended upon the mountain in the form of an elephant with six tusks. In one of the temples is a life-size elephant of splendid workmanship cast in magnificent bronze which commemorates the manifestation. The fane which encloses this elephant is even more remarkable, being a hollow cube covered with a hemisphere and roofed with a pyramid. It is truly an architectural wonder. Baber, its discoverer, considers it over fifteen centuries old, and to be next to the Great Wall the oldest Chinese building of fairly authentic antiquity.

On the mountain are upwards of seventy Buddhist temples or monasteries, either word being applicable, since they are really a combination of both. On the main road there is a temple every English mile, and near the summit they are even more numerous. These temples contain over 2,000 priests and acolytes. The whole of the Mount is, or rather was, church property. Much of the land suitable for cultivation on the lower slopes has been sold. Voluntary subscriptions are the chief means of support for all the temples, though some have money endowments as well.

Thousands of pilgrims annually visit this mountain from all parts of the empire. At the time of my visit there were several pilgrims who had walked all the way from Shanghai, some 2,000 miles distant. Tibetans and even Nepalese make pilgrimages here.

The images, etc., are numberless, and several are made of pure bronze or copper. Two mummified holy men, lacquered, gilded, deified, and set up as images, and a tooth of Buddha's about a foot long and weighing eighteen English pounds, are amongst the more interesting sights. The tooth is an elephant's molar, and very similar to the one discovered by Fortune at Fu-chau.

On the extreme summit, the Golden Summit as it is called, are the ruins of an ancient temple built of pure bronze. It is said to have been erected by the Emperor Wan-li (A.D. 1573—1620), and destroyed by lightning in 1819. Since its destruction nine or ten generations of head priests have come and gone, but they have been unable to collect enough money to rebuild it.

* Wutai-shan in Shensi, and Putai-shan in the Chusan Islands, being the others.

From the summit, when the sky is clear above and clouds of mist float in the abyss below, a natural phenomenon is observable similar to that of the spectre of the Brocken. Rain fell in torrents all the time I was on the summit, so that I saw nothing but mists. The phenomenon is described as being a golden ball surrounded by a rainbow floating on the surface of the mist. Devotees assert that it is an emanation from the aureole of Buddha, and an outward and visible sign of the holiness of Mount Omi. The appearance is known as the "Fo Kuang," or "Glory to Buddha."

The edge of the precipice is guarded by chains and wooden posts, but pilgrims in a state of religious fervour occasionally throw themselves over. From this reason this point is called the "Suicides' Cliff." This point is the highest and most vertical part of the precipice, which extends for nearly two miles in a more or less southerly direction. The first foreigner to ascend this famous mountain was the late Mr. E. C. Baber, in July, 1877. I would refer anyone interested to his accurate and incomparable description,* to which I am much indebted.

THE FLORA.

In the summer of 1884 it was ascended by Mr. Alex. Hosie.† Neither of these gentlemen paid much attention to the flora. It was not till 1887 that any plants were collected on this mountain. In that year it was visited by a Rhenish missionary and distinguished botanical collector, the late Mr. Ernst Faber, of Shanghai. During a fortnight's stay he made an interesting collection, which included no fewer than seventy novelties. In 1890 a naturalist, Mr. A. E. Pratt, visited the mountain and collected a few plants there.‡ Since Baber's visit many foreigners have ascended this mountain, but beyond Faber and Pratt we have no record of anyone having collected plants there.

It was on the morning of October 13, 1903, that I set out from the city of Kiating on a trip to this interesting mountain. Traversing the plain, which is intersected here and there by low hills charmingly wooded, the little town of Omi-Hsien (alt. 1,270 feet) was reached at the close of the day.

The flora *en route* is identical with that described in my note on Kiating. Three rivers—Tung, Ya, and Omi—traverse this plain. Irrigation by means of tiny affluents, canals, Persian wheels, etc., is complete. This plain, particularly around the base of Mount Omi, is one of the most fertile spots in China. Owing to the lateness of the season the crops were nearly all in, and the inhabitants were busy tilling the soil and planting winter crops of Beans, Peas, Wheat, and "Rape." The sides of the streamlets were yellow with *Senecio clivorum*, which, though not so fine as in the mountains of Hupeh, makes a good display. *Anemone japonica*, with its variously coloured flowers, made a worthy companion. *Miscanthus sinensis* and a broad-leaved form, with their myriads of silvery-pink plumes waving gently in the breeze, enlivened the river banks and sandy places. Small trees of *Gordonia anomala*, with large white, Camellia-like flowers, and numerous bushes of *Cratægus pyracantha* and *Meliosma* sp. with their scarlet fruits, added much to the beauties of the route. Occasionally a Banyan (*Ficus infectoria*) is passed, with the usual small shrine beneath its shade, and often an itinerant huckster's small stall as well, with sweets, cakes, sugar-cane, etc., so dear to the heart of every coolie, temptingly exposed for sale.

The next day, after journeying some three miles across the plain by a road shaded by Alder-trees and Bamboo, we reached the village of Liang Ho-kou, situated at the base of the sacred mount. Here the road bifurcates, though both routes lead eventually to the summit, and

* Royal Geographical Society's *Supplementary Papers*, vol. i.

† See his *Three Years in W. China*.

‡ See *Through China to the Snows of Tibet*.

are paved with stone blocks throughout. This paving must have cost much money and labour, but without it or something similar it would be impossible to traverse some of the steeper places. I ascended by one path and descended by the other, in order to see as much as possible of the mountain and its flora.

Between Omi-Hsien and Liang Ho-kou are some truly magnificent Banyans, shading temples now fast falling into decay. I measured one which appeared to be the largest of these trees. It was about 80 feet high, trunk 12 feet, with a girth of 48 feet five feet from the ground. Several fine trees of the Chinese Oak (*Quercus chinensis*) and Liquidambar *formosana* also occur. The sides of the Rice-fields are studded with thousands of pollarded trees of the Ash (*Fraxinus chinensis*), on which the wax-insect deposits its valuable wax. The ditches are gay with spikes of cream-coloured fragrant flowers of a species of *Hedychium*, in addition to our friends of yesterday. Near the village occurs a fine clump of that curious Cornaceous tree, *Camptotheca acuminata*. This tree, which is quite common on the lower spurs of Mount Omi, has a straight trunk with few branches. I measured one 50 feet high, girth 2½ feet, the trunk being clean for fully 30 feet. The wood is soft, white, and of very little value. The Chinese designate it the Ch'ien Chang tree.

Leaving Liang Ho-kou we commenced the ascent, but it was only after three days' hard climbing that the summit was reached. For our purpose it is convenient to divide the mountain into two parts, viz., base to 6,000 feet, and from 6,000 feet to summit (10,800 feet). Thus divided the flora falls into two well-defined altitudinal zones. The lower zone consists of such plants as enjoy a sub-tropical or warm temperate climate. Evergreen trees and shrubs largely predominate, and in the shady glens and ravines Ferns and Selaginellas luxuriate (in one day I noted no fewer than sixty-odd species). So far as individual species are concerned, *Cunninghamia sinensis* preponderates.

The upper zone consists entirely of plants requiring a cool, temperate climate, and with the exception of the Rhododendrons and Silver Firs nearly all the trees and shrubs are deciduous. The belt between 4,500 feet and 5,500 feet we may term the hinterland. Here the struggle for supremacy is keenest, and the fusion of the zones complete. Evergreen Oaks and *Castanopsis* form a peculiar feature of this narrow belt. At 6,000 feet the boundary line is unusually well defined.

Cultivation extends up to 4,000 feet, Maize and pulse being the principal crops, Rice being relegated to the valleys and bottom-lands. The cultivation of the Wax-tree (*Fraxinus chinensis*) extends up to 2,600 feet.

The foot-hills around the base of the mountain are covered with Pine (*Pinus Massoniana*), Cypress (*Cupressus funebris*), and Chinese Oak (*Quercus chinensis*), and the sides of streams, which meander amongst these hills, with Alder and *Pterocarya stenoptera*, Nanmu trees and Bamboos (*Phyllostachys mitis*) are abundant, shading temple and houses, and *Gleichenia dichotoma* and *G. longissima* form impenetrable thickets on the more exposed hillsides. *Onychium japonicum*, *Melastoma candida*, and *Mussaenda pubescens* are common roadside plants.

At 3,000 feet the Pine, Cypress, Alder, and *Gleichenias* die out. *Cunninghamia sinensis*, which occurs sparingly in the valleys, gradually increases in numbers, and between 2,500 and 4,500 feet large areas are covered solely with this invaluable conifer. Leaving aside the *Cunninghamia*, the natural order Lauraceæ forms fully 75 per cent. of the arborescent vegetation between 2,000 and 5,000 feet. This Lauraceous zone, as we may call it, is composed chiefly of Evergreens, and the genera *Machilus*, *Lindera*, and *Litsæa* run riot in numbers of species. *Machilus Nanmu* is common in groves and around temples. This is one of the hand-

somest and most valuable timber trees in China. Within this zone the following remarkable genera occurs:—*Tapiscia sinensis*, *Carriera calycina*, *Toricellia angulata*, *Emmenopterys Henryi*, the latter is rare, but the others are quite common. *Idesia polycarpa*, with its lax thyrsoid panicles of scarlet fruits, is very striking. The evergreen Himalayan *Viburnum coriaceum* is also abundant. No fewer than five species of *Berberis*, viz., *B. Fortunei*, *B. Nepalensis*, *B. gracilipes*, *B. Wallichiana* and *B. acuminata* also occur. *E. H. W.*

(To be continued.)

ORCHID NOTES AND GLEANINGS.

GRAMMATOPHYLLUM SPECIOSUM

THE "Giant Orchid" (*Grammatophyllum speciosum*) has, says the *Tropical Agriculturist*, been in flower at Peradeniya since the middle of July, and is a most striking and handsome object when in full blossom. It is a native of Malaya, and fully justifies its name, being without a rival as regards size in the orchid family. The individual flowers, however, are not beautiful, having a greenish yellow ground, thickly spotted with reddish-brown, each being five to six inches across. The scrapes or flower-stalks issue from the base of the stem and grow rapidly to about six feet in length, each bearing from 100 to 130 flowers, the lowest pair of which are always abnormal, possessing no lip and only a rudimentary column. An interesting peculiarity of this plant is that though by nature an epiphyte or "air plant," it readily adapts itself to terrestrial treatment and even grows to largest proportions when grown on the ground. As a water-plant, too, it flourishes, as may have been seen from a specimen growing in the Victoria House in Kew Gardens. Its date of introduction to Peradeniya is not known, but it was always treated as an epiphyte until 1896, when it was removed to a specially prepared mould on the ground. The result was that it flowered twelve months later and almost every year since.

ODONTOGLOSSUM × LAMBEAUIANUM GARDEN HYBRID

(CRISPUM × ROLFÆ) (CRAWSHAY).

This grand addition to hybrid *Odontoglossa* has recently bloomed at Uccle, Brussels, where it was raised by M. F. Peeters, who asks me to dedicate it to M. Firmin Lambeau, of Brussels. Its parents were *O. crispum* Madame Falcke ♀ and *O. Rolfeæ* ardentissimum ♂; this latter, one of the two first *O. Rolfeæ* shown by M. Vuylsteke at "The Temple" on May 23, 1900, when it was awarded an Award of Merit, and was purchased by M. Peeters. It is an interesting fact that the hybrid has become the parent of a secondary hybrid (or cross) bloomed in less than 4½ years. Though this seedling itself has taken longer, the first of the batch took a much shorter time to bloom. The record is, "Crossed May, 1901; seed sown June, 1902; bloomed March, 1905." The sepals have a white ground-colour, the dorsal one with a mid stripe of rose mauve-purple posteriorly; the lower ones similarly suffused over the whole posterior surface; all marked with crimson-brown spots. Petals white, without any suffusion of rose; spots of the same colour. Lip white, with spots of a

deeper brown, as in sepals. Column much stained and spotted. Substance firm, like that of *O. Harryanum*.

The dimensions of the flower were as follows: Sepals 1½ × 1 inch, petals 1½ × 1 inch. Lip 1¼ × 1 inch. Extreme diameter 3¼ inch.

M. Peeters is much to be congratulated upon this fine acquisition. *de B. Crawshay.*

"DICTIONNAIRE ICONOGRAPHIQUE DES ORCHIDÉES."

THE September issue completes the seventh series. The thirteen Orchids illustrated are with few exceptions well-known kinds of good reputation in gardens, nine of them being figured from the important collection of the Baron von Furstenberg, of Hugenpoet, Rheinland, viz., *Dendrobium æmulum*, *D. Dearei*, *D. secundum*, *Epidendrum dichromum*, *E. nemorale*, *Masdevallia Arminii*, *M. × Measuresiana*, *Lycaste costata*, and *Cattleya × Krameriana*, described by the late Professor Reichenbach in the *Gardeners' Chronicle*, September 22, 1888, p. 323, as a natural hybrid between *C. intermedia* and *C. Forbesii*, the parentage being the same as



Photograph by

[E. Corke, Sevenoaks.]

FIG. 126. *ODONTOGLOSSUM × LAMBEAUIANUM* (FLOWERS WHITE, WITH ROSE AND PURPLE COLOURED MARKINGS.)

his previously described *C. × Isabella*. Others illustrated are:—

Ancistrocheilus Thomsonianus var. *Gentilii*, commencing the new genus *Ancistrocheilus*, established by Mr. Rolfe on *Pachystoma Thomsonianum*, Rehb. f., a species which does not agree with the true *Pachystoma*. The type was figured in the *Botanical Magazine*, t. 6471, and the variety *Gentilii* of De Wildeman was illustrated from the Botanic Gardens, Brussels. The flowers bear a slight resemblance to those of a small white *Lælia anceps*, and have an acuminate front lobe to the labellum, which is marked with rose-purple. The plant illustrated has four flowers on the spike, which is stronger than in the type. Tropical Africa.

Polystachya mystacoides, De Wildeman.—Another discovery of M. L. Gentil from the Congo region, and very dissimilar from other *Polystachyas*, its growths being long, pendent, having the flattened appearance seen in some of the aporum section of *Dendrobium* and bearing thick, equitant leaves. The flowers are about an inch across, yellowish striped with red-brown, the lips being dark reddish-purple.

Cyrtipedium × Enid (bellatulum × Spicer-

ianum), raised some years ago by the Hon. Walter Rothschild, M.P., at Tring Park, is illustrated from the collection of M. J. Ginot, Saint-Etienne, France. Flowers of a peculiar reddish-rose, with clear white margins to the dorsal sepal and petals.

Cypripedium × *Mrs. Fred. Hardy* (superbians × *bellatulum*), also figured from M. J. Ginot's specimen, has white flowers with a green tint on the middle of the dorsal sepal and petals, purple lines on the dorsal sepals, and dense spotting of purple on the petals, the face of the lip being tinged with purple.

Cattleya Skinneri, Lindley, is well illustrated from a specimen grown by Messrs. Van de Putte, Ledebeg, Ghent.

ODONTOGLOSSUM GRANDE, LYNWOOD VARIETY.

A noble variety of this fine old species, following the typical form in most respects, but with larger flowers and broader segments. The inflorescence bore eight blooms, each 6 to 7 inches across. The sepals are bright yellow regularly barred with chestnut-brown; the broad petals chestnut-brown on the basal half bordered with yellow, the outer half being lemon-yellow. A peculiarity of the variety is that there is an occasional red-brown blotch on the outer yellow half. Lip whitish-yellow with numerous pale-reddish blotches arranged round the fleshy orange-coloured crest. The finely-grown plant was sent by A. E. Bainbridge, Esq., Lynwood, Jesmond, Newcastle-on-Tyne (gr., Mr. Thomas Bell), to the Royal Horticultural Society, October 10, when the Orchid Committee had no meeting.

THE ROCK GARDEN.

GALANTHUS OCTOBRENSIS.

It may be interesting to mention that the first of my flowers of a small group of one of these autumnal Snowdrops, grouped frequently under the name of *G. octobrensis*, was fully open here on October 12. Some of these forms appeared to have shown a tendency to fall into line with the winter and spring bloomers in point of time of flowering, but I hope this one will prove an exception. I anticipate that it will, because the plant came to me from a very keen lover of the Snowdrop in the far north of Scotland, with whom it flowers regularly in October. There are many who depreciate these autumn-flowering Snowdrops, but it must be remembered that the *Galanthus* is very beautiful at whatever time it may appear, and that as a plant for the rock-garden it is of great value in October, when flowers are comparatively few among its denizens. We might as well condemn the use of the lovely autumn Croci as of the chaste Snowdrops of the Mediterranean, which naturally bloom at this time, and which have only retained their natural habits when cultivated in our gardens. Some of the forms are not very enduring with us, but this one seems better than most. My plants came from Dunrobin, and I am applying to them at present the name of *G. octobrensis* Dunrobin variety. *S. Arnott*, *Sunnymead*, *Dumfriess*.

KEW NOTES.

NEPENTHES "SIR W. T. THISTELTON DYER ×"—This beautiful hybrid *Nepenthes*, with its handsome pitchers, may now be seen in excellent condition in the *Nepenthes*-house. It was raised by Messrs. J. Veitch & Sons, of Chelsea, and was exhibited by them before the Royal Horticultural Society in the year 1900, and was figured in *Gard. Chron.* on Oct. 6, p. 257 of that year. *N. Northiana* and *N. Rajah* are the only species

that rival it in the size of the pitchers, but neither of these is as robust under cultivation as this hybrid. The Kew plant has developed three very large pitchers and several smaller ones. The largest measures 13 inches from the base to the point where the lid is attached, and will hold nearly a pint and a half of water. The rim of the pitcher is extremely beautiful, and is 1½ inch across at its broadest part. The lid measures 3½ × 2½ inches. The wings are very prominent, the margins being furnished with stout red-coloured hairs nearly an inch in length. The colour of the pitcher is of a yellowish-green heavily blotched with deep-red. The blade of the leaf is not exceptionally large, those now carrying these large pitchers being only about 15 inches in length. *W. H.*

SPIRÆA DIGITATA VAR. *NANA*.—This pretty little plant was still, in the middle of October, in full flower in the rock-garden at Kew, having produced a succession of bloom for the past two or three months. There have been at various times queries in the Press regarding the origin and correct name of this plant, and in the *Gardeners' Chronicle*, December 10, 1904, p. 413, Mr. Arnott mentions it under the name of *S. lobata*, but at the same time asks for further information, as he correctly infers that the North American *S. lobata* is a tall-growing plant. On p. 431 Mr. Cutbush replied that it was distributed from Kew under the provisional name of *S. digitata*, but that it had been received from various other sources under the name of *S. lobata*. The correct history of the plant is that it was collected in the central mountains of Japan by Mr. Maries, at an elevation of from 2,000 to 7,000 feet, one of his specimens having been presented to the Kew herbarium by Messrs. Veitch in the year 1880. Plants received from the same source first flowered at Kew in the year 1886, and have been in cultivation there ever since.

It is of very dwarf habit, rarely exceeding 6 or 8 inches in height, with compact, somewhat flat heads of rosy-pink flowers. The foliage resembles that of *S. digitata* in everything but size, and it may, in short, be described as a miniature form of that species. It is, however, a more refined plant, and the name *nana* is proposed as suitable for it in order to distinguish it from its larger relative.

Other herbaceous *Spiræas* belonging to the same section of the genus as this plant bear a certain resemblance to each other, and include our English Meadow-sweet (*S. Ulmaria*), which is well known by the river-sides.

S. lobata, the name which has been applied wrongfully to the dwarf plant under notice, is an American plant, and is known in the States as the Queen of the Prairies. It is of tall habit, reaching a height of from 4 to 6 feet or more, with interruptedly pinnate leaves and loose panicles of pale pink or rose-coloured flowers.

S. digitata, a Siberian plant, is of similar habit to the preceding, but differs in having fewer stamens and more rounded seed-pods. There are both pink and nearly white-flowered forms of this. The plant known as *S. venusta* is a synonym of this species. *S. digitata* var. *nana* is the dwarf Japanese form of this species, with the same kind of foliage but with heads of flowers more resembling those of *S. palmata*. This is one of the prettiest of the genus and easy to grow, doing well in any good soil.

S. camschatica (*S. gigantea*) is a giant from North-eastern Asia, growing from 8 to 10 feet high, in strong soil with plenty of moisture. It is an effective plant for the water-side, although the flowers are not showy, being of a dirty-white colour.

S. palmata, a native of Japan, is one of the

most elegant species. It differs from all others in having few or no side lobes to the leaves, the terminal one being very large and palmately lobed. It grows about 2 feet high, with large trusses of deep-rose-coloured flowers.

All the above plants love moisture and delight in a situation where their roots can reach water, but *S. digitata* var. *nana* is also adapted for the lower parts of the rock-garden, where it is one of the few plants in flower in the autumn. *W. Irving, Kew.*

TREES AND SHRUBS.

MAGNOLIA GLAUCA (THE SWAMP LILY).

This *Magnolia* is not often met with in gardens, although during the latter half of July and the greater part of August it forms a very desirable feature in the garden. The flowers are not showy, but are attractive by reason of their sweet scent, which strongly resembles that of *Maréchal Niel* Roses. With age the plant forms a small, round-headed tree, with an irregularly branching habit, about 20 feet in height by nearly the same in diameter. The white flowers are borne singly on the ends of the branches, and when fully expanded are about 4 inches across, with a sweet powerful scent, readily discernible at a distance. The leaves are 5 to 6 inches in length by about 2 inches in breadth, and are oval in shape, being dark shining green above, and highly glaucous beneath. When ruffled by the wind the contrast between the dark upper surface and the lighter underside of the leaves forms a very pleasing picture, more especially when the sun is shining. The tree is deciduous as a rule, but in a mild winter the leaves often hang until the spring, and occasionally plants are met with that are nearly, or quite, evergreen. It is a difficult plant to cultivate in a dry situation, and is rather slow of growth, but if given suitable conditions it will be found to thrive. Here we have it planted in a moist spot at the foot of a slope in about 4 feet of sandy peat, fully exposed to the sun, but sheltered on the north and east. The wet nature of the ground has much to do with its success, as this *Magnolia* is found in swampy districts in the United States, and therefore requires plenty of moisture at the root. It is easily propagated by seeds or by layering.

YUCCA FILAMENTOSA.

Yuccas are not so generally met with as they deserve to be, and this species is rarely seen in any quantity, but of the dozen or so that are hardy in this country, *Y. filamentosa* is one of the best to grow. It is not, perhaps, so stately-looking as *Y. gloriosa* or *Y. recurva*, but it flowers more freely, and in a much younger state, than any of the others. It blooms well every year here, even quite small plants throwing up spikes of flowers that seem almost too much for the plants to carry. It grows freely in a light loam, and also does well in a mixture of peat or leaf-mould. Although moisture is not altogether essential to their well-being, *Yuccas* thrive best in a fairly moist situation fully exposed to the sun. *Y. filamentosa* is practically an acaulescent plant, forming but a very short stem. The strap-shaped leaves are about 2 feet long by 2 inches broad, stout and thick, rough to the touch, armed with a sharp terminal spine, and covered on the edges with thread-like filaments. The latter, together with the glaucous hue of the leaves, give the plant a distinct and attractive appearance. The pendulous flowers are of a creamy-white colour inside, tinged with green outside, campanulate in shape, and composed of six thick, fleshy segments. The flowers are borne on paniced, branching spikes, 5 to 6 feet in height, the latter standing erect in any

ordinary weather, but needing support from high winds. Planted in clumps of a dozen plants or so, they form a striking feature during August, especially when seen against a background of dark evergreens. Propagation is effected by means of the rhizomes, which can be detached with a few roots and planted just below the surface of the ground, when they will form small plants in a couple of years. Old plants can also be taken up and pulled to pieces, or the growths can be partly cut through at the base, and covered with soil to induce the formation of new roots. *J. C., Bagshot.*

THE SCHIPKA LAUREL-CHERRY (*PRUNUS LAUROCERASUS* VAR. *SCHIPKAENSIS*).

This variety from the Balkans is distinguished from the common Laurel-Cherry by its smaller size, deeper green leaves, and dense flower-spikes. Its compact habit renders it suitable for culture in pots, for which it is recommended by M. André. It is also stated to be as hardy if not more so than the common form.

CONFLUENT GROWTH IN A STARRY PUFF-BALL.

A FEW weeks ago a correspondent directed attention to a confluent growth in an *Agaricus*. Such growths are very frequent in that genus. They are much less so in other genera. An illustration of fasciation in a Starry Puff-ball (*Geaster fornicatus*) is shown to a reduced scale in fig. 127. This is taken from a sketch in the Department of

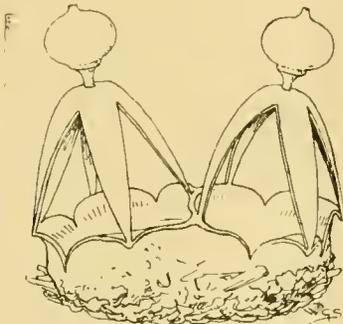


FIG. 127.—CONFLUENT GROWTH IN A STARRY PUFF-BALL.

Botany, British Museum, Cromwell Road, where the original is also preserved. It was sent to the *Gardeners' Chronicle* for a name, but without locality or the real name or address of the sender. There is a large collection of drawings of abnormal growths of fungi in the British Museum, arranged in sequence of families and genera. Some of these are very instructive, quite as much so as are the abnormalities found amongst flowering plants. Any botanist working at these unusual growths should consult the national collection. *W. G. S.*

NOTICES OF BOOKS.

THE FOUR GARDENS. By Handasyde, (T. N. Foulis, Edinburgh and London.)

A PLEASANT little book this for those who like to read descriptions of gardens with which a thread of sentiment is interwoven. The four gardens are the Haunted Garden, the Old-fashioned Garden, the Poor Man's Garden and the Rich Man's Garden. The first of these is the children's enchanted play-ground, so unlike the gardens of our later life. In the Old-fashioned Garden were "Pinks, almost hiding their own bluey-green leaves with a snowy drift of soft white flowers"; there were Love-in-a-Mist, pink and purple Columbines, Shepherd's Purse, pot-herbs, and

other plants of many sorts. The Poor Man's Garden is the patch of Potatoes and other vegetables and the blaze of flowers, with which he is generous; the Rich Man's Garden is an Earthly Paradise, which he is conscious of having no right to enjoy wholly by himself. The human element is not made too conspicuous in this little volume, and the author loves flowers so much that it is a pity more knowledge does not accompany the enthusiasm. The popular names of the plants mentioned here prove a snare both to writer and to reader. The Four Gardens, it should be added, are situated in Scotland.

POULTRY FARMING. SOME FACTS AND SOME CONCLUSIONS. By "Home Counties." (London: John Murray, Albemarle Street, W.)

A BOOK addressed to "the would-be poultry farmer who is open to conviction . . . and written largely in the interests of the townsman." It discusses in plain language under what circumstances poultry farming is or is not profitable, and the reasons for the different reports concerning the industry. The writer concludes that:—"as far as can be seen at present, the future of poultry keeping is chiefly dependent on the intelligent farmer's intelligent daughter." The experience of this gifted person, and the stores and conveniences to which she has access at comparatively small expense, give her the advantage over poultry women who must buy all the food and hire all the land required by their stock. We need not, here, follow the author of this book through all his chapters. He discourses on the profit and loss of egg and poultry traders, of the bogy of foreign competition and, in detail, of species of varieties of birds. The practical information is accompanied with various illustrations of poultry and the accessories connected with them. All those interested in the subject should give careful attention to these pages.

The Week's Work.

THE FLOWER GARDEN.

By W. A. MILLER, Gardener to LORD HENRY C. BENTINCK, M.P., Underley Hall, Westmoreland.

Galtonia candicans forms a stately plant for the border, but the flowers are also useful for indoor decoration. Well-grown spikes of this flower will often measure from 3 feet to 6 feet in height and are at their best condition during July and August. These plants flourish in a deep soil that has been enriched with much leaf-mould. They should be planted in groups of from twelve to twenty bulbs, and at about 5 inches below the surface of the soil. The plants are hardy and can be allowed to remain undisturbed for several years, but it is advisable to place a covering of some protective material over the bulbs during the first winter after they are planted.

Ranunculus can be planted at the present season and also later. Plant them at a depth of 2 inches and at from 2 inches to 4 inches apart, placing the claw-like portion downwards and covering them with sand. Protect them in severe weather with boughs of trees or with cut branches of heather.

Leucoium aestivum should be planted 3 inches deep. *Zephyranthes candida* may also be planted at the present time. Large tufts of this plant can be divided and the pieces used for forming edgings to walks.

The Wild Garden.—*Gunnera manicata* and *G. scabra* should have some dry leaves, fern fronds or dried grass spread over their roots and crowns to protect them from frost. *Kniphofias* also require protection which can be given by working leaves amongst the growths, followed by a suitable thickness of straw, and finishing with a layer of soil made firm and smooth for the purpose of throwing off the water from heavy rains. *Cortaderia argentea* and *Arundo donax* should be protected during winter with a good dressing of long manure. *Phormium tenax* should also receive some slight protection. The curious *Colletia horrida* requires shelter in hard weather, or it may be lifted, potted and wintered in a cool house. *Teucrium fruticosum*, which has ornamental and grey coloured foliage, needs to be removed indoors for the winter in all but the most favoured localities.

Wintering Various Plants.—Any useful sized plants of *Eucalyptus* growing in the borders, also *Ophiopogon jaburum* var. and *Echeveria secunda glauca*, should be taken up and potted for use for another season. *Tropaeolum tuberosum* has showy red and yellow flowers that are useful for furnishing walls facing to the south. They are also effective when the plant is allowed to climb over strong branches of shrubs. Lift the tubers and place them in a sandy soil for wintering in the cool house, unless in localities where the species is hardy. *Boussingaultia baselloides* should also be lifted and stored in sand. Let *Senecio pulcher* be potted and removed to the houses. Propagation may be effected from root-cuttings. *Eucomis punctata* has handsomely spotted foliage and waxy white flowers. Lift the tubers now and store them in dry soil.

Autumn Tints.—The following is a short list of trees and shrubs whose foliage develops rich autumnal tints:—*Acer rubrum*, and Japanese varieties, *Amelanchier botryapium*, *Andromeda arborea*, *Berberis Thunbergii*, *Gordonia pubescens*, *Itea virginica*, *Liquidambar styraciflua*, *Pyrus nigra*, *Quercus coccinea*, *Q. palustris*, *Rhus Cotinus*, *R. glabra* var. *laciniata*, *Sassafras officinale*, and *Vaccinium corymbosum* The evergreen *Andromeda axillaris* colours well in autumn in sunny situations.

FRUITS UNDER GLASS.

By F. JORDAN, Gardener to Dr. CORBET, Impney Hall Gardens, Droitwich.

Pot Vines.—If these are required to furnish ripe grapes by the end of April, preparations should now be made for starting them into growth. The vines should receive a top dressing of good fibrous loam and wood-ashes, with a sprinkling of Kirk's vine manure, removing a little of the old surface soil for its accommodation. Stand the pots on bricks or on inverted flower pots and in the spaces between them fill to the rims with leaves, pressing them moderately firm. Well ripened plants only should be selected, and of such varieties as Black Hamburg, Madresfield Court, and Foster's Seedling, as these are all adaptable for very early forcing. Avoid giving the plants too much heat and moisture in the early stages of forcing, but maintain a moderately moist atmosphere by syringing occasionally the vines and borders with tepid water, this work to be regulated according to the weather. A night temperature not exceeding 50° for the first fortnight, until the buds begin to swell, will be suitable, increasing to 55° as the buds increase in size. Very little, if any, water will be required at the roots until the buds break, providing fresh leaves are used for plunging purposes. Tie the canes in a horizontal position, and use no fire heat for the first two or three weeks, unless severe weather sets in.

Early Permanent Vines.—The vines in the earliest house should by now have been pruned, the vinery well cleansed, and the borders top dressed and made ready for starting the vines. The wood on succession vines should now be well matured, the pruning and cleansing of the vines in these houses can, therefore, be carried out as opportunity affords, in order to give the vine as long a rest as is possible. Should it become necessary to stand other plants in these houses, see that they are made clean before entry. The walls of the vinery should be well washed with hot limewash—in fact, the cleansing of the vines and houses cannot be too carefully carried out. Carefully eradicate any traces of red spider or mealy bug. Do not use mixtures of clay, lime, &c., or too strong insecticides, as these injure the vines. Remove as little of the loose bark as is possible round the spurs, and well wash the vines with a strong solution of Gishurst compound. A suitable proportion is 8 ounces to a gallon of water—a quantity which is safe and effective. Vines that are clean will only require to be well washed with a stiff brush and some soft soap, and none of the loose bark need be removed. Clear away all the old mulching material and the surface soil from the borders, and top dress them with some good fibrous loam, lime-rubble, and wood-ashes, incorporating a sprinkling of bone-meal and a small quantity of an approved vine manure, according to the age and vigour of the vines.

THE ORCHID HOUSES.

By W. H. YOUNG, Orchid Grower to Sir F. WIGAN, Bt.,
Clare Lawn, East Sheen, S.W.

Masdevallias.—Although *Masdevallias* differ from other Orchids, inasmuch as they have no pseudo-bulbs, the treatment they require during the resting period is essentially the same as that afforded those of the pseudo-bulbous section. With very few exceptions, they may be grown in the same compartment as each other, which should be one which is not much exposed to direct sunshine at any season. The atmosphere should be of an equable temperature, ranging from 53° to 58°. Ventilate the structure very carefully during changeable weather, in order to prevent fluctuations in the degree of heat, and also draughts. A moderate amount of atmospheric moisture must be provided, but if the floor and stage coverings consist of coal refuse, dampings will not be needed very frequently to promote what is necessary. The plants will pass better through the winter in a moderately dry state than if kept supplied with water when signs of dryness first occur, for it is when subjected to wet conditions, either of the base or atmosphere, that the disfiguring spot disease attacks their leathery leaves. *M. Harryana*, *M. ignea*, *M. Lindeni*, *M. macrura*, *M. cucullata*, *M. torta*, *M. Mooreana*, *M. melanopus*, and others of this group, usually grown as pot plants, are best arranged on a stage, fixed at a distance of about 2 to 3 feet from the roof-glass. Plants of *M. tovarensis*, now developing their flower-scapes, should be placed in the warmest part of the house and be watered very sparingly, as the least excess of moisture at the base would cause the leaves to fall off. Should the flowers not be needed for cutting, the scapes should be allowed to remain, as they usually produce another crop of flowers in the following season. The same remark applies to several other species, notably *M. Trochilus*, *M. maculata*, *M. Hincksiana*, and several of the "chimæra" group. The latter group, which includes, in addition to the species named, such others as *M. Carderi*, *M. vespertilio*, *M. erythrochæte*, *M. Nycterina*, *M. Houtteana*, &c., thrive best in baskets, for which they are also more suited than for pots. During the winter months it is advisable to suspend them at about a couple of feet from the glass in an atmosphere a few degrees warmer. Danger from cold or even frost will thus be prevented. The material about the roots may be allowed to remain dry for several days without any harm being feared, and when about to afford water, dip the basal half of the baskets only in the water. Sponge the leaves of all the plants several times during the season, as they are subject to the attacks of red spider and thrips. *Pleurothallis Rœzlii* thrives well with the *Masdevallias*. Suspend the plants well up to the light, keep them well on the dry side, taking care, however, to supply water before they suffer from drought.

THE HARDY FRUIT GARDEN.

By W. H. CLARKE, Gardener to Sir WILLIAM PLOWDEN,
Aston Rowant House, Oxon.

Planting Fruit Trees.—If the holes have been prepared for the trees or the ground got into readiness as previously advised, the work of planting may be pushed forward. Success will depend on the manner in which the planting is performed. Remember not to plant the roots too deeply. The mark surrounding the stem of the tree when received from the nursery will show the depth at which the tree was planted formerly, and this depth should not be exceeded. Do not permit the topmost root fibres to be laid at more than three inches under the surface that will be formed after planting has been done. In all cases the holes must be made wider than will accommodate the length of the roots, so that they can be spread out to their fullest extent, first cutting the ends off all bruised and broken roots with a sharp knife. Let a barrow-load of fine soil be worked amongst the roots, and shake the tree slightly in an upward direction, that the soil may settle amongst the fibres; these should be laid out in layers at right angles from the stem. Make the soil firm by treading with the foot if the weather is dry, but in wet weather this operation must be done less severely. When the trees have been

planted, apply a mulch of rotten or partially rotten manure over the roots of each and make each tree secure to a stake as the work proceeds. In cases where there are many roots, the stake can be placed between them and driven into the solid ground before filling in the soil. Do not shorten the branches until next spring.

Planting Wall Trees.—Espalier Apple, Pear, Plum, and Morello Cherry trees, growing upon the free stock, should be planted at from 18 to 20 feet apart. While Apricots, Sweet Cherries, Peaches and Nectarines, trained in the fan shape, also horizontally trained Apple trees on the Paradise stock, and Pear trees on the Quince stock, 12 to 15 feet apart. Cordons only require a space of 18 inches to 2 feet. Let any holes already in the walls be filled with Portland cement, coloured to match the wall, and applied by means of the whitewash brush.

Wiring Walls.—Wires provide the most economical and convenient methods of securing the trees. Excepting for Peaches, Nectarines, and Morello Cherries, which need wires at 6 inches apart, the wires for other kinds of fruit trees need not be placed closer together than from 10 inches to 1 foot. Allow sufficient space behind the wire that there may be a free circulation of air at the back of the tree.

Top Dressing.—If any established trees appear debilitated, let the soil be carefully worked away from the roots to the depth of 12 to 18 inches, replacing this with some good turf, chopped up finely, and containing a 5-inch pot full of bone meal to each barrow-load.

Quicklime is necessary for all fruit trees and particularly for those which are known as "stone" fruits. In preparing land for planting, a proportion of lime should be mixed with the soil. On land in which lime is deficient apply one-half to one pound per square yard every autumn, spreading it evenly on the surface, thereby allowing the rains to carry it to the roots of the trees.

THE KITCHEN GARDEN.

By W. FYFE, Gardener to Lady WANTAGE, Lockinge Park,
Wantage, Berks.

Roots and Tubers.—Assuming that the roots and tubers grown during 1905 have been stored in accordance with previous directions, it is now time to make preparations for next season's crops. The advantage to be gained by working the soil thus early can hardly be overstated. Such advantages include the better destruction of insects, the increased fertility of the soil brought about by its exposure to the action of the weather during winter; the better condition of the soil when it becomes necessary to sow the seeds or to plant out the crops. Old garden soils that, year after year, have been afforded animal and vegetable manures will be benefited by a good dressing of lime at this season and again during the month of February, and with an application of soot or artificial manure in the spring. Such soil, if free from large stones, will be suitable for Potatoes, Carrots, Beetroot, Parsnips, Salsify, Scorzonera, and Chicory. If a plot of ground can be prepared large enough to accommodate them side by side it will be found the most convenient arrangement possible. A position where there is a good depth of moderately light soil should be chosen, and if this was well enriched in the previous season at a considerable depth by double digging, or, better still, by trenching, all that is now necessary will be ordinary digging. Drive the spade in a perpendicular position to the full length of the blade, but do not do this work when the soil is in a wet, sticky condition, or frozen.

Broccoli.—The early and severe frosts in October have once more forced upon us the advisability of heeling-over at least some of these plants as a means of preventing them from making extra strong growth, which is sometimes the result of planting them too early or in soil that was too rich and loose. If the plants have made sturdy growth with leaves close to the ground, injury by frost is much less likely. It might almost be said that when Broccoli is planted at a sufficient distance apart in a firm, not over rich soil, the plants become frost-proof after growth is completed and the soil has been drawn round the stems. The heeling-over

process reduces very considerably the amount of produce, but if only some of the plants are saved there is gain from the practice, even after allowing for the extra labour involved. The process includes the removal from the north side of each plant of about two spadefuls of soil. The base of the hole thus caused is left in a sloping position for the plant to rest upon, bringing it to such an angle as will prevent rain water lodging on the centre. Insert the spade its full length of blade on the south side of the plant, about a foot from the stem, and force the plant towards the north, so that the base of the head may rest on the top of the ridge. Cover the stem with the soil that is taken from the north side of the next plant, and repeat the process.

PLANTS UNDER GLASS.

By A. BULLOCK, Gardener to E. J. WYTHES, Esq.,
Copped Hall, Epping, Essex.

Cool Conservatory.—If the necessary provision has been made, no difficulty need now be experienced in keeping this structure gay with flowers from the present time until the end of the year. Chrysanthemums, of the earlier flowering section, which are now at their best, will require little attention beyond that of affording water to the roots, but it will be necessary to keep the atmosphere of the house dry without being hot. Any damp that may condense on the floors or walls of the structure may be dispersed by means of a circulation of hot water in the heating apparatus, and of air admitted through the ventilators when the weather is favourable. An atmospheric temperature of 45° at night will be suitable for the Chrysanthemums and for most of the subjects contained in this structure, including the Creepers overhead, most of which will now require to rest for a period. *Lapagerias*, that may still be carrying a profusion of flowers, will require copious waterings at the roots, but a lessened supply should be given to plants that have finished their growth and have few or no flowers remaining upon them. *Cassia corymbosa* also should be afforded less water at the roots, having passed out of flower, and any growths that will not be required to furnish the plant may be removed entirely.

Camellias that are planted out against a wall or otherwise, and that are in a good condition of health, may be benefited by an occasional dusting with Clay's Fertilizer, and they will not need to be disturbed at the roots. If, however, the appearance of any of the trees is sufficiently bad to warrant an examination of the roots being made, this should be done at the present time. In such a case remove the soured or poor soil by means of a fork; take away the defective drainage, and replace it with fresh materials. For replanting the *Camellias* use good peaty soil, together with some coarse charcoal and silver sand. Water should be afforded sparingly until the trees have shown signs that they are becoming re-established. Syringe the trees overhead occasionally with clear water.

Temperate or Intermediate Conservatory.—Allamandas, Passifloras, Bougainvilleas, Ipomeas, Clerodendrons, etc., growing on the roof and pillars of this structure having, in most cases, completed their growth, should be kept comparatively but not absolutely dry at the roots. Remove any superfluous or weak growths, and shorten the others before tying them in. A temperature by night of 55° will be suitable during the time these plants are resting, and for the more tender species of plants now in full flower in this structure.

MR. F. JORDAN.—The estate of Impney Hall, Droitwich, having been leased recently by its present owner, Mr. F. JORDAN, the head gardener and writer of our weekly calendar "FRUITS UNDER GLASS," will shortly be at liberty to take up another situation. During the time Mr. JORDAN has been at Impney, he has maintained the gardens in first-rate condition, as was shown in an article published in our issue for February 20, 1904. His successes at the best exhibitions of fruit during the same period have shown him to be an unusually skilful fruit grower. We hope Mr. JORDAN may soon hear of another opening for the exercise of his practical ability.

APPOINTMENTS FOR THE ENSUING WEEK.

SATURDAY, Nov. 4	Société Française d'Horticulture de Londres meet. Brighton Chrysanthemum Show (2 days). Royal Horticultural Society's Committees meet. National Rose Committee meets. Croydon Chrysanthemum Show (2 days). Belfast Horticultural Show (2 days).
TUESDAY, Nov. 7	
WEDNESDAY, Nov. 8	
FRIDAY, Nov. 10	
SATURDAY, Nov. 11	Ascot Chrysanthemum Show (2 days). Stoke Newington and District Chrysanthemum Show (2 days). Sheffield Chrysanthemum Show (2 days). Eccles, Pendleton and District Chrysanthemum Show (2 days). Nottingham and Notts Chrysanthemum Show (2 days). Bradford Chrysanthemum Show (2 days). Leicester Chrysanthemum and Fruit Show (2 days). Huddersfield and District Chrysanthemum Show (3 days). Stockport and District Chrysanthemum Show. Burton-on-Trent Chrysanthemum Exhibition.

ACTUAL TEMPERATURES:—
 LONDON.—Wednesday, Nov. 1 (6 P.M.): Max. 53°; Min. 46°.
 287°
 15 Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—Thursday, Nov. 2 (10 A.M.): Bar., 29.3; Temp., 53°. Weather—Dull.
 PROVINCES.—Wednesday, Nov. 1 (6 P.M.): Max. 51° Guildford; Min. 45°, N.E. Coast of England.

SALES FOR THE WEEK.

MONDAY NEXT—
 Bulbs at Stevens's Rooms, King Street, Covent Garden, W.C.
 MONDAY TO FRIDAY NEXT—
 Dutch Bulbs, at 67 and 68, Cheapside, E.C., by Protheroe & Morris, at 10.30.
 MONDAY, TUESDAY, AND WEDNESDAY NEXT—
 Sale of well-grown Surplus Nursery Stock, at Otter-shaw Nurseries, Chertsey, by order of Messrs. Fletcher Bros., by Protheroe & Morris, at 12 o'clock each Day.
 WEDNESDAY NEXT—
 Palms, Plants, Azaleas, Rhododendrons, Roses, &c., at 67 and 68, Cheapside, E.C., by Protheroe & Morris, at 5.
 FRIDAY NEXT—
 Sale of Fruit Trees and other Nursery Stock, at Bellingham Nursery, Bromley Road, Catford, by order of Messrs. J. Laing & Sons, by Protheroe & Morris, at 11.30 o'clock.

The British Science Guild.

At a meeting held under the presidency of the Lord Mayor at the Mansion House on October 30th a very important step was taken. Every one wonders at the revelations of science, especially during the last half century, but there, too often, the impression ends. As a nation we are slow to change our hap-hazard and antiquated methods. We do not, as a community, sufficiently recognise the vast importance of scientific methods in all the pursuits of life, from the details of imperial government to street cleaning. We do not allude to abstract science so much as to its application. What was the prime cause of the success of the Germans in their war with France? Scientific method. What has contributed especially to the rise of Japan among the nations? What to her unexampled success in her contest with Russia? Again, scientific method. Why are certain industries so flourishing in other countries as compared with our own? The answer is the same, scientific method and organisation. In our own department we have some excellent colleges, but they are few and puny as compared with the corresponding in-

stitutions in the United States and in Germany. We are not wanting in leaders of science. We more than hold our own in the supply of great captains. Our deficiency lies in the imperfect education of the rank and file, their want of appreciation of the practical significance of scientific discoveries, and their consequent inability to avail themselves of the power which the scientific explorer puts at their disposal. The daily papers reported the speeches at the meeting pretty fully, so that it is not necessary for us to enter into detail. We may, however, express our surprise that so little was said as to the progress of biological science during the last half century. Whilst the world has been in most departments almost revolutionised by the adoption of the principles of evolution, we doubt if any one of the speakers so much as mentioned the word!

The late
Rev. H. H.
D'Ombraim.

It was only possible for us in our last issue to record the death of the Rev. H. Honynwood D'Ombraim and to insert the portrait of this well-known gardener. Some further allusions to his career will be acceptable to those who, perchance, knew him only by name. He was of Huguenot extraction and for a time wrote his name in English fashion Dombraim, reverting in later years to the original spelling D'Ombraim. He was a student at Trinity College, Dublin, and in his early days showed indications of that love for natural history pursuits which remained with him as an abiding passion to the last. His abilities as an organizer and founder of societies was also shown at this period. In the year 1838 he and a fellow student inaugurated the Natural History Society of Dublin. Its history, as he told us on more than one occasion, was this: Two University students were, in the year 1838, entomologising in the neighbourhood of Dublin, when the idea was started of a society for the investigation of the Natural History of Ireland, where less advanced naturalists might obtain information and become better acquainted with one another. Of these students D'Ombraim was one, and his friend the Rev. B. S. Clarke the other. The idea was taken up with a good deal of spirit. The founders commenced in a very quiet way. Their apartments were at first at a rope and twine shop on D'Olier Quay, although the first gatherings were at Glenan's, the bird-stuffer, in Suffolk Street. The first year's income was £37 10s. In the following year the members migrated to commodious rooms in Great Brunswick Street. Some of the most eminent men of science in Ireland joined them. Archbishop Whately took them by the hand; Mr. (afterwards Sir William) Wilde, Professor Allman, Robert Ball, David Moore of Glasnevin, the Lord Lieutenant, the Provost of Trinity College, became members, and at the end of the second year the society had a balance of £80. In 1841 D'Ombraim resigned his secretaryship, entering the Church of England. D'Ombraim took an active part in missionary and other church work. It is, however, with his career as a horticulturist that we are here concerned. For many years he laboured at Deal and, during this period, he devoted his leisure to the study of Florists' Flowers, making himself a name as a cultivator especially of Auriculas

and Gladioli, and writing much on these and others flowers in the *Journal of Horticulture* over the once familiar signature of "D. Deal." For some time he edited the *Floral Magazine*, a periodical devoted to the special flowers in which he took such interest. After some years' sojourn at Deal he became Vicar of Westwell, near Ashford, Kent, and held that position for thirty-seven years. Here his love for Florists' Flowers continued without abatement, and he became widely known as an enthusiastic rosarian, visiting Lyons, Paris and other Rose centres, and making friends of the principal continental growers of Roses and Gladioli. His chief achievement, however, in connection with the Rose was the formation of the National Rose Society. The foundation of this Society has been attributed to the late Dean Hole, but this was a mistake. We well remember the meeting in Adelphi Terrace on a typically wretched November day, when the contrast between the climatal conditions outside and the spirit animating the founders within was marked indeed. As we often heard our late friend assert, he felt assured of success when Mr. Hole—he was not, if we remember rightly, then a Canon—entered the room and took the chair at the inaugural meeting. On the subsequent progress of the Society we need not here dilate; it is enough now to say that its success has been, in a very large degree, due to the labours of its founder. For many years also Mr. D'Ombraim acted as the editor of the Rosarian's Year Book, an interesting and valuable record of matters interesting to Rosarians, and was also the author of a useful treatise on the Gladiolus. As an organiser of exhibitions, and often as a judge at these gatherings, D'Ombraim took a leading part. Our readers were for many years indebted to him for intelligence on matters connected with the Rose and for the expression of opinions, above the signature "Wild Rose," which as the outcome of lengthened experience and keen judgment were highly appreciated. To him also horticulturists are indebted for the establishment of the Horticultural Club, which has pleasantly and fittingly supplied a means of intercommunication between those interested in the pursuit of horticulture. Mr. D'Ombraim's portrait, with that of Mr. John Lee, the first president of the Club, hangs on the walls of the meeting room, and will aid in perpetuating the memory of the services of one of the most ardent, efficient, and sympathetic leaders in horticulture. Very appropriately he was one of the first to receive the honour of V.M.H.

LILIUM MYRIOPHYLLUM. (See Supplementary Illustration).—This is a new and a very elegant Chinese species of Lily, introduced into cultivation by Messrs. Veitch, through their collector Wilson. Its leaves are narrow linear, acuminate, one-nerved, with deflexed apices, and are thickly crowded on the stem. The flowers are of reddish-purple colour without, ivory white within, suffused with rich canary yellow in the tube. Although, horticulturally this, together with Franchet's *L. formosum* and Baker's varieties, chloraster and leucantum, are abundantly distinct for garden purposes, there can be no question but that botanically they are all forms of *L. Browni*. They are all really only geographical forms of one polymorphic species, their distribution being as follows:—In the glens and gorges around Ichang the type, or rather the form, known in gardens as *L. Colchesteri*, abounds. In



LILIAM MYRIOPHYLLUM, A CHINESE LILY INTRODUCED BY MESSRS. JAMES VEITCH AND SONS.

the mountains around Ichang this is displaced by the variety chloraster. The variety leucanthum is very rare in Hupeh, but common in Yunnan, and especially in the mountain valleys of Western Szechuan, where the type is rarely, and the variety chloraster never seen. In the north-west of Szechuan *L. myriophyllum* displaces the other forms, though leucanthum occurs very sparingly. In north-west Szechuan *L. formosum* is the common form. This also occurs sparingly in the mountains of Hupeh.

All these varieties or forms affect stony and rocky ground, and, with the exception of the type which affects lower altitudes, are common between 3,000 and 4,500 feet. *L. myriophyllum* was named by Franchet in *MOROT Journal de Botanique*, vi. (1892), p. 310, from dried material sent to Paris from Yunnan by Père DELAVAY. See also Hemsley in *Journ. Linn. Soc.*, xxxvi., p. 132.

HORTICULTURAL CLUB.—The next House Dinner of the Club will take place on Tuesday, November 7th, 1905, at 6 p.m., at the Hotel Windsor. After dinner the REV. CANON HORSLEY will speak about "The Influence of Flowers amongst the Poor."

NATIONAL ROSE SOCIETY.—A meeting of the General Purposes Committee will be held on Tuesday, November 7, at 1.45 P.M., in the rooms of the Horticultural Club, Hotel Windsor, Victoria Street, and a meeting of the General Committee at the same place on the same date.

MR. T. H. COOK, Head Gardener to the King at Sandringham, will shortly return home from 16, Fitzroy Square, London, where he has undergone a serious operation for an affection of the ears. Mr. COOK, who has been absent from home for almost a month, has recovered very satisfactorily, and it is anticipated the effect of the operation will be all that was desired.

BRITISH GARDENERS' ASSOCIATION.—A meeting of the Executive Council of this Association was held on October 24 at the R.H.S. Hall, Westminster, Mr. R. HOOPER PEARSON in the chair. The Secretary submitted the application forms, credentials, etc., of 66 new candidates. They were elected unanimously, thus bringing the total membership up to 749. The Secretary also reported that applications for membership had been received from several individuals, but they were unable to fill in the official form stating what experience they had in the cultivation of plants of any kind. Applications for gardeners had been received from several ladies and gentlemen since the last meeting, and members of the Association had already been selected by the employers for some of the situations, including one at Johannesburg, South Africa, and the others were also likely to be filled. For the benefit of prospective members, it may be stated that members joining after October 1 in any year, shall, on payment of the registration fee and the first annual subscription, be entitled to the privileges of the Association until the end of the following year without further payment. The rules are being very carefully considered by the Executive Council, and it is hoped that they will be issued, with a complete list of the names and addresses of all the members, some time in December. *John Weathers, Secretary.*

THE NATIONAL POTATO SOCIETY'S SHOW, which promises to be the most remarkable exhibition of Potatoes on record, will be held in the Horticultural Hall, Vincent Square, Westminster, on Thursday and Friday, November 23rd and 24th. Schedules may be had from the hon. secretary, Mr. Walter P. WRIGHT, Postling, Hythe, Kent. Entries are now due.

LORD KITCHENER AS A GARDENER.—From *Indian Gardening and Planting* we learn that "Lord KITCHENER is an enthusiastic gardener. He has built a conservatory in which Orchids from Burma and plants from Kashmir, Mysore, and the neighbourhood of the Pamirs are being experimented with. The unofficial residence of the famous soldier is 'Wildflower Hall,' which lies at a height of 8,200 feet about six miles out of Simla on the road which leads towards Tibet. The view from the grounds is magnificent, showing upon one side the snowy range which is the source of the Ganges, and upon the other the Sutlej, rolling in flood to the plains of the Punjab. Wildflower Hall is Lord KITCHENER'S week-end retreat, and it is rarely that he allows the cares of business to interfere with his weekly pilgrimage there. It is there that he chiefly indulges his gardening taste. At first he tried flower-raising, but he soon found that the climate of Simla was not suited to ordinary English flowers, and more especially bulbs; so he turned his attention to landscape-gardening. Now he has turned the grounds into a fairy bower with banks of Periwinkle and Rose-gardens, diversified with sloping grassy lawns." It is at Simla that most English flowers can be grown to perfection.

FLOWER-PANICLE WITHOUT FLOWERS.—Mr. STOCKDALE, of the Gardens, Ratho Park, Ratho, sends us a loose straggling branched inflorescence of an *Odontoglossum* in which the bracts have developed as leaves, whilst the flowers are not developed at all. Such a state of things is not uncommon in *Odontoglossum cirrosium*, where the inflorescence is sometimes produced very slowly. The plant, if we may so say, starts to form an inflorescence, but owing to some climatal or other conditions, the nature of which we do not know, the flowers are not formed, and leaves and leaf-buds take the place which should be occupied by bracts and flower-buds.

ONIONS: AILSA CRAIG AND EXCELSIOR.—A correspondent has invited some explicit statement as to the priority in commerce and naming of Ailsa Craig and Excelsior onions. Can any of our readers help to clear up the doubt which hangs over this matter? In the south it has been common experience to find Ailsa Craig onion shown in broad deep form, and in its earlier stages invariably having on one side at the base of each bulb a slight bulge. That bulge, by means of the severe selection the variety has generally undergone, has been largely, if not entirely, eliminated; hence large bulbs, whilst still broad, are more shapely than was the case formerly. Excelsior as exhibited is more egg-shaped or globular, being rather deeper and narrower with tapering tops or necks. A few years since we were favoured with a few bulbs of this variety from an eminent grower; these were planted and the seed saved with care. The next generation of bulbs, however, included some that were broad and others that were narrow. We are also aware that many growers of fine bulbs select for exhibition the broader bulbs under the name of Ailsa Craig and the deeper and narrower bulbs under that of Excelsior. For these reasons the conclusion seems inevitable that the two names apply to one variety only. At the show at Edinburgh recently where huge onions were exhibited, the owner of one lot remonstrated when large, broad bulbs were termed Ailsa Craig, and not as he claimed them to be, Excelsior. They exactly resembled Ailsa Craig as shown by others. Our correspondent, who hails from Cheshire, holds that the broad bulbs are Excelsior, and the narrow ones Ailsa Craig, but that is not the southern rule. It is a point which someone may be able to make clear.

ROYAL HORTICULTURAL SOCIETY.—A deputation from the Society visited the International Horticultural Exhibition held in Paris in May last, and on their return the Council of the Society unanimously decided to offer to M. LOUBET, President of the Republic, a token of their appreciation of his and Madame LOUBET'S kind reception of their delegates, and the cordiality of their welcome during their stay in the French capital. A large Flora medal was therefore struck in pure gold and forwarded to the President, through M. CAMBON. The following letter from the Secretary of the French Embassy was read at a recent meeting of the Council of the Society:—"Monsieur le Président de la République has been pleased to accept the medal and letter which were presented to him by the 'Royal Horticultural Society,' and has directed this Embassy to convey his sincere thanks to your Society."

— In connection with the recent Conference on the Fruit Growing Industry of this country, in conjunction with the National Fruit Growers' Federation, a letter has been received by the Society from the Federation, stating that their "Council desires to express its warmest thanks to the Royal Horticultural Society for its cordial and effective co-operation in carrying out the late Conference on Fruit Growing, the success of which was so largely due to the excellence of all the arrangements at the Hall and the courteous hospitality extended to visitors and members of the Federation."

PLANT ECOLOGY.—The following is a summary of Professor HENSLOW'S paper read at the Linnean Society on November 2:—Part I: Plant Geography and Plant Surveying (Phytotopography), comprising Records of the Fluctuating Distribution of Species within definite areas (Association, &c.), the Result of Natural Selection. Definition.—The Struggle for Existence, and the Survival of the better adapted under the circumstances. Various Applications of Natural Selection. Examples: 1, Perennials with perennials; 2, Annuals with perennials; 3, Perennials with dry and moist soils; 4, Reversals of perennials; 5, Inability to contend with others, &c. Part II.—Ecology proper, or the Physiology of Plant Geography, implies—"The Study of the Vital Relations of Organisms to their Environment" (Tansley). These include the Origin of Adaptive Structures (*i.e.*, varietal, specific, and generic characters) by means of the Protoplasmic Response to "The Direct Action of the Conditions of Life, leading to Definite Results, whereby New Subvarieties arise without the aid of Natural Selection" (Darwin). Illustrations of Ecological Adaptations shown by Induction and Experiment.

THE VITALITY OF BURIED SEEDS.—We take the following extracts from a report by Mr. DUVEL to the U.S. Department of Agriculture. The experiments were undertaken in order to determine the length of time that seeds of different species of plants will retain their vitality when buried at various depths. Seeds of both cultivated and wild plants were used, but special attention was given to weed seeds in order to ascertain what weeds can be eradicated by deep ploughing and how long the soil must remain undisturbed before the vitality of the seeds will be entirely destroyed. The results of the first year's experiments show that the noxious character of weeds is closely associated with the length of time the seeds will remain viable in the soil, and that many weeds can be eradicated by ploughing. Much additional information is given, showing the relative resistance of the seeds of cultivated plants and of those commonly designated as weeds, and the influence upon the preservation of vitality of the depth of burial, of hard seed coats, and of hulled as com-

pared with unhulled seed. Mr. Duvel sums up the results of his experiments as follows:—"The length of time that seeds will retain their vitality when buried in the soil is of much importance in the extermination of weeds. The seeds of many of our pernicious weeds can be destroyed by deep ploughing if the soil is left undisturbed for some time. Seeds of the cultivated plants, with but few exceptions, lose their vitality when buried in the soil. Seeds of the plants commonly designated as weeds retain their vitality remarkably well when buried in the soil. In general, the pernicious character of weeds is directly proportional to the length of time the seeds will remain viable when buried in the soil. The deeper seeds are buried, the better is vitality preserved. Hard seeds of the same species retain their vitality much better than those with softer seed coats. Unhulled seed, especially of the grasses, is more resistant than hulled seed, and the vitality is always better preserved. Seeds of plants from the same genus often retain their vitality in a very different degree. Vitality is best preserved, even in weed seeds, when the seeds are carefully harvested and stored in a dry and comparatively cool place.

TURKISH TOBACCO.—Dr. ALEXANDRE TZOUNIS, of Naples, has published a monograph of the varieties of tobacco grown by the Turks in the interior of Macedonia. Dr. TZOUNIS has traversed the whole of the province, and by his familiarity with the language has been enabled to collect a large amount of information concerning the cultivation and preparation of the tobacco so much appreciated by smokers. All the varieties belong to *Nicotiana Tabacum*, of which there are two primary groups, one with sessile the other with stalked leaves. It may be added that, according to Professor COMES, the best Turkish tobaccos are the produce of a cross between the varieties *Havanensis* and *macrophylla*. The first supplies the delicate perfume, the second the exquisite flavour. When the characters of the two varieties are equally balanced the result is of typical excellence, but if one variety predominates the balance is disturbed. If *Havanensis* be dominant the tobacco will be more highly perfumed, but less agreeable. If *macrophylla* be dominant a tobacco will be produced more delicate but less aromatic. The publication may be had from the Royal School of Agriculture of Portici, Naples.

THE SELBORNE SOCIETY.—The Selborne Society, founded to perpetuate the memory of GILBERT WHITE and with the object of encouraging nature-study, has now been in existence for twenty years. It continues to do good work in preserving from destruction and ill-treatment scarce and wild animals and plants, and in protecting places and objects of natural beauty or antiquarian interest. The Society endeavours to act with discrimination, and not to encourage sentimentality. The now well-known meetings and excursions in connection with the Association introduce a social element which many enjoy and by which they benefit. The members are numerous, and constantly increasing in numbers. The President is the Right Hon. Lord AVEBURY, D.C.L., F.R.S.

ORNAMENTAL DRACÆNAS.—These plants, the correct name for which is "Cordylinc," are very useful for indoor and garden decoration. A recent issue of the *Revue de L'Horticulture Belge* contains a note by M. CHARLES PYNÆRT on some of the best-known varieties. These are classed in two groups: the one including greenhouse varieties with green or variegated leaves, the other coloured leaved kinds. All are grown in vast numbers in Belgium for home use and for export.

The hardiest species are *Cordylinc australis* and *C. indivisa*, which have produced many varieties; notably *C. a. aureo-striata*, with leaves of dark

shining green streaked with clear green and golden yellow; *C. a. Rigoutsi*, a splendid and somewhat similar kind; and the familiar *C. cannefolia*.

Two varieties with prettily marked leaves and brought out about ten years ago are *C. aureo-striata* and *C. variegata*. These are less hardy than the type and the leaves are less persistent.

Among the varieties of *C. indivisa* are *C. Doncetti* and *C. Prince Albert*; the latter the less familiar and distinguished by more regular markings. *C. lentiginosa* is of similar habit to *C. indivisa*, the leaves are yellowish when young and turn to deep russet brown.

C. lineata has large leaves; *C. Veitchi* only differs from the type in having foliage which is dark red at the base and at the back of the veins.

The leaves of *C. striata* are very narrow. This is an interesting species, but one rarely met with. It is the parent of many valuable varieties including *C. congesta*, with broader leaves, and *C. discolor*, with leaves that are violet underneath. *C. rubra*, *rubra compacta*, *Bruanti*, *Danelli*, *Toeffaerti*, *Eekhautii* are all largely cultivated. *C. Bruanti* is the most commonly used as a room plant. It is hardy, dwarf and keeps its leaves well. The Ghent growers in especial cultivate this variety extensively and every autumn thousands of specimens of it are exported by them.

CHINESE PLANTS.—Messrs. VEITCH inform us that the Herbarium material numbering some 14,000 specimens collected by Wilson during his second journey on their behalf, has been sent to the following botanists and institutions:—The most complete set to The Herbarium, Royal Gardens, Kew. General sets to The British Museum; Muséum d'Histoire Naturelle, Paris; Professor Dr. E. Zacharias, Hamburg; E. H. Wilson; Professor C. S. Sargent; Arnold Arboretum, Boston, U.S.A., specimens of ligneous plants. Dr. H. Christ, Bâle, specimens of Ferns; Dr. Maxwell T. Masters, Conifers; and Lieut.-Col. D. Prain, Calcutta, Papaveraceæ and Pedicularis.

CHRYSANTHEMUMS.

CHRYSANTHEMUMS IN THE OPEN.

The infusion of Japanese blood into the race of early flowering varieties has done much to encourage the cultivation of the plants in borders. Delaux and Vertuzés, about twenty years ago, made the first real advance in this respect, but in later days M. Aug. Nonin, of Paris, has evidently acquired a keen perception of those qualities necessary for a hardy border Chrysanthemum. Most of this gentleman's new seedlings are bushy, dwarf plants having good-sized flowers of the Japanese type, clear and bright in colour. Mr. W. Wells, Mr. Shawyer, and one or two other English raisers have also raised some desirable novelties, and of these we have seen a number during the present season. Of M. Nonin's I recently saw at the Merstham nurseries a large collection, in the open, grown in lines at an interval of about a foot apart, of many of these new sorts, which seem to be well adapted for the purpose of out-door culture. All of them were neat little bushy plants, varying from a foot in height to about 18 inches. They included *Clothilde*, rosy-flesh coloured tipped white; *Flambeau*, salmon red; Mr. W. Hubert, delicate salmon rose; *Dame Blanche*, large but rather heavy blooms, colour white; *Rene Rose*, a very fine flower of rosy mauve, and of good size; *Glacier*, white, and *Blanc Precoce*, another excellent white.

Of English raised varieties *Polly* is a capital orange yellow-coloured flower. Perfection is white with a faint shade of blush. *Kuroki* crimson scarlet, a very dwarf and neat little plant. *Claret*, as its name implies, is of rich

wine colour and very good. *Whitepoint* is a distinct flower of reddish lilac colour and tipped white. *Jenny* is orange-coloured and a nice little flower. *The Champion*, deep yellow. *Orange*, a warm orange bronze or terra cotta, and *Coacher's Pink*, very bright and effective, are also desirable varieties.

SINGLE FLOWERING VARIETIES.

During recent visits to the various autumn shows I have met with many old favourites of this type whose merits are well understood, but there are several newer varieties that appear to be promising and which it may be serviceable to place on record.

Merstham Beauty is a pretty flower of medium size, colour very deep rose with yellow centre. *Glaōys Hemsley* has flat florets of lilac rose colour and a yellow centre. *Pride of Merstham* is of deep ruby red colour. *Mary Richardson* is a warm shade of golden terra cotta, free flowering and very pretty. The flowers are of large size and have yellow centres. *Nonin's* single is of a pure yellow and flowers early in the season. Distinction is a pretty shade of rosy lilac with yellow centre, and has florets of medium size—centre yellow. *Morning Star*, pure white, except for the yellow centre, is quite an exhibition variety, having very long florets. *Rimmel*, pure yellow, is rather a small flower with flat florets, and was recently awarded a Certificate of Merit. *Autumn Glory* is an immense Japanese Single with great length of floret colour, pure golden yellow. *King Edward VII.*, also a single of the Japanese type, with very long florets—a big flower—colour rich ruby red with yellow centre. *Sylvia* is a Japanese form with flat florets, coloured rosy lilac. *Miss Runchman*, pale yellow, is a large bloom with flat florets. *Enreka* is another of the Japanese type of single blooms, of very large size, and having long white florets and a yellow centre. *Rosea* is also a large-sized Japanese flower; it has immense florets of a peculiar shade of lilac blush. *Blushing Beauty* is of extra large size with medium florets of pale blush colour and yellow centre. *Princess Eva*, a nice-looking flower, with flat florets, a pretty shade of blush. *Progress*, bronze coloured; *Innovation*, rich crimson; and *Decorator*, pure golden yellow, are also attractive varieties of fairly recent introduction. C. H. P.

CHRYSANTHEMUMS IN BATTERSEA PARK.

The hipped roof of one of the larger glass-houses at Battersea Park gives shelter to a collection of Chrysanthemums in pots consisting almost wholly of Japanese varieties. It was a sense of relief to turn one's back on the scene of devastation outside, the result of the unusually severe frosts, and enter on an inspection of the fresh-looking, healthy, and vigorous plants arranged in a serpentine bank—now against the front, and then against the back walls of the house. The collection appeared to be amply diversified by new varieties. Some of the finer flowers were sufficiently expanded to disclose their peculiar beauties, and we may mention *Madame Gustave Henry*, a white, rather flatly formed, incurved flower; *Mrs. H. Weeks*, with curled reflexing florets; and *Mermaid*, with florets confused, and likewise white; *Leocadie Gentils*, a hairy yellow flower, a sport from *White Louis Boehmer*, whose flowers were just about to expand; *Mrs. T. W. Pockett*, a well-known yellow-flowered variety; *Bessie Godfrey*, the flowers massive in build; *Lady Byron*, a fine white flower; *Mrs. Coomber*, mauve-coloured with reflexing florets; the immense *Mrs. J. C. Neville*, of the purest white; the lavender-pink coloured *Ernest Penfold*, the florets incurving at the tips; *Willie Bullimore*, a showy flower,

with flat florets, rosy carmine, with silver reverse; Henry Perkins, a reddish crimson and orange, a large and beautiful flower; John Shrimpton, a bright crimson flower; the creamy white Miss Stopford, having long thread-like florets and a greenish centre; Mrs. Duckham, with fine thread-like florets, the flower full and incurving; Vicar of Leatherhead, having narrow florets of a light yellow tint, and reflexing; Mrs. Claude Beckett, a fine large flower of pure white, and said to be of good bushy habit; Mrs. Judge Benedict (new), white; N.C.S. Jubilee, a fine tint of mauve colour, build and florets of great massiveness; the bronze form of Soleil d'Octobre; William Cursham, a fine orange and bronze-coloured flower; President Nonin, orange coloured; and Descartes, a reddish-brown coloured showy flower. The above-named are Japanese varieties exclusively. *F. M.*

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his correspondents.)

WINTER FLOWERING CARNATIONS.—

There appears to be a feeling among growers that the time has arrived when an exhibition of Winter Flowering Carnations is a consummation to be wished. I venture, therefore, to appeal to all those holding this opinion to kindly communicate with me forthwith, stating what amount of support they are willing to contribute to such a scheme, so that data may be at hand to prove whether a show held early in December would receive sufficient support to make it a practical proposition. In the event of adequate subscriptions being forthcoming I have already been promised the assistance of several growers in formulating rules and drawing up a schedule that would be acceptable to both private gardeners and the trade, and in making such arrangements as to ensure a reasonable measure of success to the movement. That the American Carnation has come to stay is an undoubted fact, and its adaptability to all purposes of decoration, as well as the individual beauty of the blooms, seems to indicate that an exhibition of these attractive flowers could not well fail to gain the approbation of the general public as well as that of the enthusiastic gardener. *Hayward Mathias, Medstead, Hants.*

FRUIT BUDS FORMED AS A RESULT OF INJURY.—

I send the two shoots enclosed from a Plum tree growing against a wall in my garden. I have for several months watched with great interest their development. The tree was dis-budded in the spring in the usual manner, and the young shoots were stopped according as was deemed necessary. In order, however, to fill a gap, two shoots were allowed to extend, but during June one was partially broken by the wind. The injured part was not removed, but hung down in front of the tree, while the other shoot remained intact and grew erect. Now that the leaves have fallen, there is a striking difference in the formation of buds. The shoot which was damaged is thickly studded with fruit buds [spurs, Ed.], while on the uninjured one there are no fruit buds at all. The sap was partially arrested in the one shoot, resulting in the production of fruit buds. I regard it as a practical and interesting object lesson in fruit culture, and one showing that a tree that is growing vigorously to prove fruitful may, under careful management—either by restricting the roots, or by judicious summer pruning and stopping—be encouraged to develop fruit buds. *Richard Parker, Horsham.*

COLOUR IN SEEDS.—Has anyone ever suggested the use of colour in seeds? In flowers we are told that the colours serve as guides to insects; but I do not feel sure that we have got to the bottom of that matter. In the Scarlet Runner the best seeds are beautifully coloured, but they are quite concealed till they fall ripe to the ground. There are many seeds beautifully marked, but almost requiring a microscope to see their beauty. I want to know in what way these colours are necessary to the life of the plant. *H. E.*

COTONEASTERS.—I am much obliged to *T.* for the information that *C. bacillaris* has dark-brown berries instead of red, as penned by me. The plant has been cultivated here for many years under the name of *C. bacillaris*. The berries are larger and brighter than those of the variety known here as *C. frigida*. I have sent the two varieties to Mr. W. J. Bean, Royal Gardens, Kew, and he says that both are undoubtedly forms of *C. frigida*. Mr. Bean kindly sent me a few berries of *C. bacillaris*, the colour of which I do not appreciate. *James Mayne, Bicton Gardens, Devonshire.*

NICOTIANA SANDERÆ.—Plants raised from seed that was sown the first week in February, and were potted on until they were in 8 $\frac{1}{2}$ and 10-inch pots, commenced to flower early in June, and have continued to come into flower at short intervals. Even now I have a few plants that are only just throwing up their flower-spikes. It seems curious that they did not all come into flower nearly together, because they each received the same treatment. I at first thought it was because I had afforded them a too liberal treatment, but happening to call on a friend at Kingston I found that the same circumstance had happened there in plants grown in 5-inch pots. I have seen many splendid beds of this plant growing during the summer, especially on ground over a subsoil of chalk, but I have not noticed any out-of-door plants failing to throw up their flower-spikes at one time. *A. Etherington, The Gardens, Netherby, Weybridge, Surrey, October 22.*

APPLES IN SHALLOW BOXES.—In the last issue a request appears from Mr. Walter as to marketing apples in shallow boxes. I think much might be done in this direction, and shall therefore exhibit sound, hand-picked fruits of Cox's Orange Pippin in such boxes at the Royal Horticultural Society's Hall on November 7. This year my Cox's Orange Pippins are very fine, and worth at least 30s. a bushel. *Consulting Horticulturist.*

DRIP.—In the system of roofing known as Becker's Simplified Roofing all condensation of moisture is arrested by the horizontal bars upon which the glass rests. The water runs along the groove in this bar until it meets the rafter at right angles, when it follows a downward course in a groove made in the rafter, and ultimately empties itself into the gutter outside the house. I have read with interest the various accounts of drip preventives, but the majority of these are only theoretical, for although they provide means of carrying away such condensation as gathers upon the rafter and the bar, they do not provide for that which runs down the panes of the glass, and this is the greater evil. *H. Becker, Jersey.*

[This matter was discussed in these pages earlier in the year, and illustrations appeared in the issues for February 11, March 4, March 11, and April 1, 1905.—ED.]

ELMS IN KENSINGTON GARDENS.—Some hundreds of the old Elms in Kensington Gardens have been marked for lopping or removal, and greatly as such attention was needed, the work appears to have been set about in a rather wholesale fashion. It is to be hoped that the greatest care will be taken that a well-intended improvement may not result in a widespread disfigurement which would remain for years. The case is a difficult one when the trees are in avenues like that in the Broad Walk, wherein there is always a tendency to postpone needful thinning as long as possible, often too long in fact. This may be seen in many English parks, for avenues of Elms seem to have been favourites with planters in former times. Yet the common *Ulmus campestris* has serious defects which unfit it for the purpose, not the least of which is the loss of branches referred to by a correspondent in a recent issue of the *Gardeners' Chronicle*. Varieties that might be more frequently planted with advantage is the Jersey Elm (*U. campestris sarniensis*), the Cork Elm (*suberosa*), and the strangely-named *U. antarctica*. Of the Wych Elm (*U. montana*) there are more forms adapted for the same purpose, but the Exeter Elm (*U. montana fastigiata*) is one of the best, and it thrives well in towns, even under very adverse circumstances. *C.*

Obituary.

WILLIAM PHILLIPS.—The death of Mr. William Phillips took place at his residence in Shrewsbury, on October 23, 1905, at the age of 83 years.

Born in Radnorshire, he went to reside in Shrewsbury in 1832, so that most of his life was spent in that town.

He was one of those all-round naturalists who derive pleasure from the study of nature in many ways. Astronomy, Geology, Ornithology, all interested him, but it is with Botany that he has left his mark. Possessing a sound knowledge of the phanerogamic flora, not only of his own county but also of Britain generally, he early turned his attention to Cryptogams. A neighbour and friend of the Rev. W. A. Leighton, he became interested in lichens and studied them for many years with keen zest under that able instructor. His knowledge of this little studied group of plants was both wide and accurate, and he acquired an extensive herbarium of them, especially rich in the species of the West of England and of North Wales.

It was as a fungologist, however, that he did his best work. A correspondent of the leading mycologists of his day—Messrs. M. J. Berkeley, C. E. Broome, F. Currey, M. C. Cooke, W. G. Smith, in England; the Rev. Dr. Keith, and the Rev. John Stevenson, in Scotland; P. A. Karsten



THE LATE WILLIAM PHILLIPS.

(Finland); E. Boudier (France); Rehm (Germany); Messrs. Peck and Harkness, in America, and many others—he acquired an extensive knowledge not only of British but also of exotic species. He took up the study of fungi in 1869-70, at first with the Hymenomycetes, but he soon specialized with the Discomycetes. After 18 or 19 years' work with them he published his *Manual of British Discomycetes*. He bestowed great labour upon this book, verifying descriptions and spore measurements, so that it remains a monumental study of the British species. He had previously published from fascicles of dried specimens *Elvellacei Britannici*, 1874-1881.

He was a frequent contributor to Grevillea, the earlier volumes of which contain many papers by him on lichens and fungi.

In 1881 he published a "Revision of the Genus *Vibrissa*" in the *Transactions of the Linnean Society*. Communications from his pen appeared from time to time in the *Gardeners' Chronicle*, which in those days was one of the few periodicals whose columns were open to mycological subjects. It was here, for instance, that *Peziza Misturei*, *P. araneo-cincta* and *Phacidium tetrasporum* were described and figured. (Sep. 4, 1880, p. 308.)

Amongst other botanical papers he published the following in various places:—

The Filices of Shropshire, Californian Fungi,

Fungi of Dwelling Houses, Hymenomyces of Shropshire, British Lichens, The Breaking of the Shropshire Meres, Luminosity of Fungi, Monstrosities in Fungi, as well as a long series of papers for association with the present writer on "New and Rare British Fungi." Of a retiring disposition, he was an indefatigable worker, and has left behind him hundreds of coloured figures of fungi made from nature, with microscopical details and notes and his herbarium. Disliking controversy, he held his own opinions firmly, but never obtruded them upon others.

He was never known to say an unkind thing nor impute an unkind motive to others who differed from him in scientific matters. During the latter years of his life, when he had to a great extent to abandon the use of the microscope, he devoted much time to archæology, but his interest was always aroused by the sight of a fungus, and he was ever ready to give whatever help he could to learners.

He was one of the original members of the Shropshire Horticultural Society, a Guarantor of the 1875 Show, and one of the Honorary Treasurers to the time of his death. *Charles B. Plowright, M.D.*

GEORGE ARMISTON.—This recently deceased gardener commenced his career under the late Mr. Pillans, Floors Castle Gardens, Kelso. From there he went to the late Mr. Shearer, of Yester, who, after deceased left for Killeren, invited him back to become foreman. Mr. Shearer subsequently recommended deceased to Messrs. Veitch & Sons, and this firm sent him to Packington Hall Gardens. Messrs. J. Veitch & Sons also recommended him to Mr. Coleman, of Gatton Park, and Ditton Park. He died in his 65th year.

SOCIETIES.

THE ROYAL HORTICULTURAL Scientific Committee.

OCTOBER 24. *Present:* Dr. M. T. Masters, F.R.S. (in the chair); Rev. W. Wilks, M.A.; Dr. W. J. Russell, F.R.S.; Messrs. Bowles, Pickering, Sutton, Worsley, Gussow, Holmes, Massee and Chittenden (Hon. Secretary).

Ants Imported with Fruit.—Mr. SAUNDERS reported on these shown by Mr. HOLMES at the last meeting. "The ants belong to the genus *Camponotus*. I do not think that there is any likelihood of their becoming a pest in this country, as probably only a few workers would from time to time be introduced, and even if both sexes, or a pregnant female, which is most unlikely, should reach these shores, it is highly improbable that they would find suitable quarters to breed in or proper food."

Green Dahlia.—Mr. MASTERS reported that the malformation was due to the growth of the paleæ, which had greatly enlarged and had become green, replacing the greater part of the florets.

Quince Leaves Diseased.—Mr. MASSEE reported that these, shown by Mr. WORSLEY, were attacked by *Podosphara Oxyacantha*.

Diseased Beech Bark.—Mr. MASSEE also reported that there was no fungus present in the Beech Bark shown at the last meeting that could be identified as the cause of the exudation which covered the bark.

Silver Leaf in Apple.—Mr. SPENCER PICKERING, F.R.S., showed a shoot of Apple affected with the silver leaf disease. The disease appears rarely to attack the Apple, but it is too common on the Plum, Peach, Portugal Laurel, &c. Prof. PERCIVAL considers the disease is caused by the fungus *Stereum purpureum*, since branches inoculated by him with that fungus develop silver leaf beyond the point of attack, and the fruits of that fungus are subsequently developed on trees affected by silver leaf disease. Mr. PICKERING showed a specimen of the fungus that had developed on such a tree. He pointed out that the mycelium of the fungus evidently permeated the whole of the woody part of the tree, since a shoot of Plum that had grown from a piece of root left in the ground from a tree which had suffered from an attack of the disease developed the silver leaf.

Variiegated Cockscomb.—Mr. A. SUTTON showed a specimen of Cockscomb, part of the inflorescence of which was white, part red, but the region in which the colours occurred was clearly defined; in the basal part of the stem the red colour of the flowers was restricted to one of the four sides, while higher up it was seen

only on the opposite side, about one-fourth only of the terminal inflorescence being red, the remainder white.

Fruits.—Mr. WORSLEY showed a fruit of *Cucurbita ficifolia*, which, he said, was edible, and possessed no bitter flavour. He thought since the plant was hardy and produced fruits up to 7lbs. in weight, that it might prove an acceptable addition to the edible plants grown in this country. He also showed a large fruit of a variety of *Capsicum* (Columbus), which members recognised as the *Pabrika*, which is largely grown on the Continent, and which has no hot taste. The *Capsicum* could be used green or pickled.

Orchid Disease.—Mr. MASSEE showed a specimen of the fungus, *Hemileia americana*, attacking leaves of *Epidendrum*, and known also on *Cattleya*. He stated that the disease was becoming very prevalent in the country.

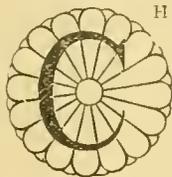
Vine Leaves Injured.—Mr. LYNCH sent specimens of Vine leaves, upon which were numerous pustules covered with a hairy growth. These were referred to Mr. SAUNDERS.

Petals of Pelargonium Streaked.—R. COOKE, Esq., F.R.H.S. sent petals of *Pelargonium*, *Soldier's Tunic*, which had a colourless streak running down them. Dr. MASTERS took them to examine.

Potato Tubers with Fungus.—W. CURTIS, Esq., of Rainham, sent tubers of Potato which had upon them patches of a reddish network, consisting of the interlacing mycelium of a fungus. The fungoid growth was entirely superficial, and could easily be rubbed off.

NATIONAL CHRYSANTHEMUM.

NOVEMBER 1-2.



CHRYSANTHEMUMS are once again the premier flower in season, and their popularity is still such that there are very few, if any, gardens in this country where a display of greater or less degree may not be seen. The National Chrysanthemum Society opened its great Autumn

Exhibition on Wednesday last, at the Crystal Palace, Sydenham, which has been its home since the Society was compelled to leave the old Aquarium, at Westminster. In past years it has frequently happened that this exhibition has been held at a time when London was visited by fog, but on this occasion there was instead of fog a heavy downpour of rain during most of Wednesday, and this circumstance must have prevented many from visiting the exhibition who had intended to do so. So far as the exhibition itself was concerned there was not apparent any falling off in interest on the part of the cultivators, and in most of the classes the amount of competition was quite up to the average. Nevertheless, it was noticeable that new varieties do not possess such distinction as novelties had years ago when development was more rapid. It is difficult at this date to raise varieties of better quality, or even of larger size than those already in cultivation, and for this reason those which obtained First-Class Certificates on Wednesday last appeared to excite less interest than could be desired. In only one respect have we noticed that novelties seen this year are better than former ones, and that is in colour, especially of yellow or bronze coloured flowers with overlay of rich orange-red colour. The two varieties of yellow incurved flowers, certificated on Wednesday, may prove to be valuable for exhibition purposes; they are of very large size, and are broad at the base, but, as at present shown, have not the conical shape that admirers of this type delight to see. It is evident that they have descended from crosses in which Japanese varieties have been parents at some time, and are far removed from the style of Queen of England. It has also to be remarked that flowers of any other type than Japanese and Incurveds become fewer at exhibitions year by year, and the Chrysanthemum plants shown have become so unimportant that their exclusion would scarcely be noticed.

Once again the effect of the Japanese flowers arranged in vases demonstrated the superiority of this method of display, and if the exhibition boards were discarded altogether, the effect of the exhibition would be further enhanced.

The displays of Chrysanthemums and foliage plants arranged in circular groups were a good feature, and are described below. In addition to the competitive classes for Chrysanthemums, there were some excellent honorary exhibits that included much of interest, also competitive classes for fruits and vegetables.

The arrangements were carried out by a sub-committee of the Society, assisted by three members of the family of the late Mr. Richard Dean, and by the courteous garden superintendent of the Crystal Palace, Mr. George Caselton.

CLASSES OPEN TO ALL.

Display of Chrysanthemums.—This class (open to all) was for a floral display of Chrysanthemums and suitable foliage plants in pots, with the addition of cut-blossoms and appropriate foliage, occupying an area of 300 square feet. There were only two competitors. The judges had evidently placed good quality of the flowers in general before effect as a whole, and awarded the 1st prize to Mr. NORMAN DAVIS, Chrysanthemum Nurseries, Framfield, Sussex. The individual blooms were of so good a quality as to entitle them to high honours in the best classes for exhibition flowers, and they were in the finest condition in most instances. The main idea consisted of a central mound of mixed varieties of diverse colours, light tints predominating, and on the apex of the mound was a Palm of moderate height. Around this were arranged at wide intervals, slender Palms and bright *Codiaeums*, Ferns, *Eulalias*, &c. The surrounding area was furnished with four handsome urn-like vases, each filled with large Japanese blooms of one variety of distinct colours. Between and behind each urn there stood a bamboo flower-stand containing single flowered Chrysanthemums of diverse tints, and between each pair of urns there were distributed cut blooms of Japanese varieties, which were stuck into pots of *Adiantum* ferns. It will be observed by the reader that the plan was simplicity itself, and the effect was so good as to grow on the beholder after a brief survey. Very superior blooms observed were those of Algernon Davis, Mrs. R. Hooper Pearson, Sapho, Mlle. Anna Debono (a fine white variety), J. H. Silsbury, M. Paul Wattine (of rich golden yellow), Mr. F. S. Vallis, Mrs. Guy Paget, &c. The second prize fell to Messrs. JOHN PEED AND SON, nurserymen, West Norwood, for a fuller group, and in which there were perhaps too few foils to the great amount of colour in the flowers. Moreover, the individual blooms were neither so finely developed nor of such good quality. Instead of vases or urns tall Chrysanthemum plants were employed—yellow, white, pink, &c. The central mound was brought down to within four feet of the edge of the group, the intervening space being rather closely dotted over with cut blooms of Japanese and decorative varieties. The foliage plants consisted of *Codiaeums*, *Myrsiphyllum*, small Palms, *Rex Begonias*, &c., and the outside line of *Isolepis gracilis*. We remarked good blooms of *Mutual Friend*, *Kimberley*, *Bessie Godfrey*, Mr. A. H. Lee, Miss Stopford, Mrs. W. Knox, *Beatrice May*, *Lady Conyers*, Miss I. A. Miller, *Mafeking Hero*, E. J. Brookes, &c. The highest awards in the foregoing class were ten guineas and a gold medal, and eight guineas and a silver gilt medal. The expressed desire of the Society was the getting away from the old style of exhibiting Chrysanthemums in groups, and that this has so far been attained successfully will not be contested by anyone who saw them.

CUT BLOOMS EXHIBITED ON BOARDS.

INCURVED VARIETIES.

Thirty-six Incurved blooms, distinct varieties.—Three exhibits were staged, Mr. W. Higgs, gr. to J. B. HANKEY, Esq., Fetcham Park, Fetcham, was easily 1st, his flowers possessing much more substance than those in the two other displays. The quality was good generally, but especially fine were the flowers in the back row. These were *Duchess of Fife*, Miss Nellie Southam, G. W. Matthew, Mrs. G. Denyer, *Embleme Poitevine*, J. R. Mileham, Mrs. J. Seward, *Lady Isabel*, W. Biddle, Mrs. F. Judson, *Pantia Ralli* and *Buttercup*, the variety last named being a magnificent specimen. The other flowers were *Ellis*, *Topaze Orientale* (nice flower), *Iolene*, R. B. Burge, *Annie Hills*, *Chrysanthemum Bruant*, W. Pascoe, *Doris Rayner*, *Boccace*, *Margaret Brown* (neat bloom), C. H. Curtis, Mrs. C. Crooks, *Triumphe de Montbreen*, *Frank Hammond*, *Major Bonnaffon*, *Fred. Palmer*, *Chas. Bacque*, Miss E. Holding, Miss E. Seward (nice specimen), J. Agate, *Madame Vemberg*, *Globe d'Or*, *Madame Verneuil*, and Mrs. A. H. Hall. There was not much to choose between the 2nd and 3rd prize groups, the flowers in both these exhibits appearing flat compared to those from Mr. Higgs, but they possessed refinement, the colours of the flowers being especially well developed. The 2nd prize was awarded Mr. W. Mease, gr. to A. TATE, Esq., Downside, *Leatherhead*, his more notable flowers being Mrs. F. Judson, *Topaze Orientale*, Mrs. Bryce, *Buttercup*, Mrs. Crooks, and J. Agate. Mr. G. Hunt, gr. to PANTIA RALLI, Esq., was 3rd.

Twelve Incurved blooms, distinct varieties.—Five exhibitors competed in this class, and each grower was awarded a prize. Mr. HIGGS had by far the largest flowers and won premier honours. His examples of Duchess of Fife, Emblème Poitevine, Buttercup, Mrs. F. Hudson, and Mrs. J. Seward were his best flowers. The 2nd prize exhibit was shown by Mr. W. Mease, gr. to A. TATE, Esq., Downside, Leatherhead, who had smaller but more refined flowers than those in the 1st prize group. The flowers also showed excellence of form; Buttercup, Topaze Orientale, Pantia Ralli, C. H. Curtis and Mrs. Crooks were the more notable examples.

Six Incurved blooms of one variety.—Among three displays, that shown by Mr. C. J. Salter, gr. to Mrs. HAYWOOD, Woodhatch Lodge, Reigate, was adjudged the best. The variety shown was W. Biddle. Mr. GEO. HALSEY followed with Chas. Curtis; and Mr. Silas Cole, gr. to the Rt. Hon. EARL SPENCER, Althorp Park, Northampton, won 3rd prize with Mr. G. P. Bryce.

JAPANESE VARIETIES.

Forty-eight blooms, distinct varieties.—This was a well contested class, there being no fewer than eleven exhibitors. Mr. HIGGS was again winner of the 1st prize with a most evenly balanced lot of blooms, colour, refinement and form being alike good throughout. His examples were Valerie Greenham, Sensation, Madame C. Nagelmackers, Mrs. J. Haddaway, Madame Waldeck Rousseau, Louis Remy, Mrs. Guy Paget, Souv. de Madame d'Or, Mdle. Anna Dobono, Duchess of Sutherland, J. H. Silsbury, Marquise Vicomte Venosta, Mrs. H. A. Allen, F. S. Vallis, W. R. Church (good flower), W. A. Etherington, Ethel Fitzroy, Madame Paolo Radaello, J. R. Upton, Mafeking Hero, Maud du Cros, George Lawrence, Marquis V. Venosta, Mrs. C. Beckett, Chrys. Montigny, Godfrey's Pride, Miss Stopford, Mrs. Barkley, A. L. Stevens (grand flower), Princess Mafalda, Lady Mary Conyers (nice specimen), Mrs. A. K. Knight, Mrs. G. Mileham (beautiful specimen), Capt. Percy Scott, Miss Olive Miller, Mrs. J. Dunn, Bessie Godfrey, Ernest Penford, Mrs. H. Weeks (lovely flower), Mrs. F. W. Vallis (also a grand specimen), Mrs. W. Knox, Edith Smith, Mrs. T. Dalton, Henry Stowe, Lieut.-Col. Ducroiset, Mildred Ware, Mary West and President Viger. The adjoining exhibit belonging to Sir C. SWINFEN EADY, Oatlands Lodge, Weybridge, (gr. Mr. James Lock) was awarded 2nd prize. The flowers in this exhibit were displayed in taller "cups" than those in the 1st prize group and were seen to better advantage. Some exceptionally large flowers were seen in this group: as those of Madame Carnot, Walter Jinks, Ethel Fitzroy, Madame Nagelmackers, Godfrey's Pride, Edith Smith, Duchess of Sutherland, Florence Penfold and Emily Mileham. 3rd, Mr. A. Jeffries, gr. to JOHN BALFOUR, Esq., Moor Hall, Harlow, Essex. Taken collectively this was a fine lot of blooms. 4th, Mr. G. HUNT.

Twelve Japanese blooms, distinct varieties.—Competition again ruled high in this class, and among seventeen exhibitors the judges must have had a difficult task to determine the best display. The 1st prize was given to Mr. Stevenson, gr. to E. MOCATTA, Esq., Woburn Place, Addlestone, for twelve meritorious flowers, including the varieties: Henry Perkins, Mrs. W. Mease, Mrs. F. W. Vallis, F. S. Vallis, Bessie Godfrey, Lady M. Conyers (charming bloom), General Hutton, Mrs. G. Mileham, Mrs. J. Dunn, Mrs. A. H. Lee (splendid flower), Edith Smith (good specimen), and Duchess of Sutherland. Mr. James Lock, gr. to Sir C. SWINFEN EADY, followed with rather smaller flowers. He had Ethel Fitzroy, Mrs. F. W. Vallis, Duchess of Sutherland, and Walter Jinks among his best specimens. 3rd, Mr. Geo. Halsey, gr. to Mr. JEREMIAH LYON, Riddings Court, Caterham Valley. Twelve really good flowers were included in this display. The specimens were perhaps a trifle coarse in the petals, but colour and form were both excellent. 4th, Mr. William Tebay, gr. to COLIN F. CAMPBELL, Esq., Everlands, Sevenoaks.

Twenty-four blooms, distinct varieties.—The President, C. E. Shea, Esq., offered a prize of five guineas for the best display in this class, and this was secured by Mr. Thomas Stevenson, gr. to E. MOCATTA, Esq., Woburn Place, Addlestone, with two dozen magnificent blooms. The colours in the flowers were grandly developed, and the quality was excellent throughout the whole of his collection. He had no easy task, however, for no fewer than 15 displays were presented in competition with him, and the majority of these embraced flowers of high quality. His specimens were of the varieties: Henry Perkins, Mrs. J. Haddaway, Henry Stowe, Mafeking Hero, General Hutton

Valerie Greenham, Miss Mildred Ware, Mrs. F. W. Vallis, Edith Smith, Lady M. Conyers, Harrison Dick, Princess A. d'Monaco, Miss Olive Miller, Mrs. A. H. Lee, Sensation, Mrs. W. Mease, Bessie Godfrey, W. R. Church, Mrs. J. Dunn, J. H. Silsbury (these four last named were all excellent), Kathleen Stoop (a large white seedling), Duchess of Sutherland (weak), Mrs. Geo. Mileham, and F. S. Vallis. The 2nd prize was secured by Mr. Thos. Waller, gr. to A. C. HAMMER-SLEY, Abney House, Bourne End, Bucks. His back row of flowers was excellent, especially the examples of Mrs. F. W. Vallis, Madame Carnot, Bessie Godfrey, and Henry Perkins. The front row flowers were a trifle small and coarse in petal. Ethel Fitzroy Mafeking Hero, W. Duckham, and Madame Paolo Radaelli, are other flowers deserving of mention in this exhibit. The 3rd prize was secured by Mr. Geo. Hall, gr. to the Dowager Lady ASHBURTON, Melchet Court, Romsey, Hants, for a commendable display. 4th, Mr. JAMES LOCK.

FLOWERS SHOWN IN VASES.

Those who have seen Chrysanthemums exhibited in vases all agree that this is by far the more effective manner of displaying the flowers, and one in which the full beauty of the blooms can be readily appreciated. This is evident to the growers themselves, for probably the best flowers in the show, taken collectively, were contained in the single vase classes.

For Twelve Vases of Specimen Blooms of Japanese Chrysanthemums, each containing five blooms of one variety, the winner of the 1st prize was Mr. W. IGGULDEN, Lock's Hill Nurseries, Frome, who also took the special First Prize of 12 guineas. The blooms in every case were excellent, and consisted of the varieties Mrs. F. S. Vallis, Madame P. Radaelli, Mrs. Berkeley (a grand lot of blooms), Miss E. Fulton H. Perkins, Eleanor Duchess of Northumberland (perhaps the weakest blooms in the exhibit), Bessie Godfrey, Valerie Greenham, Souvenir de Calvert Père, General Hutton, and President Viger. The 2nd prize was awarded to Mr. Chas. Beckett, gr. to Sir W. PEARCE, Bart., Chilton Lodge, Hungerford, and capital blooms, and but two unsatisfying colours. His best comprised General Hutton, Mrs. T. Dalton (a fine chestnut crimson), Miss Elsie Fulton, Mrs. J. Haddaway, Mr. F. S. Vallis, Mrs. Barclay, and The Lion. The 3rd prize fell to Mr. C. J. DUCKER, gr. to the Hon. Mrs. CANNING, Frant Court, Sussex, whose finer blooms were those of Madame P. Radaelli, Marquess Venosta (a crimson and lilac flower), Lord Ludlow, Mrs. G. Mileham, Mrs. J. Lewis, and Madame W. Rousseau.

Six Vases of Specimen Blooms of Incurved varieties, each containing six blooms, facing all round.—1st, Mr. W. Higgs, gr. to J. B. HANKEY, Esq., Fetcham Park, Fetcham, he also taking a Special Prize Trophy given by the Ichthemic Guano Co., Ipswich. In this exhibit very fine blooms were noted of Mrs. C. Crooks, Mrs. J. Seward, Topaze Orientale, Buttercup, and Lady Isabel. The 2nd prize was awarded to Mr. G. Hunt, gr. to PANTIA RALLI, Esq., Ashstead Park, Epsom, whose flowers of Mr. W. Biddle, bronze-yellow, Mrs. C. Crooks, Lady Isabel, and C. H. Curtis were all that could be desired. There were money prizes as well as the Challenge Trophy awarded to the exhibitors in this class, but only two competitors entered the lists. The Trophy must be won three times (not necessarily in succession) before it becomes the property of the holder.

One Variety of White Japanese.—The flowers were displayed with foliage, but this was on other growths and wired to the flower stems. Mr. H. Perkins, gr. to the Hon. W. F. D. SMITH, M.P., Greenlands, Henley-on-Thames, won 1st prize, with five grand specimens of the variety Edith Smith. About this decision there could be no two opinions, but the awards to the 2nd and 3rd prizes were questioned by some. The 2nd prize flowers, shown by Mr. A. JEFFRIES, were certainly better in point of petals and of centre of flowers than those belonging to Mr. Chas. Beckett, gr. to Sir W. G. PEARCE, Bart., Chilton Lodge, Hungerford, who was given 3rd prize, although the last-named exhibitor's flowers were of larger size than those in the 2nd prize vase.

One Vase of a Yellow Variety (Japanese).—Ten exhibits were shown, the best being that from Mr. A. JEFFRIES, who had the variety F. S. Vallis, the flowers being excellent in every respect. Mr. M. Rayment, gr. to W. BEECH, Esq., North Ockendon, Romford, won 2nd prize, with the variety Bessie Godfrey, and Mr. H. Parr, gr. to F. A. BEVAN, Esq., Trent Park, New Barnet, 3rd prize, with Hon. Mrs. A. Ackland.

One Vase of a Variety other than White or Yellow (Japanese).—This class brought a dozen excellent exhibits. All the flowers were of high merit, the best being those shown by Mr. M. Rayment, gr. to W. BEECH, Esq., North Ockendon, Romford, the variety being Henry Perkins. Mr. A. JEFFRIES was 2nd, with the variety Mrs. Barkley, having magnificent flowers. 3rd, Mr. J. SIMON, with the variety Mrs. Geo. Mileham.

OTHER TYPES.

Twelve Large Flowered Reflexed Chrysanthemums.—These were shown on boards, the best dozen being put up by Mr. T. Caryer, gr. to A. G. MEISSIMER, Esq., Weybridge; 2nd, Mr. C. Brown, gr. to the Misses HENTY, Abbots Langley; 3rd, Mr. J. A. HUMPHREYS, gr. to J. T. BURGESS, Esq., Maisey Hampton, Gloucestershire.

Market Chrysanthemums. Only one exhibit was seen in the class for six vases of Chrysanthemums of the market type. It was shown by Mr. HUMPHREYS, and was given the 1st prize.

Anemone Flowers.—The largest class in these flowers was that for 24 blooms in not fewer than 18 varieties. The Japanese forms were admissible in this class, and the flowers were required to be shown on exhibition boards. Two growers only competed, Mr. C. Brown, gr. to the Misses HENTY, Langley House, winner of the 1st prize, with much larger flowers than his opponent and Mr. J. A. Humphreys, gr. to J. T. BURGESS, Esq., Hill House, Maisey Hampton, Gloucester. In the smaller similar class, but with the Japanese flowers excluded, Mr. Brown was again first, and was again followed by Mr. Humphreys. The same exhibitors won all the prizes in the classes for the Anemone flowered types.

Pompon and Single Chrysanthemums.—Three growers competed in the class for nine varieties, distinct. The flowers were required to be shown in vases, six flowers of one variety in each vase. Mr. T. Caryer, gr. to A. G. MESSIMER, Esq., Aldenholme, Weybridge, secured the 1st prize for an even-balanced and well-grown lot of flowers. He had the varieties Madame E. Jordan, President, La Vogüé, and Wm. Westlake in especially good form. Mr. Brown, gr. to the Misses HENTY, was the other exhibitor, and he was awarded the 2nd prize, and J. A. HUMPHREYS 3rd.

Six Anemone Flowered Poppoms.—Mr. J. A. HUMPHREYS took 1st place in competition with one other exhibitor. The best examples in the 1st prize group were the varieties Emily Rowbotham, Antonius and Marie Stuart.

Six Varieties of Single Chrysanthemums in Bunches of Six Flowers.—Mr. C. BROWN was the only competitor. The flowers were a commendable lot, and worthily deserved the 1st prize, which they received. We were pleasingly impressed with the varieties Eureka, Florence Owen, Edith Pagam and Miss G. C. Warden.

COMPETITION OF AFFILIATED SOCIETIES.

This class is one reserved for affiliated societies. The schedule required a display of Chrysanthemums on a table measuring 18 feet by 3 feet. Any sections of the flower were admissible, but not fewer than four sections were to be included in the exhibits. The flowers were arranged in vases with appropriate foliage. Quality and general effectiveness in the displays were the main features to be considered by the Judges in making the awards. Two Societies alone competed. The 1st prize was won by Mr. J. HUNT, of the Epsom and District Chrysanthemum Society, for seven large vases of Japanese varieties, four of smaller size containing incurveds, and seven vases of single-flowered and decorative varieties, the Japanese and incurved varieties being especially fine flowers. The 2nd prize fell to the Wanstead and District Chrysanthemum Society, the blooms being contributed by Messrs. G. Fisher, Runcieman, T. Smith, W. Jones, R. Place, N. Crone and J. Croft. In this exhibit the finer flowers were Japanese and incurved varieties, more especially the latter. A Challenge Trophy goes with the 1st prize.

DECORATIVE CLASSES.

These classes, as is usual, made a pleasing addition to the show, and contrasted greatly with the more formal displays seen in the classes for cut flowers. Rustic flower holders were used in all the exhibits in Class 26 for three epergnes decorated with Chrysanthemums and with snitable foliage. A great similarity was seen in all five displays in this class, but that shown by Miss COLE, the Vineyard, Feltham, Middlesex, was adjudged the best. It was arranged with a yellow "single" Chrysanthemum, and with sufficient autumn-tinted

foliage and grasses to make it appear light and graceful in appearance. Miss J. FAIRWEATHER, Bifrons, Canterbury, won 2nd prize in this class.

Two vases of Pompon or Anemone Pompon Chrysanthemums.—Of three exhibits one was much superior. It was staged by Mr. A. Robertson, gr. to F. J. YARROW, Esq., 18, Abbey Road, St. John's Wood, N.W. The material with which it was composed was not of high-class value, but the manner in which the grasses, Croton leaves, coloured oak foliage, &c., were blended, was excellent.

Basket of Autumn Foliage.—The best basket of natural autumn foliage and berries was arranged by Miss COLE. A magnificent specimen of the florists' art. Fruits of Iris, Euconymus europæus, Cotoneaster frigidus, Honesty, Clematis vitiflora, &c., with bracken fern, oak and other foliage comprised the principal features. Miss JESSIE MARTEN, 9, Lancaster Road, South Norwood, won the 2nd prize.

The Best Basket of Chrysanthemums suitable for a table decoration, and open to lady members only, was arranged by Miss C. B. COLE, and was another triumph of the florists' art. Single Chrysanthemums, and a few Pompons with light foliage formed the principal contents of the basket. Mrs. A. TAYLOR, 5, Vernon Place, East Finchley, won the 2nd prize.

TRAINED PLANTS.

The displays of trained Chrysanthemum plants become weaker year by year, and this year they were very meagre indeed. In the class for six bush specimens of large-flowering varieties, only three exhibits were staged. Mr. H. RUNCIMAN, Nurseryman, Nightingale Lane, Wanstead, was 1st with plants that were of but mediocre quality. The best specimens were Lady Hanham and Nellie Pockett. The 2nd prize lot was brought by Mr. C. Haselgrove, gr. to W. BRANDON, 13, Crescent Wood Road, Sydenham Hill. We noticed a good specimen plant of Mrs. M. Fox in this group.

NEW VARIETIES.

First class certificates were awarded to the varieties following:—

Chrysanthemum Mrs. Walter Jinks.—A rosy-purple coloured reflexed Japanese variety, of average size. Shown by Mr. WALTER JINKS, Knowle Green House, Staines.

C. Godfrey's Eclipse.—A large incurved flower of the type of C. H. Curtis. Shown by Mr. W. J. GODFREY, Exmouth Nurseries, Devon.

C. Prickett's Octobre.—A variety of rather lighter shade than terra cotta Soleil d'Octobre. The flowers as shown had very weak centres, which is more or less common from all the sports from this variety. Shown by Mr. Prickett, Floral Nurseries, South Tottenham.

C. Algernon Davis.—A large-sized Japanese flower with drooping florets, colour yellow, overlaid with deep orange or even red colour. May be likened to a bronze coloured F. S. Vallis, but it has broader florets than that variety. Shown by Mr. NORMAN DAVIS, Framfield Nurseries, Uckfield.

C. Reginald Vallis.—A Japanese flower of very large size, with reflexed florets of a vinous shade of red colour. Very full, and of considerable substance. Shown by Mr. MARTIN SILSBURY, Providence, Shanklin, I.W.

C. J. G. Shrimpton.—An incurved flower of deep yellow colour, the older florets exhibiting slight colouring of red. In form, broad, but, as shown, insufficiently good, and full in centre. Shown by Mr. W. SEWARD, Hanwell.

AMATEUR CLASSES.—SECTION A.

The entries in these classes were heavy, and the quality of the flowers high, without being sacrificed to mere size.

Eighteen blooms, distinct varieties, Japanese.—The 1st prize was awarded to Mr. W. Trowell, gr. to D. FINK, Esq., Fairlight, the Avenue, Beckenham. Especially fine were the blooms H. Perkins, Miss E. Fulton, Lady Conyers, The Princess, Bessie Godfrey, Mr. G. Debril (an incurved of the palest flesh tint), and W. Duckham, of the same section (an exquisite lilac tinted flower). F. Molyneux and W. H. Lees were capital blooms; 2nd, Mr. C. Bellis, gr. to Mrs. G. M. FAULKNER, Fonthill Lodge Forest Hill, S.E., his best blooms being Marquis Venosta, Beauty of Sussex, Mafeking Hero, Bessie Godfrey, and Millicent Richardson; 3rd, Mr. F. Cordell, gr. to A. BLADES, Esq., Brookfields, Reigate. This stand contained some very good blooms, for example, Ethel Fitzroy, (a rich gold), Gustave Henry, Mrs. F. A. Cobbold, Lord Ludlow, &c.

Twelve Japanese blooms, distinct.—1st, Mr. Frank Fordell, gr. to A. F. BLADES, Esq., Brookfields, Reigate, a fine stand with scarcely one weak bloom. The following were of special merit—Mr. G. Mileham, Valerie Greenham, Mrs. W. Knox, Madame Gustave Henry, Mrs. H. A. Allen, F. S. Vallis, W. A. Hetherington and Merstham Yellow. Mr. A. Robertson, gr. to F. J. YARROW, Esq., 18, Abbey Road, St. John's Wood, N.W., with fine flowers of Paolo Radaelli, Mafeking Hero, W. R. Church, Miss Alice Byron, and G. Lawrence. 3rd, Mr. C. B. GABRIEL, Easdale, Horsell, Surrey, who had of incurved varieties W. Duckham, Miss E. Fulton, Mrs. T. W. Pockett and W. R. Church.

Twelve Incurved blooms, distinct.—1st, Mr. A. Osmond, gr. to A. KEMP, Esq., 15, Ross Road, South Norwood, with well finished flowers of moderate size, the finer being Lady Isabel, Miss M. Lyne, Madame Marie Ligés, Globe d'Or, Mrs. Hudson, Hanwell Glory and Mrs. J. P. Bryce; 2nd, Mr. J. A. Humphries, gr. to J. L. BURGESS, Esq., Hill House, Maisey Hampton, Gloucestershire, with among others excellent blooms of W. Neville, Miss E. Seward, Jeanne d'Arc, F. Palmer and Buttercup.

SECTION B.

(Similar classes were repeated in this Section the exhibitors in Section A being excluded).

Eighteen Japanese, varieties distinct.—1st, Mr. A. F. HILL, 10, Oakfield Street, Cardiff, with an excellent stand of varieties, in which pink of various shades, white and yellow were the predominant tints, and the flowers of moderate size and in general in full development. We may mention Duchess of Sutherland, Miss Alice Byron, White Venosta, Mr. C. Beckett, Lady Mary Conyers, Mrs. Louis Remy (a grand yellow flower), Mrs. G. Mileham and F. S. Vallis; 2nd, Mr. R. E. MASON, Gate House, South Weald, Brentwood, whose stand contained fine examples of F. S. Vallis, Lady Hopetoun, E. Fulton, Hy. Perkins, Madame P. Radaelli, Mildred Ware, Mrs. G. Mileham, &c.; 3rd, Mr. T. SHARPE, No. 1, Railway Terrace, Stone, Greenhithe, Kent, with a stand containing several fine well developed blooms of General Hutton, Mrs. T. W. Pockett, Australia, H. Perkins and E. Fitzroy; 4th, Mr. A. WILLIAMSON, East Street, Haslemere. This was a very full class.

Twelve Japanese Blooms Distinct.—1st, Mr. HILL, 10, Oakfield Street, Cardiff, with a stand of extra large fine blooms of President Viger, Mrs. L. Remy, Australia, Mad. Paola Radaelli, Duchess of Sutherland, Mrs. Barkley, Henry Perkins, and F. S. Vallis; 2nd, Mr. THOS. SHARPE, Railway Terrace, Stone, with a stand of fine large flowers of which F. S. Vallis, E. Fitzroy, Elsie Fulton, Godfrey's Pride were better ones; 3rd, Mr. R. E. MASON. Two extra prizes were likewise awarded.

Twelve Incurved, not fewer than Six Varieties.—1st, Mr. C. M. COLLINGWOOD, St. David's Hill, Exeter, with a stand containing particularly good examples of G. F. Evans, Ma Perfection, Mrs. Barnard Hankey, and Cecil Cutts; 2nd, Mr. THOS. SHARPE, his examples of Mrs. C. Crooks, Mrs. R. C. Kingsbury, C. H. Curtis, and Louisa Giles being the finer.

Two Chrysanthemum Bouquets.—1st, Mr. T. W. Stevens, gr. to W. H. STONE, Esq., Donnington, Laurie Park, Sydenham, a group of pompon and single flowered varieties, with Asparagus depressa intermingled, and hanging down 2 to 3 feet. There were two others of this pattern. The 2nd prize was taken by Miss J. FAIRWEATHER, Bifrons, Canterbury, for a bouquet worked out in single flowered thread petalled varieties, with Asparagus stems, and with a single flowered yellow variety. The 3rd prize was taken by Mrs. F. BREWSTER, 12, St. Peter's Street, Canterbury.

One Vase of Japanese Blooms, one variety.—Mr. H. Pestell, gr. to F. S. WIGRAM, Esq., Elsted, Bedford, was 1st with a vase full of F. S. Vallis, fine flowers set off with Codiaëum foliage, Asparagus and Myrsiphyllum; and Mr. C. B. GABRIELLE was 2nd with Miss Mildred Ware, set off with dried and green foliage which might have looked well by artificial light.

There were also classes for small exhibits of incurved Japanese, and Pompon flowers of which we are unable to take the fullest notice.

Six Japanese blooms.—(Section A.) 1st Mr. A. Osmond, gr. to A. KEMP, Esq., 15, Ross Road, South Norwood, with an excellent stand; 2nd, Mr. J. A. HUMPHRIES, with a stand but little inferior.

Six Japanese, one variety.—1st, Mr. F. W. STEVENS, with fine large blooms of F. S. Vallis; 2nd, Mr. J. A. HUMPHRIES, with the same variety.

Six Incurveds, distinct.—1st, Mr. A. ROBERTSON; 2nd, Mr. A. OSMOND, both exhibitors setting up very symmetrical handsome blooms.

Six Incurveds, one variety, 1st, Mr. A. OSMOND, with beautiful, well-finished blooms of C. H. Curtis. 2nd Mr. J. A. HUMPHRIES, with Topaze Orientale. Mr. A. OSMOND had also 1st prize for six bunches of Pompons distinct.

VEGETABLES.

A large number of exhibitors sent vegetables and culinary roots in response to Mr. R. Sydenham's offers of prizes, and very excellent were the various things observed on the tables. We may specify Hollow Crown Parsnips, than which no others were shown, prodigious Leeks, Onions, Cabbages, Carrots, Potatoes, besides Cauliflowers, collections of diverse vegetables, hard, small Brussels Sprouts, Celery, both red and white varieties, Red Cabbage of enormous size, and most excellent Beetroot.

FRUIT.

The best three bunches of white and the best three bunches of black Grapes were shown by Mr. W. Taylor, gr. to C. BAYER, Esq., Tewkesbury Lodge, Forest Hill, the varieties being Muscat of Alexandria and Black Alicante. Mr. W. IGGULDEN, Lock's Hill Nurseries, Frome, showed the best examples of Gros Colmar; the 2nd prize bunches shown by Mr. TAYLOR were heavier, but lacked finish. Mr. W. T. STOWERS, 80, Harold Road, Sittingbourne, showed the best culinary and the best dessert Apples, the fruit being grand produce. No Pears were forthcoming.

HONORARY EXHIBITS.

MESSRS. W. WELLS & Co., Merstham, Surrey, staged a number of large flowering Chrysanthemums, all of excellent quality, intermixed with bunches of the single type, and with Asparagus, Ferns, Palms, &c. (Silver Gilt Medal.)

MESSRS. CLIBRAN & SON, Altrincham, and Manchester, set up a large display of Chrysanthemums, including flowers of the Japanese, single, and decorative types. (Large Silver Medal.)

MR. H. J. JONES, Hither Green, Lewisham, made an imposing-looking exhibit of Chrysanthemums, having large exhibition flowers boldly arranged in bamboo epergnes, with other stands containing flowers of the single and decorative types intermixed. About 150 of the best large flowering varieties were included. We noticed Lady Lennard, Mrs. A. T. Miller, Mrs. A. H. Lee, May Carpenter, Lady Harmsworth, Lady Henderson, Mrs. R. C. Pulling, and a host of others of the newer and better varieties. This group was awarded the premier award of a large Gold Medal.

MR. W. J. GODFREY, Exmouth, Devon, staged a somewhat similar group to that shown by the last-named exhibitor. The general design was bold and well executed. Bamboo epergnes were carrying large exhibition flowers of the highest quality, and of such notable varieties as Guy Paget, Sapho, Mrs. T. Dalton, J. H. Silsbury, E. J. Brooks, Mrs. W. Duckham, President Viger, &c. (Gold Medal.)

MR. F. W. LADDS, Swanley Junction, Kent, showed a beautiful group of Chrysanthemums, all of the market type. Interesting were the boxes of flowers as packed for transit to Covent Garden Market. (Silver Gilt Medal.)

MR. J. W. COLE, Midland Road Nursery, Peterborough, staged large flowering Chrysanthemums arranged with small foliage plants.

MESSRS. G. PRICKETT & SONS, South Tottenham, London, N., showed a number of sports of Soleil d'Octobre.

MESSRS. H. CANNELL & SONS, Swanley, Kent, exhibited some well-grown flowers of Japanese Chrysanthemums. The flowers were arranged in tiers, and were seen to advantage against a background of Fern. On an adjoining table the same firm displayed a choice collection of single Chrysanthemums. Messrs. Cannell also showed Cut Zonal Pelargoniums, a group of Cannas, Celosias, and a collection of about 200 dishes of excellent Apples and Pears, with a few nuts at either end of the table. We also noticed fruits of Cydonia japonica and C. princeps. (Gold Medal.)

A Large Silver Medal was awarded Mr. M. LARSEN, Roebuck Nursery, Enfield Highway, N., for a group of Chrysanthemums in pots, one feature being of the variety Le Pactole. Others were Kathleen Thompson and Boule de Neige.

THE WEATHER.

METEOROLOGICAL OBSERVATIONS taken in the Royal Horticultural Society's Gardens at Wisley, Surrey. Height above sea-level 150 feet. The following are the "mean" readings for the week ending October 28, 1905:—

1905.	TEMPERATURE OF THE AIR.				TEMPERATURE ON GRASS.	TEMPERATURE OF THE SOIL AT 9 A.M.			RAINFALL.	SUNSHINE.
	At 9 A.M.	DAY.	NIGHT.	LOWEST.		At 1-foot deep.	At 2-foot deep.	At 4-foot deep.		
OCTOBER 22 TO OCTOBER 28.	Dry Bulb.	Wet Bulb.	Highest.	Lowest.	LOWEST.	deg.	deg.	deg.	ins.	hr. min.
MEANS	38	36	50	30	26	43	47	50	0'23	3 54

GENERAL OBSERVATIONS.

THE FOLLOWING SUMMARY RECORD of the weather throughout the British Islands, for the week ending Oct. 28, is furnished from the Meteorological Office:—

"The weather was mostly fair and bright over the United Kingdom as a whole, but in the North and East of Scotland, and the North-east of England showers were of frequent occurrence. Thunder was heard on Sunday at Gelderton, and on Saturday at Landale.

"The temperature was again below the mean, the deficit ranging from 2° in the North and East of Scotland to 4° or 5° in most other districts, and to as much as 7° in the East, South and South-west of England. The highest of the maxima was recorded towards the end of the week, when the thermometer rose to 59° in England, S., and Ireland, S., to 58° in the Channel Islands, 57° in the Midland Counties and England, S.W., and to between 56° and 53° elsewhere. During the major portion of the week the maxima were seldom above 50°. The lowest of the minima, which were recorded either on the 22nd and 23rd, ranged from 16° in England, S.W. (at Llangamarch Wells), 21° in England, S., and Ireland, N., and 23° in Ireland, S., to 31° in Scotland, E., and to 35° in the Channel Islands.

"The rainfall slightly exceeded the mean in England, N.E., and in Scotland, N. and W., and just equalled it in Scotland, E.; in all other districts there was a considerable or large deficit.

"The bright sunshine exceeded the mean very generally, the excess being greatest in the south and west. The percentage of the possible duration ranged from 54° in England S.W., 52° in the Channel Islands, and 49° in England S. to 33° in England N.E. and to 25° in Scotland N.

"The barometer and wind.—During the earlier days of the week the barometer was highest off our north-western and western coasts while some shallow depressions over the North Sea or the Netherlands affected the winds and weather over our most eastern districts. After Tuesday, however, the anticyclone in the north-west began to move slowly southwards over England and finally took up a position over the Bay of Biscay and France, while depressions from the Atlantic encroached gradually over the whole of the United Kingdom. The wind consequently shifted from the N. to the S.W. or S. and increased considerably in force: on many parts of our west and north-west coasts it blew a strong breeze and in a few places a moderate to fresh gale.

THE WEATHER IN WEST HERTS.

At Last a Change to Rather Warmer Weather.—The recent cold period, after lasting seven weeks, came to an end on October 29. Since then, however, the weather has been only moderately warm for the time of year. In fact, on the warmest day the temperature at no time exceeded 56°, and on the warmest night the exposed thermometer fell to 39°. On the first night of the past week the same thermometer showed 15° of frost. The ground, both at 1 and 2 feet deep, is now about 3° colder than is seasonable. Rain fell on five days, to the total depth of about 1½ inches, making it the wettest week since the end of August. For the first time since the middle of June, or for 4½ months, some rain-water has come through the percolation gauge, on which short grass is growing. During the week about 1 gallon has come through that gauge, and 3½ gallons through the percolation gauge, on which there is no vegetation. The sun shone on an average for about 3½ hours a day, which is nearly an hour a day longer than is usual at this season. Calms and light airs prevailed during the week, the mean velocity in no hour exceeding 10 miles. The average amount of moisture in the air at 3 P.M. was 6 per cent. less than a seasonable quantity for that hour.

OCTOBER.

A Remarkably Cold October.—This was the coldest October since 1887, or for 18 years—when the mean temperature was exactly the same. The days and nights were, on the whole, about equally cold for the time of year. There were only two days, and those at the end of the month, when the temperature in the daytime exceeded the average, and then only by a few degrees. Indeed, on the warmest day the highest reading in the thermometer screen was only 57°—the lowest maximum I have yet recorded here in October. On

the two coldest nights the thermometer exposed on the lawn indicated 15° of frost, or greater cold than in any October for 15 years. Rain fell on 17 days, to the aggregate depth of 1½ inches, which is 1½ inches below the average for the month—usually the wettest in the whole year. Of this total fall more than half the quantity was deposited during the last four days, so that the first four weeks were exceptionally dry for an autumn month. The sun shone on an average for 3½ hours a day, or for five minutes a day longer than is usual. The first half of the month was very gloomy, but during the second half the record of bright sunshine averaged 4½ hours a day. This proved a calm October, and during the windiest hour the mean velocity was only 18 miles—direction west. The atmosphere was, on the whole, very dry, in fact, there are only two instances in the previous 19 years of the air in October being as dry in the middle of the day. E. M., Berkhamsted, November 1, 1905.

GARDENERS' DEBATING SOCIETIES.

BECKENHAM HORTICULTURAL.—A meeting of this Society was held at the Society's Library and Reading Room, Church House, Beckenham, on Friday, October 27, where Mr. J. Randall presided over a large attendance of members and friends to hear Mr. T. Crosswell read a paper on "The Cultivation of the Herbaceous Calceolaria." The lecturer recommended, if large plants are required, the sowing of the seed in May. A suitable compost for these plants is composed of two parts turfy loam, one part leaf mould, and one part well rotten manure, with sand. For the final potting in February, a 48 size potful of bone meal should be added. The use of soft water when spraying the plants was very essential. Mr. J. Northfield exhibited 12 Uvedale's St. Germain Pears weighing 12½ lbs., and received the Society Certificate. F. G. E. d

BATH GARDENERS' SELF-HELP AND DEBATING. The usual fortnightly meeting of this Society was held at the Foresters' Hall, Bath, on Monday, October 23. Mr. T. Parrott presided over a large attendance. A good display of exhibits was again seen, chief among them being a splendid collection of Vegetables staged by Mr. C. Adlam. Mr. W. T. Rich read an interesting paper on "Hardy Bulbous Flowers," dealing in an instructive manner with the best varieties of bulbous plants for the garden, and their culture. A discussion followed. Eight new members were elected.

BRITTON, STREATHAM, AND CLAPHAM HORTICULTURAL.—At the meeting of this Society, held on October 26, and before a record attendance of the members, Mr. W. Roupell gave a lecture on "Fruit in Suburban Gardens," Mr. Thos. Whitford, M.A., presiding. The lecture was largely devoted to remarks on Apples and Pears, but Grapes, Tomatos, Peaches, Cherries, etc., were also touched upon. Mr. Roupell said the drainage of London, though necessary from a sanitary point of view, carried to the sea incalculable wealth in the shape of organic matter. A favourable condition of the weather at the time the trees were in bloom was the chief agent in determining the nature of the crop. Fresh fruit was becoming more and more an article of diet instead of, as formerly, being looked upon as a luxury. The lecturer advocated the growing for market of high quality Grapes suitable for invalids, as Diamond Traube, Duke of Buccleuch, Black Hamburgh (well ripened), and West St. Peter's. J. M. B.

JAMES MITCHELL.—It is with regret I send you news of the death, at the age of 72 years, of Mr. James Mitchell, who for about 15 years was Head Gardener at Dunrobin Castle, under two Dukes of Sutherland. Mr. Mitchell began his gardening career in the late 'forties, at Worsley Hall, where his uncle was gardener at that time.

He afterwards spent some time at Chelsea at Messrs. Veitch's, and from there went to Trentham, under the late Mr. Fleming. Among others who were at Trentham at that time was the late Mr. Taplin, afterwards at Chatsworth. Mr. Mitchell's next move was to Drumlanrig, under the late Mr. Mackintosh, and he was foreman of the Flower Gardens there. After a few years at Drumlanrig, he was engaged by the second Duke and Duchess of Sutherland as gardener at Dunrobin Castle, a position he held for 15 years, to the satisfaction of his employers. In May, 1872, he became tenant of the Sutherland Arms Hotel, Golspie, with the attached farm, and carried on both successfully for upwards of 20 years, retiring, in the early 'nineties, to Rostellan, Golspie, where he had built a house, and laid out a garden and grounds to occupy on his retirement from business. Mr. Mitchell came of a gardening family, his father having been a gardener to the Duke of Manchester, at Tandraee Castle, the Earl of Shannon, Castle Martyr, and Lord Vernon, at Sudbury Hall, Derbyshire. Latterly Mr. Mitchell devoted a good deal of attention to the finer kinds of Rhododendrons and Daffodils, of which he had a good collection at Rostellan. He was of a retiring disposition, an enthusiastic gardener, and was never happier than when busy in his garden. He was a kindly neighbour, a true friend, and will be much missed by those who knew him well, including the present writer. D. Melville, Dunrobin Castle Gardens.

Mr. DAVID RUSSELL, Essex Nurseries, Brentwood, showed a group of ornamental Conifers and Shrubs (Large Silver Medal).

Messrs. THOS. ROCHFORD & SONS, Turnford Hall Nurseries, Broxbourne, displayed a fine exhibit of retarded flowers: Lilies, Azaleas, Lilac, Laburnum, &c., (Silver Gilt Medal).

Messrs. JOHN LAING & SON, Nurserymen, Forest Hill, London, staged a semi-circular group of Chrysanthemums in pots, and bricks of Mushroom Spawn.

HOBBIES, LTD., Norfolk Nurseries, Dereham, showed bunches of cut Roses from the open of excellent quality considering the lateness of the season. (Large Silver Medal.)

Mr. S. MORTIMER, Swiss Nursery, Farnham, Surrey, arranged a table of Carnations. The flowers were much admired. (Large Silver Medal.)

Mr. C. ENGLEMANN, Horneybrook Nursery, Saffron Walden, showed Carnations and Lily of the Valley. (Silver Medal.)

Messrs. JOHN PEED & SON, West Norwood, London, S.E., staged a collection of winter-flowering Begonias, and another of Carnations. (Silver Medal.)

Messrs. WM. CUTBUSH & SON, Highgate, London, N., showed a well-arranged table of Carnations and a new variety of a Yellow Japanese Chrysanthemum named Mrs. Frank Penn.

Mr. H. Lovegrove, gr. to H. SPICER, Esq., 14, Aberdeen Park, Highbury, N., staged a group of Cypripedium—C. Spicerianum and C. insigne, and one or two well-grown specimens of Platyclinis densa, with Ferns, &c.

Messrs. GEO. BOYES & CO., Aylestone Nurseries, Leicester, displayed a collection of Carnations, having pot plants and cut flowers of the same.

At a meeting of the FLORAL COMMITTEE held on Monday, October 23, First-class Certificates were awarded to the varieties following:—

Chrysanthemum Warrior.—A deep crimson Japanese bloom of medium size. Certificated as a variety suitable for market.

C. Dora Godfrey (single).—Medium sized, flowers pale-yellow colour. These two were from Mr W. J. GODFREY, Exmouth.

C. Terra-cotta Soleil d'Octobre.—See description on p. 316 of our last issue. From Messrs. PRICKETT & SONS, Tottenham.

C. Norman Davis (Japanese).—A fine bloom, with long drooping florets of a bright chestnut-red colour. An improvement on the well-known exhibition variety Henry Perkins.

C. Mrs. R. Hooper Pearson (Japanese).—See description on p. 316 of our last issue. These two varieties were shown by Mr. NORMAN DAVIS, Framfield Nurseries, Sussex.

C. Miss Codrington (Japanese).—Yellow, with narrow drooping florets. From Mr. H. PERKINS, Henley-on-Thames.

C. Frank Greenfield (Japanese).—A deep flower, with broad, drooping florets of peculiar shades of terra-cotta colour and pink.

C. F. G. Oliver (Japanese).—Of the same type as Mrs. G. Mileham. Flowers of large size and coloured pink with a silvery reverse; florets slightly incurved. These two varieties were shown by Mr. GEO. MILEHAM.

C. Madame Marguerite de Mons (Japanese).—Very large, slightly incurved flower, of blush-pink colour.

C. Mrs. D. Willis James (Japanese).—The petals are broad and recurved. The colour is deep red with a pale gold reverse.

C. Beatrice May (Japanese).—White, with a faint blush tint, very large flowers, with slightly incurved florets.

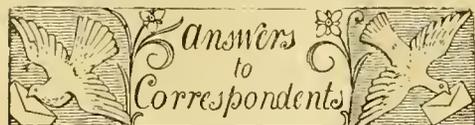
C. Mrs. W. Knot (Japanese).—The somewhat narrow and reflexed petals are of a pleasing shade of canary-yellow colour.

C. E. J. Brookes (Japanese).—Of amaranth colour with clear silvery reverse, very large flowers, with broad, slightly incurved florets. The five last-named varieties were from Messrs. WELLS & CO., Mersham.

C. Mrs. Frank Penn (Japanese).—See description on p. 316. From Mr. FAIRWATHER, Canterbury.

ENQUIRY.

STRAWBERRIES.—I wish to procure some varieties of *Fragaria*—more particularly *Fragaria vesca* multiplex, *F. Hagenbachiana*, *F. v. muricata*, *F. viridis*, *F. Dent de cheval*, *F. pratensis*. I can find none of these in French or German catalogues, nor in those sent out by English dealers. Prof. Dr. Stoll, Royal Pomological Institute, Proskau.



ADDRESSES: *Muller, Treves*. Your best course is to procure a copy of the *Horticultural Directory*, which may be had from our publishing department at a cost of a little more than one mark.—*S. A.* The journal you mention is published by the Horticultural Printing Company, Junction St., Burnley.

BEGONIAS: *D. W.* Better cut off the diseased leaves and burn them. Dip the healthy leaves in tobacco water to kill the mite. The stems appear to be attacked by a fungus.

BOOKS: *J. T.* We do not know of such a book.

BULBOUS PLANTS.—*Essex*. *Hippeastrums*, *Lycoris* and *Nerines*, speaking in a broad sense, should be started into growth in a frame or pit with some amount of bottom heat. When the leaves have developed, and the plants are growing well, stand them on a staging in a greenhouse, where they will develop their flowering spikes. After flowering reduce the amount of water afforded the roots until ultimately it is withheld altogether, and the bulbs allowed a season of rest. *Cypella*, *Watsonias*, *Tigridias* and *Moraeas* are all half-hardy plants. Although they will succeed out of doors in certain favoured places in the South of England, they require a frame with some winter protection, and succeed best treated as cool greenhouse plants. A cheap and useful book on bulbs is *The Book of Bulbs*, by *S. Arnott*. It can be obtained from our publishing department, price 2s. 9d. post free.

BULLACES: *C. W. S.* The fruits you send are those of the White Bullace. They are common in Kent. The Bullace is *Prunus insititia* and is found wild in many parts of Great Britain. The Bullace and the Damson originate from the same species. Bullaces are round and Damsons of oval shape. There are several varieties of Bullace, of which the following are the better known. Black Bullace, found in hedges and woods in Britain; White Bullace, as those you send; Essex Bullace, with fruits larger but somewhat similar to the last-named variety; and the Royal Bullace, whose fruits are about an inch and a quarter in diameter.

CATTLEYA LEAF: *E. F.* It may be that nothing but natural decay affects your Cattleya leaves. The leaf received is old and therefore would decay naturally. These evergreen orchids in their own habitats must eventually lose the old leaves. Under cultivation, as plants are not subjected to the rigours of the climate, the leaves remain plump long after they would have fallen off under more natural conditions. Cut away any damaged leaves and burn them.

CLIMATE AND VEGETATION OF THE TROPICS: *M. Buysman*, Middelburg, Holland, is desirous of entering into correspondence with cultivators with a view to obtain information as to the climate and vegetation of the tropics. In return he will give information as to a new source of India Rubber.

GRAPES: *F. S. L.* The variety is Golden Queen. You should have sent some foliage as well as fruit. The few berries received do not give one any idea of what the bunch may be like in weight or form.

INSECTS, &c., IN POTATO: *R. W. R.* Certainly not the Eucharis mite but two different animals widely separated from it. One is a species of springtail (*Podurus*), the other a common millepede. Slices of potato are an excellent bait for the latter pest, especially if the potato is slightly decayed when used. You might also try the effect of dipping the slices in a strong mixture of Paris Green (poison) and water, as this may prove fatal to the millepedes. Bisulphide of carbon is the only agent that can be used against root-feeding animals. Keep all lights,

matches and the like away from it. To apply it make three equi-distant holes at the side of the pot with a stick or pencil, and with a glass syringe inject a teaspoonful into each hole and close them up immediately afterwards. Keep the plant in the shade for two or three days afterwards. If you wish to treat the Eucharis in this way, we would advise you to try its effect on a single plant and carefully watch the result. *Adiantums* and some other tender plants are not injured by this treatment, but we are not sure that Eucharis would remain uninjured.

NAMES OF FRUITS: *B. P.* 1, Autumn Pearmain; 2, Brownlees Russet.—*Pears*. 1, Chaumontelle; 2, Easter Beurré; 3, Josephine de Malines; 4, Passe Colmar.—*W. E. B.* 1, Landsberger Reinette; 2, Winter Greening.—*T. T.* 1, Old Hawthornden; 2, Rambour Franc.—*Correspondent*. Fruits sent in a Quaker Oat box. The green apple is Lord Derby, and the coloured fruit, Flower of Herts.—*G. Monro*. Both fruits are Bramley's Seedling. We have frequently seen specimens like both fruits on the same tree; this is characteristic of the variety.—*H.* 1, Cellini Pippin; 2, Lemon Square; 3, Lady's Finger; 4, Fair Maid of Taunton.—*Bry*. 1, Warwickshire Pippin; 2, Crimson Quoining.—*G. O. S.* 1, Beauty of Hants; 2, Pile Russet.—*Collector*. 5, Marie Louise.—*W. Y. N.* 1, Cheshunt Pippin; 2, Broad End; 3, Brabant Bellefleur; 4, Dumelow's Seedling (Wellington); 5, Scarlet Nonpareil.—*W. S.* We think the small fruit is the original pear, and the Pitmaston Duchess a variety that has been budded into it at some time or other. We have ourselves frequently inserted buds on pear trees of another variety where a new spur has been necessary, and after a few years it has been quite impossible to detect the junction. By so budding it is very easy to have several varieties on one branch. The fact of your finding two distinct fruits on one branch convinces us that at some time buds have been inserted. Such buds are intended to make spurs only and can be put into wood that is of some appreciable age. *G. H.* Comte de Lamy.—*Cecil*. 1, Nouveau Poiteau; 2, Autumn Bergamot; 3, Gansel's Bergamot; 4, Winter Orange.—*W. J.* 1, Pear Bishop's Thumb; 2, Louise Bonne of Jersey.—*Apples*. 1, Melon (very fine); 2, Reinette du Caux.

NAMES OF PLANTS: *Hortensis*. 1, *Juniperus virginiana*; 2, *Cedrus atlantica*; 3, *Pinus excelsa*; 4, *Abies Pinsapo*; 5, *Picea Morinda*, or *Smithiana*; 6, *Abies Nordmanniana*.—*M. Buysman*. The Fig, *Ficus Carica*. We do not recognise the other specimen. *F. E. G.* The Red Wood Sequoia *sempervirens*; the Spruce is probably *Picea sitchensis*.—*T. A.* *Herts*. *Euonymus europæus*.—*H. I.* The fruit sent in is certainly that of the Black Walnut. The leaves got mixed. Can you send others? *A. Y. L.* The flower from the plant you describe as being similar to *Miltonia spectabilis* is *Ornithidium confertum*, and the other *Seraphyllum multiflorum*.—*F. C.* Send a better specimen when in flower.—*C. H. T.* 1, *Cupressus Lawsoniana*; 2, *Cupressus* not recognised; 3, *Cupressus Lawsoniana*; 4, *Abies Pinsapo*; 5, *Cupressus pisifera* var. *plumosa*; 6, *Cupressus (Retinospora squarrosa)*; 7, *Tsuga Sieboldi* probably; 8, *Juniperus virginiana*.—*R. G. H.* 1, *Dichorisandra Saundersii*; 2, *Begonia subpeltata* variety; 3, *Leycesteria formosa*; 4, *Sedum spectabile*; 5, *Asclepias curassavica*; 6, *Cassia corymbosa*; 7, *Asplenium viviparum*. Thanks for donation of 2s. 6d. for Gardeners' Orphan Fund.—*F. S.* Apparently *Medicago lupulina*.—*J. A. S.* 1, *Dracæna amabilis*; 2, *Dracæna Baptistei*; 3, *Dracæna Guilloylei*; 4, *Dracæna Regina*; 5, *Dracæna hybrida*; 6, *Dracæna terminalis*.—*A Forty Years' Subscriber*. a, *Cupressus sempervirens*; b, *Abies balsamea*; c, *Abies concolor* var.; d, *Abies concolor*; e, *Picea orientalis*; f, *Pinus ponderosa*; g, *Abies Nordmanniana*; h, *Picea pungens*, so far as we can tell from small sprays.—*J. Pilkington*. The Fern (No. 4) is *Polypodium sepultum* synonymous with *Goniophlebium sepultum* of gardens. We cannot undertake to analyse the chemicals. You should have sent a whole root of the Parsnip for examination. *Miltonias* are not easy plants to cultivate, unless the cultivator has had some experience. Follow the directions given from week to week in our weekly calendar.

PEARS FOR CULTIVATION AGAINST WALLS: *Lane*. There are several excellent varieties of Pears

which ripen at Christmas time, and are adapted for supplying the market. Before planting any one or two varieties, however, on the whole of the wall space, careful observations should be made in order to find out those varieties which are best suited to the district. Pear trees are rather fastidious in regard to soils in which they will thrive well. If there is any stagnant moisture in the soil, the land must be drained, otherwise the fruits to be produced will be rendered unsaleable by the attacks of *Cladosporium* and other fungus diseases. *Beurré Clairgeau*, and *Beurré Diel*, are both fine varieties, of good constitution and cropping qualities, but the former, although of attractive appearance for sale, is not of first rate flavour. *Glou Morcean* is an excellent Christmas Pear, which produces fine fruits when worked on the Quince stock and grown against a wall. Fruits of the variety *Doyenné du Comice* may, with care, be kept until Christmas. *Fondante de Thirriot* is a handsome Pear of large size, and possesses a rich flavour. It is also a good grower and free bearer on the Quince stock. The fruits are sufficiently attractive for market purposes. If Pear trees are grown on the Pear stock they need to be root pruned in October. Trees growing on the Quince stock produce the finest fruits if high culture is afforded them. If varieties are mixed one with another it results in better fertilization of the flowers.

RHUBARB: *W. M.* See note on forcing Rhubarb, published on p. 279 of the issue for October 14 last.

ROOT: *E. H. K.* Your specimen appears to be of the common corn-salad, *Valerianella olitoria*.

ROSE: *H. W.* We believe your specimen to be a Banksian rose. Probably it will flower later on.—*B. A. J.* Send your specimen to some Rose grower. We cannot undertake to name florists' flowers.

SINGLE FLOWERED CHRYSANTHEMUMS: *Old Windsor*. The seedling varieties are not so good as others of the same colours already in commerce.

SITUATION IN AMERICA: *D. E. H.* Apply to Messrs. Peter Henderson & Co., New York, and advertise in the *American Florist* (Chicago and New York), the *Weekly Florists' Review*, Chicago, or in our own pages.

SOYA BEAN: *J. M.* The seeds of a Leguminous plant from which Soy is or was produced. It will not grow in the open in this country, and we do not think you are likely to obtain seeds from our seedsmen. Try Messrs. Vilmorin Andrieux et Cie., Paris.

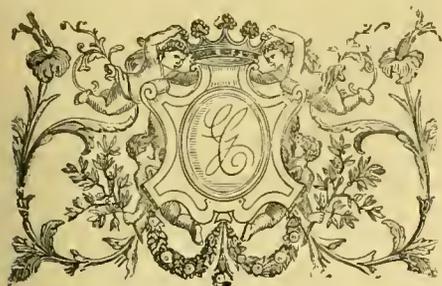
SYLLABUS: *G. O. S.* Apply to the Secretary, Science and Art Department, South Kensington, London, W.

WALLFLOWERS AND BRUSSEL-SPROUTS DISEASED: *A. M.* The stems have been eaten into by the grub of a weevil (*Ceutorhynchus sulcicollis*), and this has channelled through the centres of the plants. Burn all diseased plants, or give them to the pigs, as the disease is not fungoid. Do not cultivate members of the Brassica family on the same land for some seasons to come. Gas lime applied when the land is clear of crops is the best remedy. Meantime apply a dressing of soot.

WEIGHTS AND MEASURES: *J. F.* You will find a note on this question on p. 288 in our issue for October 14. A sieve of soft fruit weighs 4½ lbs., a sieve of stone fruit or Gooseberries 5½ lbs., while a sieve of Apples or Pears approximates from 40 to 50 lbs. Write to Mr. A. Assbee, Estate Office, Covent Garden, London.

WHITE VANDA CERULEA: *R. G. F.* It is impossible to say whether the variety will prove constant or not. The blue colour of the type is only surface colour, and in the one you flowered it may not have developed. Another year the colour may appear.

COMMUNICATIONS RECEIVED.—*Dr. Franceschi*, Santa Barbara—*W. G. S.*—*M. C. C.*—*C. P. J. O. B.*—*E. H. W.*—*M. B.*—*Muller, Treves*—*A. C. B.*—*de B. C.*—*A. C. S.*—*W. P. W.*—*J. Veitch & Sons*—*Sir Daniel Morris Barbados*—*M. Jarry Desloges, Paris*—*M. Corveon, Geneva*—*G. S. S.*—*P. W. F.*—*J. K. J.*—*Dr. Schonland, Grahams-town*—*A. W.*—*W. B.*—*G. Horrell*—*A. W.* (thanks for 1/- for Orphan Fund)—*Bone Meal* (next week).—*A. S.*—*W. J. H.*—*T. H. C.*—*G. W.*—*E. E.*—*H. K.*—*Enquirer*—*G. H. P.*—*P. W.*—*City of Birmingham Water Department*—*Sulopian*—*S. M. C.*—*W. S. E.*—*F. J.*—*D. B.*—*H. G. K.*—*S. B.*—*Bellis*—*Dr. F. F.*—*S. W. F.*—*C. Rusc*—*E. H. J.*—*A. D.*—*R. P.*—*A. C. B.*—*National Potato Society*—*T. E. W.*—*W. H.*—*J. W.*—*A. G.*—*G. B. M.*—*H. W. W.*—*W. R. F.*—*A. D. W.*—*Pitt*—*A. E. T.*—*T. C. B.*—*Gardener*—*S. A.*—*F. W. P.*—*H. E.*—*C. P. S.*—*Ballyarthur*—*F. S.*—*A. M. S.*—*X. Y. Z.*



THE

Gardeners' Chronicle

No. 985.—SATURDAY, November 11, 1905.

CONTENTS.

Agaves	346	Potatos, warty disease	
Allotment gardening at		of	346
Redditch	345	Reafforestation	345
Anemone blanda and its		Roses, some notable	338
allies	339	Royal Botanic Gardens,	
Apple, a large	345	Regent's Park	340
Books, notices of—		Scutellaria hirta...	338
Forest management...	337	Societies—	
Chemistry and its rela-		Birmingham Chrysan-	
tion to the garden	348	themum	351
Crinodendron Hooker-		Cheltenham Chrysan-	
ianum	346	themum	350
Dover House, Roehamp-		Linnean	345
ton	345	Paris Chrysanthemum	350
Eschscholtzias	345	Royal Horticultural	347
Foreign correspondence	338	Southampton Horti-	
Fruit growing for profit	346	cultural	349
Gardening books, a sale		Torquay Chrysanthe-	
of	345	mum	350
Ipomea rubro-carulea..	338	Weybridge Horticul-	
Miln, Mr. T. E.	345	tural	350
Nicotiana glauca	338, 345	South Africa, the	
Nursery notes—		weather in	345
King's Acre Nurseries,		Stangeria paradoxa	346
Hereford	341	Water-Lilies	345
Plants new or note-		Week's Work, the—	
worthy—		Flower garden, the	342
Diervilla rivularis	339	Fruits under glass	343
Oncidium coryne-		Hardy fruit garden	343
phorum	340	Kitchen garden, the	343
Potato Duchess of Corn-		Orchid houses, the	342
wall	346	Plants under glass	342

ILLUSTRATIONS.

Apple, King's Acre Bountiful	341
Chrysanthemums, A Prize Collection of	349
Diervilla rivularis	339
Fernery at Dover House, Roehampton (Supplementary Illustration)	340
Oncidium-corynephorum	340
View of the Southampton Chrysanthemum Exhibition..	349

FOREST MANAGEMENT.*

MR. HUFFEL's first volume on Forest Management appeared last year. It discussed the utility of forests, the nature of woodland property, forest policy and statistics, the whole being dealt with chiefly from the point of view of French forests. The author, who is one of the professors of forestry at the Nancy Forest School, states in his preface to the second volume that his first volume has met with an excellent reception, the success of which greatly surpassed his expectations, and he promises the third volume for next year. The last volume of the series will deal with the history of forest working-plans in France, and will give a complete account of the theory and practice of forest working-plans.

From a perusal of the present volume any well-educated forester will at once recognise that the author is singularly well equipped with the knowledge and experience necessary for dealing with his subject. Mr. Huffel has for several years been in charge of the instruction in forest management at Nancy, and this comprises all branches of forestry, except forest utilization, silviculture, and forest protection; the latter subject, however,

has never been taught at Nancy as a separate branch of forestry. The work before us is of the most comprehensive character, as was also Mr. Huffel's first volume, and will tend to raise French forest literature to a level with that attained in Germany. The book shows what great advances French forestry has made since 1872, when I left Nancy for the Indian Forest Service. Then the theoretical teaching of forestry in France was far too dogmatic and too little based on the nature of growing woods and on the results of past European experience in silviculture, so that men actively engaged in managing French forests often found it impossible to adapt their work to the theoretical teaching of the professors.

Of recent years, however, there have been great changes in the recruiting and instruction of the Nancy forest students. They now enter the national forest school after acquiring a knowledge of agriculture at the Ecole Agronomique, in Paris, being thus better prepared by a preliminary scientific education to follow with advantage the special course at Nancy. They make longer and more varied tours than was formerly the case in the French and Swiss forests, and depend far more on their own observations for a knowledge of the forests and of the various methods of exploiting them to advantage. Besides learning German, as they did in my time at Nancy, they also learn English, and are thus enabled to profit by the voluminous recorded results of observations in German, Austrian, and American forests, as well as of forests in India. Information regarding Indian forests is particularly useful to them, as some of them are eventually employed in the semi-tropical forests of Algeria and Tunis, and in the tropical forests of Tonquin, Cochinchina, Madagascar, and other French colonies.

To come to the subject of the present book, nowhere is dendrometry, or tree-mensuration, better dealt with. Based on strict mathematical principles, the author's explanations of the measurement of the bole of a tree and of the reasons why wood-merchants have adopted certain arbitrary modes of measurement are excellent. Such a mode of measurement is that by quarter-girth, which still prevails in England. It originated in the wood cutters' custom of roughly squaring the base of a felled tree, leaving the top of its bole round, and gives a little less than four-fifths of its volume. Other mercantile methods are also explained, being still used in some French forests; but the method of measuring the solid cubic contents of wood over bark, corresponding to measurements necessarily made by the framers of a forest working-plan in calculating its annual yield, is now generally employed in Continental forests. Descriptions are given of the best instruments in use for measuring single trees and logs and of the measurement of stacked timber and firewood, and the reader is gradually led on to the methods of measuring crops of standing trees.

The second part of the book deals with the production of timber and the comparative shares taken in it by capital and labour. Huffel says that while in primitive countries, where capital is scarce, agricultural capital, chiefly vested in the ownership of land, takes

four-fifths of the produce of the soil, in advanced democratic countries, such as France, where there is abundance of capital and interest on money is low, the *métayer*, or cultivator of another man's land, gets half the produce of the soil, and the landowner only the other half, after paying taxes, rates, and for the wear and tear of all necessary buildings, implements, manure, etc. This leaves to the landowner only about one-third of the net revenue. *Métayage* in France is now giving way to *fermage*, or farming on the English principle of the payment of rent to the landowner by the cultivator; but then the latter provides a considerable part of the capital. There is an estate in Gloucestershire where the landowner pays for nearly all the capital charges on his farms, but expects a return of 7 per cent. on his total expenditure on manure, drains, and on the original sum he paid for the farm. It would be interesting to ascertain what proportion of the net revenue accrues to the landowner in this case.

The great financial distinction between forestry and agriculture is in the reduced percentage in which labour contributes to produce forests as compared with its percentage in producing agricultural crops. In simple coppice, with a short rotation, osier-beds, pinewoods treated for the production of resin, and in woods of cork-oak, the percentage of labour is probably nearly equal to that usual in agriculture. In French high-forests of silver-fir, however, belonging to the State, the labour employed by the State is not more than 6 per cent. of the value of the final crops produced, and 11 per cent. of that "thinnings," before the produce in either case is delivered to the wood-merchant. In French State coppices-with-standards, it is 17 per cent. The share that labour gets from the gross revenues of State forests in Prussia is 55 per cent., and in Bavaria, 49 per cent., but in those countries the State itself largely engages in the conversion of the produce before it is sold to the wood-merchant. All this is of special interest to us at present, owing to the proposed planting of our wastelands, partly with the object of arresting the exodus of labour from the country to the towns.

The rôle that nature plays in the production of timber is well dealt with by Mr. Huffel, and the book contains excellent plates illustrating the form of trees of oak and other species grown under different silvicultural systems. He also gives a clear account of the methods of estimating the volumes of timber in woods of the principal forest trees at different ages, and of their values and the rates of interest to be obtained on the capital involved in their production. This capital he divides into two parts—*fonds* and *superficie*. It is difficult to coin an English word for *fonds*, which comprises the forest soil with all values that are attached to it after a clear-felling of the pre-existing standing-crop. These are:—

- (a) Stools, roots, seeds of forest trees that have fallen on the ground, all ready to reproduce a fresh crop.
- (b) Humus, dead leaves, the physical and chemical condition of the soil rendering it fit for producing trees.

* Huffel, *Economie forestière*. Tome deuxième. Dendrométrie. La formation du produit forestier. Estimation et expertise. Paris. Lucien Laveur, Editeur, 13, Rue des Saints Pères, 1905.

(c) Boundaries, roads and bridges, rides and lines of separation between woods of different ages, drains, etc.

(d) Houses for woodmen and woodcutters, forest nurseries, irrigation works, etc.

Most of these items are absent where land has to be planted that has been waste or recently given over from agriculture. The best English phrase to represent all that enters into the French word *fonds* appears to be "forest soil and its appurtenances."

The other part of forest capital, *superficie*, may be rendered in English by the term *forest standing-crop*. This term is quite peculiar to forests, for a forest standing-crop is not necessarily, like a crop of Potatoes, exploitable at any fixed time. We may, for instance, have planted or sown an area with Scots Pine, but no one would think of felling the crop till it becomes old enough to yield pit-timber at, say, forty years, or the crop may be left till it is eighty years old or even older, to produce large timber. Meanwhile a large proportion of the produce is cut out from time to time in the thinnings. Now, the capital employed in forestry comprises both *fonds* and *superficie*. The former of these is of fairly constant value for the same locality, but the latter steadily increases in value up to a certain age, provided it is properly treated. The rate of increment of the *superficie* also increases up to a certain age, and then diminishes. Hence it follows that there is considerable complexity in calculating the prospective value of the final crop of trees, and also that of the capitalised value of the thinnings, up to the end of the rotation of the wood. The capital value of the "superficie" at the end of the rotation is the sum of these two capitals, and the correct rate of interest obtained from it depends on the accuracy with which this prospective capital is calculated.

As regards the capitalised value of thinnings taken periodically from a growing wood in order to improve the final yield, the author gives an example to show that, owing to the comparatively early realisation of the value of thinnings, this may nearly equal that of the standing-crop. For instance an Austrian pine wood yielded £56 in thinnings. The accumulated interest on these thinnings amounted to £31 at the end of the rotation, making their total value £87, while the final crop was sold for £91, only £4 more than the capitalised value of the thinnings.

Mr. Huffel is not convinced of the accuracy of German forest yield-tables, and says so plainly on page 248. This statement has doubtless attracted attention in Germany, and will certainly be disputed by German foresters.

The parts of the book dealing with the mensuration and valuation of woods are well illustrated by numerous graphic diagrams, but apparently contain nothing particularly original, although this is the clearest account of these important subjects that I have read in the French language. The production of timber managed in selection forests of silver-fir and in coppice-with-standards is probably better understood in France than elsewhere, and this subject is admirably treated in the present volume.

This interesting book concludes with two chapters, the first of which is devoted to the estimation by experts of the compensation to be paid for any damage done to a forest, which frequently exceeds that due to the mere removal of certain trees, or crops of trees, in the forest, as the realisation of the objects of a working-plan may thus be seriously affected, or frustrated, to the detriment of the owner.

The last chapter deals with the estimation of the value of forest usufruct, and the just manner of exercising the latter, and is useful in questions affecting entailed forest estates.

To the intelligent student of forestry Mr. Huffel's book is a mine of wealth, rendered all the more valuable by the clearness and comprehensiveness with which it is written and illustrated. *W. R. Fisher, Oxford. October 25, 1905.*

FOREIGN CORRESPONDENCE.

CASTANOSPERMUM AUSTRALE.

AT a country place, a few miles from Santa Barbara, there is a large specimen of this remarkable Australian tree, about 25 years old. It has been flowering and fruiting regularly these last 15 years, several plants being raised from it, some of which are now blooming. We have never been able to propagate it from cuttings. The flowers, as described by Mr. A. Berger, are very curious indeed, but do not show much from a distance, being borne only on the trunk and main branches. The illustration published in the *Gardeners' Chronicle* is not of natural size, but, as stated, considerably reduced. I have had myself "nuts" of two inches diameter.

BAMBOOS FLOWERING.

SINCE many years there have been imported to California under the name of "taisan-chiku" or "giant Bamboo from Japan" plants of *Dendrocalamus latiflorus*, which are now becoming to be one of the most conspicuous ornaments of our gardens. About five years ago a number of the plants then imported began to bloom and died after a short time; one of them, however, has continued showing bloom until now, without dying, but without making any perceptible growth. It allowed the means of identifying the species described, as it is in Gamble's classical work on *Bambuseæ*. The large growing kinds are very highly prized here, and I have succeeded in gathering already four species of *Dendrocalamus*, one of *Oxytenanthera*, several of *Bambusa* proper, of *Arundinaria* and of *Phyllostachys*. Two or three very large growing species have just been imported to Santa Barbara from the Philippines, and they may prove new to science. *F. Franceschi, Santa Barbara, California, U.S.A.*

PLANT NOTES.

IPOMEA RUBRO-CŒRULEA.

FOR a number of years I have grown this climbing annual for autumn and winter flowering and for the special purpose of decorating the breakfast and luncheon tables, for which it is distinctly adapted. The hardy varieties of these twiners have been repeatedly cultivated here for summer decoration, and with good effect, but not until this season has the above-named variety been grown out-of-doors, when the results have been highly satisfactory. The plants attain a height of 20 feet, and during September they were studded with their lovely sky-blue-coloured flowers, which will continue until cut down by frost. Plants intended for autumn and winter flowering are now well established in their final pots and have been removed to

warmer quarters, in which they are intended to bloom, which will be from about the first week in November onwards.

NICOTIANA SANDERÆ.

I have seen numerous complaints from disappointed cultivators respecting this addition to our flower-gardens, but I have nothing but admiration for it as a bedding plant. The seeds should be sown early, say in February, and when the seedlings are large enough to handle they should be potted singly or pricked off into boxes. Plants raised here in the above manner were planted out during the second week of last May in time to experience the 10° and 11° of frost, which the majority of gardeners have good reason to remember occurred about these dates, but apparently with no bad effect upon the plants in question. The bed in which they were planted measured 19 by 9 feet, and was fully exposed to the sun, and as I imagined the plants would reach a height of but 2 to 3 feet, I interspersed standard plants of *Heliotropes* 4 feet in height as dot plants in the bed. These latter I grew principally for their fragrance. Early in June the *Tobaccos* commenced to show their brilliant carmine-coloured flowers, and from the middle of July up to quite recently they have produced a profusion of blooms of good size, substance and colour from within a few inches of the ground-level to a height of 6 feet. The flowers have not the undesirable character of affinis of closing its blossoms by day [not invariably. ED.]. The 4-feet-tall plants of *Heliotropes* peeping from out this mass of glowing crimson presented a rather peculiar appearance. Some little time since I placed a few plants of *Abutilon Sawitzii* round the edge of the bed, producing a good effect. Another season I hope to intermix *Swainsonia alba* with *Nicotiana Sanderæ*. *W. Fyfe, Lockinge Gardens.*

SCUTELLARIA HIRTA,

Sithorop (Flor. Græca, t. 583).

This pretty plant, raised from seeds received from Cyprus, flowered with me in September. The small leaves are agreeably lemon-scented, and the flowers yellow, with the upper lip red. I do not think this species will be hardy here. *M. Buysman, Middelburg, Holland.*

THE ROSARY.

SOME NOTABLE ROSES OF THE LAST DECADE.

OF roses which have originated within the last ten years one is pre-eminent alike in beauty and impressiveness: I refer to the magnificent Hybrid Perpetual entitled *Frau Karl Druschki*, raised by Lambert in 1900. This is undoubtedly the grandest of all white roses, enormous in dimensions (I have had flowers occasionally nearly 7 in. in diameter); with a habit approximating as nearly as possible to absolute perpetuality; and flowering profusely in summer and autumn. Yet it has its limitations. It is somewhat lacking, like some of its great contemporaries, in central petals; and it is entirely destitute of the attribute of fragrance. In those respects it is strongly contrasted to such varieties as *Kaiserin Augusta Victoria*, an empress among roses; and the richly odorous *Viscountess Folkestone*. Perhaps the most formidable rival of *Frau Karl Druschki* is that famous Newtownards Rose, *Mildred Grant*, which was exhibited by Mr. George Paul, of Cheshunt, with immense shell-like petals—the admiration of all beholders—at the last Temple Show. Nevertheless, I shall always continue to believe that the true rival of *Frau Karl Druschki*—at least, in our gardens—is not *Mildred Grant*, which is essentially an exhibition variety, but the almost incomparable *Margaret Dickson*, which, while even more floriferous and fuller in the centre of the flower, has at least some suggestion of the fragrance of its chief parent,

Lady Mary Fitzwilliam. Another beautiful variety of Irish origin is Florence Pemberton, which may without exaggeration be regarded as possessing nearly all the finest attributes that constitute the fascination of a perfect rose. It is, in my estimation, greatly superior to Mildred Grant as a variety adapted for garden cultivation; and that is a qualification which can hardly be overestimated. Dean Hole is, I doubt not, an effective variety where it can be successfully grown; in my own garden, I regret to say, it has not succeeded any better than Alice Lindsell, Mildred Grant, or Mrs. Edward Mawley; which probably require a finer climate and warmer soil than Scotland can afford them. I have given those roses every possible attention; but atmospheric conditions seem always to prevent their development. But I have abiding consolations in Margaret Dickson, Florence Pemberton, and the invariably beautiful Gloire Lyonnaise. Clio, which is perhaps the finest rose ever given to the world by the firm of Wm. Paul & Sons, is quite as precious a production, for garden decoration, as any of these varieties. It produces its salmon-pink coloured flowers in clusters like a Noisette; it aspires not seldom, in favourable situations, to a high elevation; and its artistic effectiveness is therefore supreme. There is hardly, in short, a grander rose in cultivation; and it is scarcely realisable that it can ever be superseded. In my own "Paradisus Terrestris," where most roses succeed admirably, Clio and Margaret Dickson are like similarly endowed sisters, growing side by side. The former was raised in 1894; the latter in 1891.

Other recently-raised roses of great distinction are Bessie Brown, David Harum, Earl of Warwick, Etoile de France (Pernet Ducher 1905), a beautiful variety, whose popularity is ensured; Hugh Dickson, and J. B. Clarke, lustrous natives of Belfast; Boadicea, Enchantress and Corallina, exquisite emanations from Waltham Cross; Lady Roberts, a more richly-hued Anna Ollivier; Mrs. B. R. Cant, Perle des Jaunes, and Souvenir de Pierre Notting; the last-mentioned being one of the most valuable of recent Continental introductions. *David R. Williamson.*

HARDY FLOWER GARDEN.

ANEMONE BLANDA AND ITS ALLIES.

No hardy, tuberous-rooted plant is more welcome in the early spring-time than *Anemone blanda*, the Grecian Windflower, that comes into blossom while the year is young, and continues to produce a profusion of its ever-pleasing blue flowers far into the mid-spring-time. As the present time is seasonable for planting it, a few remarks may also be opportune. The plant is by no means exacting in its requirements, nor is it fastidious as to soil. It forms a bright and pleasing subject that should be freely planted in a variety of positions in our gardens. The species and its garden-forms are essentially sun-loving plants, bursting quickly into blossom under the influence of the sun's rays, but generally remaining in the bud state or opening only in a half-hearted manner when the day is cloudy and sunless. Sunlight and sunheat are both essential to its success, and this fact should not be lost sight of when planting.

As a "carpet" to Azaleas of the mollis or allied sections, in the fore-front of the sunny shrubby border, crowning or furnishing the sunny side of a grassy slope, or carpeting the soil from which presently choice Lilies may spring, these are some of the many ways in which it is possible to utilise this bright blue flower of spring. The plant should be planted with a free hand, preferably where the early morning sun will reach it.

With regard to soil it certainly prefers a well-drained light loamy soil, but peat and heath soils, and such as overlies chalk, also suit the

plant admirably. Indeed, the only soil in which the plant is not a permanent success is a retentive or water-logged clayey soil. It is worth remarking perhaps that the established plant growing and flowering from the nipple-like crowns of the tuber sends out its leafy growths at some distance from the central crown, and for this reason the tubers should be planted not closer than 8 inches apart, and 4 or 5 inches deep. Many seedling varieties are now distributed, and these vary not only in the shade of their blue-coloured flowers, but also in the length and breadth of their petals. This particular species has for years been specialised at Belvoir Castle, and lovely masses are to be seen

with the above. As a garden plant, however, it is distinct. *A. b. bythinica* has numerous linear petals, while *A. b. cypriana* has fewer petals of an obovate, obtuse shape, while the plant is always fully a fortnight later in flowering. Some years ago a well-flowered example of this form from Belvoir Castle gardens received the Award of Merit of the Royal Horticultural Society. Unfortunately, from my experience, this variety has not a good constitution, otherwise it would possess a special value for its lateness in flowering. Seedlings of these Anemones should be raised periodically. They flower well in their second year if liberally treated. *E. H. Jenkins.*



FIG. 129.—DIERVILLA RIVULARIS, WITH STRUCTURAL DETAILS: COLOUR OF FLOWERS CREAMY YELLOW.

there in the spring-time. *A. b. atrocœrulea* is a dark blue kind, and *A. b. alba* a pure white selected form. Other white-flowered forms appear in collected tubers, and occasionally some have a tendency to develop flowers of a pinkish hue.

Quite distinct from the above is *A. b. bythinica*, with the inner surface of the flower white, and blue on the exterior. A free group of this, when buds and blossoms comprise the picture, is very pleasing. It is more compact in growth and later to bloom than the foregoing.

A. b. cypriana is in some respects similar to the last-named; indeed, in the *Kew Hand-List* of hardy plants it is referred to as synonymous

NEW OR NOTEWORTHY PLANTS.

DIERVILLA RIVULARIS.*

A pretty flowering shrub native of Georgia, and stated to be allied to *D. trifida*. It has pubescent leaves and creamy yellow, Daphne or Lonicera like flowers, flushed with pink, and crowded in large terminal panicles. Mr. Gumbleton, to whom we are indebted for the opportunity of figuring the plant, speaks of it as extremely floriferous. We do not find it mentioned in the *Kew Index* nor in the *Kew Hand-List*, nor in Britton & Brown's "Flora of the United States."

* DIERVILLA RIVULARIS, Göttinger in *Coulter Botanical Gazette*, xiii. (1888), p. 191.

ONCIDIUM CORYNEPHORUM.

ABOUT fifteen years ago a handsome *Oncidium* was described in these pages under the name of *O. Leopoldianum*, Rolfe (1890, ii., p. 556), from materials obtained by Messrs. Linden, L'Horticulture Internationale, Brussels, these consisting of a dried specimen, the collectors' coloured drawing, and some living plants. From these a coloured plate was prepared (*Lindenia*, vi., t. 274), and as the plants were distributed it was hoped that flowers would soon appear in our collections. At length, as was supposed, the long-looked-for event happened, and a plant in flower, from the

violet-purple, with a bright yellow base. In habit and in its long twining inflorescence the plant recalls *O. macranthum*, but as regards the shape and colour of the flowers it is distinct from anything known in cultivation. A few other plants are known, and it will be interesting to see what they are when they flower. Such a handsome species should not be neglected by importers, as its shy-flowering habit is probably the result of weakness, owing to its treatment not being properly understood. We should suggest the cool treatment given to *Odontoglossums* and to *Oncidium macranthum* as likely to prove the most suitable. *R. A. Rolfe.*

on the summit a good specimen of *Fourcroya longæva*. *Crassulas*, *Echeverias*, *Yuccas*, and a host of other similar plants are included, and the arrangement is in suitable taste. The plant of *A. arborescens*, above referred to, is an older occupant of the building, and in its scrambling method of growth has supported itself on an old Corinthian capital. At the foot of this ornament has been planted, not inappropriately, a specimen of *Acanthus mollis*, for this plant is said to have furnished the old Grecian artists with the design of this beautiful architectural ornament. It is said that a basket, on whose top was a large earthenware tile, having been carelessly placed on the top of a plant of *A. mollis*, the leaves grew up around the basket and, reaching the eaves formed by the tile, recurved in a graceful manner, thus forming a beautiful object and a copy appealing to the artistic spirit of the artist. Before we finish our description of the Mound, mention should be made of other interesting plants. It accommodates a good specimen of the Traveller's Tree—*Ravenala madagascariensis*, whose leaves when pierced at the base are said to furnish a supply of clear liquid to the weary traveller. On the summit of the Mound is also a large clump of *Monstera deliciosa*, with several spikes of its interesting and edible fruits. *Citrus decumana*, near by, was also fruiting. In another part of the house was *Colletia cruciata* in flower, the xerophytic nature of the plant suggesting a home on some arid plain of Chili. *Sparmannia africana* was also brightening the surroundings with its flowers, and, near by, *Archontophoenix Cunninghamii* was carrying a good inflorescence. The two noble specimens of *Sabal umbraculifera* were looking their best. Other noteworthy plants observed were the large specimens of *Ficus lutescens* and *F. elastica*.

The *Victoria regia* house was bright with a collection of stove plants, while many interesting tropical and economic plants were seen in flower. The *Victoria regia* itself is by no means past its best, and is at present in flower. It has eight remarkably fine leaves at the present time, and during the past season has developed the record number of 31 flowers. Happily, the dreaded disease has not put in an appearance. The curious *Vallisneria spiralis* was plentifully flowering beneath a clump of *Hedychium coronarium*, also in flower. The Rice plant *Oryza sativa* was in fruit, the plants being excellent specimens of this important cereal, and over 7 feet in height. The beautiful Water Hyacinth gave evidence of its presence by its perfume before its handsome flowers were detected. The plants were growing in a corner of the tank, and by their luxuriance looked quite at home. The papyrus—*Cyperus Papyrus*—was in flowers, the growths being robust and large. Opposite was the sacred Water Lily of the Indians—*Nelumbium speciosum*. Other interesting plants observed in flower were *Dalechampia Roezliniana*, *Eichornia azurea*, *Combretum purpureum*, and *Hoya capensis*. A small plant-house is devoted to the culture of orchids; we noticed in flower *Angraecum sesquipedale*, *Cypripedium Spicerianum*, *Pleione lagenaria*, *Zygopetalum Mackayii*, *Lycaste Deppel*, and *Cypripedium barbatum*. Other houses were occupied with collections of *Chrysanthemums*.

The Economic range has been entirely renovated and now forms an admirable structure. It measures 150 feet by 20 feet and has a height of 13 feet. It shelters a goodly collection of economic plants. The Elephant's Foot (*Tesudinaria elephantipes*) was in first-class condition. It was finely in flower, and its healthy appearance indicated that its environment was in agreement with its requirements. The Cotton



FIG. 130.—ONCIDIUM CORYNEPHORUM, LINDLEY: LIGHT ROSY PURPLE EDGED WITH WHITE, LIP DEEP VIOLET.

collection of E. Ashworth, Esq., Harefield Hall, Wilmslow, appeared at the Royal Horticultural Hall, on October 24, and was unanimously awarded a First-class Certificate by the Orchid Committee. Mr. Ashworth had apprised me of the event, and late in the afternoon I went to the meeting, and was surprised to see the quite distinct but equally handsome *O. corynephorum*, Lindley, which had previously only been known from dried specimens. The discrepancy is difficult to account for, as the plant is believed to be one of the original ones, and the respective dried specimens are quite distinct in the structure of the lip. The probable explanation is that the two grow together, and, as often happens in the *O. macranthum* section, may be confused when out of flower. The circumstance affords a clue to the habitat of *O. Leopoldianum*, which was not recorded. *O. corynephorum* is a native of Peru, and was described by Lindley from dried specimens collected by Matthews at Moyambambo (*Sert. Orch.*, sub, t. 25). With these dried specimens Mr. Ashworth's plant agrees in every respect, and the species is a very handsome one, as may be seen from the illustration. The rounded, undulate sepals and petals are light rosy purple, with a broad white margin, and the nearly orbicular lip is deep

ROYAL BOTANIC GARDENS.

EVIDENCES of improvement in the Regent's Park gardens, reflecting credit on the management of the present superintendent, Mr. E. F. Hawes, who is an enthusiastic cultivator, were apparent on a recent visit. The glass structures and the grounds showed that progress is being made, although much still remains to be done before these gardens can take rank among the foremost botanical and horticultural stations of this country. However, that progress is being made is encouraging.

The large conservatory presented a tidy appearance and was gay with decorative *Chrysanthemums*, *Michaelmas Daisies*, and other flowering subjects that were accommodated on the staging round about the building or interspersed among the permanent occupants of the beds and borders. A great part of that portion of the conservatory known as the Mound has been re-modelled and has been planted with a collection of "succulents," forming part of the gift of plants from the late Rev. H. G. Torre, of Norton Curliue, Warwickshire. A few of the plants noticed were *Agave Victoria Regina*, *Sempervivum holochrysum*, *Aloe allispina*, *A. plicatilis*, a grand clump of *A. arborescens*, and

(*Gossypium herbaceum*) was seen in both the flowering and the fruiting stages. Another plant noticed in fruit was *Sanseveria grandis*. *Olea fragrans* was observed in flower. The interesting aquatic *Isoetes lacustris* was in grand condition. Another interesting water plant seen was *Myriophyllum proserpinacoides*; it was growing in the greatest luxuriance. The beautiful little *Helxine Soleirolii* was spreading itself as a carpet over the surface of the beds or hanging in tresses from the sides of the larger pots. It is an admirable subject for such situations, and can be recommended as a plant for hiding bare patches of ground work or for edging purposes. It spreads like a weed in moist situations and is almost as hardy.

The cool-fermy has been re-constructed and re-roofed, and is now almost ready for the reception of the plants. A hurried walk through the grounds revealed tidiness in the various departments, and we were pleased to observe that the labelling of plants has been undertaken in a systematic and legible manner—a point of importance in an institution of this character.

Three other remarkable specimen trees are within view as one looks at the Cedar tree, wondering if its present somewhat impoverished condition indicates the commencement of decay. These are of the Weeping Ash, the purple-leaved Beech, and common Lime, the last-named specimen being on ground on the other side of the roadway. Such trees, together with the lawn and flower garden, and the very long, broad path with borders of decorative Conifers on either side, impart to the front of the Nursery, as seen from the roadway, an effect quite above the ordinary.

Since Cranston's time the Nurseries have passed through many vicissitudes, and during the six years the present firm has controlled them the management has been directed towards ridding the Nursery of ill-developed plants, bringing the soil into a high state of cultivation, and raising on the 100 acres or so of land nursery stock of the first quality. Anyone who may have visited the establishment recently will agree that the quality of the stock now contained in the Nursery does the utmost credit to Mr. Charles Seton, the managing director, and the efficient staff of de-

in the cider industry the cultivation of varieties of Apple most suitable for the making of cider is a considerable feature in these Nurseries, and the stock of such trees numbers more than 40,000 specimens. The most celebrated of these varieties in this particular district are known as *Medaille d'Or* and *Kingston Black*. Of ordinary culinary and dessert Apples a representative collection of varieties is grown, but those present in greatest numbers are varieties that are most remunerative in the district. *Allington Pippin* and *James Grieve* are both numbered amongst the favourite varieties, but there are excellent stocks of *King of the Pippins*, *Cox's Orange Pippin*, *Blenheim Pippin*, *Ribston Pippin*, and other dessert varieties, and of *Bramley's Seedling*, *Bismarck*, and other culinary Apples.

Instead, however, of making a list of the popular varieties, reference may be made to two Apples that are specially connected with the *King's Acre Nurseries*. One of these is a dessert Apple named *King's Acre Pippin*, a seedling from a cross between *Sturmer Pippin* and *Ribston Pippin*. The fruits are of brownish red colour on one side and

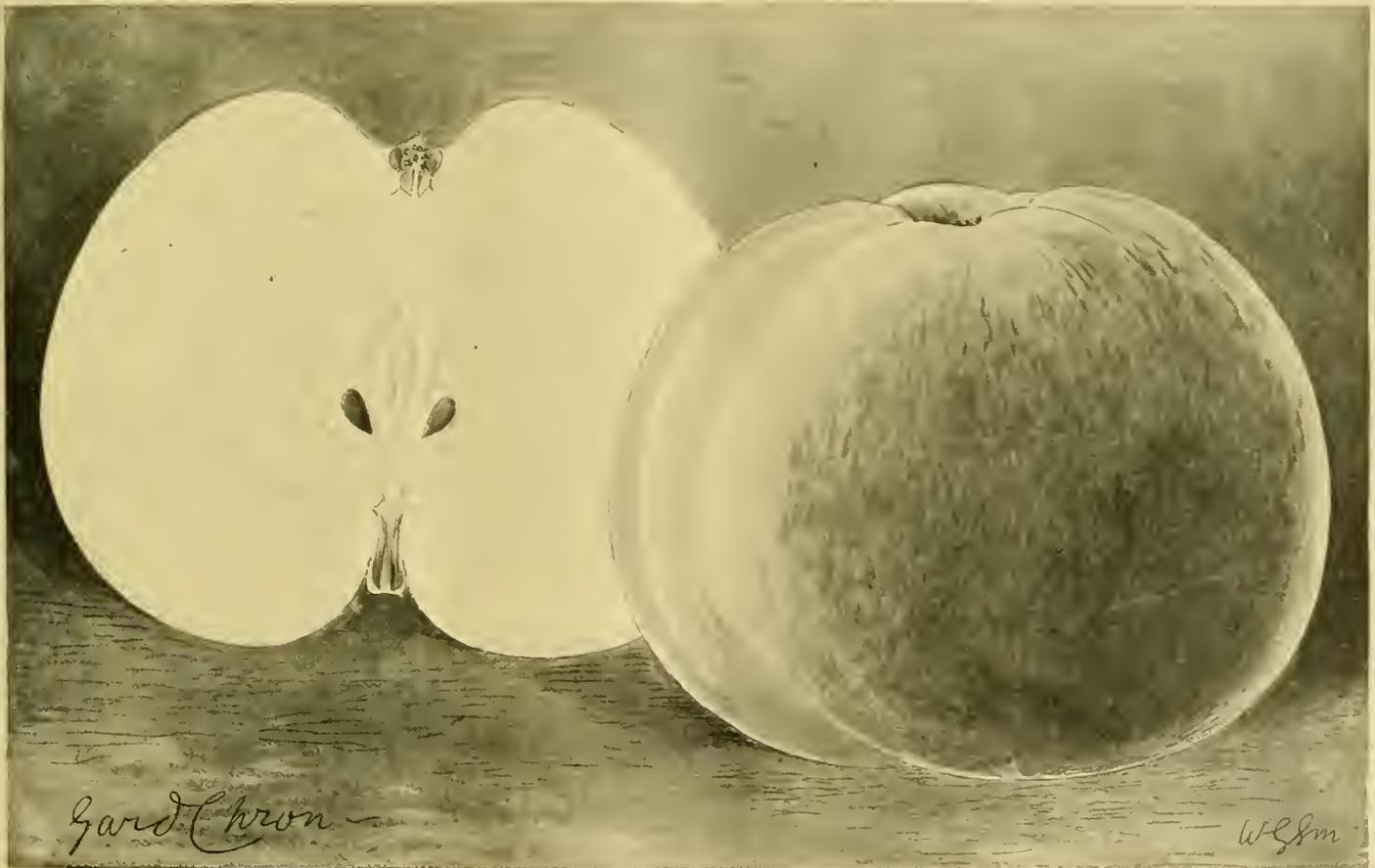


FIG. 131.—CULINARY APPLE, KING'S ACRE BOUNTIFUL.

NURSERY NOTES.

THE KING'S ACRE NURSERIES, HEREFORD.

THESE Nurseries are situated about three miles west of the City of Hereford, on the Brecon Road. Many of our older readers will remember them when, as "Cranston's" Nurseries, they were celebrated over the whole country for the culture of Roses, and they were a favourite resort for the Rosarians of that period. It has even been stated that the idea of forming a National Rose Society was first discussed under a fine old Cedar that is now an exceedingly interesting feature of the lawn. Be that as it may, one thing at least is certain, the tree had reached its prime long before the establishment of the Rose Society.

partmental managers, for, whether the Fruit trees are examined or the Rose trees, all are alike free growing specimens, that have been given a good start, and are of the proper size for their respective ages. In August last, when we were at Hereford, an examination of the Apple and Pear trees for any sign of American Blight, and of the Black Currant bushes for the dreaded Mite, revealed neither of these pests. Young plants of the Plum that were planted last Spring had made growths 6 feet long, Maiden Apple trees had growths 4½ feet long, and young Pear and Cherry trees similarly testified to the good condition of the soil and to the excellent effect of repeated surface cultivation by means of the Planet, Jr., hoe, an implement of the greatest utility.

The Hereford district being so largely concerned

green on the other, with a considerable degree of russet, and they keep well and are of good flavour until the following March. The other variety is shown at Fig. 131, and is known as *King's Acre Bountiful*. It obtained an award of merit at a meeting of the Royal Horticultural Society in October of last year. This variety flowers late in the season, is a good cropper, and is in season until the end of November. The form of the fruit may be seen from the illustration, but it may be said here that the stalk is very short and thick, and is set in a deep basin-like cavity. The eye remains closed and is inserted in a deep and irregularly formed depression.

We were particularly impressed with the large number of fruit trees, trained as espaliers and in various shapes, which are among the best we have

seen These include Peach, Nectarine, Apricot, Plum, Apple and Pear trees.

Fruit trees in pots, including a considerable stock of Vines, are likewise a good feature, and those who visited the Shrewsbury exhibition will remember that this firm showed a number of excellent fruit trees in pots, which formed a new and highly attractive feature at that exhibition. There were 8 Pot Vines, 15 Pyramid Apple, Pear, and Plum trees in pots, 8 cordon Apple trees, 14 standard Currant and Gooseberry plants, and 9 Fig trees. A few details of the cultivation that was afforded the Vines may be useful to other cultivators. The Vines were already established in pots, and they consisted of four plants of Black Hamburg, 2 of Muscat of Alexandria, and 2 of Foster's Seedling. These Mr. Middlebrooke, the fruit foreman, had trained on flat trellis frames made with two upright canes and three crossbars. When the Vine-rods were tied on the trellis they formed the shape of the letter S, which he is of opinion is the best shape for exhibition purposes, as the check thus given to the flow of sap causes the Vines to break evenly from bottom to top. The Vines were stood on a stage with an ash bottom, upon which were laid some fresh cut turves two deep, sandwiched with cow-manure and dry blood mixed together. A thick ring of the same material was also placed around the pots, and the top dressing enclosed by this became filled with healthy roots three weeks later. In addition to the provision thus made for extended root action the Vines were fed from start to finish with weak manure water made from sheep-droppings. They were also watered at intervals of three days with a weak mixture of nitrate of soda until the stoning of the berries was completed, when a change of diet was resorted to in the way of small doses of Colchester's Ichthemic Guano, which had the desired effect of imparting a dark colour to the foliage, and at the same time tended to assist in the good colouring of the fruit. The holes in the bottom of the pots were considerably enlarged in order to allow the roots a more free access through them, but not a single root penetrated—preferring to feed on the surface top-dressings which they apparently consumed, for at the period when the berries started colouring the whole of the first top-dressing was gone and nothing but a mass of fibrous roots was left. Another top-dressing was added and the roots soon entered this also. The Vines were not subjected to any artificial heat except during the first five weeks after they were put indoors, which was in the third week in March. Some of the Vines—Black Hamburgs—carried seven and eight large well-coloured bunches each, and were well furnished with amply developed and perfectly clean foliage. With such a crop the roots needed copious supplies of water several times a day during the three months prior to being exhibited. Some days, Mr. Middlebrooke informed us, they had to be watered as many as six times. The foliage was not syringed from start to finish, but, instead, was sprayed overnight and morning with a Vermorel's knapsack sprayer, putting on the finest jet which delivers the spray in a condition almost like dew, this being discontinued on the first appearance of colouring in the berries.

We might have referred more fully to the stocks of Roses, of which about 120,000 are raised each year, and to the ornamental trees and shrubs, hardy flowering plants, &c., but we must refrain on the present occasion. It may be stated, however, that the firm has 11 more acres of land about nine miles distant at Birch Hill. The site is situated 600 feet above sea level, and the soil being of a light and sandy nature, the Rhododendrons are cultivated there, also manetti stocks for Roses, and other cutting and seedling plants raised. At 1, High Town, Hereford, is the firm's premises for the sale of seeds, horticultural sundries,

&c., and there is another branch at Kyrle Street, Hereford.

The attractive tints of the cover enclosing the firm's excellent catalogue, and of the decorations at the various premises are the straw which indicates the direction of the wind, for Mr. Selton has effectively studied art.

The Week's Work.

THE ORCHID HOUSES.

By W. H. YOUNG, Orchid Grower to Sir F. WIGAN, Bt., Clace Lawn, East Sheen, S.W.

Cypripedium concolor.—Cypripediums of the concolor section require to be very carefully managed during the dull months of winter. Their general treatment was outlined in my notes in the issue for June 10th, and the positions there recommended for the plants are suitable also for the winter season. As most of the plants have thick succulent leaves, a dry condition at the base may be permitted without fear of it causing harm so long as the leaves do not shrivel. When water is afforded it should be done by immersing the receptacles to their rims only in rain-water, warmed to the same temperature as that of the atmosphere in which the plants are growing. The atmosphere should be kept in a moderately dry condition, so that condensed moisture will not collect on the leaves or on the bars of the roof from which it would drip on to the plants. If any water is allowed to settle in the axils of the leaves the consequences may be serious. Prevent or destroy thrips by vaporising the atmosphere with the usual nicotine compounds, as the sponging of the leaves would be dangerous at this season.

Cattleya Walkeriana.—This brightly-flowered species usually flowers in the dull season, and though not of any great horticultural value, is worthy of care on account of its rarity. It seems to thrive best when planted in a teak basket and suspended in a light position in the Cattleya house. Afford water infrequently, except just when the plant is making roots freely, for scarcely any is needed in the resting period to keep the pseudo-bulbs in a plump condition, but an overdose might induce disease in the basal portion of them. The twin-flowered scapes spring from a small leafless bulb-like process at the base of the last made pseudo-bulb. *C. dolosa* thrives under the same cultural conditions as *C. Walkeriana*, and is hardly distinguishable from that species in any respect except that the flowers are produced in the usual manner from the apex of the pseudo-bulbs.

Ada aurantiaca is generally subjected to too much heat and moisture. At this season the plants need a position in the warmest part of an Odontoglossum house, where they will be secure from draughts, and yet have the benefit of a free circulation of air. The rooting medium should not be subjected to too much water, or the surroundings be kept very moist; therefore allow the stage covering to become moderately dry. Sponge the leaves occasionally to keep them clean from red-spider, being careful not to slip the young leaves out in the process.

Phaius.—Many complaints are made regarding the difficulties attending the cultivation of most members of this genus, and yet they are often met with in good condition in gardens where orchid growing is not made a speciality. The condition to be observed is that the roots need to be left undisturbed for a very long period. *P. grandifolius*, *P. Sanderianus*, *P. Wallichii*, *P. Blumei*, and others of this section, with the hybrids therefrom, will now need a warm intermediate atmosphere, and only sufficient water to keep the soil from becoming dust dry. To prevent rapid evaporation of moisture from the roots let the pots be placed directly on the covering of the stage. Should the mealy bug show itself, spray the plants occasionally with a solution of the X.L. All preparation. The species so long known as *P. tuberosus* (now *P. simulans*) has finished its growth, and should be kept moderately dry at the base, spraying the under sides of the leaves on bright days to keep them free from insects. This species requires much shade during the summer months, but at this season should be exposed to the light in a warm intermediate atmosphere. The many fine hybrids obtained from the above species and *P. Humb-*

loti should be treated similarly to their parents, and be saved from a long period of saturation at the base, and from the lodging of water in the young growths.

THE FLOWER GARDEN.

By W. A. MILLER, Gardener to LORD HENRY C. BENTINCK, M.P., Underley Hall, Westmoreland.

Various Bulbous Plants.—*Ixias* are useful subjects either for furnishing a supply of flowers for cutting, or for their effective appearance when planted in borders. When planted out, however, they require a sunny situation on a well-drained and sheltered border which faces to the south. The soil in which they are grown should consist of light loam, and the bulbs should be planted 4 inches deep and at 2 inches apart, surrounding each bulb with a little sand. Prepare the beds 4 feet in width with an alley between each bed. Afford the bulbs protection during the winter with a covering of some light material. *Calochortus* also require a warm position, and the planting of them must not be longer delayed. Both established and recently planted *Montbretias* should be given protection during severe weather with some material such as cocoanut fibre refuse or leaf mould. *Alströmerias* are excellent plants for furnishing a display in early summer; their flowers also remain fresh for a long time when cut and placed in water. These plants thrive in a rich garden soil on a border sloping to the south. Plant the fleshy roots with their crowns 6 inches below the surface of the soil and afford them protection during the first winter after planting. They show to best advantage when grouped in masses, and are impatient of root disturbance. The propagation can be effected both by division and by seed. The hardier species are *A. aurantiaca*, *A. chilensis*, and *A. lutea*.

The Planting Season.—Plants will now be arriving from various sources and these should at once be suitably labelled. Choice Alpine and herbaceous plants are received in pots, and should be placed on or plunged in some porous material, in a well ventilated frame, where due attention can be given them. Plants which are not in pots, and are of medium size, can be planted or heeled in in frames. Strong, hardy species may be afforded the protection of a wall or a hedge. Plant them in trenches and cover the soil in which they are planted with any loose protective material till they can be placed in their permanent quarters. Should large plants arrive when the temperature is much below the freezing point, place the package containing them in a dark cellar which is proof against frost.

Herbaceous Plants.—Any borders in which the soil shows signs of exhaustion should now be renovated. Lift fibrous-rooted plants that bear removal without sustaining much damage, such as *Asters*, *Phloxes*, &c., and "heel" these in a spare piece of ground. Give the border a liberal dressing of manure and some new soil of the richest nature available. Trench the ground not less than 2 feet in depth. Apply the fork round well-established clumps of *Tritomas*, *Anemone japonica* and other plants that resent disturbance. Replant when the soil is again in a workable condition, avoiding a too formal system of grouping.

PLANTS UNDER GLASS.

By A. BULLOCK, Gardener to E. J. WYTHES, Esq., Copped Hall, Epping, Essex.

Plumbago coccinea grandiflora.—As these plants are now developing their flowers, they will require a slightly cooler atmosphere, also a less degree of moisture at the roots. The syringing of the plants overhead must be discontinued.

Jacobinia chrysocephala.—To induce the flowers to develop perfectly a considerable degree of heat will still be necessary. The plants being now only in the early stage of expanding their flowers, let measures be taken immediately to thoroughly remove any traces of Mealy bug, Scale, or other insect pests, in order that the plants may be clean when in full flower.

Poinsettias.—Afford these plants a stove temperature whilst they are developing the bracts, and keep them as near to the light as possible. Apply to the roots copious supplies of weak

manure water made from sheep droppings, and syringe the plants freely overhead with clear water until the bracts have developed to half their proper size, after which time the manure water and the overhead syringing must be discontinued.

Euphorbia Jacquiniaeflora.—Well matured plants that are showing flower buds may be afforded the same treatment as Poinsettias, if it is desirable that some of the plants should flower early, but bearing in mind that the use of much heat has a tendency to weaken the flowers.

Thysacanthus rutilans, when allowed to become drawn and weakly, owing to the plants having been crowded together or deprived of sufficient light, is of little service, but if grown under proper conditions, the plants are useful for furnishing a temperate house or conservatory. Afford such plants as are already well rooted an occasional application of Clay's Fertilizer, dusting a little of this over the surface of the soil. Be careful not to overwater the roots.

Amasonia punicea.—Too much water during damp and foggy weather, or too little water would soon render this plant useless. It requires much light and heat, and the roots may be afforded weak manure water made from sheep manure if the plants are in a vigorous condition, but avoid using artificial manure.

Primula × Kewensis.—Let the structure containing the earliest flowering plants of this hybrid *Primula* be provided with a little warmth from the water pipes to prevent damping of the foliage and also to induce the plants to expand the flowers perfectly. Water must be only sparingly applied to the roots after this date, and the use of artificial manures may be discontinued.

Marguerite, Queen Alexandra.—This variety is one to be highly recommended either for cultivation in beds or pots. Plants that have done good service out of doors during the summer and were subsequently lifted are now furnishing an abundance of clear white anemone-like flowers, and promise to continue to do for some time to come.

THE KITCHEN GARDEN.

By W. FYFE, Gardener to Lady WANTAGE, Lockinge Park, Wantage, Berks.

Cabbages.—Let the soil be earthed up a little by means of a draw hoe around the stems as a protection from frost, and lift any surplus plants that are still in the seed beds and lay them in some sheltered position, covering the roots with soil. These will be found valuable for planting in spring. The leather-coated grub, which was very destructive here amongst young plantations of cabbage for three seasons at least, has been considerably reduced in numbers, with the result that a large amount of labour is saved which was previously expended on replanting. For the destruction of this grub I am inclined to thank the starlings, which are numerous and diligent in this neighbourhood.

Forcing of Seakale.—Weekly batches may now be placed in the forcing quarters. If the crowns have been lifted and exposed to a few degrees of frost less trouble will now be experienced in inducing them to start into growth. Suitable positions for this purpose may be provided by covering the hot-water pipes in some of the sunken tracks, so that there will be complete darkness. It is essential, also, that the atmosphere be kept close and in a moist condition. Plants which have been raised from cuttings are best suited for forcing in this way, and quantities can be placed in a very small compass when the thongs have been trimmed off rather close to the main stem. Put the crowns in moist soil at sufficient distance apart for the growths to develop properly. Growths ranging from 4 to 6 inches in length are in the best condition for consumption. A period varying from three to six weeks is all that is necessary to bring this vegetable into the best possible condition, if the crowns are subjected to a temperature of from 55° to 60°.

Rhubarb.—Roots that were lifted as previously advised and given full exposure to the weather will now be in the best condition for forcing, and this operation may be carried out either as

advised for Seakale or in the Mushroom house. When forced Rhubarb is required in large quantities it is a good practice to cover the plants with barrels where they are growing, and then to cover the barrels with fermenting materials to provide heat. The greatest portion of these materials should consist of leaves, as these are more lasting than manure and provide more moderate heat. Excessive heat must be guarded against, remembering that about 60° will be sufficient to force Rhubarb into condition for consumption at Christmas time.

Silver or Seakale Beet.—Varieties of vegetables for consumption at this season are none too numerous. Yet how seldom is the Silver Beetroot included in collections sent to the kitchen. It is, nevertheless, a striking vegetable when seen growing, and the large white mid-ribs of the leaves when cooked compare very favourably with Seakale. Its cultivation is simple, and the seeds should be sown at the same time and in the same manner as those of ordinary Beetroots.

THE HARDY FRUIT GARDEN.

By W. H. CLARKE, Gardener to Sir WILLIAM PLOWDEN, Aston Rowant House, Oxon.

Planting Raspberries.—These plants require much moisture. I have seen excellent crops produced on a north border facing to the north, but such a site may be reserved for the successional and later crops. For the main crops, select an open quarter in the coolest part of the garden, and although the Raspberry is only a shallow-rooting plant, deep trenching is recommended, as it will keep the surface soil in a sweet condition. In heavy soils, incorporate some lime rubble, leaf mould, or sand in with that of the staple. If the land has been already prepared and the soil is settled, the work of planting may be commenced. There are many methods of planting adopted, but the most common-sense practice, and one that gives the best results, is that of planting them against strained wires at a distance of 4 or 5 feet between the rows, and this will allow of tying the canes to right and left as they grow, thus exposing the fruits to all the light and air possible. A distance of 2 to 2½ feet should be allowed between each plant. One of the best varieties is that known as Superlative, the plants of which are vigorous and very free in bearing. Baumforth's Seedling, Hornet, and Carter's Prolific are all good red fruited varieties, while Yellow Antwerp and the Guinea are excellent yellow varieties. In making new plantations the canes should be shortened to 1 foot from the ground, so as to induce the plants to produce new shoots from the base.

Black Currant bushes also need a moist situation, and will often fruit in parts of the garden where other fruit trees have failed. When making new plantations, allow a distance of 6 to 8 feet between the bushes. The best varieties to plant are Baldwins and Lee's Prolific (which are very fertile, and have large and sweet berries), Boskoop Giant, and Black Naples.

Red Currants need a warmer and lighter soil than will do for Black Currants, and may be planted closer together, or as standards and pyramids. If some be planted against N. and N.E. walls, trained as cordons or palmette shape, they will continue the season of ripe fruits until late in the autumn. The variety, Fay's Prolific, is well adapted for this purpose, while Raby Castle, Red Grape, and Comet will provide excellent fruits for general purposes.

Selection of varieties to plant.—Although it is difficult to make a selection of varieties to suit each individual case, the following are some of the best:—*Standard Apples for culinary purposes*: Keswick Codlin, Ecklinville Seedling, Warner's King, Prince Albert, Dumelow's Seedling (Wellington), Newton Wonder. *Standards for dessert purposes*: Cox's Orange Pippin, Worcester Pearmain, King of the Pippins, Blenheim Pippin, Irish Peach, Devonshire Quarrenden. *Pyramid and Bush Apples for culinary purposes*: Duchess of Oldenberg, Prince Albert, Stirling Castle, Bramley's Seedling, Dumelow's Seedling (Wellington), and Northern Greening. *Pyramid Apples for dessert*: Irish Peach, Cox's Orange Pippin, King of the

Pippins, Blenheim Pippin, Sturmer Pippin, Ribston Pippin, and Lady Sudeley. *Pears for planting against walls*.—The varieties of Pears behave so differently in divers districts that a selection cannot be given of kinds that would suit all sites and soils. The following selection will provide a supply of ripe fruits from July until April: Doyenné d'Été, Williams' Bon Chretien, Beurré d'Amanlis, Souvenir du Congrès, Marie Louise, Beurre Hardy, Doyenné du Cornice, Glou Morceau, Josephine de Malines, Marie Benoist, Easter Beurré, and Olivier de Serres. *Dessert Plums*.—The following are some of the best, continuing the supply over a long season: Denniston's Superb, Jefferson's, Coe's Golden Drop, Kirke's, Reine Claude de Bavay, Green Gage, and the Transparent Gages. *Cooking Plums*: Victoria, Early Prolific, Belle de Louvain, Czar, Prince Engelbert, and Diamond.

The varieties under each heading may be largely supplemented by additional kinds, but I have found those mentioned to be reliable in different parts of the country and as good croppers.

FRUITS UNDER GLASS.

By F. JORDAN, Gardener to Dr. CORBET, Impney Hall Gardens, Droitwich.

The Vinery.—Muscat grapes that are ripened and well coloured must receive careful and proper treatment in order to maintain them in good condition. They must not be given too much fire heat, nor must they be allowed to suffer from dampness. Of the two evils it is preferable for the berries to shrivel a trifle from artificial heat than to suffer damping, which takes place during the period the leaves fall. Consequently, these should be picked up daily and not allowed to accumulate moisture. The outside vine-borders should receive some sort of protection, in order to ward off heavy rains, but the protecting material should be removed when the grapes are cut. Inside borders may be covered with dry hay or with bracken fern for the purpose of preventing damp and frost from rising. The temperature of the vinery at night time should not exceed 50°, with a little ventilation allowed on all favourable occasions. Unskinned varieties of Grapes will keep better at this season in a good grape room than on the vines, while their removal will also allow the pruning and cleansing of the vines to be proceeded with and afford the vines a longer season of rest. All Muscat of Alexandria Grapes should, by the end of this month, be cut with as much wood as is possible and placed in bottles.

Figs.—Trees for early forcing that were potted or top dressed as advised in a previous calendar have had a splendid season for ripening their wood. Should ripe fruits be required by the end of April or by the beginning of May, these and other pot Figs for later fruiting should, if not already done, be at once placed inside. Cleanse the trees and perform what little pruning is necessary; also see that the house is thoroughly cleansed. Make a hot-bed of fairly dry Oak or Beech leaves, adding a portion of stable litter, for the purpose of furnishing a steady bottom of not more than 65°. Plunge the plants in the hot-bed, standing them on pots to keep their heads well up to the glass, so that they may receive the maximum amount of light. The progress made during the early stages of forcing will be slow, but high temperatures must always be guarded against. A night temperature of 50°, rising during the daytime to 55° or 60°, with sun-heat, being quite high enough to commence with. Pay careful attention when watering, and maintain a moderately moist atmosphere by discreet syringing and damping.

Succession Houses.—Trees in these houses should now be cleansed and put in order as recommended in the calendar for September 30. If these plants are used for furnishing fruit in succession to the pot trees, a month later will be soon enough to commence forcing them. Cold houses should be attended to as opportunities occur. The borders should be kept moderately moist, but if no fire heat is available these houses cannot be kept too dry during the winter months.

APPOINTMENTS FOR THE ENSUING WEEK.

SATURDAY, Nov. 11	Burton-on-Trent Chrysanthemum Exhibition.
TUESDAY, Nov. 14	South Shields and Northern Counties' Chrysanthemum Show (2 days). Devises Chrysanthemum Show. Autumn Flower Show at Winchester (2 days).
WEDNESDAY, Nov. 15	Royal Botanic Society's Show at Regent's Park. York Chrysanthemum Show (3 days). Liverpool Chrysanthemum Show (2 days). Chester Paxton Society's Annual Exhibition (2 days). Buxton and District Chrysanthemum Show. Bristol Chrysanthemum Exhibition (2 days).
THURSDAY, Nov. 16	Edinburgh Chrysanthemum Show (3 days). Manchester Chrysanthemum Show (3 days). Barnsley Chrysanthemum Show (2 days). Newport Chrysanthemum Show. Bradford and District Chrysanthemum Show (2 days). Aberdeen Chrysanthemum Exhibition (2 days).
FRIDAY, Nov. 17	Bolton Horticultural and Chrysanthemum Show (2 days). Blackburn and District Chrysanthemum Show (2 days).
SATURDAY, Nov. 18	Cheetham Hill, Broughton, and Crumpsall Flower Show.

ACTUAL TEMPERATURES:—

LONDON.—Wednesday, Nov. 8 (6 P.M.): Max. 50°; Min. 36°.
Gardens' Chronicle Office, 41, Wellington Street, Covent Garden, London.—Thursday, Nov. 9 (10 A.M.): Bar., 30.1; Temp., 48°. Weather—Dull.
PROVINCES.—Wednesday, Nov. 8 (6 P.M.): Max. 48° Guildford; Min. 40° N.E. Coast of Scotland.

SALES FOR THE WEEK.

MONDAY AND WEDNESDAY NEXT—
Bulbs, Roses and other Plants, at Stevens's Rooms, King Street, Covent Garden, W.C.
MONDAY TO FRIDAY NEXT—
Dutch Bulbs, at 67 and 68, Cheapside, E.C., by Protheroe & Morris, at 10.30.
WEDNESDAY NEXT—
Palms, Plants, Azaleas, Roses, Fruit Trees, &c., at 67 and 68, Cheapside, E.C., by Protheroe & Morris, at 5.
WEDNESDAY NEXT—
Annual Sale of 150,000 Fruit Trees and Bushes, and 50 Tons Potatoes, at Perry Hill, Cliffe, nr. Rochester, by order of Messrs. W. Horne & Sons, by Protheroe & Morris, at 11.30.
THURSDAY NEXT—
1,130 Cases Japanese Lilioms received direct, also Spiræas, Lily of Valley, &c., at 67 and 68 Cheapside, E.C., by Protheroe & Morris, at 3.
FRIDAY NEXT—
Valuable Orchids, imported and established from various growers and collections, at 67 and 68 Cheapside, E.C., by Protheroe & Morris, at 12.30.

The Recent Vegetable Show.

THE show held at the Royal Horticultural Hall on October 24 was disappointing, not alone on account of its small extent, but for the almost entire absence of novelties in vegetables and saladings, more especially for the want of those Continental kinds and varieties obtainable at the present season. Of ordinary varieties long grown in this country there were, so far as we saw, for instance, no Walcheren Cauliflowers, although there were numerous Giants and Mammoths all too large for a gentleman's dinner table. It may be doubted if these are as economical to the cultivator as the smaller varieties, which may be grown at 1½ feet apart, whereas the Giants require 3 feet at the least by 2 feet to grow them without undue crowding. As they are such strong growers, with enormous leaves, the plants take too much out of the land, and the leaves spreading so much, the heads are more difficult to protect from sun and frost. The flavour is, moreover, less delicate than that of the Walcheren. There were no heads of Couve Tronchuda, otherwise Braganza Cabbage, a delicious vegetable at this season

and onwards so long as no hard frosts occur. It is of rather spreading growth, requiring to be planted not less than 2 feet by 2½ feet apart; but then, as it is not advisable to plant large breadths, this is of no great consequence in any garden excepting those of very small area. The leaf-ribs of this Cabbage, stripped of the thin portions, make an excellent substitute for Seakale, which is not readily obtainable in the early autumn months. The heart should be cooked like any other Cabbage. The Winnigstadt, an old variety of Cabbage, was noted in two or three exhibits, its only merit being that the heart does not readily burst, and as the form is sharply conical, rain and snow do not easily find an entrance and cause rotting. That mild-flavoured yellow Ulm Savoy was not shown in the class for small-headed varieties. It is not particularly hardy, but still a few should find a place in every garden for use up to Christmas. The plant requires but small space in which to grow it to its fullest size, say, 1½ feet by 1½ feet.

The only French Bean observed was Canadian Wonder, which is too tall for growing in frames at this season and always so for pot culture in the winter and spring. No Butter Beans (which it may be said belong to the climbing class of French Beans) were shown, and yet these varieties are excellent eating and afford desirable additions to summer and autumn vegetables. The later sowings should be made in frames. Capsicums, red and yellow, were displayed in several collections, but no Chillies, and not an Aubergine nor a Custard Vegetable Marrow was noticed; indeed, but few Vegetable Marrows of other varieties or of Pumpkins.

Cos Lettuces were of poor quality in some of the collections, and the Cabbage varieties were not good examples of the gardener's art. Of Celeriac a solitary exhibit was observed. We do not seem "to take" to this excellent root as a salad by itself or mixed with Beetroots, etc., yet, when cooked till tender, and served with oil, vinegar, coarse pepper, and salt, it is very nice with cold meats.

Enough has been written to show that the exhibition would have been more interesting had there been greater variety in the exhibits. It was, indeed, too utterly British. Our gardeners should wake up, and, in order to assist them so to do, perhaps the Royal Horticultural Society will extend their list on another occasion so as to include some or all those items we have mentioned.

FLOWERS IN SEASON.—From Messrs. JAMES GARAWAY & Co., Durdham Down Nurseries, Bristol, we have received flowers of Schizanthus under the name of *S. grandiflorus*. The flowers are a good type of this decorative greenhouse plant, the colours ranging from deep violet to almost pure white, with the usual marking of yellow in the throat.

FORESTRY AT OXFORD.—We learn from *Nature* that St. John's College, by a new statute, is to contribute in and after 1908 £600 a year to the Siblethorpe professorship of rural economy. It is understood that the main subject to be entrusted to the future professor is pathological botany, so that he will have an important share in the instruction of the forestry students. St. John's has also placed a considerable plot of land near Bagley Wood at the disposal of Prof. SCHLICH for the purpose of starting a "forest garden."

A FACT FOR THE BRITISH GARDENERS' ASSOCIATION.—The English gardener labours under a great disadvantage, as compared with other occupations. In the past 40 years the wages in England of mechanics, masons, and carpenters, for instance, have increased over 75 per cent., while the wages of under gardeners have increased only about 35 per cent. Thus, while a carpenter or a mason is able to earn 50 shillings per week, an under gardener can earn only 18 or 20 shillings. Again, in the hours of labour, the gardener must work an average of ten or ten and one-half hours per day, while the mechanic is required to work only nine hours per day. This state of affairs offers no inducement to bright young men to enter the gardening business; better wages and a more promising field take them elsewhere. The result of this is, according to my observation, that in England gardening as a business is in a decadent condition. The young men engaged in it must, under these conditions, average lower in intelligence and ambition than obtained 25 or 30 years ago. So says Mr. PETTIGREW in addressing an American audience.

NUTRITIVE VALUE OF FUNGI.—It appears that the value of Fungi as articles of food has been exaggerated, the quantity of albuminoid matter which they contain being much less than in meat. According to Mr. MANGIN, the average quantity of albuminoid matter required by a man is 138 grammes a day. To supply this amount more than five and a half kilogrammes of common mushrooms would be required, fourteen kilogrammes of *Lactarius deliciosus* and 26 kilogrammes of the common *Chanterelle*.

BOTANICAL MAGAZINE.—The plants illustrated and described in the November number are the following:—*Streptocarpus grandis*, N. E. Brown, t. 8042—a new species from Zululand, said to be the largest of the genus so far as size of leaf and height of flower stems are concerned. It differs from *S. Saundersii* in its larger leaf, longer, more slender, and bluer flower tube.—Kew.

Primula tangutica, Duthie, t. 8043. See *Gardens' Chronicle*, xxxviii.—1905 p. 42, f. 17.

Lissocheilus Ugande Rolfe, t. 8044. A terrestrial orchid with long (2-3 feet) narrow leaves and flower scape 3½ feet high, bearing a dense raceme 6-8 inches long. The individual flowers are about 2 inches long, yellow suffused with purple, brown at the tips of the spreading sepals; petals hooded, yellow; lip one inch long, 3-lobed, with numerous prominent ridges.

Erica australis, Linnæus, t. 8045. A hardy, or probably half-hardy species rare in gardens, native of S. W. Europe and N. W. Africa. It is a free grower and "perhaps the most ornamental of the outdoor species," flowering from April to July. It is allied to our native *E. Tetralix* and to *E. cinerea*, and is distinguished by the crest at the base of the anthers being deeply serrate on the outer edge only.

Asparagus madagascariensis, Baker, t. 8046. An erect species with the habit of the Butcher's Broom, *Ruscus aculeatus*, but with ternate phylloclades and globular, deeply 3-lobed red berries.—Madagascar.

RESEARCH STATIONS.—At the Horticultural Congress of Liège it was pointed out by M. MICHEL that if horticultural industry is not to deteriorate, properly equipped research stations under the management of competent specialists must be established.

MANDEVILLA SUAVEOLENS.—It is not often that we see the fruits of this species, but we learn that at the present time a plant in the garden of R. H. BEAMISH, Esq., Cork, is bearing a considerable number of pods. The plant is growing in the open air against a bare rock in an old quarry. A representation of these pods was given in a former number.



VIEWS IN THE PALM-HOUSE, DOVER HOUSE, ROEHAMPTON, THE RESIDENCE
OF MR. J. PIERPONT MORGAN,

NICOTIANA SANDERÆ.—EUGEN DE DUREN, in the *Revue de l'Horticulture*, Belge, comments on the slow progress made by this plant in the first instance, but says that when once the roots have got established the progress is rapid. The writer advocates the use of this plant at the base of the bare trunks of large trees, and states that the plants flower better and for a longer period in partial shade than in full sun.

ESCHSCHOLTZIA.—This is a very pretty flower with, to English-speaking people, a very terrible name. Hitherto we have been content to recognise ten or a dozen species, but Professor EDWARD GREENE tells us there are over one hundred! If we are to go on at this rate, the Index Kewensis of the future will have to be as big and voluminous as the Catalogue of the Library of the British Museum, and of course with no limit to future expansion.

WATER-LILIES.—A monograph of the genus *Nymphæa* has, we learn, been published through the Carnegie Institution of Washington by Mr. CONARD. As no recent monograph has been published we shall look forward to the perusal of this with great interest.

THE WEATHER IN SOUTH AFRICA.—Writing from Johannesburg on October 15, Mr. JAMES HALL, a leading florist there, says that "notwithstanding that we have not had a drop of rain for six months—since last April—my garden is very beautiful with tens of thousands of magnificent Roses, including most of the newer kinds. Dry days and cool nights, with heavy dews, suit the Rose, and consequently it is the favourite flower of our part of the Transvaal. For some days past we have had reports of great floods in Cape Colony, the railways being washed away in places, crops damaged, and some lives lost, the Grahams-town and South East districts being generally affected. Our turn will come, but I am prepared. One of my first instructions when I came to South Africa many years ago was always to be prepared for a flood, and I have borne the maxim in mind with advantage. New comers should always work with a view to the time when they may be flooded, especially in low lands."

LINNEAN SOCIETY.—At an evening meeting, to be held on Thursday, November 16, 1905, at 8 P.M., the following Papers will be read:—Contributions to the Embryology of the Amentiferæ, Part II., by Miss MARGARET BENSON, D.Sc., F.L.S., Miss ELIZABETH SANDY, B.Sc., and Miss EMILY BERTRIDGE, B.Sc., F.L.S.; the Ears of Certain Sharks, by Prof. CHAS. STEWART, F.R.S., F.L.S., &c.

AN ALLOTMENT GARDENERS' ASSOCIATION.—We referred last year to a society which had been instituted at Redditch for the protection and encouragement of allotment holders in that neighbourhood. LADY WINDSOR, of Hewell Grange, having had experience of the advantages obtained from such an association at St. Fagan's, near Cardiff, where LORD and LADY WINDSOR have also a residence, was mainly instrumental, with LADY MARGESSON, in bringing about the society at Redditch. Mr. A. A. PETTIGREW, head gardener at Hewell Grange, became hon. secretary, and the first report was presented at a meeting held on October 31 in the Technical Schools. It is hoped that the society will eventually be able to buy such things as manures at reduced prices for distribution among the members, and that as a body the society would be better able to prevent pilfering from the allotments than heretofore. In various ways it will seek to encourage a love of gardening in the district, and we wish it and similar societies all the success possible. At present only one allotment holder in ten has become a member, but this experience, although somewhat discouraging, is that of all newly-formed

societies for whatever purpose they may have been formed. LADY WINDSOR, in presenting the prizes won during the current year, encouraged the members to develop a still greater love for plant culture.

THE MIDLAND REAFFORESTING ASSOCIATION.—This Association, of which Sir OLIVER LODGE is president, started with three tasks before it; first, to convince the public that its plans were reasonable; secondly, to establish branches throughout the Black Country; and lastly, to plant, and to keep on planting. The first of these labours is fulfilled, and the idea of planting pitmounds has become familiar, while public bodies, as well as private owners, have been persuaded to plant mounds in their possession on the lines laid down by the association. The second is progressing, and branches are flourishing at Old Hill, Wednesbury, and Walsall. The third task has been begun. Its magnitude may be judged from a map of "Parks and Spoil Banks, Black Country, 1904," in which the total waste area shown is nearly 30,000 acres, and it is estimated that about 14,000 acres could be planted profitably without further delay. The work done already includes a six acre plot planted at Wednesbury, and a small model plantation formed at Old Hill in October, 1904. This year's work includes a 42-acre wood now being laid out at Moxley, a small wood being planted at King's Hill, Wednesbury, and further model plantations at Old Hill. The association has contracted to do all the work, preparing the ground and planting it as well as laying it out, at the rate of £5 per acre. Last year this plan worked well with plantations that were small and easy of access. This year the work undertaken is heavy, some sites chosen are difficult of access, and the charge for labour on a single plot of 42 acres is considerable. The association's present needs are summarised as follow:—(1) More and larger annual subscriptions, that the increasing management expenses may be met out of income, and that an efficient organising secretary may be secured at once; (2) donations sufficient to raise a permanent working capital fund of £200, from which advances may be made to meet the expense of work undertaken on contract in any part of the district, all such advances to be repaid to the fund as soon as the work done is paid for; (3) more mounds to plant. All new members should communicate with P. E. MARTINEAU, Bentley Heath, Knowle, Warwickshire.

ACCIDENT TO MR. T. E. MILN, DARLINGTON.—On Tuesday evening, the 31st ult., Mr. T. E. Miln, of the firm of Messrs. Mack and Miln, nurserymen of Darlington, had the misfortune to break his right arm just above the elbow, as the result of a carriage accident.

SUPPLEMENTS.—Owing to the large rise in our circulation we regret that some of our readers did not receive the supplement issued with our last issue. Steps have been taken to print additional copies in order to supply the deficiency.

SALE OF GARDENING BOOKS.—Messrs. HODGSON and Co. concluded on November 3 a three-days' sale of books and manuscripts at their auction rooms in Chancery Lane. Amongst the works disposed of and the prices realised were the following:—"A Second Century of Orchidaceous Plants," by J. Bateman, 100 coloured plates, 1867, £2 4s.; "Filices Exoticæ: Coloured Figures and Descriptions of Exotic Ferns," by Sir W. J. Hooker, 100 coloured plates by Fitch, 1859, £1 19s.; "Novæ Hollandiæ Plantarum Specimen," by J. J. Labillardière, 265 plates, Paris, 1804-6, £2 14s.; "Fuci: or Coloured Figures and Descriptions of the Plants referred by Botanists to the Genus

Fucus," by Dawson Turner, 258 coloured plates, 1808-19, £1 18s.; "The Rhododendrons of Sikkim-Himalaya," 30 beautifully-coloured plates from drawings and descriptions made on the spot, edited by Sir W. J. Hooker, 1849, £1 19s.; another copy of the same in royal folio, £2 7s.; "Theatrum Botanicum, the Theater of Plantes; or, An Universall and Compleate Herball," by J. Parkinson, numerous woodcuts, first ed., London, printed by Tho. Cotes, 1640, £2 12s.; "The Pinetum Brittanicum, a Descriptive Account of Hardy Coniferous Trees cultivated in Great Britain," by E. Ravenscroft, numerous large coloured plates, photographs, and illustrations in the text, three volumes, 1884, £10 5s.; "A Description of the Genus Pinus, and also of many other new Species of the Family of Coniferæ," by A. B. Lambert, 95 coloured plates, two volumes, 1842, £10; "Die Coniferen, nach Lambert, London und Anderen," by F. Antoine, 53 plates, Wien, 1840-1, £1 8s.; "A Monograph of the Genus Lilium," by H. J. Elwes, illustrated by W. H. Fitch, 48 large coloured plates, imperial folio, 1878-80, £10; "Palms of British East India," by W. Griffith, plates, Calcutta, 1850, £2 4s.; "A Monograph of Odontoglossum," by J. Bateman, 30 beautifully-coloured plates and woodcuts, 1874, £2 8s.

A LARGE APPLE.—Mr. LEWIS SOLOMON, of the Central Avenue, Covent Garden Market, has displayed in his shop window during the past week a fruit of Emperor Alexander Apple, weighing 1 lb. 10 oz., and having a circumference of 17 inches. Our "record" book contains an entry in 1880 of a fruit of Mère de Menage, weighing 2 lb. 2 oz.; and of another unnamed variety on June 4, 1859, weighing 2 lb., and measuring 18 inches round.

DOVER HOUSE, ROEHAMPTON.

(See Supplementary Illustration.)

The Supplementary Illustration to the present issue shows two views in what may be termed the Palm House, in Dover House Gardens, Roehampton, the property of Mr. J. Pierpont Morgan. The structure was built by Messrs. McKenzie and Moncur several years ago at a point where one of the ranges of fruit-houses terminated, and, being built up to the end of this range, the new structure enclosed the remaining portion of the wall having a southern aspect, and a greater length of another wall extending at right angles and facing to the West. The Palm house was built with straight glass front and side, and as the roof was provided with an elegant and commodious lantern there is sufficient head room for plants of moderate height. There are two doorways, the one affording entrance from the fruit-range, and the other from the open garden at the opposite end of the house. A pathway extending round the house encloses a large central bed, and is at a sufficient distance from the boundaries to allow of moderately wide plant-shelves being placed on the sides that are bounded by glass. At first the central bed was furnished by Palms and other fine foliage plants in pots, and we remember a magnificent specimen of *Kentia Forsteriana*, that worthily occupied the central position. There was a narrow border under the two enclosed walls, and this was planted with creeping species for the purpose of screening the walls and rendering them ornamental. About two years ago, however, Mr. J. F. McLeod, who has managed these gardens with conspicuous ability for the past sixteen years or so, being dissatisfied with the appearance presented by the walls, determined to effect an alteration which has since proved to be one of considerable improvement.

Both walls were covered with rockwork, and pockets were made for containing the roots of ferns and other plants suitable for the position, and the degree of heat and moisture maintained in the structure. At the same time the central bed was provided with six large rockwork pockets several feet high, three being on either side. Each of these pockets contains a fine Palm, four being of *Kentia Forsteriana* and two of *K. Belmoreana*. Pieces of rock and a few ground pockets serve to link these larger pockets with each other, and permits of the growth of *Selaginellas*, ferns and other plants to form a kind of groundwork on which are placed as many "dot" plants of Palms, *Caladiums*, *Codiaeums*, *Pandanus*, *Cordyline*, *Anthuriums* or other species as are desirable. The system allows of alterations being made in the general effect as the season of *Caladiums* or *Anthuriums*, etc., comes round, and on several occasions when we have visited the garden the general effect has reminded us forcibly of that produced by some of Messrs. Cypher and Sons' elaborately-arranged groups of miscellaneous plants at the exhibitions at Shrewsbury and elsewhere. The walls also are no longer devoid of interest and effect, for, as will be seen in the illustrations, they are clothed with beautiful Ferns and other plants that afford much more variety of frond than would be the case if they were covered merely with creeping plants. The magnificent fronds of *Cibotium Schiedeii* and *Asplenium candatum*, these latter measuring from 7ft. to 8ft. in length, are most attractive. We will mention a few of the ferns that have become most effective on these walls, for they are such that might profitably be planted by others in similar positions. They are as follow:—*Polypodium Mayii*, *P. phymatodes*, and *P. aureum*; *Asplenium candatum*, *A. Veitchianum*, and others; *Nephrolepis Fosteri*, *N. exaltata*, *N. Piersoni*, and *N. tuberosa*; *Denstaedia*, *Woodwardia orientalis*, *Cibotium Schiedeii*, *Gleichenia flabellata*, *Davallia fijiensis robusta*, and *D. elegans*. On the front shelves may always be seen a selection of pretty and well-grown foliage plants, including Palms, and at the present time there are very nice plants of *Phoenix Rœbelini*, amongst others.

November is not the best month to visit a garden, but only a week ago when at Dover House there were several matters of unusual interest in the various houses. In one of the stoves, for instance, we noticed a plant of Messrs. Veitch's splendid hybrid *Nepenthes* known as *N. mixta*, which was bearing 15 good pitchers, the largest being 14 inches long, probably the largest pitcher yet cultivated. The plant, which was growing in a suspended basket, possessed growths from 3ft. to 4ft. long, and these were secured to wires in a horizontal position. One growth at least is developing a very strong flower spike, and when the flowers expand, the plant already having so many good pitchers will be doubly attractive. Some baskets containing the popular *Begonia Gloire de Lorraine*, in the same house, but which will shortly be removed to the Palm House, are excellent instances of successful cultivation. In another structure, where the *Codiaeums* are housed, our admiration was excited by a beautiful plant of the new narrow-leaved variety, named Mrs. McLeod. The *Calanthes* were just coming into flower, and having up to that date escaped injury from fog, they appeared very promising. The plants are stronger than formerly, and Mr. McLeod attributes this circumstance to the use of very fresh cow dung as a top-dressing, which one might expect to be capable of causing injury to the roots.

Chrysanthemums are always a feature in these gardens in autumn, and we saw several houses which contained good displays. The

best were grouped in a vinery and an adjoining Peach house. The method of arrangement was uncommon, and to our mind agreeable, for the yellow varieties were all grouped together, also the pink, and the red or crimson flowers, likewise the white ones. Thus the effect of this system is such that there is sufficient of one colour for the eye to rest upon at one time, and in addition the student is enabled to compare easily the varieties of different shades of the same colour with each other. Some of the varieties, new and old, that appeared to be best in this well-cultivated collection were as follow:—*Sensation*, Mrs. W. Mease, W. R. Church, Mrs. J. C. Neville (pure white and of great merit, though old), Mrs. Guy Paget, a new variety of palest bluish colour, Mrs. J. Dunn, George Lawrence, M. Chenon de Leché, Vivian Morel (still valued), Mrs. Barkley, F. S. Vallis, Bessie Godfrey, L. Remy, Maud du Cros, Phœbus, Mrs. Greenfield, Kimberley, Mr. T. Dalton, Duchess of Sutherland, Sapho, Roi d'Italie, the old Charles Davis, Lionel Humphreys, a fine crimson flower with yellow tips to the florets, and Mrs. W. Knox. Two flowers of the last-named variety on one plant were perfect in size and development, and we have never seen this buff-coloured variety in better condition.

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his correspondents.)

WARTY DISEASE OF POTATOS.—Apropos of Mr. W. B. Groves' article on this subject (page 308), my own experience with the disease may be of interest. When I was lecturing at Woore (a village about six miles north of Market Drayton, Shropshire), in 1901, diseased tubers were brought under my notice by Mr. J. H. E. Fisher, Head Master of the Board School there and an enthusiastic amateur gardener. Mr. Fisher informed me that he had observed a few diseased potatoes in the previous year. In 1902 the crop in one portion of his garden was seriously affected. I examined the warty growths microscopically, but with the literature at my disposal was unable to identify the fungus, at the time. I came to the conclusion, however, that it was, as surmised by Mr. Groves, allied to *Chytrorhynchus*. I failed to detect any mycelium attached to the spores, but, staining with Congo red, revealed traces of mycelium in neighbouring tissue. I began to experiment with the fungus in 1902, and found that healthy tubers were readily inoculated with small fragments of diseased tissue, and large warty growths quickly developed. Circumstances prevented me from following up the matter further. C. W. Herbert Greaves, B.Sc., County School, Pwllheli, North Wales.

CRINODENDRON HOOKERIANUM.—I note that in answer to a correspondent enquiring for information as to the above plant (page 204), the editorial note gives its correct name as *Tricuspidaria hexapetala*. In Nicholson's Dictionary of Gardening the same statement is made, but in the Century Supplement of this book this correct name of *Crinodendron Hookerianum* is given as *Tricuspidaria dependens*. At the present time, however, it is held at Kew that both these names are incorrect, and that the rightful title of *Crinodendron Hookerianum* is *Tricuspidaria lanceolata*. *Tricuspidaria dependens* is a very different plant, and I fancy rare in gardens, as I have only met with it once, namely, at Carclew, Cornwall. When I was there early in October the largest of the two bushes, about 7 feet in height, was still bearing a few flowers. These are drooping, bell-shaped and white, with a prettily fringed, open mouth very distinct from the somewhat closed mouth of the flowers of *T. lanceolata*. The last-named plant is fairly common in the south-west, specimens often of large size, being met with in all the best gardens. S. W. Fitzherbert, South Devon.

STANGERIA PARADOXA.—I have been much interested and surprised with this plant this year. I have had it from 35 to 40 years, and it as a rule made each year one leaf only—of medium growth—but this season it has produced 8 leaves, two of them

between 3 and 4 feet long, with twelve pairs of leaflets and the others fewer. It has two crowns and one just showing a cone. From out of the soil amongst its roots, another cone is showing, a leaf also is produced; and on the other side of the plant, another leaf comes from beneath the roots; to me this is a very remarkable thing in every way—the plant having been in the same pot for 30 years at the least. The stem is about 6 inches high. J. C. Didcot.

AGAVES.—In addition to the many kinds of plant cultivated at the present time I think some of the old ones are even now worthy of notice. There are others doubtless of the same turn of mind. Amongst the dwarf kinds of *Agave* I consider *A. Besseriensis candida* a very beautiful kind with white leaves and black thorns. *A. dealbata nana* is another distinct kind. *A. nigra marginata* has black-edged leaves and occasionally some very minute spines. *A. Romanii* is a very rare hybrid, or cross. This is dwarf, broad in the leaf, with wide margins of chestnut-brown. *A. Seemannii* is very rare, I think, and very distinct. Its colour is very noticeable, being of a yellowish green, with thorny edges and with a sharp spine at the tip. Leaf rough and wide in the middle. *A. De Smetii* is a very pretty plant, like *A. maculata* with brown spots. *A. maculosa* is, I fear, lost to cultivation. I have a small one under the same name with stiff leaves spotted in the same way, but a totally different thing. *A. Verschaffeltii* with its silvery leaves is a very interesting variety. It flowered with me about 15 years ago, also did *A. Ousselghemiana picta*, a most beautiful thing. *A. Celsiana nana* also is very dwarf and distinct, and last, but not least, is *A. Victoria Regina*, a most distinct and beautiful species. I have two varieties of it. J. C.

FRUIT GROWING FOR PROFIT (see p. 314).—The returns of the Fruit Crops throughout Britain and Ireland, published in the *Gardeners' Chronicle* some few weeks since, showed the Apple crop this season to be greatly below the average, while many places had scarcely any; consequently it is impossible to judge fruit growing in regard to Apples by such a season as this. Speaking from my own experience, which has been closely connected with Apple growing for nearly fifty years, a season of such general scarcity as this is very seldom met with. In fruit growing, as in every other occupation, bad seasons occur as well as good ones; the grower must therefore be prepared to take every precaution against failure, and must put the good years against the bad ones. There is still a splendid market for English grown Apples if the grower knows how to take advantage of it. Even in the plentiful season of 1904 I knew one grower who obtained 10d. per lb. wholesale for Cox's Orange Pippin and 1s. 8d. per stone for Bramley's Seedling. A tree of the latter variety, measuring 16 feet by 14 feet and about 10 feet high, furnished 25½ stones of fruit; thus an acre of trees like this would have brought £251 15s. at an average price of 1s. 6d. per stone, which is not a bad return even if it only occurs once in ten years. Another grower sold 160 tons of Bramley's Seedling at £10 to £12 per ton wholesale. These prices were obtained by good growers who knew when and where to sell and who have had a proper training at the business. This year the first mentioned grower has neither Cox's Orange Pippin nor Bramley's Seedling, but he has a splendid lot of Wellington (syn. Dume-low's Seedling) which will later be worth 3s. per stone. W. H. Divers, B.ivoir Castle Gardens, Grantham.

"DUCHESS OF CORNWALL" POTATO.—Two pounds of these Potatoes were supplied by F. Williamson, Esq., Summerhill, Mallow, in February last. One of the Potatoes, weighing 4 ounces, was given to R. Wilson, Estate Office, Coolattin, who planted it in his garden with the following result: The Potato was divided into six sets, and planted in a line (on March 28), leaving 18 inches between each set. A fair amount of good farmyard manure was used when planting and a small quantity of bone manure. The tubers were taken out on October 26 and were weighed and numbered as under. The sets while growing were sprayed about the middle of July. The number of Potatoes taken out were 173 (not one black one), and the weight 3 stone 9 lbs., an average of nearly 4½ ounces. It may be interesting to read the following as to the weight of the larger tubers. The flavour was very good. One weighed 18½ ounces;

one 1½ ounces; one 14 ounces; two 13 ounces each; two 12 ounces each; one 11½ ounces; three 11½ ounces each; one 11¼ ounces; two 10½ ounces each; three 10 ounces each; one 9½ ounces; three 9 ounces; one 8½ ounces; two 8½ ounces; one 8 ounces.—*D. Brough, Coolatlin.*

SOCIETIES.

ROYAL HORTICULTURAL.

NOVEMBER 7.—The usual fortnightly meeting of the Committees took place on Tuesday last in the Royal Horticultural Hall, Vincent Square, Westminster. The display of flowers, though of less extent than usual, was satisfactory for the season, and, of the exhibits generally, the show of Orchids was the most important feature. To novelties in these plants the ORCHID COMMITTEE recommended one First Class Certificate, and five awards of merit.

The FLORAL COMMITTEE recommended only three awards of merit to novelties, and these were to single flowering varieties of Chrysanthemums. Among groups that came before the Committee there was one of Chrysanthemums from Mr. NORMAN DAVIS that was greatly admired. In arrangement and in the quality of flowers shown the group was alike admirable.

The exhibits that came before the FRUIT AND VEGETABLE COMMITTEE included a commendable collection of Apples from Mr. J. MOUNT, Canterbury.

At the afternoon meeting of Fellows, fifteen candidates were admitted to Fellowship, and a lecture on "Chemistry and its relation to the Garden" was delivered by Professor VOELCKER.

FLORAL COMMITTEE.

Present: H. B. May, Esq. (in the chair), and Messrs. C. T. Drury, G. Reuthe, E. H. Jenkins, W. J. James, W. P. Thomson, W. Cuthbertson, C. E. Pearson, C. Jeffries, C. Dixon, R. W. Wallace, J. F. McLeod, Jas. Hudson, C. R. Fielder, Chas. E. Shea, Ed. Mawley, Geo. Nicholson, J. Walker, E. T. Cook, and R. Hooper Pearson.

Chrysanthemums were staged by several exhibitors, and many good displays were to be seen. One of the largest groups was put up by Mr. Ellis, gr. to Mrs. BISCHOFFSHEIM, Warren house, Stanmore. The exhibit embraced both pot plants and cut blooms of Chrysanthemums, with suitable foliage plants such as *Cocos Weddelliana*, *Acalyphas*, Ferns, &c., interspersed, the background being furnished with tall Kentias and other Palms. The whole was edged with *Adiantum* Ferns. The flowers were a commendable lot, and for such an extensive collection remarkably well grown. Some of the more notable varieties were *Lady Mary Conyers*, Mrs. Geo. Mileham (very creditable specimens), Mrs. Bischoffsheim, *Roi d'Italie* (excellent colour and very compact flowers), Mrs. W. Knox (the colour is straw-yellow diffused with terra-cotta, an excellent type of the Japanese flower), *Bessie Godfrey*, &c. Well-grown bush plants of the varieties Mrs. C. H. Payne and Mrs. G. W. Palmer occupied a place at either end of the group. (Silver Gilt Banksian Medal.)

Mr. NORMAN DAVIS, Chrysanthemum Nurseries, Framfield, Sussex, arranged a group of Chrysanthemums adjacent to the wall near the entrance. The display was extensive, and was arranged with excellent artistic taste, several handsome vases being well furnished with magnificent flowers of the Japanese type, coloured vine leaves and other autumnal foliage adding additional attractiveness. On a setting of *Adiantum* Ferns, single flowers of Japanese Chrysanthemums formed the main groundwork, the continuity being pleasingly broken by the above-mentioned vases of flowers and by bamboo eperges filled with specimen blooms. A few single and decorative Chrysanthemums were also worked into the group. The quality of the Chrysanthemums was first-class, and the varieties embraced some of the latest novelties, such as Norman Davis, one of the best "crimsoms," Mrs. R. Hooper Pearson, *Abneron Davis*, Mrs. Chas. Davis, *Florence Penfold*, F. S. Vallis, &c. (Silver Gilt Flora Medal.)

Messrs. JOHN PEED & SONS, West Norwood, London, put up a creditable display of these flowers. The group was arranged so as to form a bank of flowers, Palms, Ferns, *Codiaeums* (*Crotons*), &c., being freely interspersed for relief. The major portion of the exhibit was composed of pot plants, but around these were a number of large Japanese flowers, with plants of Pompon varieties at intervals, and the whole having a suitable edging of small Ferns and *Isolepis gracilis*. The more notable among the varieties were *Maurice Rivoire*, a Japanese flower with a pleasing shade of greenish-yellow colour in the petals; Mr. Sabey, a

neat yellow-coloured Pompon; Captain Percy Scott, a yellow incurved; Margaret, a white "single"—a good type of flower. (Silver Banksian Medal.)

Messrs. H. CANNELL & SONS, Swanley, Kent, exhibited a collection of single-flowered Chrysanthemums, which entirely filled one of the side tables. We noticed many good varieties in the display, notably *Innovation*, a neat flower with reddish-coloured florets and a good centre; *Marguerite*, a white variety, with flowers somewhat resembling its namesake; F. W. Smith, a somewhat large and bright rose-coloured variety; Cannell's Yellow, of good colour, with long narrow, quilled petals; Miss E. Terriss, a bold flower of yellow colour; *Gerbera*, bronze coloured, &c. Adjoining the Chrysanthemums were plants of *Salvias*, and vases containing bunches of *Zonal Pelargoniums*, including many fine unnamed seedlings. (Silver Banksian Medal.)

Messrs. W. WELLS & CO., Merstham, Surrey, displayed new Chrysanthemum flowers, among which were several single-flowered varieties. There were also exhibition boards with blooms of the Japanese type of such notable kinds as Mrs. W. Knox; E. J. Brooks; Mrs. R. F. Felton, a medium-sized flesh-coloured flower; Merstham Crimson, a magnificently coloured variety; *Mary Ann Pickett*, the recurved petals displaying a charming gold coloured reverse; *Glitter*, yellow colour, suitable size for cut purposes; Miss Millie Lockett, new, the petals being of rich claret colour, with a golden reverse, &c.

Mr. H. B. MAY, Dyson's Lane, Upper Edmonton, staged a collection of rare and choice Ferns. On a tall stand surmounting the group was a noble specimen of *Drynaria quercifolia*. Other stands were occupied by *D. conjugata*, *Asplenium scandens* and *Davallia Braziliensis*—a very graceful plant. Other interesting things were *Polypodium crassinervum*, whose sori are arranged with great regularity; *Drynaria micropteris*, one of the smallest species of the genera; *Acrostichum nobile*; *Anemia phyllitidis* var. *lonchophorum*; an interesting form of *Nephrolepis rufescens*; *Polypodium Xiphias*, &c. Mr. May also displayed a collection of greenhouse flowering plants. (Silver Gilt Banksian Medal.)

Messrs. JAMES VEITCH & SONS, Ltd., King's Road, Chelsea, displayed winter-flowering *Begonias* with *Leonotis leonurus*, *Salvia Pitcherii*, &c. (Silver Banksian Medal.)

From the Duke of FIFE, East Sheen Lodge, East Sheen (gr. Mr. Geo. Mountford), came a very pretty group of *Begonias* and *Primula obconica*. At the background were single Chrysanthemums, Palms, *Dracæna Godseffiana* and *Eulalia japonica*; next came *Begonias*, with a band of *Primula obconica*; on either side was a pyramidal-shaped clump of *Begonia Gloire de Lorraine*, and another of *B. Turnford Hall* occupying the foreground, with a row of *Primula obconica* and an edging of small Ferns and *Panicum plicatum*. The group formed one of the prettiest displays in the Hall. (Bronze Flora Medal.)

Messrs. HUGH LOW & CO., Bush Hill Park Nursery, Enfield, brought a number of greenhouse flowering plants, *Carnations*, *Ericas*, *Begonias*, *Bougainvilleas*, &c. *Lotus peliorhynchus* hung gracefully in front of the table. Plants of *Citrus sinensis* were carrying numerous fruits. A small group of Chrysanthemums was formed at the head of the table. These were dwarf pot plants of such decorative varieties as *A. Seward*, *Source d'Or*, and the peerless "single" flower *Miss Mary Anderson*.

P. PURNELL, Esq., Woodlands, Streatham Hill, S.W. staged a group of greenhouse foliage and flowering plants. (Bronze Flora Medal.)

Mr. J. C. BECK, Henley-on-Thames, showed a scarlet *Zonal Pelargonium* labelled Mrs. Peck. It greatly resembled *Paul Crampel*, a variety that may be regarded as one of the best scarlet bedding *Pelargoniums*.

Mr. S. MORTIMER, Rowledge, Farnham, Surrey, again displayed vases of American varieties of *Carnations*.

Messrs. T. S. WARE & CO., Ltd., displayed numerous pans of Alpine plants. Not many were in flower, however, and they appeared uninteresting at this season. We noticed *Gentiana acaulis* in flower, also flowering sprays of *Parochetus communis*—a clover-like plant with blue Leguminous flowers. Flowers of *Schizostylis coccinea* were also displayed. More interesting were the hardy Ferns in the group and the curious growths of *Mesembryanthemum uncinatum*. The same firm also displayed cut *Carnations*. (Silver Banksian Medal.)

Mr. L. R. RUSSELL, Richmond Nurseries, Richmond, again exhibited berried plants of *Aucubas*, with a collection of *Eleagnus* interspersed, including one labelled *E. macrophylla*, a species having broad leaves with a mealy appearance.

Mr. G. REUTHE, Fox Hill Hardy Plant Nursery, Keston, Kent, showed several species of *Crocus*:—*C. Clusii*; *C. longiflorus*; *C. hermoneus*; *C. Tournefortii*; and the comparatively new *C. caspicus*, which has pure white flowers with yellow bases to the petals. At the back of the *Crocuses* were a number of *Nerioses*.

J. T. BENNETT-POE, Esq., V.M.H., 29, Ashley place, S.W. (gr. Mr. Downes), showed a number of named varieties of *Nerines*. F. D. Moore has a well-balanced umbel, with large rich scarlet flowers; Mrs. Harrison; *atro rubens*; *Lady Dorington*, large flowers, flushed with rose, with a dark central line, &c.

AWARDS OF MERIT were recommended to the following plants:

Chrysanthemum Miss Irene Cragg (single).—A very commendable variety, pure white, the largest flowers being 3½ inches in diameter. The growths were stiff, and erect in habit, some of them bearing as many as six flowers. The blooms, which were composed of several rows of florets, are not comparable with those of *Mary Anderson* from the point of view of form, but this new variety is of much value for decorative purposes. Shown by Messrs. CRAGG, HARRISON and CRAGG, Heston, Middlesex.

C. Reine des Roses (single).—A flower of good form, about 2½ inches across, possessing two or more rows of florets. Shown by G. FERGUSON, Esq., The Hollies, Weybridge (gr. Mr. F. W. Smith).

C. Mary Richardson (single).—A large-flowered single variety with several rows of florets. The shade of colour, which approaches to that of terra cotta, is the principal attraction. Shown by Messrs. W. WELLS & CO., Merstham, Surrey.

FRUIT AND VEGETABLE COMMITTEE.

Present: A. H. Pearson, Esq. (in the chair); and 1 Messrs. Jos. Cheal, S. Mortimer, W. Pope, Geo. Kell, H. Markham, F. Q. Lane, Geo. Reynolds, J. Willard and Geo. Norman.

Twenty good fruits of the culinary Pear *Uvedale St. Germain* were shown by JEREMIAH COLMAN, Esq., Gattou Park, Reigate. These fruits together weighed 22 lbs. 4 ounces, showing them to be of good average size, but not extraordinary, as the heaviest fruit of this variety of which we have record weighed as much as 4 lbs. 15 ozs. The tree at Gattou from which the fruits were gathered, covers a wall space of 91 feet long, and the girth of the tree's stem at one foot from the ground measures 9 feet. (Cultural Commendation.)

Messrs. HUGH LOW & CO., Bush Hill Park Nurseries, Enfield, exhibited fine fruits of the five following varieties of new or little-known Apples: *Charles Ross*, *Norfolk Beauty*, *Gabalva*, *King Edward VII.*, and *Allington Pippin*.

An exhibit of about 40 varieties of Apples was made by Mr. GEO. MOUNT, Exotic and Rose Nurseries, Canterbury. They showed the usual high quality seen in fruit from this county, and clearly proved that Mr. Mount can grow good fruit as well as perfect *Roses*. The fruits of the varieties *Chas. Ross* and *Blenheim Pippin* were superb. Good also were the examples of *Gascoyne's scarlet*; *Lane's Prince Albert*; *Newton Wonder*; *Cox's Orange Pippin*; *Allington Pippin*; *Court Pendu Plat*; *Mère de Ménage*, &c. (Silver Knightian Medal.)

Four boxes of *Cox's Orange Pippin* Apples were shown by W. ROUFELL, Esq., Harvey Lodge, Roupell Park, Norwood. The fruit was not of large size, but was good, clean, useful produce, and worthy the Cultural Commendation awarded.

Mr. J. H. RIDGEWELL, The Gardens, Histon, Cambridgeshire, displayed good *Cauliflowers*, *Onions*, *Carrots*, and *Brussels Sprouts*. The *Carrots* were useful produce, and not attenuated to the degree often seen in this vegetable on the exhibition table. The variety was *Sutton's New Red Intermediate*. Examples of *Autumn Mammoth Cauliflower* were also commendable. (Silver Banksian Medal.)

Mr. R. W. GREEN, Wisbech, brought a collection of *Potatoes*, in about 30 varieties. Many of the latest novelties were included, as well as standard varieties such as *Up-to-Date*. A good sample of *Duchess of Cornwall* was staged, also *Langworthy*—a large white kidney variety with shallow "eyes," *King Edward VII.*, with red colouring in patches on the skin, &c.

Interesting were the tubers of Village Blacksmith, the dark leathery roughened skins reminding one somewhat of Truffles. (Silver Banksian Medal.)

ORCHID COMMITTEE.

Present: J. Gurney Fowler, Esq. (in the Chair); and Messrs. Jas. O'Brien (Hon. Sec.); De B. Crawshaw, W. Boxall, W. H. Young, H. A. Tracy, A. A. McBean, T. W. Bond, G. F. M. o. e. J. Charlesworth, W. Cobb, J. Coleman, R. G. Thwaite, F. Wellesley, J. Douglas, N. C. Cookson, W. A. Bilney, H. Bullantone, F. W. Ashton, W. H. White, and Harry J. Veitch.

The evening was a magnificent show of Orchids, both quantity and quality being beyond the average.

JOHN BRADSHAW, Esq., The Grange, Southgate (gr. Mr. G. G. Whitelegge), was awarded a Gold Medal for a magnificent group in which the forms of *Cattleya labiata* were superb, a collection of white varieties occupying the middle and including *C. labiata* alba, C. I. R. I. Measures, C. I. Angel, C. I. Lowae, C. I. Etona, C. I. Penelope, C. I. Ariadne, C. I. G. G. Whitelegge, C. I. Amesiana, C. I. Ariadne, and others—most probably the best lot of white *labiata*s ever shown. The best of the coloured forms was C. I. Hercules (see Awards), *Laelio* *Cattleya* × *Decia* alba, L.-C. × *Ingrami*, L.-C. × *Huroldiana*, John Bradshaw, and other *Laelio*-*Cattleya*s; fine forms of *Lycaste* Skinneri, including alba, and *Enchantress*; the fine yellow *Oncidium Forbesi* Bradshawiae, *Lycaste* × *hybrida*, &c.

JEREMIAH COLMAN, Esq., Gatton Park (gr. Mr. W. P. Boud), was awarded a Gold medal for a very fine group extending some 50 feet in length. The whole was made up of smaller groups of fine *Cattleya labiata*, including the variety *cœrulea*, hybrids of *Laelia Perrinii*, selections of *Cypripedium*s and other showy species. The centre was composed of very handsome plants of *Cymbidium Tiacyanum*, C. × *Winnianum*, and *Oncidium varicosum*; and among leading forms noted were *Cattleya* × *Mantini*; C. × *Portia*, *Phaio*-*Cymbidium* × *Chardwatense*; selections of yellow forms of *Cypripedium insigne*, the white *Laelia Perrini*, Gatton Park var., &c.

Messrs. CHARLESWORTH & Co., Heaton, Bradford, were awarded a Silver Flora Medal for a very fine group, principally hybrids. The centre was of good examples of *Vanda cœrulea*, and around them were good selections of *Laelio*-*Cattleya* × *Haroldiana*, L.-C. × *callistoglossa*, L.-C. × *luminosa*, L.-C. × *Celia*, *Cattleya* × *Fernand Denis* and a good selection of *Cattleya labiata*, including the nearly white C. C. Princess. Others noted were *Sophros*-*Cattleya* × *Nydia*, *Brass* × *Cattleya* × *Digbyano*-*Warszewiczii*, *Cypripedium* × *Leeanum giganteum*, C. × *Hitchinsiae*, C. *Spicerianum* *magnificum*, and *Acanthephippium javanicum* var. *Fletcheri*, with almost wholly dark red flowers with yellow labellum.

MESSRS. I. CYPHER & SON, Cheltenham, secured a Silver Flora Medal for a very well-arranged group of good hybrids and species. The middle was of *Oncidium varicosum*, *O. prætextum*, and very fine forms of *Cattleya labiata*. Among the large collection of *Cypripedium*s were C. × *Niobe* Westonbirt variety, fine in form and rich in colour, C. × *Harrisianum* *superbum* × *œnanthum* *superbum*, with the fine shape of *Harrisianum* and rich colour of *œnanthum*; C. × *Maudiae*; C. × *Pitcherianum*; C. *insigne* *Sanderae*, and other yellow forms; brightly coloured *Dendrobium Phalenopsis*, &c.

A Silver Banksian Medal was awarded to Messrs. HUGH LOW & Co., Enfield, for a group containing fourteen good specimens of *Laelio*-*Cattleya* × *Lady Rothschild*, three white forms *Cattleya labiata*, viz., *Reedleyensis*, King of Greece, and America; *Cypripedium*s × *Leeanum Statterianum*, a large and finely formed flower; good *Dendrobium Phalenopsis*, including one of the white variety, *Oncidium cheiroporum*; *O. tigrinum* forms of *Cypripedium insigne*.

M. CHAS. VUYLSTEKE, Loochristy, Ghent, received a Silver Banksian Medal for a small group of hybrid *Odontoglossum*s, including the magnificent O. × *Vuykstekei*. (See Awards.)

Messrs. STANLEY & Co., Southgate, were awarded a Silver Banksian Medal for a group including good *Cattleya labiata*; a fine dark form being named *Newtoni* and a good light variety *Stanleyi*; also C. × *St. Gilles*, C. O'Brieniana, C. aurea, C. bicolor *Sophrontis grandiflora*, *Oncidium flexuosum*, a good selection of *Cypripedium*s, and a hybrid said to be raised between *Dendrobium Victoria Regina*, and *Cattleya Harrisoniae*, but which the Committee considered to be *Laelio*-*Cattleya*, near to L.-C. × *Cantoniae*.

Messrs. WILLIAM BULL & SONS, Chelsea, showed a small group of *Cattleya* × *Iris*, C. × *Clarkie*; *Odontoglossum crispum* *Coronet*, a spotted form, and other Orchids.

LEOPOLD DE ROTHSCHILD, Esq., Gunnersbury House (gr. Mr. J. Hudson), showed a basket of the fine orange-scarlet, winter-flowering form of *Epidendrum vitellinum*.

Major G. L. HOLFORD, Westonbirt (gr. Mr. Alexandre), sent *Cattleya* × *Mrs. Pitt* var. *delicata*, a delicately-tinted sulphur yellow flower, tinged with rose colour, &c.

The MARQUIS DE WAVRIN, Chateau de Rousele, Belgium (gr. Mr. De Gast), sent *Laelia pumila*, Queen Alexandra, a good white flower tinged with lavender and with slate-blue front to the lip.

Baron Sir H. SCHRODER, The Dell, Egham (gr. Mr. H. Ballantine), showed the finely spotted *Odontoglossum* × *Bingelianum* of the O. *crispo*-*Harryanum* class; and the richly coloured O. × *Vuykstekei* *Schroderianum*.

R. BRIGGS-BURY, Esq., Bank House, Accrington (gr. Mr. Wilkinson), sent *Odontoglossum* × *Vuykstekei*, Bank House Variety, heavily blotched with chestnut-red, &c.

FRANCIS WELLESLEY, Esq., Westfield, Woking (gr. Mr. Hopkins), sent *Laelio*-*Cattleya* × *Miss Gilberta* Blount (C. *Mantini* × L.-C. × *Ingrami*), a pretty and nicely-coloured flower; L.-C. × *Norba* and *superba* which had already received an Award of Merit; *Cattleya labiata* *Minnie*, a large and finely-formed flower of rich colour; C. × *Mantini nigricans*, equal to the fine C. × *M. colorata*; and C. × *Abraham Lincoln* (*Niobe* × *orphanum*) with white dorsal sepal, having a green base and broad purple line.

DE B. CRAWSHAY, Esq., Sevenoaks (gr. Mr. Stables) sent *Odontoglossum* × *crispodinei* (*crispum* × *coradinei*), a great improvement on O. × *coradinei*.

NORMAN C. COOKSON, Esq., Oakwood, Wylam (gr. Mr. Chapman), showed *Laelia* × *De Geestiana*, L. *flava* × *L. Jongheana* alba with white sepals and petals.

F. M. OGILVIE, Esq., The Shrubbery, Oxford (gr. Mr. Balmforth) sent *Cattleya* × *Portia* *magnifica*, with flowers nearly equal to C. *labiata*.

R. I. MEASURES, Esq., Camberwell (gr. Mr. Smith), sent cut examples of *Cypripedium* × *Unxia*, C. × *Chas. Rickman*, *Odontoglossum crispum* with forty-two blooms on the spike, and various hybrid *Cattleya*s and *Laelio*-*Cattleya*s.

Messrs. JOHN COWAN & Co., Gateacre Nurseries, near Liverpool, showed a very fine specimen of a white form of *Cattleya labiata* nearest to C. I. *amesiana*. The flowers were large and of fine shape, white with a pale pink front to the broad labellum.

AWARDS.

FIRST-CLASS CERTIFICATE.

Odontoglossum × *Vuykstekei* (parentage unrecorded) from M. CHAS. VUYLSTEKE, Loochristy, Ghent. In size, form and colour the finest hybrid *Odontoglossum* yet shown. It is probably a development of O. × *venustum* (*ardentissimum* × *Harryano*-*crispum*), in which the glorious rosy-claret colour of O. *crispum* Franz Masereel, derived through O. × *ardentissimum* has predominated, or possibly O. × *ardentissimum* × *Vuykstekei*. The flowers are large and broad in all the segments, and especially in the labellum, which is usually the defective feature. Colour rosy-claret with slight silver-white lines between the confluent blotches and white acuminate tips.

Cypripedium × *triumphans* (*Sallieri* × *œnanthum* *superbum*), from R. BRIGGS-BURY, Esq., Bank House, Accrington (gr. Mr. Wilkinson). A fine, dark coloured hybrid with the rich rose and white upper part to the dorsal sepal, as in C. × *œnanthum*. The plant received an Award of Merit when shown by the raiser, M. Jules Hye de Crom, of Ghent, November, 1894, and the variety *superbum* to Major Holford, November, 1904.

AWARDS OF MERIT.

Cattleya × *Petersii* var. *Mrs. Francis Wellesley* (*labiata* × *Hardyana*).—A very showy and finely-coloured hybrid, with the winter-flowering properties of C. *labiata* and the rich colouring of the other parent. Flowers of perfect form and fine substance, purplish rose, with ruby crimson front to the labellum.

Cypripedium × *Santedera* (*Sanactæus* × *insigne* *Sanderae*).—A conglomerate as the name implies, and very largely composed of C. *insigne* *Sanderae* which it

closely resembles. The dorsal sepal, however, shows no trace of spotting.

Cattleya labiata *Hercules* from J. BRADSHAW, Esq., The Grange, Southgate.—A gigantic form of typical coloured C. *labiata*, broad in all its parts, and a model flower of the florist's standard.

Dendrobium Phalenopsis *Thundersleyen* from Messrs. HUGH LOW & Co., Enfield.—One of the darkest in colour, the flowers being of a rich rose-purple, darkest on the lip and middles of the petals.

CHEMISTRY AND ITS RELATION TO THE GARDEN.

In the afternoon a lecture on the subject of Chemistry was delivered by Dr. J. Voelcker, M.A., Analytical Chemist to the Royal Horticultural Society. Sir Trevor Lawrence, Bart., presided, and, in his opening remarks, alluded to the recent institution of the British Science Guild, and said that in the diffusion of scientific knowledge amongst the people, and by the observance of scientific principles in matters of everyday life, would progress be made in the future.

Dr. Voelcker commenced his discourse by pointing out the differences there are in respect to the application of chemistry to agriculture and horticulture, owing to the different methods of cultivation that are adopted in the garden and the greater power possessed by the gardener to modify the condition of the soil in which he has to cultivate his crops. It was the special relation of chemistry to horticulture to which Dr. Voelcker referred in his lecture. Speaking of the atmosphere first he described how the plants obtained some of their food from oxygen, nitrogen, carbonic acid, &c., present in the atmosphere. Nearly all the carbon that is necessary is obtained from this source. He explained that plants have a limited capacity for taking up ammonia through their leaves, and though nitrogen cannot be taken in this manner, Leguminous plants obtain nitrogen from the atmosphere by the aid of bacteria at the roots.

Proceeding to speak of the possibility of the atmosphere becoming polluted, Dr. Voelcker said that it was in the vicinity of factories where sulphur, arsenic, &c., got into the atmosphere that the greatest injury was caused to trees, especially of coniferous species. The atmosphere of a plant-growing structure was sometimes rendered injurious to the plants by the use of tar on the hot-water pipes or other surfaces. Some tar contained carbolic acid and other volatile matter, and was quite unsuited for use in such structures.

MOISTURE.

Moisture constituted 90 per cent. of agricultural crops and 40 per cent. even of timber. Dr. Voelcker proceeded to describe the ill effects of badly drained land—cold soil and stagnation; also the good effect of proper drainage, &c. The retention of moisture in the soil was connected with the degree of separation of the particles, sand was least retentive, then loam, then clay, and the most retentive was peat. There were different samples of water, and when more than one supply is available for horticultural purposes Dr. Voelcker said it would be a fitting occasion to consult a chemist in order that use may be made of that which was most suitable.

PLANT-FOODS AND MANURES.

Reference was made to the principal foods that plants obtain by means of their roots, and it was pointed out that a knowledge of the ash residue was not sufficient to indicate what particular manures should be supplied to the soil. Each plant must be studied as to the power it possesses of getting and utilising a particular element. Very little nitrogen may be found in the ash of a certain plant, but it may be that the plant will have considerable difficulty in getting and assimilating that little unless it is applied to the soil in a particular form. Emphasis was placed upon the need for lime in all soils to prevent them from getting into a condition of acidity, as well as for supplying lime as food to the plants. But iron was present in sufficient quantities in almost all soils. After stating that soil may first be regarded as of service to hold up the plant, and secondly to supply the plant with food, Dr. Voelcker said that the process of manuring was the supplying of elements needed by the plants, and lacking in the soil. Hints were given as to the proper use of natural, chemical and artificial manures, and much praise was given to farmyard manure, also to Peruvian guano. He had analysed compound manures sold under different names, and had found that (1) some were undoubtedly good, (2) some were of doubtful value, and (3) some were not worth nearly the price at which they were sold.

In regard to the materials used against insects and fungous pests, and weed-killers, which latter were mostly arsenic compounds, there was need for the assistance of the chemist to enable the gardener to know that he was getting the best materials and free from adulteration. White lead, which is largely used for building purposes, is very frequently adulterated to a considerable degree.

In answer to questions by Mr. A. H. Pearson, the lecturer said that nitrate of potash was the best form of applying potash to plants cultivated merely for their flowers, or in cases where it was desirable to promote quick growth, but it was also the most expensive form. Sulphate of potash should be the means of supplying potash to fruit trees, because it would the better promote good quality and rich flavour. In a garden, and providing that the expense incurred by the provision of manures was of little importance, there was no necessity to follow out a system of rotation in crops. But in having the same crop on a piece of land year after year, more manure would be required than otherwise would be the case.

SOUTHAMPTON HORTICULTURAL.

OCTOBER 31.—The Annual Autumn Exhibition of the above Society was held in the Skating Rink, Southampton, and was much the best of the long series held. Competition was unusually keen, and the quality of the Chrysanthemums displayed was very good, cut blooms of these flowers in vases being the feature of the show. A handsome challenge vase, value £40, with a substantial cash prize, was offered for twelve varieties of Japanese Chrysanthemums, three blooms of each variety. Eight growers competed, resulting in a bright display. Mr. G. Hall, gr. to Lady LOUISA ASHBURTON, Melchet Court, Romsey, was an easy first prize winner in this class, with large, shapely, well-coloured specimens (see Fig. 133); the examples of F. S. Vallis, Bessie Godfrey, Sensation, Mrs. J. Dunn, and Marquise Vicomte Venoste were especially well developed; 2nd, Mr. B. Hollis, gr. to Major G. F. CHICHESTER, Embley Park, Romsey, with smaller but high class blooms.

For two white Chrysanthemums, three flowers of each variety, Mr. Hollis, with typical examples of Mrs. J. Dunn and Madame C. Nagelmackers, won the first prize, followed by Mr. L. Dawes, gr. to Mrs. OGILVIE, Rosecroft, Hambledon. For six Japanese Chrysanthemums, of any other colour than white, three flowers of each variety, Mr. G. Ellwood, gr. to W. H. MYERS, Esq., M.P., Swanmore Park, Bishop's Waltham, was awarded the first prize with very fine quality flowers of Miss Olive Millen and Mrs. F. W. Vallis; 2nd, Mr. Stevenson, gr. to the Duke of HAMILTON, Wimborne.



FIG. 133.—GROUP OF THIRTY-SIX BLOOMS OF JAPANESE CHRYSANTHEMUMS EXHIBITED AT SOUTHAMPTON, AND AWARDED THE ROYAL CHALLENGE TROPHY.

Mr. Ellwood also won, for four bunches of single-flowered varieties of Chrysanthemums, his exhibit comprising large and handsome specimens of notable varieties.

In the class for twenty-four Japanese Chrysanthemums, in not fewer than sixteen varieties, to be arranged on exhibition boards, Mr. HALL won quite easily with full-sized examples that were not displayed to their best advantage owing to crowding. For twelve Japanese Chrysanthemums, distinct, Mr. F. Bible, gr. to H.S.H. Prince HATZFELDT, Daycot Park, Chippenham, won the first prize, the same grower also winning,

for twelve incurved Chrysanthemums. The quality of the groups of Chrysanthemums seen was above the average. Mr. C. Hosey, gr. to J. C. E. D'ESTENE, Esq., Elmfield, Southampton, in the winning exhibit, had dwarf plants that were well furnished with healthy leaves, and carrying handsome blooms.

The class for naturally grown specimen Chrysanthemum plants, in four varieties, made quite a feature, so good was the quality of the specimens staged. Mr. Hosey was again the premier prize winner.

In the class for a group of miscellaneous plants arranged for effect, Mr. E. WILLS, Winchester Road Nurseries, Southampton, had much the best of four exhibits. Miscellaneous exhibits, such as bouquets, vases of Chrysanthemums, and baskets of autumn foliage were attractive. Miss WILLS had the best bouquet, Mrs. JEFFERY the best vases of Chrysanthemums, while Mrs. Dawes showed the best basket of foliage.

Exhibits of fruit and vegetables were numerous and good. Messrs. MITCHELL, Chilworth Manor, and G. ELLWOOD secured the leading awards in the Grape and the vegetable classes respectively (see Fig. 132).

CHELTENHAM CHRYSANTHEMUM

NOVEMBER 2.—The annual show of the Cheltenham Chrysanthemum Society was held in the Winter Gardens, Cheltenham, on this date. A fine display of flowers was made, though in some respects there was a falling off in numbers. Chrysanthemums and winter-flowering Begonias were a feature, and there were also some good Carnations and Violets.

The Chrysanthemum groups were fewer this year. Mr. H. O. LORD, M.F.H., of Lilley Brook, had no one to challenge him in the circular group, 10 feet in diameter. There was, however, competition in the group of miscellaneous plants arranged for effect, and here Mr. LORD had to take second place to Mr. G. S. GODSELL, of Stroud, who sent a very excellent display.

A grand collection of 24 Chrysanthemum blooms of the Japanese type was shown by the Dowager Lady HINDLIP, of Hadzor Hall, Droitwich, which took premier honours in a strong class. Sir HUBERT PARRY, Bart., of Ilington Court, Gloucester, was awarded 1st prize for 12 Japanese blooms, and Lady HINDLIP for 36 blooms, while in the collections arranged with ornamental foliage Mr. LORD's display was the best of three. The best bloom in the show was a specimen



FIG. 132.—VIEW OF THE SOUTHAMPTON CHRYSANTHEMUM EXHIBITION, SHOWING THE LARGE NUMBER OF GRAPES STAGED.

of the pale yellow Japanese F. S. Vallis, and this secured the National Chrysanthemum Society's certificate. Mr. H. G. BENNETT, for the third time, won the Cup given by the Mayor and Corporation for the best six incurved Chrysanthemum plants in pots, and the trophy now becomes his absolute property. Dr. FERGUSON secured the Baron de Ferrières' prize for the best specimen Chrysanthemum plant in the show.

Sir HUBERT PARRY showed the best table plants, Mr. FAIRFAX RHODES was successful with winter-flowering Begonias, and Sir BROOK KAYS', Bart., exhibit was not surpassed in the the Primula class.

Among the fruit exhibitors Mr. H. C. MOFFATT, of Goodrich Court, Mr. W. J. SHELDON, of Pershore, Mr. S. B. GUTHRIE, Mr. H. NOORMAN, and Mr. A. BARNFIELD shared the premier awards. Those for Pears went to Mr. MOFFATT, Mr. F. TAYLOR, Mr. H. O. LORD, and Messrs. J. HITCH and SON. F. P.

WEYBRIDGE DISTRICT HORTICULTURAL.

NOVEMBER 2.—The seventh annual autumn exhibition of this Surrey society was held in the new and elegant Holstein Hall, Weybridge. In the centre of the Hall Mr. J. Lock, gr. to Mr. Justice SWINFEN EADY, of Oatlands Park, arranged a superb non-competitive group of chrysanthemums, measuring some 200 square feet in area. The collection comprised large and small blooms interspersed with Bamboos, Ferns, Asparagus, Codiaums (Crotons), Cyperus, Alocasias, and many other plants. The arrangement was thoroughly informal in style and with artistic effect. Other honorary exhibits included a small group of Orchids staged by Mr. Whittock, gr. to W. A. BILNEY, Esq.; a fine lot of Gloire de Lorraine and Turnford Hall Begonias, staged by Mr. Watford, gr. to A. HARTMANN, Esq.; a nice group of Cyclamen and Primulas put up by Mr. R. Rowe, gr. to Miss L. E. MARTINEAU; Messrs. Fisher and Sons, Addlestone, had a group of Chrysanthemums, and Mr. A. R. Cobbett staged 60 very fine bulbs of Ailsa Craig Onions.

Competitive Plant Classes.—Mr. W. E. Pagram, gr. to J. COURTENAY, Esq., had the best large group, and Mr. F. Cawte, gr. to E. LUXMORE, Esq., the best small group of chrysanthemums. Mr. WATFORD staged the best three Orchids, Mr. WHITTOCK following very close. Scarlet Salvias made a fine display of colour; six large plants, shown by Mr. Curtis, gr. to Mrs. MARSHALL, won the first prize, while smaller, but capital, plants from Mr. Wyatt, gr. to E. J. FRY, Esq., secured the second place. Mr. E. Gosden, gr. to R. A. TODD, Esq., had the best three plants of Salvias. Mr. CAWTE took the first prize in the class for three berried plants with neat Solanums. In the class for six plants of Primulas Mr. WATFORD was easily first with six plants of Primula obconica. With the same species, that quite surpassed the Chinese forms shown, Mr. E. Nicholson, gr. to F. H. COOKE, Esq., had the largest winter Begonias, and won the first prize, but the second prize plants, although smaller, were much the better bloomed. These were shown by Mr. Watford.

Cut Flowers.—For 12 varieties of Japanese chrysanthemums arranged in vases, Mr. Caryer, gr. to A. G. MEISSNER, Esq., was awarded premier honours, having full developed flowers. In the class for 12 blooms of Chrysanthemums distinctly displayed in two vases, Mr. W. Shute, gr. to Mrs. MACHIN, was a good first with superb flowers. A very effective class was that for a shallow box measuring 30 by 36 inches, containing large and small flowered Chrysanthemums, set up in vases, Bamboos, and with cut foliage and small plants. Mr. W. SHUTE was worthily awarded the first prize, his display forming quite a floral picture. Mr. WYATT had the best 18 blooms of Chrysanthemums distinct. He showed well-known varieties. Mr. H. BUCKMASTER won the 2nd prize. The last-named exhibitor had the best 12 incurved Chrysanthemums, but the flowers required a longer time to develop their best. Mr. CARYER had the best vase, containing 12 reflexed blooms of Chrysanthemums having quite good flowers. The same grower was also first for 6 varieties of Pompon Chrysanthemums, 6 blooms of each variety in a vase.

Fruit and Vegetables.—The best pair of bunches of Black and the best White Grapes came from Mr. Morgan, gr. to S. J. DU CROS, Esq., with the varieties Alicante and Muscat of Alexandria respectively. Mr. CAROTE was awarded the 1st prize for 4 dishes of Pears, but his examples included poor specimens of the variety Uvedale St. Germain's. 2nd, Mr. MORGAN, with very fine Pitmaston Duchess, good Doyenné du Comice, Marie Louise, and Beurré Bachelier. For

two dishes of the same fruit Mr. G. CRABBE was first with Pitmaston Duchess and Emile d'Heyst. Apples were not represented. Mr. WATFORD had the best four dishes, and Mr. CAWTE was first for three dishes. Mr. W. JOHNS had a good collection of six kinds of vegetables, staging Red Celery, Leeks, Tomatos, Onions, Cauliflowers, and over large Potatos. Cottagers in the district showed excellent vegetables.

TORQUAY CHRYSANTHEMUM.

NOVEMBER 2.—The Torquay Gardeners' Association held a most successful show on November 2 in the great hall of the Bath Saloons. Not for several years have the exhibits been so numerous and good, competition being keen in almost all classes, and the quality of the cut blooms and groups showing a great advance on former exhibitions.

CUT BLOOMS.

Thirty-six Japanese Chrysanthemums.—The 1st prize was secured by Mr. W. J. GODFREY, with an excellent stand of flowers, including the varieties Miss Elsie Fulton, Mrs. A. R. Knight, Mrs. Guy Paget and W. R. Church.

Mr. J. N. WHITEHEAD had the best twenty-four blooms of Japanese Chrysanthemums.

Twelve Japanese Chrysanthemums.—The 1st prize was carried off by Mr. W. J. GODFREY.

Col. TOMS won for six Japanese Chrysanthemums, followed by Mr. J. N. WHITEHEAD, and by Mrs. TREVOR BARKLEY.

Twelve Incurved Chrysanthemums.—1st, Mr. J. N. WHITEHEAD.

Mr. J. N. WHITEHEAD won in the class for four varieties (Japanese) displayed in vases; 2nd, Mrs. TREVOR BARKLEY; while in the larger similar class for six varieties in vases Mr. BAYNES was successful, followed by Mr. S. B. COGAN.

Six White Japanese Chrysanthemums, one variety.—1st, Col. CARY, who had the variety Miss Elsie Fulton; 2nd, Mr. P. P. ALEXANDER, with Mme. Carnot.

Six Yellow Japanese Chrysanthemums.—1st, Mr. J. N. WHITEHEAD, with magnificent specimens of F. S. Vallis; 2nd, Mrs. TREVOR BARKLEY, with the same variety as in the winning vase.

Col. CARY carried off the prize for six Japanese Chrysanthemums of one variety, of any other colour than yellow or white, with the variety W. R. Church. 2nd, Mr. J. N. WHITEHEAD, with Mme. P. Radaelli. Mr. J. N. WHITEHEAD was awarded the National Chrysanthemum Society's Silver Medal for the highest aggregate of points in the cut bloom classes.

The classes for Floral Decorations were well represented; Mr. W. H. VEALE arranged the best decorated table.

PLANTS.

The prize for a group of Chrysanthemums carried with it a Silver Challenge Cup. Mr. H. DUNDEE HOOPER won with a magnificent collection.

Dr. QUICK staged the best group of single Chrysanthemums; Capt. TOTTENHAM the best three specimen Chrysanthemums, and Mr. W. H. BULLEID the best three plants of single Chrysanthemums.

Six Flowering Table Plants.—1st, Capt. TOTTENHAM.

Six Foliage Table Plants.—1st, Mrs. TREVOR BARKLEY.

MISCELLANEOUS EXHIBITS.

Fine Collections of Fruit and Vegetables were shown. Among nurserymen's exhibits, which added much to the beauty of the show, were stands contributed by Messrs. ROBERT VEITCH & SON, Exeter, who staged Orchids, winter-flowering Carnations, Scutellaria mocciniiana, Statiche profusa, cut Chrysanthemums, Apples, &c.

THE DEVON ROSARY, Torquay, showed specimens of floral decorations as well as Tuberoses, Acacia platytera, Salvia fulgens, Begonias, Ericas, &c., and a handsome stand of fruit—Apples, Pears, Grapes, Tomatos, Cucumbers, &c., set off with countless bunches of Violets. Messrs. W. B. SMALE and SON, Torquay, exhibited Zonal Pelargoniums, Cycas revoluta, Acalypha Sanderiana, Rehmannia angulata, Bouvardias, and Chrysanthemums. Messrs. SUTTON and SONS, Reading, had an attractive stand of varied sorts of Tomatos, Capsicums, and specimen vegetables. Mr. J. HEATH, Kingskerswell, showed many varieties of Violets. Mr. W. H. ALLWARD, Torquay, supplied a large stand of flowering plants, and Messrs. J. TOMLINSON and SONS, Devonport, staged a good collection of Apples.

PARIS AUTUMN SHOW.

As a complement to the International Horticultural Show which took place in Paris last May, the National Horticultural Society of France held, on November 4 to 12 an autumn show of Chrysanthemums, Fruit and Vegetables at Cowes la Reine. Nowhere can we see the slightest chance of such a site being ever possible in which to hold our leading London Flower Shows.

At half-past ten on the morning of the first day of the Show, M. Loubet, the President of the French Republic, paid a visit and was conducted round by M. VIGER, M. ABEL CHATENAY and other officials of the National Horticultural Society of France. Our correspondent, Mr. HARMAN PAYNE, had the honour of being presented to M. Loubet as representing the English Chrysanthemum growers present on the occasion.

The schedule and prize list was a very comprehensive document, liberal provision being made for almost every kind of exhibitor. Altogether there were 153 classes, of which 74 were for Chrysanthemums alone, the remainder being divided among other flowers, Orchids, Carnations, &c., fruit, shrubs and vegetables, all of which were shown in great variety and in a high state of excellence. Prizes of honour were offered by the President of the French Republic; several by the Ministers of the Paris Municipal Council; by the French and English National Chrysanthemum Societies, and by many other public bodies and private individuals.

The JURY, which numbered many horticulturists of European repute, was divided into 15 sections, and, in addition to these, there was a *Jury Supérieur*, composed of Mr. Harman Payne as President, MM. Charles Baltet, Closon, Luizet, Maxime de la Roche-terrie, Baron de Solemacher, and Stinville, with M. G. Duval as Steward. A deputation from the N.C.S. attended, and formed part of the Jury, viz., Messrs. Thos. Bevan, Cragg, Runciman, and Payne.

The approach to the Show, a promenade of considerable length, was lined on each side with numerous fruit trees trained in every imaginable form. Right and left Messrs. VILMORIN, ANDRIEUX and Co. had a pretty display, in pots, of Chrysanthemums, mostly decorative and Pompon varieties, while a little further on Messrs. MOZER & SON, of Versailles, had a fine series of groups of Aucubas, as well as of Cupressus, Junipers, Retinosporas and other Conifers. Similar exhibits were shown by MM. LAURENT, PAILLET, and GAYER.

Fruit trees were an extensive and interesting feature, the best exhibits coming from Messrs. NGMBLOT, CROUX and SON, GEO. BOUCHER, and PAILLET.

On entering the Rotunda of the Antin Greenhouse a similar brilliant sight presented itself to our vision as that which we saw last May. All round the walls of the Rotunda there were looking-glasses, placed at intervals with cream-coloured drapery and festoons. Two geometrically-shaped beds were in the centre, the whole slightly raised from the ground with a bevelled edge and a turf border. This part of the building contained a grand display of Chrysanthemums in pots by Messrs. VILMORIN, ANDRIEUX & Co., to whom the *Jury Supérieur* unanimously awarded the Grand Prize of Honour, given by M. Loubet, as a well-deserved recompense, not only for Chrysanthemums, of which there were several lots, but also to a superb and thoroughly representative collection of vegetables arranged on the slope facing the Seine and also for various flowers. In the Chrysanthemum groups we noticed many excellent examples of popular favourites, such as J. R. Upton, W. Duckham, Mme. Gustave Henry, R. Hooper Pearson (very rich in colour), Phœbus, F. S. Vallis, Mme. Carnot, Miss Alice Byron, Viviani Morel, Mrs. Seward, N. C. S., Jubilee, Merstham Yellow (a splendid specimen), Mousmée (a most delicate shade of soft, rosy lilac), W. R. Church, Mrs. Barkley, and large numbers of novelties, besides varieties that are not well known in England.

Of the three hundred exhibitors, many of whom showed in numerous classes, it is of course impossible to do more than mention a few. In plant classes M. AUG. NONIN was awarded a prize of honour for several capital groups, in which M. Ant. Marmontel, a fine Japanese variety, large in size and of a rich rosy amaranth colour, with a silvery pink reverse, a most effective flower, and of good size, was shown in strong force. Other good things in these groups were Amateur Rozière, Satin Rose, Yolande de Pins, Paris 1900, Le Peyron (a new yellow), La Gracieuse, Naples (a fine golden yellow, incurved), Sapho, Roi d'Italie, Miss Ellen Willmot, Wm. Duckham, and scores of others.

Medals were awarded to Messrs. PIENNES and LARI-GALDIE, Messrs. LEVEQUE and SON, M. AVARRE, GERAUD, CORTIN, the ECOLE HORTICOLE DU PLES-SIS, PIQUES, and others, for interesting exhibits in the other Chrysanthemum plant classes.

† *Cut Blooms* were intensely interesting, especially when we remember our first visit to a French Chrysanthemum Show some years ago. Dealing first with new seedlings, these were finely shown by M. ERNEST CALVAT, to whom a prize of honour and a gold medal were awarded. He exhibited several blooms of each variety, 22 big heavily-built Japanese novelties forming his collection. Other seedling raisers were also conspicuous, but in point of quality the blooms were behind those shown by the Grenoble raiser.

M. LIGER-LIGNEAU showed a pretty incurved variety called *Mme. Depallier*, good in form, colour, pure white. M. ROZAIN-BOUCHARLAT exhibited a lot, of which *Pelican Jaune*, a huge yellow Japanese, was the most promising. M. CHANTRIER, M. NONIN, M. CAVRON, the MARQUIS DE PINS, M. DOLBOIS, M. HERAUD, Messrs. VILMORIN, M. DURAND, M. DECAULT, M. JOUANDO, M. TILLIER, M. GIRARDIN all showed new seedlings, and between them received no fewer than 56 first-class certificates from the Jury specially appointed to judge the novelties. In other cut bloom classes prizes of honour were awarded to M. E. ROSETTE and to M. PAUL OUDOT.

In the ordinary competitions for cut blooms some good collections were staged by Messrs. LEVEQUE, MOMMEJA, CAVRON, DECAULT, BIGOT, ANATOLE CORDONNIER & SON, PECQUENARD, MAGNE, CHARVET, RAGUENEAU, and others too numerous to mention. M. PECQUENARD is only a young grower, but he has distinguished himself before to-day in the culture of plants for cut bloom. His collection had some fine blooms of great size of the following: W. R. Church, President Viger, Madame L. Remy, M. L. Remy, Madame Carnot, General Hutton, Marguerite de Mons, F. S. Vallis, Vierge Montbrunoise, Madame Paolo Radaelli, in fact, about 100 of the biggest blooms in the Show. M. CHARVET'S lot was a well-finished collection, Madame E. Charvet being a pale lilac mauve Japanese flower of fine form, Madame MARIE CARRERE another. Amongst those shown by Messrs. ANATOLE CORDONNIER were some fine blooms of *Zaccharie Bacqué*, *Solange*, *Souvenir de Cologne*, *Luteum*, W. R. Church, Mrs. C. Harman Payne, F. Pilon, *Souvenir de Lombez*, and others.

Fruit made a grand show, the Apples and Pears being exhibited in large numbers. The *Jury Supérieur* awarded the second grand prize of honour to M. NOMBLOT BRUNEAU for a very large collection of fruit trees, and fruits fresh and preserved. A prize of honour was awarded to Messrs. CROUX and SON for a remarkable display of Apples and Pears arranged in a very effective style. We noticed among the Apples many German varieties, but beside these there were good samples of Cellini, Cox's Pomona, Reinette de Caux, Calville Blanche, Lord Raglan, Peasgood's Nonsuch, Emperor Alexander, Reinette du Canada, Jeanne Hardy, St. Barbe, and how many more it would be hard to say.

In Pears they were remarkably strong. Some finely coloured well-grown examples were found in Doyenné du Comice, Beurré Dumont, Marie Louise d'Uccle, Duchesse d'Angoulême, Charles Ernest, Belle Angévine, Charles Cognée, Beurré Diel, Doyenné d'Hiver, Fondante du Comice, Pittaston Duchess, Beurré Bachelier, but these form not a twentieth part of the total on view.

▽ Apples and Pears were also contributed by several other large exhibitors.

Messrs. TRUFFAUT and SON, of Versailles, were awarded a prize of honour for a prettily-arranged group of greenhouse flowering and foliage plants. A similar award went to M. C. MARON for Orchids, which were all displayed in a separate room on the right-hand side of the long corridor connecting the two large greenhouses. Orchids were also shown by M. BERANEK, M. G. LESUEUR, M. REGNIER, and one or two others.

Table decorations were charming and greatly admired. M. GABRIELLE DEBRIE, the famous florist of the Rue Royale, had some bouquets and decorations for tables and drawing-rooms that were triumphs of the floral art.

A few remarks on some of the other exhibits are due to exhibitors of miscellaneous subjects. M. GEO. BOUCHER showed Clematis. Messrs. CAYEUX and LECLERC, Dahlias, Asters, &c. M. L. BOIS, Lilies grown by retarded culture. M. LEDOUX showed Peaches, six nice baskets of Balbet, Salway, Victoria

Blondeau, Bourdine, and Belle Imperiale. Messrs. VALLERAND had a large bed stretching right across the width of the further greenhouse composed of simple Begonias in brilliant array, the bed being edged with Golden Pyrethrum and a border of turf which showed up the colours most effectively. Mr. GEORGE TRUFFAUT, the well-known horticultural chemist, had an object lesson in the use of his new manure "Biogine."

Grapes were shown in the same room as at the May Exhibition. A prize of honour was awarded to Messrs. SALOMON & SON, who staged a very comprehensive collection of fruiting vines in pots and Grapes. A Gold Medal in two classes was awarded to Messrs. ANATOLE CORDONNIER & SON, of Baillieu: Canon Hall Muscat, Gros Colmar and Black Alicante were the finest bunches in the Show. M. H. WHIR showed a collection of late Grapes, for which he received a Gold Medal. Carnations were shown in fine form by several exhibitors.

THE BANQUET.

At mid-day the Officials, the Jury, and the members of the French N.C.S. Conference assembled at the Hotel d'Orsay for dinner. The Chair was taken by the Minister of Agriculture. There was a very large gathering, about 200 persons being present, and the proceedings were of the most cordial nature.

When the time arrived for toasts Mr. VIGER proposed the health of M. Emile Loubet, President of the French Republic, which was duly honoured.

He then proposed the toasts of the exhibitors, the French National Chrysanthemum Society, which had arranged to hold its annual conference in Paris in connection with the Paris Show, the members of the Jury and the Press coupling with his toast the names of M. MAXIME DE LA ROCHESTERIE, President of the French N.C.S., Mr. HARMAN PAYNE, the Baron SOLEMACHER and M. LUCIEN CHAURE of the *Moniteur d'Horticulture*. All these gentlemen replied in the order named. Immediately after the banquet the members proceeded to the Hall of the National Horticultural Society of France, in the rue de Grenelle, where the first meeting of the Conference was held at 3.30, and of which a short account will appear in a subsequent issue.

BIRMINGHAM & MIDLAND COUNTIES' CHRYSANTHEMUM, FRUIT & HORTICULTURAL.

NOVEMBER 7, 8, 9.—The forty-fifth annual Show of this flourishing Society was held in Bingley Hall, Birmingham, on the above dates, and although not quite so large as on some previous occasions, it may be regarded as a good average one.

Many of the specimen Chrysanthemum plants shown in several classes were not fully developed, and the prizes for these were divided between two exhibitors.

We observed a marked falling off in the classes for incurved flowers, as well as in those provided for Japanese blooms on boards. It is very pleasing to be able to record the last-mentioned circumstance.

Competition in the vase classes was weak in point of numbers, and the quality of flowers scarcely reached the Birmingham standard.

Hardy fruits, especially Apples, were represented by well-grown and highly coloured examples.

A silver challenge cup offered by Sir John Holder, Bart., President of the Society, for a collection of British grown fruit brought seven competitors, whose produce was remarkable for all-round excellence.

Tables decorated with Chrysanthemum flowers were quite a feature of the exhibition. Considerably more than half the space occupied by exhibits was allotted to honorary exhibitors, who showed superb displays of gathered fruit, vegetables, greenhouse plants, and cut flowers which compensated for the weakness in some of the competitive classes to which reference has already been made. The arrangements were not so complete as they might have been; for instance, the classes in certain cases were widely separated, and special cards indicating where particular classes were located could not be found, which caused the representatives of the Press unreasonable delay at a time when moments are most precious. It was a pity that such a magnificent collection of fruit as that staged by Mr. Goodacre should have been placed in an out-of-the-way corner amongst vegetables.

CHRYSANTHEMUMS.

For a group of Chrysanthemums in which quality of bloom, variety and general effect were to be the leading features, and for which a prize of £10 and a silver subscription challenge cup (to be held by the winner

during the ensuing year, and should he be successful in winning it a second time, to become his absolute property) was gained by Messrs. SANDFORD & Co., Hall Green, Birmingham, whose exhibit of well-grown flowers was artistically arranged and relieved with Bamboos, Palms, Codiceums and Grasses; 2nd, J. A. KENRICK, Esq., Berrow Court, Edgbaston (gr. Mr. A. Cryer), who had an almost equally meritorious display of plants, but which lost points in arrangement. Last year's first prize winner, J. WHITFIELD, Esq., Forest Row, Moseley (gr. Mr. W. Thomson), was placed third on this occasion.

For a group of plants covering less ground-space than the last-named, and arranged as grown, A. CLARKE, Esq., Hagley Road, Edgbaston (gr. Mr. J. Easom), won the 1st prize for a creditable display, and Mr. E. BURDEN, King's Heath, the 2nd, with a nice lot of flowers but arranged stiffly.

A new class provided for decorative varieties to be arranged as grown, in a space not exceeding 150 square feet, and for which a 1st prize of £4 was offered, only drew two competitors. Thinning was allowed, but not disbudding to single flowers. 1st, Messrs. SANDFORD & Co., Hall Green, Birmingham, with an effective arrangement; 2nd, Mr. C. H. HERBERT, Acocks Green.

SPECIMEN PLANTS.

For nine large flowering varieties of Chrysanthemum (Japanese excluded) dissimilar varieties, six Japanese varieties (dissimilar varieties), three Japanese varieties (dissimilar varieties), and one large flowering variety (Japanese excluded), E. MARTINEAU, Esq., West Hill, Edgbaston (gr. Mr. O. Brasier), and J. A. KENRICK, Esq. (gr. Mr. A. Cryer), won 1st and 2nd prizes respectively.

For one Japanese variety E. MARTINEAU, Esq. (gr. Mr. O. Brasier), was again awarded the 1st prize, and E. BURDEN the 2nd prize.

CUT BLOOMS (JAPANESE).

Only five exhibitors entered in the leading class for eight distinct varieties, five blooms of each with stems at least 18 inches long, to be shown in vases. The 1st prize of £5 10s. was won by H. O. LORD, Esq., Lilley Brook, Charlton Kings (gr. Mr. F. May). The best flowers were those of General Hutton, Miss A. Byron and Bessie Godfrey. 2nd, H. ROWE, Esq., Lunsdowne Crescent, Worcester (gr. Mr. W. J. Meadows), whose flowers of Madame P. Radaelli, Mafeking Hero, and General Hutton were fresh but rather small in size. 3rd, Rev. G. ARBUTHNOT, The Vicarage, Stratford-on-Avon (gr. Mr. H. Hygate).

The 1st prize for six distinct varieties, same conditions as in last-named class, was won by Lieut.-Col. BEECH, Brandon Hall, Coventry (gr. Mr. E. J. Brooks), with Mrs. G. Mileham, Bessie Godfrey, Guy Hamilton, J. H. Silsbury, F. S. Vallis, and Mrs. Clive Miller.

For four distinct varieties, R. BARNES, Esq., Wych Road, Malvern, took leading position, with J. H. WHEATLEY, Esq., Berkswell Hall, Coventry (gr. Mr. H. Westbury), following.

R. BARNES, Esq., was placed first for two distinct varieties, and F. E. MUNTZ, Esq., Umberslade Hall, Hockley Heath (gr. Mr. H. S. Foster), won the 2nd prize.

The 1st prizes for the best vase of five blooms of any white variety and for one vase containing the same number of flowers of any yellow variety went to H. O. LORD, Esq., Lilley Brook, Charlton Kings. F. E. MUNTZ, Esq., Umberslade Hall, Hockley Heath (gr. Mr. H. S. Foster), won the 2nd prizes in the same classes.

A prize of 15s. offered for six decorative varieties, six sprays in each vase, was awarded to Messrs. W. SANDFORD AND Co., of Hall Green, who were the only competitors. The varieties shown were Source d'Or, Mrs. H. J. Hampson, Mons. W. Holmes, Mad. M. Nonin, Mrs. J. Fletcher, and R. C. Radcliff.

BLOOMS ON BOARDS.

For twelve incurved varieties: The EARL OF HARRINGTON, Elvaston Castle, Derby (gr. Mr. J. H. Goodacre), was placed 1st, and Mrs. ARMFIELD, Edgbaston (gr. Mr. C. Batchelor), 2nd.

In a class for twelve blooms (six incurved and six Japanese) and in another for 24 blooms, (12 incurved and 12 Japanese), all to be grown within four miles of Stephenson Place, Birmingham: Messrs. W. SANDFORD AND Co. beat all comers.

These special prizes were offered by Messrs. W. Wells and Co., Earlswood, Redhill, Surrey, for the best flower of Chrysanthemum Mrs. W. Knox or Bessie Godfrey, to be shown with, at least, one foot of stem. 1st, Gold Medal and 10s.; 2nd, Silver Gilt Medal and 7s. 6d.; 3rd, Silver Medal and 5s.

The Judges awards were: 1st, Mrs. W. Knox, from Mr. W. IGGULDEN, Frome, Somerset; Bessie Godfrey, from H. O. LORD, Esq., Lilley Brook, Charlton Kings (gr. Mr. F. May); 3rd, Mrs. W. Knox, from the Donors of the prizes.

MISCELLANEOUS PLANTS AND FLOWERS (OPEN).

In the classes for single-flowered and double-flowered Chinese Primulas, J. A. KENRICK, Esq. (gr. Mr. A. Cryer), won 1st prize in each case.

Messrs. PERKINS AND SONS, Coventry, won 1st prize for a Bouquet in a competition limited to nurserymen; 2nd, Mr. R. WINTER, Birmingham; 3rd, Messrs. JOHN POPE AND SONS, King's Norton.

Nineteen dinner tables, each 8 feet by 4 feet, decorated with Chrysanthemum flowers, were inspected by the Judges, and after a very close contest Miss WHITE, of Acocks Green, was awarded 1st prize, and Miss A. DAVIS, Woolashill, Pershore, 2nd prize.

AMATEUR CLASSES.

J. A. KENRICK, Esq. (gr. Mr. A. Cryer), won 1st prize for Chinese Primulas and Cyclamen.

For twelve table plants in not fewer than six varieties, and for six table plants, distinct, W. MANNING, Esq., Dudley, took the lead.

Baskets of autumn tinted foliage and berries were received from ten competitors, and were greatly admired by visitors generally. Mr. T. JONES, of Ruabon, whose dainty basket composed of Ampelopsis Veitchii, Barberries, Privet Berries, Scarlet Oak and Larch received the premier award; 2nd, C. A. PALMER, Esq., Park Hill, Handsworth (gr. Mr. C. Thomas).

The best bouquet of Chrysanthemums was made by E. Darby, Esq., Selly Oak, and was composed of the variety Source d'Or. E. A. DAVIS, Esq., Woolashill, Pershore, beat nine competitors with an epergne of flowers for the dinner table.

FRUIT (OPEN).

In the class for a collection of British grown fruit, shown on a space of 40 square feet, the Earl of HARRINGTON, Elvaston Hall, Derby (gr. Mr. J. H. Goodacre), easily won the 1st prize, with one of the best contributions of choice fruit ever seen in Bingley Hall. Muscat Grapes, Peaches and Melons were very fine, and of Apples, the varieties King of Tomkins County, Washington, Gascoyne's Seedling, Cox's Pomona and American Mother were unusually good. 2nd, Mr. T. BARRATT, Mansfield Road, Nottingham. In this collection the Grapes were small and poor, and the Apples and Pears indifferently coloured. 3rd, The Earl of CARNARVON, Bretby Park, Burton-on-Trent (gr. Mr. J. Read).

A prize of £5 and a magnificent silver challenge cup, the latter kindly given by Sir John Holder, Bart. (who takes a practical interest in the promotion of British horticulture), were offered for a collection of British-grown hardy fruits to be grown by the exhibitor, and to occupy a table of 12 feet by 8 feet. The 1st prize was awarded to the Earl of CHESTERFIELD, Holme Lacy, Hereford (gr. Mr. W. Humphries), whose Apples and Pears were very handsome. J. CORBETT, Esq., Impney Hall, Droitwich (gr. Mr. F. Jordan), won 2nd prize. In this exhibit Apples appeared to be superior to those in the leading collection, but Pears were not so good. 3rd, Mr. J. BASHAM, Bassaleg, Newport, Monmouth.

In a class for six bunches of grapes in not fewer than three varieties (open), 1st prize Earl of HARRINGTON (gr. Mr. J. H. Goodacre); 2nd, G. W. FLEMING, Esq., Chilworth Manor, Romsey (gr. Mr. W. Mitchell); 3rd, Mrs. F. NEED, York House, Malvern (gr. Mr. J. Jones). The three best bunches of black Grapes came from G. W. FLEMING, Esq. (gr. Mr. W. Mitchell), and the same number of bunches of white Muscat Grapes were sent by the Earl of HARRINGTON (gr. Mr. J. H. Goodacre).

The Hon. T. F. HALSEY, Hemel Hempstead (gr. Mr. H. Folkes) had the best two bunches of white Grapes (Muscats excluded).

Liberal prizes were offered for dessert and cooking Apples.

VEGETABLES.

Vegetables were shown extensively and well. In a class for a collection of nine kinds, for which prizes offered by Messrs. Sutton and Sons, Reading, 12 competitors entered. 1st, Lord ALDENHAM, Elstree, Herts (gr. Mr. E. Beckett), with grand examples of Ailsa Craig Onions, Solid White Celery, Pritzetaker Leek and Perfection Tomatoes; 2nd, Mrs. DENISON, Little Gaddesden (gr. Mr. A. G. Gentle); 3rd, Mr. J. HUDSON, Mostyn Street, Leicester. In a collection of eight kinds, for which prizes were offered by Messrs. Webb and Sons Stourbridge. 1st prize, the Hon. T. F.

HALSEY, Esq., Hemel Hempstead (gr. Mr. H. Folkes); 2nd, W. C. ALSTON, Esq., Elmdon Hall (gr. Mr. C. Hayes); 3rd, the Earl of CARNARVON, Bretby Park, Burton-on-Trent (gr. Mr. J. Read).

For a collection of nine kinds, in which prizes were offered by Messrs. R. Smith & Co., Worcester. 1st, Mr. R. A. HORSPOOL, Ruabon; 2nd, Hon. T. F. HALSEY (gr. Mr. H. Folkes).

The Silver Challenge Bowl offered by Mr. Robert Sydenham, Birmingham, to the exhibitor who secured the greatest number of points in particular classes was won by Mr. R. A. HORSPOOL, Ruabon, with 37 points; and the Silver Challenge Bowl, open only to local exhibitors, was secured by Mr. E. DEAKIN, Hay Mills, with 39 points.

Notes on the non-competitive exhibits are held over until next issue.

ENQUIRIES.

CLOCHES.—Can any reader state where cloches similar to those used in France in the cultivation of lettuce may be obtained in this country? H. W.

PELARGONIUM ROSAMUND WRIGHT: S.A.—Can any reader give me information of this variety, as to the kind of foliage and flowers that distinguish it? W.

ANSWERS TO CORRESPONDENTS.

APPLES WITH MITES: M. J. W. The supposed mites are Aphid, Green-fly. They will do very little harm to the fruit now it has been gathered. Try brushing them off. They will, however, soon succumb with the advent of cold weather.

APPLE SHOOTS DISEASED: J. P. The older shoots are badly attacked with canker. This is the work of a fungus—Nectria ditissima—and generally occurs when the tree is injured by frost or any other condition that causes a wound. In your case the fungus has probably gained an entrance through the punctures made by the coccus of the American Blight, which exists in the younger branches you send. Cut away the affected portion and burn them, and cover the cut surfaces and wounds on the tree with tar.

BETLE AT THE ROOTS OF AURICULAS: F. W. Price. Bembidium pallidipes, a very pretty little species, usually found under stones at the borders of streams. It is not known to be destructive to plant life, but, as many of its allies are predaceous, it is just possible that this species has the same habits. It is extremely doubtful if it feeds upon aphides—we are of opinion that it does not do so.

BONE MEAL FOR PEACH TREE BORDER: Castle. Use raw bone meal and half-inch bones in sufficient quantity to be easily seen after they have been well mixed in the soil, when they are preferable to steamed bone flour.

CHRYSANTHEMUMS: A. E. T. If the plants are so infested with thrips, it would be very difficult to destroy the insects now the plants are in flower, or approaching that stage. Try a fumigation with one of the Vaporisers. Before raising fresh stock be careful to obtain clean cuttings, and afterwards keep the plants free from the pest whilst they are making growth next season.

EMPLOYMENT: T. C. B. You should write to the Superintendent of the Royal Horticultural Society's Gardens, Wisley, Surrey, and to the Superintendent of the Horticultural Department, Reading College, Reading, for particulars as to admission into these respective gardens. To be eligible for employment in the Royal Gardens, Kew, a candidate must have been employed for a period of five years in approved gardens or nurseries, and must not be less than 20 nor more than 25 years of age.

NAMES OF FRUITS: C. Best. 1, The Queen; 2, Graham's, or Kentish Deux Ans; 3, Bergamotte d'Esperen; 4, Triomphe Jodoigne; 5, Fondante de Malines; 6, Van Mons Leon Leclerc.—Harold Sadler. Bergamot This is a very old pear of first-rate quality.—F. Howell. Castle Major Apple.—Hawkes. 1, Reine de Canada, 2, Hanwell Souring.—F. Q. S. 1, Hoary Morning; 2, Jolly Beggar; 3, Beauty of Kent; 4, Rymer.—Enquirer. Jolly Beggar (delayed).—G. H. P. 1, Scarlet Golden Pippin; 2, Grenadier; 3, Waltham Abbey seedling.—Nut.—E. O. Corylus colurna; not uncommon.

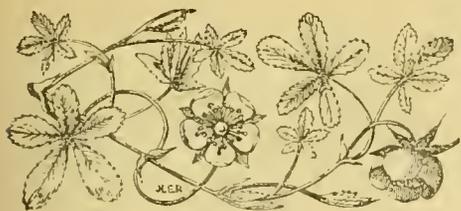
NAMES OF PLANTS: Gardener. Datura Stramonium (Thorn Apple).—H. E. 1, Sedum Sie-

boldi; 2, a species of Begonia; send a better specimen; 3, Eranthemum pulchellum; 4, Isoplepis gracilis.—H. G. 1, Garrya elliptica; 2, send a better specimen with leaves.—W. C., Petersfield. 1 and 2, Cattleya labiata; 3, Vanda tricolor; 4, Maxillaria grandiflora; 5, Aristolochia elegans; 6, Cypripedium and probably a bad form of C. x Dauthieri (barbatum x villosum).—C. B. 1, Adiantum capillus veneris; 2, Adiantum Waltoni; 3, Adiantum cuneatum mundulum; 4, Davallia bullata; 5, Asplenium bulbiferum.—A. B. Phytolacca decandra.—R. S. P. The fern is Davallia hirta cristata and the other Tydaea insignis.—T. M. 1, Cattleya Forbesi; 2, Cattleya bicolor; 3, Laelia longipes; 4, Oncidium barbatum; 5, Masdevallia simula; 6, Odontoglossum Lindleyanum.—A. H. P. We do not undertake to name varieties of Chrysanthemums. Send to one of the nurserymen who make a speciality of these flowers.

PLANTS FOR THE ROCKERY: A. Williams. The period for which you require flowering plants for the rockery, viz., July to November, is not one of the most plentiful, for you could not have selected any season when the number of suitable flowering plants is so limited. Most of the showy Alpine plants have completed their flowering in June. It may be that your knowledge of this fact has given rise to the enquiry now before us, and the desire to extend the period of flowering is certainly a good one. In July, August, and September the Campanulas will figure strongly. Of these C. pumila in variety, C. pulla, C. gárganica, and C. g. alba, C. turbinata, C. G. F. Wilson, C. carpatica, C. c. alba, C. c. Isabel, C. c. Riverslea, and C. c. White Star are the best. Very well suited to your damp situation are Nierembergia rivularis and Gentiana gelida, G. septemfida, and G. Andrewsii. Cordyalis capnoides and C. thalictrifolia both flower profusely, but, like Zauschneria californica, prefer a rather dry situation. Another good species, when planted in loam and old mortar rubble, is Androsace lanuginosa, whose flowering period is May to October: the plant is of trailing habit. During September the hardy Cyclamen, C. repandum (hederifolium) and C. cilicicum, are very beautiful and thrive best in a rather dry position where they will receive shelter. The first of these is worthy of general cultivation for its well-marked leafage when not in flower. Other good late-flowering subjects include: Ceratostigma plumbaginoides, formerly known as Plumbago Larpentæ, and Polygonum Brunonis (syn. P. affine), which is one of the most effective of late-flowering Alpine plants. The daisy-like flowered Erigeron mucronatum is very late and valuable on this account. Solidago virgaurea and Aster acris nana are 12 inches and 15 inches high respectively, but are good and showy withal. Sedum spectabile and its variety atro-purpureum are of the same height. Silene maritima fl. pl., Statice bellidifolia, and S. incana are also desirable. In September and October various Colchicums and the early autumn crocuses may be had in flower. The only really hardy Mesembryanthemum is M. uncinatum, with pink flowers, but it is only suited to a well-drained situation in an open and sunny position.

SHRINKAGE IN TIMBER: Pitt. Thoroughly air dried wood has usually lost about half its original green weight in the process of drying. This loss varies slightly with the species of tree, age of the timber, and the proportion of knot-wood it possesses; while the rate at which it has grown also hastens or retards the process of drying. The loss in the weight of pit props stacked in the open air during one summer of average dryness would probably be from 15 to 25 per cent., or about one-fifth of their green weight. This loss would be affected by the place or method of stacking, and also by the time of year at which the timber was cut—spring or summer cut wood drying faster than that cut in winter. During the winter the process of drying would be much slower.

COMMUNICATIONS RECEIVED.—R. A. R.—J. V. & Sons (many thanks).—A. B. R.—E. H. J.—L. R. L.—E. E. Rye.—N. B.—J. T.—W. E. B., Grenada.—H. V.—W. J. B.—C. H. P.—Dr. F., California.—Zola.—H. A. M.—W. J. S.—R. W. D.—T. G. K.—W. D. & Co.—Y. Z.—T. C.—T. C. (photograph).—C. T. D.—A. H. B.—Gardener.—A. B. W.—G. B. M.—H. M.—O. T.—R. P.—E. J. A.—F. G. B.—A. D.—J. H. G.—W. C.—R. H. C.—E. J. H.—E. M.—S. A.—E. H. J.—C. R.—H. W.—H. L.—E. W.—A. D. W.—S. M.—H. H.—M. Jarry Desloges, Paris.—A. Pettigrew (with thanks).



THE
Gardeners' Chronicle

No. 986.—SATURDAY, November 18, 1905.

CONTENTS.

Amelanchier canadensis	362	Societies—	
American Universities	361	Devon and Exeter	
Arbor day at Eynsford	361	Horticultural	367
Bamboos, flowering	362	Dumfriesshire and	
Bananas and mealy bug	362	Galloway Horticul-	
Berries, foliage, and		tural	366
dried grasses for		Gardeners' Debating	367
vases	369	Gloucestershire Chrys.	367
Books, notices of—		Guildford and District	
Sowerby's English		Chrys.	366
Botany	361	Hanley Chrys.	364
Carnations, winter-		Hereford Fruit and	
flowering	362	Chrys.	363
China, plant collecting		Linnean	364
in	355	Manchester and North	
Chrysanthemums	356	of England Orchid	363
Downie, the late John,		National Chrys.	361
memorial to	356	National Fruit Grow-	
Examinations in horti-		ers' Federation	364
culture	361	Paris Chrysanthemum	
Fitzroya patagonica	361	Congress	364
Forestry, Belgian	358	Royal Horticultural	361
Greenaway, Mr. W.,		(Scientific Com-	
presentation to	361	mittee)	362
Lamont, Mr. William,		Royal Botanic	369
presentation to	361	Sheffield Chrys.	367
Nerines, the culture of		Southend-on-Sea	
Nurseryman as Mayor	361	Chrys.	365
Obituary—		West of England	
Scalardis, Ales-		Chrys.	365
sandro	367	Soil, sterilising	361
Reydellet, M. de	367	Trees, transplanting of	363
Orphan Fund, Royal		Varieties, multiplication	
Gardeners'	362	of	361
Societies		Week's Work, the—	
Birmingham Chrysan-		Flower garden, the	358
themum	365	Fruits under glass	359
British Gardeners'		Hardy fruit garden	359
Association	363	Kitchen garden, the	359
Cardiff Chrys.	366	Orchid houses, the	368
Chesterfield Chrys.	366	Plants under glass	359
Chudleigh Chrys.	365	Rose-beds, the forma-	
Dartmouth Chrys.	364	tion of new	361

ILLUSTRATIONS.

Chrysanthemum, Miss Irene Cragg	363
Fruit, exhibit of, by the King's Acre Nursery Company	364
Memorial window erected to the late John Downie	356
Nerines, a group of	357
Transplanting of Trees, Diagrams illustrating	354
Vase containing Autumn Berries, Dried Foliage and Grasses (Supplementary Illustration)	

TRANSPLANTING.

THERE is no operation connected with the cultivation of trees and shrubs upon whose proper performance so much depends as transplanting. To its successful accomplishment not only the health, the proper placing, but the very presence of a plant in a garden are due. It may be said, indeed, that it is only the art of transplanting that makes a garden possible. In itself, however, it is an evil, although a very necessary one. With few exceptions a tree that is rightly placed and in proper soil is better left undisturbed at the root.

To understand the full importance of transplanting we have only to consider the typical root-system of a plant. If a tree or shrub old enough to have formed a woody stem be carefully taken from the ground and examined, it will be seen to have a root-system somewhat as follows: Proceeding from the stem there will be three, four, or perhaps more radiating main roots similar to the stem in character; these are, of course, developed from the first roots emitted by the seedling and become woody with age. Issuing from them are

other ramifications becoming smaller with each sub-division till at last they cease to be woody and are invested merely by thread-like organs. Now it is important to remember that the nutrition of the plant is entirely dependent on these hair-like roots. All the other portions of the root-system serve merely as conduits from them to the stem, and as supports and hold-fasts for the plant. In transplanting it will thus be seen how important it is that as many as possible of the finest rootlets should be preserved. It is to its power to renew these rootlets quickly, or to its capability of existing with little loss of vitality until they are renewed, that a plant bears transplanting well or badly. The finer and less woody portions of the root-system send out these fine fibres more freely and quickly than the older parts do. For this reason tiny seedlings may be transplanted with safety.

Plants like Rhododendrons, and others belonging to the Heath family, are easily transplanted because they produce an enormous quantity of fibrous roots close to the stem, enabling a much larger proportion of working roots to be removed with the soil than is possible with the majority of trees and shrubs.

The occasional transplantation that young trees undergo in all well-managed nurseries is practised for the same reason. The shortening of the roots caused by transplanting induces the production of a large quantity of fibrous roots close to the stem, which are thus easily removed with the plant. The tendency of the active fibrous roots is to spread out farther and farther away from the stem. Consequently the longer the tree remains undisturbed the greater the proportion of them that have, perforce, to be sacrificed in transplanting, and the greater is the risk involved in its ultimate removal.

A mistake that is frequently made by public bodies and others who have control of municipal parks and gardens is to purchase at cheap rates badly rooted trees and shrubs. Such plants, with their long, clean, vigorous shoots appear to the uninitiated to be preferable to the short-jointed, comparatively stunted growths in trees which the nurseryman has transplanted every few years, and for which, consequently, he requires a higher price. It is, however, a false economy to plant the cheaper stuff.

METHODS OF TRANSPLANTING.

The commonest and most simple method of transplanting is to take a plant out of the earth with as many of its roots as can conveniently be saved and to transfer it to its new quarters nearly or quite free from soil. Trees and shrubs to be sent long distances have necessarily to be dispatched in this state. For the great majority of young trees and shrubs with deciduous foliage this plan is perfectly safe. For evergreen shrubs that do not form close masses of roots, as Rhododendrons do, it is risky. And with both deciduous and evergreen plants the risk is increased the older they become and the longer they remain undisturbed.

Seedlings removed from seed-beds, boxes, etc., to more roomy quarters rarely fail if care be taken, but it has to be remembered that the younger and more succulent they are

the less able are they to withstand dryness, exposure and delay. Seedlings of important species or varieties have sometimes to be transplanted whilst they are growing, and in that case it is a good plan to lay them on damp moss or canvas as they are taken up. After they are replanted they should be watered thoroughly and occasionally sprinkled afterwards if they show signs of drooping. But with the seedlings of most deciduous hardy trees and shrubs it is best (and usually most convenient) to transplant them in the winter season at the same time as more fully grown ones.

It may here be said that the same methods have to be adopted, and the same principles govern, the transplanting of all trees and shrubs, no matter what their size may be—whether they are seedlings a few weeks old, or whether they have attained the largest size at which it is possible to transplant at all.

When the removal of a plant has to be done, it will be incumbent to decide whether a proportion of the soil in which it is growing shall be carried with it, or whether it shall be taken with naked roots only. Several circumstances will have to be considered, such as the nature of the plant, the cost and labour entailed, the distance to which the products have to be removed, etc. But, generally, it may be said that old plants, plants that have been long undisturbed, and most evergreens should be transplanted with "balls" of earth attached. On the other hand, young plants and most deciduous plants may be moved with naked roots.

Transplanting Without Soil.—In transplanting a tree or shrub without soil it has always to be borne in mind that the greater the proportion of fibrous roots that are retained the greater will be the degree of success. With small plants up to two or three years old it is, as a rule, sufficient to push the spade or fork beneath them and raise them bodily from the ground, and then shake them free of soil. But with older specimens more care and labour are needed. Lazy and incompetent workmen should never be allowed to take up, unsupervised, trees or shrubs whose roots have spread, say, 3 feet or more from the stem. With such specimens it is necessary to commence operations at a sufficient distance from the stem (proportionately, of course, to the size of the tree) by digging a trench; then, by working inwards towards the stem with spade and fork, the roots should be carefully shaken free from the soil. In the case of large specimens especially, the work should never be hurried. Roots that have been taken up may, if necessary, be kept fresh by bundling them loosely together and covering them with damp mats or canvas.

In replanting a tree that has been taken up in the way described, the first consideration should be to provide a hole wide enough to allow the roots to be spread out to their fullest extent. This applies to plants 3 inches high, but it is more and more important the larger they are. Roots should never be doubled back or made to fit the circumference of a hole. They should be placed in the earth as nearly as possible in the same relative positions as they were when taken out.

With regard to the depth at which trees should be planted, the accompanying diagram

will give a good idea of what is right (fig. 134). The mistake of too deep planting is nearly always made, especially where the soil has been deeply stirred, because insufficient allowance is made for settling. When the soil is light and sandy, the evil is not so great, but in heavy or clayey ground it is fatal to the well-doing of most trees and shrubs. After a transplanted tree has settled down to its permanent level, the soil should cover all the roots, but should only reach to the thickened base of the stem. A convincing lesson may be learnt in connection with this

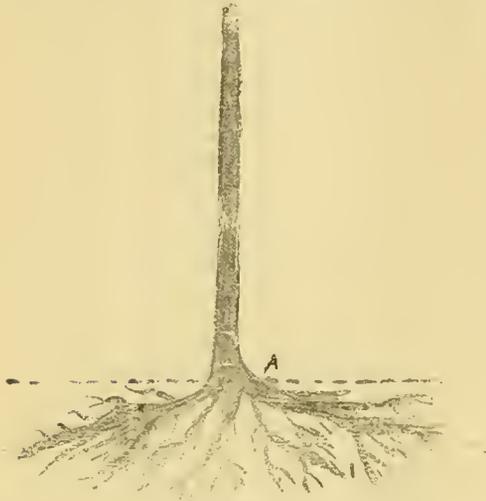


FIG. 134.—A. THE GROUND LEVEL, SHOWING AT WHAT DEPTH A TREE SHOULD BE PLANTED AFTER REMOVAL.

question of depth from naturally-sown trees. It will be noticed that there is always some tendency—and often it is a very marked one—for the base of the stem to be elevated above the surrounding ground.

When re-arranging the roots in their new quarters the aim should be to spread them out evenly in all directions. The soil placed in immediate contact with them, both above and below, should be well pulverised and worked well amongst them. A gentle shaking of the stem and main roots will often facilitate this, but the fingers should be used to embed the roots properly. Transplanting is not work for those who fear to soil their hands. When once the roots are well covered the soil may be trodden or rammed firmly about them, but the planter should bear in mind that the moister and heavier the soil, the less of this consolidating process will be needed, and *vice versa*. The mechanical effect of water on the roots of newly planted things is not generally recognised. Nothing causes the soil to settle about the roots so thoroughly. It is advisable always to give a thorough soaking, and this is most conveniently done before all the soil has been replaced. Soil should be in what gardeners term a "friable" condition at planting time.

Transplanting with Soil attached to the Roots.—We have now to turn to the consideration of the transplanting of trees and shrubs that are removed with a mass of earth about the roots. Whilst this is the most troublesome and costly method, it is the safest, and should always be adopted for large or particularly valuable specimens.

So far as the physiology of the plant is concerned, the operation presents no problems, for the aim is to transfer the plant with its root-environment practically undis-

turbed. Such difficulties as arise are chiefly mechanical. With the necessary appliances and mechanical skill, trees hundreds of years old can be transferred to new quarters, as witness the removal of the famous Yew in Buckland Churchyard, near Dover, by Mr. Barron in 1880. (See *Gardeners' Chronicle*, fig. 18.) But in the everyday routine of garden work one has rarely to deal with masses of soil weighing more than one ton. Below that there is every gradation down to the seedlings with an ounce or two of soil attached. Whatever the size may be, the object is the same, viz., to transfer *intact* the "ball" of earth with the roots that permeate it. With small plants the task is easy. The "ball" may be kept together with the hands; often it may be carried from one place to another on a spade or fork, or on a wheelbarrow or truck. But, the larger the "balls" are and the less matted become the roots, the more careful has the planter to be. Still, the main object is always the same, and that is to keep the "ball" from breaking. With Rhododendrons and such-like plants with dense masses of fibrous roots, it is often self-supporting, but usually artificial support is necessary. This is best afforded by shaping the "ball" to a cylindrical form and binding it together with two cords, one near the top, the other near the bottom. The "ball" should first be wrapped in stout canvas or matting, and a few thin boards should be inserted between it and the cords, so as to prevent the latter cutting into the soil. It is very important that the cords should be made as tight as possible. This is done by making a noose at one end and after threading the other end through the noose, giving a man's strength to the work. An instrument called the *tourniquet* is sometimes used for the purpose of tightening the cords.

After the soil has been supported in some such manner as that described, the ball has to be partially undermined, first on one side and then on the other, and a pair of stout lifting boards inserted. The plant is then ready to be lifted out of the hole and carried away to its new position. When the weight is greater than can be managed by a few men, mechanical appliances have to be used.

In the Royal Botanic Gardens at Kew the removal of plants weighing (with soil attached) 4 to 5 tons is commonly practised, and with not more than 3 per cent. of failures. Most of them are transplanted with the aid of machines.

There would be no profit in attempting to explain the working of these machines. An intelligent labourer can learn to use them in a very short time. But, as a matter of fact, the great majority of gardens have nothing of the kind, and the operator has to rely on such simple appliances as an ordinary establishment affords. It is not easy at once briefly and clearly to describe the transplanting of big trees. It is an operation in which a little experience counts for more than pages of print. But the following explanation is offered as an aid to the reader who has not had the opportunity of assisting at the removal of a heavy plant, and who has no transplanting machine at his disposal. A little thought should be given to the method of carrying out a plan of operation before the work is started.

To remove a plant weighing, say, from 1 ton to 4 tons, the following *material* is necessary: A stock of stout planks of various lengths and thicknesses, three or four wooden rollers, a lifting-jack, sufficient stout canvas (or matting), and soft cord to tie up the ball, and the ordinary garden-tools.

The following is the routine for transplanting a tree or shrub with a mass of soil 4 feet or more square. However the method may differ in detail it is sufficiently obvious in its chief points. The ball of earth must be supported and kept from breaking; it must be particularly undermined to admit of lifting planks being placed beneath it; it must be elevated sufficiently to allow of rollers being placed beneath the lifting planks and for planks to be inserted beneath the rollers for them to run on; it must then be hauled out of the hole and taken to its destination. Given in more detail, the routine is as follows:—

Tie up all branches that would be liable to be broken or interfere with the work.

Mark out the outline of the mass of soil to be moved. (This, of course, is a matter for individual judgment, and depends on the size and character of the tree.)

Dig out a working trench at each end, but for the present leave the sides intact. Then remove the soil carefully with a fork back to the marked outline so as to preserve the fibrous roots.

Now undermine the "ball" evenly from end to end exactly in the middle and at sufficient depth to preserve most of the roots. The tunnel should be large enough to admit two stout planks being pushed through. They

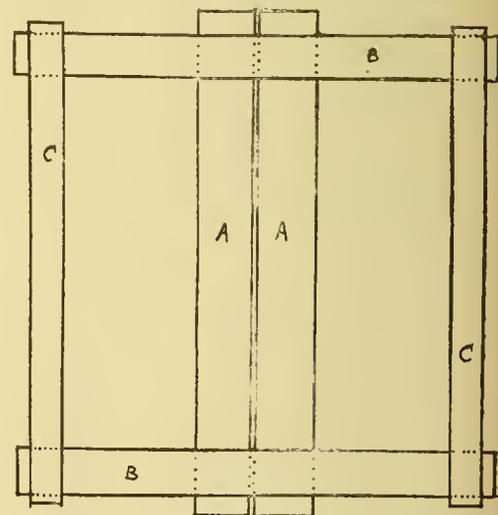


FIG. 135.—ARRANGEMENT OF PLANKS FOR PLACING BENEATH THE "BALL" OF A TREE WHEN LIFTING FOR TRANSPLANTING.

A. A.—Lifting planks. B. B.—Board at each end of "ball" resting on the lifting planks A. A. C. C.—Slighter boards at the sides.

are the lifting planks, and will have to bear the entire weight. They should project at least 6 inches from each end of the "ball." (See fig. 135. AA.)

Hitherto the sides have been left undisturbed because the soil can be more safely undermined, but the trench should now be carried round the whole of the "ball." Support it by binding cords and canvas in the way described above. Strong boards from 1½ to 2 inches thick should now be inserted one at each end of the ball, above (and resting on)

the lifting planks. No more soil than is just sufficient to make room for them should be removed. (See fig. 135, B.)

Above these again at each side must be inserted another board of similar or rather less thickness. (See fig. 135, C.)

The tree is now ready for removal either by a machine or by rolling. In the latter case the ball must be elevated by means of the lifting boards, using a jack for the purpose. It will have to be elevated sufficiently to allow of stout wooden rollers being placed beneath, also planks beneath the rollers for them to run on. An inclined plane has to be made, up which the mass can be hauled, and then taken to its destination.

In replanting the tree the processes described above are simply reversed, but the following reminders may be useful to beginners: The depth of the hole should be carefully made to correspond with the size of the "ball," and allowance must be made to correct any tilt the tree may have had, by making the hole deeper at one end or side than the other. A trench running along the hole from end to end must also be made to allow space for the lifting-boards to settle down and be easily extracted. W. J. Bean.

(To be continued.)

LEAVES FROM MY CHINESE NOTE-BOOK.

MOUNT OMI:—

(Continued from page 324.)

In ascending any high mountain, especially in these latitudes, it is always instructive and interesting to note the aggressiveness of the temperate flora. Mount Omi offers special facilities for observing this phenomenon. Everything looks so smiling around us that nature seems to be always at peace. However, in these days everyone is alive to the fact that a relentless war is being continually waged on all sides, and every inch of ground is contested. It is well, perhaps, plants cannot speak, or the groans around us would be too much for poor humanity! But to note the struggle. *Cornus macrophylla* manages to get nearly to the base. It is followed closely by several species of Maple, *Acer Davidi* being particularly prominent, and a Birch—*Betula alnoides* var. *pyrifolia*—several species of *Viburnum*, *Pyrus*, *Rubus*, and *Cerasus*, are also well to the fore. However, it is in the hinterland (4,500 to 5,500 feet) that the main battle between the zones is fought. This narrow belt is one of the richest I have been privileged to botanise in. Of plants peculiar to it, I may mention *Halesia hispida*, *Æsculus chinensis*, *Euptelea Davidiana*, *Pterocarya huphensis*, *Decaisnea Fargesii*, and the monotypic *Tetraetron sinense*, and *Davidia involucreata*. At least five species of Maple occur, viz., *Acer laetum* var. *tricaudatum*, *A. Francheti*, *A. Davidi*, *A. Oliverianum*, and *A. reticulatum*. There are many fine specimens of each of these species. I measured one tree of *Acer Oliverianum*, 50 feet high, girth 11 feet, five feet from the ground. *Akebia quinata* and several species of *Euonymus* and *Ilex* are common. The bulk of the larger evergreen Lauraceæ have given up the struggle, and evergreen Oak and *Castanopsis* have taken their place. Monkeys are common, and they seem very fond of the fruits of the *Decaisnea*, the seeds of which, however, I note they cannot digest.

Emerging suddenly from a dense thicket on to a narrow ridge 6,100 feet above the sea level, a magnificent view presents itself. Above, gigantic limestone cliffs, which ultimately culminate in the Golden Summit; below, valleys and plains filled with a dense cumulus of fleecy clouds, the higher mountain-peaks jutting out like rocky islands in the ocean; to the west, the

mighty snow-clad ranges of the Tibetan border, 80 miles distant as the crow flies, stretching north and south as far as the eye can range.

The contrast in the floral zones is equally startling and grand. Below, until lost in the clouds, one mass of rich sombre green; above, autumnal tints of every hue, from pale yellow to the richest crimson, relieved with clumps of magnificent Silver Fir; the whole bathed in sunlight, with the gentlest zephyr moving the air, and gorgeous butterflies flitting here and there seemingly unconscious of winter's near approach. The stillness and quiet are most impressive, broken only by the warbling of an occasional songster in some adjacent tree or bush. The unspeakably glorious autumnal tints are principally due to the foliage of numerous species of *Viburnum*, *Vitis*, *Pyrus*, and *Acer*, together with *Enkianthus himalaicus*, which outdoes them all in the richness of its crimson leaves.

At 6,200 feet *Cunninghamia sinensis* gives up the struggle, having fought gamely till it is reduced to the dimensions of an insignificant dwarf. *Abies Fargesii* now assumes the sway, and right royally does it deserve it, for no finer Silver Fir exists in all the Far East. Its large, handsome, bluish-black cones, at first erect, bend as they ripen to the horizontal. The temples on the higher parts of the mountain are constructed almost solely of this timber. It is known as the "Lêng-Sha" (Lêng meaning cold, and Sha is a general term for all Conifers save Pines). It occurs on the higher peaks of the Ta-Pa-shan range in Hupch, and is common on all the high mountains about here, and as far west as Tat'en-lu. On Mount Omi its lowest limit is 6,000 feet, where it is a miserable-looking plant; yet at 6,500 feet it is a handsome tree. However, it is between 8,500 and 10,000 feet that it reaches its maximum. In this belt it is a simple matter to find scores of trees 60 to 100 feet high, with a girth of 10 to 12 feet. *Tsuga chinensis* (Tich Sha = iron Sha) occurs but sparingly, and an occasional Yew, *Taxus baccata*, with a dwarf Juniper on the summit, completes the list of Conifers noted on the higher parts of the mountain. At 6,200 feet the ascent, never easy, becomes more and more difficult. Having at length ascended a formidable staircase of 800 feet, we were glad to rest at the temple of Hsi Hsiang Chüh. All the temples are situated in lovely and romantic spots, and none more so than this, which on one side abuts on the edge of a precipice, and is surrounded by a grove of Silver Fir on the other three.

While the priests regaled up with tea and sweets, we questioned them, and learned much that was curious and amusing. It seems that it was on this particular spot that P'u-hsien P'u-sa, in the form of an elephant, first alighted on the mountain and proceeded to wash his feet in a pool of water close by, the particular spot being marked to-day by a large cistern. Immediately on leaving the temple, another steep staircase was encountered; this over, we rested again. Onward once more. Another staircase, then a slight descent, and we meandered across a small plateau shelving away on one side with a vertical precipice on the other. Familiar deciduous trees and shrubs surrounded us, inviting investigation. *Pyrus microphylla* was particularly common, and its corymbs of white fruits very conspicuous. *Hydrangea scandens* here ascends to the tops of the highest trees. Several other species of *Hydrangea* grow epiphytically on the large trees, and so also do two or three species of *Pyrus*, including *P. Aucuparia*. Herbs were over for the season, though an occasional late flower of *Delphinium*, *Caltha* and *Epilobium angustifolium* enlivened the path. Three species of *Primula* (not in flower) occur hereabouts, viz., *P. ovalifolia*, *P. argutidens* and *P. Veitchii*.

Rhododendrons, the first bush of which I noted at 4,800 feet, were now fairly abundant, especially on the edge of the precipice. Altogether I noted thirteen species on this mountain.

However, compared with the sister mountain (Mount Wa), Mount Omi is poor in Rhododendrons, and the same remark applies to the genus *Primula*.

At 9,000 feet the worst staircase of all was encountered, and I was fairly exhausted when the top of it was reached (alt. 10,100 feet). Winter had laid his stern hand more heavily here, and most of the trees and shrubs were leafless. At 10,000 feet a dense scrub of dwarf Bamboo puts in an appearance, and increases as the summit is approached, until finally it crowds out nearly everything else.

From the top of the last staircase (10,100 feet) an easy path leads to the summit, which we reached just as the sun was setting behind the snow-clad ranges of the Tibetan border, illuminating everything in a wealth of gold for a moment or so before it finally disappeared.

A brief twilight, and a rapid fall in the thermometer caused us to hurry inside the temple to supper and an early bed, and to sleep a dreamless sleep.

A perfect night succeeded the day, and my hopes were high for the morrow. Alas! a thick fog and drizzle of rain is what I awoke to find. The terrible precipice in front and a more or less gradual shelving away behind are all one can make out of the lay of the land. To find out what the summit is really like a walk through the dense Bamboo scrub was undertaken, and resulted in a thorough drenching. The precipice extends in a more or less southerly direction for nearly two English miles, and the top of the mountain shelves away towards the west by quite an easy gradient. The summit is covered with dense scrub of dwarf Bamboo, with a few bushes of Willow, Birch, *Pyrus*, *Berberis*, *Rhododendron*, *Spiraea*, and *Rosa sericea* interspersed. Near watercourses the shrubs were particularly abundant. *Climacostoma montana* was abundant trailing over the shrubs. It was in fruit, but I had a vivid recollection of what it was like on the summit of Mount Wa last June. At least five species of Rhododendrons grow on the summit, but, judging from the paucity of seed-vessels, they flower but sparingly. Fine groves of the Silver Fir occur in places sheltered from the winds. In fully-exposed places the Silver Fir is very stunted, as likewise is the Juniper, which only occurs on the summit.

Around their temples the priests cultivate small patches with Cabbage, Turnips, Radish and Irish Potatoes. The drizzle of the morning developed into a heavy downpour, which continued unceasingly for three whole days, and on the fourth it still rained. However, having exhausted our provisions, we were forced to descend, and we and our baggage arrived drenched at our resting-place for the night. The next morning the sun shone. The rest of our stay we enjoyed splendid weather, and added quite a considerable number of things to our collection.

The cultivation of the Chinese medicine "Huang-lien" (*Coptis chinensis*) is largely carried on on this mountain; between 4,000 and 5,000 feet large areas are devoted to this plant. It is grown very thickly in beds some 4 feet wide shaded from the sun's rays by thick layers of brushwood supported on a frame-work 3 feet from the ground. It takes four or five years for the plants to mature from seeds. The flowers are small, yellow, and appear in late February and early March. It is the rhizome which is used in cases of ophthalmia and diseases of the eye generally.

At intervals in the ascent of Mount Omi stalls are passed on which the products of the mountain are exposed for sale. These consist chiefly of a few medicines, quills of the porcupine, crystals of felspar, sweet tea, and staves for pilgrims. These latter are made out of the wood of *Alnus nepalensis*, and are carved to represent fantastic dragons and Buddhas. Sweet tea is a peculiarity of Mount Omi, and is made from the leaves of *Viburnum phlebtrichum*. E. H. W.

(To be continued.)

JOHN DOWNIE.

THERE are still among us many who cherish collections of this eminent nurseryman, the head of the firm of Downie, Laird & Laing (all now gone before), and trading afterwards in his own name. He was a true Scot; kindly, cautious, upright, well informed—a florist of the old type.

It is only recently that a memorial window has been placed in the church at Corstorphine, by Mr. Downie's widow, who availed herself of the opportunity offered by the restoration of the church to erect this memorial of her husband and their son. The window tells its own tale. The work was designed and carried out by Mr. N. Bryson, of Edinburgh, who has long acted as Assistant Secretary to the Royal Caledonian Horticultural Society.

CHRYSANTHEMUMS.

HALF-POINT JUDGING.

I THINK few persons will agree with Mr. Lockie that half points in judging are not desirable. I find them extremely useful when judging Chrysanthemums, Fruit, and even Vegetables. A Chrysanthemum bloom may not receive justice with four points, but is not deserving of five points: the half point then is most useful. I think if Mr. Lockie were to practise the use of half points he would change his opinion. What is his remedy? I would ask. Because 70 points were allowed at Edinburgh in one class as a maximum number, that is no reason why half points are not desirable. The total of points as arranged in many schedules is much too high. Why is it necessary to allow 10 points for Muscats, and so on? Would not 7 points be sufficient? *E. Molynaux.*

CHRYSANTHEMUM "DAZZLER."

THIS is one of the newer varieties, and possibly is of no use for supplying large specimen blooms; but some bush plants of it which I saw a few days since at Belton Park bore a remarkable quantity of rich red-coloured flowers. The variety is similar to S. T. Wright when grown as a bush plant, but it flowers earlier, and is much brighter in colour, being of a shade that will have good effect when seen under artificial light. It is the best variety I have seen among these dark red flowers for growing in bush form. The specimen blooms at Belton Park were also remarkably fine, especially those of F. S. Vallis, which is one of the most graceful flowers when well grown. Miss E. Fulton was also very good. Mr. Emerton, the gardener, may be congratulated on his success, which would have placed him in the front rank at many of the shows if he had exhibited his flowers. *W. H. Divers, Belvoir Castle Gardens, Grantham.*

MRS. W. KNOX.

THIS new Japanese variety is a distinct addition to any collection, no matter how small. Full-sized blooms measure 9 inches in diameter, and are fully 6 inches in depth, having a well-built-up centre. The broad florets are semi-drooping, while in colour the flower is of cinnamon shade on a yellow base, with an edging and splashing of purple. A most attractive variety. *E. M.*

CHRYSANTHEMUMS AT LEIGH PARK, HAVANT.

THE name of Charles Penford would be of popular interest even had he raised no other Chrysanthemums than the famous Duchess of Sutherland in the Japanese section, and the incurved variety, Buttercup, so well shown by Mr. Higgs at the last Crystal Palace Show. But many other of our best Chrysanthemums do we owe to the skill of this indefatigable raiser.

Many readers of the *Gardeners' Chronicle* will be surprised to hear that Mr. Penford is an octogenarian, and has grown Chrysanthemums for well-nigh half a century. As an exhibitor he gained his laurels at the Southampton, Portsmouth, and Brighton Shows twenty years ago, when these Societies were among the leading ones of the day. Of late years, however, Mr. Penford has turned his attention more to the raising of seedlings, with results all exhibitors

copious notes of as parents for future generations.

Of varieties raised at Leigh Park, Duchess of Sutherland, Leigh Park Rival, Beauty of Leigh, Mrs. Chas. Penford, Florence Penford, Mrs. Guy Paget, Mrs. Chas. Beckett, Duchess of Bedford, and Miss Mona Davis are all well represented. They have, however, been so recently exhibited throughout the country that it is not necessary to repeat their descriptions here.

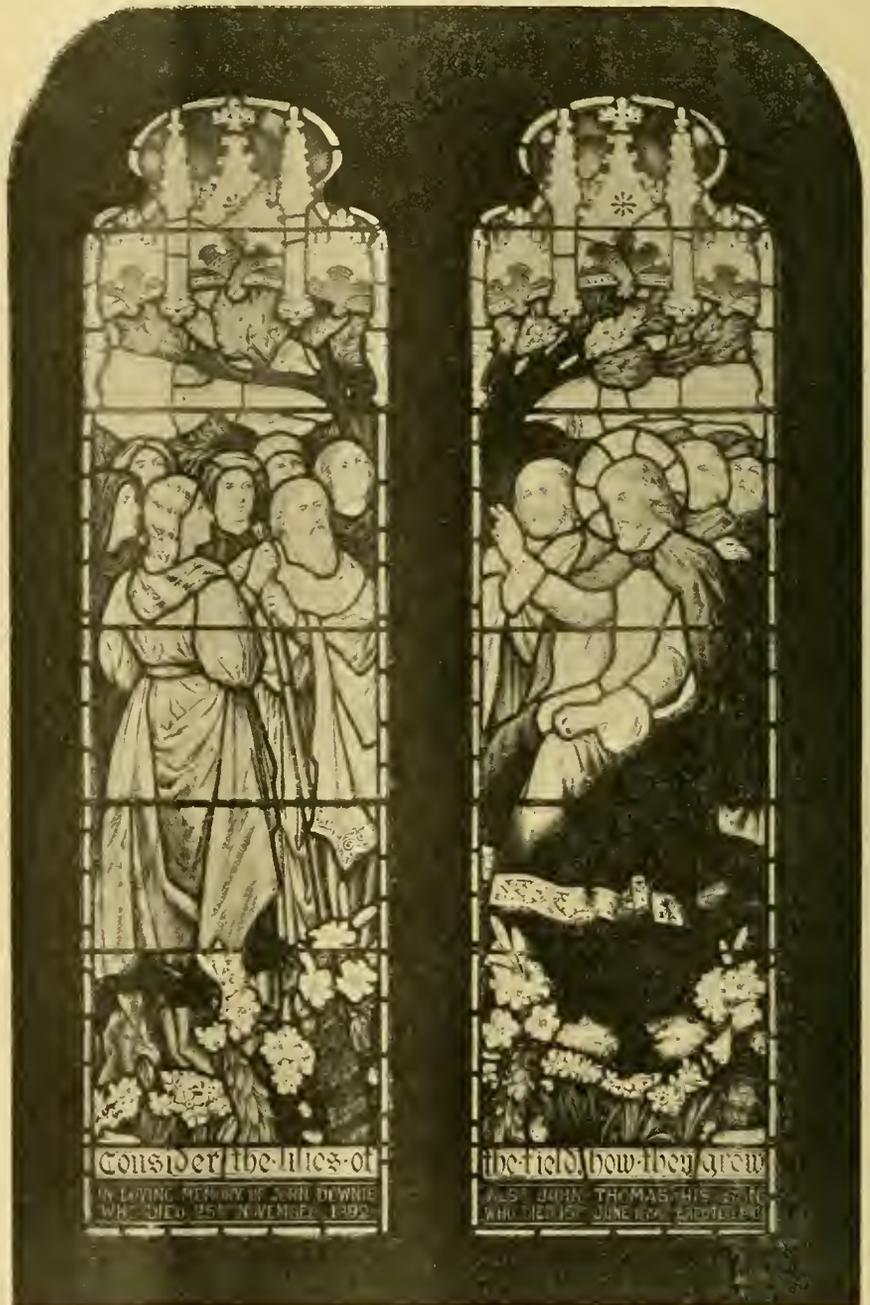


FIG. 136.—MEMORIAL WINDOW RECENTLY ERECTED TO THE MEMORY OF THE LATE JOHN DOWNIE.

of Chrysanthemums know well. Not very many of the old standard varieties are now grown at Leigh Park beyond those of Mr. Penford's own raising. A few novelties from other sources are tried every year, but unless they possess some characteristic, either in form, size, colour, or habit, likely to lead to improvements when crossed with other varieties, they are discarded. In the general collection I noted grand blooms of both F. S. Vallis and Mrs. F. W. Vallis, General Hutton, Mlle. R. Oberthur, Madame Anna Debons, W. A. Etherington, J. S. Silsbury, Chrysanthemiste Montigny, and Mlle. Paolo Radaelli, all of which Mr. Penford has

In the house devoted to novelties there are many examples of crossing, and among these named for distribution were those following:—Sidney Penford, a reddish terra-cotta coloured flower, after the style of Mrs. F. W. Vallis; very fine. The variety Mrs. R. Hooper Pearson was raised by Mr. Penford last year, but the stock passed to Mr. Norman Davis, who has obtained awards both from the National Chrysanthemum Society and the Royal Horticultural Society. The colour is a pleasing shade of lemon yellow, overlaid more or less with orange and bronze colour. Leigh Park Wonder is of immense size and of the deepest crimson colour.

The Mikado has rather narrow florets, but of great length, and of a velvety crimson. Miss M. Paget is pure golden yellow, like Duchess of Sutherland, but of different formation. W. Watson is also a very large flower, ground colour pale yellow, overlaid with bright red, and a plant of splendid dwarf habit. Another house is filled with seedlings of the current season. Here are represented many new and distinct types and colours. Many very promising varieties for the future were to be seen. Others, again, bore huge, mop-like blooms, altogether too coarse for distribution, but presenting some characteristics for further experiments. *Wanderer*.

THE NATIONAL CHRYSANTHEMUM SOCIETY'S SHOW.

At the recent Show held at the Crystal Palace there was more comment than formerly on the way the blooms were staged on the stands by some exhibitors in the Japanese classes. On p. 64 of the National Chrysanthemum Society's Annual Report it plainly states that all exhibitors must have their stands of a uniform size, viz., 7 inches high at back and 4 inches high at front for Japanese blooms, and, to add to the general effect, the blooms in the front row of a stand should be just clear of the board. I suggest that the members of the committee in attendance at the time the flowers are being staged should instruct the exhibitors to observe the rules of the Society. What is the use of making a rule that stands should be of a certain height, and yet allow some exhibitors to put their blooms on zinc tubes of extraordinary length? At the recent Show one set of stands in particular had the back row of flowers just 2 feet in height, measured from the table, and the front row was a great height from the boards, instead of the florets just clearing them. Another practice which is becoming fashionable is to peg the lengtheners which hold the water tubes at such an angle that the top part of the blooms show to the best advantage, and any defects of the lower petals on the large blooms are hidden, so that only judges with plenty of time at their disposal can properly gauge the merits of each individual flower that they are expected to scrutinize. I hope other members of the Society may have something to say on this subject. One very notable improvement was that in most cases a space was allowed between each set of stands, which is much better than having each exhibitor's stands staged closely against his neighbours'. *A Member of the N.C.S.*

THE CULTIVATION OF NERINES.

THESE beautiful bulbous plants were introduced into this country from the Cape as far back as the year 1767, and it is astonishing, considering how valuable they are for flowering in a cool plant-house during the late summer and early autumn that they are not more extensively cultivated. Among the best varieties in cultivation are *Nerine undulata*, *N. flexuosa*, *N. coruscans*, *N. Sarniensis* (the Guernsey Lily), and *N. Fothergillii*; but the best for all general purposes is a variety of the last-named—*N. Fothergillii* major.

In these gardens (Blenheim Palace) is a batch, numbering over 160 plants of this variety, recently in flower, the individual specimens occupying pots varying in size from 5½ inches to 10 inches in diameter, and containing from three to thirty bulbs in their respective sizes. The plants, which have produced close upon 1,000 flowering spikes this season, commenced blooming at about September 19, and were at their best condition during the second week of October. The flowers are developed in an umbel, on a moderately long flower stalk, and average from ten to sixteen individual flowers on an inflorescence, according to the length of the bulb. The colour is a brilliant shade of orange-scarlet. The accompanying illustration (fig 137), affords some idea of the splendid effect produced by a group of these flowers. At

this season of the year, when flowers of good quality are scarce, their value is readily apparent especially to cultivators who are required to furnish plants extensively for decorative purposes in the residence. As pot-plants for embellishing rooms, brightening the conservatory, or for utilising in groups, they are well adapted, while for table decoration, relieved with fronds of *Nephrolepis* fern, or with spikes of *Eulalia*, they are admirably suited.

One specimen plant here carried twenty-five flowering spikes with an average number of twelve flowers to a spike. This plant is growing in a 10-inch pot and has over thirty bulbs.

With the exception of the above the best specimen I have seen, taking a bulb average, was one grown by Mr. John Crook, Forde Abbey Gardens,

into larger-sized pots, or for dividing thoroughly established plants, is about the third week in August; in either case the plants should receive a thorough soaking of water before operating. Nerines are similar to *Vallotas* in that they resent frequent shifting at the roots, and they remain with advantage for years undisturbed in the same pots. They produce new bulbs very quickly, and this fact should be borne in mind when potting, and a suitable sized pot allowed. Thus, plants from a 5½-inch pot should be shifted into one measuring 8½ inches in diameter. When potting divided plants select the largest bulbs and plant these by themselves, pressing the soil about them firmly with the fingers. Keep the bulbs well up to the surface of the soil, and, providing the soil is in a moist condition, they will require no water for some time after

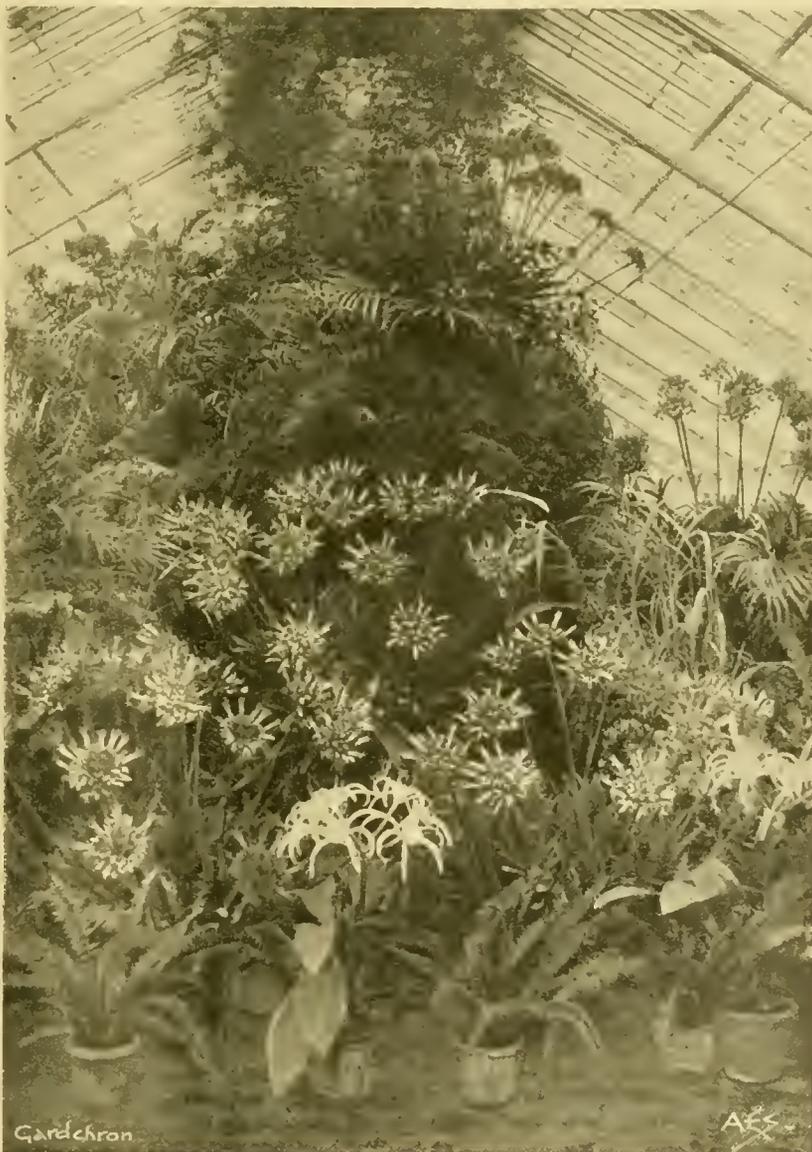


FIG. 137.—GROUP OF NERINES IN BLENHEIM PALACE GARDENS.

Chard. It was growing in a 9-inch pot, and had eleven bulbs, of which ten had developed flowering spikes that averaged thirteen flowers to the umbel; some of the larger spikes carried eighteen flowers. *N. undulata* was also flowering well with Mr. Crook.

A few remarks on the culture of these plants may be of interest. The most suitable compost for Nerines is a good, strong, fibrous loam, with which is incorporated sand, adding about half a peck of charcoal or crushed bones to each barrowful of loam. Nothing further is required, providing the loam is of good quality, but if it is not the addition of a little dried cow dung will be beneficial. The most suitable time for shifting

planting. A slight spraying occasionally over and about the plants will suffice. Afford shade when necessary, and admit air freely, as a too moist and close atmosphere in the plant-house will induce the foliage to push rapidly, thereby causing weak growth. Place the plants in a position that is close to the glass. During the growing season they should be kept as cool as possible, but frost must be excluded. By the end of April the plants will show signs of resting, when water must be withheld gradually, as the proper ripening of the bulb forms one of the chief secrets of success. Toward the end of May water should be withheld altogether, and the plants allowed full exposure to the sun, and the freest circulation of

air possible; in fact, a thorough roasting is what they require. To sum up, Nerines require but little heat in their growing season, are free flowering subjects, remain for years without disturbance, and for practically three months in the year require no attention whatever. I may add I have never seen them attacked by any insect p.st. *Parvo*.

FORESTRY.

BELGIAN FORESTRY.

(Concluded from page 308.)

Financial Results—According to the figures given to the members of the Royal English Arboricultural Society the prices obtained for timber and the yield from the various kinds of land under forest are remarkably good. Beech, for instance, which is often difficult to sell at any price with us, sells in most parts of Belgium at over rs. per cubic foot when of fine quality; while the best class of timber goes as high as rs. 6d., and this in the forest itself. In the case of Oak there seemed to be less difference between the prices of the two countries, the quality of much of the Belgian timber being very high.

Spruce and Scotch Pine, being sold mostly for pitwood, are more difficult to calculate per cubic foot, but apparently made about 4d., which is much about our own figure for similar stuff where a market exists for it at all. With the exception of Beech, therefore, prices in both countries may be considered much the same. When one comes to consider the yield per acre, however, it is apparent that the Belgians can surpass us, owing, in great measure, to their superior climate, the larger areas devoted to timber, the few species grown, and the cheaper railway rates which prevail throughout the country. As regards climate, it was apparent that the rate of growth of all species was much more rapid than that seen, say, north of the Midlands. In the Mirwart domain, the forests of which have been managed by Dr. Schlich for some years past, Scotch Pine of about thirty years' growth was seen, which was from sixty to seventy feet high. It was certainly growing in ground better than that usually associated with the cultivation of this tree here; but, after making every allowance for that fact, it was evident that it would be extremely difficult to find as fast growing a crop in many parts of England. Not far from St. Hubart a crop of Spruce was pointed out about thirty years of age, which was said to be worth as many pounds per acre. This crop was being cleared, and it was stated that the ground before planting was worth practically nothing; but after clearing, root grubbing, &c., it could be let at something like 24s. per acre for agricultural purposes. Whether this was only a temporary rent for what may be termed the accumulated fertility of the soil, or a permanent increase in value, was not quite clear, but allowing for any reasonable reduction being made in the figures given, it would appear that climate compensates for soil fertility to a much greater extent than would be the case with us.

VALUE OF LARGE PLANTATIONS.

But of equal importance with climate in giving good returns must be reckoned the great advantage of growing one species of timber in large masses. This point cannot be too strongly impressed upon those who plant for profit. The miserable returns made by small woods are not wholly connected with the greater expenses of growing the timber, but are quite as much due to the small and insignificant quantity it is in the power of the owner to offer at any one time. With timber of low value per cubic foot this is especially the case, for a charge of 2d. or 3d. per cubic foot for haulage, &c., in timber worth not more than 5d. or 6d. when delivered, does not enable the timber merchant to handle small quantities with any advantage to himself or the

grower from whom he buys it. In the case of valuable timber, such as Larch, Oak or Ash, small quantities are more saleable, as there is a wider margin for profit, and it is only such kinds of timber that can be profitably grown in small woods or in small quantities.

RAILWAY RATES.

The question of railway rates is a complicated one, and much might be written about it which cannot be said here. But there can be little doubt that Continental countries are able to convey their produce by rail at a much cheaper rate than is possible at present on British railways. It is a well-known fact that foreign timber is given an enormous advantage over British timber even in this country, although the railway companies assert that no preference is shown the former. There is probably a good deal to be said on both sides, but there can be little doubt that large quantities, whether it be timber or anything else, economise handling and transit, and it is difficult to understand how the miserable samples which are often seen on railway sidings and trucks can ever pay for the cost of carting and loading, leave alone that of freight.

GOVERNMENT ATTITUDE.

In concluding these few notes on the comparison between British and Belgian forestry, not altogether to the advantage of the former, it may be permissible to contrast, once more, the attitude of the Belgian Government toward's forestry and that of our own. It has often been urged that Great Britain depends so much upon those immense industries connected with coal and iron that she can afford to neglect a slow-paying industry such as forestry, which can have but an insignificant influence upon the prosperity of the country as a whole. Then, again, it has been said that our hill ranges do not need a forest covering in the same way that precipitous mountain sides require it. But the same might be equally as truly said of Belgium, which, for its size, is far more industrial than Great Britain, equally adapted for the importation of foreign produce, and does not require forests for soil protection or climatic considerations to a greater extent than this country. Yet if Belgium can spend from £20,000 to £30,000 in reclaiming her waste lands, one would think Great Britain might do as much, if not more, without seriously imperilling her financial position, or taxing unduly her resources. Time has proved, one would think, that the private landowner will not, or cannot, take up the work of waste land afforestation on a large scale, and that if it is to be done at all it must be done *pro bono publico* by the State. It might, at any rate, be expected that the Crown woodlands of Great Britain would be as well managed as those of Belgium. Whether they are so or not may be a matter of opinion, but facts speak for themselves. *A. C. Forbes.*

The Week's Work.

THE ORCHID HOUSES.

By W. H. YOUNG, Orchid Grower to Sir F. WIGAN, Bt.,
Clare Lawn, East Sheen, S.W.

Phalenopsis.—The process of leaf formation is completed, and most of the showy species are now developing their flower spikes. If the plants are suspended it will be necessary to lower them as the spikes continue to elongate, otherwise they would touch the glass. As much atmospheric moisture is maintained in the structure where these plants are growing, permanent saturation of the rooting medium would, if insisted upon, cause harm to the succulent leaves. Superfluous moss should be picked or trimmed off, so that an excess of moisture may not be retained around the crown of the plants, and the affording of water should be by means of the finger tips, when dipping would afford an over-abundance. Fluctuations of temperature must be avoided as much as possible, allowing a range of variation equal to 8 or 10 degrees, when temperatures outside are at the extremes

during day or night. When it becomes necessary to heat the pipes to an extraordinary degree to procure a temperature of 70°, it is preferable to be satisfied with a much lower temperature, at the same time keeping the plants and surrounding atmosphere drier. A temperature of 58° early in the morning during severe weather will cause no harm if at the same time the atmosphere is somewhat dry; otherwise, one of 62-3° would be preferable. The flower spikes should not be pinched from weak plants until the buds are developing, or a second spike will be produced.

Pleiones.—These deciduous Orchids need but little space for their cultivation, which is easy providing a few simple cultural details are observed. The floral scapes are developed from the young growths, which appear soon after the parent pseudo bulbs attain their full dimensions, and the flowers push up soon after the leaves have fallen away. These young growths make steady progress throughout the winter months, and early in their career new roots are projected, hence the necessary re-potting should be done as soon as the flowers have past, that the roots may enter at once into the new material. The most suitable receptacles for them are pans which measure from eight to ten inches in diameter, and four to five inches in depth. These should be made fully two-thirds full with drainage material. The compost we use here consists of one-third each of peat, fibrous loam, and sphagnum moss, adding a good sprinkling of coarse silver sand, small crocks, and a dusting of dried cow dung. These ingredients should be mixed well together, and be made as warm as the atmosphere of the house before the work of re-potting is commenced. Soon after the flowers have faded, shake the pseudo bulbs free of the old materials, pick off the membranous covering, but retain the old roots, as they are useful together with some sphagnum moss in forming a small "ball" to aid in the potting operation. The pans being crocked, place a layer of rough moss over the drainage material, and proceed to fill in with the prepared mixture, so fixing the flattened pseudo bulbs evenly and regularly in the mixture that the young growths will have room to develop, without crowding each other, and so firmly that ordinary handling will not dislocate them. The centre should be slightly raised above the level of the pot rim.

Position and Treatment.—The potting operation being finished, the pans containing *P. maculata* should be given a position near to the roof glass in the coolest part of a Cattleya house, and *P. lagenaria*, *P. præcox*, *P. Wallichii*, and *P. Reichenbachiana*, a similar position in a cool intermediate compartment. No water should be applied to the roots for fully six weeks after re-potting, but at the expiration of that period immerse each pan to the rim in a pail of tepid rain-water, so placing the thumbs that the compost will not rise out of the pans. Following this another similar period should elapse before water is again afforded, but afterwards more frequent applications will be needed, if care is exercised to avoid over-saturation of the roots during the early stages of growth. As growth advances and root action becomes vigorous, copious supplies will be essential, until the pseudo bulbs are nearing completion and the leaves decaying.

Pleione humilis does not flower until the end of February, remaining dormant through the winter, consequently nothing should be done with this until the flowers are over. The pans may be placed with the other cool-growing species, and the roots will need no water until they are re-potted.

THE FLOWER GARDEN.

By W. A. MILLER, Gardener to LORD HENRY C. BENTINCK,
M.P., Underley Hall, Westmoreland.

Lawns must be frequently swept and rolled, and the present is a good time to level any portions that are uneven. In order to do this, cut the turf into pieces of convenient size and lift them evenly. If possible, carry the turves off and spread them on bare ground, as they spoil if stacked up together for any length of time. Make the ground level and firm, and when this has been done relay the turf and beat it level. Lawns that are mossy should be raked heavily that the moss may be dragged out. Then spread on a

mixture composed of two parts rich soil and one part powdered lime. If the grass is thin and the lawn bare, harrow over the surface and apply a dressing of lawn manure mixed with fine loam. Sulphate of ammonia is sometimes mixed with soil and strewn on lawns to destroy fleshy and broad leaved weeds.

Creefters and other Wall Plants.—On the approach of severe weather, protection should be afforded these by using mats or branches of Spruce Fir tied firmly to the wall. In cold districts plants such as *Abelia rupestris*, *Buddleias*, *Ceanothuses*, *Desfontainia spinosa*, *Magnolia grandiflora*, *Smilax aspera*, etc., require branch protection and a mulching over the roots.

Tender Trees and Shrubs.—*Bamboos*: Mulch these well with littery manure, the richer the better, because large plants of Bamboo are the most decorative. *Paulownia imperialis* and *Ailanthus glandulosa* should be protected about the roots and stem in the event of hard frost occurring.

Alpine Plants.—*Androsace lanuginosa* and *A. sarmentosa* require shelter by having rocks so placed that heavy rains and snow will be warded off the woolly foliage. The rosettes of *A. sarmentosa* should be pegged to prevent them from being blown about by wind. Let *Morisia hypogæa* be afforded a top-dressing with a compost of leaf mould, loam and grit, which should be worked well underneath the foliage. Keep *Mossotis rupicola* and *Onosma tauricum* as dry as possible during its period of rest. Examine *Saxifragas*, *Sempervivums*, and other plants, and replace the soil if it has got washed away from the roots. Keep all plants clear of falling leaves.

Bedding Plants in Frames.—*Calceolarias*, *Violas*, *Phloxes*, *Pentstemons*, etc., having rooted, may be afforded air on all favourable occasions. Remove dead leaves from the plants and any flowers that may show. Stir the surface of the sand to prevent moss growing and aid aeration. *Calceolarias* are susceptible to injury by frost, therefore coverings, mats, or tarpaulins should be in readiness for their protection.

THE HARDY FRUIT GARDEN.

By W. H. CLARKE, Gardener to Sir WILLIAM FLOWDEN, Aston Rowant House, Oxon.

The Planting of Fruit Trees.—Continue this work whenever the weather is suitable, but when the ground is in a very wet condition it is better to suspend it for a time, as the necessary solidification of the soil about the roots is detrimental if carried out under such circumstances.

Cherry Trees require a good loamy soil, free from stagnant moisture, and of a calcareous and gritty nature. In planting young trees select those which are free from "gumming" and that have no visible injury upon bark or branch. Mix plenty of mortar rubble and lime into the soil that is placed about the roots, and cut back any roots which have a tendency to grow in a downward direction. Manure, whether in a fresh condition or rotten, is injurious to the Cherry, but burnt refuse or leaf mould may be used in its place. Make the soil firm about the roots, and in the case of standard or other trees needing support affix suitable stakes at the time of planting. Varieties of sweet Cherries growing on walls should be planted 15 feet apart, and Morellos at 20 feet apart. Orchard standards require a distance of 25 to 30 feet; bushes and pyramidal trees, 12 to 15 feet.

Mahaleb and Cherry Stocks.—Cordons, bushes, and pyramids of the Duke class, also those varieties having the Morello race in them, grow and fruit more freely on the Mahaleb stock than on the common Cherry stock, especially so where the soil is shallow. Trees on this stock that have their roots pruned when this is necessary soon become very fruitful, and they can be grown in a much less space than other trees.

Selection of Varieties.—Those for orchard standards should be chosen for their hardiness, such are Kentish Bigarreau, Bigarreau Napoleon, Emperor Francis, Bigarreau de Schrecken, St. Margarets, and Early Rivers. Other varieties suitable for cultivation against walls or as pyramids include Governor Wood, Black Tartarian, Guigne de Annonay (on wall), Noble, Frogmore Early, May Duke, Morello, and Reine Hortense for culinary purposes. We grow many more in these gardens, but I have only mentioned those likely to prove most reliable.

Pruning.—Cherry trees must not be pruned

more than can be avoided. If a tree is growing too strong, let the roots be pruned rather than the branches. The fruit is produced on spurs and on wood made in the preceding year. If the spurs are too long they should be shortened to an inch of their base, and the leading shoots on young trees should be shortened back as may be required to induce the formation of other shoots for the furnishing of the bush or pyramid. Where young growths can be laid in on older trees to fill a bare wall space this should be done.

PLANTS UNDER GLASS.

By A. BELLOCK, Gardener to E. J. WYTHES, Esq., Copped Hall, Epping, Essex.

Tree Carnations.—From now onward for several weeks to come is a most critical time for the "tree" or perpetual flowering Carnation. Do not lose a favourable opportunity to afford structures containing these plants a little outside air. In the case of those plants that are developing their flowers a temperature of 55° should be maintained at night, and a rise of 5° allowed during the day. Air may be admitted on bright sunny days, and just sufficient to dispel excessive damp and prevent the atmosphere becoming close and unhealthy. Syringe the plants with clear water on favourable occasions, but not when the atmospheric conditions outside are such that the plants cannot become dry before darkness sets in. Apart from America and Mrs. S. J. Brookes, which I have mentioned in previous calendars as being particularly good and reliable varieties for flowering early in autumn and winter, the following varieties, Fair Maid, C. J. Thornton, and Enchantress, are also worthy to be grown. From cuttings rooted early in the spring of this year we are cutting well developed flowers of good form; the plants themselves are strong and free from disease, and I am favourably impressed with the adaptability of these varieties for early forcing. Cuttings, if obtainable, will easily make roots if inserted at the present time in small pots, which should be plunged to the rims in cocoanut fibre or fine ashes in handlights placed on a stage near the light where the temperature does not exceed 60°. Plants which are intended to bloom early in the spring must not be coddled at this stage, but the use of artificial heat is essential on dark, dull days, to prevent the atmosphere becoming too moist, and if a free circulation of air is allowed to pass among the plants, there will be no danger of them becoming drawn or weakly. On bright days admit full top and side ventilation.

Souvenir de la Malmaison Varieties.—Where artificial heat is necessary in order to obtain early flowers, an occasional inspection of the plants should be made for red spider, which must be removed by the use of a syringe and clear water. These plants should be afforded more moisture at the roots and between the pots and about the stages than is beneficial for plants that are growing naturally at this time of the year, which should be treated strictly according to my remarks in the calendar for March 11.

Lilium candidum.—The first batch of bulbs for flowering from February onward should be introduced to moderate heat. (See my calendar for August 12.)

FRUITS UNDER GLASS.

By F. JORDAN, Gardener to Dr. CORBET, Inipney Hall Gardens, Droitwich.

Strawberry Plants in Pots should now be removed to pits or frames for the winter, as they need protection from heavy rains and severe frosts. The lights need only be placed on the frames when the above adverse conditions prevail. If the pots can be plunged up to their rims in a bed of ashes it will be better, even after their removal to the frames. Severe frosts have sometimes the effect of destroying some of the tender roots, and many failures may be attributed to this cause. The variety Royal Sovereign, being tender, suffers most, and therefore needs a little extra care in storing. In gardens where pits or frames cannot be had for this purpose the pots had better be plunged up to their rims in ashes out of doors, leaving sufficient space between the beds so that bracken or a light covering of straw can be quickly placed over the plants in severe weather. Unless a few fruits are wanted very early the first batch of plants need not be introduced to heat before the beginning of December;

but plants should be selected for this purpose before they are stored, choosing those with hard, red coloured, single crowns as most likely to respond to moderate forcing. If there are several thousand plants to be forced, a special house is necessary, in which the plants can be placed near to the glass. In such a house the forcing can be done slowly and draughts of cold air prevented. In many gardens no such provision is made, and the first plants are introduced into the Early I each house as soon as this house is closed for forcing. Take every care to clear the drainage, wash the pots, and make the plants clean from red spider before they are placed in the houses. The plants will require to be carefully watered, and they should be syringed regularly, but not excessively. Let the temperature at night be 40° to 45°, and ventilate the structure freely in favourable weather. In mild weather, when no fire-heat may be necessary throughout the night, a little hot water should be turned into the pipes early in the morning before water is afforded the plants.

Tomatos.—Plants in full bearing will now require a warm and moderately dry atmosphere, with a temperature at night of 60° in mild weather, employing a little ventilation on all favourable occasions. Pollinate the flowers daily, and keep all side growths removed. Apply a top-dressing to the plants as may be necessary, and before they show signs of becoming exhausted. Pay careful attention to the affording of water and see that the plants are kept clean and in a good growing condition.

THE KITCHEN GARDEN.

By W. FYEE, Gardener to Lady WANTAGE, Lockinge Park, Wantage, Berks.

Globe Artichokes.—Having removed the surface soil down to the first roots and applied a heavy mulching of good farm-yard manure, we have removed the suckers to a place of safety for the winter, and are now placing around the plants good mounds of cinder ashes which we have found to be the most suitable material for protecting the plants during winter. There need be little difficulty in the cultivation of this vegetable, but at the same time there are few vegetables that show more clearly the better return obtained by the painstaking grower. The fleshy scales surrounding the flower head are the only edible portion, and these are almost useless unless produced under high cultivation. Preservation from injury during winter, and a proper bleaching of the crowns, are the principal points to be observed. The best variety is Green Globe, and the proper means of increasing the stock is by lifting the suckers during the months of October and November.

Endive.—Young plants of Endive are perfectly hardy, but when the hearts of the plants begin to develop they are soon injured by sharp frosts. Any plants that are three parts grown should be lifted and placed in frames, houses, or boxes. Boxes are convenient for containing a few roots, to be placed in darkness, as required, to bleach.

Lettuce.—It will now be apparent that upon the great majority of soils there is much advantage to be gained by making successional sowings during August and September. Large plants seldom or never pass through the winter satisfactorily. If the plants are but large enough to handle when they are transplanted, the more likely will they be to pass safely through the winter, whether they are in frames or in the open ground. Take care of the plants still remaining in the seed beds, for these may be of much value for use early in the year. Afford free ventilation to plants in frames and prevent dampness by frequently stirring the surface of the ground and by the removal of all decaying matter.

Potatos.—It may appear somewhat premature to think of planting Potatos at this date, but if a supply of new tubers is required during March and April attention must now be given to the sets, and the work of planting cannot be long delayed. If early varieties are stored too thickly, or in too warm an atmosphere, the tubers will soon show signs of growth. Choose the healthiest-looking tubers for early planting, standing them on end in shallow trays or boxes in a light, well-ventilated structure, and when the "eyes" begin to sprout no difficulty need be experienced in the selection of one or two of the strongest and best situated at the upper end of the tuber. In order to be successful commence to force very slowly, whether the sets are planted in pots or frames. The object should be to secure short and sturdy growths.

APPOINTMENTS FOR THE ENSUING WEEK.

SATURDAY, Nov. 18	Cheetham Hill, Broughton, and Crumpsall Flower Show.
TUESDAY, Nov. 21	Royal Horticultural Society's Committee meet. Leeds Paxton Society's Exhibition (2 days). Meeting of Council of the British Gardeners' Association at Royal Horticultural Hall, 4 p.m.
WEDNESDAY, Nov. 22	Woolton and District Chrysanthemum Show.
THURSDAY, Nov. 23	National Potato Society's Exhibition in the Royal Horticultural Hall, Westminster (2 days).
FRIDAY, Nov. 24	Royal Botanic Society meet.
SATURDAY, Nov. 25	Morley and District Paxton Chrysanthemum Society's Show.

ACTUAL TEMPERATURES:—

LONDON.—Wednesday, Nov. 15 (6 P.M.). Max. 44°; Min. 36°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—Thursday, Nov. 16 (10 A.M.): Bar., 29.8; Temp., 40°. Weather—Dull.

PROVING S.—Wednesday, Nov. 15 (6 P.M.): Max. 43° W. Coast of Ireland; Min. 34° N.E. Coast of England.

SALES FOR THE WEEK.

MONDAY NEXT—	Sale of Bulbs, Plants, &c., at Steven's Rooms, King Street, Covent Garden.
MONDAY TO FRIDAY NEXT—	Dutch Bulbs to 67 and 68, Cheapside, E.C., by Protheroe & Morris, at 10.30.
TUESDAY NEXT—	Clearance Sale of Nursery Stock and Greenhouses, at the Bedford Nursery, Haverstock Hill, by Protheroe & Morris, at 12.
WEDNESDAY NEXT—	Sale of Palms, Azaleas, Bulbs, &c., at Steven's Rooms, King Street, Covent Garden.
WEDNESDAY NEXT—	Azaleas, Rhododendrons, Roses, &c., by Protheroe & Morris, at 67 & 68, Cheapside, E.C., at 5.
WEDNESDAY NEXT—	Third Annual Sale of 30,000 Fruit Trees and Bushes, at Platt Nurseries, Borough Green, Kent, by order of Mr. J. W. Todman, by Protheroe & Morris, at 11.30.
FRIDAY NEXT—	Capital Freehold Property, Reliance Nursery, or Jude Farm, Binstead, Alton, Hants, with Residence, Bungalow, Buildings, Greenhouses, and 21 Acres, at the Mart, Tokenhouse Yard, E.C., by Protheroe & Morris, at 2.

EDITORIAL NOTICE.

* * * EDITOR AND PUBLISHER.—Our Correspondents would obviate delay in obtaining answers to their communications, and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the PUBLISHER; and that all communications intended for publication, or referring to the Literary department, and all plants to be named, should be directed to the EDITOR. The two departments, Publishing and Editorial, are quite distinct, and much unnecessary delay and confusion arise when letters are misdirected.

Royal Botanic Society.

We have received the following communications, with the request that we should make them public.

We offer no comment on them at the present time beyond pointing out that when the Royal Horticultural Society was, some years ago, in a similar position to that in which the Botanic now is, rescue was secured by the adoption of a strictly horticultural policy, by the strenuous efforts of many who had the interests of horticulture and the welfare of the Society at heart, and last, not least, by the lowering of the rates of annual subscription. It cannot be said that the reputation and status of the Horticultural Society have been lowered by this reduction of the subscription-rate, whilst, on the whole, at no period has a greater amount of valuable work been accomplished than at present:—

"A meeting of this Society has been summoned for Friday, the 24th inst., at four o'clock, to vote on a proposal to be submitted by the Council to raise the Fellows' annual subscription from two to three guineas, on the ground that this increase is essential to keep the Society in existence, as the liabilities now exceed £30,000.

"This proposal is so drastic and the financial

position of the Society so serious that many of the Fellows have embodied their views in a communication they intend to submit to the Council, a copy of which I enclose.

"While the Council are able to use and are using the whole organisation of the Society to obtain support for their motion the Fellows have to act more or less singly. The future of the Society is a matter of such public concern that I venture to ask you to allow me through your columns to invite Fellows to communicate with me if they desire to know the non-official views as distinct from those put forward by the Council.

"J. S. RUBINSTEIN.
"76, Addison Road, Kensington, W., November 10, 1905."

"TO THE COUNCIL, ROYAL BOTANIC SOCIETY.

"We the Fellows of the Royal Botanic Society whose names are appended hereto desire to place on record the reasons for which we are unable to support the pending proposal to be brought forward by the Council at the Fellows' Meeting to be held on the 24th inst., to alter the bye-laws in order to increase the Fellows' annual subscription from 2 to 3 Guineas.

"We are fully aware of the fact that if the Society is to go on the present annual income must be largely supplemented, but in our view the proposal now made is futile as a method of meeting our present financial difficulties or of securing a larger income in the future.

"It is exceedingly doubtful if the increased subscription can legally be claimed from the present Fellows. If we are right in our view it can only be claimed from new Fellows. You have repeatedly enlarged on your difficulty in obtaining an adequate number of new Fellows, and it is obvious that an increase in the subscription must add to this difficulty.

"We take this opportunity of indicating plainly what in our views are the causes that have brought about the Society's present deplorable condition and the steps that must in our opinion be taken if the Society is to be rescued from extinction.

"The present critical condition—critical because our liabilities have been increasing yearly until they now reach a total of over £30,000—is in our opinion due solely to mismanagement and to an attempt to restrict the use of the Gardens to the personal enjoyment of a comparatively few individuals not specially interested in the science of Botany. Instead of holding at arm's length those who are engaged in the pursuit of horticulture in this country the Council should, we consider, have encouraged or welcomed them. Had this policy been pursued there is not the least doubt that the Royal Botanic Society would have been as it ought to have been identified with the recent universal revival of interest in horticulture.

"The Charter which was granted in 1839 authorised the formation of a Society 'for the promotion of Botany in all its Branches and its application to Medicine, Arts and Manufacture, and also for the formation of extensive Botanical and Ornamental Gardens within the immediate vicinity of the Metropolis.' It vests the management in a Council of 32 Fellows, eight of whom were to be removed and eight elected by the Fellows at each annual Meeting in August, and power is given to the Council to make Bye-laws not 'repugnant' to the Charter.

"The Bye-laws made by the Council for the regulation of their own election are in our view wholly 'repugnant' to the Charter, and cannot be sustained before any tribunal. They give the Council the right to select the 8 retiring Members and to nominate the 8 Members for election. The names are to be brought forward at a Meeting in June, and they are then binding on the Society unless within seven days after this Meeting at least 6 Fellows give notice of other names. The Members are thus elected or re-elected by the Council itself in June, the names on the two Lists being nearly always identical. The Fellows at the Annual Meeting in August have no option but to endorse the June lists. The result is that the general lines of management are confined within the narrowest of traditional grooves—grooves that are wholly repugnant to the Charter and quite unsuited to the changed and changing character of the times.

"You have thus not only kept the selection of new Members of your own body entirely in your own hands but you have systematically denied to the Fellows the right to say an effective word. For instance even at Fellows' Meetings no one is allowed to move a Resolution of any kind, not

seven by way of recommendation to yourself. Recently on three occasions at the Fellows' Meetings on the 23rd June, the 28th July and [at] the Annual Meeting on the 10th August you refused to allow a Resolution to be discussed for the appointment of a Committee of the Fellows to consider the position and to confer with you as to the best methods of improving the condition of the Society. It is proposed to bring this Resolution forward again at the Meeting on the 24th inst., and in the best interests of the Society it is sincerely to be hoped that you will then allow it to be considered and voted upon.

"We would ask how it is possible in these days for any Society to exist managed as ours is on such archaic and unbusinesslike lines.

"The only hope that in our view the Society has of surmounting its present difficulties and entering on a new life of usefulness and vigour is for it to adopt an enlightened policy framed to attract new Fellows and secure the support of those engaged in education and in horticulture and of the general public. Such a policy would doubtless involve many innovations. The fundamental changes that must in our opinion be made include:

- "1. The election on the Council of an adequate number of persons (a) of botanical or horticultural attainments (b) of business aptitude.
- "2. The division of the scientific and administrative branches of the Society's work, a competent Manager being found to supervise each branch.
- "3. The provision of greater facilities for students and those engaged in horticulture as a pursuit.
- "4. A thorough revision of the Bye-laws.

"If the first suggestion is adopted the many proposals for reform that have for years past been rejected or ignored can be reconsidered and dealt with on their merits. These include:—

- "(1) The expediency of encouraging Horticultural Societies and arranging for their Flower Shows being held in our Gardens.
- "(2) The re-institution of Fruit Shows.
- "(3) The institution of Musical Promenades on the days the Gardens are open to the public.
- "(4) The erection of a large Floral Hall to serve as a Winter Gardens wherein Exhibitions and Receptions could be held in any weather.

"With regard to the second suggestion anyone who has been brought into touch with the work of the Society knows how very far the Office management falls short of what it should be. The entire reorganisation of the Office work is we consider a matter of urgent and vital importance.

"You have frequently urged (without any justification) that a Section of the Fellows desire to turn the Gardens into a place of amusement similar to the Earl's Court Exhibition. We do not know any Fellow who entertains this view. On the contrary we believe the desire of the general body of Fellows is that the intention of the Charter shall be fully carried out. The provision of bands at Exhibitions and Shows in fact at any time cannot be considered as in any way contrary to the Charter.

The Gardens are so delightfully situated and can be so easily made to serve their proper educative purposes that we view with dismay the prospect of the Society coming to an end. We have we believe equally with every Member of the Council its welfare at heart.

"The Fellows being denied the right to give practical expression to their opinions we are impelled by means of this communication to bring our views to your notice.

"Dated this 10th November, 1905."

DECORATION OF DWELLING-ROOMS IN WINTER. (See supplementary illustration.) The autumn foliage of trees and shrubs, with its beautiful tints and rich colours, will soon be unavailable for use in the decoration of dwelling-rooms. In these circumstances the magnificent vase of skilfully arranged and carefully selected species of grasses and other plants, shown in the supplementary illustration to this issue, may afford hints to those of our readers who have to economise in respect to the use of cut flowers, or who desire to obtain greater variety combined with good, lasting qualities. The Vase is one arranged for Lady Wantage, and was photographed in one of her ladyship's apartments at Lockinge Park, Wantage. Some of the principal plants in the arrangements are *Physalis*, *Francheti*, *P. Alkekengi*, *Clematis vitalba*, *Humea elegans*, *Gypsophila paniculata*, *Eulalia zebrina*,



A VASE OF ORNAMENTAL GRASSES, ETC., AS USED FOR WINTER DECORATION
BY LADY WANTAGE AT LOCKINGE.

Arundo Donax variegata, *Typha angustifolia*, *T. latifolia*, *Gynerium argenteum* (Pampas Grass), *Lunaria biennis* (Honesty), and a selection of the most ornamental of British grasses. Some of the vases utilised at Lockinge by Mr. Fyfe in the manner shown in the illustration are 6 feet or more in height.

FITZROYA PATAGONICA.—The flowers of this handsome Chilean tree have hitherto been described as dioecious. Kent, in Veitch's Manual, ed. 2, p. 199, says that none of the "Chilian Fitzroyas growing in Great Britain, so far as they have been observed, produce staminate flowers, but ovuliferous strobiles are produced in great profusion from an early age of the tree." Mr. A. A. PETTIGREW now sends us from Hewell Grange, Worcestershire, specimens showing the male and female spikes on the same branchlets, so that the tree is occasionally, at least, monoecious. The male flowers are like those of *Podocarpus* or *Diselma*, in short cylindrical spikes about 1 cent. long, placed at the ends of the branchlets, the scales being continuous with the leaves, each scale bearing two rounded anthers at the base.

PRESENTATION TO A NURSERY MANAGER.—Mr WILLIAM LAMONT, manager to Mr. JOHN DOWNIE, Beechhill Nursery, Murrayfield, was recently presented by a number of gardening and other friends with a gold Albert, travelling bag, and umbrella on the occasion of his leaving the district.

EYNSFORD ARBOR DAY.—The following is the programme to be carried out in this Kentish village to-day, November 18th, 1905: 11 a.m., Tree-planting (weather permitting) in various parts of the village. Noon, Meeting of school children to assist in planting a lime tree in the centre of the village, Part-Song "God Save the King." 2.45 p.m., Dedication Service in the New Drill Hall. 3.30 p.m., Meeting, at which The Right Hon. Sir WILLIAM HART DYKE, Bart., M.P., accompanied by Lady EMILY DYKE, will declare the Hall open. The Chrysanthemum Show will be open in the evening and also on Monday, November 20th.

THE REV. DAVID R. WILLIAMSON, F.N.C.M., President of the British Guild of Musicians, has been elected a Vice-President and Member of the Council of the Society of British Composers, on the nomination of Dr. Lendon Bennet, D.C.L.

NATIONAL CHRYSANTHEMUM SOCIETY.—The annual dinner will take place at the Holborn Restaurant, High Holborn, W.C., on Tuesday, November 28, 1905, at 6.15 p.m. sharp. Charles E. Shea, Esq. (President of the Society), will preside. The Committee particularly request the presence of exhibitors at the November Show entitled to receive cups or medals. The presence of ladies is specially desired. The Challenge Trophy, the Holmes Memorial, and other cups and medals will be presented to the winners during the evening. Tickets 5s. each (exclusive of wine). *G. R. Dean, Secretary.*

THE INTERNATIONAL BOTANICAL CONGRESS, BRUSSELS, 1910.—The death of Professor ERRERA has necessitated the election of a new President of the Organising Committee. Count KERCHOVE DE DENTERGHEM replaces Professor ERRERA. With the Count is associated M. DURAND, the Director of the Brussels Botanic Garden.

AMERICAN UNIVERSITIES.—The total amount of private benefactions to University Education in the United States during the last 30 years, says *Nature*, was 40 millions sterling, irrespective of Government and State grants. For the same period in Great Britain the amount was 5 millions. There are about as many professors and teachers in America as there are students here. It must be remembered that our population is about 42 millions, as compared with about 77 millions.

VARIETIES.—"If the money, time, and labour expended in the growing, maintenance, and advertising of these three hundred different varieties were concentrated on the development of better, truer stocks of say twenty or even fifty of the most distinct and desirable sorts it would be of advantage to the seedsmen and of immense benefit to their customers." These words were spoken by Mr. TRACY of the U.S. Department of Agriculture at a meeting of the Society for Horticultural Science. They were uttered in connection with Lettuces, but it is obvious that they apply with equal force to Potatoes, Apples, Peas and other vegetable products in which the differences are so slight as to preclude exact definition.

PRESENTATION TO MR. W. GREENAWAY.—On the occasion of the 43rd Show of the Oxfordshire Chrysanthemum and Fruit Society, the Secretary, Mr. W. GREENAWAY, was presented with a cheque for £91 as a testimonial to his twenty-five years' service in that capacity. Mr. GREENAWAY, who is 72 years of age, has been more or less connected with floral societies in Oxford for a period of 40 years.

A MAYORAL NURSERYMAN.—Mr. A. E. TOWNSEND, head of the firm of Messrs. JARMAN & Co., nurserymen, Chard, has been elected to fulfil the duties of Mayor of that town for the ensuing year.

SOWERBY'S "ENGLISH BOTANY."—The thirteen volumes of this important work, revised by the late Dr. BOSWELL and by Mr. N. E. BROWN, are now offered by the Caxton Publishing Co., 84, Chancery Lane, on the instalment plan. An immediate payment of one guinea, and a subsequent monthly instalment of a like amount, will ensure the delivery of the work at once. For students of British plants the book is invaluable.

STERILISING SOIL.—The *Journal of the Board of Agriculture* for September quotes the following account of a method of sterilising soil given in a recent Bulletin of the United States Department of Agriculture:—"Sterilisation can be carried on in boxes 12 to 15 inches or 18 inches deep, in the bottom of which are steam pipes with perforations every 2 inches, the perforations being about one sixteenth of an inch in diameter, and so placed that they are on the under-side of the pipe. The pipes are arranged in coils and distributed far enough apart to allow the blade of a spade to be worked between them. A lid to lift the top of the box should be provided, and the box should be made to hold one or two cartloads of compost. After subjecting the soil to the action of the steam a sufficiently long time to cook a Potato buried in it, the soil will have become thoroughly sterilised."

ROYAL HORTICULTURAL SOCIETY.—I, *General Examination in Horticulture.*—The Society's annual examination in the Principles and Practice of Horticulture will be held on Wednesday, March 28, 1906. The examination will be held simultaneously in as many different centres in Great Britain and Ireland as circumstances may demand. The Society is willing to hold an examination wherever a magistrate, clergyman, schoolmaster, or other responsible person accustomed to examinations will consent to supervise one on the Society's behalf. A copy of the Syllabus may be obtained by sending a stamped and directed envelope to the Society's offices. Intending candidates should send in their names not later than March 1. A Scholarship of £25 a year, for two years, is offered by the Worshipful Company of Gardeners in connection with this Examination. Copies of the Questions set at the Examinations 1893-1905 may also be obtained from the Society's offices, Vincent Square, Westminster, S.W., price 1s. 9d., or 10s. a dozen.

II, *School Teachers' Examination.*—The Society will hold an Examination in Cottage and Allotment Gardening on Wednesday, April 11, 1906.

This Examination is intended for, and will be confined to, Elementary and Technical School Teachers. It has been undertaken in view of the increasing demand in country districts that the schoolmaster shall be competent to teach the elements of Cottage Gardening, and the existing absence of any test whatever of such competence. The Society's Certificate will be issued after the Examination to all who shall, in the judgment of the Council, have shown sufficient acquaintance with a knowledge of the subject to warrant their teaching it to their scholars. Teachers and assistants desiring to sit for the Examination should apply at once for a copy of the Syllabus to the Secretary, R. H. S., Vincent Square, Westminster, S.W. A stamp should be sent to cover postage. The general conduct of this examination will be on similar lines to that of the more general Examination.

III, *Public Parks Examination.*—This Examination is specially intended for Gardeners employed in Public Parks and Gardens belonging to County Councils, City Corporations, and similar bodies, and will be held on Thursday, January 11, 1906, in the Royal Horticultural Society's Hall, Vincent Square, Westminster, S.W.

The Examination, which will commence at 10 a.m., will be partly written, partly viva voce, and will occupy three hours for the written portion, and about twenty minutes each candidate's viva voce. A Syllabus, with entry form attached, can be obtained on application to the Secretary, R. H. S., Vincent Square, Westminster, to whom intending candidates should send in their names as soon as possible. No entry can be accepted after December 31, 1905.

Rules for Judging.—The third revised edition of the Society's Code of Rules for Judging and suggestions to Schedule-Makers Judges and Exhibitors, for use at Horticultural Exhibitions has just been issued, and can be obtained from the Society's Offices, Vincent Square, Westminster, price 1s. 6d.

THE ROSARY.

THE FORMATION OF ROSE BEDS.

The preparation of new Rose beds and borders should now receive attention. It is important, when selecting a site for a new bed or border for Roses, to choose an open position, with a south aspect, and one that is sheltered from strong winds. Should the construction of a complete Rosary be desired, its style will, of course, depend upon the owner's taste, but it will also have to be in accordance with the site, &c. The beds in any case should not be of too large a size to enable the Roses in the centre to be examined and gathered with ease. Generally speaking, the simpler the outline of the beds the better will they appear in effect. Much may be claimed for the practice of planting Roses of one colour only in each bed. Rose beds can also be formed on lawns, and in the borders by the side of walks in the kitchen garden. Climbing varieties of Roses may be used as wind screens, or for hanging in festoons, &c. The most suitable soil for the Rose is a rich, turfy-loam, provided with good drainage. It frequently happens that the soil in a garden is not suitable for Rose culture. Where this is the case it should be removed to a depth of two feet, and made up with a suitable compost, consisting of good fresh loam mixed with well-rotted manure. Should the soil from an old vine border be available, this will answer admirably, but it should be trodden before the Roses are planted in it. When planting, spread the roots horizontally, cover them with soil, and tread about them to consolidate the soil. When planting standard Roses secure them to stakes. After planting, mulch with stable manure, and if the soil is dry give the ground a thorough soaking with water. *C. Ruse, Munden Gardens, Watford.*

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his correspondents.)

BANANAS AND MEALY BUG.—"W. T. L.," on p. 297, warned Grape growers of the fact that imported bunches of Bananas teem with mealy bug. May it not also be said that unseen myriads of fungoid germs gain a footing in the British Isles in much the same way? Who shall say that the germs of the dreaded Cucumber and Melon disease were not introduced with fruits from abroad? Melons in quantity, and of a kind, are, in season, distributed broadcast through town and village; the packing-cases and material may be even more widely diffused; and only by some such universal distribution can the equally universal spread of this disease be accounted for. *E. H. Jenkins, Hampton Hill.*

ROYAL GARDENERS' ORPHAN FUND.—May I again direct the attention of horticulturists to the above-named Fund, and ask for annual subscriptions or donations thereto? As will be known to many readers, this Fund was originated in the year 1887, as the horticultural method of celebrating the first Jubilee of Her Majesty Queen Victoria. Her Majesty Queen Alexandra is patron of the Fund. The objects of the charity are to give some support to orphans of horticulturists of all grades who may need it. This is done mainly by granting allowances of 5s. per week to each child elected, until they are fourteen years of age, when the committee may also make a further grant of £10 to fit them for a start in life. From the commencement it has done good work, but it has now more claims for its help than the funds enable it to satisfy. The committee is composed of eminent men, and they have all along given freely to further the objects of the charity. There are numerous cases to come before the committee, one from Yorkshire being a very sad case. The Secretary writes me quite recently that it is disappointing to find so little support in the shape of subscriptions from this county of broad acres, and adds that unless Yorkshire horticulturists acquire more voting power before the annual election in February, there is but little chance of our child being elected. Apart from other kind-hearted persons who may see fit to help, I would appeal especially to the more than 500 non-subscribing Yorkshire gardeners, who, I feel sure, are able to spare a trifle more than one penny per week each, and thus become annual subscribers of 5s. with one vote at each election. Life subscriptions of £5 give the same privilege. The secretary, Mr. B. Wynne, 30, Wellington Street, Covent Garden, W.C., or myself will gladly receive donations or subscriptions and give any information deemed necessary. *H. J. Clayton, Grimston Gardens, Tadcaster, Hon. Local Secretary.*

THE FLOWERING OF BAMBOOS.—A great loss has been sustained in gardens owing to the flowering of *Phyllostachys Henonis*, the most beautiful of all the Bamboos. This commenced to flower in some gardens last year, and was in flower in every garden I visited this year. The majority of the clumps are flowering on every culm, and will therefore in all probability die. Even *Arundinaria Simoni*, which is said to survive flowering, dies, according to my experience, if it flowers on every culm, as most clumps of this Bamboo have done. The roots of plants that have been dug up a year after flowering in my presence, were, to all appearance, quite dead. In one case, where *A. Simoni* was flowering, the owner cut all the canes at the ground level. Subsequently a thick sheaf of young growths, ranging in height from 6 inches to 4 feet, sprang up from the rootstock, and every one of them flowered, and for the past year the plant has shown no sign of life. Many fine clumps of *P. Henonis* are quite brown and apparently dead, this being also the case with young plants, having only one culm about 5 feet in height, planted last year. In a Cornish garden that I visited last month, where numerous species of Bamboos are grown, two splendid clumps of *P. Henonis*, the finest specimens in the collection, considerably over 20 feet in height, did not show a single green leaf. In one garden where *P. Henonis* was flowering, but not on every culm, many hours were spent in cutting off the seed-spikes in order to save the plant, but without effect, it eventually flowering on every culm. *P. Henonis* appears, in some instances at least, to produce little seed, for I have gone through a bushel basket of seed-pods and only found one perfect seed. At Menabilly

Phyllostachys Castillonis, *P. Boryana*, *P. Henonis* and *A. Simoni* were flowering, but *A. Simoni variegata* was not in flower. The history of the finest Bamboos at Menabilly, grown by the late Mr. Rashleigh under the name of *Arundinaria nobilis*, is interesting. Seed was originally secured from North China in 1838, and the next year the seeds germinated. In 1872, after a life of 33 years, the plants flowered and died, and the present clumps are the produce of seed saved at that time. As these plants are now 33 years old it would be expected that they should be showing signs of flower, but fortunately there is, as yet, no appearance of blossom, though the time is probably not far distant when they also will flower and die. They are splendid clumps, the tallest about 28 feet in height. At Fota Island, Co. Cork, large masses of *Arundinaria Falconeri*, growing on an island in the lake, were in flower at the end of May last year, and, I am informed, have since died. *S. W. Fitzherbert, South Devon.*

AMELANCHIER (MESPIBUS) CANADENSIS. The autumn tints of the foliage on this excellent tree have been very fine here this season. This species flowers well early in the summer and in the autumn. Its foliage change to the most lovely tints. It should certainly be planted more extensively. *L. E. Walker, Barton Hall Gardens, Bury St. Edmunds.*

WINTER FLOWERING CARNATIONS (see p. 331).—No doubt there is an increasing interest in winter flowering Carnations, and before long none of the more important gardens will be without a house specially devoted to their cultivation. But why create a new Carnation Society? Have we not in our "Carnation and Licotee Society" one of the oldest societies of its kind in the world? If the Committee of this Society were approached, I have no doubt they would be willing to hold, besides their summer show, another winter show, where these invaluable flowers might be exhibited, not trimmed and collared, but in a more up-to-date style, with long stems arranged in vases, and where special prizes would be awarded for good home-grown novelties in order that we might regain the ground which we have lost, and in due time equal, if not beat, the Americans. All Carnation growers should combine and co-operate, not separate and split up into two or three different societies. As regards the date of a winter show, I should like to see one held in the early part of February, for that is the time when we can see the value of a real Tree-Carnation. In the autumn up to December we have more than enough shows all over the country, and doubtless as the popularity of the Tree-Carnation increases many of the Chrysanthemum societies would be willing to have a special class for Carnations at their shows. I consider May too late for a winter-flowering Carnation Show, for any of the Border Carnations can easily be flowered at that time, besides we are then full up with shows, of Daffodils, Tulips, Auriculas, the Temple, etc. But from Christmas till April there is nothing of importance, and a Carnation Show about the beginning of February would, I believe, be appreciated. *C. Engelmann, Horneybrook Nursery, Saffron Walden, Essex.*

SOCIETIES.

ROYAL HORTICULTURAL Scientific Committee.

NOVEMBER 7.—Present: Mr. G. Massee, V.M.H. (in the chair); Dr. Masters, F.R.S.; Messrs. Douglas, Saunders, Güssow, Veitch, Bowles, Roulger, O'Brien and Chittenden (Hon. Sec.).

Phylloxera on Vine.—Mr. SAUNDERS reported as follows on the Vine leaves sent by Mr. LYNCH from Dublin: "The Vine leaves are attacked by *Phylloxera vastatrix*. This is one of those aphides whose life history is rather complicated. An egg is laid by one of the true females under the bark of the Vine, from which in due time a wingless insect is hatched, which makes its way to a leaf on which it lays its eggs and forms a gall such as those on the leaf examined. Later on the young hatched from the eggs leave the galls and descend to the larger roots, where they multiply viviparously very rapidly for several generations. They then pass to the smaller ones, where they form small pear-shaped galls, from which individuals emerge which become winged and fly to the leaves, where having become fully developed the sexes pair, and the female having found a suitable place in the bark

deposits her egg, which is almost as large as herself. There the egg remains unhatched until the new leaves are formed. No trouble should be spared in destroying this pest. If it is attacking the roots the best remedy is bi-sulphide of carbon injected into the soil among the roots in various places: ½ oz. is said to be enough for one Vine. All the infested leaves should be burnt as soon as they are noticed, but probably the most satisfactory thing to do would be to take up the Vine and the earth near it and burn them."

Pelargonium Petals disfigured.—Dr. MASTERS reported that the streaked appearance of the *Pelargonium* petals shown at the last meeting was probably caused by "drip."

Curious Growth on Apple.—Dr. MASTERS also reported on a curious growth on a spur of an Apple sent by Rev. M. C. H. BIRD, which had assumed the form of a small Apple, but consisted simply of a swollen "spur" about an inch in length. The shoot which had swollen bore no trace of a flower or seed.

The Web-like Covering on Potato.—The SECRETARY said that the curious web-like covering on the Potato from Rainham was due to the growth of the fungus *Rhizoctonia violacea*. This fungus is well known on the Continent and in America as the cause of a disease of Lucerne and Clover, and attacks numerous other plants, among them Potatoes, Carrots (*Gardeners' Chronicle*, xxxvi., 373), and Asparagus. Cereals are not known to be attacked by it. In this case the fungus had attacked Potatoes, following a crop of Lucerne, and was confined to a strip down the field where the soil was damper than the rest, and where a much larger amount of decaying vegetable matter was present in the soil than in the remainder of the field. As Mr. GÜSSOW remarked, there were numerous small sclerotia present under the webbing which would carry the disease over to the next year. The Potatoes so attacked rapidly decayed.

Cucurbita ficifolia.—Mr. ODELL, supplementing the remarks made at the last meeting by Mr. Worsley on the fruit of this plant, stated that it was edible only when young. As it became older the rind became very hard, and the placenta became much developed and pulpy, and of no use whatever as a vegetable.

Streptocarpus lagosensis. (C. B. Clarke).—Mr. ODELL showed a specimen of this species recently raised by Mr. O'Brien for the first time. It is a native of West Africa, and has a tall stem, and the habit of an Impatiens. It appears to be a near relative of *S. Kirkii* (*Bot. Mag.*, 6782). It bears numerous flowers of a dark purplish colour on slender pedicels. On germination two cotyledons are produced, which become separated by an internode, the lower cotyledon remaining small, while the upper develops to a large size; the internode grows upwards, and becomes fused with the developing epicotyl. On the proposition of Dr. Masters, a botanical certificate was awarded to this interesting plant.

Lenticels in Potato Evergood.—Mr. MASSEE showed some tubers of the Potato Evergood which had been grown in sterilized soil to draw attention to the lenticels, which in this variety are very large and conspicuous. This characteristic renders the entrance of the fungi present in the soil very easy. Once in, the plant, in response to the irritation set up, forms a corky growth around the attacked spot, which leads to a warty appearance on the tuber such as is often seen on this variety.

Crossing of Primulas.—The following letter sent by P. MURRAY THOMPSON, Esq., to Prof. HENSLOW, was read:—"For the last few years I have been interesting myself as to the influence which each of the parents have upon seedlings, and have used Primroses as the basis of my experiments. I had the idea that the pollen parent influences the colour, and this I find to be the case in all my experiments. In the first generation I did not get one plant bearing double flowers, although I had used pollen from double flowers. Saving seed from these single seedlings, without any artificial fertilisation, I was surprised to find a good percentage of doubles, some of them very fine indeed; but what pleased me more was the great vigour with which they grew compared with the old doubles which have been in commerce so long. If a repetition of my experiment should be followed by similar results, it seems to me that we ought to have a very much extended range of colours and improvement in growth of our double Primroses." Mr. DOUGLAS stated that his experience coincided with that of the writer so far as the colour of the flowers of cross-bred offspring was concerned.

Hybrid Nepenthes.—Dr. MASTERS showed a considerable number of pitchers of hybrid *Nepenthes* recently

raised by M. Jarry Desloges, and commented on their peculiarities.

Abies Mariesii fruiting.—Dr. MASTERS also showed a cone of *Abies Mariesii*, the first he had seen grown in this country.

"Polarity" of Growth in *Seakale*.—Mr. CHITTENDEN showed a root-cutting of *Seakale* which had been planted in the soil in an inverted position. Two buds had grown out from the lower end, and the resulting

MANCHESTER AND NORTH OF ENGLAND.

OCTOBER 26.—There was a moderate display of plants at the meeting on the above date. Awards were made as follow:—

FIRST CLASS CERTIFICATES.

Odontoglossum × *Waltoniense*, from W. Thompson, Esq.; *Cypripedium* × *Niobe*, Westonbirt var., from A. Rogerson, Esq.; *C. Fairricanum*, from W.

SILVER MEDALS.

Messrs. Cypher and Sons for a nice display of plants, in which were several good *Cypripediums*; and to G. W. Law-Schofield, Esq., for a collection of *Cypripediums*.

Messrs. Sander and Sons displayed a nice group of plants, also Messrs. Keeling and Sons, for which votes of thanks were awarded. P. W.

BRITISH GARDENERS' ASSOCIATION.

PLYMOUTH AND DISTRICT BRANCH.

OCTOBER 23.—The Mutual Improvement Association held its second meeting in the Corn Exchange, Plymouth; Ernest W. Hawker, Esq., of Ivybridge, presiding.

An interesting paper was read by Mr. J. E. Tuplin, of the Floral Nurseries, Newton Abbot, on "THE CARNATION." Mr. Tuplin first described the chief distinction between a Carnation and a Picotee; and explained the classification of Carnations and the points that went to constitute excellence in the flowers. Mr. Tuplin dealt principally with Border Carnations, describing the different modes of propagation and planting, also the dressing and staging of the blooms for exhibition. A discussion ensued as to the means of destroying wire worms, and the benefit of shading the blooms. E. W. HAWKER, Esq., exhibited specimens of flowering shrubs, &c., and Mr. FARLEY, gr. at Seven Trees, seed pods of *Stephanotis floribunda*. W. S. E. C.

HANLEY CHRYSANTHEMUM.

NOVEMBER 1.—The Hanley Chrysanthemum Society was recently affiliated with the Borough Horticultural Society. The first show under the changed régime, also the 23rd exhibition of Chrysanthemums in the town, was held on the above date in the Victoria Hall, Hanley. Although the aggregate of entries fell below that of some previous years, the exhibition was one of general excellence. In the cut flower division of the amateur class, the blooms were better than usual, and the display evidenced improved taste. The groups of Chrysanthemum blooms from the Duke of SUTHERLAND's Trentham estate (gr. Mr. Peter Blair), from Lord GROSVENOR, Tittensor Chase (gr. Mr. Scotney), and those from Mr. RUFF, from The Hayes Stone, all included magnificent blooms.

HEREFORD FRUIT AND CHRYSANTHEMUM.

NOVEMBER 1, 2.—The above society held its annual show on these dates in the Shire Hall, Hereford. The displays of fruit were excellent, Apples, as is to be expected, being a leading feature. Pears, generally, were not up to the standard of quality, nor so numerous as in former years. The classes devoted to collections of fruit and also to Grapes were well filled, the examples generally being of good quality. Excellent collections of Vegetables were staged and competition was keen. Groups of plants and cut blooms of Chrysanthemums were also of good quality.

OPEN CLASSES.

APPLES AND PEARS.

A Collection of Fifty Dishes of Apples.—Not more than twelve nor fewer than five fruits were to comprise a dish of any one variety. Five exhibitors staged, and of these the KING'S ACRE NURSERY CO., Hereford, took the lead. The first prize fruit was remarkably clean and brightly coloured, especially good being their new variety King's Acre Bountiful. C. W. CADDICK, Esq., Caradoc, Ross, was second, with highly coloured, well finished fruit, including Crimson Queening, Adams' Pearmain, Jefferson, Cox's Orange Pippin, Court pendu plat, Stirling Castle, &c. Five exhibitors staged in this class.

A Collection of Thirty Dishes of Apples.—Mr. R. M. WHITING, Credenhill, Hereford, was awarded chief honours for a splendid lot of fruit of both culinary and dessert varieties, including James Grieve, Braddick's Nonpareil, Ribston Pippin, Allington Pippin, Emperor Alexander, Stirling Castle, &c.

Twenty-four Dishes of Pears.—Only two exhibitors staged in this class, Mr. Humphries, gr. to Earl CHESTERFIELD, Holme Lacey, Hereford, being easily 1st, with clean good fruit, though not over large. He had, amongst others, Beurré Superfin, Doyenné d'Alençon, Ramillies, Durondeau, Doyenné du Comice, Beurré Hardy, and Duchesse d'Angoulême.

Twelve Varieties of Pears.—This class was won by Mr. BAYLEY, but he was closely followed by Mr. Rick, gr. to G. H. HADFIELD, Esq., Moraston House, Ross,



FIG. 133.—CHRYSANTHEMUM, MISS IRENE CRAGG: FLOWERS WHITE.

(See description on page 347 ante.)

shoots had curved upwards, elongating until they reached the surface of the soil. From the other end roots had been produced which had curved downwards.

"Phylloidy" in *Antirrhinum*.—Mr. CHITTENDEN also showed an inflorescence of *Antirrhinum*, in which, instead of bearing flowers, each pedicel bore a considerable number of small bracts. The plant bearing these had been found among a batch grown for seed.

Gigantic Polypori.—Mr. BATY sent several very large specimens of *Polyporus fomentarius*, measuring 18 inches in diameter, found growing upon Ash trees at Gerrard's Cross, Bucks.

Farrer, Esq.; *Oncidium Leopoldianum*, from E. Ashworth, Esq.

AWARDS OF MERIT.

Cattleya labiata variety "Dawn," C. I. variety *Col-dreya*, from Messrs. Stanley and Co.; *Cypripedium* × *œnanthum* × *nitens* var. *superba*, from W. Farrer, Esq.; C. × *Trafalgar*, C. × *Olga*, Bagshaw, from Messrs. Sander and Sons; *Lælia* × *nigrescens* var. *albescens*, from Messrs. A. J. Keeling and Sons; *Cattleya* × *Vigeriana*, and C. × *Hardyana* *Hazelburn* var., from E. Rogerson Esq.; *Dendrobium* *Phalænopsis Schroderianum* var. *E. Ashworth*, from E. Ashworth, Esq.

who won 2nd prize. Six exhibitors staged in this class. There were twenty-one open classes for single dishes of leading varieties of Apples and Pears, and these were all strongly contested, some of the best fruits in the show being seen in these classes.

Collection of Fruit, Eight Dishes.—Five entries were made in this class. Mr. Hyde, gr. to W. MAYNARD, Esq., The Holt, won the 1st prize, with good bunches of Muscat of Alexandria and Gros Maroc Grapes, Pitmaston Duchess Pears, Blenheim Pippin Apples, a Melon, and Coe's Golden Drop Plums.

Mr. Parrott, gr. to A. W. FOSTER, Esq., Brockhampton Court, Ross, was 1st for three bunches of Gros Colmar Grapes, having medium-sized bunches, with large, perfectly-coloured berries. For three bunches of any other black variety of Grapes Mr. SYKES was placed 1st, for excellent bunches of Gros Maroc.

AMATEUR CLASSES.

Apples.—For twelve dishes of culinary and the same number of dessert varieties of Apples four growers

MISCELLANEOUS EXHIBITS.

Prizes were offered for the best exhibits of plants or fruit or flowers, or these combined, arranged in a space of 70 square feet. In this class Mr. Fox, gr. to Sir H. S. COTTRELL, Garnons, Hereford, deservedly took the lead with a beautifully-arranged group of well-grown miscellaneous plants. Messrs. PEWTRESS BROS. were 2nd, with an ornamental exhibit of fruit and flowers, and the KING'S ACRE NURSERY CO. 3rd, with Apples and miscellaneous plants more tastefully arranged than usual. (See fig. 139.)

CHRYSANTHEMUMS.

The KING'S ACRE NURSERY CO. were placed 1st for a group of Chrysanthemums occupying a space 12 feet x 7 feet.

For Four Vases of Chrysanthemums, Three Blooms in Each Vase.—Mr. SIMMONS was awarded the 1st prize, having the varieties F. S. Vallis, Mafeking Hero, Mad. Gustave Henry, and General Hutton.

For Six Vases of Chrysanthemums not Disbudded.—Mr. GRINDROD was awarded chief honours.

DARTMOUTH CHRYSANTHEMUM.

NOVEMBER 3.—The Dartmouth Horticultural Society held its annual show on the above date. The exhibition was in every way a success, the cut blooms in the winning stands being especially fine. Plants were shown well and the displays of fruit and vegetables were also of high quality. The principal prize winners were Lady FREAKE and Mr. GODFREY.

For a group of plants arranged for effect the 1st prize was awarded to Lady FREAKE, who also won the classes for a group of Chrysanthemums, for Ferns, for six foliage table plants, for six Primulas, and for a specimen Chrysanthemum.

In the sections for fruit and vegetables almost all the 1st prizes were carried off by Mr. T. B. BOLITHO, other winners being Lady FREAKE, Mr. F. C. SIMPSON, and Mrs. LLEWELLYN.

Classes were also provided for floral decorations.

PARIS CHRYSANTHEMUM CONGRESS.

NOVEMBER 4.—The annual congress of the French National Chrysanthemum Society which was established in conjunction with the International Horticultural Show in Paris, on the above date, held its first sitting in the Hall of the National Horticultural Society, Rue de Grenelle, at 3.30 p.m., when M. Viger presided.

Before the proceedings were opened M. Maxime de la Rocheterie presented, in the name of the French National Chrysanthemum Society, a bronze statuette to M. Viger in recognition of his valuable services in connection with the gatherings of the French National Chrysanthemum Society during the past few years. M. Viger responded in appropriate terms.

Papers were read by Dr. Chiffot of Lyons, on the damping of blooms and the best means of preserving them from this injury; on the results of the use of the "repertoire des couleurs," from the Chrysanthemum grower's point of view, by M. Dauthenay, and two on the best means of developing a taste for the culture of the Chrysanthemum. A very lengthy and lively discussion ensued upon the last-named subject.

There were three candidates for the Congress Medal which is annually voted to the person who is considered to have rendered the greatest service to the cause of the Chrysanthemum during the past year. M. Choulet, of Lyons, was successful in gaining the Award for 1905.

The second sitting of the conference was held on Sunday morning, at 9 a.m., when other papers were read and discussion ensued. The text of these papers and the consequent discussions will appear in the journals of the two societies under whose auspices the Show and Congress were organised.

NATIONAL FRUIT GROWERS' FEDERATION.

NOVEMBER 6.—The monthly meeting of the Council was held at the Royal Horticultural Hall, Vincent Square, on the above date. Col. C. W. Long, M.P., President of the Federation, occupied the chair; and there were also present Messrs. F. S. W. Cornwallis, A. Mislin, G. E. Champion, W. Idiens, S. Bootman, A. H. H. Matthews, T. Waghorn and A. T. Matthews, Secretary.

At a meeting held on October 12 the following resolution was passed: "That this Council expresses its agreement with the recommendations of the Departmental Committee on Fruit Culture, and respectfully urges upon His Majesty's Government that action should be taken upon them at an early date." This resolution was forwarded to the Prime Minister, the President of the Board of Agriculture and the President of the Board of Trade, from all of whom formal acknowledgments of receipt were read. At the same meeting a resolution was passed cordially thanking the Royal Horticultural Society for its valuable assistance and co-operation in carrying out the late very successful Conference on Fruit Culture. It was found that the full report of that Conference would form a very bulky document, but in view of its important character to growers it was decided to have a good number of copies printed, one of which the Council hope to be able to supply to each member, as many of the papers being the work of well-known authorities will be found extremely useful for reference, especially on the subject of plant-diseases and insect-pests. Communications were then read, amongst which was one from Mr. Geo. Bunyard, V.M.H., announcing a donation of £5 to the funds of the Federation from the Fruiterers' Company. Mr. T. Waghorn, Barrister-at-Law, who has rendered the Federation such excellent service as a witness before the Departmental Committee on Preferential Railway



FIG. 139.—VIEW OF A PORTION OF AN EXHIBIT OF FRUIT SHOWN BY THE KING'S ACRE NURSERY COMPANY AT HEREFORD.

competed, Mr. Jones, gr. to C. W. HAZLEHURST, Esq., taking the 1st prize with a capital exhibit. Mrs. WOODHOUSE, Burghill Court, (gr. Mr. J. Nume), won premier honours for twelve culinary varieties, but she was closely followed by Mrs. BLASHILL and Mr. RICK, in the order named. Dessert varieties.—The eight dishes of dessert varieties staged by Mr. S. Jones, gr. to J. COMER, Esq., Hill Side, Hereford, won the 1st prize in that class, being followed by Mr. RICK and Mrs. BLASHILL, in the order named.

Pears.—For eight dishes of these fruits there were four good lots seen. Mr. R. Currie, gr. to the REV. G. H. DEVONPORT, led with a fine set of dishes, including Doyenné d'Heyst, Beurré Bosc, Pitmaston Duchess, Durondeau, Easter Beurré, &c.; 2nd, Mr. W. Foster, gr. to the REV. H. BRIERLEY, Bridston, Ross; 3rd, Mr. Trever, gr. to S. H. DEAREN, Esq., Weir End, Ross.

VEGETABLES.

A collection of ten dishes, for which Mr. Wilson, Commercial Street, Hereford, offered special prizes brought eight good collections, Mr. GRINDROD taking chief honours with an excellent stand, comprising Leeks, Parsnips, Potatoes, Carrots, Brussels Sprouts, Onions, Cauliflower, and Celery. Fourteen dishes of Tomatoes were staged in a class for these fruits: 1st, Mr. C. Williams, gr. to W. J. DAVIES, Esq.

The 1st Prize in the Class for 24 Japanese varieties of Chrysanthemums was awarded to Mr. SIMMONS, Mr. PARROTT following. This order was reversed in the similar class for 12 blooms only.

LINNEAN SOCIETY.

NOVEMBER, 2.—Professor W. A. Herdman, F.R.S., President, in the chair.

The Rev. George Henslow delivered an address on "Plant Oecology, interpreted by direct response to the conditions of Life." He remarked that Plant Geography and Plant Surveying—that is, Phytotopography—comprise records of the fluctuating distribution of species within definite areas, Associations, the result of Natural Selection, which he defined as the Struggle for Existence, and the Survival of the better-adapted under the circumstances.

Oecology proper, or the Physiology of Plant-geography, implied what had been defined by Professor Tansley as "The Study of the vital relations of Organisms to their Environment." These include the origin of adaptive structures, as varietal, specific, and generic characters, by means of the protoplasmic response to what was formulated by Darwin as "The Direct Action of the Conditions of Life, leading to definite results, whereby new subvarieties arise without the aid of Natural Selection."

Rates and Services, then reported to the Council his labours in that capacity, and made several valuable suggestions for improving the transit of fruit and delivery to market and the securing of the rebates on large consignments to which growers are entitled. The next meeting will be held on December 4 at 2.30 p.m.

WEST OF ENGLAND CHRYSANTHEMUM.

NOVEMBER 7.—This society held a most successful exhibition in the Guildhall, Plymouth, on the above date. Cut blooms were shown in large numbers, all the classes were well filled, and the quality of the winning stands has never been higher. Even in the Amateurs' section this excellence was maintained, and Mr. A. F. HILL'S winning stands of 12 and 6 Japanese were well worthy of the open classes. The practice of showing Japanese blooms singly in vases with foliage was much appreciated by the public, as the form of the flowers can then be seen whereas when the regulation boards are used and the flowers are of gigantic proportions the petals are so crowded together that the form of the individual flowers is entirely lost. Chrysanthemum groups were decidedly above the average, that which took the 1st prize being especially remarkable for the size of the blossoms.

Fruit and vegetables were well shown, and the 1st prize, for a collection of Salads exhibited by the EARL OF MORLEY, was one of the most attractive things in the Exhibition, which was largely patronised by the public.

For Forty-eight Cut Blooms, Japanese.—The 1st prize was gained by Mr. F. S. VALLIS, who was easily first, this being the fourth year in succession that he has won the premier award with an excellent stand of enormous blooms. He again showed Montigny, which, though fine, did not approach the size of the gigantic bloom of this variety that he showed last year, which was awarded a special certificate as the finest exhibit in the show. Other exceptional blooms in this stand were W. A. Etherington, Mrs. F. W. Vallis, Mrs. J. Hadaway, Mme. Waldeck Rousseau Mrs. J. Lewis, and Magnificent

The 1st prize for a group of miscellaneous stove and greenhouse plants in the open division was won by Messrs. J. WEBBER & SON, and 1st prize for a similar group confined to Devon and Cornwall was awarded to Capt. M. BROWNING, R.N. Messrs. J. WEBBER & SON carried off the 1st prize for a group of Orchids.

In the classes confined to residents within 15 miles of Plymouth, the competition was keen. The 1st prize for a group of Chrysanthemums was won by Mr. G. SOLTAU-SYMONS. The classes for Primulas, Cyclamen, Roman Hyacinths, zonal Pelargoniums, Orchids, Begonias and table plants were well filled. There were also classes confined to amateurs and to cottagers and artisans, which were well supported.

NON-COMPETITIVE EXHIBITS.

The Nurserymen's stands formed a welcome addition to the exhibition. Messrs. SUTTON & SONS, Reading, made a very attractive display of brilliant crimson Capsicums, Tomatos, golden and red, of many varieties and sizes, ornamental Gourds and prize vegetables, for which they received a Gold Medal and the certificate of the Society. Messrs. ROBERT VEITCH & SON, Exeter, showed *Correa cardinalis*, *C. magnifica*, Orange trees in full fruit, *Eupatorium Weinmannianum*, winter-flowering Begonias Mrs. Heal, Winter Cheer and Gloire de Lorraine, tree Carnations, *Nerine Fothergillii* major, *Bouvardias*, *Pancretium fragrans*, *Statiche profusa*, *Scutellaria*, *Tremandra verticillata*, *Grevillea alpina*, *Physalis Francheti*, *Ericas*, *Hollies* and large collections of Apples and cut blooms of Japanese Chrysanthemums. Messrs. T. CHALICE & SON, Plympton, contributed masses of *Ruellia macrantha* in full bloom and the scarlet *Bouvardia* President Cleveland, interspersed with foliage plants. Mr. VINCENT SLADE, Taunton, staged a large collection of zonal Pelargoniums, the trusses making a brilliant display and showing every shade of scarlet, crimson, orange, pink, flesh and white. Mr. N. LEVINS, Bridgewater, exhibited cut flower-sprays of a large number of the best perennial Asters or Michaelmas Daisies. Messrs. J. TOMLINSON & SON, Devonport, showed Apples in quantity as well as a general collection of miscellaneous stove and greenhouse plants. Messrs. ROSSITERS, Paignton, contributed fruit and a selection of flowering and ornamental shrubs; and Messrs. WEBBER & SON, Plymouth, were also represented.

CHUDLEIGH CHRYSANTHEMUM.

NOVEMBER 7.—The annual show of the Chudleigh Chrysanthemum Society, held on the above date, was a distinct success. Entries compared favourably in number with those of last year. In the first two divisions the Rev. T. SHEEPHANKS (gr. Mr. Dunkley) secured the principal prizes, while Mr. C. J. STEVENS was a prominent winner in the Amateur Classes. The Cottagers' section filled well, while the exhibits in the section devoted to Dairy Produce were of high quality.

Honorary exhibitors at the Show included Lord CLIFFORD, Mrs. YARDE, Miss BUTTRESS, Mrs. F. HEYWARD, Messrs. WHITEWAY & SON, Mr. H. ST. MAUR, Messrs. FULLER & SON, Messrs. JARMAN & CO., and Messrs. WRIGHT BROS.

SOUTHEND-ON-SEA AND DISTRICT CHRYSANTHEMUM SOCIETIES.

NOVEMBER 7, 8.—The seventh annual autumn exhibition of the above Society was held in the banquet hall of the Kursaal, Southend-on-Sea, and was the best hitherto held by the Society.

Groups of Chrysanthemums in pots were arranged by Mr. E. BINES, Mr. J. Burles, gr. to J. TABOR, Esq. The Lawn, Rochford, Mr. E. BOOSEY, and Mr. S. HANSEN, who were awarded the prizes in the order in which their names appear. Mr. C. H. SCOTT, The Nursery, Leigh-on-Sea, was awarded 1st prize for a neatly arranged group of miscellaneous plants, including brightly coloured *Codæums* (Crotons), *Dracænas*, *Ophiopogon Jaburan aureo-variegatus*, Palms, &c.

CUT BLOOMS.

Mr. J. BURLES won the 1st prize easily for 24 blooms of Japanese Chrysanthemums, in not fewer than 18 varieties, with, among others, excellent blooms of F. S. Vallis, Godfrey Bride, Bessie Godfrey, and Duchess of Sutherland. Mr. BURLES was again to the fore with a dozen excellent Japanese blooms, in distinct varieties. In the corresponding class for incurves, in not fewer than eight varieties, Mr. EPPS was first, Mr. BURLES had the best stand of six Japanese Chrysanthemums, the best blooms being examples of Mrs. Barkley, W. R. Church, Mr. F. S. Vallis, and Godfrey's Pride. Mr. BURLES also secured 1st prize for six blooms of Japanese Chrysanthemums, one variety, with grand blooms of the variety F. S. Vallis.

The Amateur Classes were well filled; the blooms on the winning stands being of a high order, and compared favourably with those shown in the open classes. Mr. H. E. CAMPKIN, Meldreth, Boscombe Road, Southend-on-Sea, secured six 1st prizes with large, fresh blooms, of fine depth.

FRUIT.

Apples, both dessert and culinary varieties, were shown extensively and in fine form. Mr. C. WEIGH, Ashington, Essex, was placed 1st with six dishes of dessert varieties, staging good, clean, well-coloured fruits of Ribston Pippin, Adam's Pearmain, Golden Reinette, Sturmer's Pippin, Cox's Orange Pippin, and Blenheim Pippin; 2nd, Mr. E. BOOSEY, his fruits of Beauty of Eastwood, King of the Pippins, and Winter Pearmain being well coloured. Mr. MURRELL, Barling, won the 1st prize in the corresponding class for culinary varieties with even well-coloured fruits.

Mr. EPPS won the 1st prize for two bunches of white Grapes, having medium-sized bunches of Muscat of Alexandria. Seven stands of black Grapes were staged, Mr. E. BOOSEY being a good 1st, with medium-sized bunches of black Alicante. Mr. EPPS was 1st for three dishes of Pears among four exhibitors.

Non-competitive exhibits were staged by Messrs. GARDNER BROTHERS, York Road Nurseries, Southend-on-Sea; Messrs. MARTIN RAY & SONS, the Leigh Road Nursery, Westcliff; Mr. HATCH and G. F. JONES, Esq., M.R.C.S., Westcliff House, The Cliff, Southend. Mr. BOOSEY and Mr. HERBERT staged Apples and Pears of good quality.

BIRMINGHAM AND MIDLAND COUNTIES CHRYSANTHEMUM FRUIT AND HORTICULTURAL.

(Concluded from page 352.)

HONORARY EXHIBITS.

NOVEMBER 7, 8, 9.—Messrs. BAKERS, Ltd., Codsall and Wolverhampton, exhibited 60 varieties of Decorative Chrysanthemums. The flowers were arranged on the ground in large vases, which afforded visitors an opportunity of inspecting each variety with comfort. On a table near by flowers of single and double zonal Pelargoniums were shown, and of these the Sirdar, Zenobia and Grace Darling were particularly good. (Large Gold Medal.)

From the Lady WARWICK COLLEGE, Studley Castle Warwickshire, came gathered fruit, bottled fruit jellies, and cut Chrysanthemums. (Silver Medal.)

The Misses HOPKINS, Mere, Knutsford, sent a few plants suitable for Rock and Alpine gardens. (Vote of Thanks.)

Messrs. W. WELLS & CO., Merstham, Surrey, contributed an exhibit of large Japanese Chrysanthemum flowers on boards. The varieties Mrs. W. Knox, Merstham Crimson and J. Harrison Dick were much admired. A number of good single-flowered varieties were displayed in vases. (Silver Medal.)

Messrs. JOHN WATERER & SONS, Bagshot, Surrey, sent a large group of hardy shrubs consisting principally of variegated Hollies and well-coloured Conifers. (Large Gold Medal.)

Another group of hardy shrubs, more representative, but not quite so meritorious as the last-named, came from Messrs. RICHARD SMITH & CO., St. John's Nurseries, Worcester, who also staged a collection of Apples and Pears. A Silver Gilt Medal was awarded for the hardy shrubs and a Silver Medal for the fruit.

Messrs. J. M. JOHNSTON & SON, Sutton Coldfield, put up a bank of decorative Chrysanthemums in many varieties, and about eight dishes of Potatos. (Silver Medal.)

A Silver Gilt Medal was awarded to G. E. BELLIS, Esq., The Dell, King's Norton (gr. Mr. T. Bowers), for 36 superbly-flowered plants of Begonia Gloire de Lorraine, interspersed with graceful Palms, *Dracæna Sanderiana*, and Ferns.

Mr. G. H. TOWNDREW, Malvern Link, brought an exhibit of zonal Pelargonium Beauty, with large bright scarlet single flowers. (Bronze Medal.)

Messrs. W. CUTBUSH & SONS, Highgate Nurseries, London, showed winter-flowering Carnations as growing plants and cut flowers. A stand of the new yellow-flowered Japanese Chrysanthemum Mrs. Frank Penn was well shown. (Silver Medal.)

Another group of winter-flowering Carnations, arranged in vases and tall Bamboo stands, came from Messrs. GEO. BOYES & CO., Leicester. (Silver Medal.)

Messrs. WEBB & SONS, Stourbridge, exhibited about 80 varieties of Potatos, six dishes of large shapely Onions, and a large number of small well-flowered plants of Begonia Gloire de Lorraine and its white variety Turnford Hall. (Large Gold Medal.)

Messrs. SANFORD & CO., Hall Green, Birmingham, staged a pretty collection of single-flowered Chrysanthemums in bold masses. (Silver Medal.)

Single Chrysanthemums and a number of very good incurved varieties came from Messrs. CLIBRAN & SONS, Altrincham. (Silver Medal.)

Mr. H. WOOLMAN, Tysley, Acock's Green, had a nice lot of Japanese Chrysanthemums arranged in vases.

Undoubtedly the best display of Chrysanthemums came from Mr. W. J. GODFREY, Exmouth, whose flowers of F. S. Vallis, W. Gooding (light purple), G. Montigny (soft yellow), Miss Dorothy Oliver (lovely shade of pale pink), Mrs. T. Dalton (deep crimson), and G. F. Evans were unusually good. Sprays of a few varieties of zonal Pelargoniums were included in the award of a Large Gold Medal.

Messrs. BICK BROS., Olton, Birmingham, sent an interesting group of Alpine plants in which were several uncommon Saxifragas and *Sempervivums*. (Silver Medal.)

A small Gold Medal was awarded to Rev. H. BUCKSTON, Derby (gr. Mr. A. Shambrook), for a wonderful display of well grown and profusely flowered Cyclamen in small pots. The thick leathery leaves were beautifully marbled and the flowers large and substantial.

A similar award went to the KING'S ACRE NURSERIES, LTD., Hereford, for a meritorious collection of Apples.

Messrs. W. B. ROWE, Worcester, showed a representative collection of Apples and a few good Pears. (Silver Medal.)

Messrs. PEWTRESS BROS., Tillington, Hereford, filled a table 12 feet by 8 feet with an assortment of Apples of average size and merit. (Silver Medal.)

Mr. JOHN BASHAM, Bassaleg, Newport, Monmouth, also occupied a table similar to the last-named, with a collection of Apples and Pears. (Silver Medal.)

From the EXPERIMENTAL GARDENS OF THE WORCESTERSHIRE COUNTY COUNCIL, at Droitwich (Supt. Mr. J. Udale), came an instructive collection of gathered and bottled fruits, and vegetables grown under particular conditions. Some good-sized bunches of outdoor Grape Gamay Noir, used for wine, were also included in this exhibit, for which a Silver Medal was awarded.

Messrs. THOMPSON & CO., Sparkhill, Birmingham, exhibited a large group of comparatively uninteresting foliage and flowering plants indifferently arranged. (Silver Medal.)

The LEAMINGTON NURSERYMEN AND FLORISTS CO., Leamington, sent a nice collection of hardy shrubs. (Silver Medal.)

Mr. JOHN E. KNIGHT, Wolverhampton, also sent a group of hardy shrubs in which variegated hollies were the principal feature. (Bronze Medal.)

Messrs. HEWITT & CO., Solihull, showed a choice collection of well-grown hardy shrubs. (Silver Gilt Medal.) In another part of the hall Messrs. HEWITT staged a beautiful group of winter-flowering plants, comprising Tree Carnations, Bonvardias, Begonias, and Cyclamen. (Silver Medal.)

Messrs. JAMES SIMPSON & SON, Court Oak Road, Harborne, sent a group of small, sombre-looking Conifers. (Bronze Medal.)

Messrs. GUNN & SONS, Olton, Birmingham, had a very pretty and costly exhibit of Floral Designs. Messrs. GUNN also staged a grand collection of Decorative Chrysanthemums in large vases, each vase containing nearly 100 flowers. (Large Gold Medal.)

Messrs. PERKINS & SONS, Coventry, also had a large collection of Floral Designs. The same exhibitors staged a collection of zonal Pelargoniums in pots, but owing to the quantity and unsightliness of the white sticks supporting the flowers much of the effect of the latter was lost. A large Gold Medal was awarded for the two exhibits.

Messrs. POPE & SONS, King's Norton, had a collection of Floral Designs and a few plants of *Primula obconica*, with deep rose purple-coloured flowers. (Silver Medal.)

A similar award went to Messrs. H. J. & A. HUGHES, Water Orton, Birmingham, for an arrangement of cut flowers and plants of *Begonia Gloire de Lorraine* laden with flowers.

From Mr. R. WINTER, City Arcades, Birmingham, came floral designs and choice fruit. (Silver Gilt Medal.)

Messrs. CHILD & CO., Acock's Green, had a large group of decorative Chrysanthemums in which Comtesse Fouchier de Cariel, White Quintus and Pluie d'Or were noteworthy. (Silver Medal.)

The VINERIES, LTD., Acock's Green, also showed decorative Chrysanthemums, for which a Silver Medal was awarded.

The only non-competitive display of Vegetables shown at Birmingham this year came from Messrs. VATES & SONS, Old Square, Birmingham.

It is doubtful if a more representative or finer all-round collection of Vegetables has ever been seen in Bingley Hall. (Gold Medal.)

CERTIFICATES OF MERIT

were awarded to each of the following Chrysanthemums:—

Chrysanthemum Mrs. W. Knox.—A fairly well-known Japanese variety.

C. Mary Richardson.—Described on p. 347.

C. E. F. Brooks.—A Japanese variety with large substantial flowers, composed of purplish crimson florets with a silvery reverse. The three varieties named above were shown by Messrs. W. WELLS & CO., Merstham, Surrey.

C. Melba.—A shapely single flower of medium size with two rows of florets. The colour is claret-crimson, passing to a lighter shade with age. Shown by Messrs. CLIBRAN & SON, Altrincham.

C. Mrs. J. Luxton.—A handsome Japanese variety with long drooping deep crimson florets with a paler reverse.

C. Dorothy S. Eady.—A medium-sized Japanese flower of good form; colour pale orange yellow with a sulphur yellow reverse.

C. Mrs. Hinchley.—A large, handsome, white Japanese flower, with drooping florets.

C. Godfrey's Eclipse.—Beautiful incurved flowers with substantial deep yellow florets.

The four varieties named above were shown by Mr. W. J. GODFREY, Exmouth.

. We should have stated in the report published last week that the 1st prize in the Class for a vase of white Chrysanthemums was won by Mr. R. BARNES, St. Andrew's Nursery, Wyche Road, Malvern, who had good flowers of the variety Mrs. J. Dunn.

CHESTERFIELD CHRYSANTHEMUM.

NOVEMBER 8, 9.—The twelfth annual show of the above Society was held on these dates in the Stephen Memorial Hall, Chesterfield, and was a success.

In the open class for 24 Japanese Chrysanthemums in not fewer than 18 varieties, Ald. J. SUTCLIFFE, J.P.,

Grimsby (gr. Mr. Jackson), with his exhibit easily beat the two other competitors. For incurved blooms, however, Mr. JACKSON was placed 2nd to Mr. WOOD, of Derby.

The group classes are always a prominent feature at Chesterfield, and no fewer than five prizes are offered for a class devoted to large blooms and foliage plants arranged for effect; and five also for a group of Chrysanthemum plants—decoratives, singles, Pompons, &c.—which have not been disbudded.

In the former class Mr. Bloxham, gr. to R. F. MILLS, Esq., Tupton Grove, won the 1st prize among four competitors, while the best group of Chrysanthemums among four was shown by Mr. Nelson, gr. to E. E. BARNES, Esq., Ashgate, Chesterfield.

The Cup class for 18 blooms shown in vases, open to local exhibitors, was won by M. DEACON, Esq., Whittington House (gr. Mr. Durham).

The Five Guinea Cup in the Amateurs' section was won by Mr. W. PACKARD, of Dronfield.

The schedule embraced classes for *Salvias*, *Begonia Gloire de Lorraine*, *Roman Hyacinths*, *Lily of the Valley*, *Table decorations*, decorated Baskets and Vases, *Orchids*, &c. All were keenly contested. A stall in aid of the Gardening Charities was well supplied with plants and cut flowers, while one lady contributed a bunch of *Barbarossa Grapes*, which realised over 30s. A local auctioneer very kindly disposed of the plants, &c., remaining unsold at the closing time. The ladies who managed the Charity stall were the wives of the officials and committeemen. W. P.

GUILDFORD AND DISTRICT CHRYSANTHEMUM.

NOVEMBER 8, 9.—The twenty-first annual exhibition of this Society was held on the above dates. Among the many successful shows held by this Society none has reached in magnitude or in standard of excellence the results achieved this year. The entries numbered over 200. The President's Silver Challenge Cup for the best collection of plants was won by Mr. W. Foreman, gr. to J. S. BUDGETT, Esq., Stoke Park. Mr. J. Lock, gr. to Sir C. SWINFEN EADY, Outlands Lodge, Weybridge, won the Silver Challenge Cup given by Lady Pirbright in the Class for 36 Japanese blooms. Mr. Lock also repeated his former success in the competition for 27 cut Chrysanthemums flowers, and was awarded a special prize for the best Japanese Chrysanthemum in the Exhibition, the example being *Duchess of Sutherland*. The premier incurved was shown by Mr. R. Turvey, gr. to Lord ALVERSTONE, Winterfold, Cranleigh. The trade exhibits formed a notable addition to the display.

DUMFRIESHIRE AND GALLOWAY HORTICULTURAL.

NOVEMBER 8.—The third Chrysanthemum show, held by the above Society took place in the Drill Hall, Dumfries, on the above date. The attendance of the public was considerably greater than on any former occasion of the kind at Dumfries. The quality of the exhibits showed improvement, and never before have Chrysanthemums been so well shown in Dumfries.

Messrs. JAS. SERVICE & SONS, Maxwelltown, Dumfries, were the only competitors in the class for a circular group of plants, and they were awarded the 1st prize, their plants being well grown and their flowers of high quality, but staged a little too flat. In the classes for plants open to gardeners some excellent specimens were exhibited. The principal winner in the Chrysanthemum classes was Mr. Jas. Henderson, gr. to J. D. MINTO, Esq., Elmbank, Dumfries. Noticeable in his exhibits were good plants of a white single named *Ewan Cameron*, a variety which was much admired by the judges. For stove or greenhouse plants Mr. C. M'IVER, gr. to Mrs. YOUNG, Lincluden, was awarded the 1st prize. The same competitor won for table plants, but in the class for Palms Mr. STEWART won the 1st prize.

Cut flowers were, as a whole, very superior to those of former years, and in some classes the competition was very close, only a few points separating the first group from the second. In the Open Classes the competition was not as keen as in the Gardeners' Classes, and Messrs. JAS. SERVICE & SONS led in the classes for twenty-four, twelve, and for six Japanese Chrysanthemums respectively.

A close competition resulted for the Challenge Cup, presented by the Town Council of Dumfries, and offered for twelve blooms of Japanese Chrysanthemums. It was awarded to Mr. J. Houston, gr. to the TRUSTEES of the CRICHTON ROYAL INSTITUTION, for a stand of fresh and even blooms of high quality. Mr. J. DUFF led in the cut bloom classes, with the exception of that for the silver cup presented by Messrs. Service and Sons

for three white and three yellow Japanese, this being won by Mr. J. HENDERSON. The FRUIT CLASSES were limited in quantity, but some excellent fruit was shown, the Apples being particularly fine. Mr. J. Culton, gr. to C. A. PHILLIPS, Esq., Dildawn, won the first prize for white Grapes and for culinary Apples. Mr. J. M. STEWART, Mr. J. DUFF, and Mr. J. Smith, gr. to Mrs. LAWRENCE, Ernespie, Castle Douglas, were the leading prize winners in the vegetable classes.

CARDIFF AND DISTRICT CHRYSANTHEMUM.

NOVEMBER 8, 9.—The seventeenth annual show held in connection with the Cardiff Chrysanthemum Society, took place in the Park Hall, Cardiff, on the above dates. The exhibits were quite up to the standard of former years both in point of quantity and quality, and the interest which the society has roused among growers and the general public is steadily increasing, as was evidenced on both days by the crowded state of the halls, which made it difficult for visitors to view the exhibits with anything like comfort.

OPEN CLASSES.

Mr. J. Duff, gr. to Mrs. WILLIAMS, Bryn Glas, Newport, was successful in carrying off the 1st prize and a Challenge Cup, offered for eight vases of specimen blooms of Japanese Chrysanthemums, distinct, each vase containing three blooms of one variety. The blooms were exceedingly fine, and consisted of the following varieties: *M. Louis Remy*, *Mrs. J. Bryant*, *Mrs. F. W. Vallis*, *F. S. Vallis*, *Nellie Pockett*, *W. R. Church*, *Bessie Godfrey* and *President Viger*. Mr. F. May, gr. to H. O. LORD, Esq., Charlton Kings, Gloucestershire, won the 2nd prize. Two of the best varieties in his collection were *W. A. Etherington* and *General Hutton*.

For 24 blooms of incurved varieties, not fewer than 12 distinct varieties, nor more than two blooms of any one variety, Mr. G. W. DRAKE won the 1st place with a beautiful collection of flowers conspicuous amongst which were the varieties *Madame Ferlat*, *Miss E. Seward*, *Ma Perfection*, *Mrs. F. Judson*, and *Nellie Threlfall*. Mr. PITT, Abergavenny, and Mr. F. MAY won 2nd and 3rd prizes respectively in this class.

Mr. W. TRESEDER, Cardiff, was awarded the 1st prize and a silver cup for a group of Chrysanthemums, arranged for effect in a space of 60 square feet. The quality of the flowers staged was good, and the arrangement of colours in the best of taste.

Prizes were also offered for *Bouquets*, *Wreaths*, and *Crosses*, composed of Chrysanthemums. The principal prize winners in these classes were Messrs. ELLIS & SON, Cardiff, Mr. W. TRESEDER, and Mr. BAGGESEN, Cardiff.

AMATEURS AND GENTLEMEN'S GARDENERS' SECTION.

For a stand of 24 blooms (Japanese) in not fewer than 18 varieties, Mr. J. Grahame, gr. to A. T. STEVENS, Esq., Sully, Cardiff, took the premier position with excellent blooms. The most striking varieties on this stand were: *F. S. Vallis*, *Marquis V. Venosta*, *Mad. P. Radaelli*, *Mrs. J. Dunn*, *Chrysanthème Montigny*, and *President Viger*. In addition to the 1st prize and a challenge cup, Mr. Grahame was awarded a special prize on account of this collection containing the premier bloom in the show. This was a bloom of the variety *F. S. Vallis*, which for three years in succession has at Cardiff met with similar recognition. Mr. E. PARSONS, gr. to E. J. POOLE, Esq., Cardiff, won the 2nd prize, some of his best blooms being *Mrs. J. Lewis*, *W. R. Church*, and *F. S. Vallis*. Mr. H. Farmer, gr. to the Marquis of BUTE, who exhibited Chrysanthemums for the first time, won the 3rd prize with a very creditable collection of flowers.

For a collection of 12 Japanese blooms in not fewer than six varieties the 1st prize was awarded to Mr. Webber, gr. to F. PRIMAVESI, Esq., Cardiff. The most noteworthy varieties of these were *Madame P. Radaelli*, *Nellie Pockett* and *Mrs. Barkley*. The 2nd prize was taken by Mr. H. Woodward, gr. to E. WATTS, Esq.

For a stand of 12 incurved blooms in not fewer than six varieties Mr. H. Baker, gr. to Dr. CROPPER, Portskewett, won the 1st prize, and the National Chrysanthemum Society's Silver Medal. *Mrs. J. B. Bryce*, *Pantia Ralli*, *Mrs. B. Hankey*, and *Ralph Hatton* were among the best varieties shown.

Mr. H. EDWARDS, a member of the City Police Force, and a well-known exhibitor at this show, was awarded the 1st prize and a Silver Challenge Cup for a stand of 12 blooms (Japanese) in not fewer than four varieties. Three of his best blooms were *Duchess of Sutherland*, *Chrysanthème Montigny*, and *Bessie Godfrey*.

Mr. Pinden, gr. to Dr. WALLACE, Cardiff, showed six bunches of distinct single varieties arranged in vases, for which he was awarded the 1st prize.

MISCELLANEOUS EXHIBITS.

A very fine collection of Orchids was staged by the well-known local Orchid grower, J. J. NEALE, Esq., Penarth. Although this was a non-competitive exhibit the Society paid the owner a thoroughly deserved compliment by awarding him a silver medal.

Messrs. JAMES CYPHER & SONS, Cheltenham, were awarded a gold medal for a large group of Orchids.

Fruit and vegetables again formed a very pleasing feature of the show, and competition was satisfactory in all the classes. Some very fine bunches of Grapes were staged, which added variety to the tables, while the various collections of Apples produced a very bright display.

GLOUCESTERSHIRE CHRYSANTHEMUM.

NOV. 9.—The forty-second annual exhibition of the Gloucestershire Chrysanthemum Society was held in the Shirehall, Gloucester, on the above date, and in many respects was a record in the annals of the Society. The Chrysanthemum classes, in point of quality, were generally admitted to have been far in advance of previous years. Sir HUBERT PARRY, Bart., of Highnam, near Gloucester, was the premier prize winner for a display of cut blooms, and also for 18 Japanese blooms of distinct varieties, the latter prize being given by the Mayor and Corporation. Mr. JAMES HORLICK, of Cowley Manor, was 1st for 18 Japanese blooms of distinct varieties. Sir WILLIAM WEDDERBURN, Bart., Mr. E. S. GODSELL, of Stroud, and Mr. W. MEATH BAKER, of Harfield Court near Gloucester, also figured prominently in the prize list, and Mr. E. S. GODSELL was placed first by the judges for an ornamental basket of flowers, arranged for effect. In the first classes the principal prize winners were:—Mr. W. GORDON CANNING, Hartpury House, Hartpury (winner of the Terrell Cup for greatest number of points); JAMES HITCH & SONS, Shurdington; Col. HENRY; Capt. W. S. R. COX ROSS; A. W. G. WRIGHT; J. R. BENNETT, Chahill; J. D. BIRCHALL, Upton St. Leonards; T. A. POWELL, Ross; J. CAVE, Tibberton; D. PHELPS, Tibberton; J. H. WOOTTON, Hereford; MORRIS & ELLIS; and E. R. HAINE, Churcham. F. P.

DEVON & EXETER HORTICULTURAL.

NOVEMBER 9, 10.—The Chrysanthemum and Fruit show of this Society was held in the Victoria Hall, Exeter, on these dates. Entries were fewer, and in many of the leading classes competition was less keen than usual.

The Silver Medal of the N.C.S. in the professional gardener class was won by Mr. W. Rowland, gr. to Mr. W. BROCK, Exeter, who also was awarded the N.C.S. Certificate and the 1st prize for Chrysanthemums arranged in a space measuring 25 feet by 6 feet, his best blooms being those of F. S. Vallis. The Silver Medal for Amateurs was won by Mr. C. M. COLLINGWOOD, Exeter, to whom also was awarded the Bronze Medal for the best incurved bloom in the show; the winner of the Medal for the best Japanese bloom being Mr. G. Lock, gr. to Mr. B. H. HILL, Crediton, the variety being F. S. Vallis. A Certificate of Merit was awarded to a seedling Apple, Star of Devon, shown by Mr. J. GARLAND, Broadclyst. The variety is said to be a late keeper and suitable either for cooking or for dessert purposes. In size and appearance it resembles Beauty of Bath.

CHRYSANTHEMUM CLASSES.

The prize for a group of Chrysanthemums measuring 12 feet by 6 feet, the plants to be grown in 6½ inch pots, was awarded Mr. C. M. COLLINGWOOD, who displayed some fine plants. For a miscellaneous collection of plants, Mr. BROCK won the 1st prize. In the class for 36 Chrysanthemums of Japanese varieties, three blooms of one variety; arranged in vases with suitable foliage, Sir DUDLEY D. KING was awarded the 1st prize for a grand lot of blooms, including the varieties F. S. Vallis, Madame Paolo Radaelli, Madame Carnot, Louis Remy, Duchess of Sutherland, &c. Second prize went to Mr. COLLINGWOOD, his best examples being Bessie Godfrey, President Viger, W. Duckham, Godfrey's King, and Alice Byron.

The best 24 Japanese Chrysanthemums in not fewer than 18 distinct varieties were staged by Mr. H. R. HARRISON, Barnstaple (gr. Mr. C. J. Mearles), including good examples of Sensation, Henry Perkins, and Mrs. H. R. Harrison. Sir DUDLEY KING was awarded 2nd prize for very fine blooms of Madame Paolo Radaelli, Waldeck Rousseau, Madame Carnot, &c. The award in

this class was warmly discussed, many expert growers maintaining that the awards should have been reversed. A quarter of a point only separated the two exhibits!

The best 12 Japanese Chrysanthemums were shown by Mr. LUXMORE JONES, Exeter, his best flowers being the examples of Mrs. F. W. Vallis, Bessie Godfrey, and Duchess of Sutherland. Sir DUDLEY KING was 1st in the class for six white Chrysanthemums, having half a dozen good flowers of Madame Carnot. For six yellow, Mr. J. A. GULSON, Teignmouth (gr. Mr. F. E. Brincombe), won 1st prize in a similar class for six yellow Chrysanthemums, the variety being General Hutton; and for six flowers of any other colour than white or yellow, the same exhibitor was 1st with Mad. Paolo Radaelli. Mr. GULSON and Mr. COLLINGWOOD were respectively 1st for twelve and for six incurved Chrysanthemums, the latter exhibitor's flowers being very good, especially the examples of Souvenir de W. Clibran and Mrs. F. Judson.

In the Amateur Classes fine blooms were shown on the winning boards of Mr. CHARLES HAM and Mr. LUXMORE JONES, of Exeter, Mr. E. J. T. PRICE, Taunton, and Mr. COLLINGWOOD.

FRUIT.

The class for 24 varieties of Apples to include 12 culinary and 12 dessert caused spirited competition. Mr. B. H. HILL, Crediton, won the 1st prize, but he was hard pressed by Sir JOHN FERGUSON-DAVIE, Creedy Park, 2nd. Amongst the finer examples in these two exhibits were Gascoyne's Scarlet, Nancy Jackson, Peasgood's Nonsuch, Bismarck, Cornish Aromatic, &c.

SIR D. KING was awarded the 1st prize for dessert Apples, with Red-ribbed Greening, Cox's Orange Pippin, Adams' Pearmain, Ribston Pippin, Cornish Aromatic, and Golden Pippin. Mr. J. R. GULSON gained similar honours for six culinary varieties, having Kentish Fillbasket, Warner's King, Peasgood's Nonsuch, &c.

Exceptionally fine quality was shown in the single dish classes, frequent winners being Dr. SAMWAY'S Cyst St. George (gr. A. C. Williams), and Lord POLTIMORE (gr. T. Slade). The last named exhibitor showed very fine fruit.

Mr. B. H. HILL, Crediton, won the 1st prize for nine varieties of Pears, six dessert and three culinary, with fine specimens of Pitmaston Duchess, Duchesse d'Angoulême, Beurré Baltet, Doyenne du Comice and Beurré Diel.

Trade exhibits were limited to two, a large and extensive one of Fruit, Chrysanthemums, and rare shrubs by Messrs. ROBERT VEITCH & SON, of Exeter, and a smaller one of Fruit, Onions, &c., by Messrs. JARMAN & CO., Chard.

SHEFFIELD CHRYSANTHEMUM.

NOVEMBER 10, 11.—The annual autumn show of the above Society was held in the Corn Exchange and was a success. The entries were numerous in most of the classes, while the quality of the blooms, and especially of those in the open classes, was quite equal if not superior to anything seen this year.

CUT FLOWERS.—OPEN CLASSES.

In the Class for eight varieties of Japanese Chrysanthemums, three blooms of each variety, arranged in vases with Chrysanthemum foliage only, four growers competed, resulting in a good display. Mr. C. Crooks, gr. to LADY HINDLIP, Hadzor House, Droitwich, won the 1st prize with exceedingly heavy blooms. His specimen of Henry Perkins was fully 9 inches in diameter and as much in depth, F. S. Vallis was of similar dimensions, while Valerie Greenham and Lady Mary Conyers were even larger. 2nd, Mr. A. Chandler, gr. to A. JAMES, Esq., Coton House, Tingley.

In the Class for 24 Japanese Chrysanthemums, in not fewer than 18 varieties, nor more than two of any one variety, competition was keen. Mr. Crooks was again successful winning with a handsome set of blooms of which the following were conspicuous: H. Perkins, Lady Conyers, F. S. Vallis, and Mrs. E. Beckett.

Six growers staged in the Class for 12 Japanese Chrysanthemums in distinct varieties, Mr. Crooks again surpassed all other competitors.

Incurved varieties of Chrysanthemums made a magnificent display. Four growers entered in the Class for 24 blooms, in not fewer than eighteen varieties, nor more than two or any one variety. Mr. G. W. DRAKE, 44, Cathays Terrace, Cardiff, secured the leading award with large, even, fresh blooms, that were well staged. The varieties Nellie Threlfall, Madame Ferlat, Miss E. Seward, B. Hankey, Ma Perfection and Pantia Ralli were some of the more

notable. 2nd, Mr. Higgs, gr. to J. B. HANKEY, Esq., Fetcham Park, Leatherhead, whose blooms in a few instances showed a want of finish and freshness. Mr. Higgs was easily first for twelve incurved Chrysanthemums, with large, even, solid, well finished examples of Miss A. Hills, Pantia Ralli, Buttercup, &c.

DISTINCT CLASSES.

Mr. Alderman was first for six varieties of Japanese Chrysanthemum, three blooms of each, arranged in vases with handsome examples of W. A. Etherington, F. S. Vallis and Mrs. Barkley.

The 1st prize for 12 specimen Japanese blooms, distinct, with long stems arranged with small Ferns, Palms and any kind of foliage to illustrate the value of large Chrysanthemum blooms for decorative purposes, was taken by Mr. W. Redmill, gr. to ISAAC MILNER, Laverack Bank, Shanon, the flowers being arranged in bottles among small Ferns and Panicum plicatum, producing little effect.

The best incurved flowers were shown by Mr. Alderman, gr. to J. D. ELLIS, Esq., Workop.

Mr. H. FREEMAN, with 52 points, was first with an artistic arrangement of cut Chrysanthemums arranged with foliage, grasses, or berries for effect, to occupy a table space measuring 4 feet by 2½ feet.

Exhibits in the Amateur and Cottager Classes made an extremely fine display.

Plants were not numerous. In the class for a group of Chrysanthemums interspersed with flowering and foliage plants arranged for effect in a space of 100 square feet there was but one exhibit. This was shown by Mr. C. E. ABBOTT.

Mr. W. J. GODFREY, Exmouth, had a fine display of cut Chrysanthemums.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT

NOVEMBER 13.—The monthly committee meeting was held at the Royal Horticultural Hall, Vincent Square, Westminster, S.W., on the above date. Mr. C. H. CURTIS in the chair. Seven new members were elected. The amount paid for sickness since the last meeting was £26 16s.

Ten members are on the sick fund at the present time. A sick member was granted £1 from the convalescent fund. It is hoped that many more members will contribute a small amount annually to this fund.

Obituary.

ALESSANDRO SCALARANDIS.—On October 31 last ALESSANDRO SCALARANDIS, formerly Head Gardener to King Humbert, died at Stupinigi, at the early age of 44 years. We have many pleasant recollections of our old friend, who, since King Humbert's death, has been the Head Gardener in charge of all the Royal Gardens in Piedmont. During my visit to Turin last year, I saw his curious reproduction of an old Italian garden, and were shown over the gardens adjoining the Palace of Stupinigi, the summer residence of the Dowager Queen Margherita. Mr. Scalarandis was one of the founders and also for a time the President of the Italian N.C.S. He was a member of the French and English N.C.S. and several leading Continental Societies. Mr. Scalarandis was a widower, and leaves a family behind him to whom deep sympathy will be extended in their loss. C. H. P.

M. DE REYDELLET, the raiser of Chrysanthemum La Triomphante and many other varieties well known to our growers fifteen to twenty years ago, recently died at Valence (Drome). He was one of the most delightful of old men, greatly respected by his colleagues for his genial, patriarchal manners. He was a member of the French, English and Italian Chrysanthemum Societies, and a Knight of the Merite Agricole.

GARDENERS' DEBATING SOCIETIES.

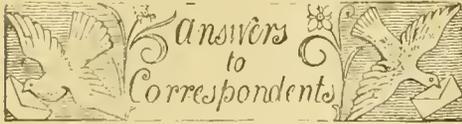
BECKENHAM HORTICULTURAL.—At the meeting of this society, held in the large hall, Church House, on November 10, presided over by W. Atkinson, Esq., Mr. H. Langford read a paper on "Specimen Chrysanthemums for Exhibition and Conservatory Decoration." The lecturer gave a list of varieties suitable for growing as pyramid and standard plants, with full details of culture, &c. Mr. Langford exhibited plants, especially good being the varieties Guy Hamilton, Maynall and W. Dunkham.

CHELMSFORD AND DISTRICT GARDENERS'.—At a meeting held on Friday, November 10, Mr. Hammond, of The Gardens, Trueloves, Ingatestone, read a paper on "Winter-flowering Begonias," and exhibited several varieties suitable for flowering in winter, including that known as Mrs. Heal. The popular variety Gloire de Lorraine was shown well by Mr. Elcock, of Boreham, who also described the cultural details, and supported Mr. Hammond in claiming further attention for these useful flowering plants.

ENQUIRIES.

APPLE (THE SPENCER).—Can this variety, which I believe was raised in Columbia, be procured from English nurserymen? *X.*

C. CANES.—Can any reader state where cloches similar to those used in France in the cultivation of lettuce may be obtained in this country? *H. W.*



APPLE, GREEN BALSAM: *Tooting.* This is the correct name for a culinary Apple cultivated chiefly, if not exclusively, in the northern districts of Yorkshire. Hogg, in his *Fruit Manual*, describes it as "The farmer's wife's apple." The fruits are about 2½ inch wide and 1¾ inch high. The flesh is described as crisp, not very juicy, and possessing a pleasant acidity.

ARSENATE OF LEAD: *H. G. K.* If used as a spray this substance should not be employed at greater strength than 3oz. to 10 gallons of water, and other substances as treacle, or soft soap should be added to make the liquid adhesive. If you use it on Vines having no foliage, and you are careful not to get any of the dressing into the points of the buds, the strength may be considerably increased.

CALANTHE LEAVES SPOTTED: *W. H. L.* The small clearly-defined marks are probably due to punctures by green-fly or other insects made when the leaves were young, the injury developing into that now seen. The larger blackish markings are probably due to natural decay of the leaf after maturity. It is seldom that a batch of hybrid calanthes are seen without some of these disfigurements being present after the leaves are matured. Sometimes indiscriminate watering with liquid manure will cause similar damage even when the leaves are young. It is better to cut off mature leaves that are so disfigured and burn them.

CARNATIONS DISEASED: *A. S.* We believe the diseased appearance to be due to eelworm. Kindly send examples of the roots for confirmation or otherwise. Meanwhile burn all plants similarly affected, and sterilise by baking any soil used for potting purposes.

CELERY; *J. T., Dartford.* The heart-rot of celery is caused by an eelworm, *Tylenchus devastatrix*. Diseased plants should be removed and deeply buried, or better still, consumed by burning to prevent further infection. The soil is undoubtedly infected with the pest, and should be treated with gas-lime.

COVENT GARDEN MEASURES: *J. F.* A Southampton basket should contain 6lb. of Strawberries; a punnet may contain from one-half to 2lb.; a peck, 12lb.; a barrel of Apples about 120lb.; a French crate is variable; a Californian box should contain 40lb. Raspberries are sold by the sieve of 48lb. We do not know how many lbs. are contained in a French basket of Black Currants.

CURRENT-BUD MITE: *E. J. II.* Burn all growths that are badly affected with the mite. Hand pick the swollen buds on the other branches and burn them. In addition to these practices you should scrape the surface soil from beneath the bushes, and burn this also. After this has been done apply a top dressing of soil from another portion of the garden. If the bushes are very badly affected, it may be well to burn them, and replant, but not on the same site, a variety such as Boskoop Giant, which is less liable to the attacks of this pest. You will find an illustration of some affected buds and a note on the pest in the *Calendar of Garden Operations*, to be obtained from our Publishing Department, price 7½d. post free.

DAISIES ON LAWN: *Bellis.* The best cure for these is to eradicate them entirely by means of one of the spuds sold for the purpose. If the work is done carefully the lawn need not be disfigured greatly, and the growth of the grass would soon hide the bare spots if a little good soil be put on the spot from which each root is removed. If you do not wish to adopt this method you may apply lawn-sand (manure), such as that recommended for *Old Reader*, which, by encouraging the grasses to make extra growth,

will help to smother any moss there may be present, and hinder at least the growth of Daisies, which, after considerable time, would be destroyed.

GARDENER'S LICENSE: *W. P.* For a head gardener paid by the week, but employed constantly by one employer, his master has to pay an annual license. Respecting the amount of notice necessary to terminate employment see reply on this page to *W. H. S.*

GARDENERS' NOTICE: *W. H. S.* In order to successfully claim a month's notice it would be necessary to prove that you were not engaged by the week. That you are paid by the week is presumptive, but not conclusive evidence in the absence of an agreement that the engagement was by the week also. Head gardeners in every case should ask for an agreement on this matter at the time of accepting service.

GRAPES: *Correspondent.* We believe the variety received is that known as Kempsey Alicante. But readers who send grapes for identification should always observe the rule to send a little of the wood, and some foliage when this is possible, for this attention makes the task before us less difficult than it would be otherwise.

INSECTS: *Countess Cecilia Lurani.* The insect is *Pyrrhocoris apterus* of Linnaeus. It belongs to the Hemiptera Heteroptera or "Plant Bugs."

LARGE PEARS FOR CHRISTMAS: *Gardener, Sheringham.* The Pears recommended on p. 336 to a correspondent for use at about Christmas were such as may be expected to bear a remunerative crop, and were recommended for growing against walls. They were as follows: Beurré Diel or Magnifique, a very large fruit with a pale yellow skin spotted with russet. The flesh, when ripe, is white, very rich and melting, and the variety is one particularly adapted for colder soils than that most Pears will succeed on. Glou Morceau is also a Pear of considerable size and when fully ripe, the flesh is melting and of rich flavour, the skin is a greenish yellow, but when grown against a wall and the roots afforded an occasional dressing with potash, the skin of the fruits develops a slight colour. This variety is a heavy bearer on the Quince stock, but requires to be planted against a wall, or in an otherwise sheltered spot. Fondante de Thirriot is a large handsome Pear, with a green skin slightly covered with russet. The flavour is first rate, and the flesh very sweet and melting. It is highly recommended for market purposes, and is exceedingly prolific, growing well on the Quince stock. To *connoisseurs* requiring a highly perfumed Pear at Christmas, Hacon's Incomparable is recommended. It is of rich flavour and bears well. Beurré d'Anjou is another large and excellent Pear with a green skin turning to yellow when ripe, and if exposed to the sun develops a dull red colour. The flesh is white and of excellent flavour. A large, handsome and highly-coloured Pear is Beurré Clairgeau, but the flavour is not of the best. The fruits find a ready sale on account of their attractiveness. The variety is a free cropper on the Pear stock, and in the district where you reside (Norfolk) should ripen at or about Christmas. Jargonelle is a fruit of from medium to large size, ripening during August, and is one of the best dessert Pears ripening at that time. Very fine fruits can be grown against a wall, but the variety will also succeed well as a standard tree. It requires a considerable length of stem on account of its long pendulous branches. As a bush, or pyramid, it makes rather an ugly tree, but is very prolific when worked upon the Quince stock. All the varieties mentioned above are dessert Pears.—[See also an article on "Christmas Pears," by Mr GEORGE WOODWARD, in the issue for December 24, 1904, p. 437.]

LAWN: *Old Reader.* We assume that you require the Lawn sand for the destruction of moss, and would, therefore, advise that you apply a mixture of sulphate of ammonia and sulphate of iron, three parts of the former to one of the latter, and use three ounces per square yard of Lawn. A little soot, applied in early spring, would also be found beneficial, or some dry and finely sifted fowls' manure. These dressings in spring should be applied during moist weather.

NAMES OF FRUITS: *Ballyarthur.* 1, Tippet's Incomparable; 2, Calville Malingre; 3, Crimson

Queening; 4, Granny Gifford. The Pears were over-ripe.—*F. S.* 1, Beurré de Jonghe; 2, fruit decayed; 3, Conseiller de la Cour.—*A. M. S.* 1, Léon Leclerc de Laval; 2, Swan's Egg; 3, Sturmer Pippin; 4, Niton (Seaton) House; 5, Lord Burghley; 6, Reinette Van Mons.—*C. P., Shipston.* 1, Radford Beauty; 2, Stirling Castle; 3, Ashmead's Kernel; 4, Duchesse d'Angoulême.—*X. Y. Z.* 1, Sweet Lading; 2, not recognised; 3, This certainly is not Kentish Pippin nor Colonel Vaughan, but a very well-grown specimen of Alfriston, a grand fruit; 4, Fondante de Malines; 5, Bergamotte Esperen.—*D. K. S.* 1, Vicar of Winkfield; 2, Beurré Diel; 3, Annie Elizabeth; 4, Northern Greening.—*W. J. Snell.* Pear, Hayshes Prince of Wales; Apple, Gilliflower, not Cornish Gilliflower.—*H. A. M.* 1, Pitmaston Duchess; 2, Beurré Leon Leclerc; 3, Hacon's Incomparable; 4, Beurré Diel.—*F. G. Kemp.* Apple Queen Caroline.—*R. W. D.* 1, Tower of Glamis; 2, Castle Major. The large green fruit (No. 3) is Alfriston, the Conical fruit (also No. 3) Claygate Pearmain; 5, Kentish Deux Ans.—*Zola.* 1, Knight's Monarch, Apple, Gilliflower, not Cornish Gilliflower.

NAMES OF PLANTS: *M. Sprenger.* The plant from Basutoland, is *Haplocarpha scaposa* of Harvey.—*W. S.* *Jacobinia* (*Sericographis*) *Ghiesbreghtiana*.

ORCHIDS FOR MIXED GREENHOUSE: *F. E. F.* Orchids suited to your purpose are, *Cypripedium insigne*, *Cymbidium Lowianum*, *Coelogyne cristata*, *Lycaste Skinneri*, *Zygopetalum Mackayi* and *Oncidium prae-textum*, *O. varicosum*, *O. Forbesi*, or others of that class.

PHYLLOCACTUS: *F. de L.* The *Phyllocactus* is perfectly free from fungus disease or insects. The cause will be found in some cultural defect; probably excess of moisture in the air or at the roots of the plants.

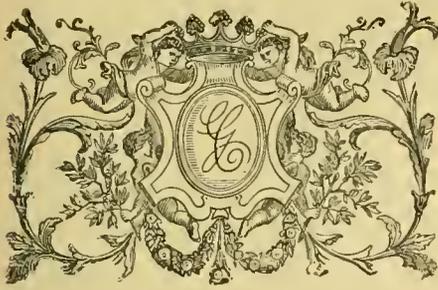
PLANTING YOUNG VINES: *R. H. C.* Canes but one year old are the most satisfactory to plant. Such canes can be fruited in the first season, but the practice is not a commendable one. It would be much better to plant double the number of canes, and allow every alternate plant to fruit for the first two years or seasons. After that period the canes that have fruited should be cut out to make room for the permanent vines, for by that time these will be in proper condition for perfecting several bunches of fruit each.

ROSE: *T. C., Worcester.* The variety *Crimson Rambler* is very subject to rose mildew. Just after the leaves appear in the spring, dredge every part of the plant with flowers of sulphur mixed with one third its quantity of quicklime. At the present time remove all diseased branches that can be spared, and apply with a small brush, rubbing well into the mildewed spots on the branches, a mixture of equal parts of paraffin and water, a wineglass full to a gallon, well mixed with a little soft soap.

SEAKALE: *J. G.* The "crowns" you purchased are, no doubt, in a suitable condition for forcing. Place them in boxes or in pots in soil of a light nature, and plunge them in some suitable material. Cover them with inverted pots or baskets, and over the whole place a covering of leaves or straw. This is necessary in order to produce etiolation, as the seakale is worthless if not properly blanched. Maintain a temperature of from 55° to 60° when forcing. See note in the *Kitchen Garden Calendar* on p. 343.

WINTER DRESSING FOR VINES: *Salopian.* We have not used a mixture of caustic soda, and pearlsh or potassium carbonate for Vines; but if you employ about 1 lb. to 1½ lbs. of soda and an equal amount of pearlsh, together with ½ lb. of soft soap to ten gallons of water it will not be likely to injure the canes. The operation of dressing Vines in winter to kill mealy bug, &c., will shortly be described in the *Weekly Calendar*.

COMMUNICATIONS RECEIVED.—*F. M.*—*Sec. R.H.S.*—*de B. Crawshaw*, with thanks. *Rev. G. H.*—*J. R. J.*—*R. P. B.*—*R. I. L.*—*G. E. W.*—*J. H. V.*—*Rev. D. W.*—*Rev. G. H.*—*W. P. W.*—*C. Branson*—*Langley Dale*—*J. W.*—*T. G. Baker*—*W. J. V.*—*N. D.*—*J. Lewis*—*A. R. B.*—*F. P. M.*—*J. S.*—*J. H.*—*G. H.*—*National Potato Society*—*Midland Daffodil Society*—*T. B. D.* & *Co.*—*J. D.*—*A. H.*—*F. J.*—*W. A. C.*—*W. W.*—*J. J. W.*—*W. H.*—*C. T. H.*—*W. H.*—*W. W. P.*—*W. H. T.*—*J. B. J.*—*W. B.*—*S. W. F.*—*Adolphus*—*Mac*—*B. S.*—*Butt*—*Reader*—*Fern Lover*—*S. S.*—*F. F.*



THE

Gardeners' Chronicle

No. 987.—SATURDAY, November 25, 1905.

CONTENTS.

Adiantum cuneatum, cultivation of ...	374	Pear tree, a fine ...	372
Arbor Day at Eynsford ...	378	Pears, a selection ...	380
Arundinaria Simoni, the flowering of ...	380	Plants for tubs and vases ...	370
Belgian and British Forestry ...	380	Potatoes, cause of variation in ...	376
Books, notices of— I Go a Walking ...	378	Potatoes, a census of early varieties of ...	374, 377
The Advertiser's Year Book ...	378	— mid-season varieties ...	371, 377
Carnations, a winter exhibition of ...	340	— octettes— Bradford Chrys. ...	382
Dumbar and its Potatos ...	374	Chester Paxton ...	383
Fern, a rare British ...	374	Devizes Chrys. ...	382
Foreign correspondence Hill Lodge, Enfield ...	380	Manchester Botanical and Horticultural ...	383
Hollies, lecture on ...	382	Manchester and North of England Orchid ...	383
Kew Notes ...	370	Royal Botanic ...	383
Manscript, a garden ...	377	Royal Horticultural ...	381
Narcissus poeticus ornatus, forcing of ...	374	Scottish Horticultural ...	383
Nepenthes, hybrid ...	379	Winchester Chrys. ...	383
Nymphæa Zanzibarensis var. rosea ...	377	Summer-flowers in the South-west ...	359
Obituary— Ford, G. F. ...	384	Trees, transplanting of Weather in Devonshire and North Cornwall ...	377, 380
Marslen, H. ...	384	Week's work, the— Flower garden, the ...	375
Pierre, M. ...	384	Fruits under glass ...	375
Tremayne, Col. ...	384	Hardy fruit garden ...	375
Odontoglossum x Vuylstekeæ ...	379	Kitchen garden, the ...	375
Palm, a coloured ...	374	Orchid houses, the ...	374
		Plants under glass ...	374

ILLUSTRATIONS.

Nymphæa zanzibarensis rosea (Supplementary Illustration)	377
Odontoglossum Vuylstekeæ	379
Pear tree bearing three hundred and twenty-seven fruits	372
Potato, a bicolor	376
Transplanting a large tree in Kew Gardens	373

SUMMER FLOWERS IN THE SOUTH-WEST.

THE reports that we are privileged to publish from time to time concerning the gardens of Devonshire and Cornwall and their occupants are read, as we know, with a feeling of interest not unminged with envy by those resident in less-favoured localities. The geographical position of these counties and their sheltered aspect are of course sufficient to account for a native flora approximating in some cases more or less closely to that of Western France or even of Spain. The residents, too, in these equable districts know how to avail themselves of these favourable conditions. It must not, however, be thought that all the south-west coast is equally favoured, or that experiments in adaptation are always successful. Parts of Devonshire and Cornwall are as bleak and unfavourable for garden experiments as any places further north, and we know, on the contrary, that many places in south-west Ireland, and even in the north-east coast of that island, the Isle of Man, and Western Scotland can rival the south-western counties in their vegetation. Dr. Landsborough's experiments with various Eucalyptus in Arran rise to the mind, whilst an illustration of an opposite character may be cited from Dorsetshire, where Dr. Alfred Wallace was, as he told us recently, quite unsuccessful in his attempts to grow Cape Heaths in the open in the mild climate of the district between Poole and Bournemouth. We do not know until we try what plants can adapt themselves to our climate. We should not have supposed that the Brazilian Passionflower, *Passiflora cœrulea*, would be hardy near London, nor that the common Jasmine, from the Himalaya, would survive our most severe winters. Instances like these should encourage our planters to experiment with judgment even in the case of plants that, from their native locality or other circumstances, appear ill adapted to survive the vagaries of our fickle climate. For it is indeed to its ordinary fickleness and not to its occasional severity that we must generally attribute the greater measure of our want of success. Still a "grand winter," or a succession of such as we experienced in 1878-9, 1880-81, and again from 1886 to 1891, and in 1893, 1894, and 1895, make havoc with our cherished plants. In mentioning these particular winters we have had the neighbourhood of London in view, but we have no doubt that the very low temperatures experienced in or near the metropolis in the years in question were shared by the whole country to a greater or less degree, according to circumstances. For a general statement of the effects of the great frosts in some of the years above mentioned we may refer to the elaborate report presented to the Scientific Committee by the Rev. Prof. Henslow, and published in the Journal of the Royal Horticultural Society for vol. viii, 1887. No doubt the losses were severe, but we are sure all plant lovers will echo Tennyson's lines and say with him:—

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" 'Tis better to have lov'd and lost
Than never to have loved at all."

Moreover we think that those who peruse the following list, with which we have been obligingly furnished by Mr. Fitzherbert, of plants which flourish in the south-west will endorse the recommendation:—

"Let those love now who never loved before;
Let those who always loved now love the more."

"Summer Flowers in the South-West.—*Abelia floribunda*, usually trained against a wall, succeeds perfectly in bush form, and has flowered profusely. *Abutilon megapotamicum* bore for many weeks its drooping yellow and crimson flowers, and *A. vitifolium* produced its large lavender or white blossoms. This *Abutilon*, when it reaches a fair size, often dies off unaccountably. *Agapanthus umbellatus*, grown in the open, forms great clumps 5 feet and more across, and blooms grandly in August, and *Alonsoa Warscewiczii*, which also proves perennial in some gardens, has been a spot of vivid colour. *Alstromeria pelegrina* and its white form, rarely seen in the open, have flowered well, the South African *Aristea Ecklonis* has carried its small, starry gentian-blue flowers on its branching shoots, and *Artichoke-dium cirratum* has perfected its white bloom-sprays. *Asclepias tuberosa*, a rarely-seen though strikingly handsome plant, has borne its large orange-scarlet flower heads, and *A. Douglasii* has a noble aspect. The Dropmore variety of *Achusa italica* was a sheet of blue for many weeks, and *Argemone grandiflora* rivalled *Romneya Coulteri* in its beauty. The Mexican *Bessera elegans*, with its slender stems set with bright red flowers, made a

pretty picture in a narrow border, where the yellow-flowered *Chlidanthus fragrans*, *Bravoa geminiflora*, and *Cypella Herberti* also bloomed well, and where lately the first of the Zephyranthes, *Z. candida* and *Z. Andersonii*, were blossoming. *Berberidopsis corallina* has perfected its red, pendent berry-like blooms, and in August *Bignonia speciosa*, against a south wall, bore several of its long, trumpet-shaped lavender blossoms. *Boronia megastigma* and *B. heterophylla* have also been in flower in the open border. *Bowkeria triphylla* has borne its white, waxy Calceolaria-like blooms, and *Buddleia Colvillei* has flowered. This apparently does not bloom until it attains a height of 7 feet or more. Of *Campanulas*, *C. pelviformis* has been fine, as have *C. G. F. Wilson* and *C. pulloides*; the last raised by Mr. Archer-Hind and is in every way an improvement upon *G. F. Wilson*. *C. isophylla alba* has been pretty hanging over a rock-face, and the rare *C. punctata* has flowered, while the charming little *Wahlenbergia serpyllifolia* has also bloomed well. *Candollea tetrandra* has borne its clear yellow flowers. *Cassia corymbosa* commenced its floral display early in August, and was a sheet of gold, which it retained for many weeks, and some flowers may last till the end of the year. The Lily of the Valley tree, *Clethra arborea*, has plentifully borne its branchlets of drooping, white bell-shaped flowers. *Codonopsis ovata's* lavender blossoms, beautifully marked within with orange and purple, have been admired, as have the crimson bottle-brushes of *Callistemon salignus* and the blue veil of *Convolvulus mauritanicus*, shrouding a rocky bank. *Crasula coccinea* has been a brilliant object, and *Cyananthus lobatus* has clothed a shaded nook with lavender-purple. *Desfontainea spinosa's* Holly-like foliage has been spangled with trumpet-shaped scarlet blossoms tipped with yellow, and the slender, arching flower-wands of *Dierama*, formerly *Sparaxis pulcherrima*, especially the pure white variety, have been very lovely. There is a pale flesh-coloured form that is also preferable to the type. *Digitalis obscurus*, from Granada, has produced its chestnut and yellow blossoms, the rare *Escallonia pulverulenta* has borne its white flower-spikes, and at the commencement of June *Eriobotryum coccineum* was clad in a robe of vermilion. *Fremontia californica*, a shrub that has an unfortunate habit of collapsing suddenly when it reaches a large size, was studded with its deep yellow cupped blooms for many weeks, and *Gerbera Jamesoni* has borne its large, scarlet Daisy-like flowers. This is a capricious plant that often fails in the hottest and driest spots, but succeeds in others that would appear far less suited to its requirements. *Geranium grandiflorum* has flowered well, and *Gladiolus Saundersii* and *G. princeps* have been bright, while a fine specimen of the Chilean Nut, *Guevina avellana*, over 20 feet in height, was in September covered with hundreds of flower-spikes 4 inches in length, bearing about two dozen small ivory-white blossoms with narrow, twisted-back petals and stamens half-an-inch long. *Habranthus pratensis*, a very rarely seen plant, has been bright with its scarlet Vallota-like flowers, and *Hummelmannia fumarifolia*, which lives out through the winter, is yellow with bloom. *Indigofera decora alba*, now bearing its white flower-panicles, is far more attractive than *I. Gerardiana*. *Inga pulcherrima*, against a south wall, has perfected its scarlet tassels, and the large pale blue flowers of *Ipomœa rubro-cœrulea*, spangling the glossy foliage of *Rosa lævigata* against a high wall, created a charming picture. The little-known *Jaborosa integrifolia* has borne its white blossoms, strongly resembling those of *Nicotiana affinis*, through several weeks. *Lavatera maritima bicolor*, grown in the south-west under the incorrect name of *L. assurgentiflora*, has produced its large, flesh-white purple-blotched flowers, and *Lathyrus pubescens* its lavender-blue bloom-sprays. The fine *Lonicera*

Hildebrandiana has flowered well at Torquay, and the beautiful Mandevilla suaveolens, on high wall and balcony, has been covered with its large, white, sweetly-scented flowers. Malvastrum lateritium, in the rock garden, has borne numbers of its salmon-pink blossoms and Sphaeralcea Munroana, formerly Malvastrum Munroi, has covered a ten foot bank with its foliage and red flowers. Mimulus cardinalis, a branching herbaceous plant 4 feet in height, seldom seen in gardens, has been bright with its crimson blooms, and M. glutinosus and its red-flowered variety have been flowering profusely in the open. Mitraria coccinea has been brilliant with its scarlet mitre-shaped flowers. Manettia bicolor has been in bloom and of the Montbretias, G. Davidson, Tête Couronnée and Germania have been effective. Mutisia decurrens, climbing through Berberidopsis corallina, has produced numbers of its large bright orange blossoms, but Ostrowskia magnifica, sadly damaged by the gale of April 31, made but a poor show. Pardonanthus chilensis, Pentstemon cordifolius, the little-known P. tubiflorus and the lovely Philesia biflora, with its pink Lapageria-like blossoms, have flowered well. Plumbago capensis has commenced to bloom. Salvia dichroa, 8 feet in height and 5 feet through, has been the glory of the garden, being covered with hundreds of long purple and white flower-spikes. This plant comes from the Atlas

Mountains and is practically unknown. S. leucantha and S. Grahami have also bloomed well. Of Sisyrinchium S. chilense has been by far the most attractive; from the end of June Sollya heterophylla has been blue with flower, and Trachelospermum jasminoides, quite hardy in the south-west, has covered wall and summer house with its scented, white bloom-clusters. Tricuspidaria dependens, better known as Crinodendron Hookeri, was a bright picture early in June. Tulbaghia violacea bore its lavender-pink flower-heads for many weeks and Veronica Gauntletti proved a valuable acquisition, its flower-heads, though not being salmon-pink as stated, being of a clear rose-pink that renders it the most beautiful of the shrubby Veronicas with the exception of V. Hulkeana. Watsonia O'Brieni produced its tall white flower-spikes in July. S. W. Fitzherbert, South Devon."

KEW NOTES.

CYMBIDIUM GAMMEANUM.—There is a good example of this Cymbidium in flower now in the Royal Gardens, Kew, where it has been growing for some years along with the Cattleyas. It is figured in King and Pantlings' *Orchids of the Sikkim Himalaya*, where it is said to be common in Sikkim and a possible natural hybrid between C. giganteum and C. elegans. It was first imported and distributed seven or eight years ago

by Messrs. F. Sander and Sons. Mr. O'Brien noted it in the *Gardeners' Chronicle* 1899, xxvi, p. 409, and Mr. Rolfe in the *Orchid Review* 1900, p. 107. I see no difference between this plant and one shown at the meeting of the Royal Horticultural Society on October 24th last, by Mr. Gurney Fowler, under the name of C. x Maggie Fowler, when it obtained an Award of Merit (see p. 316). Probably its previous appearance under the name of its discoverer, Mr. Gammie, of Darjuling, had been overlooked. W. W.

LISSOCHILUS MILANJIANUS.—Rendle.—This is certainly one of the most beautiful species, belonging to a rather large genus of terrestrial Orchids. According to the *Botanical Magazine* (t. 7546) it was originally discovered by C. J. Meller, Esq., when accompanying Dr. Livingstone in his second expedition to the Zambesi in 1861. Since that time it has been found by several collectors at various times. The tubers of the plants now flowering in the Orchid-house, were sent to Kew by Mr. J. Mahon from British Central Africa about four years ago. It has proved to be rather easy to manage under cultivation, and has flowered annually. It has very rigid fleshy leaves, and the flower scape is from 2 to 4 feet in height, with usually a dozen to eighteen flowers, arranged at intervals of about an inch towards the apex of the scape. The flowers are 1½ inches across the

(Continued on page 372.)

THE MOST SUITABLE POTATOS FOR PARTICULAR DISTRICTS. (SEE PAGE 376.)

EARLY VARIETIES. Total Number of Varieties mentioned— 48	Scotland, N. No. of Returns 3	Scotland, E. No. of Returns 16	Scotland, W. No. of Returns 12	England, N.E. No. of Returns 8	England, E. No. of Returns 16	England, Midland Counties. No. of Returns 43	England, Southern Counties. No. of Returns 50	England, N.W. No. of Returns 5	England, S.W. No. of Returns 31	Wales. No. of Returns 8	Ireland. No. of Returns 9	Channel Islands. No. of Returns 2	Isle of Man. No. of Returns 2	Total No. of Returns 205
American Early Rose	Total Votes
Ashleaf (Myatt's)	1	2	1	1	3	6	10	1	4	2	2	...	...	2
Ashleaf (Rivers' Royal)	1	2	2	2	3	1	3	1	1	...	...	31
Ashleaf (Sutton's Royal)	1	...	...	...	...	...	...	16
Ashleaf (Veitch's Early)	1	1	4	2	2	5	8	1	5	1	...	...	...	1
Beauty of Hebron	39
Beauty of Hebron (White)	2	1	...	...	...	...	...	...	3
British Premier	2	...	...	...	...	...	...	2
British Queen	1	...	2	...	...	1
Campania (Sharpe's)	1	...	...	...	...	...	...	...	1
Covent Garden Perfection	1	...	...	...	...	...	...	...	...	1
Duchess of Cornwall	1
Duke of York	1	12	5	2	7	19	10	2	16	3	1	...	...	78
Early Giant	1	...	1
Early July	1	...	...	...	...	...	...	...	...	1
Early Market	1	...	...	1
Early Puritan	1	1	3	4	9	...	3	...	...	...	...	21
Early Rose	3	2	...	...	...	...	...	...	5
Epicure	2	...	...	...	...	...	...	...	...	...	...	2
Express (Sharpe's)	1	...	...	...	...	...	...	...	...	1
First and Best (Wheeler's)	1	1	...	...	...	2
First Crop (Carter's)	1	...	...	...	...	...	...	1
Flounder	2	...	...	2
Forerunner	1	...	...	...	...	...	...	...	1
Harbinger	1	...	2	3	1	...	...	...	...	...	7
International	1	...	...	...	...	1	1	3
Jersey Kidney	1	...	...	...	...	...	...	1
May Queen	1	1	5	5	14	1	3	1	...	...	...	31
Mona's Pride	1	...	1
Ninety-fold	2	...	2	1	3	...	1	1	...	...	...	10
Prolific (Myatt's)	1	...	...	...	1	...	...	...	...	...	...	...	2
Puritan	1	...	3	...	...	1	1	...	2	...	...	...	...	9
Puritan (White)	4	...	...	4
Queen of the Ladies	1	...	...	...	...	1
Reading Giant	1	...	...	...	...	1
Regent (Sutton's)	1	...	1	...	...	...	...	...	2
Ringleader	1	1	10	8	1	8	2	...	...	2	33
Royal Kidney	1	...	...	...	...	...	...	1
Satisfaction
Sir John Llewelyn	1	...	...	1	1	...	...	...	...	...	...	...	1
Snowdrop	2	...	...	...	3	8	...	8	2	3	...	...	26
Star of Reading (Brinkworth's)	1	...	...	...	...	...	...	...	3
Sutton's No. 2 Kidney	1	...	...	1	...	...	...	...	...	...	1
The Dean	1	...	...	...	...	...	...	...	...	...	...	...	2
The Sirdar	1	...	...	...	...	...	...	1
Victor (Sharpe's)	2	12	4	4	3	16	12	1	3	2	1	...	1	61
Victory (Brinkworth's)	1	...	...	...	...	...	...	...	1
Walker's Seedling	1	...	...	...	...	1

(Continued from page 370.)

spreading petals, which are the most showy and prominent parts, are almost orbicular in form, golden-yellow without, and carmine-red on the inner surface, the lip is small, yellow, and tipped with red. It has a funnel-shaped spur, which is pale yellow on the outside, and marked with red lines on the inner surface. The sepals are small, brown in colour, and rather inconspicuous. This species succeeds well in a house having an intermediate temperature; and should be grown in pans in a mixture of fibrous loam, peat, leaves, and sand.

IXORA STRICTA ALBA.—Now in flower in the Stove this is a very distinct variety, and one that is rarely seen. It is a charming variety, and should be grown by all lovers of this showy genus. The leaves are lanceolate in form, usually about 6 inches in length, and much undulated on the margins. The trusses of flowers are freely produced, and are 4 inches in diameter on the small plant now flowering. The individual flowers are of pure white, and are rather smaller in size than those of *I. coccinea*; they are densely arranged in the inflorescence, and are sweetly scented. The corolla tube is rather more than an inch in length, the lobes are recurved on the margins, and are spatulate in form. *W. H.*

SPARTINA CYNOSUROIDES VAR. *AUREO-MARGINATA*.—A native of North America the Marsh Reed Grass (*Spartina cynosuroides*) is usually found growing by the sides of streams and in marshy places. It is a tall-growing, elegant plant from 5 feet to 6 feet high, with long, broad, arching leaves, eminently suitable for growing by the water's edge. The above variety is a distinct addition to the group of ornamental subjects

belonging to this family, and has golden bands running the entire length of the leaves. Although more at home where it can obtain unlimited moisture, it may be grown in drier places, such as in isolated positions on lawns, where a group of it is very effective. The genus is represented in this country by *S. stricta*, which grows by the edges of tidal water near Southampton. It is also a handsome grass, but does not grow so tall as its American relative. *S. cynosuroides* var. *aureo-marginata* was received at Kew from the New York Botanic Gardens in 1904. *W. Irving*,

CALLIPSYCHE KEWENSIS ×.—This hybrid is a very interesting addition to a genus containing but few species. *C. eucrosioides*, *C. mirabilis* and *C. aurantiaca* are the species in cultivation at Kew, the two last-named being the parents of the Kew hybrid, of which there are about a dozen bulbs now flowering in the Begonia-house. The stout erect scape is about 2 feet in height, surmounted by 15 to 18 large flowers arranged in a circle. This number being about twice as many as are usually contained in an inflorescence of *C. aurantiaca*, but rather fewer than in *C. mirabilis*. The perianth is about intermediate in size and colour between that of the two parents, being of a pale yellow. The stamens are 4 inches in length, having the prominent upward curve for about one-third of their length, which is such a distinctive character in *C. mirabilis*; the style is fully 6 inches long, and is curved upwards to a greater degree than are the stamens, which combined characters give the inflorescence a circular, brush-like appearance.

The cross was effected in 1898; the bulbs flowered for the first time in the autumn of last

year. They were then about the size of a small Hyacinth bulb. *Callipsyche*s make their growth in the early spring, the leaves dying off late in the summer. After resting for a time the flower scapes are then developed. They should be potted in a strong loamy compost and afforded stove treatment until they begin to lose their leaves, after which they should be placed near to the glass in an atmosphere of intermediate temperature to ripen the bulbs. When in flower a position in a greenhouse is most suitable. *W. H.*

A FINE PEAR TREE.

The excellent specimen of a horizontally-trained Pear tree, illustrated at fig. 140, is one growing in the gardens of R. Brocklebank, Esq., Haughton Hall, Tarporley, Cheshire. It is trained to a wall which faces to the south-east, and is 12 feet in height, the tree having been planted 10 years since. From the illustration, it may be seen that the tree affords an instance of good training as well as fruitfulness, for the horizontal branches are at almost equal distances from each other; they are all perfect, not failing at half the proper length, and there are fruitful spurs over the whole tree. The figure will serve to illustrate some of the directions given by Mr. Clarke in his weekly calendar on p. 375 and indicate to beginners the kind of tree they should seek to produce if this system of training is adopted. Of the variety Louise Bonne of Jersey, we need say little, its popularity is such that it is cultivated in most gardens.

Mr. T. Winkworth, gardener at Haughton Hall, to whom we are indebted for the photograph, has also sent us one representing a good specimen of the variety Durondeau bearing 304 fruits.

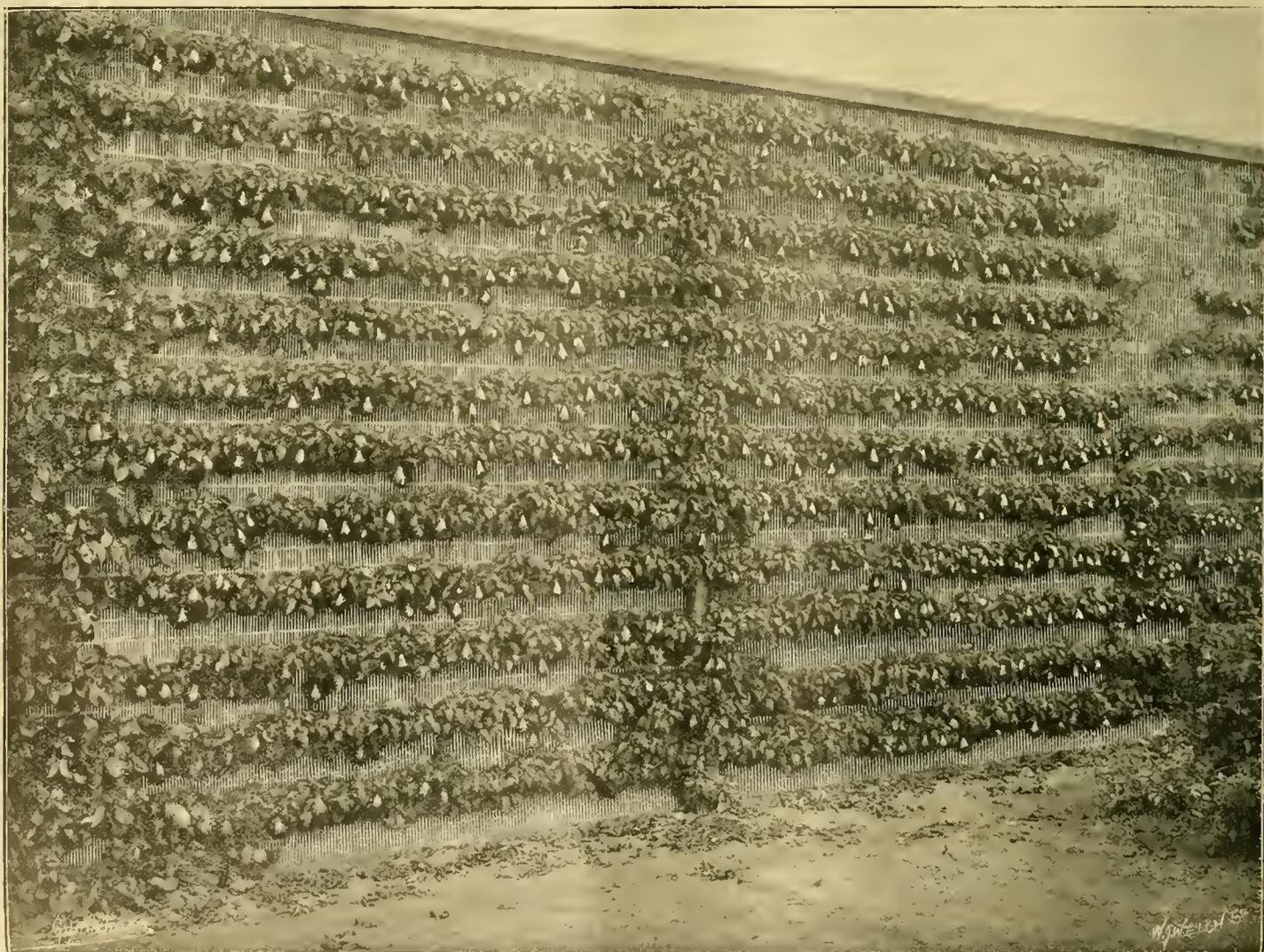


FIG. 140.—PEAR TREE OF THE VARIETY LOUISE BONNE OF JERSEY, BEARING THREE HUNDRED AND TWENTY-SEVEN FRUITS.

TRANSPLANTING.

(Concluded from page 355.)

PREPARATION OF LARGE TREES FOR TRANSPLANTING.

Reverting to the method of transplanting a tree with a "ball" of earth four feet or more square, it may be added that it is often advisable with large trees to dig the trench six or even twelve inches outside the marked square outline, and to remove the soil carefully as far as this outline and thus to preserve an additional number of fibrous roots. The ball should be supported by cords in the manner described. Finally, before removing the tree four "guy" ropes should be strained from the stem of the tree to the ends of the boards B and C, fig. 135, p. 354. These will not only prevent the head of the tree from swaying unduly but will also afford some additional support to the "ball."

Where it is desired to transplant particularly valuable or important trees, especially trees that have long been undisturbed and are known to have their feeding roots so far spread out from the stem as to make it impossible to take a necessary proportion of them with the tree, it is often desirable to prepare the "ball" six months, a year, or even two years beforehand. It is done in this way. The dimensions of the ball to be removed (whether round or square) are marked out, and then a trench is dug out rather nearer the stem than the marked line and as deep as the roots go. All the roots, of course, are roughly severed in the process, and these should be cut clean back. It is important that tap-roots if they exist should be severed also, and to do this half the "ball" or less should be undermined and then filled in again before another section is dealt with. After all this is done the trench should be filled in again with the same or, if necessary, with better soil, rammed firmly and watered.

The object of this process is to provide the tree with a stock of fibrous roots so near to the stem that they, or most of them, can be taken away with it at the time of transplanting, that thus the tree may be enabled to take hold of the soil at once in its new quarters.

One growing season at least must intervene between the preparation of the tree and its ultimate removal. Some trees may be prepared in the early spring and removed in the autumn of the same year. With most a full year should be allowed. In some cases it may be well to prepare half the "ball" one year and the other half the next. This is to avoid the check caused by removing all the roots at one time.

The accompanying reproduction of a photograph at fig. 141 shows an Evergreen Oak about 30 feet high being removed in the Royal Botanic Gardens at Kew. The mass of soil ($7\frac{1}{2}$ feet square and $2\frac{1}{2}$ feet deep), with the plant itself and lifting tackle, weighed nearly 6 tons. It was taken nearly a mile, and required five horses to draw it. The tree has been planted near Kew Palace, where extensive alterations are being made. It was required to block out a view of the unsightly gas-works at Brentford.

TIME FOR TRANSPLANTING.

The most convenient time for the removal of trees and shrubs is during the winter months, say from the middle of October to the middle of March. With very few exceptions, all deciduous trees and shrubs may be transplanted with safety during that period. Still, the earlier part of the time is better than the latter part. As far as possible all deciduous plants should be planted after the leaves have changed colour, but just before they fall. The roots are not yet inactive, and they get a grip of the new soil and become settled down before the winter sets in. The

period, however, is so short that this must be regarded rather as a counsel of perfection than as being always practicable.

The worst time for the work is during the period of dry east winds in March and early April. But after that again there frequently comes a time when, if the work has not been done before, it may still be safely accomplished. This is during soft or showery weather when the buds are bursting. The roots have by now become active again, and if the plants can be kept moist for a few days (natural rain showers, of course, are best, but watering and spraying are a great help) they start growing again almost immediately. In trade nurseries, much transplanting has perforce to be deferred till the end of the selling season.

Evergreen Plants are much more difficult to transplant safely than deciduous ones are. The reason of this is that the leaf-bearing

cannot be done, as in the case of a Holly hedge, or where plants have to be sent long distances. Consequently they have to be removed with little or no soil attached to the roots. It is in such cases that it becomes very important that the proper time be chosen.

It is essential with such evergreens as those named above that the plants, although not in the full vigour of their growth, should nevertheless not be in their most inactive state. The best times, therefore, are in autumn before growth ceases; or in late spring just after growth recommences.

With regard to autumn planting, warm moist days in late September and early October are particularly advantageous to the work in the South of England. In the cooler, moister north a few weeks earlier are better.

In spring planting the work should be deferred till the drying east winds are over. Showery warm days in May are best.



[From a photograph by E. J. Wallis.]

FIG. 141.—TRANSPLANTING A LARGE TREE AT KEW.

part of the plant is never so independent of the root-system. Even in midwinter the leaves both breathe and transpire, so that a cessation in the supply of moisture from the root, however partial, is felt much more than it is by a leafless plant.

In the case of Rhododendrons and many other evergreen members of the Heath family the fine roots are so numerous and get so complete a grip of the soil that the whole root-system can practically be removed intact. But in their case the problems of transplanting scarcely arise; with ordinary care it can be done at almost any season of the year. It is with such evergreens as Hollies, Evergreen Oaks, Cherry and Portugal Laurels, Arbutus, Evergreen Magnolias, and all those (which form the majority) with a more or less rambling root-system, that difficulties appear. They can, of course, be moved with safety if the "balls" of earth in which they grow are tied up and taken with them. But it frequently happens, from considerations of convenience, cost in labour, etc., that this

Many discussions have been held as to whether the autumn or the spring planting of evergreens is preferable. But we may say that, with suitable weather and smart workmanship at the time, and with due attention to watering during the following summer, success is equally probable in either season. Just as a hard winter setting in very early might prejudice one against autumn planting, so might a long dry time in May and June prejudice another against spring planting.

This much, however, is certain: from mid-winter onward to early April is the most dangerous time. In the case of the most susceptible of these evergreens it is better to be earlier in autumn or later in spring than the reverse.

Evergreen Oaks transplant better in June than in April. Bamboos, if planted at all in the autumn, should be moved early, but in their case experience proves that mid-May is best.

I am conscious that much of what I have

advocated, especially about the method of transplanting, may appear to involve an unnecessary amount of care in the operation. In practice, it may be said, it is impossible to give so much attention to detail; it may not even be necessary. In whatever one does, however, it is always best to aim at perfection, however much circumstances may prevent one getting near to it. A good deal of gardening must of necessity be of the rough and ready sort, but there is a great deal of difference between the rough and ready methods of a man who knows what the ideal conditions should be and those of another who is ignorant of, or indifferent to, them.

Certain experiments, the results of which have lately been published, are stated to have gone to prove that, with some fruit trees, more successful results had been produced by careless planting than by what we consider good planting. We shall soon be saying about experiments what has so often been said about statistics, that they can be made to prove anything. In my experience of trees and shrubs, now a fairly lengthy and extensive one, I have seen, not one, but scores of instances where careless planting of trees has produced ill-health and often death, especially where the carelessness has been in the form of too deep planting. A Willow or a Poplar may not object to such treatment, but my experience is that most trees thrive best when they are well and carefully planted in the way I have endeavoured to describe. And that experience I believe to be backed by that of many generations of gardeners before me. *W. J. Bean.*

THE FERNERY.

A RARE BRITISH FERN.

WHEN spending a few days at Gwydyr lately I was shown several strong clumps of the forked Spleenwort (*Asplenium septentrionale*) growing within a few yards of a spot where hundreds of tourists pass during the summer months when exploring the beautiful valley of the Conway and onwards to the pass of Llanberis. I counted about a score of plants nestling cosily in the crevices of an old wall, and subsisting merely on lime, rubbish and an accumulation of decayed vegetable matter—little, indeed, of the latter. The original discovery of this Fern is curiously interesting, for it occurred many years ago when the Chester Naturalists' Society visited Trefrew and Llanrwst. Mr. McIntyre, agent of the Gwydyr property—a keen naturalist and observer—after having piloted the Chester Society over the more interesting parts of the estate, was returning home, and in crossing some fields espied the forked Spleenwort in the crevices of the wall referred to.

There were only two or three plants at that time, so the increase has been moderately rapid, and I need hardly add that the sanctity of the spot is carefully guarded by the finder. *A. D. Webster, Regent's Park.*

CULTURE OF ADIANTUM CUNEATUM.

In the culture of this and other species of Ferns I have been very successful. In giving a description of my treatment I shall be pleased to see in the valuable columns of the *Gardeners' Chronicle* any methods used by other readers that may lead to still better results. In the cold, cheerless days of November the Fernery is still a reflection of summer, the stages being covered by a mass of delicate green fronds of the "Maiden Hair." My treatment refers mainly to old, pot-bound plants. In December I strip every plant of its fronds, and leave the plants in a dormant state, in an atmospheric temperature of about 45° or 50°, till about the beginning of February. When the young fronds begin to appear I then soak the roots of every plant individually in lukewarm water, once in the first week, twice in the next week, and so on until a few of the fronds have fully de-

veloped. At this stage a little manure in liquid form has proved to be of great benefit, and the strength is increased in proportion to the constitution of the plant. At Midsummer the plants are afforded, three times a week, diluted farm-yard wash. Shade from sunshine is afforded from April until the end of September. The treatment is simple, but it has good results. I shall be glad to read the views of others interested in *Adiantums*, for I have heard of other methods, but have not practised them. *A Lover of Ferns.*

FOREIGN CORRESPONDENCE.

CYCLOBOTHRA FLAVA.

MR. H. J. ELWES, in the *Gardeners' Chronicle* for September 23, is correct in supposing that complete dryness in winter is desirable for this bulb. For the benefit of all cultivators of Mexican bulbs I will state that all such bulbs require a period of rest in winter, and these include *Amaryllis* (*Hippeastrum*) *formosissima*, *Bessera elegans*, *Cyclobotras*, *Milla biflora*, and *Tigridias*, also the *Dablias*, which are native of this country. Not only do they require dryness, but in the growing season, in their native habitats, we find them in perfectly drained situations on the edges of ravines or side hills, so that the excessive amount of water that falls in the rainy season does not cause the bulbs to rot. *J. A. McDowell, Mexico.*

LIVISTONA MARIE [see pp. 251, 297.]

IN 1899 I raised a good number of plants of this rare Palm, of which very little was known, even in Australia, none of the Botanic Gardens there having it in cultivation at that time. Some of my plants were sold and distributed in different places, and many died, as it appears to be one of those Palms very hard to manage in small pots and under glass. After the first two or three years it grows tolerably fast, and a very remarkable Palm it is for the very unusual colour of its leaves. These are green when opening, but soon assume the red (or purple) hue which, however, gets duller with time. Another peculiarity is that the leaves instead of standing flat or partially drooping, as those of other *Livistonas*, are often turned upwards in a slightly cucullate shape. The same happens at times with our "blue Palm" *Erythea armata*, belonging like this "red Palm" to an exceedingly dry country. Since 1899 I have not been able to get good germinating seeds of *Livistona Mariae*, and do not wonder that it is still scarce. Under separate cover I send you a thoroughly developed leaf (from my specimen plant) and a couple of fruits (from Australia). *F. Franceschi, Santa Barbara, California, U.S.A.*

The Week's Work.

THE ORCHID HOUSES.

By W. H. YOUNG, Orchid Grower to Sir F. WIGAN, Bt., Clare Lawn, East Sheen, S.W.

Treatment During Fog.—During the winter months, in or near large towns, fogs often obscure the light, and are in other respects exceedingly injurious to plant life under glass. In order to lessen the evil caused by such fogs it is customary to aim at having the plants and atmosphere in a fairly dry condition, the temperatures moderately low, with very little ventilation. It is an utter impossibility to exclude these fogs, and I am inclined to think that to attempt to exclude it by keeping the ventilators closed only increases the injury suffered by the plants. Flowers that are open have a better chance of preservation if the surroundings are fairly dry, but should a visitation of fog be accompanied by a low external temperature, the mere fact that much fire heat has to be used necessitates damping and watering, and this promotes atmospheric moisture. After every severe fog the outside of the roof-glass should be washed, in order to remove the sooty deposit that is left behind in urban districts, as is the case here. On more than one occasion during

most winters the glass of our houses has an appearance similar to that of slated roofs, and but for the subsequent washing little light would reach the plants.

Protection from Frost.—When cold winds or frosty weather prevail, the roofs of the various houses should have some covering material placed over them at night, if this is convenient, so that less fire-heat may be needed, and ice will be prevented from forming on the inside of the glass. A very slight covering will fulfil the latter condition, and prevent icy cold drip from falling on the plants. The lath-roller blinds afford considerable protection, and should be used at night whenever the need arises.

Cattleya Trianae, &c.—In many instances the floral scapes are now to be seen in the sheaths of the above species and those of *C. Percivaliana* and *C. chocoensis*, which, though distinct, is generally considered to be a variety of *C. Trianae*. The two first-named species have been kept moderately dry, but from the time the scapes begin to develop the rooting medium should be kept moist until the flowers expand, when the resting conditions should be resumed. *C. chocoensis* should never be subjected to dry treatment, although much less water is needed when the pseudo-bulbs have matured, a few days' drought causing the pseudo-bulbs to shrivel inordinately. New importations of *C. Trianae* are now arriving, and where this species is grown a few plants should be acquired to replenish the stock, or for the purpose of securing new varieties. Newly-acquired plants should be thoroughly cleansed to rid them of any insects that may be present, taking care, however, not to rob the basal buds of their natural covering. The "pieces" should then be stood upright on a moist stage and be kept covered with sheets of paper for a time, for if exposed to strong light immediately on arrival the leaves will fall away. When root action is noticed the plants should be potted into suitably-sized receptacles, and the materials be kept moderately dry until the season of growth arrives.

Cattleya Grub.—This is the grub of a small fly that infests the roots of various *Cattleyas* and *Lælias*, their presence being made manifest by small globular swellings on the roots, in which the evolution of the grub to the fly state occurs. Little actual harm is done by these, but whilst going over the plants at this season it is advisable to pick out as many as possible with the point of a knife, so that a decrease in their number may be anticipated next season.

The Deciduous Calanthes are now commencing to flower, and for the better preservation and appearance of the blooms the plants should be staged in a light, warm intermediate compartment amongst *Adiantum* ferns. The atmosphere should be moderately dry, but the rooting compost allowed to remain moist until the scapes have fully expanded. When the spikes have been removed, place the pots on an exposed shelf in a warm house, and afford no further waterings. Those of the *C. Turneri* and *C. Regneri* sections may still be growing, and therefore absolute dryness at the base should not be permitted.

PLANTS UNDER GLASS.

By A. BULLOCK, Gardener to E. J. WYTHES, Esq., Copped Hall, Epping, Essex.

Roses.—In order to obtain a succession of bloom throughout the winter months, it is necessary to have suitable structures, fitted with proper ventilators and heating apparatus, in which the plants will be under the influence of a sufficient degree of light. To maintain an unbroken supply of flowers two or more such houses must be devoted to the cultivation of Carnation plants. A house having a span roof and running north and south is most suitable, as it affords the plants the full benefit of the sun's rays. Probably the best results are obtained from plants that were planted out in the spring and what were recently rooted cuttings. By this method of cultivation it will be necessary to make a border composed of good turfy loam, adding a little rotten dung and lime rubble, bearing in mind that, light being essential, the borders should be made as near to the glass as convenient. Plants intended for supplying cuttings for this method of culture should now be placed in a moderate degree of heat to start them into growth. When growths measuring 5 to 6 inches in length have been made, detach them with a good "heel" and place them in a small pot, plunging

the pots to the rim in cocoa-nut fibre over a considerable bottom heat. They will soon make roots, and when ready should be planted out in borders to furnish a supply of flowers for the following winter. At any season of the year the first appearance of mildew in the plants should be checked by the use of a little soft soap and sulphur in water, sprayed over the foliage, repeating the application if necessary. Remove the flower buds as they appear until such time as it is desirable the plant should flower. Very great care is necessary in the matter of affording water to the roots. Choose for forcing only those varieties that have proved themselves suitable for this method of culture, such as the Bride and Bridesmaid, &c.

Rests in Pots.—Let those plants that have been plunged in ashes during the summer months, and are intended to furnish blooms from March onward, be overhauled before removing them to a warm atmosphere. If the plants have not been recently re-potted, let the surface soil be removed by means of a sharply pointed stick, replacing it with good turfy loam to which a little bone meal has been added. This should be made firm. Examine the drainage material and make sure that the water will be able to pass away easily. Remove any weakly shoots and shorten growths made during the past season to within a few buds of the base. Afford water sparingly until the roots have become active.

THE KITCHEN GARDEN.

By W. FIFE, Gardener to Lady WANTAGE, Lockinge Park, Wantage, Berks.

Seakale.—The entire crop of this vegetable should be lifted at the first favourable opportunity. The work is best performed by commencing at one end of the plantation, as if for trenching the ground. Turn the soil over with steel forks to the full depth at which the roots have descended, in order to remove every particle of the root, as the smallest remaining portion will develop and assert itself during the next summer. The "thongs" are now in the best possible condition for making into sets, which should be taken from the crowns after the latter are lifted, when there is less danger of breaking the best sets. Crowns intended for forcing during this season should, after being divested of roots, be thickly inserted in some light material, such as leaf-soil, and covered with litter, from which they can be conveniently taken as required. Portions of the roots from four to six inches in length, cut at their lower ends in a slanting manner, and tied in bundles of 25 or 50, should be buried in sand or in ashes; these will form the sets for next season's crops. If the soil is thoroughly broken up by digging, and exposed to the influence of frost and air, Seakale may be grown successfully upon the same ground for several seasons in succession.

Cauliflower.—Although disappointment was caused earlier in the season by numbers of these plants becoming "blind," the abortive plants that were allowed to remain have furnished from three to five small cauliflowers, each about the size of a breakfast-cup and of the finest table quality. The seeds of these plants were sown about the middle of June, the varieties being Early London, Walcheren, and Extra Early Forcing. The "heads" are developed near to the ground, and are thus well protected by the foliage from frost. I intend, another season, to stop or remove the centres from a number of young Cauliflower plants, in order to secure a crop of this vegetable by this means, as a larger number of "flowers," each of a more suitable size for culinary purposes than the ordinary heads, is the result. Cauliflowers as a rule are grown much too large. At this season of the year vegetables that are the more likely to suffer from frost should be used first; for example, early Coleworts and Savoys will often become damaged, while Kales and Brussels Sprouts will escape uninjured. Pickling Cabbage will now be in suitable condition for use.

FRUITS UNDER GLASS.

By F. JORDAN, Gardener to Dr. CORBET, Impney Hall Gardens, Droitwich.

Cucumbers.—A temperature of 65° to 70° at night, according to the weather, will be sufficient for these plants. Employ a little ventilation daily whenever the weather is favourable, if only for a short time. Direct syringing having been discontinued, sufficient atmospheric moisture should be induced by frequently damp-

ing the paths and other available spaces in the house. Vigorous plants will continue freely to show fruits, but do not overcrop them. Afford small rich top dressings of warmed compost applied in a very rough condition. If the same plants are required to produce fruits at the beginning of next year, do not pinch the laterals so frequently as previously recommended. Remove all decayed leaves from the plants, but avoid removing very many at one time, or the plants may suffer a severe check. If greenfly is troublesome, fumigate the plants lightly two nights in succession and syringe with tepid water early on the following morning. Should the bottom heat be supplied from hot-water pipes alone and the drainage is in good condition, the plants will require much more water at the roots than would otherwise be the case. All liquids applied at the present season should be weak and in a clear condition.

Later Plants, which were set out last month, should be treated carefully and kept growing steadily until the turn of the year; no difficulty need then be feared in obtaining fruit during February and March. Regulate the growths carefully, allowing plenty of space for the principal foliage to develop properly. The foliage should be kept at a farther distance from the glass at this season of the year than at others. Keep the glass clean, and cover the roof of the pits each night with mats if this can be done conveniently.

The Orchard House.—Early varieties of Peaches and Nectarines will have been housed as advised in a previous calendar, and no further time should now be lost in placing all later varieties under cover where there will be ample ventilation, but protection from heavy rains and severe frosts. Cherry trees should be given similar protection. If Apple, Pear, and Plum trees are not yet placed in some sheltered position, this should now be done and the pots be well protected from frosts with bracken or other material. Push forward all pruning and cleaning operations in later houses.

THE FLOWER GARDEN.

By W. A. MILLER, Gardener to LORD HENRY C. BENTINCK, M.P., Underley Hall, Westmoreland.

Deciduous Creeping and Climbing Plants should now be pruned, afterwards tying the remaining growths neatly to suitable supports. *Vitis Cœgnata* has a grand effect in autumn with its wealth of finely coloured leaves. The main shoots should be trained at 12 in. to 15 in. apart, and the laterals be cut back to 2 or 3 eyes. *Ceanothus azureus*, *Aristolochia Siphia*, *Wistaria sinensis*, and *Indigofera gerardiana* should be treated similarly. *Clematis* of the Jackmanni type may have its growths of the present year cut back to about half their lengths. Other types of *Clematis* should be left unpruned. *Clematises* require good soil and plenty of manure. Do not allow any strong and coarse growing climbers to rob the moisture and nourishment from them. Roses are apt to get "leggy" when growing against walls; therefore, maintain a constant supply of new growths from the base upwards. Prune these back to a well-ripened bud. Remove any hidebound stems and thin out the weakly shoots; after which afford the roots a top-dressing with well rotted manure. Amongst the many climbing roses W. A. Richardson is still a favourite. Dorothy Perkins is a worthy companion to the Ramblers. Philadelphia Rambler is brighter and richer in colour than Turner's Crimson. Lady Gay is a glorified form of Dorothy Perkins, and is destined to take a leading position.

Lilium tigrinum and its varieties, also *L. bulbiferum* if growing strongly, bear quantities of bulbs in the axils of the leaves. These can be easily collected when matured, and if carefully planted in a border of rich, light soil where they will not get disturbed will make useful flowering bulbs in a few seasons.

Value of Fallen Leaves.—Make an effort to harvest as many forest tree leaves as possible, especially those of Oak and Beech. Throw out any sticks and weeds and then store the leaves in low heaps, where only moderate fermentation will take place. These leaf heaps will afford excellent materials for the making of hot beds for use in the propagation of bedding plants next season. Let the store made last year be turned over to hasten decomposition, as leaf mould is an important ingredient in all potting

composts for the encouraging of root action, besides which decaying leaves possess considerable nutritive value. Humus possesses the power of absorbing and retaining moisture. In proper proportion with inorganic soils, humus or decayed vegetation is a valuable asset. As Tusser quaintly says: "A rotten mould is a land worth gould."

THE HARDY FRUIT GARDEN.

By W. H. CLARKE, Gardener to SIR WILLIAM LEWDEN, Aston Rowant House, Oxon.

Pruning Apple and Pear Trees.—To carry out this work successfully, it is necessary for the operator to possess some knowledge of the peculiarities of the different varieties. If the growths were shortened during the summer months, as advised in a former calendar, the pruning remaining to be done at the present is very little. Young trees require their branches pruned more severely than older trees, so that a foundation of the tree be made. This applies to pyramids, standards, espalier, and fan-trained trees; in each case, where the trees are about 3 to 5 years old, the leading shoots may be shortened to about 12 to 18 inches, and shoots produced from these can be selected another season to form the permanent foundation of the tree. Young wall trees are sometimes insufficiently pruned to induce them to form branches for furnishing the lower wall space; consequently this is left bare. Varieties forming their fruit buds on the ends of their branches, viz., Marie Louise, Jargonelle, Winter Nelis, Josephine de Malines, Williams' Bon Chretien, and a few other varieties not so generally grown as these, should have their shoots left at full length, if not unusually long, but the leading or extension branches of the tree having a fruit bud at the end should be pruned back to a growth bud if further extension is necessary.

Espalier Trained Trees [see fig. 140].—If the trees have not reached to the top of the wall or trellis, the central leader must be pruned back to the buds, which are required for forming new lateral shoots, generally allowing 12 inches between the tiers, or a corresponding space to that at which the other tiers have been trained, so that symmetrical and evenly trained trees may be formed; at the point of pruning one bud is necessary on either side of the branch for providing horizontal shoots, and a terminal bud for upward extension; strong side shoots may be left 2 feet long, but weaker growths be pruned a little more severely.

Fan-trained Trees should have their branches so shortened that the resulting growths therefrom will, in the opinion of the operator, form at certain places, and make when trained a symmetrical and evenly balanced tree. Trees which have filled their allotted space will only require to have their growths formed during the current year shortened.

Treatment of Spurs. In young trees this is a simple matter, where the growths were stopped during the summer to 5 or 7 leaves, and in some cases a subsequent stopping to 2 leaves. These summer made shoots should now be shortened to 2 or 3 buds. In some cases, after frequent stoppings, young vigorous trees will form a bunch of spurs, which at the present time should be thinned, reserving the most prominent fruit buds.

Old Trees may have long unsightly and useless spurs, which, in consequence of their being so crowded, smother the fruit. In such a case a certain number of these spurs should be removed annually, leaving others to furnish the branches. If the saw has to be used, let the rough cut be smoothed over afterwards with a sharp knife.

Standard Trees.—Young trees in various sizes require their branches to be so shortened that a sufficient number of shoots may be formed to make a good head to the tree. Older trees will require little pruning beyond the removal of any cross branches, which must be spurred back. Let the centre of the trees be kept well open.

Miscellaneous Work.—Remove all ties, shreds, and other fastenings from the trees and burn them. When re-tying young trees, leave sufficient space for the shoot to swell. Nails and ties should be used in preference to shreds, which harbour insects. Trees infested with scale must be well cleansed with a strong insecticide or an application of caustic soda and potash, of which more will be said at a later date.

APPOINTMENTS FOR THE ENSUING WEEK.

SATURDAY,	Nov. 25	{ Morley and District Paxton Chrysanthemum Society's Show.
TUESDAY,	Nov. 28	{ National Chrysanthemum Society Annual Dinner, Holborn Restaurant.

ACTUAL TEMPERATURES:—

LONDON.—Wednesday, Nov. 22 (6 P.M.): Max. 48°; Min. 32°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—Thursday, Nov. 23 (10 A.M.): Bar., 29'7; Temp., 52°. Weather—Much rain.

PROVINCES.—Wednesday, Nov. 22 (6 P.M.): Max. 50° Portsmouth; Min. 48° N. Coast of Ireland.

SALES.

MONDAY TO FRIDAY NEXT—

Dutch Bulbs, at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 10.30.

WEDNESDAY—

2,468 cases Japanese Lilioms, received direct; 90 cases Spiraeas, Iris, &c., Lily of Valley, &c., by Protheroe & Morris, at 67 & 68, Cheapside, E.C., at 3.0. Palms, Plants, Roses, Azaleas, Fruit Trees, &c., by Protheroe & Morris, at 67 & 68, Cheapside, E.C., at 5.0.

FRIDAY—

Choice Orchids, in large variety, from well-known growers, by Protheroe & Morris, at 67 & 68, Cheapside, E.C., at 12.30.

EDITORIAL NOTICE.

EDITOR AND PUBLISHER.—Our Correspondents would obviate delay in obtaining answers to their communications, and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the PUBLISHER; and that all communications intended for publication, or referring to the Literary department, and all plants to be named, should be directed to the EDITOR. The two departments, Publishing and Editorial, are quite distinct, and much unnecessary delay and confusion arise when letters are misdirected.

Who could have thought, says Roze, in his elaborate *Histoire de la Pomme de terre*, that the Potato, having its home in Chile, naturalised in Peru, where it was cultivated from time immemorial, introduced into Europe in the sixteenth, despised in the seventeenth, slightly esteemed in the eighteenth, would have taken so important a place in commerce and form a subject of such absorbing interest to almost all nations in the nineteenth century? Roze joins with Claude Gay in esteeming the potato as the most important acquisition that Europe has obtained from the new world. Had the talented French botanist lived to see in the twentieth century the establishment of the National Potato Society, the exhibitions conducted under its auspices, and what is still more important, the trials and experiments carried out by its members, he would have found his impressions materially strengthened. M. Roze's book is very complete up to the time of publication in 1898. It includes allusions to the exhaustive articles in our columns by Mr. W. S. Mitchell in 1886, the papers of Baker, Arthur Sutton and others, and the proceedings at the tercentenary conference. The important discussions on the alleged degeneration of older varieties of potato carried on at the Scientific Committee during the present spring, would have been full of interest to him. Equally important would he have deemed the experiments with *Solanum Commersoni* as detailed in a pamphlet now before us.*

Solanum Commersoni, one of the tuber-bearing species, is a native of Uruguay, with very fragrant flowers, and is sufficiently dis-

ting to be treated as a separate species even by Mr. Baker in his well-known paper in the Journal of the Linnean Society. Not unnaturally considerable difference of opinion prevails among botanists in their estimate of what constitutes a species. Some would consider as a species any variation, however apparently trifling, provided it was constant and capable of perpetuation by seed. Others, considering the immense degree of variability of the plants, the way in which they differ according to circumstances, and the manner in which a more or less continuous chain may be traced between the extreme forms, are inclined to regard all or most of these tuber-bearing *Solanums* as belonging originally to one and the same species. Some, for instance, consider *Solanum Maglia* to be a distinct species from *S. tuberosum*, whilst others look upon it as a variety only. Discussions of this character may be thought to be of no practical importance, but that opinion is contradicted at every stage of the enquiry. The study of the variations met with in the Potato, their causes and limitations, is really of the greatest importance to the cultivator. M. Noel Bernard, it may be remembered, attributes the formation of tubers to the irritation and enhanced growth consequent on the presence of a fungus. If this be true we have to find out what are the conditions which favour the growth of this fungus.

The history of *Solanum Commersoni* is another case in point. This was originally described by DuRoi, and was well figured by Sabine in the tenth volume of the Transactions of the Horticultural Society, plate x. (1822). It was introduced into cultivation by M. Heckel, of Marseilles, and grown on a large scale by M. Labergerie. The most important facts relating to it are the perfume of its flowers, its productiveness in the matter of tubers, and its immunity from disease (Phytophthora). Moreover, it has been found especially suitable for growth in damp or even marshy soil, where its haulm and foliage may be used for purposes of forage. From 1896 onwards at M. M. Vilmorin's trial ground at Verrières, and elsewhere, no variation was observed, and all attempts at cross-fertilisation and hybridisation proved unsuccessful; but with M. Labergerie the case was different. With him a whole series of variations, not only in the tubers but in other parts of the plant, made their appearance, not suddenly, but gradually, and these variations are carefully enumerated and described in his monograph. The general tendency was, we are told, in the direction of greater hardiness and increased power of resistance to the fungus, even to the extent of complete immunity from its attacks. Among these numerous forms, one in particular, a violet variety, known in France as the Uruguay Potato, made its appearance in 1901, suddenly, and presented various characteristics different from those presented by the parent plant—differences fully detailed by the author but which need not be repeated here. The practical points are the increased productiveness, the nearly smooth tubers, and the absence of any bitter flavour. Assuming M. Labergerie's observations to be correct, the Uruguay Potato would furnish an example of what De Vries calls mutation. It must be said, however, without in the least degree impugning M. Labergerie's good faith, that some doubts

have been expressed as to the identity of the sport. Some think it may have been the result of cross fertilisation, but this is denied by M. Heckel. Some, who have seen both growing and are competent to express an opinion, see little or no difference between the Uruguay form and the variety known as Blue Giant. M. Labergerie contests this view and assigns reasons for his belief. This state of things brings us back to the notion that all these varied forms have had a common origin—belong in fact to one species, from which they have branched out and are still branching out, and to which they may occasionally revert. Some of the new varieties are adapted to one set of conditions, others to a different "environment." M. Ed. André, on the other hand, who found wild potatoes growing in Colombia and in Peru, contends that the potatoes as we now know them are the descendants not of one but of several species, from which they have "sported" or are the results of cross-fertilisation.

It is admitted by M. Heckel, after an inspection of more than ten thousand plants which are known to have originated from the violet Uruguay Potato, that it was impossible to make any distinction between them when growing and the known produce of *S. tuberosum*. M. Philippe de Vilmorin has arrived at this conclusion from his trials at Verrières. This being the case, it is no wonder that differences of opinion arise, and that some who have seen M. Labergerie's variety consider it as identical with others like Giant Blue, known to have originated from *S. tuberosum*. This opinion, as we have already stated, is repudiated by M. Labergerie, who adds to his memoir several illustrations of his violet variety of *S. Commersoni*. In this connection we may refer to the "Trochie Grant" exhibited by Mr. Scarlett at a recent meeting of the Royal Horticultural Society (see p. 317). This was a very dark violet variety, which has retained its characters unchanged since 1745, and is stated to be absolutely free from disease.

Mottled potatoes are common enough and may be taken as evidences of mixed parentage. One of the most remarkable cases of the kind which we have seen was furnished us by Messrs. Carter, wherein half of the tuber showed the characters of Myatt's Ashleaf and the other half those of White Elephant. The occurrences of sport and variations of this kind should induce caution in forming an opinion as to the true nature of particular varieties.

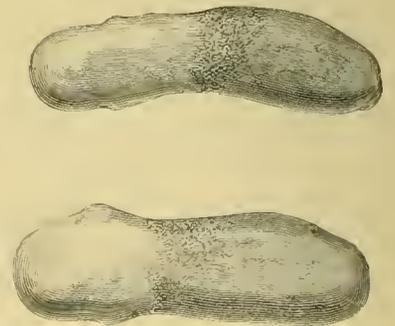


FIG. 142.—A BI-COLOR POTATO.

In any case, these circumstances show how necessary it is for well-directed experiments to be carried out in order to get at the truth, and at the same time to enhance the quality, productiveness and power of resisting disease of the potato.

* Roze, *Histoire de la Pomme de terre*, &c., Paris, Rothschild, 1898. Sutton, Potatoes, 1896.—Le *Solanum Commersoni* et ses variations, par J. Labergerie, Paris, Rue Jacob 26.



NYPHAEA ZANZIBARENSIS, VAR. *ROSEA*, FROM THE HON. WALTER ROTHSCHILD, M.P.

A POTATO CENSUS.—In connection with the forthcoming exhibition of the National Potato Society, of which we shall give a report in our next issue, we now present a list of the most popular early and mid-season varieties of Potatoes (see pages 370 and 371). These details have been obligingly furnished us, in reply to our enquiries, by our correspondents in all parts of Great Britain and Ireland. Next week we shall complete the enumeration by giving a similar list of the late varieties. It must be borne in mind that the votes have been given by cultivators in no way commercially interested in the Potato. Hence, no doubt, the list is different from that which would be forthcoming from dealers or professional growers. Some of the newer varieties are less well known than they will be in a few years' time, hence the present record will be an interesting subject for comparison in the future. Whatever differences there may be in individual opinions and in other circumstances, the very large proportion of votes cast for a few varieties shows quite clearly the high opinion generally entertained as to their merits. In the list of early varieties, Duke of York heads the list with 78 votes, and this variety is followed by Sharpe's Victor with 61 votes. But it may be pointed out that the votes given for Ashleaf are divided under the names of Myatt, Rivers, and Veitch; and if these votes for forms of Ashleaf be added together the total is 78, or exactly equivalent to the votes recorded for Duke of York. In the mid-season varieties, Windsor Castle heads the list with 65 votes, and Beauty of Hebron follows with 57. It may be useful to state what the exact question was which we submitted to the courtesy of our correspondents. They were asked to enumerate the best two of early mid-season and late varieties in their particular district. This has resulted, in the case of mid-season varieties, in making a table of 98 different sorts, though of early sorts only 48 are mentioned. This greater degree of unanimity is due to the preponderance of the Ashleaf and Duke of York. It will be obvious to the reader that, although the voting was for the two best varieties for garden purposes, it is just as easy to select from the lists published a collection of the six best, twelve best, and so on. Some of the varieties may be considered to be synonymous, but we take the names as supplied to us.

NYMPHÆA ZANZIBARENSIS VAR. ROSEA (see Supplementary Illustration).—The flower shown in our Supplementary Illustration was exhibited at a meeting of the Royal Horticultural Society on August 29, by Lord ROTHSCHILD, when the Floral Committee recommended it a First Class Certificate. In regard to this handsome variety the Hon. WALTER ROTHSCHILD, M.P., obligingly sends us the following communication:—"This very distinct variety was raised at Tring some three years ago from a packet of seed sent as *Nymphæa zanzibarensis*, var. *violacea*. Out of about 100 plants raised only one flowered true to name, and the rest were either ordinary *N. zanzibarensis* (flowers blue) or else very small flowered pink varieties, with the exception of two plants, which, instead of flowering in the seed tubs, grew into much larger and stronger plants than the rest. These two plants were planted out in the large tank, heavily manured. When the plants flowered one proved to be a pale blue form more than twice the size of *N. zanzibarensis*, which I propose to call var. *grandis*, and the second one was the fine variety figured on the accompanying plate. The colour is a beautiful shade of rose-pink with a slight tinge of mauve. The leaves are at least a fourth larger in the varieties *grandis* and *rosea* than in typical *N. zanzibarensis*, and the flowers stand at least 6 inches to a foot above the leaves and water. The house in which the tropical *Nymphæas* are

grown at Tring is a low, span-roofed forcing pit, with the staging and fittings replaced by a tank about 5 feet deep, 8 feet wide and 46 feet long, divided into three compartments; in the largest one (23 feet long) these two varieties of *zanzibarensis* are planted. The soil is about 2½ feet deep and the water above is about the same depth. There are two rows of pipes running through the centre of the house in the water and also running round the house. The bottom ventilators are mostly used, as the temperature of 70° to 75° necessary during the growing season could not always be maintained if the top ventilators were opened. In the winter the water is run off and only 1½ to 2 inches depth is maintained. The plant of *N. zanzibarensis rosea* has this season produced over 50 flowers and is still in full flower. In addition to the two forms described above, the following *Nymphæas* are cultivated in the same house. *Species*.—*Nymphæa mexicana*, *N. blanda* Fenzliana, *N. Parkeriana*, *N. Rudgeana*, *N. gracilis*, *N. g. var. rosea*, *N. elegans*, *N. lotus dentata*, *N. l. rubra*, *N. l. aurea*, *N. columbiana*, *N. amazonum*, *N. ampla*, *N. coerulea*, *N. stellata*, *N. s. var. pulcherrima*, *N. s. Berlin* variety, *N. zanzibarensis*, *N. z. violacea*. *Hybrids*.—*Nymphæa* × *O'Marana*, *N. × William Stone*, and *N. × George Husten*."

BOOKS.—Messrs WESLEY & SON, of Essex Street, Strand, call our attention to their classified catalogue of works and pamphlets on various branches of Botany, Horticulture, Forestry and Agriculture. The catalogue is a very rich one, well arranged, and containing many entries, which will appeal to those who desire to add to their garden libraries.

FROST IN DEVONSHIRE.—We have been very lucky here in the way of frosts. Although it has been general throughout the whole of the south-west, here at Kingswear, just over the salt water at the mouth of the Dart, the thermometer, on the worst night, only fell to 32°, and even *Dahlia foliage* is quite uninjured. In a garden I have, higher up the hill, *Fuchsia procumbens* and *Anthericum variegatum* were a little cut. *Arctotis aspera arborescens*, *A. aureola*, *Calceolaria Burbidgei*; *Correa cardinalis*, *Sollya heterophylla*, *Agathaea cœlestis* are all in bloom. We are, however, sadly behind in the rainfall for the year, and want 12 inches in the six weeks to make up the average. S.W.F.

M. LAURENT'S COLLECTIONS FROM THE CONGO.—We note the appearance of Fascicules 1 and 2 of the descriptions and plates of the plants collected in the Congo by the well-known traveller M. EMILE LAURENT in 1903-4. The results of the explorer's valuable labours are brought out by M. E. DE WILDEMAN, who is so well qualified for this important work, and the volumes form a most acceptable addition to our knowledge of the rich flora of the Belgian Congo. The illustrations are of their usual excellence.

VIOLETS.—The *American Florists' Review* is answerable for the statement that Violets reach the New York market at this season in boxes holding from one thousand to two thousand five hundred blooms, so that the total daily supply is a million and a half. They do things on a large scale in America.

THE RIGHTS OF PROPERTY IN PLANTS.—A very curious case has lately been decided in a Northern Court of Law. The plaintiff, till lately a manager in the employ of a firm of nurserymen, sued his former employers for £100, the alleged value of certain seedling plants detained by the defendant nurserymen. The plaintiff had himself collected the seed and now claimed that the seedling plants were his property, although it was not denied that they had been grown in the defendants' nursery, presumably with their pots and soil, and that for the time, attention, and skill required in

the cultivation of the plants, the plaintiff had been duly paid by his employers. The point to which we wish to draw attention is the claim made by the servant, because we often hear of similar cases in which the gardener considers as his own private property what really belongs to the master. It is a pity in such cases that some understanding is not come to between employer and employee. In the absence of such agreement we imagine that in all cases the plants, if grown upon his premises, belong to the employer. At any rate, this was the opinion of the judge in the case to which we are referring, which was terminated by the judge dismissing the plaintiff's claim with costs. A counter claim on the part of the defendants was also dismissed with costs, so that neither side has gained anything by invoking the aid of the law, and the only persons to be benefited are the lawyers.

LIEGE HORTICULTURAL SCHOOL.—The tenth annual *Bulletin of the Association des Anciens Elèves de l'Ecole d'Horticulture de Liège* contains portraits of the late Leo Errera, of MM. George Schneider and Emile Laurent. Articles are included on the following subjects: Botany and the 20th Century, by M. Louis Gentil; Cultivation of Vegetables from Seed, M. R. Fassin; Appreciation of M. G. Schneider, by M. Louis Gentil; and Florists' Flowers, M. F. Delfosse. The Bulletin contains several illustrations.

A GARDEN MANUSCRIPT.—The most important volume in the sale of the Earl of CORK'S library, disposed of on Tuesday last at Christie's, says the *Times*, was a French manuscript of the 15th century of Petrus de Crescentis "Le Livre les Prouffits Champestres et Ruraulx," beautifully written on 293 leaves, 17in. by 13in., richly illuminated with 12 large miniatures, with borders in gold and colours of leaf and scroll work, and with many thousands of initial letters; the MS. is divided into 12 books, each of which commences with a miniature, and the subjects include building, planting and pruning trees, ploughing and threshing corn, flower and fruit gardening, country sports, &c. At £2,600 the lot fell to Mr B. QUARITCH. The work itself is a very famous one, and was frequently reprinted during the latter part of the 15th and the earlier half of the 16th century. The first edition in Latin was printed by SCHUSZLER in 1471, in folio and on 209 leaves; an *editio altera* appeared in 1474, "impressum per Ioannem de Westphalia," who issued two other editions, all three of which are very rare. The first French translation, corresponding to the manuscript sold yesterday, was published by A. VERARD, Paris, July 10, 1486, and extends to 226 leaves; according to BRUNET, the translation from which VERARD'S edition was printed was written in 1373. An Italian edition was published at Florence in July, 1478, and the work continued to be reprinted in Italy down to 1784.

OOTHECA WOLLEYANA.—The third part of this work is now issued, and deals with *Columbæ* and *Alcæ*. The title of the complete work indicates its scope: "An Illustrated Catalogue of the Collection of Birds' Eggs formed by the late JOHN WOLLEY, JUN., M.A., F.Z.S.; edited from the original notes by ALFRED NEWTON." Specialists who remember the former two parts will know what to expect from the bulky tome now ready. The illustrations are excellent. It is published by R. H. PORTER, 7, Prince's Street, Cavendish Square.

HOW TO INCREASE THE QUANTITY OF SEED FROM SHY-BEARING PLANTS.—An interesting paper which appeared in the *Bulletin de la Société des Agriculteurs de France* for October, 1904, seems, says Mr. HENSLOW, to supply a valuable hint to florists. It is by M. H. HITIER, on the cultivation of the Beetroot. The part to which he refers describes the

method adopted for securing an abundance of seed of the best sorts of sugar-beet. It is notorious that as flowers are "improved" to a high standard from a florist's point of view the power of producing seed diminishes. For example, a florist told me that he had secured a remarkably fine strain of Primulas, but the seed ultimately entirely failed, so that he lost all his stock. Another was an expert in Cyclamens, but the production of the seed from the best varieties was so precarious that he kept a small stock of "weedy" plants, as he described them, for the express purpose of raising seed, as they bore plenty. Then by seed selection he was always able to keep a good supply of marketable plants. Now, M. HITIER observes that of 20 to 30 Beetroots selected for exceptional qualities and destined to form races, it is very rare for the cultivator to be able to preserve one or two in which the qualities prove hereditary. This is why the value of a race is so great if the seed can be trusted to come true. After describing the method of cultivation and the way in which analyses are made to test the sugar qualities, &c., the processes being long and costly, he observes that if the plants selected be planted, say, in 1904, they bear seed the following autumn, 1905. Those sown in 1906 will be planted out in 1907. Then, finally, a commercial supply of seed may be looked for in 1908. Notwithstanding this careful selection, anomalies are often found in a race thought to be well fixed, the amount of sugar varying from 14 to 19 per cent. Regarding the shoots issuing from the top of the Beetroot as "individuals," and cultivated separately, they give seed without the undesirable admixture of characters. Hence the practice is to take a number of shoots, buds, and portions of the remaining roots, and grow them together and then select for homogeneity. In that way a much greater number of seed-bearing plants will be procured. They give shoots producing 250 to 300 grammes of seed, buds 200, and fractions—i.e., portions of the root—150. Thus, finally, from the same Beetroot in one year 12 to 15 kilogrammes of seed may be obtained. The wider application of this method seems desirable; at all events, if not practised, it might be worth while to try it wherever the seed begins to fail in exceptionally fine flowering plants.

ARBOR DAY AT EYNSFORD.—Tree-planting commenced in various parts of the village at about 11 o'clock on Saturday, November 18, under the supervision of Mr. HENRY CANNELL and Mr. JAMES LAWSON, of the Horticultural College, Swanley, while four sturdy young lady students from this excellent college took an active part in the tree-planting operations. Ornamental as well as forest trees were planted; and on the site of the old Eynsford stocks in the centre of the village was planted a silver Birch, and not a Lime (as was originally decided upon), it being considered by arborists that the Birch would be more suited to the soil.

"THE ADVERTISERS' YEAR BOOK."—Messrs. DAWSON & Co. have published a very handy little book full of useful information and sensible hints as to the value of judicious advertising. Messrs. DAWSON do not mention the subject, nor do we in the remarks we are going to make in any way allude to their firm, or indeed to any firm in particular. The point we wish to emphasise is that an advertisement is an advertisement, and that an editorial comment or a notice contributed by a correspondent is an entirely different thing. Some advertisers, and especially some advertising agents, seem to think that because they forward a certain number of advertisements and pay for them, therefore an editorial paragraph should follow, as a matter of right, whether the editor knows anything about the object advertised or not. They not infrequently ask that this should be done. We would

ask these enterprising agents whether, as business men, they think that such procedures are fair to other advertisers, and whether they would not very soon cease to hold in esteem any journal which adopted their suggestions. We would ask the advertisers themselves, who presumably know what sort of reputation a journal has, whether it would answer their purpose in the long run to pay for advertisements at all in a journal which it is known would on occasion insert them without payment, and thus act unfairly to others. A journal has its reputation for good faith to its subscribers and to its readers to maintain, and it owes its success as an advertising medium or otherwise to the jealous care it exercises in supervising both its editorial and its advertising matter, and in keeping the two separate.

"I GO A-WALKING."—Under this rather awkward title Mr. T. N. FOULIS, 5, Frederick Street, Edinburgh, and London, is publishing a book upon natural history. The first part, containing thirty illustrations, is "I go a-walking through the Country Lanes," and subsequent parts detail peregrinations "through the meadows," "by stream and lake," "through the woods," "o'er the moor," and "homewards." The letterpress is avowedly compiled from *British Birds and their Haunts*, by Rev. C. A. JOHNS, and from other standard books, and the pictures are from photographs by CHARLES READ WISHAW. These illustrations show young thrushes, blackbirds, hedgehogs, and other common species of birds and animals in and out of their nests and homes, and are examples of the present fashion for showing wild life as it really is. This is a vast improvement upon the often wooden drawings with which earlier generations had to be content, and everyone must admire these pretty studies of familiar favourites seen at their best. The publication is especially useful to youthful and other readers who have not access to larger and costlier volumes on bird-life. Further parts of the issue will treat of other wild creatures of our country-side.

PUBLICATIONS RECEIVED.—*The Cape Times*, Oct. 4th.—Circulars and Agricultural Journal of the Royal Botanic Gardens, Ceylon: *Notes on Dioscoreas* (Yams), H. F. Macmillan; April.—*Chemical and Physical Properties of Soils from Tea Plots, Peradeniya*, A. Bruce; May.—*Ornamental Climbers and Creepers*, H. F. Macmillan; July.—*Properties of Soils from Cocoa Plots, Peradeniya*, A. Bruce; July.—*Indian Corn (Zea Mays) in Ceylon*, Herbert Wright; July.—*Para Rubber in Ceylon*, H. Wright and A. Bruce; July.—*Administration Reports for 1904*; July.—*Green Manures*, Herbert Wright; August.—*Composition of Soils for Fodder Growing and Grazing*, M. Kelway Bamber; September.—*Collage Gardens: Practical Hints on Cultivation and Management*, by Colonel the Hon. R. Stapleton-Cotton. This contains useful hints written by one who claims to have had thirty years' interest in gardens and much practical experience in that time. The proceeds of the sale of the booklet are to be given towards the foundation of a Scholarship at the Harper-Adams College, for the benefit of the sons of bona-fide agricultural labourers or other working men.—*The Forbidden Fruit*, by Mrs. John Lane. A description of how to serve and eat the Shaddock, which Mrs. Lane considers is not appreciated in England as it deserves, though well-known over here. It is difficult to overcome popular prejudice, especially in this case, where the fruit needs sugar and other added flavours before it can be considered really palatable.—*Thirty-sixth Annual Report of the Fruit Growers' Association of Ontario, 1904*. With over ten million apple trees in Ontario it is not wonderful that new markets are required for the fruit. The Association is doing good work in watching the trade and in assisting growers.—*Thirty-fifth Annual Report of the Entomological Society of Ontario, 1904*.—*Eleventh Annual Report of the Fruit Experiment Stations of Ontario, 1904*. It is the intention of the Board to enter at once upon some new lines of work, such as the best means of winter protection for the roots of Peach trees at the G. W. Station, and more extended trials of the adaptation of the best commercial varieties of all fruits to the various sections of the Province.—*Agricultural Bulletin of the*

Straits and Federated Malay Straits, edited by H. N. Ridley, August. Contents: Results of tappings of *Hevea brasiliensis*; History of Agriculture in the Malay Peninsula; and Forestry in Malay in 1904.—*Report on Botanic Station, Grenada, 1904-5*. The Cotton grown in the Experimental plots obtained first prize at the local Agricultural Exhibition. The general conditions of the Station are satisfactory.—From the Michigan State Agricultural College: *Some Bacterial Diseases of Plants prevalent in Michigan*, by W. G. Sackett. This deals with Pear Blight, Bacteriosis of Beans, Black Rot of Cabbage, Wilt of Cucumber, Soft Rot of Sugar Beet, and Blight of the Potato, Tomato, and Egg Plant.—From the United States Department of Agriculture; Division of Entomology: Bulletin No. 50.—*The Cotton Bollworm*, by A. L. Quaintance and C. T. Brues; Bulletin No. 51.—*The Mexican Cotton Bollworm*, by W. D. Hunter and W. E. Hinds; Bulletin No. 53.—*Catalogue of the Exhibit of Economic Entomology at the Lewis and Clark Centennial Exposition, Portland, Oregon, 1905*, by Rolla P. Currie.—From the Imperial Department of Agriculture for the West Indies: *Reports on the Botanic Station, Agricultural School, Experiment Station and Plots, St. Lucia, 1904-5*. Improvements have been effected and interesting plants added. The report on the work done at the Station is satisfactory.—From the Cornell University College of Agriculture: *Announcement of Courses of Instruction for the Academic Year 1905-6*; Bulletin No. 227.—*Mushroom Growing for Amateurs*, by Geo. F. Atkinson and Robert Shore; Bulletin No. 228.—*Potato Growing in New York*, by J. L. Stone; No. 229.—*An Apple Orchard Survey of Orleans County*, under the direction of John Craig, by G. F. Warren; No. 230.—*Quality in Potatoes*, by John W. Gilmore.—From the Agricultural Experiment Station, California; Bulletin No. 171.—*Commercial Fertilizers*, by George Roberts, and Circular No. 15: *Recent Problems in Agriculture*. From a lecture by Prof. L. H. Bailey.—From the Bureau of Agriculture of the Philippine Islands; Bulletin No. 6.—*Soil Fertility*, by W. C. Welborn.—*Annual Report of the Board of Agriculture and Department of Public Gardens, Jamaica, for the year ended March 31, 1905*. The work accomplished included the starting of eight school gardens, and many practical experiments with cotton growing, and with other tropical agricultural industries.—*Annales de l'Institut Central Ampélogique Royal Hongrois*, publiées sous la Direction du Dr. Gy. de Istvanfi; Tome III., livraisons 3 and 4. Contains an illustrated account of the Institute and its work, and various articles of viticultural interest.—*The Journal of Agricultural Science* (Cambridge); Vol. 1, Part 2, May, 1905, and Part 3, October, 1905.—*Report on the Administration of the Government Botanical Gardens and Parks, the Nilgiris, Madras, August, 1905*. The plantations afford a wide range of climatic conditions, making them almost unique and most valuable for experimental purposes.—*Botanic Gardens and Government Domain, New South Wales*. Report for 1904. Mr. J. H. Maiden reports that spells of dry weather rendered the season unfavourable. Nevertheless, great progress was made.—From the United States Department of Agriculture; Bulletin No. 54 (Entomological). *Miscellaneous Results of the Work of the Bureau of Entomology*.—*Proceedings of the Academy of Natural Sciences of Philadelphia*, April to August.

DUNBAR AND ITS POTATOS.

TRAVELLING by one of the splendidly appointed trains which leave King's Cross several times daily for Edinburgh, Dunbar is passed about half-an-hour before the northern capital is reached. The last stop made by these express corridors is at Berwick. From Berwick to Edinburgh the scenery is very grand on the seaward side, but there is not much time to observe it, as the travelling is very rapid. If the traveller can catch sight of Cocksburnspath, in less than ten minutes he will have passed through Dunbar and left behind the famous tract of land that produces the potatoes which always top the London market. It is a strip of country about ten miles long by two to three in width. These 20,000 acres or so are blessed with the so-called red soil. It is singular that this red soil should be so clearly demarcated. It begins at Cocksburnspath on the south, and stops two miles west of Dunbar, giving place in both cases to grey soil, which is less valuable for potato culture, and consequently less remunerative to the landowners. The red soil varies from 18 to

30 inches in depth: it is a rather sharp loam overlying the old red sandstone formation. In many fields stones are numerous, they of course being genuine red sandstones.

Potatos grown on the land in question have a bright appearance unattainable in other soils, but that is not all. The cooking quality of the produce is always good, and after being cooked genuine "Dunbars" remain white long after getting cold. This quality alone makes them especially valuable to restaurant keepers in London, who no doubt serve up "cauld tatties het again," and the demand on their part for Dunbar potatoes is not infrequently greater than the supply.

In years when crops are light the London trade will accept consignments as Dunbars coming off the intermediate land in East Lothian but in seasons when heavy crops are the rule only genuine red soil Dunbars obtain the coveted 20s. per ton above others.

In a district such as this, where rents are high—often £4 an acre—the grower^s are up-to-date men, and the holdings are all large—60 to 150 (in one case 300) acres of Potatos being quite usual on the various farms. Potatos in most cases come in rotation every four years: in some farms they are worked every three, as follows:—Wheat sown down, Hay, Potatos, Turnips, Barley, Potatos, and again Wheat. Dunging is practically all done in autumn, never in the drill in spring, as this latter method spoils the quality of the tubers. Artificial manure is liberally applied in spring at planting time. Each farmer has his own formula, but it may be said that sulphate of potash of a high grade enters into all of them, it being found that potash in this form gives quality. For the same reason sulphate of ammonia is preferred to nitrate of soda. The usual width for planting is 26 inch drills and 10 to 12 inches between the sets. Planting is usually commenced about the third week in March. Then, it may be remarked, the tubers are still dormant in this part of the country. The growers do not want the growths to appear above ground before the middle of May, otherwise they would most likely be blackened by cold, frosty winds. If one looks at the map it may be seen that the Dunbar coast is quite open to the North Sea. For this reason no early varieties are grown, and only comparatively few second early sorts. If the starting is late the finishing is also late. I think it is a feature of this district that Potato-tops are green and grow well on into September, and it is also most noticeable that the tops finish off in a russety-brown or dark yellow shade of colour instead of the almost black colour assumed in damper districts. Raising or lifting is not usually in full swing before October. The majority of the growers spray once. Twenty years ago Magnum Bonums and Maincrops were largely, almost exclusively grown. Magnums have long ago entirely dropped out, and the same may almost be said of Maincrop now. Following Magnum came The Bruce, and Langworthy succeeded Maincrop. These are still grown to a limited extent. Doubtless the reason for these varieties being abandoned was the small tonnage per acre they produced. If 12 tons can be got from the new varieties instead of six or seven from the old, the Dunbar men are not the ones to stand on sentiment or ceremony. Up to Date came along to "fill the bill," and to-day it is more largely grown than any other sort; but the most enterprising growers are already looking ahead; several large fields of The Factor have been planted, and Mr. James Hope, of East Barns, is impressed with Warrior, which he is growing for the second year. Small trials are also being made of Superlative, Radium, The Laird, Premier, and Table Talk, no doubt with the object of discovering something which will produce 20 tons per acre, and in the course of time oust the standard ones of to-day! I saw all

these new sorts raised on one farm; they were all good, but I intend to keep my eye on Table Talk. "Dunbars 20s. per ton above all others" is a statement we have all long been familiar with. I have tried to show the reason why this is so. It is clearly not so much a question of variety as it is one of soil and climate. *William Cuthbertson.*

ODONTOGLOSSUM × VUYL- STEKEÆ.

OUR illustration (at fig. 143) represents a flower of the fine hybrid *Odontoglossum* of unrecorded parentage, for which Mons. CHAS. VUYLSTEKE, of Loochristy, Ghent, was awarded a First-class Certificate at the Royal Horticultural Society's meeting held on November 7. It was thought that the hybrid might have been derived from *O. × venustum* (*ardentissimum* × *Harryanocrispum*), or from *O. × Vuylstekei* crossed with *O. × ardentissimum*; but it was generally agreed it is the most beautiful and richly-coloured hybrid *Odontoglossum* yet exhibited. In colour the flower is of various shades of rosy claret with silver-white tips to the segments, and slight markings of the same tint between the colour on all the segments. A great attraction in the flower is that the colouring varies in tint when seen in different lights.



FIG. 143.—ODONTOGLOSSUM VUYLSTEKEÆ; COLOUR OF FLOWER ROSY CLARET AND SILVERY WHITE.

HYBRID NEPENTHES.

I HAVE sent you a box containing pitchers of seedling hybrids raised by me at Remilly. Five of these have received 1st class certificates of merit from the *Société Nationale d'Horticulture de France*, a society which awards but one class of certificate.

N. Vallierae × is noticeable for its yellowish throat and the rose-coloured spots inside the pitcher.

N. Remilly × has a large collar, spreading widely horizontally, as in *Nepenthes lanata*.

N. Deslogei × has a wide, blackish collar, spreading horizontally, as in *N. lanata* and *N. Curtisii*.

N. Gomerii × is interesting in form and markings. These four hybrid seedlings are the result of crossing *N. Tiveyi* × and *N. mixta* ×: the fifth seedling is *N. Boisiana* ×: the colouring and form of the throat of this are peculiar.

It was raised by crossing *N. Tiveyi* × with *N. Morganiae* ×.

It should be noticed that the influence of *N. lanata* and *N. Curtisii*, ancestors of *N. Vallierae*, is strongly manifested in several of the hybrids; the effect of *N. lanata* is especially dominant in the form and colouring of the collar. I send also several other seedlings from the same two crosses. Many of these seedlings have, doubtless, a fine future before them. The plants for the most part are still undeveloped, and none have yet been pinched. The pitchers in the future will, therefore, be much larger, as some of the plants are still small, and bear pitchers only from 4 to 5 centimetres (1½ to 2 inches) in length. All were sown in May, 1902. I have other seedling *Nepenthes* from different crossings. Unfortunately, female plants are rare and are not easy to cultivate. *Jarry Desloges, 83, Boulevard Hausmann, Paris.*

[Accompanying this communication was a package containing a large number of pitchers, among which those mentioned below were the most noteworthy:—

N. Vallierae × (*Le Jardin*, 1905, p. 136, c. ic. col.), remarkable for its greenish pitchers, de tite of spots on the outside, but marked with purplish blotches within; opening of the throat ovate, collar deeply revolute, irregularly lobed, finely ribbed, golden-yellow with occasional stripes of purplish red; lid ovate pointed, green-

ish with few or no spots, relatively few glands on the inner surface and with a shallow keel.

N. Remilly ×.—A very handsome pitcher, 25 centimetres long, 18 centimetres in circumference, broadly cylindrical, dark green with reddish-purple streaks anastomosing to form a network, wings deep lacinate at the margins; opening of the throat broadly ovate acute, surrounded by a broad, spreading, reddish collar, deepest above, gradually narrowing below, and marked by numerous uniform radiating ridges; lid ovate, oblong obtuse greenish spotted, only slightly keeled on the inner surface and with relatively few glands.

N. Deslogei × (*Le Jardin*, 1905, p. 139, c. tab. col.), a cross between *N. Tiveyi* × and *N. mixta* ×, pitchers 24 centimetres long, 16 centimetres in circumference, greenish, with numerous reddish-purple streaks and with deeply lacinate wings. Opening of the throat or mouth ovate acute, surrounded by a broad, deep, purplish-red, spreading collar, with recurved edges and uniform closely set ridges; lid cordate ovate acute, finely spotted, inner surface glandu-

lar, keel narrow with a large obtuse projection at the base.

N. Gomerii X.—Pitcher elongate, greenish with a few scattered purplish blotches, deeply winged, wings lacinate; mouth ovate acute, much prolonged above and surrounded by a deep, blood-red, undulate, lobed collar much recurved and uniformly marked with numerous fine ridges; lid oblong acute greenish flushed with red. Inner surface glandular and with a row of glands on the slightly projecting keel. The presence of glands on the keel is unusual.

N. Boisiana X, a cross between *N. Tiveyi* (itself a cross between *N. Curtisii* and *N. lanata*) and *N. Morganæ*. In this the pitchers are cylindrical elongated, heavily blotched with red on a greenish ground and with fringed wings; the mouth of the throat is oval elongate, collar reddish with a recurved margin marked with numerous, closely set, uniform ridges. The lid is ovate, covered with red spots, glandular and deeply keeled on the inner surface, the keel ending in a large blunt prominence. Ed.]

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his correspondents.)

PEARS—A SELECTION.—Having recently undertaken to lecture to the Kingston gardeners on Pears, their selection and culture, I thought interest might be added to what otherwise might be a dry discourse, by obtaining from a few prominent Pear-growers their estimate of the best twelve varieties for wall or open culture. Necessity compelled me to restrict my constituency to half-a-doxen. I went so far north as Notts, where Mr. Gibson, of Welbeck Abbey gardens, gave his opinion; east, to Mr. Wallace, Gunton Park; south-east, to Mr. G. Woodward, Barham Court; home, to Mr. T. Smith, Coombe Court, Kingston; south, to Mr. Bowerman, of Hackwood Park, Hants; and south-west, to Mr. Thurton, the Castle Gardens, Sherborne, Dorset. Thus a very wide area of country was covered. Each voter grows Pears largely and well, and none had any interest in advocating any special variety. It affords conclusive evidence of the great excellence of our garden Pears generally that the six electors sent in the names of no fewer than 40 varieties in all. It also evidences an important fact in relation to the making of individual selections, that varieties good in one place, or district, may not be so elsewhere, hence such selections may have value only for limited areas. The large number of 40 varieties was, however, partially due to the liberality of two correspondents, who feeling, perhaps, the difficulty of picking out a best dozen from so many that are good, added several over the required number, thus compelling me to select from their lists their first-named dozen, and admitting these only to the election as voted upon. In that way the selected varieties still numbered 30, quite a large list, and for my purpose a little perplexing. However, I present the votes in the following note, and it would be a matter of interest to learn how far the selected 12 meet with general approval or otherwise:—Doyenné du Comice, 6 votes; Williams' Bon Chretien, Louise Bonne, Josephine de Malines, 5 votes; Marguerite Marillat, Marie Louise, Glou Morceau, Winter Nelis, 4 votes; Fondante d'Automne, Jargonelle, Doyenné d'Été, 3 votes; Beurré Diel, Marie Benoist, Triomphe de Vienne, Emile d'Heyst, Durondeau, Olivier des Serres, Conseiller de la Cour, 2 votes. Twelve other varieties had 1 vote each. No doubt the first 12 varieties include too many that are early ripeners. These are Doyenné d'Été, Jargonelle, Fondante d'Automne, Williams' Bon Chretien, and Marguerite Marillat. If the first two were replaced by Marie Benoist and Olivier des Serres as late varieties the list would be strengthened. It is interesting to note how generally that grand Pear Doyenné du Comice is held to be the best, although it does not anywhere rank amongst the finest croppers. The old Bon Chretien also still ranks amongst the very best earlies. Louise Bonne is one of the most reliable croppers, and Josephine des Malines ranks very high as a late variety. It is possible that some electors may not be familiar with the newer varieties, or, perhaps, may distrust them. In any case, it is obvious we have really a grand lot of well-tested varieties of Pears; and if those who want the 12 best will obtain and plant 20 to 24 varieties they may find in them all they need. *d. d.*

HILL LODGE, ENFIELD.—This is the residence of the Rev. R. J. Campbell, the busy preacher at the famous City Temple. When not engaged in his many duties he finds much pleasure and relief in his garden. His garden is not large but compact. The house is partially covered with climbers, which are flourishing. On the lawn are some fine specimens of Conifers and other trees, which are growing well. Amongst some of the best is *Liriodendron tulipiferum* (Tulip Tree), 13 feet girth by 40 feet high and 42 feet spread, an *Araucaria* 35 feet high and 6 feet in girth, a *Sequoia gigantea* 45 feet high, a Silver poplar 60 feet high and 14 feet girth, a pair of fine *Cypresses* 55 feet high and 12 feet girth; other notable examples are growing well. In a greenhouse were a splendid batch of *Gloxinias*, as fine a batch as one would see anywhere, and in fine health and vigour. The flower beds in front of the house were well filled with a choice selection, and in Mr. Parker, the gardener, the reverend gentleman has a keen observer and grower of all things beautiful for the garden. *W. A. Cook.*

[With this communication came a photograph which was unfortunately unsuited for reproduction.—Ed.]

PLANTS FOR TUBS AND VASES.—In addition to the plants named by your correspondent, *N. Y. Z.*, p. 225 of the *Gardeners' Chronicle*, for furnishing tubs and vases, may I draw attention to *Hydrangea Hortensia*, which is, I think, one of the best subjects for tub furnishing, and when well grown produces a magnificent effect. In these gardens we have several specimens over five feet in height, covered with large trusses of bloom. Some of the lower branches are allowed to hang over the tubs in sufficient numbers to almost cover the tubs. All the protection the *Hydrangeas* require during winter is a sheltered position, with a light covering in very severe weather. When I took charge of these gardens, some three years ago, the collection of *Chrysanthemums* was infested with the rust, but this year, I am happy to say, there is scarcely a sign of it, either indoors or out. In previous years I tried all kinds of so-called remedies without success. This year I simply picked off any affected leaves when the plants were in the cutting stage, I may mention that I grow my plants on the "cut-down" system, cutting them down to within three or four inches of the pots from May 26 to 28, and by thus inducing the plant to make new growth I considerably reduce the power of the rust. *J. Murray, Sopley Park, Christchurch.*

A WINTER EXHIBITION OF CARNATIONS.—It would almost appear that the promoters of a separate exhibition for the American winter flowering Carnation have for the moment lost sight of one of the greatest attributes of these justly popular flowers, viz., their perpetual flowering habit. It is because of this and that the plants give part of that flowering during the duldest months of the year that a single exhibition would be quite inadequate to meet the case. If the Royal Horticultural Society were a myth and if there was no such meeting place as the Royal Horticultural Hall, Vincent Square, wherein such exhibits could at all times be staged, there would be some reason for the proposal to hold a special exhibition of Carnations. As the case stands, however, the fortnightly meetings of the above-named society offer the best possible facilities to all who may desire to exhibit these beautiful flowers and that over a greatly extended period, and surely, if to exhibit is an attempt to popularise the flower would not this end be more perfectly attained by a series of exhibitions than by one? Moreover, would not a series of exhibitions better prove the true value of Carnations for flowering in winter and demonstrate to the visitors the fact that the flowers are obtainable for months together? That some of the leading growers have not lost sight of this important matter recent shows have afforded ample proof. *E. H. Jenkins.*

THE FLOWERING OF ARUNDINARIA SIMONI.—My experience with this Bamboo coincides with the remark of Mr. Fitzherbert, on p. 362—"if it flowers on every culm . . . the plant dies." Three years ago last spring a plant here did not appear so vigorous as formerly, and fearing it was about to flower I shifted the plant to a moister, warmer position, hoping that this change would induce it to make fresh growth and forego flowering. But the experiment only resulted in slightly delaying this fatal period. Before the year was out it, in common with all other plants of its

species, had flowered and died. Knowing that the roots of many Bamboos remain dormant for a year or more after being moved, I carefully dug around this plant over a year afterwards, but found no signs of life in any of its roots. Recently—at about the end of July last—at Menabilly, Mr. Bennett showed me a clump of *Phyllostachys Henonis*, which was bearing fruits, and still growing, and had a quantity of green fly on the fruiting culms! *A. C. Bartlett, Pencarrow Gardens, Cornwall.*

THE WEATHER IN NORTH CORNWALL.—The Aurora Borealis was visible in all its glory for a little over half an hour at about 6.30 p.m. on the evening of November 15. The next morning 9° of frost were registered, and during the day the thermometer did not rise above 42° Fahr. On Friday 9° were again registered; on Saturday morning the temperature was 2° lower, and the day maximum was 40°. On Sunday morning the thermometer showed 3° of frost, and during the day barely reached 36°. This morning (Monday, November 20) we had 12° of frost. During this period a bitter E. or N.E. wind has been blowing, and there are every signs of a continuance of cold weather. *A. C. Bartlett, Pencarrow Gardens.*

BELGIAN AND BRITISH FORESTRY.—In the concluding paper of Mr. A. C. Forbes's interesting series on Belgian Forestry there are two or three points which I feel it difficult to apprehend. "When one comes to consider the yield per acre," he says, "it is apparent that the Belgians can surpass us, owing, in great measure, to their superior climate, the larger areas devoted to timber, the few species grown, and the cheaper railway rates which prevail throughout the country." I am afraid we shall delude ourselves if we attribute the inferiority of our own forest results to anything except mismanagement and want of system. For instance, "their superior climate": show me a single element in the British climate which is adverse to the production of first-class timber. Gales? Of course we suffer more than the Belgians do from gales, for we court disaster by disposing our woodland, for the most part, in strips, clumps, and blocks of 20 to 50 acres. There is probably no country in the world better adapted by soil and climate for the production of timber than that of Great Britain and Ireland; but agriculture gives such far quicker returns that, in the days of its prosperity, we sacrificed the forest to the field. "Cheaper railway rates." Mr. Forbes does not supply comparative figures, but he may rest assured of this that if the traffic in home-grown timber were regular and capable of classification according to the nature and size of timber to be carried, competition would secure quite as favourable terms on British railways as on the State railways of Belgium. But my experience of fifteen years as a railway Director has shown me how difficult it is to carry at any profit stuff of all sizes and lengths consigned at irregular intervals of time. Moreover, how can railway rates affect the "yield" of timber per acre? They affect the net profit per acre, no doubt, but that is a different question. Mr. Forbes goes on to say that "as regards climate, the rate of growth of all species was much more rapid than that seen, say, north of the Midlands." Why, a chief objection to British grown coniferous timber is that it is grown too fast. Can anything in Belgium surpass the eight acres of Douglas Fir at Taymount, for which, notwithstanding early mismanagement, 9d. a foot was offered at 40 years of age, equal to £200 an acre, or £1,600 for the whole crop? I can show Mr. Forbes *Pinus insignis*, 21 years planted, 61 feet high; *Pinus monticola*, 29 years planted, 60 feet high; *Pinus laricio*, 30 years planted, 50 feet high; sessile-flowered oak, nine years planted, 12 feet high; ash, six years planted, 10 feet high, and larch, six years planted, 10 feet high; and this in Scotland, far north of the Midlands. I agree entirely with Mr. Forbes that no satisfactory prospect exists for British forestry until the system of planting in massive areas is adopted. As regards the price of beech in this country, I cannot doubt that it would be higher were the supply more regular. But you cannot expect a merchant to offer the same terms for odd lots at uncertain intervals as he would for a crop. As for quality, I am assured by a large manufacturer in the North that he would never take German beech if he could get Scottish, so greatly superior is the quality of our native trees. We lack in this country one most remunerative outlet for inferior timber which our Continental rivals enjoy, namely, pulping

mills. I am told that it costs from £50,000 to £80,000 to build and equip one of these. Who is likely to attempt such a venture without assurance of a full and regular supply to keep the mill running? In Germany there are 600 such mills, all established since 1854, consuming annually about 30,000 cubic feet of soft wood—Willow, Poplar, Birch, Spruce, &c. Under present circumstances we have to look on at this magnificent industry, or rather, we have to put our hands in our pockets as customers, importing in 1902 paper, mostly from wood-pulp, to the tune of £4,500,000, and paper materials, mostly wood-pulp, to that of £3,300,000—£7,800,000 worth of material, every hundredweight of which, under wiser conditions, might have been grown at home, to the manifest advantage of our rural population. *Herbert Maxwell, Monreith, Nov. 20.*

SOCIETIES.

ROYAL HORTICULTURAL.

NOVEMBER 21.—The display made on this date in the Royal Horticultural Hall, Westminster, on the occasion of the fortnightly meeting suffered in some degree from the advent of very severe weather. Nevertheless, a number of cultivators risked the conveyance of tender Orchids and other plants to and from the hall, and the building was therefore furnished to about one half its capacity.

THE ORCHID COMMITTEE recommended awards which included one First Class Certificate, two Botanical Certificates, and seven awards of Merit.

THE FLORAL COMMITTEE recommended only one award, this being an Award of Merit to a new variety of tree Carnation.

THE FRUIT AND VEGETABLE COMMITTEE recommended Awards of Merit to a new Apple, a variety of Savoy, and several varieties of Potato.

At the afternoon meeting, 20 new Fellows were elected, and a paper by Mr. E. T. Cook on "Hollies" was read by the Assistant Secretary.

Floral Committee.

Present: H. B. MAY, Esq., in the chair, and Messrs. Geo. Nicholson, G. Reuthe, J. F. McLeod, W. Cathbertson, W. P. Thomson, W. Baker, M. J. James, Charles E. Shea, J. T. Bennett-Poë, Jno. Green, E. H. Jenkins, W. Howe, Jas. Hudson, Jas. Walker, Geo. Gordon, Chas. Blick, Jno. Jennings, R. C. Notcutt, Charles Dixon, and C. T. Druery.

Mr. H. B. MAY, Dyson's Road Nursery, Upper Edmonton, made a fine exhibit of groups of Begonia Gloire de Lorraine, Turnford Hall, Masterpiece, Mont Blanc, a somewhat taller growing variety, white; Marie, Rosea crispata. Most of these varieties are sports from Gloire de Lorraine. Choice ferns were interspersed between the groups of Begonias. (Silver Flora Medal.)

Messrs. JAMES VEITCH & SONS, Royal Exotic Nurseries, King's Road, Chelsea, made a capital exhibit of their strain of winter-flowering Begonias, obtained from crosses between tuberous and fibrous-rooted species. The varieties shown on this occasion included Success, Mrs. Heal, Winter Perfection, Ensign, Julius, Winter Cheer; and among the small-flowered type was John Heal, the first hybrid from B. Socotrana, and Agatha. (Silver Flora Medal.)

Messrs. W. BULL & SONS, King's Road, Chelsea, exhibited a group of Stove foliage plants, in which the handsome *Dracæna Victoria*, with its broad yellow and green coloured foliage; several varieties of *Codiaeum*, *Aralia*, *Cordylina*, &c., were included.

Mr. G. REUTHE, The Fox Hill Hardy Plant Nursery, Keston, Kent, exhibited varieties of *Nerines* in pots, also several species of Crocus, &c.

From Mr. H. J. JONES, Ryecroft Nurseries, Hither Green, Lewisham, came some fine bunches of decorative and single-flowered Chrysanthemums, arranged in vases and bamboo stands. Some of the brightest and best Chrysanthemums were Glory, a yellow decorative variety; Ryecroft Belle (single flowered); Mr. Will Jordan (single, pink crimson), Delicatissimum, straw coloured and pink, semi double, and Ryecroft Star, single, pink, &c. (Silver Banksian Medal.)

Messrs. CRAGG, HARRISON, and CRAGG, Merrivale Nurseries, Heston, Middlesex, showed a very brilliant group of flowers of single-flowered Chrysanthemums, the variations in which were very numerous. Of several good white varieties one of the best was Miss Irene Cragg, which was illustrated in our last issue. (Silver Banksian Medal.)

A pretty single-flowered Chrysanthemum named Queen Aurantia was shown by G. FERGUSON, Esq., The Hollies, Weybridge (gr. Mr. F. W. Smith). The flowers were of bronzy red colour, with a ring of yellow around the centre. (Silver Banksian Medal.)

Mr. GEO. CARPENTER, West Hall Gardens, Byfleet, exhibited a Japanese Chrysanthemum of red colour, with bright buff reverse, apparently a good decorative variety.

Lord ALDENHAM, Aldenham House, Elstree (gr. Mr. E. Beckett), showed a collection of Chrysanthemums in vases. The display well illustrated the value of these seasonable flowers for decorative purposes, especially when of not too large a size. The Pompon, decorative and single types, were all included in the exhibit, many of the older varieties being staged in addition to others of more recent introduction. We may mention as being especially pleasing the varieties William Sabey, with flowers of yellow colour; Scarlet Gem, the small flowers have scarlet ray florets and a pleasing cushion-shaped, yellow disc, &c. (Silver Flora Medal.)

Messrs. W. WELLS & CO., Merstham, Surrey, showed a collection of Chrysanthemums of all types. Many new seedling varieties were included in the exhibit. Especially fine were the vases of single and of decorative flowers, but many good things were also noticed among the large Japanese blooms that were interspersed singly throughout the group in vases, or displayed on exhibition boards in the foreground. We noticed a yellow sport from the well-known Mrs. F. W. Vallis. The variety Mr. J. A. Miller has large lax flowers of a pale terra-cotta colour. This flower won the Silver Medal at the recent Edinburgh Show as being the best novelty shown there. The colour is somewhat "washy." (Silver Banksian Medal.)

Messrs. H. CANNELL & SONS, Swanley, Kent, also exhibited Chrysanthemums extensively. In addition to large Japanese blooms, there were many vases of the single and decorative kinds, and others containing the curious fimbriated flowers, known as the thread-petalled type. The variety Sam Caswell is a pink coloured form of this last-named class. Bacchus is another with crimson florets, whose yellow bases form a pleasing combination of colouring with the darker shade. Maud Jefferies is a new white Japanese flower of great promise. MESSRS. CANNELL also displayed bunches of zonal Pelargoniums, that formed one of the brightest features in the Hall. As a selection of the finest of these flowers displayed we may include Ascott (salmon); Blenheim (scarlet); Chatsworth orange scarlet; Frogmore (crimson); Goodwood (white); Hatfield (pleasing pink); and Sir T. Hanbury (crimson.) (Silver Banksian Medal.)

Mr. PHILIP LADDS, Swanley Junction, Kent, displayed a grand collection in vases of Chrysanthemums of the most approved varieties for market purposes. They were arranged in flat market bunches of a dozen flowers each. About 30 varieties were represented, and the whole formed a brilliant display. The more noteworthy were Crimson Quintus, Mrs. Lionel Humphreys (medium-sized flowers with dark red petals), Matchless (of a much darker red colour than the last-named), White Star, Lizzie Adcock (yellow), Framfield Pink, W. Holmes, Pearl Palace (a pink coloured incurved), Framfield Beauty (single), A. J. Balfour (pink), Mr. F. Greenfield (deep yellow), and Mabel Morgan (pale sulphur yellow). (Silver Gilt Banksian Medal.)

Messrs. JOHN PEED & SON, West Norwood, London, showed a seedling Chrysanthemum named John Peed. The flower is a very large Japanese, but the colour is poor—a suffusion of pale rose merging to white in the upper florets. Messrs. Peed also exhibited pans and boxes of Alpine plants, few of which, however, were in flower.

Messrs. THOS. WARE, LTD., Feltham, also showed pans of Alpine plants, and a few Carnations in vases at one end of the Alpines.

Mr. L. R. RUSSELL, Richmond Nurseries, Richmond, showed a collection of hardy ornamental foliage and berried plants—Ivies, Eleagnus, Conifers, Box, *Eurya latifolia variegata*, *Skimmia oblata*, *Aucuba vera*, &c. We remarked a richly-coloured *Viburnum* labelled V. "awafurki."

Mr. A. F. DUTTON, the Nurseries, Iver, Bucks., showed a number of varieties of carnations, arranged in tall glasses in a very tasteful and effective manner. The flowers were excellent in colour, development, and the best of known varieties and some novelties were included. (Silver Banksian Medal.)

Mr. S. MORTIMER, Rowledge Nurseries, Farnham, exhibited flowers of winter-flowering Carnations, arranged in about twenty vases, also flowers of the

double-flowered white Stock, All the Year Round, and the variety of Carnation known as Fair Maid was magnificent. (Silver Banksian Medal.)

Messrs. HUGH LOW & CO., Bush Hill Park Nurseries, Enfield, exhibited a number of varieties of winter-flowering Carnations as plants in pots, also plants in flower of their attractive Cyclamen, Low's Salmon, *Acacia platyptera*, *Ericas*; decorative and market Chrysanthemums, flowering in 5-inch pots, and a few small Cactaceous plants in pots. (Silver Banksian Medal.)

AWARD OF MERIT.

CARNATION, XMAS EVE.

This is another of the favourite winter flowering type. The flowers are of moderate size, good form, have non-splitting calyces, and fimbriated petals. The colour is a shade of crimson. It was shown by Mr. A. F. DUTTON.

Orchid Committee.

Present: Harry J. Veitch, Esq. (in the chair), and Messrs. James O'Brien (Hon. Sec.), De B. Crawshaw, R. Brooman-White, Francis Wellesley, J. Charlesworth, F. W. Ashton, W. Thompson, A. A. McBean, J. W. O'Leh, W. H. Young, W. Boxall, H. Little, G. F. Moore, W. H. White, R. G. Thwaites, W. A. Bilney, H. A. Tracy, and J. Douglas.

Messrs. CHARLESWORTH & CO., Heaton, Bradford, were awarded a Silver Flora Medal for a bright group, in the centre of which were three fine plants of *Cattleya* × *Portia*, a finely coloured *Lælio-Cattleya* × *luminosa*, the pretty white *Cattleya labiata* Louise, with purple front to the lip margined with white; *Brasso-Lælia* × *Digbyana-purpurata* Haakon VII., a beautiful and distinct flower; two nicely spotted forms of *Odontoglossum crispum*, &c. Others noted were good *Trichopilia sinavis*; a selection of hybrid *Cypripediums* including *C. × Gravesia*; the rare *Zygopetalum Lindenae*, of the *Z. rostratum* section, whitish, with rose lines on the lip; *Cattleya* × *Chamberlainiana*, and other hybrids. Messrs. JAS. VEITCH & SONS, Chelsea, received a Silver Flora Medal for a select group in which were several good examples of *Cypripedium insignis* Sanderæ; one of *C. i. Harefield* Hall variety; two very fine forms of *C. Fairrieanum*, and several of its hybrids including *C. × vexillarium*, *C. × Thalia*, *C. × Violæ magnificum*, *C. × Arthurianum pulchellum*, and *C. × Little Gem* (Baron Schroder × *Harrisianum superbum*), which belies its name, for it is a large and finely-shaped flower of dark colour.

M. CHAS. VUYLSTEKE, Loochristy, Ghent, was awarded a Silver Flora Medal for a collection of hybrid *Odontoglossums*, including a finely coloured *O. × ardentissimum*; a very large yellow and purple-brown *O. × Vuylstekei*, good *O. × Harryano-crispum*, a fine *O. × Wilckeatum*, and several unnamed hybrids.

Messrs. HUGH LOW & CO., Enfield, secured a Silver Banksian Medal for a compact group in which were a collection of yellow forms of *Cypripedium insigne*, including *C. i. Chantini Lindeni*; also *C. s. Madame Jules Hye*, and other *Cypripediums*, *Lælio-Cattleya* *Skinneri*, and two very finely coloured *Cattleya labiata*, that named "gloriosa" being the better.

Messrs. STANLEY & CO., Southgate, were awarded a Silver Banksian Medal for a group, in the centre of which was a magnificent specimen of *Cattleya bicolor*, with fifteen spikes of flowers. With it were the dark coloured *Cypripedium* × *Bookeri*, and various other hybrid *Cypripediums*; a large variety of *Epidendrum nocturnum*; the pretty *E. ciliare* and some bright *Sophranitis*, &c.

FRANCIS WELLESLEY, Esq., Westfield, Woking (gr. Mr. Hopkins) showed *Cypripedium insigne*, *Mitchellianum* with brown tinge in the unspotted dorsal sepal, *C. insigne aureum*, a fine yellow flower with white upper half to the dorsal sepal; *C. × Hiero superbum* (*Lawrenceanum* × *Chamberlainianum*); *C. × Cassandra* Westfield variety, and *Lælio-Cattleya* × *Phryne superba* (*C. Warszewiczii* × *L. xanthina*), a pretty pale yellow flower with rose front to the lip.

Sir FREDERICK WIGAN, Bart., Clare Lawn, East Sheen (gr. Mr. W. H. Young) showed *Brasso-Cattleya* × *Heatonensis* (*B. Digbyana* × *C. × Hardyana*), one of the finest *Brasso-Cattleyas*. Flowers large, rosy-lilac, with light disc to the finely-fringed lip; and *Cypripedium* × *Marjorie* (*insigne* *Sylhetense* × *Lælanum superbum*) a large and finely-formed flower.

H. S. GOODSON, Esq., Fairlawn, Putney (gr. Mr. G. E. Day), sent *Cypripedium* × *Lily Blanche* (*Charlesworthii* × *Niobe*), a pretty flower with rose-tinted dorsal sepal; *C. × Padgeni* (*Lælanum superbum* × *Charlesworthii*), with the upper sepal prettily spotted with rose-purple; and *Lælio-Cattleya* × *Goodsonia* (*L. Perrini* × *C. Schroderi*), an attractive rose-tinted flower with ruby-crimson front to the lip, and closely resembling *L. C. × Semiramis*.

Messrs. SANDER & SONS, St. Albans, showed *Lælio-Cattleya* × *The Duchess* (L. C. × *Hippolyta* × C. *Hardyana*), an attractive orange-coloured flower with ruby-purple front to the lip; and *Cypripedium* × *The Baron* (*Hitchinsia* × *nitens* Sander's variety). (See Awards.)

R. I. MEASURES, Esq., Camberwell (gr. Mr. Smith), showed a small selection of cut Orchids.

Mons. L. CAPPE, Le Vesinet, France, sent *Lælio-Cattleya* × *Schneideri* (L.-C. × *Amelia* × C. *Dowiana aurea*), resembling L.-C. × *Charlesworthii*, orange-yellow with dark purple front to the lip, which is broader than in others of its class, and another variety of a uniform yellow colour.

AWARDS.

FIRST CLASS CERTIFICATE.

Cypripedium × *The Baron* (*Hitchinsia* × *nitens*, Sander's variety), from Messrs. SANDER & SONS, St. Albans. A showy hybrid of good shape, and of the fine substance imparted to it by the strong element of C. *insigne* in its composition. Dorsal sepal large, white with a small green base and a profusion of rose-coloured spots. Petals and lip yellowish tinged and marked with purple.

AWARD OF MERIT.

Cypripedium × *Thalia giganteum* (*insigne* Chantini × *Baron Schroder*), from FRANCIS WELLESLEY, Esq., Westfield, Woking (gr. Mr. Hopkins). A good flower with broader and rounder dorsal sepal than in the original. Dorsal sepal, white with a pale green base, and evenly distributed blotched line of rose-purple colour. Petals yellowish with purple lines and reticulation, lip tinged with purplish-red.

Disa pulchra, *Tring Park variety*, from the Right Hon. Lord ROTHSCHILD, Tring Park (gr. Mr. Dye). A handsome and remarkable species, with pale rosy lilac flowers nearly as large as those of *D. grandiflora*. The inflorescence bears a resemblance to that of one of the species of *Gladiolus*. It first flowered at Tring Park in 1896, and was illustrated from a specimen sent by the Hon. Walter Rothschild in *The Gardeners' Chronicle*, December 26, 1896, p. 785. The variety shown has broader segments than the type. It was imported from Griqualand East, S. Africa.

Mormodes badium, from the Right Hon. Lord Rothschild. This is the type plant, with ruby-red flowers borne on a stout ascending spike. The yellow variety shown from Tring Park, January 12, 1897, was given an Award of Merit on that date.

Cattleya × *Mrs. Pitt var. magnifica* (*Harrisoniana* × *Dowiana aurea*) from MAJOR HOLFORD, Westonbirt, Tetbury (gr. Mr. Alexander). The plant was shown with immature pale flowers at the last meeting, and referred for development. The flower now showed marked improvement, and is the best of its section. Sepals and petals rose-pink; lip orange coloured, darkest at the base.

Odontoglossum × *Hallio-crispum Theodora* (*Hallu* × *crispum*) from DE B. CRAWSHAY, Esq., Rosefield, Sevenoaks (gr. Mr. Stables). Flowers in size equal to those of a good *O. crispum* and of fine shape; primrose yellow, prettily spotted with red-brown.

Odontoglossum × *Phæbe* (*cirrosum* × *crispum*).—From Messrs. CHARLESWORTH & CO., Bradford. An elegant hybrid which may be best described as a great improvement on *O. cirrosum*, with a compact spike of white flowers slightly tinged with pink and spotted with reddish-purple. Broader in all its parts than *O. cirrosum*.

Cypripedium × *Actæus chardwarensis* (*insigne* × *Lee-anum*).—Flowers equal to a good C. *insigne*, but with paler tint and a broader dorsal sepal white on the upper half and pale green below with some brownish spotting.

BOTANICAL CERTIFICATE.

Dendrobium striatum.—From Sir TREVOR LAWRENCE, Bart., Burford, Dorking (gr. Mr. W. H. White.) A very remarkable species imported from the same region in the Philippines as *D. Victoria Regina*. Pseudo-bulbs a foot in length and closely set with pairs of singularly-formed flowers, each an inch or more in width. Sepals and petals narrow and nearly equal; labellum as long as the petals, narrow with the sides folded back, whitish tinged with rose.

Disa pulchra, from The Right Hon. Lord ROTHSCHILD. Flowers produced on erect spikes, segments over an inch in length, pale rosy lilac. Leaves linear, stiff; scape furnished with leafy bracts.

Fruit and Vegetable Committee.

Present: Geo. Bunyard, Esq., Chairman, and Messrs. S. Mortimer, Ed. Beckett, Alex. Dean, W. Pope, Jas. Cheal, H. Parr, H. J. Wright, J. Lyne, J. Jaques, Geo. Wythes, Owen Thomas, and H. Somers Rivers.

A collection of 56 dishes of Apples and Pears

was shown by Mr. B. H. HILL, Newcombes, Crediton (gr. Mr. G. Sock). The varieties included some of the very best for kitchen use and for dessert, and the specimens were of first-rate quality. Very high colour was developed on many of the fruits, all of which were of creditable size. (Silver-gilt Knightian Medal.)

Mr. J. H. RIDGEWELL, Histon, Cambridgeshire, showed three new varieties of Brussels Sprouts, which the Committee recommended to be sent to Wisley for trial.

AWARDS OF MERIT.

Apple, Star of Devon.—This is a seedling variety exhibited by J. GARLAND, Esq., Broadclyst, Devon. The fruits are of moderate size, richly coloured, with red on the side next to the sun, and streaked with red over yellow on the other side; flesh soft, sweet, and possessing agreeable flavour.

Drumhead Kale.—A very handsome type of Kale, the leaves being of a pale green colour merging to yellow in the centre, and possessing deeply crenated margins of a deeper green colour. The outer leaves are escalop shaped and enclose a well-defined heart of good substance. A section of the heart shows rather much stalk, and the leaves are arranged in almost parallel rows. The leaves are fleshy and crisp, and are said to possess unusual flavour. Shown by Messrs. J. CARTER & CO., High Hobourn.

Potatos.—The following varieties of Potatos were, after trial at Wisley and after having passed a culinary test, given an Award of Merit: British Hero (G. CARTER), Denbigh Giant (WINNARD), Hurst's Favourite (HURST), Southern Star (J. VEITCH and CRAMPTON), Cigarette (BARR), Peckover (BOYER).

LECTURE ON HOLLIES.

At the meeting held in the afternoon under the chairmanship of Mr. Geo. Bunyard, V.M.H., 20 new fellows were added to the roll of the Society, after which a paper on Hollies, written by Mr. E. T. Cook, was read by the Assistant Secretary. Of all the trees available for embellishing our gardens and our landscape none surpasses our common Holly, especially for winter effect, the beautiful bright green of its spiny foliage and the rich red of its berries presenting a glorious contrast with their surroundings. The Holly loves a good, deep, sandy loam, but will succeed on most soils, especially if favoured with an application of well-rotted manure, or a mulching of the same. They are best transplanted in May, and can be removed then with almost certain success, especially if mulched with a layer of manure and syringed in the evening time with water. The Holly is suitable for planting in many situations—on lawns, in borders, beneath trees, and among the copse, and they are eminently suited to the formation of hedge-rows. They are best planted in single rows for fencing purposes, and can be clipped and trained into almost any desired shape. A suitable distance at which to plant for hedges is from 1 foot to 15 inches apart, and they should be well trodden when planted. The Holly submits to drastic treatment with the knife. They are best pruned in the spring time, when the young growths will quickly cover up the wounds and any gaps that may be formed. Mr. Cook enumerated a selection of Hollies, and referred to the most exhaustive monograph, by the late Thomas Moore, with illustrations of all the known varieties, which was published in the *Gardeners' Chronicle* in 1874, 1875, and 1876. The best varieties of Hollies for hedges or for growing under trees are *Shepherdii*, *Gold Queen*, *Handsworth Silver*, *Platyphylla*, *Camelliaefolia*, and *Compacta aurea*. The Holly possesses all the virtues of leaf-colouring and the most beautiful gradations are to be seen in the various golden and silver-leaved forms.

A selection of the more beautiful SILVER HOLLIES include—*Argentea marginata*, the old silver Holly, a variety of quick growth, quite hardy, and one that produces berries freely. *A. pendula*, a variety of very bright colour, and graceful in growth. It forms a beautiful weeping tree for the lawn. *Handsworth Silver*, a handsome form; if only one Holly was to be selected it should be this one. The berries are well displayed. *Argentea regina*, a fine Holly, but does not approach to the form of *Handsworth Silver*. *Grandis*, a very bright and desirable form, but one little known in gardens.

Of GOLDEN-LEAVED HOLLIES there were *Golden Queen*, the gem of the section, strong in growth and with leaves of soft golden colour; and *Compacta aurea* or *Watereriana*, a weeping form of the *Golden Queen* Holly. There is also a variety of recent introduction, named *Madame Briot*. The variegation is almost as bright in appearance as in that of *Golden Queen*, while the growth is strong and the berries bright and profusely produced.

The six best Hollies for all purposes are the varieties *Shepherdii*, *Gold Queen*, *Handsworth Silver*, *Platyphylla*, *Camelliaefolia* and *Compacta aurea*.

BRADFORD CHRYSANTHEMUM.

NOVEMBER 17, 18.—The annual exhibition of the above Society was held on the above date, and was again a success. The total number of entries was 290, an increase of 60 on the previous year.

In the premier open class for 24 Japanese blooms, in not fewer than 18 varieties, competition was exceedingly strong, six splendid stands claiming the attention of the judges. In the end Mr. CHANDLER, who has hitherto seemed unapproachable at Bradford, had to take second place. The winner of the 1st prize, Mr. W. IGGULDEN, of Frome, Somerset, is an entirely new competitor at the Bradford show. Mr. Iggulden's blooms possessed great compactness and symmetry, but Mr. Chandler's collection was also an extremely meritorious one. The winning flowers included examples of F. S. Vallis, Mrs. Barkley, Madame R. Oberthur, General Hutton, Florence Penford, W. R. Church, J. R. Upton, J. H. Silsbury, Madame P. Radaelli, Mrs. F. W. Vallis, Bessie Godfrey, &c.

In the class for 12 Japanese blooms, dissimilar to the positions of Mr. CHANDLER and Mr. IGGULDEN were reversed.

The class for six Japanese blooms, any variety, Mr. E. ELLIS, of Hestwall, Cheshire, won the 1st prize with six magnificent specimens of F. S. Vallis. This grower also obtained the prize for the best Japanese bloom in the exhibition with a specimen of this variety.

The society endeavours to foster local competition in the neighbourhood of Bradford, and this year the inclusion of a new class, for 18 Japanese blooms, in not fewer than 12 varieties, proved a splendid success. There were no fewer than five competitors, and the flowers were all of excellent quality. Mr. Henry Foster, gr. to Mr. W. FERRAND, of Bingley, took the 1st prize with a collection of large even blooms.

The incurred varieties were not strongly represented, but the blooms were all of exceptional quality. Mr. CHANDLER won several 1st prizes, and his collection of 24 blooms, in not fewer than 18 varieties, was a notable one. The varieties were *Pantia Ralli*, C. H. Curtis, W. Pascoe, *Buttercup*, Mr. B. Hankey, Mrs. F. Judson, Miss H. Southam, &c. Mr. W. HIGGS, of Leatherhead, took the 2nd prize, and also the prize for the best incurred bloom in the exhibition, with a beautiful specimen of the variety *Frank Hammond*.

In the Local Classes for this type Mr. THOMAS BIRD, of Windhill, showed some nice blooms. Mr. Bird has for many years been a successful competitor in the Local Amateur Classes.

Last year only one group of Chrysanthemum plants was exhibited, but this year the judges had to decide on the merits of five. They had no difficulty in awarding to Mr. T. M. PETCH, of Bridlington, the 1st prize and the Cup given by Alderman W. E. B. Priestley, the President of the Society. This group was tastefully arranged.

The class us for miscellaneous flowers and for table plants were again well represented. A class for table groups of miscellaneous flowers attracted four competitors, and Mr. F. Howland, gr. to Mr. T. ARTON, of Rawdon, won 1st prize for a very choice arrangement.

DEVIZES CHRYSANTHEMUM.

NOVEMBER 14.—The exhibit at the annual show held in the Corn Exchange on the above date were considered the best seen in Devizes for many years past. Especially was this the case in Mr. F. S. Vallis' exhibit of 24 Japanese blooms, while but little less meritorious were the 24 incurred blooms shown by the veteran Mr. Mease.

Three circular groups of plants were arranged down the centre of the building. Mr. Clack, gr. to Col. COLSTON, of Roundway Park, was placed 1st with a creditable display embracing some fine blooms. 2nd, R. H. GRUNDY, Esq. (gr. Mr. Hamblen), Hillworth Gardens. In the class for 24 incurred blooms distinct, A. TATE, Esq., Downside, Leatherhead (gr. Mr. Mease), won the 1st prize easily with 24 blooms of *Duchess of Fife*, *Ralph Hatton*, *May Philip*, H. J. Jones, *Fred Palmer*, Mrs. Judson, *Mildred Lyne*, *Buttercup*, &c. 2nd, Mr. G. W. DRAKE, Cardiff, who also had a very fine collection, among which *Frank Hammond* was especially fine.

Mr. F. S. VALLIS, of Bromham, won the Mayor's Cup with 24 Japanese blooms. He had finely developed examples of F. S. Vallis, *Calvat's 99*, *Magnificent*, H. A. Etherington, Mr. S. Remy, *Reginald Vallis*, Mrs. J. Lewis, Mrs. F. W. Vallis, J. H. Silsbury (grand specimen), &c. 2nd, A. TATE, Esq., Leather-

head (gr. Mr. Mease). This exhibitor also had an excellent collection, his best blooms being Donald McLeod, J. R. Upton, General Hutton, Valeria, Greenham, and Mrs. Barkley. Mr. MEASE was first for 12 incurved blooms, six yellow and six white, having Mrs. Judson, Ma Perfection (white), Emblème Poitevine and C. H. Curtis (yellow). Mr. BIBLE was awarded the 2nd prize. Mr. F. S. VALLIS was again 1st for six yellow and six white Japanese blooms, showing F. S. Vallis (yellow) and Mrs. J. Lewis and Madame Oberthur (white.) In the class of 24 Japanese blooms open only to Wiltshire Mr. BIBLE was well to the fore. The best epergue of Chrysanthemums was staged by Mr. COLSTON HALE, Ingleside, Warmminster.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

NOVEMBER 9.—There was a very good display of plants at the meeting held on the above date.

A. WARBURTON, Esq., Haslingden (gr. Mr. T. Raven), exhibited a very fine collection of Cypripediums, including good yellow forms of *C. insigne*. (Silver Gilt Medal.)

G. W. LAW-SCHOFIELD, Esq., Rawtenstall (gr. Mr. Shill), also made a fine show of Cypripediums. (Silver Gilt Medal.)

Messrs. JAS. CYPHER & SONS, Cheltenham, made a very good show with Cattleyas, Dendrobiums, and Cypripediums. (Silver Medal.)

M. CH. VUYLSTEKE, Loochristie, Ghent, exhibited a few hybrid Odontoglossums, in which the fine *O. x Vuylstekeae* was seen. (Silver Medal.)

S. BRIGGS-BURY, Esq., Accrington; Mr. FIELDEN, Tadcaster; Mr. S. ALLEN, of Sale; Messrs. HUGH LOW & Co., Enfield; Messrs. STANLEY & Co., Southgate; and S. GRATRIX, Esq., Whalley Range, received votes of thanks for groups.

Messrs. A. J. KEELING & SONS received a Bronze Medal for a group of Cypripediums.

Awards were made as follow:—

FIRST CLASS CERTIFICATES.

Odontoglossum x Vuylstekeae (see fig. 143), from M. Ch. Vuylsteke, and Cypripedium x Leeaenum, Trenton Giant, from G. W. Law-Schofield, Esq.

AWARDS OF MERIT.

Cypripedium x Longwoodense var. superba, from A. J. Keeling & Son; *C. insigne* var. E. Skill, *C. x Evelyn Ames* (Schofield's var.), *C. x Euryades* (New Hall Hey var.), *Cattleya labiata* var. Schofieldiana, all from G. W. Law-Schofield, Esq.; *Lycaste Skinneri* var. Queen Alexandra, from S. Gratrix, Esq.; *Odontoglossum x Vuylstekei* (Bank House var.), *Cypripedium x Acteus* var. magnifica, *C. x Arthurianum pulchellum* var. Harrisii, *C. x Niobe* var. superba, all from S. Briggs-Bury, Esq.; *C. x callosum x C. aureum* var. virginale, from Mr. J. Robson; *C. x Isis* (*C. to grande x C. bellatulum*), from E. Ashworth, Esq. P. W.

WINCHESTER CHRYSANTHEMUM.

NOVEMBER 14, 15.—The annual show of the above Society, held in the Guildhall on these dates, was much superior to any of its predecessors. Competition in the various classes was unusually keen, while the quality of the exhibits was above the average.

A feature was the class for Conservatory plants, viz., plants possessing good blooms, dwarf habit and good foliage. The class for nine Chrysanthemum plants was won by Mr. H. Gigg, gr. to Rev. R. M. MOORSON, who showed handsome blooms on dwarf plants. In a similar class for any white or yellow variety Mr. G. Adams, gr. to Col. DICKIN, Edgehill, Winchester, won with examples of F. S. Vallis.

The best six plants of any variety were shown by Mr. R. Stone, gr. to Archdeacon HAIGH, The Close, Winchester. Three collections of Chrysanthemums, each arranged in a space 8 feet by 7 feet, were shown. Mr. Pitman, gr. to Mrs. J. S. CURTIS, Otterbourne, was successful with dwarf, well-flowered plants, that possessed healthy foliage.

CUT BLOOMS.

Displays of cut blooms were both numerous and good. The leading class was for 48 flowers, half of incurved varieties and the remainder of Japanese. Four growers competed. Mr. E. J. Hunt, gr. to P. RALLI, Esq., Ashted Park, Epsom, won, by the superiority of his incurved blooms, together with good examples of the Japanese type. Mr. A. J. Marsh, gr. to M. A. HODGSON, Esq., Moreton House, Winchester, followed closely with a stand of strong incurved and rather weak Japanese blooms.

Japanese varieties.—In the class for 36 blooms Mr. G. Stevenson, gr. to E. MOCATTA, Esq., Addlestone, Surrey, won the 1st prize with handsome specimens of

popular varieties; 2nd, Mr. G. Hall, gr. to Lady LOUISA ASHBURTON, Melchet Court, Romsey. Mr. J. Wasley, gr. to J. B. TAYLOR, Esq., Shenfield Manor, Basingstoke, secured the premier award for 24 Japanese blooms in a strong competition; 2nd, Mr. H. Dawes, gr. to Mrs. OGLIVIE HAMBLEDON. Mr. G. Hughes, gr. to A. P. RALLI, Esq., Twyford Lodge, Winchester, won for 12 blooms, but was closely followed by Mr. Ransom, gr. to C. A. LINZEE, Esq., Braendean.

Incurved varieties.—Two classes were provided for these flowers. In that for 24 blooms Mr. G. Lane, gr. to Miss RIDGE, Englefield Green, won easily with full-sized, shapely, fresh examples of leading sorts; 2nd, Mr. HUNT.

Single and decorative varieties and decorative Chrysanthemums in bunches and staged in vases were each represented by a class which produced keen competition. Mr. STEVENSON won the premier award in both classes with really handsome displays of desirable sorts.

MISCELLANEOUS.

Groups of various plants were an interesting feature of the show. Mr. E. Long, gr. to E. C. BURCH, Esq., Christchurch Road, Winchester, won the 1st prize in the premier class with Palms, Poinsettias, Orchids, &c., that were effectively displayed; 2nd, Mr. G. HUGHES. Captain CLAYTON MITCHELL was successful with 12 Primulas, which showed much variety. Mr. J. A. MARSH won for double-flowered varieties of this flower.

The displays of fruit and vegetables were numerous and good. Mr. W. Mitchell, gr. to J. WILLIS FLEMING, Esq., Chilworth, showed the best black and the best white Grapes. Mr. T. HALL was first for both dessert and for kitchen Apples. Mr. ELLWOOD won the 1st prize in both Messrs. Toogood's and in Sutton's Vegetable classes, with high-class produce.

Among the non-competitive exhibits, Messrs. HILLIER & SON had an extremely fine collection of Apples and Pears. Mr. ELLWOOD staged Chrysanthemums and hardy fruit, and Mr. B. LADHAMS, Shirley, showed winter-flowering Carnations.

ROYAL BOTANIC.

NOVEMBER 15.—Many visitors attended the Society's Exhibition held on this date, but the exhibits were very limited in number. This, however, was to some extent compensated for by the fine display of Chrysanthemums grown in the Society's gardens and well displayed in the conservatory. The only trade exhibit came from Messrs. T. S. WARE, Feltham, who put up some good Carnations, also a fine collection of Rock plants, for which they were awarded a Silver Medal. Mr. H. Parr, gr. to F. A. BEVAN, Esq., Trent Park, New Barnet, staged about 120 plants of Begonias, the varieties consisting of Gloire de Lorraine, Turnford Hall, and Mrs. Leopold de Rothschild, the plants of the latter being specially well flowered. It would be difficult to find a better lot of these plants. (Gold Medal.)

Mr. R. Mountford, gr. to the DUKE OF FIFE, Richmond, made a good display with Begonias, Orchids, Liliiums, and Chrysanthemums, with foliage plants arranged among them. (Large Silver Gilt Medal.) Mr. G. Kelf, gr. to Miss ADAMSON, Regent's Park, put up a large group of Chrysanthemums in pots, chiefly of large Japanese varieties, with an edging of Begonias and Ferns. (Silver Gilt Medal.)

SCOTTISH HORTICULTURAL.

NOVEMBER 16, 17, 18.—The Waverley Market, Edinburgh, was again the site for the autumn Chrysanthemum exhibition, which was equal in quality and in the keenness of competition to any of its predecessors. Chrysanthemum blooms shown in vases were a feature, as many as 21 classes being provided for flowers exhibited in this manner. The arrangements were excellent, as usual, and were superintended by the President, Mr. J. W. McHattie, and the Secretary, Mr. P. Louey.

CUT BLOOMS IN VASES.

Japanese varieties.—The principal class was that for 15 varieties, three blooms of each, with Chrysanthemum foliage only. The leading prize was a piece of plate value £20, and £10 in cash with 2nd and 3rd prizes of £20 and £15 respectively. Six competitors produced a good display. The orthodox method of judging the blooms in this and the three other leading classes was departed from, the system adopted being that of allotting points to each trio of blooms, and denoting the number of points to each variety on cards specially prepared along with the ordinary prize card.

As an illustration of the method adopted we append the names of the varieties staged and the total number of points given. The blooms were of fair size, in very fresh condition, and were well displayed. Mr. D. Niccoll, gr. to J. W. BELL, Esq., Rossie, Forgandenny, just secured the coveted position by the narrow margin of one point. His varieties were:—F. S. Vallis, Mrs. F. W. Vallis, Miss Alice Byron, Ethel Fitzroy, Henry Stowe, Mdme. Cadbury, Bessie Godfrey, Mdme. P. Radaelli, Mrs. C. Beckett, Miss M. Ware, Miss E. Shrimpton, Miss C. Miller, Mrs. J. Lewis, Mrs. Barkley, J. H. Silsbury.—Total number of points, 106. Mr. T. Lunt, gr. to Captain STIRLING, Keir, Dunblane, won the 2nd prize, having excellent examples of the following varieties: Lady Conyers, Duchess of Sutherland, Henry Stowe, F. S. Vallis, Mrs. F. W. Vallis, Mrs. J. C. Neville, Loveliuiss, Mdme. Cadbury, Bessie Godfrey, Miss M. Ware, J. H. Silsbury, Calvat's 99, W. R. Church, Mrs. Barkley, and Miss Elsie Fulton. Total number of points, 105.

In the class for eight varieties of Japanese Chrysanthemums, three blooms of each variety, and confined to Scottish growers, the Scottish Challenge Cup and £10 were offered. No fewer than 14 contested. The premier award was made in favour of Mr. G. Stewart, gr. to Sir JAMES SIEVEWRIGHT, Zulliallan Castle, Kincardine-on-Forth, for a superior exhibit which totalled 62 points. The principal varieties were Florence Penford, F. S. Vallis, Mdme. P. Radaelli, Miss Elsie Fulton and Lady Conyers. Mr. J. H. Cumming, gr. to Lady STEWART, Grantully Castle, secured the 2nd prize, with a total of 53½ points.

In the classes, open only to Gardeners and Amateurs, for six varieties, three blooms of each, Mr. Thos. Baird, gr. to JAMES YOUNGER, Esq., Armsbrae, Cambus, won the 1st prize. Seven growers competed in this class. In that for six blooms of any one variety to be shown in two vases, Mr. LUNT easily won the 1st prize with examples of F. S. Vallis in good condition.

Decorative and single varieties.—Mr. A. E. TODD, Stoneybank, Musselburgh, was awarded the 1st prize for four vases of three sprays of decorative flowers, partially disbudded. This was an interesting exhibit, and one well illustrating the value of such decorative varieties as Souvenir de Petite Amie, La Triomphante, and Mons. W. Holmes. The class for three vases of single flowers (distinct) brought eight competitors; Mr. A. Knight, gr. to Sir WILFRED LAWSON, Brayton Castle, Carlisle, was distinctly ahead with handsome vases of Purity, Edith Pagram, and Miss A. Holden. Mr. W. Ferguson, gr. to W. SORLEY, Esq., Viewfield House, Partick, was awarded the 2nd prize. Thirteen growers contested in the class for three vases of decorative varieties, each vase containing not more than 12 sprays, with any kind of foliage. Mr. J. KAY, with crimson Source d'Or, La Triomphante and its yellow sport, won the 1st prize.

The premier bloom in the show was the example of Mrs. F. W. Vallis in Mr. LUNT's 2nd prize exhibit.

An interesting class was that for six bunches of Chrysanthemums as arranged for market. Messrs. JAMES CRAIG & SON, Bamptongate Nurseries, secured the 1st prize with a bright set of really good blooms.

Plants in pots showed a great improvement on those of former years. Mr. J. Pulman, gr. to D. R. W. HINE, Esq., Holywood, Colinton Road, and Mr. Michie, gr. to Lady STEEL, were the principal prize takers, staging really excellent specimens.

FRUIT AND VEGETABLES.

The exhibits of fruit and vegetables were both numerous and good. In the classes for Grapes Mr. J. LESLIE, Pitculen House, won the leading awards with fruit of good quality, though not of large size. Mr. JORDAN, Impney Hall Gardens, Droitwich, won the 1st prize for a collection of fruit as well as for 18 dishes of apples. Mr. Beckett, gr. to Lord ALDENHAM, Elstree, secured the leading positions in the classes for collections of vegetables, winning 1st prizes for both 10 and six varieties with very superior produce.

HONORARY EXHIBITS.

Mr. H. J. JONES, of Rycroft Nurseries, Lewisham, was awarded the Society's Gold Medal for a handsome display of Japanese Chrysanthemums intermixed with free flowering and single varieties in bamboo stands and the whole effectively interspersed with Palms, Ferns, &c.

Mr. W. WELLS, Earlswood, had an interesting collection of new varieties.

Mr. FORTUNE, Edinburgh was awarded a Silver Gilt Medal for baskets of flowers, &c.

MANCHESTER BOTANICAL AND HORTICULTURAL.

NOVEMBER 16.—The annual Chrysanthemum show of the above society was held on the foregoing date in the Botanical Gardens, Old Trafford. The show was one of the finest seen in these gardens. Mr. J. BROWN, of Heaton Mersey, was awarded first place in all three classes for plants, and his exhibits would be difficult to surpass. Equally high praise is merited by the two stands of blooms shown by Mr. J. B. HANKEY, of Leatherhead, Surrey, which secured for their owner the Manchester Challenge Cup, presented by the Earl of Derby, in the competition open to all comers, nurserymen excepted. As this is the second year Mr. Hankey has won the cup it now becomes his own property. His stand of incurved blooms contained splendid flowers, including grand examples of the varieties *Emblemé Poitevine* (yellow) and *Mrs. G. Denyer* (heliotrope). There was a good entry in the two classes for local growers.

CUT BLOOMS.

The best 24 incurved blooms in not fewer than 12 varieties were shown by W. S. H. BASS, Esq., Byrkley, Burton-on-Trent; 2nd, J. B. HANKEY, Esq.

The smaller class for 12 incurved blooms saw the position of these exhibitors reversed.

Lady ASHBURTON, Milchet Court, Romsey, won in the class for 36 Japanese blooms, while the principal prize in the smaller class for 18 Japanese blooms was secured by Mr. BASS.

The large class for 36 miscellaneous Chrysanthemum blooms, to include not fewer than six each of incurved Japanese and reflexed varieties, was won by EDWIN JACKSON, Esq., Hale Road, Altrincham, followed by F. H. GOSSAGE, Esq., Woolton, Liverpool.

* * ROYAL BOTANIC SOCIETY.—As these pages are passing through the press we have received a circular letter signed by Mr. J. B. SOWERBY, adverting to the communication published in our last issue. It is impossible for us to give publicity to this document this week, and it will be hardly necessary to do so next week as the meeting was held on Friday, November 24.

Obituary.

M. PIERRE.—We regret to hear of the decease at Paris of this eminent botanist on the 30th ult. M. Pierre achieved a very high position as a traveller and a botanist. His fine work on the forest flora of Cochin China remains unfinished. He was the founder of the Botanic Garden at Saigon, and did much in the identification and distribution of plants of economic importance.

GEORGE F. FORD.—On the afternoon of Thursday, November 16, in the small picturesque churchyard of Silsoe, Bedfordshire, were interred the remains of Mr. Geo. F. Ford, for sixty-seven years a resident of the Parish of Silsoe. Mr. Ford died on Sunday afternoon, November 12, at the advanced age of 85 years after a lingering illness. He came to the neighbourhood as a young man of eighteen, and was for the long period of sixty-seven years connected with Wrest Park Gardens. On the death of his uncle, Mr. Seward Snow, in 1869, Mr. Ford was appointed Head Gardener, a position he held till 1896, when he retired on a pension from the late Earl Cowper, K.G. He acted as Churchwarden up to a few years before his death. Mr. Ford was highly esteemed by all with whom he came in contact. *George Mackinlay.*

News has reached us of the decease of Colonel Tremayne, of Carclew, and of Mr. H. Marsden, of Isleworth. A further notice will be given in our next issue.

TRADE NOTE.

G. POCKOCK & SON, LTD.

This Company has been registered with a Capital of £2,000 in £1 shares. Object, to take over the business of a florist, fruit-grower, kitchen gardener, fruit merchant, greengrocer and nurseryman carried on by G. H. Pockock at South End Road, Hampstead, and at the Temple Nurseries, Hendon, as G. Pockock & Son. No initial public issue. Table A mainly applies. Registered office: 1, Heathurst Road, Hampstead Heath, N.W.

ANSWERS TO CORRESPONDENTS.

BEECH TREES: *T. H. W.* You do not say what is the matter with your trees. Presuming you mean the white fluffy Coccus we advise you to scrub the bark with a wineglassful of petroleum, 1 oz to a gallon of water and soap suds. If the disease has made much progress this will not be effectual.

CALANTHE PSEUDO-BULB WITH BROWN SPOTS: *H. M.* The appearance is quite common whenever Calanthes of this class are grown, but it is most common where the plants are cultivated in unsuitable houses. A sudden fall in the temperature of the atmosphere of the house at night, having the result of condensing the moisture in the house and producing "drip" from the roof may originate the mischief. The pseudo-bulb itself is perfectly healthy, and the roots at the base show that it has been tolerably well grown though not developed up to the best. It is possible that the affording of water has been continued too long after the pseudo-bulbs have reached maturity. Sometimes the use of crude, artificial manure, such as stable runnings, cause similar damage.

CARNATIONS DISEASED: *Anxious.* The diseased appearance of the plants is due to the presence of eelworm. See answer to *A. D.*, p. 320 in our issue for October 28, 1905; also p. 135 of the Calendar of Garden Operations, obtainable from our Publishing Department. Price, 7½d. post free.

CHRYSANTHEMUM NIVEUM: *Langley Dale.* This variety is a pure white Japanese flower, and was raised from seed by Messrs. Nathan Smith & Son, of the United States of America, being first introduced into this country about the year 1900. Some few years ago it produced both yellow and pink sports, but the original white form is the one now commonly grown, and even that is giving place to newer varieties of better form and habit.

CUCUMBERS DISEASED: *J. A.* The nodules on the roots are caused by eelworms. See answer to *Anxious.*

GARDEN SOIL: *F. P. M.* (1) The chemical analysis you have sent us shows that the soil is exceedingly poor in soluble plant-food; there is only about one-half the quantity of organic matter that there should be to make a satisfactory garden soil. The soil would be very susceptible to drought, as is indicated by the large quantity of sand and chalk, and the small proportion of humus matter. There is a deficiency of both potash and phosphates. The nitrogen content should be nearly three times as high as is shown by the quoted figures. (2) The first thing to do is to improve the physical condition of the soil, which in this case will be best done by the application of some farmyard or stable manure; as much as from 8 to 10 cwts per 100 square yards may be applied with advantage. Peat moss manure may be used if more easily procured, but this would not be so lasting or beneficial in its effects on this class of soil as the stable or farmyard manure. In regard to artificial manures in addition to the dung, a mixture of superphosphate and Kainit with a little bone-meal would be the most suitable—5 lb of superphosphate of 30 per cent. soluble phosphate, 3 lb. of Kainit, and 1 lb. of bone-meal, may be applied per 100 square yards. (3) The dung should be put on and dug in during the winter months, the sooner the better. In the early spring, say beginning of March, according to weather, apply the artificial manure mixture, which may be raked in previous to sowing the seeds or planting out the flowers. Should you have any difficulty in procuring the stable manure or peat moss manure, or not feel inclined to use those materials, you may apply to Messrs. Willis Bros., of Harpenden, or other firms who supply garden manures specially adapted to such cases.

INDIAN ORCHIDS: *J. H. C.* There is a book, by Sir George King and Mr. Pantling, to be had from Wesley & Son, Essex Street, Strand, for £7. It deals with the Orchids of Sikkim only. For a general account of the Orchids of the whole of India see Sir Joseph Hooker's "Flora of British India," vols. 5 and 6 (Lovell, Reeve & Co.).

NAMES OF FRUITS: *Mac.* Warner's Seedling. Quite distinct from Warner's King—*Dolphis*. Bachelor's Glory.—*B. S.* 1, Beurré Diel; 2, Beurré Clairgeau; 3, Cheshunt Pippin; 4, Golden Reinette; 5, Winter Colmar; 6, prob-

ably a seedling. There is nothing very remarkable about the fruit, except its shape.

NAMES OF PLANTS: *H. S. C. P.* Ornithogalum lacteum. Thanks for the stamps, they will be given to the Gardeners' Royal Benevolent Institution in accordance with your wish.—*D. H. C.* *Platanus orientalis*.—*J. M.* An Iris. Send flower when the plant blooms.—*J. H.* 1, *Cupressus Lawsoniana erecta viridis*; 2, *Cupressus (Retinospora) pisifera aurea*; 3, *Berberis nepalensis*; 4, *Daphne Laureola*; 5, *Daphne indica*; 6, *Berberis dulcis*.—*A Twenty Years' Subscriber* 1, *Cupressus nootkatensis*; 2, *Thuja dolabrata*; 3, *Juniperus Virginiana Schottii*; 4, *Juniperus*; 5, *Abies*, perhaps *Nordmanniana*; 6, *Thuja orientalis*. *A. M.* Perhaps *Capsicum baccatum*.

NURSERY IN NEW YORK: *E. A. R.* Try Peter Henderson & Co. The American journals are mostly purely trade journals. There are several POTATOS: *Butt.* The potatoes are badly scabbed, the superficial form of scab caused by *Oospora scabies*. It would be risky to use scabbed potatoes for sets. If so, they should be submerged for two hours in a solution consisting of 15 gallons of water mixed with half a pint of formalin. The soil in which the potatoes grew will be infected, and should be treated with quicklime, or better still, gaslime.

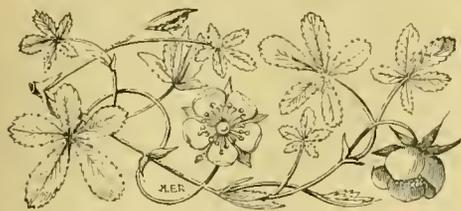
RAINFALL AT POTTER'S BAR: *J. L.* After careful comparisons our meteorological expert estimates that the mean annual rainfall of Northaw, Potter's Bar, is 26½ inches, which is as nearly as possible the average rainfall in Hertfordshire.

REMOVAL OF FLOWERS OF BEGONIA GLOIRE DE LORRAINE AT AN ULSTER FLOWER SHOW: *Co. Down.* If the facts were as you state them it was a contemptible proceeding, and one which you should have immediately brought under the notice of the Committee. As you say you know the offender you should certainly have nothing more to do with him in the way of challenge or otherwise.

THE FORCING OF NARCISSUS POETICUS ORNATUS: *A. R. B.* The ultimate result will depend entirely upon circumstances of which we have no information. The temperature you name is excessive at this early period of the season, and if continued will in all probability produce a result the very opposite of that you desire. If artificial heat be too early applied to this variety it has a retarding influence, and your only safe guide in the circumstances is the immediate condition and day-by-day progress of the plants. You remark "they are now about one inch above the soil," we presume you refer to the leaf growth. Unfortunately this counts for very little, and it is possible the foliage may remain in this condition for a month or even longer. If you have nothing more than leaf growth in sight you were in error in placing the batch too early in a strong heat. You must be guided by the progress of the flower scapes. Under no circumstances should much artificial heat be applied to this variety until it is seen that the scape has safely emerged from the neck of the bulb. At this early date such progress is highly improbable—we had almost said impossible—and the entire batch would have made far greater headway eventually, and have saved you much fire heat and worry in the meantime had the bulbs been allowed to remain plunged in the open air for a month longer at least. Very early planted bulbs of the ornatus variety are best left in the plunging bed till the end of November, after which time a preparatory fortnight in a cold house should be given, and then heat should be gradually applied until it is seen that the flower scape has emerged. Undue heat applied prior to this stage of growth is directly responsible for strangulation. An atmospheric temperature of 45° or 50° is generally sufficient from the start until the end of December. Read an article on this subject that appeared in these pages on October 22nd, 1904, p. 286.

* Owing to pressure upon our space we are compelled to hold over several Society reports, including one from York and one from Bristol.

COMMUNICATIONS RECEIVED.—*S. W.*, photographs with thanks—*C. H. P.*, *F. M.*, *J. U.* (with thanks).—*D. Landreth*, Pennsylvania.—*J. R. D.*—*F. M. G.*—*J. Vick's Sons*, Rochester.—*G. Paul*, Harrogate (with thanks).—*G. W.*—*H. A. Pettigrew*.—*C. A. H. H.*—*A. D. R.*—*J. R. T.*—*J. C. & Co.*—*J. V. & Sons*.—*W. M.*—*J. T.*—*P. B.*—*J. L.*—*Clapton Reader*.—*J. D. C.*—*R. B. W.*—*J. V.*—*W. H. T.*—*J. T. G. Hall*.—*W. H. C.*—*E. H. J.*—*B. Ashton*.—*C. H. P.*—*C. R. C.*—*T. D.*—*J. M.*—*W. I. J. D.*—*W. C.*—*J. U.*—*S. A.*—*F. M. S.*—*J. F. McL.*—*W. H.*—*Flore*, Brussels.—*J. B. S.*—*H. M.*—*F. H. W.*—*E. M.*



THE
Gardeners' Chronicle

No. 988.—SATURDAY, December 2, 1905.

CONTENTS.

Agriculture at Cambridge ... 392	Nymphææ, names of ... 393
Belsize Court, Hampstead ... 389	Obituary—
Books, a sale of gardening ... 391	Billinghurst, Henry ... 400
Books, notices of—	Marsden, H. ... 400
The Chrysanthemum ... 394	Tremayne Col. ... 398
British Gardeners' Association, the ... 392	Orchid Notes and Gleanings ... 388
Brussels, the Floral Society at ... 393	Orchids, resting of ... 393
Chertsey, a charity concert at ... 393	Peas, culinary, in November ... 395
China, plant collecting in ... 388	Picea Morinda, a remarkable form of ... 395
Chrysanthemum, Mrs. R. Hooper Pearson ... 392	Plants, new or noteworthy—
Chrysanthemums ... 393	Aloe decora ... 386
Clusia grandiflora ... 389	Aloe Orpenæ ... 386
Colonial Fruit Show, a Eucharis at Danesbury Park ... 393	Potato, Peckover ... 395
Fern, a rare British ... 395	Potato show, the National ... 392, 397
Flower shows, judging at ... 396	Aloe Orpenæ ... 337, 392
Forestry—	Primulas, a monograph of ... 393
The Locust-tree ... 390	Rainwater in Yorkshire, quality of ... 396
Fruit buds formed as the result of injury ... 395	Rhubarb, forcing of, with ether ... 393
Fruit trees, transplanting ... 396	Trees, transplanting ... 396
Glasgow Parks and Winter Gardens ... 385	Societies
Gunnersbury House Gardens ... 388	Bristol Chrys. ... 399
Leeks, bulbous ... 394	Limnan ... 393
Mandevilla suaveolens, fruiting of ... 395	National Chrysanthemum ... 398
	National Potato ... 397
	Royal Horticultural (Scientific Committee) ... 396
	York Chrys. ... 399
	Week's work, the ... 390-391

ILLUSTRATIONS.

Aloe decora ... 386
Aloe Orpenæ ... 386
Chrysanthemum, Mrs. R. Hooper Pearson (Supplementary Illustration) ... 389
Clusia grandiflora ... 394
Leek with bulbs developed at the base of the stem ... 394
Mussel-Scale, the ... 390
Picea Morinda with bush-like habit at Pencarrow ... 395

GLASGOW PARKS & GARDENS IN WINTER.

FEW British cities have more need for parks and open spaces than the great industrial city of Glasgow, and few town dwellers are so favoured as those of that busy centre on the Clyde in having ready access to so many beautiful and interesting plants at all seasons of the year. These will shortly be added to through the generosity of Mr. Cameron Corbett, M.P., who has recently made gifts of a park near the city and one in Argyllshire. Even in dark November, when fog so frequently hangs over Glasgow, and its open spaces are dull and shrouded in smoke, there is much to brighten the lives of the dense population of the city.

In mid-November the writer had the privilege of a glance through some of these gardens, and a few notes on some of their contents may be interesting. In one of the worst situations possible for such a garden, on account of the growth of the city, the Botanic Gardens, which for a number of years have been under the ownership of the corporation, are yet kept full of interest and beauty, and the constant efforts on the part of Mr. James Whitton, the superintendent of parks, and his able lieutenants in the gardens greatly mitigate the evil effects of smoke and fog.

This year there has been the usual display of Chrysanthemums in the Kibble Palace. Grouped in one of the divisions to the right of the entrance there has been a capital display of Chrysanthemums with large blooms. These, having been well grown, have given great pleasure to the many visitors who go to see them. For a public park it is not necessary to add the novelties on their first appearance, so that many old varieties, not now seen on the show tables, are included, and their retention is fully justified by the excellent blooms they yield. A large number of plants grown for quantity of bloom are arranged in a house on the other side of the main entrance. All reflect much credit upon Mr. Rorke, who is in charge of the glass department, and the Chrysanthemum growers of his staff.

The other parts of the Kibble Palace are always of interest to plant lovers, especially to those who take pleasure in cool house plants. Of especial charm is the picture given by a group in the centre of the building, where in a realistic manner are grouped a number of tree Ferns, planted out, and thriving splendidly. The Cyatheas are very fine, including such species as *C. medullaris*, *dealbata*, and others, and the Dicksonias are very beautiful, one having fronds quite nine feet long. This group, as an Australian visitor remarked, is more like a group in an Australian donga than one in the heart of Glasgow. The Bamboos are also interesting here, and several are seeding varieties, among the latter being *Bambusa gracilis* (*Arundinaria falcata*) and *B. Simoni* (*Arundinaria Maximowiczii*). There are many interesting plants in the Kibble Palace, and in the Rhododendron season it is particularly gay with several species of these fine shrubs. Camellias and Azaleas are also included among the flowering shrubs here. Palms and many other effective plants are plentiful.

The main range of houses and its accessory buildings are full of interesting and valuable plants. Orchids have always been numerous cultivated here, but their cultivation is now attended with serious difficulties, and many have their flowers soon destroyed by the fog. Thus *Cattleyas* have but short-lived beauty, and the fine *C. labiata* grown here are not so satisfactory as could be wished. *Odontoglossums*, *Dendrobiums*, *Phalænopsis*, *Masdevallias*, and the other genera find an appropriate place, but none do better here than the *Cypripediums*. Mr. Whitton finds the favourite *C. insigne* in its various forms very useful, and many superior varieties are cultivated.

Among the plants of value to the student of botany and of interest to many visitors are the aquatics, of which there is a good collection, these including a number of the smaller aquatics which helped to make the valuable group sent by the Glasgow Corporation to the recent International Horticultural Exhibition in Edinburgh, and which was awarded gold medals by the Royal Horticultural Society and by the Royal Caledonian Horticultural Society. *Myriophyllums*, *Limnobiums*, *Jussieuap*, *Cambomba caroliniana*, and several others are grown in small glass tanks, and constitute a most interesting group. Among other plants noticed in this connection was the fine *Cochliosfema Jacobiannum*, which is doing well placed in a tank of water. *Ouvirandra fenestralis* and the superior variety *O. f. major* were also among the aquatics.

Ferns receive much attention, and many choice stove and greenhouse species are in the collection. The *Platyneriums* are especial favourites of Mr. Whitton, and the collection

is a good one. Grouped in a corner of one of the houses they form an interesting picture. Among the species are *P. grande*, *P. æthiopicum*, *P. Hillii*, *P. Ghellinekii*, *P. alaicorne*, and a few more of this quaint class of plants. Hardy Ferns are now having the attention they deserve, and a new and extensive rockery has been set apart for them and will shortly be a valuable feature of the place. In the same connection mention may now be made of the Moss House, one of the most delightful things in the garden, which, unfortunately, but for sufficient reasons is not open to the public, although it is always willingly shown to anyone interested in the plants cultivated here. It is unheated but is slightly protected by mats in very severe weather. Here are a number of the best forms of some of our native Ferns, together with those of several exotics. *Todeas* are doing well, and in their vivid and dull green setting of mosses and hepaticæ look far more beautiful than when cultivated in the ordinary way. The back wall is arranged after the fashion of a rock wall, and the aspect of the whole house is delightful in the extreme, even on a dull November day. This is mainly due to the mosses and hepaticæ, of which there is a wonderfully fine collection, practically all of native species. The gardens possess a specialist in these in the person of Mr. Scott, the propagator, and the collection is one which might well be imitated in many other gardens, both public and private. In a warm house are a number of *Selaginellas*.

The succulent house, likely to be re-arranged shortly, contains many good plants; the Palm House, too small for its occupants; the various other houses, containing such fine plants as *Marattia Cooperi*; a collection of *Anthuriums*, *Strelitzias*, *Tillandsias*, and many more; besides a number of economic plants, might be remarked upon more fully.

In the outdoor department the paths have all been overhauled; the turf here is as good as is possible; the herbaceous plants in the borders are now fully labelled and their contents largely added to, and the rock garden, now under the charge of Mr. Hepburn, has been re-arranged and many plants added. *S. Arnott*.

(To be continued.)

NEW AND NOTEWORTHY PLANTS.

ALOE ORPENÆ sp. n.

As a foliage plant alone this species will be a decided acquisition to European gardens.

Acaulescent; leaves, rigid, usually slightly incurved, about 20 in a dense rosette, up to 30 centimetres in length, 6-8 centimetres broad near the base, oblong-lanceolate, slightly convex on the inside, more so on the back; glaucous with very marked, interrupted, longitudinal sub-parallel lines on the face and back. On the face there are also a small number of whitish spots, some of which (especially a few near the apex) bear a small spine in the centre. On the back are very numerous white spots arranged in irregular bands. Many of these (especially those near the apex) have small spines in the centre margin, with strong, straight or curved spines, brown, rising from a white base, about 3 millimetres long, and separated by nearly straight interspaces 8-10 millimetres long. Inflorescence sub-terminal, about 55 centimetres long, laxly branched, branches bearing a number of lanceolate-cuspidate, empty bracts, and a dense, terminal, capitate raceme. Floriferous bracts ovate-cuspidate about 2-3 centimetres long, membranous, whitish with 3 dark veins (youngest flowers aborting and their bracts forming a terminal tuft); lowest

pedicels 3 centimetres long, upper gradually smaller. Perianth almost cylindrical except in the uppermost portion, which is sharply turned upwards, nearly 3 centimetres long, tube of corolla about 5 millimetres long; outer petals red with 3 darker nerves which radiate from the apex, otherwise apex nearly white; inner petals with a distinct keel which is greenish near the apex, reddish lower down and with almost white wings; filaments, especially the outer ones, rather broad, white; anthers pale terracotta coloured, ovary oblong, dark green, style white. Stamens and style exerted 6-8 millimetres long.



FIG. 144.—ALOE ORPENÆ, SCHÖNLAND.

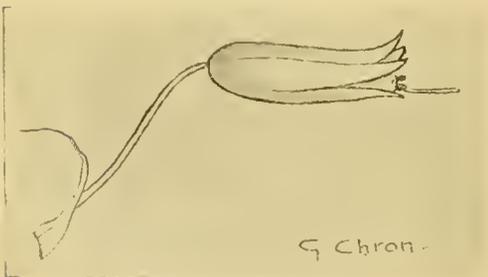


FIG. 145.—FLOWER OF ALOE ORPENÆ, NAT. SIZE.

The flowers are very decidedly proterandrous. When in the male state they are sharply deflexed; in the female state the pedicels straighten themselves out and the flowers point upwards.

Received from Miss K. Orpen, S. Clair, Douglas. Flowered in Grahamstown, August, 1905. S. Schönland, Grahamstown.

ALOE DECORA, SCHÖNLAND, n.sp.

ACAULESCENT: leaves 30-40 in a dense rosette, ovate-lanceolate, c. 20cm. long, the older c. 9cm. broad near the base, c. 3cm. thick, curved upwards, rather stiff, glaucous, slightly convex

on the upper surface, strongly convex on the lower surface, unspotted, with two or more rows of spines on the lower surface near the apex, sometimes reaching below the middle, marginal spines usually almost at right angles to the margin, nearly straight, compressed, reddish brown rising from a whitish base, about 3mm. long, separated by nearly straight interspaces, which are usually about 10mm. long. Inflorescence usually simple, subterminal, sometime bifurcated. Peduncle thick, laterally compressed and without bracts near the base; raceme densely multiflorous; bracts about 20cm. long, ovate-cuspidate, membranous, whitish with a few darker lines near the centre; flower buds subtrigonal, swollen near the apex (lower side more so than the upper), red with greenish tips; perianth about 3.3cm. long, slightly irregular, enlarging upwards and contracted at the mouth, tube a little over one half the length of the perianth, outer petals red with a lighter margin and green centre near the apex, inner whitish with a green keel and light brown near the apex, filaments and style yellowish white, anthers yellowish-red on the back, pale yellow on the face, stamens and style exerted 10-12mm., flowers decidedly proterandrous. The flowers become much paler at the time the anthers discharge their pollen, and with the pale yellow filaments and style the older flowers present a fine contrast to the red flower-buds and younger flowers. The opening of the flowers proceeds more quickly on the under side of the raceme, which is always bent downwards. My specimens were collected by Miss K. Orpen, S. Clair, Douglas, Griqualand West, and flowered in Grahamstown, Sept., 1905. Although a dwarf species, *A. decora* has altogether the flowers of the ferox group. S. Schönland. Albany Museum, Grahamstown, Oct. 7th, 1905. See Fig. 146.

TRANSPLANTING FRUIT TREES.

THE present season being suitable for transplanting fruit trees, a few remarks as to the proper method of performing the work may prove helpful. Holes dug for planting young trees—say, from three to five years old—should be made 2 feet in diameter and from 18 to 20 inches deep. The bottom spit from the soil should be put on one side of the excavation and the top soil on the other, the latter to be returned to the hole after the bottom has been loosened with a spade or a fork. If the soil is lacking in fertility some short manure should be incorporated with it. This mixture in the bottom of the hole should be made higher in the centre before setting the trees thereon, when the roots can be spread evenly all round with a slight inclination downward. All damaged roots must be cut clean away, straggling roots shortened and the remaining ones covered to the thickness of about 6 inches with prepared soil, providing the original soil is not good enough by itself. When doing this grasp the tree by the stem and give it a shake in an upward direction, so as to incorporate the soil well among the roots. After the soil is applied, make it firm about the roots by treading, regulating the pressure by the condition of the soil with regard to moisture. Care should be exercised in planting not to bury the trees deeper in the soil than they were before transplanting, always assuming, as a matter of course, that they were at a proper depth originally. When filling the holes allow sufficient extra material for the loosened soil subsiding, and lay on a surface dressing 2 or 3 inches deep of rotten manure. This mulch will prevent frost penetrating to the roots, and will maintain the soil about them in a more equable condition



FIG. 146.—ALOE DECORA, SCHÖNLAND

with regard to warmth and moisture than would otherwise be the case, and, furthermore, the winter and spring rains will wash the substance of the manure down to the roots with beneficial results.

REMOVING TREES.

The foregoing remarks apply to trees obtained from a nursery after the leaves have fallen. Where fruit trees are required to be transplanted from one part of the garden to another the sooner the work is performed after the crop of fruit has been taken the better, as this will allow the trees so shifted to become re-established before the fall of the leaf. The trees should be taken up with good balls of earth attached to their roots. Dig a trench round the individual trees required for removal at from 15 to 18 inches from the stem, more or less, according to the size of the tree to be lifted. Work the soil out around and beneath the roots with a digging fork, until the tree can be lifted bodily with a good ball of soil on to a strong mat and then placed on a hand-barrow. The cor-

ners of the mat should be tied round the stem of the tree, which can be thus conveyed to the hole previously prepared for its reception. When the tree is placed in position, with its suitably pruned roots and spread out as indicated above, the prepared soil should be worked well under and among the roots and the latter covered with the same preparation to the thickness of 6 inches, mulched as already recommended, and then watered to settle the soil.

Ground sloping southward or westward and is protected from the north and east by a belt of Fir, Poplar, or such-like trees, and which is not likely to become submerged at any time, should preferably be chosen as a site for a new orchard; and strong loamy soil is suitable to the requirements of all kinds of fruit trees.

Pyramid and bush-trained Apple, Pear, Plum, and Cherry trees should be planted in rows at from 10 to 15 feet apart and at the same distance from tree to tree in the rows. Two or three rows of Gooseberry or Currant bushes may be planted between taller fruit trees, and the

number of these rows can be reduced as the fruit trees attain larger dimensions.

VARIETIES.—Were I limited to 12 each of Apples, Pears, and Plums I would select the following:—*Apples* (Dessert): Irish Peach, Beauty of Bath, Duchess of York's Favourite, American Mather, Newtown Pippin, and Cox's Orange Pippin; (culinary), Keswick Codlin, Lord Suffield, Lord Derby, Lane's Prince Albert, Bramley's Seedling, and Warner's King. *Pears*: Williams' Bon Chretien, Beurré d'Amanlis, Souvenir du Congrès, Beurré Diel, Durondeau, Doyenné du Comice, Glou Morceau, Marie Louise, Duchesse d'Angoulême, Beurré d'Arenberg, Josephine de Malines and Catillac. *Plums*: Bryanston Gage, Old Green Gage, Jefferson's Washington, Kurk's Seedling, Monarch, Transparent Gage, Belgian Purple, Old Orleans, Pond's Seedling, Victoria, and Reine Claude de Bavay. *Cherries*: Black Heart, Black Tartarian, Royal Duke, Governor Wood, May Duke, and Morello. *H. W. Ward, Lime House, Rayleigh.*

THE MOST SUITABLE VARIETIES OF POTATOS FOR PARTICULAR DISTRICTS.

(SEE PAGE 392.)

LATE OR MAIN CROP VARIETIES. Total Number of Varieties mentioned— 56	Scotland, N. No. of Returns	Scotland, E. No. of Returns	Scotland, W. No. of Returns	England, N.E. No. of Returns	England, E. No. of Returns	England, Midland Counties. No. of Returns	England, Southern Counties. No. of Returns	England, N.W. No. of Returns	England, S.W. No. of Returns	Wales. No. of Returns	Ireland. No. of Returns	Channel Islands. No. of Returns	Isle of Man. No. of Returns	Total No. of Returns
Abundance (Sutton's)	1	3	1	1	..	4	..	..	..	2	..	..	..	Total Votes
Ard Cairn Beauty	1	..	..	..	..	..	..	..	..	12
Beauty of Bute...	2	..	..	..	..	1	..	..	3
British Queen	1	..	..	1	..	2	4	..	1	..	..	..	..	9
Brinkworth's Challenge	1	..	..	1	..	..	..	..	2
Champion	2	..	..	..	..	..	..	..	1	..	6	..	..	9
Charles Fidler	2	1	..	..	..	..	..	..	3
Cramond Blossom	1	..	..	..	..	..	..	..	..	..	..	..	1
Defiance (Daniel's)	1	..	..	..	..	..	..	1
Duncraig Castle	1	..	..	..	..	..	..	1
Dunbar Regent	1	..	..	..	..	..	..	1
Dalmeny Beauty	1	1	..	..	1	..	..	..	..	1
Dalmeny Hero...	1	..	..	..	1
Dalmeny Regent	1	..	..	..	1	1
Discovery (Sutton's)	1	3	..	1	..	..	..	..	5
England's Glory	1	..	..	..	..	..	..	1
Empire Kidney (Findlay)	1	..	..	..	..	..	..	1
Evergood	1	..	2	1	3	..	2	1	..	..	1	11
Farmer's Glory	1	..	..	..	..	..	..	..	..	..	..	..	1
Favourite (Cole's)	1	..	..	..	..	..	..	1
Flourball (Sutton's)	1	..	..	..	..	..	..	1
Garnton	1	..	..	..	..	1	..	..	..	..	2
Goldfinder	1	..	..	1	..	..	..	..	..	..	..	2
Imperator	1	1	..	..	4	..	..	..	..	6
International (Royal Jersey Fluke)	2	..	..	2
King of the Russets	1	..	..	..	..	..	..	..	1
Langworthy	3	2	1	..	1	..	1	1	..	..	..	..	9
Lord Roberts	1	..	..	..	..	..	..	..	..	..	..	1
Lord Rosebery... .. .	1	..	..	..	..	..	..	..	..	..	..	..	..	1
Magnum Bonum	1	1	..	3	4	6	..	2	4	..	..	..	21
Main Crop (Clarke's)...	5	2	..	2	1	1	1	3	..	..	..	..	15
Masterpiece	1	..	..	..	..	..	..	..	1
Monarch (Carter's)	1	..	..	..	..	..	..	..	1
Northern Star	1	..	1	..	1	1	..	..	..	..	..	..	..	4
Reading Giant	1	3	..	..	1	..	..	..	4
Reliance (Sutton's)	1	1	..	..	1	..	..	..	3
Satisfaction	1	1	..	1	..	..	..	2	1	1	..	..	7
Schoolmaster	1	1	..	2	3	..	..	..	..	..	..	7
Scottish Triumph	3	2	4	1	1	..	1	1	..	..	13
Sensation (Daniel's)	1	1	1	..	1	..	..	..	..	..	..	4
Sirdar	1	..	..	..	..	..	..	..	..	1
Skerry (Improved)	1	..	..	1
Snowdrift	1	..	..	..	..	..	..	..	..	1
Snowdrop	1	..	..	..	..	..	..	1
Syon House Prolific	5	3	..	5	1	..	..	..	14
The Bruce	1	..	..	..	..	1	..	..	..	..	1
The Crofter	2	1	..	..	..	2	..	1	..	..	..	..	6
The Factor	2	2	1	1	5	6	..	4	1	..	..	..	22
Tremendous (Toogood's)	1	1	..	..	..	..	..	..	2
Triumph...	1	..	1	..	..	..	..	..	..	2
Up-to-Date	2	7	6	5	14	35	41	4	27	3	5	..	2	151
Village Blacksmith	1	..	..	..	..	..	..	..	1
White Beauty	1	..	..	..	..	..	..	1
White Elephant	1	..	..	..	..	..	..	1
Windsor Castle	2	1	..	..	2	7	1	1	..	..	..	..	14
Worm Leighton	1	..	..	..	..	..	..	1

ORCHID NOTES AND GLEANINGS.

CYMBIDIUM × GAMMIEANUM AND
C. × MAGGIE FOWLER.

With reference to the suggestion of W. W., November 25, p. 370, that the latter may be identical with *C. × Gammieanum*, I should like to state that *C. × Maggie Fowler* was shown as of *C. giganteum × C. elegans*. Members of the ORCHID COMMITTEE carefully examined the flower, and agreed that the parentage was correct, and moreover that the hybrid had a distinct inclination towards *C. giganteum* in the labellum. As will be seen by reference to the report of the Show (*Gardeners' Chronicle*, October 28, p. 316), Messrs. Sander & Sons exhibited a fine specimen of typical *C. × Gammieanum* as illustrated in King & Pantlin's *Orchids of the Sikkim Himalaya*, and the opportunity was given for comparing at the time, and it was decided, with the help of the picture of *C. longifolium* in the Society's collection, that Messrs. Sander's plant was of *C. longifolium × C. elegans*, a conclusion which Mr. Rolfe had arrived at long before (*Orchid Review*, 1900, p. 107). There is a general resemblance between the two, but *C. × Maggie Fowler* is much the handsomer.

As all the species concerned grow together, it appears that natural hybrids of both sets have been imported.

VANDA CÆRULEA.

Two beautiful and very dissimilar varieties of this fine cool, or intermediate house, Orchid are sent by Mr. H. Garnett, gr. to R. G. Fletcher, Esq., Mount Harry, Brighton, who states that the twenty-four plants of it in the collection have afforded flowers for some time past. Some of them are still in bloom with *Dendrobium Phalaenopsis Schroderianum*, *Cattleya labiata*, &c. One variety is large and beautifully veined and tinted with bright blue colour, and the other, and rarer form, has white sepals and petals, and bright violet coloured lip. Flowers, showing the variation of *Dendrobium Phalaenopsis*, are also sent, differing much in colour, the lightest having white sepals and petals, the latter slightly tipped with rose and labellum, with primrose disc, in front of which are light purple lines. *J. O. B.*

GUNNERSBURY HOUSE
GARDENS.

SOMETHING out of the common rut is sure to greet the visitor to this remarkable garden; be it the methods pursued in fruit-culture in pots, or with *Nymphæas* under glass, in heated pits; autumnal-bearing strawberries treated as annuals; *Chrysanthemums* growing in tubs; or the fine specimens of sweet-scented foliaged *Pelargoniums* which are employed as decorative objects on the terrace; and in many other features. The frost had made havoc on October 17 and 18 with the more tender occupants of beds and borders, but the great tubs, filled each with eight or ten plants of *Chrysanthemums* of one variety, made a remarkable display of colour at the bottom of the lawn at about 100 yards distance from the windows. The masses of bloom measured six to eight feet in diameter, and consisted of Goacher's *Crimson*, *Harrissianum* (a white-flowered variety), *Horace Martin*, a deep yellow-flowered sport from the *crimson Mad. Marie Masse*, of which there were four tubs full, most abundantly bloomed; and *Carrie*, another of nearly the same shade of colour, and equally free in growth and blooming, but earlier. The whole of these consisted of early, large flowering varieties. In several *Vineries*, from which the fruit is cleared, *Chrysanthemums* occupy the staging underneath the vines—*President Hardy*, a reddish, orange-coloured flower, early, free and excellent for cutting at this part of the season. A large number of this variety is grown. *Fleur d'Octobre* is another variety grown in quantity, and in one of the houses I saw 200 plants of it in

full bloom—a most useful plant for furnishing cut bloom or other uses.

In the roof garden at the mansion the remains of a gorgeous display of *Salvia splendens* Zurich variety was remarked. The plants are but little more than half the height of the type, but the spike of blooms is twice as long. These plants formed a line along the front, and were met by a curtain of *Tropæolum Fireball*, and these latter hung down to the groups of *Salvia* and scented *Pelargoniums* standing on the terrace walk in bays.

The Japanese Garden is growing in interest yearly now that the various plants are become established, more especially the Bamboos, which have attained to a great width and height. Lilies, with which much of the area has been decorated, where they were afforded protection from overhanging trees had still numerous flowers uninjured, as for instance, *L. speciosum*, *L. auratum*, and the variety *platyphyllum*, whereas the hardier species *L. tigrinum* was quite spoiled by the frost. Plants of *Cimicifuga racemosa* were flowering abundantly. In this garden *Juglans Sieboldiana* was remarked with fine large foliage, almost equalling in size that of *Ailanthus glandulosa*; and two nice young specimens of *Sophora japonica pendula* were noted.

The Bamboo garden possesses several fine clumps, and the following were remarkable for the size of the clumps or great vigour of growth—*B. fastuosa*, with canes of one year, 14 feet in height; *B. palmata* and *Phyllostachys aurea*, both fine masses; *P. nigra*—a large clump having numerous stems 18 feet high, and *P. Castillonis*, the nodes of the stems of which are alternately green and yellow in colour. The curious *Kochia scoparia*, whose foliage turns from light green to dull purple, was used as an edging to rose beds hereabouts.

Several glasshouses were filled with *Begonia* Mrs. Leopold de Rothschild, a brightly-coloured sport from *B. Gloire de Lorraine*, and from the first-named another sport was observed having the name *Marie*, the plant, of good habit, sturdy, and distinct, almost standing erect without support. The colour of the flower is bright pink. The various plants were shapely, nearly two feet high and freely flowered.

Orchids have not hitherto been largely cultivated, but now a nucleus has been made with choice hybrid *Cattleyas* and *Lælio-Cattleyas*; *Cattleya Trianae*, *C. Mossiae*, *Dendrobium formosum giganteum*, *Odontoglossum crispum*, *O. grande*, *Phalaenopsis amabilis* var. *Reimstadtiana*, *Vanda cœrulea*, &c., all of which are in the best of health, and several in flower.

The Plum-house still contained trees carrying the remainder of their crops of fruits, *viz.*, *Coe's Golden Drop*, *Rivers' Late*, and *Golden Orange*. A large number of *Plum*, *Cherry*, *Peach*, *Nectarine* and other fruit trees which had been denuded of their fruits were standing in sheds or out-of-doors awaiting their annual re-potting. The system of successional utilisation of several glasshouses for different kinds of fruit is well carried out by Mr. Hudson, the gardener, who in most of the houses contrives to get three crops during the year, putting into heat alternately *Figs*, *Vines*, *Plums*, *Strawberries*, *Peaches*, &c. There were, at the date of my visit, some pot *Vines* in fruit of the following varieties: *Royal Muscadine*, *White Frontignan*, *Tokay Frontignan*, the *Strawberry*, *Early Auvergne*, &c. The vines are fruited once and then thrown away. The various *Grapes* are small of size in berry and bunch, and of exquisite flavour and some of them destitute of seeds.

Figs were found in several houses with crops coming to the ripening stage of *D'Agen*, *Grosse Violette de Bordeaux*, *Violet Sepor*, and others. The earliest forced *Figs*, such as *Pingo de Mel* (*St. John*) will fruit in February, and others will be introduced successively, so that practically the *Fig* season lasts for nine months.

Two houses were filled with autumn bearing strawberries carrying nice crops in various stages of ripening. Of these the following were observed, *viz.*: *Pearl*, a good fruiting white variety of nice flavour; *St. Joseph*, *St. Antoine de Padoue*, and *Origen*, a later fruiting variety. The plants were derived from the earliest runners obtainable in June and July of the current year. *F. M.*

LEAVES FROM MY CHINESE
NOTE-BOOK.

(Continued from page 355.)

WA-SHAN.

THIS sister mountain to the sacred Omi is situated in long. 103° 14'E.; lat. 29° 21'N., six days' (roughly 100 miles) journey from the city of Kiating. The intervening country is very rough, wild, and mountainous. The road is execrable.

Baber, the first foreigner to visit and ascend this mountain, as well as Mount Omi, gives its altitude at 10,545 feet above the sea-level; 4,560 feet above the neighbouring valleys. My readings give 11,250 feet above the sea; 5,150 feet above the surrounding country. Allowing for error in the barometer, I think the mountain cannot be less than 11,000 feet high. The flora—always a fair guide—proves it to be higher than Mount Omi (10,800 feet); and this agrees with the opinion of the natives, who assert that it is the higher of the two mountains.

As seen from the summit of Mount Omi it resembles a huge Noah's Ark, broadside on, perched high up amongst the clouds. Viewed from a near distance it is a succession of tiers of vertical limestone cliffs, only seriously broken at one point, with a peculiarly flat top. From the hamlet of Ta-t'ien-ch'ih (6,100 feet), situated in a depression at its base, it is remarkably square looking, its four sides being more or less perpendicular. It looks no more than 2,000 feet above the hamlet, and yet it is really over 5,000 feet. When it was first pointed out to me, 20 miles or so distant, I could not believe it was the mountain. It looked like a huge vertical precipice, its massiveness belittling its height. There is something peculiar about the mountain which detracts from its height.

As above stated, the first foreigner to ascend this mountain was the late E. Colborne Baber, Esq., on June 5, 1878. The description of this mountain given by him is so accurate and beautiful that I cannot do better than quote it:—"The upper storey of this most imposing mountain is a series of 12 or 14 precipices, rising one above another, each not much less than 200 feet high, and receding very slightly on all four sides from the one next below it. Every individual precipice is regularly continued all round the four sides. Or it may be considered as a flight of 13 steps, each 180 feet high and 30 feet broad. Or, again, it may be described as 13 layers of square, or slightly oblong, limestone slabs, each 180 feet thick and about a mile on each side, piled with careful regularity and exact levelling upon a base 8,000 feet high (I made this base 8,500 feet). Or, perhaps, it may be compared to a cubic crystal, stuck amid a row of irregular gems. Or, perhaps, it is beyond compare. Some day the tourist will go there and compose 'fine English'; he could not choose a better place for a bad purpose; but if he is wiser than his kind he will look and wonder, and say very little and pass on."

The next person to ascend this mountain was a naturalist—Mr. A. E. Pratt—in May, 1889. I believe I am correct in saying that one of Dr. Henry's native collectors accompanied this gentleman and collected plants for Dr. Henry. If this is correct, it constitutes the only record we have of the plants being collected on this mountain.

It was on the afternoon of June 30, 1903, that I arrived at the scattered hamlet of Ta-

t'ien-ch'ih (6,100 feet), from whence the ascent is made. I took up quarters in the same inn that had lodged Baber, and afterwards Pratt. This tiny hamlet is situated in an oval depression, locked in by high mountains on all sides. This depression is about a mile long and rather less than half a mile broad at its widest point. A small lake surrounded by a luxuriant greensward occupies the lower end of this depression. A species of Delphinium, with lovely blue flowers, is abundant. The Chinese call it "Wu-tzu," and say that it is poisonous to man and cattle alike. Around the farm-houses Maize, Peas, Beans, Buck-wheat, and Irish Potato are cultivated. The people here mostly profess Christianity, a Roman Catholic mission-house being the only decent building in the hamlet.

Having procured a guide, I left the inn at 5.45 a.m. on July 1 to ascend the mountain. Mists obscured everything as we set out, and it felt very raw and cold. The path was the merest track—very sinuous, steep, and difficult. Rain commenced at 2.30 p.m. and continued during the whole of the descent. We reached our inn at 6.30 p.m. drenched through and through.

At one time a dense forest of Silver Fir covered this mountain, but this has long since been felled, and the majority of the trees still lay rotting where they fell. It is a common sight to see bushes of Rhododendrons 20 feet or more in height growing on the rotting trunks. Some of these Firs could not have been less than 150 feet in height and 20 feet or more in girth. On the summit there are still a number of trees left, but none of great size, and nearly all have their tops broken off, either by the wind or by the snow. This mountain, in common with others I have visited, shows only too plainly the wantonly destructive nature of the Chinese. Fifty years more, at the present rate, and there will not be an acre of accessible forest left in all Central, Southern, and Western China. The making of charcoal alone imposes a heavy toll on hard-wooded trees and shrubs. Potash-burning is a common industry in the mountains west, and is another means of clearing away the vegetation in a ruthless manner. It is to the making of charcoal that I attribute the marked absence of Oak, Beech, and Hornbeam in the mountain, and Birch and Hazel were none too plentiful. Besides the Silver Fir (*Abies Fargesii*), the only other Conifers noted were *Tsuga chinensis*, *Juniperus chinensis*, and *Picea* sp. nov.

Rhododendrons constitute the conspicuous feature of the vegetation, and their wood is, luckily, not esteemed for making charcoal. They begin at 7,500 feet, but are most abundant at 10,000 feet and upwards. In the ascent I noted 16 species. They vary from diminutive plants 4-6 inches high, to giants 30 feet or more in stature. Their flowers, also, are of all sizes and colours, including one pale yellow. It was most interesting to watch how, as we ascended, one species gave place to another. *R. Augustinii*, with its flowers of various colours, was one of the commonest species. *E. H. W.*

(To be continued.)

CLUSIA GRANDIFLORA.

This charming stove plant, belonging to the Nat. Order Guttiferae, has flowered in the Cambridge Botanic Garden during the past summer, where it presented a very striking appearance for a period of several weeks.

The plant is about 6 feet high and well branched. The leaves are produced in pairs, and are from 8 to 12 inches in length, obovate in form, and about 4 to 6 inches across at the broadest part. The bases of the petioles are swollen and slightly winged, and act as a protection to the growing point during development.

The flowers are produced in threes at the termi-

nation of the branches (see fig. 147). They are about $3\frac{1}{2}$ inches in diameter, both the sepals and petals are of a fleshy or waxlike substance, and are almost pure white. The stamens are numerous and form a dense circle around the base of the corolla. The stigmatic surface occupies nearly the whole area encircled by the stamens, and is covered with a quantity of gelatinous substance somewhat of the consistency of glue. Only one of the three flowers on a branch is open at one time. The plant seldom flowers, I believe, in gardens, although in other respects it is of easy culture, and may be considered worth growing on account of the bold deep green leaves, which afford a contrast to the foliage plants usually cultivated in the stove. *E. J. Allard.*

BELSIZE COURT, HAMPSTEAD.

THIS interesting old mansion with its quaint gardens is one of the few remaining properties practically within the London area where politicians, artists, and the *élite* of society used to meet and talk over the events now embodied in the history of the country. Step by step the town encroached on the fields around it, until now it is almost surrounded by dwellings. At all times its gardens were interesting, but never so much so as they are now in the hands of its present possessor, J. S. Berghem, Esq., who has reconstructed or renovated everything about the garden, and built new houses for the

accommodation of the plants in which he takes such interest, and the cultivation of fruits successfully grown by his gardener, Mr. H. A. Page.

Mr. Berghem, whose last journeying was in the Congo district, has visited many remote regions, and brings with him a good knowledge of the plants of different countries. The most beautiful and the curious are always acquired by him, and hence the collection of plants at Belsize Court is one of the most interesting and complete. Selections of Orchids, in which the showy and the curious are equally represented, a remarkable collection of rare Ferns, *Sarracenia*s, *Drosera*s, and other insectivorous plants, including a good collection of *Nepenthes*, economic plants, greenhouse plants of peculiar structure, and good selections of the plants denominated "decorative," are a few of the special features in the Belsize Court Gardens.

THE ORCHIDS

are the showiest at the present time, and in the matter of cultivation and profusion of flower they are highly satisfactory. One of the warm houses has a very fine show of *Dendrobium Phalaenopsis Schröderianum*, one side of the house being decorated with them, their arching sprays of flowers varying in tint in a remarkable manner. Among the ordinary rose and rose-purple tinted forms two variations from those tints stand out prominently. The one has flowers of a rich magenta-crimson tint, with



FIG. 147.—CLUSIA GRANDIFLORA IN FLOWER IN CAMBRIDGE BOTANIC GARDEN. FLOWERS WHITE.

purple base to the lip, and the other has several spikes of white flowers with a very faint and scarcely perceptible lavender tint on the sepal's and petals. In this, the lightest variety, the base of the lip is in colour dark claret-purple, and the front of the lip is white, it being the only form without colour on the front of the lip. Arranged with them are *Dendrobium formosum giganteum*, the plant having fifteen flowers, one spike bearing five large blooms. This plant has been some years in the gardens, and last year is said to have had eight flowers on a spike. In the same house is a selection of *Catasetums* completing their growth; *C. callosum*, *C. macrocarpum*, and others being in bloom or bud; and in another division some *Phalænopsis*, one plant of *P. Esmeralda* having five spikes; *Calanthe veratrifolia*, *Cypripedium Spicerianum* and other *Cypripediums*, some *Anæctochili*, &c. In this house *Nepenthes* are suspended overhead, and in some of the warm houses *Eucharis amazonica* planted under the stages grow and bloom most luxuriantly.

The cool-houses contain a collection of *Odontoglossums*, *Masdevallias*, &c., *Odontoglossum grande*, the true *Masdevallia melanoxantha*, and some others being in bloom. Here are several fine specimens of *Pleione lagenaria* covered with bloom, many of the bulbs giving two growths each, and the growths two flowers. This vigour Mr. Page attributes to the method which he adopts with all deciduous species—viz., that of giving them a good moist growing-time and a cold and dry rest. This plan works well here with the *Dendrobium Wardianum* and *D. crassinode*, which many growers complain of dying out. Here they have increased in size for years, and have many strong leading growths, the plants being now suspended in a cold, dry greenhouse. Their growths were made in the old warm Lily-tank house, in which also the *Bananas* fruit. Other Orchids in bloom were *Cattleya Bowringiana* and good *C. labiata*, &c. *Pinguicula caudata* is very vigorous, and in bud; and *Darlingtonia californica* and various *Sarracenias* are grouped together. The specimens of *Sobralia* are grown in the stove plant-house, and in each house are many interesting and rare plants grown into fine specimens.

In the Fern-house the cushion-like specimens of the creeping epiphytal *Polypodiums* are very handsome objects; *Ceropegia Woodii* is a pretty species with slender, pendulous growths; and in the greenhouses are many interesting old plants of peculiar structure, as, for example, the winged *Acacia platyptera*.

In other houses are a fine lot of brightly-coloured *Codiaeums*, a selection of *Tillandsiads*, a good batch of *Poinsettia pulcherrima*, and *Euphorbia jacquiniæ-flora*; a large quantity of well-flowered *Chrysanthemums*, a magnificently-flowered batch of *Begonia Gloire de Lorraine*, showy *Nicotiana Sanderæ*, *Acalypha Sanderi*, *Salvias*, &c.

Adjoining the dwelling-house is an extensive rockery-house arranged under the direction of Mr. Berghem, in which his knowledge of tropical scenery has greatly assisted. Winding walks are arranged among the Fern-clad rocks; *Philodendrons* and other climbers are trailing overhead, and other tropical plants, some of which were brought home by Mr. Berghem, are effectively arranged. In one corner *Papyrus antiquorum* rises nearly to the roof, and here and there *Anthuriums* and *Begonias* give colour and variety of foliage. To one who knows and likes plants, the great attraction of the place is the great number of species of diverse characters represented. In the adjoining warm-house are specimens of *Musa Cavendishii* and other tropical plants and aquatics, trailing over one side being *Luffa ægyptica*, with its large netted fruits.

FRUITS

under glass are grown extensively and with great success, notwithstanding the visitations of the London fogs in their season. A large number

of Cherries, Plums, Peaches, Nectarines, &c., are grown in pots, and extensive vineries and Peach and Nectarine-houses are provided, all giving evidence of good management, the Grapes being remarkably fine. Outdoor fruits are said to have been highly satisfactory this season. *B.*

FORESTRY.

THE LOCUST-TREE.

This tree has had a fair trial as a timber producer in this country. Here we have cut down several trees in late years, and all of them have yielded sound, hard timber of first-class quality, which has been used for various purposes, and up to the present has given no cause for complaint. For the making of posts and fencing we have found it durable, even in moderately wet ground, being equal if not superior to that of good Spanish Chestnut. Some of the wood was used three years ago for repairing a cart, one of the sides and a shaft being made of it, and they are now as good as when first put in, though for shafts it is not so good as Ash, because it lacks that elasticity which makes Ash-wood so useful for this purpose. A few of the larger planks were worked up by a carpenter into panels, &c., and he reports that, though rather hard to work, it is not specially difficult, being easier than English Oak; it is not woolly, and does not tear or splinter. The finished wood is of a yellowish-orange colour with brownish markings, polishes well, and is prettily grained. For use in carpentry the wood of the Locust-tree resembles Hickory more than any other. The tree can be grown almost anywhere except on very wet ground, and is of rapid growth. In rate of growth it is not inferior to any of our timber trees, and is superior to many of them. The spines on young trees are rather against their being handled, but plants rarely die after planting, and they do not suffer from any insect pest or fungoid disease. Propagation is easily effected from the suckers, which are produced in quantity from the old stools. *J. C., Bagshot.*

The Week's Work.

THE ORCHID HOUSES.

By W. H. YOUNG, Orchid Grower to Sir F. WIGAN, Bt., Clare Lawn, East Sheen, S.W.

Angracum sesquipedale, &c. The leaves of this species are too often seen in a sickly condition and spotted with disease, this being the result of the plants having been subjected to an excessive degree of shade and moisture. Most members of this genus need dense shade, much heat, and moisture during the growing season, but *A. sesquipedale* grows best in a moderately exposed position in a stove, with ample supplies of water so long as the root tips are extending. At the present time, however, and during the winter, dryness at the base may be tolerated for short periods, taking care that it does not continue too long, or the leaves will suffer injury. Other large growing *Angracums* are *A. eburneum* and *A. virens*, which thrive under similar treatment. The dwarf-growing kinds that are usually cultivated in baskets, pans, or on blocks suspended from the rafters, need very careful management during the winter months, an excess of moisture at the base or a too prolonged period of dryness being alike very injurious. Overgrown sphagnum moss should be removed, so that the condition about the pseudo bulbs can be perfectly gauged, and when the weather is against rapid evaporation the necessary amount of water should be applied to the surface by means of the fingers or through a fine rose, if it can be done without causing much wetting of the leaves. Those species having thick leaves like those of *A. leonis* or *A. Scottianum* may be subjected to a considerable degree of drought without harm resulting. The new species from the Victoria Nyanza district, *A. infundibulare* and *A. Rothchildianum*, are said to grow well in a Cattleya

house, where also the pretty *A. falcatum* succeeds best.

Brassavola Digbyana was held in little esteem until its value as an agent in the production of hybrids was recognised. Importations now occur more frequently, and the species is more extensively grown. It is a native of Honduras, a notoriously hot country, and, therefore, grows best in the atmospheric temperature of the East Indian house, either fixed on blocks or in pans or baskets. The season of growth of this plant is very short, and it is only during that short period that an abundance of water is essential. At other times the supplies should be very limited and infrequent. *B. glauca*, an inferior kind, may be treated similarly, though it may be grown in a warm position in a Cattleya house.

Hybrids from *Brassavola Digbyana* are moderately easy to grow, and in most instances thrive and increase their leads surprisingly well in a leaf mixture. Where this mixture is employed, very careful and judicious watering must be practised from the time the pseudo bulbs reach their full dimensions until roots become active in the following season. With very few exceptions, a position at the warmest part of the Cattleya house, not far removed from the glass, fulfils their requirements. Should any plants have young growths which are immatured, the most favoured position should be given them to ensure proper development. Small or weakly plants should have their flower-sheaths removed as early as possible after they are observed.

PLANTS UNDER GLASS.

By A. BULLOCK, Gardener to E. J. WYTHES, Esq., Copped Hall, Epping, Essex.

Cool Conservatory.—Inspect *Chrysanthemums* and other plants in this structure daily, in order to afford water to those requiring it, and to remove any plants which have ceased to be effective. The flowers will last for a longer period if care is taken to maintain the atmosphere in a moderately dry condition, and use no more fire heat than is absolutely necessary. Any moisture collected on the floors or other surfaces may be removed each day by means of a mop or flannel after the operation of watering the plants has been performed.

In the Warmer Conservatory, where a temperature of 60° is maintained at night, the conditions are somewhat different, but even there an excess of humidity must not be permitted at this season, but advantage should be taken of bright days to damp the walls, floors, and stages. In order to obtain the best effect from the various plants and flowers, it is necessary to secure harmony in the blending of colours, or to mass plants of one colour together. In groups of plants arranged for effect I prefer to use sufficient plants of one variety only to constitute a feature for the eye to rest upon in preference to mixing a variety of colours. For the guidance of those unacquainted with some of the later varieties of winter flowering *Begonias*, which are now at their best, I can specially recommend *Winter Cheer*, *Mrs. John Heal*, and *Julius*. These afford a striking contrast when arranged in separate groups surrounded with greenery.

Coleus thyrsoides.—Now that the plants are developing their first flowers, clear water should be the only liquid afforded them. If a free current of air be allowed to pass between the plants, it will help to prevent the shedding of the foliage, and the plants will remain sturdy.

Callicarpa purpurea.—The clusters of purple berries are very effective at the present time. A considerable degree of heat is necessary to keep the foliage green and in a healthy condition.

Poinsettias.—Sufficient water should be afforded those plants with well developed bracts to prevent the leaves from flagging, and a slightly lower temperature will help to prolong the season of usefulness. Plants for flowering later should be still afforded weakly-diluted manure water at the roots, and a moderate degree of fire heat is necessary.

Chrysanthemums.—Steps should be taken to prepare for the propagation of the plants. The stock plants from which it is intended to obtain cuttings should be kept in the lightest position possible, and if from any cause the young growths are weakly and drawn, defer taking cut-

tings until better growths are obtainable. It may be necessary to afford the plants an application of a suitable artificial manure, which should be dusted on the surface of the soil, but taking care not to allow it to come into contact with tender growths. A half-teaspoonful of manure for each plant is sufficient for one application.

THE HARDY FRUIT GARDEN.

By W. H. CLARKE, Gardener to Sir WILLIAM PLOWEN, Aston Rowant House, Oxon.

Old Orchards sometimes come under the control of the gardener, and if the age of the trees is not too great, they may be rejuvenated. Supposing they are already too old, it will be well to plant on fresh land young trees of about five years old, which will be growing into a bearing condition annually, so that in time the older orchard may be dispensed with entirely. In renovating old trees both roots and branches must be given attention. In grass orchards the turf should be removed and as much soil down to the roots as there is material at disposal for filling up again. The fresh soil may be composed of road scrapings and other kinds of refuse which has been thrown together and well incorporated with lime; also well decayed farmyard manure, if it can be spared. After the substitution of this new soil, the turf may be re-laid, but a circle measuring 6 feet in diameter should be left around each tree, and this may be top-dressed in subsequent years with good farmyard manure.

The Branches and Spurs.—All crowded parts of each tree should be next thinned out, removing branches that cross each other, and leaving only those which are of clean and free growth. The thinning out of spurs should likewise be done at the same time. In many cases it is owing to the over-abundance of these there is no crop, and not to their absence. The flowers are so weak, and the fruits which set are poorly nurtured that they soon fall. The spurs should be so thinned that the hand may easily gather the fruit throughout the tree.

Want of Drainage is often the cause of unfruitfulness and bad health in trees, causing mosses and lichen to grow on the branches and spurs. If the ground is water-logged, means should be taken to drain it, laying a drain of common field pipes at about 3 feet from the surface in bad cases, or placing at the bottom of the trench clinkers or any porous material which will allow the water to run away.

Mosses and Lichens.—Where a powerful garden engine can be had, the branches may be thoroughly saturated with liquid manure water; this will not only destroy the Moss and Lichen, but will act as a manurial stimulant to the roots, by this means killing two birds with one stone.

Fig Trees.—In many parts of the country it is necessary to afford these protection from severe frosts. After removing the branches of very large trees from the wall they should be tied up in bunches and thatched with straw, securely fastening the whole to the wall to prevent it being blown about. Smaller trees may have their branches bent down to the ground level, and straw or other material packed about them. Healthy trees that are growing very vigorously should be root-pruned, or entirely lifted if this work has not been previously done. Such a practice, if repeated annually or biennially, will suppress excessive vigour, and result in the growth of short-jointed, hard shoots, which will bear crops freely. If the soil is not naturally of a calcareous nature, small nodules of chalk, mortar, lime, or plaster rubbish should be freely intermixed with the soil and worked about the roots. The stations for new trees, preferably on S. and S.W. walls, need to be well drained. Brown Turkey and White Marseilles are good varieties for such positions.

THE FLOWER GARDEN.

By W. A. MILLER, Gardener to LORD HENRY C. BENTINCK, M.P., Underley Hall, Westmoreland.

Roses.—Afford protection to Tea Roses before there are severe frosts. For beds of dwarf plants a covering of bracken is very effectual, especially if the fronds were cut just as they began to turn of a brown colour. If left too long the leafy parts drop from the stems. Heather or Spruce branches are also suitable for the purpose. Leaves are nature's covering, but they require to be renewed often. Litter is not so

tidy in appearance or reliable as the protective materials already mentioned. Standard plants of tender varieties must be covered with a hood made of straw or fern.

Vacant Flower Beds may now be trenched, working in a liberal supply of manure during the process. Fork over the bottom of the trenches, breaking up the soil there as much as possible. The surface soil should be left in a rough condition, so that it will the better come under the influence of frost, which will pulverise the lumps into a fine tilth.

Pruning of Shrubs.—The pruning of deciduous flowering Shrubs can be proceeded with as circumstances permit. Amongst others, the following Spiræas should have the vigorous shoots shortened and old flowering and weakly growths removed. *S. Douglasi*, *S. callosa atrosanguinea*, *S. flagelliformis*, *S. opulifolia*, *S. o. aurea*, and *S. Anthony Waterer*. Leggy and overgrown bushes are best cut over, in order to induce them to make a fresh start. *Rhus typhina* and *Ailanthus glandulosa* should be cut back hard every year. *Dervillas*, *Syringas*, *Philadelphus*, *Viburnums*, etc., should have any useless wood cut away.

Weeping Trees and Shrubs are desirable for affording variety and effect. Amongst the deciduous species and varieties the following are indispensable:—*Acer dasy carpum Wieri*, *Betula pendula Youngi*, *B. alba laciniata*, *Caragana arborescens pendula*, *Cerasus rosea pendula*, *C. serotina pendula*, *C. Mahaleb pendula var.*, *Cornus florida pendula*, *Fagus sylvatica pendula*, *Fraxinus excelsior pendula*, *Laburnum pendulum*, *Morus alba pendula*, *Populus grandidentata pendula*, *Salix babylonica*, *S. caprea pendula*, *S. americana*, *S. rosarinifolia*, *Sophora japonica pendula*, *Taxodium distichum pendulum*, *Tilia europæa Parmentieri*, and *Ulmus montana pendula*.

Evergreen Weeping Plants.—*Tsuga canadensis Sargentii pendula*, *Picea excelsa inverta*, *Cupressus Lawsoniana pendula alba*, *Juniperus virginiana pendula*, *J. communis oblonga pendula*, *Ilex pendula argentea var.*, *Taxus baccata Dovastonii*, and *Sequoia (Wellingtonia) gigantea pendula*.

Hedges.—Before planting a hedge the ground should be prepared by trenching. Remove pernicious weeds, and add some rich soil, and manure if needed. For a boundary fence *White-thorn* and *Beech* planted closely when young form an impassable barrier. *Hornbeam* is excellent; *Berberis Thunbergii* and *Cotoneaster Simonsii* make an ornamental screen and bear the knife well; *Box*, *Holly*, *Yew*, *Arbor Vitæ*, *Lawson's Cypress*, *Laurel*, and *Privet* all make substantial hedges.

FRUITS UNDER GLASS.

By F. JORDAN, Gardener to DR. CORBET, Impney Hall Gardens, Droitwich.

Early Peaches.—In the calendar for October 28 I advised that the houses containing early Peach trees should be cleansed, the borders top dressed, and all made ready for starting the trees. If sufficient pot trees of early varieties are available, it is better to force these first than to subject permanent trees to very severe forcing. The pots can be plunged in a bed of fermenting leaves, which will maintain the necessary temperature without any fire heat; the buds will then respond quickly to the warm, moist atmosphere thus produced. If pot trees are not available and ripe Peaches are required in May from trained trees, no further time should be lost before closing the house. It is much better to close the house in good time and start with a low temperature and plenty of ventilation than to have to force hard later on. In a house which contains such varieties as *Royal George* and *Stirling Castle Peaches*, *Lord Napier* and *Stanwick Elruge Nectarines*, a month longer growth should be allowed than for such varieties as *Alexandra* and *Duchess of Cornwall Peaches* and *Early Rivers' Nectarines*. Examine the borders, and, if necessary, soak them with tepid water, it being most important to thoroughly moisten the soil down to the drainage. It will not be necessary to apply much if any artificial heat for some time after the house is closed, or until the buds have made good progress; a temperature of 40° to 45° at night and 55° by day, rising to 60° with sunheat in the

middle of the day will be sufficient at the commencement. Afford a little ventilation at the top of the house every day, if the condition of the weather will permit of this being done. Syringe the trees in the morning and early in the afternoon on fine days, and keep the atmosphere of the house moderately moist by damping the borders and other available spaces, taking care, however, to always have the buds dry before darkness sets in. As the buds increase in size a little fire heat during the day will be beneficial, and its use will allow the trees to be lightly syringed more often, and more outside air may be admitted. Discontinue the use of such fire heat when the house is closed for the night. All houses containing early varieties should be lightly fumigated once or twice when quite dry, before the flower buds open, in order that there may be no aphid present when the fruits are setting and syringing has to be temporarily discontinued.

Succession Houses.—The second house intended for closing at the New Year should be cleansed and made ready for starting, if this work has not been already done. Trees started after the turn of the year may be subjected to a slightly higher temperature, with plenty of ventilation on all favourable occasions. Full ventilation should be given to houses containing later trees, in order to retard the buds as much as possible. The cleansing of such houses may be given attention in bad weather. The best time for the replanting and root-pruning of large trees having passed by, any further addition or alteration to existing borders should be carried out whenever conditions are favourable, and this work brought to a close as soon as possible. The matter of affording water to the roots must never be overlooked; do not trust to external appearances, but examine the borders, and apply thorough soakings when necessary. Apply a top dressing to the borders. Take care not to tie the shoots too tightly, and read over again the calendar in the issue for October 28.

THE KITCHEN GARDEN.

By W. FYFE, Gardener to Lady WANTAGE, Lockinge Park, Wantage, Berks.

Celery.—If Celery will be in daily demand during the next four months some efficient protection against severe frosts must be provided. The practice of lifting the plant in advance of their requirement for use has little to recommend it, for the appearance and crispness of Celery soon changes after it has been lifted. For a number of seasons past we have adopted the practice of digging in between the ridges all the freshly-gathered leaves we can manage to obtain and afterwards the ground is also covered with leaves. In order to keep these leaves from being blown about, a slight covering of straw or litter is spread over them. As portions of the Celery crop are lifted the leaves are covered by the soil from the ridges, and as our practice is the old and successful one of following a Celery crop by a crop of Peas and Spinach, the decaying leaves are favourable to these crops whether the succeeding season be wet or dry. If it is wet, they accelerate the drainage, and they provide one of the best mediums for the free ramification of the roots.

The Rubbish Yard.—This necessary part of every garden will claim a considerable amount of attention at this season, when the collecting, burning, and removing of what to the inexperienced would appear but useless rubbish, needs to be carried out. If a fire be kept alive during the greater portion of the year, much valuable residue is secured for use in the kitchen, flower, and fruit garden, and after careful selection in the fruit and plant houses also.

Fallen Leaves.—A considerable amount of time has to be spent in the gathering of leaves, but it is time well spent. Large quantities of leaves in different stages of decay are excellent stores for the supply of valuable material for many purposes. Newly-gathered leaves are also a valuable addition to kitchen gardens in which the soil is of a retentive nature, and may be dugged or trenched in in considerable quantities.

Parsley.—Do not neglect this valuable herb, though at the present time it may appear so plentiful, but protect some of the plants with frames, lights, trellis-work, mats, or other suitable appliance.

APPOINTMENTS FOR DECEMBER.

SATURDAY,	Dec. 2	{ Société Française d'Horticulture de Londres Meet.
TUESDAY,	Dec. 5	{ Royal Hort. Soc.'s Committees Meet and Show of Colonial Fruits and Vegetable Products at the Royal Hort. Hall (2 days). British Gardeners' Assoc. Ex. Council Meet. Hort. Club Dinner.
WEDNESDAY,	Dec. 6	{ Nat. Chrysanthemum Society's Exhibition at the Crystal Palace (2 days).
THURSDAY,	Dec. 7	{ Nat. Rose Society's Ann. Meeting and Dinner.
WEDNESDAY,	Dec. 13	{ Nat. Chrysanthemum Society's Exh. of Market Chrysanthemums in the Floral Market, Covent Garden.
FRIDAY,	Dec. 15	Roy. Botanic Society Meet.
TUESDAY,	Dec. 19	R.H.S. Committees Meet.

ACTUAL TEMPERATURES:—

LONDON.—Wednesday, Nov. 29 (6 P.M.): Max. 48°; Min. 40°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—Thursday, Nov. 30 (10 A.M.): Bar., 30.1; Temp., 47°. Weather—Dull.

PROVINCES.—Wednesday, Nov. 29 (6 P.M.): Max. 48° Plymouth; Min. 41° N.E. Coast of England.

SALES.

MONDAY AND WEDNESDAY NEXT—

Dutch Bulbs, Roses, &c., at Stevens' Rooms, King Street, Covent Garden.

MONDAY TO FRIDAY NEXT—

Dutch Bulbs, at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 10.30 o'clock.

WEDNESDAY NEXT—

Rhododendrons, Azaleas, Camellias, Roses, Carnations, &c., at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 5 o'clock.

Cambridge University Department of Agriculture.

We have before us a guide to various experiments carried out by, or under the supervision of, the Department of Agriculture of the University of Cambridge.

The institution of such a department in connection with one of our oldest universities is in itself a welcome sign of progress. The report gives, in a condensed form, the results of numerous experiments and trials on various agricultural and garden crops. We need hardly say that they are of great interest, but too numerous and intricate for us to do more than call attention to them. Those who require to see the document should apply to Prof. MIDDLETON, St. John's College, Cambridge.

In the case of Wheat, cross-breeding experiments have been carried out with the object of obtaining larger yields per acre and wheat of superior quality. Two hundred different sorts were kept under observation, but the majority of these have been eliminated as useless under our climatal conditions. The few that have been retained have each some good quality, and these have been crossed with Wheats of good "milling" properties, and thus, step by step, Wheats closely approaching the ideal set up have been built up. In the first generation, whichever of two varieties be used as the seed-bearer the offspring are all similar. In the following generation "a number of different forms occur of which the characteristics and proportions may be predicted with considerable accuracy." Continuous selection is practised, and only those showing decided improvements are saved for trial. The results with Mangels are very interesting, but scarcely within our province.

As far as Potatos are concerned, the points under investigation are "the merits of the leading new varieties, the effect of 'change of seed,' sprouting in trays, size of sets, cutting sets, 'greening' of sets, and growing in the pits." Dobbie's Factor and Findlay's British Queen, out of several others, supplied much the largest yield. Findlay's Evergood was also very productive.

So far as manures are concerned, the greatest total produce was obtained where twelve tons per acre of farmyard manure were used in association with complete artificial manure, consisting of 1½ cwt. of sulphate of ammonia, 3½ cwt. of super-phosphate, and 1½ sulphate of potash.

There is always the fear that experiments of this character will become weighed down with detail, and thus made available with difficulty. Specialisation becomes therefore increasingly necessary, whilst a repetition of experiments already made over and over again, as in the case of the trials of whole sets or cut sets in Potatos, should be avoided. These are matters which the practical man can readily determine for himself. A University station should occupy itself with the study of general principles and with researches that are beyond the competence of the gardener or farmer.

CHRYSANTHEMUM MRS. R. HOOPER PEARSON. (See Supplementary Illustration).—The variety of Japanese Chrysanthemum shown in our supplementary illustration to the present issue, is one that was raised last year by Mr. CHARLES PENFORD, of Leigh Park Gardens, Havant, and has been awarded this season the First-class Certificate of the National Chrysanthemum Society, and the Award of Merit of the Royal Horticultural Society's Floral Committee. The flowers are of very large size, our illustration being considerably reduced, and the florets are unusually long, some of them twisting a little and having their spoon-shaped tips incurved slightly. In colour they are yellow, with shades of orange and bronze colour developed as an overlay on the florets nearest to and around the centre. We believe, however, that this overlay is developed only in flowers obtained from second crown or terminal buds, or from extra well matured shoots. On first crown buds they would most likely be purely yellow. The stock has passed into the hands of Mr. NORMAN DAVIS, Framfield Nurseries, Sussex, who exhibited at the Crystal Palace the flower depicted. Owing to a printer's error the photographers are described on a few of the plates as Messrs. Rupell and Sons, instead of Russell and Sons.

THE CENSUS OF POTATOS.—In the present issue we print the concluding portion of our Potato census, compiled from information kindly supplied us by about 200 of our correspondents in all parts of our islands. The table now presented has reference to late yielding Potatos only, and it will be seen that in answer to the request for the names of the best two varieties, our correspondents have mentioned 56, as compared with 48 early, and 80 mid-season varieties in the previous lists. The preponderance of Up-to-Date amongst late varieties is most remarkable, 151 voters having mentioned it as one of the best two. In the list of early varieties the favourite, which was Duke of York, a variety distributed by Messrs. DANIELS BROS., of Norwich, in 1893, obtained 78 votes, and in the mid-season varieties Windsor Castle

headed the list with only 65 votes. Up-to-Date has, therefore, a poll of 151 against 78 and 65; or we may put it in another way by saying that in answering the question as to which were the two best late Potatos three out of four of our correspondents named Up-to-Date! The variety which polled next to Up-to-Date in the same list was The Factor, which has only 22 votes; then follow Magnum Bonum with 21, Maincrop with 15, Syon House Prolific and Windsor Castle, 14, and Scottish Triumph 13 votes, &c. The new variety Evergood has 11 votes, but some of the reporters remarked that the tubers are apt to turn black in the centre. Summing up the results, it will be seen that the two most esteemed early varieties are Duke of York, with 78 votes out of 205 returns, and Sharpe's Victor, with 61 out of 205, or taking all the varieties of Ashleaf as one, then Ashleaf enjoys the same amount of confidence as Duke of York, viz., 78 votes. For the mid-season varieties the voting was as follows:—Windsor Castle, 65 votes out of 196 returns, and British Queen (not Beauty of Hebron as stated inadvertently last week), with 57 votes. Of late varieties Up-to-Date heads the list with 151 votes out of 198 returns, The Factor coming next with 22 votes.

THE POTATO SHOW.—Those who examined the many new varieties shown recently at the National Potato Society's exhibition, could hardly fail to notice the remarkable likeness running through them. The primary reason is that just as some 20 years ago Magnum Bonum was a prime agent in the production of new varieties, so at the present time is Up-to-Date. The majority of new varieties do in their tubers show close resemblance to the tubers of that undoubtedly famous variety. This likeness in many cases extends to the tops also, yet each one when grown seems to have some peculiarity which enables it to differ from its parent or others of the same progeny. We have in modern Potatos entirely destroyed the old line of demarcation which once existed between round and kidney-shaped tubers. But, then, what does it matter? If a rose under any other name would smell as sweet, certainly a good Potato will be equally good, let its shape be what it may. Mr. WILLIAMSON, the only Irish exhibitor of Potatos at the Vincent Square Hall the other day, exhibited the popular variety Duchess of Cornwall only, as he did at the Crystal Palace last year. Yet then the tubers were invariably kidney-shaped, whilst this year they were practically all round. Such are the effects of diverse seasons. Hence we see the folly of keeping up old distinctions which now no longer apply. However, out of all this Potato raising, comes one great fact. We are now very rich in the possession of a great number of heavy cropping Potatos of fine quality, and that is far too important to us, as consumers, to make us cavil because many are too much alike.

BRITISH GARDENERS' ASSOCIATION.—A meeting of the Executive Council of this Association was held at the R.H.S. Hall, Westminster, on November 21. Forty-seven new members were elected, bringing the total up to 797, while the application of one candidate was declined. To enable owners of gardens and others interested in Horticulture, who could not qualify as effective members, to show their sympathy with the Association, it has been decided to admit honorary members. Dr. MAXWELL T. MASTERS, F.R.S., Mr. T. G. BAKER, nurseryman, Wolverhampton, and Mr. H. G. COVE were unanimously elected honorary members. The rules of the Association are now in type with the names and addresses of all the members, the branches, and their secretaries; and the secretary would be glad to receive early intimation as to any change of address, &c., so that the first published list may be as complete and accurate as possible. The next meeting of



NEW JAPANESE CHRYSANTHEMUM, "MRS. R. HOOPER PEARSON," SHOWN BY MR. NORMAN DAVIS,
FLOWERS YELLOW, OVERLAIN WITH BRONZE COLOR.

From a Photograph by Messrs. Russell & Sons.

the Executive Council will be held on December 5, at the same place. *J. Wethers, Secretary, 7, Talbot Road, Isleworth, W.*

SHOW OF COLONIAL GROWN FRUIT.—The Royal Horticultural Society will hold an exhibition of Colonial-grown fruit on Tuesday and Wednesday, December 5 and 6. The date has been specially selected with a view to showing the fruits and vegetables from the Dominion of Canada and from the West Indies in the greatest possible perfection. There will be a fine display of all the principal varieties of British Columbian apples and pears, shown both in the officially recognised commercial packages and in table groups, as is usual in this country. The exhibitors from this part of our Empire will number 20 private individuals and firms, including the Earl of ABERDEEN, Mr. T. G. EARL, and MESSRS. STIRLING & PITCAIRN; and although this is the first shipment of any size to London, the fruit has already arrived in excellent condition. It is also hoped that Nova Scotia and other provinces will exhibit. The West Indies will be represented by the West India Committee and the British West India Fruit Company. Economic garden products will come from Grenada, Barbados, Jamaica; and probably other Islands will each make a display of bananas, pines, yams, Citrus and other fruits in which they excel. The Society has issued a schedule for an exhibition of both home and colonial bottled and preserved fruits and vegetables to be held on the same date. Mr. C. HERMAN SENN will lecture at 3 p.m., on the first day of the Exhibition (Tuesday, December 5), on the Crystallisation of Fruit and Flowers, and on Wednesday, December 6, Mr. R. M. PALMER, of Victoria, B.C., will deliver an address, illustrated by lantern slides, on the Fruits of British Columbia. The exhibition will open at 2 p.m. on December 5, and at 10 a.m. on December 6, and will close at 6 p.m. on both days. No entrance fee or charge for space is made, and tabling is also provided free of expense. If desired any produce may be consigned direct to the Society and it will be stored in the cellars at Vincent Square and staged by the Society's officials, but the Society cannot undertake to repack and return any exhibits. Medals and other prizes are offered by the Council in each class. Copies of the schedule and other particulars can be obtained on application to the Secretary of the Royal Horticultural Society, Vincent Square, Westminster, S.W.

IS A RESTING PERIOD NECESSARY FOR ORCHIDS?—This important question is raised in the current number of the *Orchid Review* by Mr. W. WATSON. This eminent cultivator has been touring in the North among the great Orchid growers, where the resting period is not insisted on and where, nevertheless, the results are most satisfactory. In such discussions it must be remembered that we grow Orchids for our own purposes and subject them to a different "environment" to that in which the plant is subjected in a natural condition. With the aid of electric light we might easily dispense with a resting period, and if the individual suffered, or had a shorter life, we could easily fill up the gaps with younger plants. A resting stage may be necessary under natural conditions, but under artificial cultivation, where the means at our disposal are greater and the objects altogether different, it is no wonder that the resting period is found in some cases to be unnecessary, or one in which the disadvantages are compensated for by other circumstances.

PRIMULACEÆ.—A monograph of the entire order has been published by Messrs. Pax & Knuth, in *Engler's Pflanzenreich*. The descriptions are happily in Latin, the comments in German. Two hundred and eight species of *Primula* exclusive of

hybrids are mentioned, 84 species of *Androsace* and 110 of *Lysimachia*, not to mention other genera. There are 75 illustrations and a copious index.

THE USE OF ETHER IN FORCING RHUBARB.—Recently W. Stuart, of the Vermont Station, has reported results of experiments in forcing Rhubarb by the aid of ether fumes. In these experiments the roots were dug in the fall and allowed to freeze. About mid-December they were put in a cool cellar, where they thawed out gradually, after which part of the roots were subjected to the fumes of ether and part left untreated for comparison. The roots were etherised for 48 hours in an airtight box, using ether at the rate of 10 cubic centimetres per cubic foot of space. The method of applying was to pour the liquid through a small hole in the cover of the box into a vessel suspended beneath the opening, after which the hole was immediately closed. Three other lots of roots were later etherised in the same manner, one lot January 9, another January 30, and the third February 24. With the roots treated January 30, 17 cubic centimetres of ether per cubic foot of space was used. This was later found to be too much, as the plants were injured by the treatment. The etherised plants gave the largest total yield in every instance. This is not marked in the case of the lot etherised February 24. The exception in this case was not unexpected, since European experiments with other plants have shown quite uniformly that the later etherisation is deferred during the resting season the less effect it has. Plants that have completed their resting period have not usually been benefited at all by etherisation. If early yields are considered, the average of the three lots shows an increased gain in earliness of the etherised plants of 62.2 per cent. for the first picking, 86 per cent. for the second, 23 per cent. for the third, and 47 per cent. for the fourth. *Florists' Exchange, November 17.*

GARDENERS' ROYAL BENEVOLENT INSTITUTION.—The annual concert in aid of this excellent gardening charity, organised by Mr. A. J. BROWN, was held at the Constitutional Hall, Chertsey, on Thursday, 23rd ult., and was again a success. During six years the Chertsey district has contributed £60 by similar means to the funds of the Institution.

NATIONAL ROSE SOCIETY.—The twenty-ninth annual general meeting of the National Rose Society will take place at the Rooms of the Horticultural Club, Hotel Windsor, Victoria Street, Westminster, on Thursday, December 7, at 3.30 p.m., to receive the report of the committee; to pass the accounts; to elect the officers and committee for the ensuing year; and for the transaction of other general business. Proposed alteration in by-law 1.—That the first part of By-law 1 be altered so as to read "The society shall hold an exhibition annually in the Metropolis not earlier than July 1st, and not later than July 9th. The day on which the show is held to be Tuesday."

LINNEAN SOCIETY.—The next general meeting will be held on Thursday, December 7, 1905, at 8 p.m. Papers:—1. Dr. JONATHAN HUTCHINSON, LL.D., F.R.S.—On the *Ætiology of Leprosy*. (Communicated by the Rev. T. R. R. Stebbing, F.R.S., Sec. L.S.) 2. Mr. ARTHUR W. ALLEN.—Some Notes on the Life-History of *Margaritifera Panesæ*. (Communicated by the Rev. T. R. R. Stebbing, F.R.S., Sec. L.S.) Exhibition:—Photographs of a luxuriant specimen of *Shorea uniflora*, in the rock-garden of Mr. W. T. HINDMARSH, F.L.S., at Alwick.

ROYAL "FLORA" SOCIETY OF BRUSSELS.—This horticultural society, after about twenty years of inactivity, has lately become endued with new life. A council has been formed with

MM. DE WILDEMAN and GENTIL as Secretaries. The Administrative Council contains the names of MM. Les Barons van EETVELDE and LAMBERT, MM. STEPMAN, BUYSSENS, DRAPS, DURAND, Dr. CAPAIT, and T'SERSLEVENS. The "Société Flore" is one of the oldest horticultural societies, having been founded in 1650 under the name of "Confrérie de Sainte Dorothee." It is hoped that it will regain its former standard of success now that it is revived under royal patronage.

SALE OF GARDENING BOOKS. In the sale of the library of the Earl of CORK at Christie's Rooms, King Street, St. James's, London, on November 21, 22, and 23, the following were amongst the lots disposed of, at the prices appended:—R. Bradley's "Treatise of Husbandry and Gardening," with plates, 2 vols., 1726, "New Improvements of Planting and Gardening," with plates, 1731, and "Practical Husbandman and Planter," with plates, 2 vols., 1733-4, 178; "New Botanic Garden," by Sydenham Edwards, 1812, with 60 coloured plates, engraved by Sansom from the original pictures, 2 vols., £1 1s.; Horticultural Society's Transactions, vols. 1-5, 1815-24, 11s.; Philip Miller's "Gardeners' and Botanists' Dictionary," 1807, £1 12s.; "Figures of Plants," by Philip Miller, with 30 copper plates, coloured, 1760, and John Hill's "Natural History of Plants," coloured plates, calf, 1751, £2 4s.—The following were included in a sale at the rooms of MESSRS. SOHBEY, WILKINSON AND HODGE, Wellington Street:—"Cheape and Good Husbandry," by G. Markham, 1631 (15 pages missing), 4s.; "New Illustrations of the Sexual System of Linnæus," by R. J. Thornton, with numerous large and beautifully-coloured plates of plants, 1807, 19s.; "Gardening Illustrated," vols. 1 to 16, 1880-1895, 16s.; "The Profitable Art of Gardening, now the third time set forth, to which is annexed the Marvellous Government, Propertie, and Benefite of Bees," etc., by Thomas Hyll, black letter, published by H. Byneeman, 1579, £6 12s. 6d. In our next issue we shall give some particulars as to the sale of the library of the late Mr. W. Paul.

CHRYSANTHEMUMS.

CHRYSANTHEMUMS IN FRANCE.

No English grower can possibly walk round a French Chrysanthemum Show without becoming conscious of two important differences between that and a show in his own country. One is that there is a far greater diversity of choice varieties staged, and the other is the fact that there are so many varieties which are practically unknown to English exhibitors.

The number of different varieties at the recent Paris Show was enormous. In England most of the exhibits in the leading classes are made up of a selection from a certain number of well recognised exhibition varieties, and no matter whether the class be for 12, 18, 24, 36 or 48 cut blooms, one exhibit varies in variety but little from the others.

I often wonder how it is that so many Chrysanthemums well known and frequently shown at the leading French Shows are ignored here in England. Some of them are very pretty and effective. They are often seedlings raised by growers who are perhaps not closely in touch with English importers, but even that fact does not explain their absence, because many of these out-of-the-way varieties do find a place sooner or later in the catalogues of those French nurserymen who have business relations with English trade growers.

At the Paris Show, the best and finest blooms, taken as a whole, would probably be well known here, but every now and then in passing by the various exhibits I was struck with something that

I thought was new, but which on further investigation proved to be a well-known French show-variety. A few of these seem worthy of mention. Let me take, first, Duchess of Orleans, one of the finest and noblest of white Japanese flowers in cultivation. It has been grown in France for years, it figures in all the leading exhibits, but apparently it has never been introduced into this country. Mousmée, a Japanese, and one of the most effective blooms in the show, is most valuable for a decorative group, large in size and of a lovely shade of delicate soft lilac-rose colour, with silvery reverse. Why is this not in English collections? M. Ant Marmontel is another very pretty flower, a large Japanese; the colour is pinkish-amaranth, passing to white in the centre. This is a most effective variety in a group. Paris 1900 is of pure incurved form, a noble bloom of perfect build; colour, pale golden-yellow. Mme. Marie Carrière is a fine white Japanese flower, slightly tinted green towards the centre. Naples is a noble-looking incurved, deep and solid; colour, rich golden-yellow. Emma Bonnefous is a large Japanese, very pretty shade of soft salmon rose. Ami Nonin, large Japanese, with long florets, pretty shade of greenish-yellow. Nathalie Bourseul, an immense Japanese with long tubular florets, curly twisted and intermingling; colour, pure paper white, just faintly tinged in the centre with pale yellow. Comtesse de Yanville, a very big bloom, pale sulphur yellow. The florets are long, narrow and spreading, and tubular at the base. Gloire Poitevine; this is not large, but for colour has no equal in its shade. It is a dazzling, brilliant crimson of the finest tone; the reverse golden. Charles Bacque ought, if well-known, to make a fine, deep incurved flower. It is of a deep golden yellow colour, slightly shaded at the base with apricot. Mme. Lasies; a very large spreading Japanese; long florets; colour, pearly rose shading off to a darker tint towards the tips; centre almost white. Mme. E. Charvet is also a fine Japanese. The florets are twisted and curly; colour, pale lilac mauve tinged with white. C. H. P.

WHAT IS A SPRAY OF FLOWERS?

Much confusion arises on the correct definition of a "spray," and it is a point that crops up annually at autumn shows at which it is customary to offer prizes for, say, "twelve Chrysanthemums in sprays, distinct, three sprays of each." In dealing with such classes judges have a difficult task in correctly defining a spray, especially as no information is obtainable on this point in any of the prize schedules that I am acquainted with. Such vague wording as the above, which is a fair sample of Class definition in ordinary exhibition schedules, affords abundant loopholes for exhibitors. Now that Chrysanthemum shows are over for this season, committees will soon be arranging their schedules for the next, thus the time is opportune for determining this debatable point. Perhaps readers interested will give their opinion on such a knotty subject. The dictionary explanation of the word spray affords little help in defining a spray as applied to Chrysanthemums. "A small shoot or twig" is the substance of the term given. What must be determined is whether the terminal shoot of, say, one foot of growth with all the flower buds and with from two to a dozen blooms constitutes a spray? I think it does in the true meaning of the word. On the other hand a branch, say, from one foot to a yard in length, and cut below the last break, is also a spray. This break may produce six terminal growths, and the whole of this collection of growths on one stem is often shown as a spray. G. Molyneux

LEEKES.

THE cluster of bulbs shown at Fig. 148 is a sample of the outcome of several successive years of experiment in the endeavour to obtain a race of Leeks (*Allium porum*) that would yield a crop of such root-bulbs. I suppose these root-bulbs are analogous to the produce of "escallions," so-called, i.e., of thick-necked Onions (*Allium Cepa*), that one sometimes re-

plants after they have started green blades in autumn or winter. But the form of these Leek bulbs is of quite a different character, and, when cooked, we find them most delicious. Indeed, when used in the kitchen in any way they are most acceptable, being devoid of the strong Onion flavour, and susceptible of easy digestion, without any of the after-effects which follow eating many sorts of ordinary Onions.

Six or seven years ago, on growing a fine crop of Leeks, I determined to see, experimentally, what the ultimate issue would be if one or two plants were left to grow exhaustively. The autumn being open, the plants threw up flower-scapes, which I cut off just below their junction with the stem. I then left them to themselves until the tops died off in a shrunken condition. Ultimately I dug the roots up, and found one or two nice-looking bulbs of moderate size. These I took care of, and planted as soon as they began to project a green shoot, planting them four inches deep in ground not freshly manured; and I realised a nice crop of good bulbs. On this plan I have proceeded each year since. They are very hardy, and are capable of enduring somewhat rough-and-ready treatment. I may observe that they do not all throw up a flower-scape, although all of them may be grown exhaustively. G. Pavl, Harrogate.

sections must, in view of the distance and climate, be accepted as being applicable to Chrysanthemum culture in America, considering the experience of the author obtained in the United States, and of his position as former President of the Chrysanthemum Society of America. Before going to America Mr. Herrington was a gardener in this country, and subsequently, for a short period, was a member of the editorial staff of *The Garden*. The principal chapters of the book under notice are headed "Culture for Exhibition," "Composts," "Planting Benches," "Boxes or Pots," "General Cultural Details," "Crown and Terminal Buds," "Feeding," "Care of the Buds," "Exhibiting and Judging," in which appears the American scale of points; "Specimen Plants," "Commercial Culture," "Seed Raising and Hybridising," a subject not often included in such a book, but one of great importance; "Sports," "Insects," &c. After having been frequently disappointed with the behaviour of certain English varieties in America, and also with the erratic way in which prominent American varieties behave in England, we read in Chapter xvii. the following lines with appreciative interest: "Only within recent years has the Chrysanthemum come into special prominence in Australia, but already the Australian varieties have attained a world-wide reputation. It is proper that some mention should be made of them, for it cannot be denied that the Australian

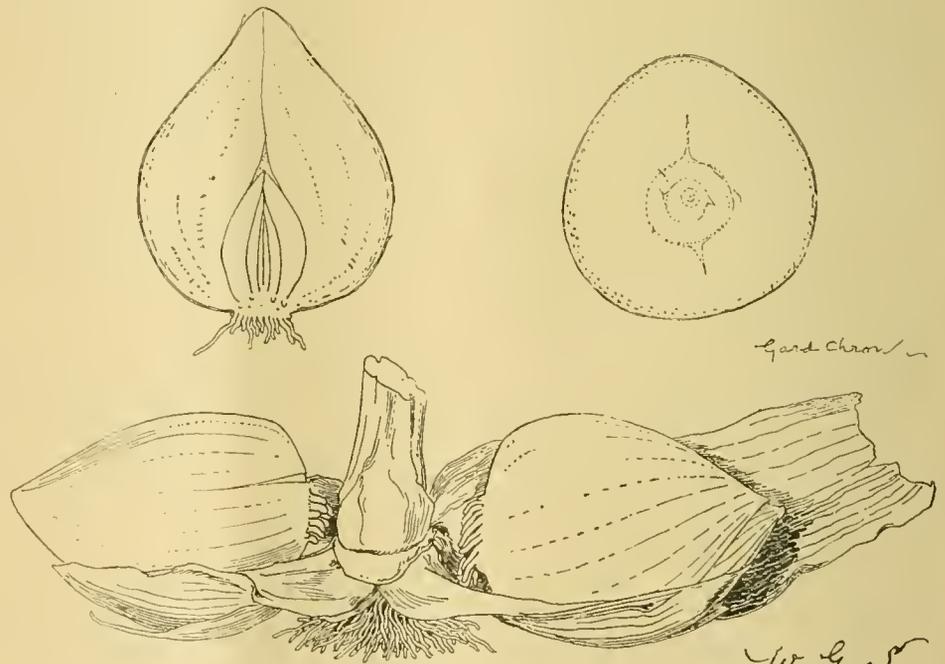


FIG. 148.—LEEK WITH GROUP OF BULBS (TWO ONLY BEING SHOWN) DEVELOPED AT BASE OF OLD STEM.

NOTICES OF BOOKS.

THE CHRYSANTHEMUM: Its Culture; for Professional Growers and Amateurs. By Arthur Herrington. (New York: Orange Judd Co.)

This book is described by the author as a practical treatise on the propagation, cultivation, training, raising for exhibition and market, hybridisation, origin and history of the flower which he undertakes to treat. It will be seen that the work is comprehensive in its scope, but is really intended for use by growers on the other side of the Atlantic, where there are, no doubt, many difficulties and differences in growing the Chrysanthemum that are not encountered here. Mr. Herrington's work is in the form of a handy little cloth-bound volume, running into something like 160 pages of fairly well printed matter. Photogravure illustrations are freely interspersed in the text, and, in a general way, the book is a decided credit to author and publishers alike. There are twenty chapters in all, some of these being sub-divided under various appropriate headings. The cultural directions given in the different

varieties have given an impetus to Chrysanthemum culture in America within the last few years, owing to the marked adaptability shown by the Australian varieties to respond and do well under the conditions of climate and environment that prevail here. . . . The Australians 'came and saw and conquered.' Mr. Herrington then gives an account in brief of Mr. T W. Pockett's labours and an illustration of Chrysanthemums at the Malvern Gardens, Victoria, of which Mr. Pockett has charge. In a chapter on "Hardy Chrysanthemums" the writer states that these were known and grown many years before the flower attained its present popularity in America. In some country cottage gardens there are hardy varieties that have been growing there for over half a century. The last chapter deals with the history of the Chrysanthemum. We do not wish to be hypercritical, but in the light of much that has been discovered and written upon this subject during the past twenty years we think the author might usefully have collated his facts and verified some of his dates, at any rate so far as the European history is concerned. We will

only say, however, that we take exception to the oft repeated error that Blanchard was the introducer of the first large flowering Chrysanthemum into Europe. It is as certain that the real name was Blancard as that Ernest Calvat was the raiser of Madame Carnot, or John Salter the raiser of the Queen of England.

PICEA MORINDA.

IN the Pinetum at Pencarrow, North Cornwall, there are several very fine specimens of the Weeping Fir of Nepal. They were planted in the years 1849 and 1852 by Cornwall's famous statesman, the Right Honourable Sir William Molesworth, Bart., the first Secretary of State for the Colonies, who, by a noteworthy coincidence, like the late holder of that important office, occupied his leisure in Orchid growing and planting new and rare trees.

The soil (a well-drained loam of fair quality) and situation (a north slope, sheltered from rough winds), together with Cornwall's moist atmosphere, have so well suited these Spruces that, with one exception, they have grown freely, and are unusually good types of Pinetum specimens—tall and shapely, with a straight bole, and long, pendulous branchlets, which clothe the trees to the ground. Their smooth, pale green, cylindrical cones, which are now fast changing colour to their mature brown, are but sparingly produced, and, curiously enough, are borne only on the south-east sides of the trees. The male (staminate) flowers, which, for a Spruce, are unusually large, are freely produced in the spring, rendering these trees very attractive. Just before the pollen ripens they are

bright pea-green in colour, and have much the appearance of young cones. Beginning at the base of the buds, this greenness gives place to a pale yellow, and, on the slightest provocation, the flowers discharge clouds of pollen, so prolific is tree-nature, which covers the branches below and ground around with a dense layer of yellowish dust. The pollen all distributed, these male flowers, having performed their functions, quickly fade to brown, wither, and drop off. The tallest specimen tree is 61 feet high, and has a girth of 5 feet 4 inches at 5 feet from the ground.

The "exception," although planted at the same time as the others, and apparently in similar soil, for it is only 20 yards from the other tree of the usual form, is a very distinct-looking tree. It has a very compact, dense habit, and is broader at the base than the type, forming a symmetrical, rounded tree only 29 feet in height. Its leaves are straighter and about three-fifths the length of those on typical trees. The only suggestion I can offer to account for this great difference in habit (it has not yet coned) is that probably it was raised from a cutting. Conifers so raised frequently lack the vigour and tree growth of trees which are raised from seed. *Picea morinda* (syn. *P. Smithiana*) is quite hardy, and when grown in a good, moist loam, and sheltered from rough winds, makes a beautiful lawn tree. Good examples have a spread of from 25 to 30 feet in diameter. For Pinetum work this tree is more effective and interesting when planted in a group of not fewer than three, and should be allowed plenty of room for development. *A. C. Bartlett.*



FIG. 149.—PICEA MORINDA WITH BUSH-LIKE HABIT, IN THE GROUNDS AT PENCARROW.

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his correspondents.)

FRUIT-BUDS FORMED AS THE RESULT OF INJURY.—The note in the issue for Nov. 4, reminds me of a practice followed by fruit growers several years ago, which was called the system of "breaking over." A friend of mine who was manager in an extensive provincial nursery, thought very highly of this system, and practised it annually in his own private garden, but I cannot say the results were satisfactory, compared with those obtained from trees properly pinched during the summer months. The practice was as follows: all the shoots were allowed to grow until the early part of the month of June, when they were all partially broken off in a downward direction, and within about 3 inches of the old wood. The shoots so fractured hung downwards and were not removed until the foliage had fallen in the autumn. The idea was to so check the flow of sap as to divert it to the dormant buds at the base of the fractured growths, converting them into fruit spurs, or buds, as the case may be. The system is not one I should recommend, for not only would this injury to the shoots occasion a great check to the growing tree, arresting root action, but the branches hanging in this untidy fashion would form excellent lurking places for insects. The main branches were treated in the same manner, but the fracture was made at greater distance from the old woods. There is no better method of keeping trees fruitful than the practice of pinching back side shoots with the finger and thumb throughout the summer, and in protracted cases into the autumn, coupled with a judicious restriction of the roots. *W. H. Clarke, Aston Rowant, Oxon.*

PEAS IN NOVEMBER.—I am sending you a sample of Peas which were gathered on November 16 from plants raised from a sowing made in August in the open. The plants are still blooming and setting freely, although, of course, the late setting pods will not mature. It may be interesting to readers of the *Gardeners' Chronicle* to know that culinary Peas can be grown so late in the season without any special effort in this favoured Island. *J. R. Taylor, Osmond's Nursery, Coutanchez, Guernsey.*

[The haulm appears to be in full bearing condition.—ED.]

MANDEVILLA SUAVEOLENS FRUITING.—Referring to the seed-pods of this handsome climber in Mr. R. H. Beamish's garden at Ashbourne, co. Cork, it is stated, on page 344, that fruits of the *Mandevilla* are not often seen. In the south-west it fruits fairly freely, and I have seen it bearing its long, narrow seed-pods in at least half a dozen gardens. I have never, however, seen it fruiting so profusely as at Carclew early in the month of October in the present year. The plant was growing against a wall, and had been hard pruned to keep it within bounds. It was literally covered with fruit, the seed-pods, in large bunches, numbering some hundreds. Another climber that fruits very freely in South Devon and Cornwall is *Sollya heterophylla*. The other day I picked over 300 seed-pods off a plant only about 4 feet in height. Home-grown seed germinates readily and the young plants grow very quickly, forming flowering specimens two years from seed. *S. W. Fitzherbert.*

PELARGONIUM, ROSAMUND WRIGHT.—(See enquiry by "S. A." on page 352.) This variety was raised by the late Mr. J. R. Pearson. It has variegated white foliage and rosy pink flowers. *Chas. E. Pearson, Loudham.*

POTATO PECKOVER.—[See illustration in *Gardeners' Chronicle*, October 22, 1904, p. 290.]—This fine new late or main-crop Potato obtained from the Fruit and Vegetable Committee, at its last meeting, a higher honour than an Award of Merit, that award having been made to it last year, when grown and proved to be so fine a cropper at Wisley. But this year Peckover with several other late varieties were cooked at Vincent Square, and in that form presented to the committee after obtaining three marks, a recommendation for fine clean crop, at Wisley, and now Peckover has the honour of receiving unanimously a F.C.C., a very high compliment indeed for any Potato to obtain. When cooked, and the cooking of the various tubers, in their coats, is splendidly done by the hall-keeper, the flesh of Peckover was found to be so exceedingly rich and well-

flavoured that the entire dish soon disappeared. The variety was raised and sent to Wisley by Mr. J. W. Boyce, Welney, Cambridgeshire. It speaks volumes for the excellence of so many of the new varieties of Potatoes as also for the quality of the Wisley soil that so many of the varieties grown there this year for trial should at once turn out such fine clean crops, and then cook so admirably. Out of several varieties of Potatoes presented to the committee on the 21st ult., only one was of inferior quality, and complaint is now often made that so many of the new varieties or newly-named ones put into commerce are so much alike. That it is to be feared is inevitable, for the obvious reason that raisers generally work with similar materials. *A. D.*

BOYCOTTING JUDGES AT FLOWER SHOWS.—

Will you kindly permit me to protest, with all the force at my command, against a reprehensible practice resorted to by a few, fortunately a very few, over zealous—or it may be avaricious—exhibitors, in bullying and even boycotting judges when their decisions have not been favourable to their exhibits. No exhibitor, be he ever so clever or successful, can reasonably expect in these days of keen and increasing competition to always merit the first prize. I fully admit that judges are as fallible as their fellows, also that they may sometimes unintentionally err in their decisions—more often through lack of time in which to perform their duties than from lack of judgment. When such mistakes do unfortunately occur, or when an exhibitor feels (it may be without just cause) that his exhibit has not received the award it merits, instead of abusing the judges, and at the same time making himself ridiculous, it would be more creditable to himself, more conducive to his own success and happiness, and much more likely to promote the prosperity of horticultural shows, if he were to resort to the proper and only legal remedy open to him under such circumstances. The Council of the Royal Horticultural Society, as well as many other committees of horticultural shows, select referees, whose duties consist in adjudicating in similar cases to those I have mentioned. The example might, I think, be imitated to advantage by every society, whether large or small, throughout the kingdom. An aggrieved exhibitor should, after due consideration, fully and fairly state his case to the managing committee, who would, of course, consult with the responsible judges, and then if the committee thought that the matter was open to question they would consult the referees, whose decision would be final, and ought to be satisfactory to all the parties interested, without further quibble or question. This practice if generally adopted would tend to make judges even more careful than they are now, and would also tend greatly to rectify the evil to which I have referred. I have not, I am thankful to say, been a great sufferer from this practice myself, yet I fear that I have not altogether escaped converting a few intimate friends, if not into enemies, at least into cool acquaintances. It is, however, a much more serious matter when a judge is commercially engaged, and where his trade prospects are thereby endangered. When he is wilfully and persistently boycotted not only by an aggrieved exhibitor, but also by those whom he, in his unwise and unjust zeal, will most probably influence, it then becomes a serious evil that demands the most careful consideration of all managing committees of horticultural exhibitions, *T. Challis, Wilton House.*

TRANSPLANTING.—Mr. Bean's excellent articles upon transplanting trees have afforded most instructive reading, and the advice they furnished is especially needed at the present time. His concluding remarks indicate the evils which arise from inconsiderate statements even in the best devised experimental work. It has been widely circulated that bad methods of planting produce as good results as the careful and reasonable system which Mr. Bean so well advocates. Without enquiring into the circumstances, some have accepted this and spread it still wider, to the evident injury of good gardening, and to the discredit of men who have been taught by able masters, and by long experience, the absolute necessity for the utmost care in all planting operations. The investigation at Woburn, as I understand it, had a special scientific object in reference to other experiments, and this should have been made perfectly clear, as well as all the conditions

influencing the results. The publication of general conclusions founded upon a few facts is calculated to defeat the object in view, unless accompanied by due qualification and the fullest description of every point which has a bearing upon the subject. The misconception which has been caused is apparently due to not giving full weight to practical matters of the utmost importance. *F.R.H.S.*

A FINE BATCH OF EUCHARIS.—Being at Welwyn a few days ago I paid a hurried visit to Danesbury Park, the seat of Col. Blake, where I saw one of the finest batches of *Eucharis grandiflora* (amazonica) that I have seen for many years. There were about 30 pots, 11 or 12 inch; all the plants in the most vigorous health, with strong, leathery foliage, and an average of 12 to 15 spikes of very fine blooms to each pot, the spikes thrown well above the foliage and presenting a sight one does not readily forget. Mr. Sawford, the very courteous head gardener, informed me that the stock had been increased in a few years from one potful of plants, and that he flowers them twice a year, the only stimulant that he uses being soot and liquid manure obtained from cow manure. No plunging in bottom heat is practised, but after each flowering period a short rest is given the plants in a cooler house, with very little water for a time. That this treatment is correct the plants themselves are the best of testimony. Associated with the *Eucharis* were some nice plants of *Begonia Gloire de Lorraine*, *Ferns*, etc., the whole making a very pretty picture. *B. Ashton, Lathom Gardens, Ormskirk.*

A RARE ASPLENium.—I observe a note in your issue of Nov. 25th by Mr. A. D. Webster on the occurrence of *Asplenium septentrionale* in an old wall about Gwydyr. It may be of interest to know that on certain rocks in N. Wales (the exact locality of which need not be specified) the plant is growing wild in profusion, and I have known of its existence there for about a dozen years. *J. B. Farmer.*

RAIN WATER.—For some time past I have been under the impression that here in the West Riding of Yorkshire rain water, for horticultural purposes under glass, contains an injurious amount of sulphuric acid. Situated as we are in the midst of collieries, iron, brick, and other works, the atmosphere is highly charged with gases, and as the roofs of glass and other houses are covered with dust, etc., which are the accumulations of days and weeks, all this filth is washed into our water tanks. When used for syringing Peach trees the water naturally hangs on the leaves some little time before they become dry, and after a fortnight's syringing the points of the leaves die back. Whether this is the direct effect of the water on the leaf, or the wet leaf is more easily injured by the acid existing in the atmosphere, I cannot tell, but when the syringing is discontinued the decay stops. Another circumstance which I attribute to the water is the killing of sphagnum-moss; it gradually becomes brown and dies away. If some reader can enlighten me on this matter I shall be greatly obliged. It is possible I may be wrong in attributing these injuries solely to the water. *A Sufferer.* [If you are a Fellow of the Royal Horticultural Society, you can have the water analysed by the Society's analyst on payment of a small sum.—Ed.]

NYMPHÆAS.—On November 24 I received from America the very exhaustive monograph of the genus *Nymphaea*, by Mr. Henry S. Connard. This book necessitates a good deal of alteration in the names printed by you in the account of my *N. zanzibarensis rosea*. I, therefore, should be much obliged if you will publish the following corrections. The very large pale blue form for which I proposed the name *N. zanzibarensis* var. *grandis* already has a name, and so must stand as *N. capensis zanzibarensis* var. *azurea*, for Mr. Connard has proved that *N. zanzibarensis* is a local race of *N. capensis*. Then I find my so-called *N. blanda Fenzliana* are true *N. blanda*, the real *Fenzliana* not being in cultivation. *N. gracilis* must be altered to *N. flavo-virens*, as that is the name under which it was originally described. *N. gracilis rosea* is a hybrid originating from a fertilisation of *N. flavo-virens* with *N. c. zanzibarensis rosea*. The plant I recorded as *N. coerulea* is *N. stellata*; while we have not got true *N. coerulea* at Tring Park. So-called *N. stellata pulcherrima* and

the Berlin variety are hybrids of *N. coerulea* × *N. capensis*. *N. c. zanzibarensis violacea* is true *N. c. zanzibarensis*. *N. William Stone* is a hybrid between *N. flavo-virens* × *N. zanzibarensis*. *N. columbiana* and *N. × omarana* are hybrids between *N. Lotus* and *N. rubra*. *N. × George Hnster* is a hybrid of the fourth generation of *N. Lotus* and *N. rubra*, obtained by recrossing *N. omarana* with *N. Lotus* or *N. Sturtevantii*. *Walter Rothschild.*

SOCIETIES.

ROYAL HORTICULTURAL SOCIETY.

Scientific Committee.

NOVEMBER 21.—Present: Dr. M. T. Masters, F.R.S. (in the chair); Rev. W. Wilks, Dr. Rendle, Messrs. Saunders, Bowles, Güssow, Sutton, Masee, and Chittenden, hon. sec.

Mealy Bug in Bananas.—From Las Palmas came specimens of an insect which "attacks both plant and fruit of Bananas, particularly the latter, at the time of the rainy season, when it seeks shelter from the rain between the fruits and eats its way into the fruit." Mr. Saunders said "The insect is one of the 'mealy bugs,' probably *Dactylopus citri*. Paraffin emulsion will kill these insects, but how is this or any other insecticide to be applied effectually to clusters of Bananas? It might be possible to tie the bunches of fruit up in bags and then introduce hydrocyanic acid gas by means of a tube from some vessel in which the gas was generated."

Fungus on Rose.—Mr. Saunders showed a shoot of Rose on which was a dense whitish felt of the fungus *Sphaerotheca pannosa* (the common Rose mildew). The resting spores of this fungus are formed on such permanent parts of the plants as this, while the fungus on the leaves produces only spores which germinate immediately. Mr. Saunders also showed a leaf of Violet from Burmah, attacked by a fungus which Mr. Masee took to examine further.

Hardy Eucalypti.—Mr. Bowles showed flowering specimens of two Eucalypti which had been growing in the open air for four years at Myddelton House, Waltham Cross; *Eucalyptus cordata* ("Bot. Mag.," t. 7835; Mueller, "Eucalyptographia," dec. 8, 1), a native of Tasmania, having crenulate leaves and the calyx rounded at base, and *Eucalyptus pulverulenta* ("Bot. Mag.," 2087; Mueller, "Eucalypti," dec. 8, 7), a native of New South Wales, having entire leaves, and the calyx tube narrowed at the base.

Variation in Pears.—Dr. Masters showed Pears from Mr. Roupell, who sent the following communication:—"Beurré Rance Pear, which bears well with me as a standard on the 'free stock,' sometimes gives traces, I think, of its ancestry by reverting to a form resembling that of the Catillac Pear with a large open eye, round form and long stalk, and in some cases a flushed cheek. This deviation from the usual form occurs with a second crop which appears in unfavourable seasons when the first bloom is cut off by spring frosts and the abnormal fruits are borne upon the extremities of the new growths. The stalks often have buds on them, as in the specimen sent, and also thorns upon rare occasions."

Burrs on Birch.—Mr. Douglas showed a specimen of Birch from Great Bookham having large burrs covered with a large number of adventitious buds. Such growths are common on many kinds of trees.

Solanum tuberosum.—Dr. Masters showed a copy from the original plate of this plant drawn by Clusius in 1588, and Gerard's figures of a somewhat later date, along with plates of the reputed sport from S. Commersoni found and cultivated by Mons. Labergerie in France. It was seen that this alleged sport bore a great resemblance to the well-known variety Blue Giant much cultivated in Germany. (See *Gardeners' Chronicle*, Nov. 25, 1905, p. 376).

Scarlet Runner poisonous.—Mrs. Arnold, of the Lodge, Dedham, sent roots of Scarlet Runner with the information that a pony, after having eaten a root of this plant and another had become seriously ill after eating a portion of a root. Enquiries make it quite clear that no other root such as *Aconitum* had been mistaken for this Scarlet Runner, and that there could be no doubt that the roots of the Scarlet Runner were the cause of the trouble. Mrs. Arnold says: "I want to make it known as much as possible, as no gardeners about here seem to know of its being poisonous, and the roots are being dug up in all directions." Mr. E. M. Holmes, F.L.S., writes as follows: "I can find no mention in books, at present, of the *P. multiflorus* (coccineus) being poisonous, but a nearly allied species

P. lunatus, with smaller flowers and crescent-shaped pods, is known to be poisonous to cattle. According to the Agric. Ledger, 1905, No. 2, p. 13, 'a number of cases in which cattle had been poisoned as a result of eating the plant had been recorded in Mauritius, and in 1898 Mr. Bonaine showed that the whole plant produced prussic acid when ground up with water, the larger amount being obtainable from the seeds.' These beans have been investigated at the Laboratory of the Imperial Institute, and it has been proved that they yield (before being boiled, presumably) an average of 0.009 of prussic acid, but that amount may vary very widely, the cause of such variation being unknown (l.c., p. 16. See Bull. of Imperial Institute, 1903, vol. 1, p. 16-115). The prussic acid does not pre-exist, but is formed by the decomposition of a glucoside called phaseolinatin, by means of an enzyme, probably identical with the emulsion of bitter Almonds. As the ferment is contained in separate cells, it is only when the plant is bruised or injured that the contents of the cells come in contact, and it is necessary that water should be present in order for the poison to be developed. The same arrangement occurs in the Cherry Laurel (*Prunus Lauro-cerasus*), so that the leaves may be dried and then powdered, and no prussic acid is formed until the powder is moistened, although it is readily given off when the fresh leaves (which contain water) are bruised, as every entomologist knows. This case of poisoning raises a very interesting point with regard to this familiar vegetable, viz. 'will the bruised fresh pods of the Scarlet Runner yield prussic acid, and will the air-dried seeds do the same?' It is quite possible that they may be poisonous if eaten before being boiled, since boiling would destroy the enzyme, or render it inactive, so that the prussic acid would not be developed in the boiled pods. I may also point out that *Phaseolus aconitifolius*, Linn., is used as fodder for cattle, although the root is stated by Royle to be narcotic (Watt, Dict., Ec., Prod. India, vi., pt., 1 p. 185). The seeds of *P. semi-erectus*, Linn., are used in the West Indies as a fish poison (Rosenthal, Pl. Diap., p. 1019)."

NATIONAL POTATO.

NOVEMBER 23, 24.—The second exhibition of the National Potato Society, as held on these dates, in the Royal Horticultural Society's Hall, Vincent Square, Westminster, was a distinct success. It will be noticed that the dates on which the show was held are more than a month later than those of last year's exhibition.

Although the days of the Potato "boom" have gone, great interest was nevertheless displayed, and the numbers of exhibits were substantially increased, this being especially seen in the competitive classes. The quality of the tubers was generally of high excellence, and it was apparent that the judges were not in the least influenced by mere weight of tubers when determining the merits of the respective exhibits, but favoured qualities such as clearness of skin, evenness of shape, regularity of size, and general suitability for culinary purposes. To most persons the show afforded no great measure of interest, owing to the great sameness to be seen in the various exhibits, and to the stereotyped method of staging that was adopted. New varieties seemed as plentiful as ever, and the crop of young seedlings exhibited gave promise of many more. Doubtless the synonyms sub-committee found plenty to do in breaking down the new names which, in some cases, have been given to old favourites, and in assigning them their proper patronyms.

A general review of the prize list shows at once the great superiority of the Scotch exhibitors' produce over that of their more southern competitors. This is, perhaps, in a measure due to the greater keenness of the Scotch growers in the matter of Potato culture, although, doubtless, much is due to the northern climate. We were pleased to see the Cottagers' classes so well contested, and the premier exhibit in the larger class open only to these growers was equal to any six dishes of tubers in the show. The Llewelyn Cup was secured this year by Messrs. DOBBIE & Co., whose exhibit was thus adjudged the best display in the hall. The cup has now to be won three times before it becomes the absolute possession of an exhibitor. Messrs. Carter's and Mr. Findlay's Joint-Cup, value £50, was won by Mr. BEN ASHTON.

A Conference on "Potato Diseases" was opened at 3 p.m. in the afternoon of the first day in one of the committee rooms. Mr. Geo. Gordon presided, and Mr. Foster read a paper on the disease known as Curl.

In the evening the annual dinner was held at Odone's Restaurant, Victoria Street. Mr. A. D. Hall, M.A., presided, and there was a company present of about 60 persons

CLASSES OPEN TO TRADE GROWERS.

Audit Class.—This Class was for the 12 varieties of Potatos awarded the highest number of votes in the audit held by the Society in 1904. The varieties were Northern Star, King Edward VII., Sir John Llewelyn, Duchess of Cornwall, Evergood, Factor, Discovery, Eldorado, Royal Kidney, Up-to-date, Lymm or Sim Gray, and Recorder. Four growers entered, the first prize being awarded to Mr. F. PICKERING, Pinehurst, Woodhall Spa, Lincolnshire. The tubers in the premier collection formed a handsome set of an even size, were free from blemish and had relatively shallow placed eyes. Moreover they were of suitable size for culinary purposes. 2nd, Mr. R. W. GREEN, Wisbech, Cambridgeshire. The tubers shown by this grower were also a commendable lot, being remarkably clean, but not so evenly matched as in the preceding exhibit. Mr. H. SCOTT, Boreham Road Nurseries, Warminster, Wilts, secured the 3rd prize.

Six dishes, distinct, any varieties.—Four exhibitors also staged in this class. Again Mr. PICKERING was to the fore. He had King Edward VII., Sir John Llewelyn, Duchess of Cornwall, Recorder, a remarkably pleasing variety, of Kidney shape, with shallow eyes and roughened skin; Eldorado, a round, dark-skinned tuber, and Discovery, a Potato of good appearance. Mr. WILLIAM DEAL, Brooklands, Kelvedon, Essex, followed. The examples of Eldorado differed greatly in appearance from those shown by Mr. Pickering, in that they were much paler in colour, and not possessed of such roughened surface. King Edward VII. was the best example shown in this collection. Nobleman was also commendable. Third, Mr. P. WALKER, Berwick, Ardrross, Elie, Fife, N.B., with tubers twice the size of those that were awarded the 1st prize.

TRADE GROWERS EXCLUDED.

The classes similar to the preceding, but from which trade growers were excluded, excited far more interest. In the class for 12 varieties, distinct, no fewer than 11 growers competed. The three premier exhibits were found adjacent to each other, and all were staged by northern growers. There was not much to choose between the first three displays. The 1st prize was given to Mr. JOHN GEMMELL, Flakefield, Chapelton, Hamilton, N.B. The premier dozen were Britannia, a white oval variety; Satisfaction, Herd Laddie, a coloured round Potato, with somewhat deeply set eyes; Gold Mine, Snowdrop, a white lapstone form; Mr. Bresee, Bonntiful, and Purple Eye, a long kidney variety, whose name well describes its appearance, the eyes being purple coloured, the remaining surface being of the usual Potato colour. Mr. BEN ASHTON, Latham Gardens, Ormskirk, followed with larger specimens, all well matched, of good shape and clean of skin. Sutton's A1 impressed us as being a desirable variety. It has a very regular surface, the tubers being of the proper kitchen type. Ideal, Distinction, and Goodfellow are other varieties worthy of mention. 3rd, Mr. A. COLE, The Gardens, Althorp Park, Northampton.

The smaller class of six varieties, distinct, brought even more competition than the last mentioned, for as many as 16 displays were staged. Again the premier award fell to a Scottish grower, the fortunate exhibitor being Mr. J. ROBERTSON, Smailholm, Kelso, N.B. All the varieties were of the round or round kidney type. They included Britannia, The Dean, White Eyes, Abundance, Bonntiful, and Climax, and formed an admirable selection. The 2nd prize was awarded Mr. JOHN GEMMELL, Flakefield, Chapelton, Hamilton, N.B., the two front pairs of whose dishes presented a great sameness of type, being white oval tubers of Britannia, Scottish Triumph, The Crofter, &c. The Dean, a coloured form, was included in the back row. 3rd, Mr. BEN ASHTON, Latham Gardens, Ormskirk.

COTTAGERS' CLASSES.

Two classes were open to cottagers: one for six varieties and the other for three. These were both strongly contested, the number of entries totalling 15 and 19 respectively. The premier prize in the larger class was taken by Mr. J. ROBERTSON, Smailholm, Kelso, N.B., with six dishes that would have done credit to any grower in the country. Indeed the examples of Reading Russet were awarded the Silver Medal for the best dish of Coloured Potatos shown in the Amateurs' and Cottagers' Classes. Duke of York, Lord Tennyson, a red mottled round tuber, The Factor, Britannia, and The Dean comprised the other varieties shown by Mr. Robertson; 2nd, Mr. COLEMAN, 13, Hunter Street, Buckingham; Mr. H. J. BALDOCK, 51, Castle Street, Canterbury.

Mr. COLEMAN secured the 1st prize in the smaller

class for three dishes, having Dalmeny Beauty, King Edward VII., and Windsor Castle; 2nd, Mr. MARSHALL GILES, Ramcliff R.S.O., Yorks., with large examples of Evergood, King Edward VII., and Up-to-Date; 3rd, Mr. H. RUSSELL, Eccles, Maidstone, Kent. A good dish of Purple Satisfaction was included in this grower's exhibit.

OPEN CLASSES.

There was a class for the greatest total yield of any variety from twelve consecutive roots, to be lifted under the supervision of a nominee of the Committee and scaled. The sets were required to be planted at a not greater distance than 3 feet by 18 inches. Mr. GEMMELL won with a total weight of 147 lbs., the variety being Scottish Triumph. This was over 70 lbs. more than the total weight in the 1st prize exhibit of last year, when the variety was Duchess of Cornwall. Mr. JOHN M. BOYCE, Welney, Wisbech, was awarded the 2nd prize, but of this exhibit the weight was not given. The judges were influenced by the quality of the various yields, and weight was not necessarily the determining factor in awarding the prizes.

Mr. T. A. Scarlett, Edinburgh, offered special prizes for the produce of one root and one separate dish of six tubers of the varieties Money Maker and Table Talk.

Mr. JOHN GEMMELL won in the former class, having 222 tubers totalling 43 lbs. weight, and an excellent dish of specimen tubers. The produce of the single root formed an even-sized serviceable lot of tubers, a great percentage of them being of a useful culinary size. Mr. A. LAWSON followed with 91 tubers weighing 24 lbs.

Mr. GEMMELL again surpassed all other competitors in the similar competition for Table Talk, having no fewer than 176 tubers, weighing 39 lbs. The tubers were small in comparison with those shown by Mr. J. H. RIDGEWELL, The Gardens, Histon, Cambridge, who staged 67 tubers of a net weight of 19 lbs.

CUP CLASSES.

LEWELYN CUP.—The "blue ribbon" of the show is the Llewelyn Cup, value 10 guineas. This was offered by Sir John Llewelyn, the President of the Society, for the best exhibit in the show, and is required to be won three times (not necessarily consecutively) before it becomes the absolute property of an exhibitor. Last year, it will be remembered, a similar cup was won outright by Messrs. Sutton & Sons, Reading. This season Messrs. DOBBIE & Co., Rothesay, secured the trophy for a magnificent collection of 90 varieties. Messrs. Dobbie were well in the running last year, and were then awarded 2nd place. The whole were staged in flat baskets, with a little Parsley interspersed, but which in no way prevented the tubers from being well seen. They formed a remarkably clean, even set of tubers, and older approved kinds found a place side by side with the latest introductions. As a selection of the best (from appearances only) we may mention Sir John Llewelyn, Beauty of Hebron, Edgecote Purple, Waverley (red lapstone); The Factor, a magnificent basket of tubers; Sir Walter Rayleigh, The Scot, Warrior, Table Talk, Southern Queen, King Edward VII., and Windsor Castle.

CARTER-FINDLAY CUP.—A cup was also presented to the Society by Messrs. Carter and Mr. Archibald Findlay for the best 12 dishes of nine tubers, each selected from a list of 20 varieties given, and to include not fewer than three varieties bearing Messrs. Carter's name. Substantial money prizes were offered in addition to the cup. The trophy—which has to be won three times in succession to become the absolute property of an exhibitor—was secured for the first time by Mr. BEN ASHTON, Latham Gardens, Ormskirk, N.B., in competition with one other grower, Mr. J. H. RIDGEWELL, The Gardens, Histon, Cambridgeshire. Both collections were splendid produce, and not much difference was observed in the two displays. Mr. ASHTON, showed Evergood, Monarch, Snowball, Northern Star, Empress Queen, Ruby Queen, Royal Kidney, Empire, Mr. Ambrose, Advancer, Goodfellow and Klondyke.

DISEASE-RESISTING POTATOS.

In the Society's recent election of disease-resisting sorts, the following eight varieties were prominent:—Evergood, Discovery, Royal Kidney, Northern Star, Sir John Llewelyn, King Edward VII., Eldorado, and The Factor. Prizes were offered in a class for eight varieties of disease-resisting varieties, to include not fewer than four selected from this list. Ten collections were staged, the best being that belonging to Mr. J. H. RIDGEWELL, who had grand examples of Duke of York, Sir John Llewelyn, Webb's Empire, The Factor, Royal Kidney, Cigarette, Duchess of

Cornwall, and Evergood. Second, Hon. E. HUBBARD, Downe, Kent (gr. Mr. C. Miles), who had Duchess of Cornwall, The Factor, Warrior, &c.

POTATOS FOR FLAVOUR.

This class was also in accord with an Audit of the Society of 1904, and was for the best flavoured Potato. The schedule required four of the principal sorts of that election to be included among an exhibit of six dishes. The varieties chosen in the election were Langworthy, Sir John Llewelyn, Factor, Royal Kidney, Evergood, Duchess of Cornwall, and Snowdrop. Mr. RIDGEWELL was again to the fore with a handsome half-dozen dishes, the varieties Snowdrop and Webb's Chieftain being especially noteworthy and good. Mr. A. TANNER, Grove Ground Cottage, Shanklin, Isle of Wight, followed with darker-skinned produce, among which Snowdrop was especially pleasing. Third, Mr. R. W. GREEN, Wisbech, Cambs., with smaller tubers of a yellow appearance.

AFFILIATED SOCIETIES.

A class open to societies affiliated to the National Potato Society was provided for an exhibit of six distinct varieties to include four of white and two of coloured kinds. Nine societies entered, and competition was keen, the whole of the produce being of high-class appearance. The Cambridgeshire Horticultural Society, represented by Mr. A. MATTHEW, 20, Trinity Street, Cambridge, was successful. Quality ran high in the exhibit, Webb's Industry being especially good. Kerr's Favourite was also well shown. Mr. BRESSEE, Up-to-Date, Beauty of Hebron, and Eastern Star were the other varieties, and these all contributed to an excellent display. 2nd, The Sittingbourne and Milton Gardening Society, who showed Lillie Langtry, a red mottled kind, Scottish Triumph (a grand dish), Purple Perfection, &c. 3rd, Boughton Monchelsea Society, Maidstone.

SINGLE DISH CLASSES.

Charles Fidler.—Mr. J. D. RIDGEWELL had the best dish among four. *Conquering Hero*.—Four growers also contested in this class. Mr. RIDGEWELL again won the 1st prize. *Dalmeny Beauty*.—Half-a-dozen exhibits were staged, the best being those belonging to Mr. COLEMAN. The tubers were not the heaviest shown, but they were of even size and clean in skin. *Dalmeny Radiant*.—Mr. J. GEMMELL was easily 1st among six, his specimens being a grand sample, and light in colour. *Diamond*.—Again six dishes were presented, the best and largest tubers being those shown by Mr. J. BELL, Park Mount, Bunbridge, Ireland. *Discovery*.—Very substantial and numerous prizes were offered by Messrs. Sutton & Sons for the best exhibits of this variety. These were eagerly contested, no fewer than 27 growers competing. Mr. BEN. ASHTON won the premier prize, being followed by Mr. S. ROBERTS, Shenley Villa, Hurstpierpoint. *Duchess of Cornwall*.—This variety was also largely represented as many as 19 dishes being displayed. The tubers differed greatly in point of quality; the best were those shown by Mr. J. BOWLES, who had splendid examples, evenly matched. 2nd, Mr. J. RIDGEWELL with lightly coloured examples. *Duchess of Norfolk*.—Great dissimilarity was seen in the exhibits in this class. Mr. BEN. ASHTON had by far the finer produce, for which he was awarded the 1st prize. *Eldorado*.—This famous variety was shown by 11 growers. As exhibited by Mr. J. BOWLES, who won the 1st prize, it appeared to warrant much of its popularity, for the tubers presented a very handsome appearance. *Evergood*.—Mr. C. ROSS, Welford Park Gardens, Ross, had the best dish among 14. *The Factor*.—This variety was strongly represented, 20 dishes being seen. The best tubers were shown by Mr. A. LAWSON, Amsfield, Kempkettle, N.B. *Golden Wonder*.—The best among three dishes was shown by Mr. J. BELL. *Highlander*.—The largest and best examples were shown by Mr. T. CLAYTON, Spalding Marsh, Lincs. Six growers contested in this class. *King Edward VII*.—Fifteen dishes of this popular variety were shown, the best being the examples belonging to Mr. A. LAWSON. *Langworthy*.—Mr. J. M. CHRISTIE, Scotsraig, Main, Tayport, N.B., had the best dish among five. *Lynn or Sim Gray*.—Four dishes were presented, the best being that of Messrs. D. MACHEISH & SON, Lamdash. *Nobleman*.—Mr. T. CLAYTON, with a beautiful dish of even, well-balanced tubers, won the 1st prize. *Northern Star*.—A large class, contested by 17 growers, the premier dish being shown by Mr. J. M. CHRISTIE. Many of the examples were badly spotted. *Peacemaker*.—The best dish among five came from Mr. P. WALKER, Berwick Ardross, Fife, N.B. *Pearl*.—Mr. J. BELL won, having only one opponent. *Recorder*.—Four entries were seen, Mr. J. GEMMELL being easily first with beautiful examples. *Royal Kid-*

ney.—Nine growers competed. 1st, Mr. A. LAWSON. *Sensation*.—This variety was well represented, ten dishes being seen. Mr. BEN. ASHTON had the premier dish. *Sir John Llewelyn*.—This sterling variety was displayed by 19 growers. Mr. J. RIDGEWELL won the 1st prize, with large, clean examples. *Snowball*.—Mr. H. ROSTS, New Hythe, Larkfield, Kent, had the best dish of seven. *Snowdrop*.—Nine growers showed in this class, Mr. GEMMELL winning with large clean specimens. *Superlative*.—This was a keenly-contested class, no fewer than 24 dishes being seen. The prizes numbered ten, the principal of these being of substantial value. Mr. BEN. ASHTON was placed first, followed by Mr. JOHN GEMMELL. *Warrior*.—This variety was represented by five good dishes of tubers, among which those of Mr. J. H. RIDGEWELL were adjudged the best. *Windsor Castle*.—This sterling Potato was staged by 14 growers. Mr. A. HOGARTH, New Smailholm, Kelso, with a magnificent dish, was well to the fore, and secured the premier prize. Mr. Hogarth also had the distinction of having the best dish of a white skinned variety in the Amateurs' and Cottagers' Classes. The variety was Britannia.

NON-COMPETITIVE EXHIBITS.

These made a good display, although, perhaps, not such a notable one as at the inaugural show of last year, as one or two exhibitors who had large collections then were not represented this year. The exhibits were in the main composed of varieties of Potatoes, displayed with great similarity on the various stands, generally in baskets or on dishes, and with little or no attempt at making them decorative. The only striking departure from the dish and table method was the exhibit put up by Messrs. SUTTON & SONS. This consisted of a six-sided kiosk, and in it was arranged a most interesting collection of tubers representing many species and novel varieties, including *Solanum tuberosum* S. etuberosum, S. stoloniferum, S. Commer-soni, S. Maglia, the black Congo Potato, various kinds of Fir Apple Potatoes, so-called from their resemblance to Fir-Cones, and young Potatoes from retarded "sets." (Gold Medal.)

MESSRS. DANIEL BROS., Norwich, displayed a collection of about 40 varieties of Potatoes, including the variety Duke of York, which was sent out by Messrs. Daniel Bros. in 1893, and is even now one of the very best Potatoes in commerce. (Gold Medal.)

MESSRS. G. MASSEY & SONS, 17, Market Place, Spalding, showed about 50 varieties, including some grand tubers of Eldorado. The Leader (a new early kidney of great promise), Rob Roy (a second early or mid-season variety), and Midlothian Early, are varieties that attracted attention on Messrs. Massey's stand. (Gold Medal.)

MESSRS. WEBB & SONS, Wordsley, Stourbridge, showed a collection of well-grown tubers, all evenly matched, clean of skin, and of proper culinary size. They were set up in a tasteful manner, with small Palms interspersed. (Gold Medal.)

Silver Medals were awarded the following exhibitors for displays of Potatoes. Mr. F. G. CRAMPTON, Gate House, Sissinghurst, Kent; Messrs. W. DAVIE & CO., Market Street, Haddington, N.B.; Mr. WM. DEAL, Brooklands, Kelvedon, Essex; Messrs. W. DENNIS & SONS, Kirton, Lincolnshire; Messrs. FIDLER & SONS, Reading; Mr. R. W. GREEN, Wisbech; Messrs. HOGG & ROBERTSON, Mary Street, Dublin; Messrs. W. W. JOHNSON & SONS, LTD., Boston, Lincolnshire; Mr. JAMES KERR, Dumfries, N.B.; Messrs. ISAAC POAD & SONS, Walmgate, York; Mr. T. A. SCARLETT, Market Street, Edinburgh (a tuber was exhibited in this group weighing 4 lbs. 4 ozs., the variety being Table Talk); Mr. HENRY SCOTT, Boreham Road Nurseries, Warminster, Wilts.; Messrs. J. F. WILLIAMSON, Summer Hill, Mallow, Ireland.

Collections were also displayed by Mr. S. M. THOMSON, 7, Warrenden Park Crescent, Edinburgh; Mr. A. W. PEPPER, Bridge Farm, Downham; Messrs. ALEX. DICKSON & SONS, 55, Royal Avenue, Belfast; Mr. C. W. BREADMORE, 120, High Street, Winchester; Mr. J. W. BOYCE, Welney, Wisbech; Mr. R. W. PINNEY, Coleshill, Birmingham; Mr. J. BETTINSON, Parkfield, Otwell, Wisbech; Mr. A. LIGHTON, Junr., Kirton, Lincolnshire; Mr. F. PICKERING, Pinehurst, Woodhall Spa; Mr. A. FINDLAY, Mairsland, Auchtermuchty, N.B.; Mr. JAMES GARDINER, Perth, N.B.; and Mr. HENRY FINCHAM Kent.

NATIONAL CHRYSANTHEMUM.

NOVEMBER 20.—A meeting of the Floral Committee of this Society was held on the above date, when the following varieties received the Society's First Class Certificate:—

Miss Irene Cragg (single), Phyllis (single); both

from Messrs. CRAGG, HARRISON & CRAGG; Madame R. Oberthur (Japanese), British Empire (Japanese), Souvenir de Lombraz (Japanese); the above three from Mr. NORMAN DAVIS; John Peed (Japanese), from Messrs. J. PEED & SON; Kate Palgrave (Japanese), from Mr. SEWARD; and Maud Matthews (single), from Mr. H. REDDEN.

ANNUAL DINNER.

The annual dinner of members and friends of the National Chrysanthemum Society took place on Tuesday evening last in the Venetian Chamber, Holborn Restaurant, when there were about 100 persons present. The chair was occupied by the Society's President, C. E. Shea, Esq., and he was supported by most of the more prominent members.

In proposing the Royal toast the chairman made special reference to the Queen's well-known love for flowers, and related how great her interest was in examining the flowers at the National Rose Society's Exhibition at the Royal Botanic Society's Show held at Regent's Park in July last.

Following the musical honours of this toast, Mr. Balantine made an appeal to those present on behalf of the Queen's Unemployed Fund, and it was further decided to send a telegram to H.M. The King congratulating him upon his recovery from his recent accident, and upon his third daughter becoming Queen of Norway. Subsequently it was announced that a sum of £3 7s. had been collected for the Queen's fund for the unemployed.

On rising to propose the toast of the "National Chrysanthemum Society," the President said one's thoughts could not but be tinged with a touch of sadness. He referred to the death of Mr. Richard Dean, yet he thought perhaps he had used the wrong word in speaking of sadness, for the feeling should be rather one of exultation. For all must die, and when one had lived to a good age, and spent a useful life—useful in the work he did, and in the example he set—it was hardly a case for sadness. Passing to the subject of the toast, and to the Chrysanthemum in particular, Mr. Shea said the imagination naturally went to the far East, to the home of one section of the Chrysanthemum. The Japanese had set us many lessons in progress and in other matters that we should do well to learn, for men loved change and progress, and it was necessary for the welfare of that society as for other institutions and nations. The Japanese called their Chrysanthemum Festival a Festival of Happiness, and this year it would certainly be held under happier conditions in Japan than could have been possible for several years past. Incidentally the president said he believed the Japanese held their first Chrysanthemum show in the year 900, and they had probably all, or most of, the difficulties that are familiar at the present time. Reviewing the events of the year, Mr. Shea said the society had been most successful; they had maintained their membership and their finances. The society's committees were most efficient bodies, and "sensitive to the requirements that proper progress necessitated." The shows were good, and though ill-health prevented his (the President's) presence at the October show, he was just able, by interpreting somewhat liberally his doctor's orders, to visit the November show on the third day. He saw many deviations from the beaten rut. He admired the groups shown by Mr. H. J. JONES and Mr. NORMAN DAVIS. But the big vase class seemed scarcely so well supported, or effective as usual. He wondered if it was not possible to get away from this class to something more accessible to the majority of members. Mr. Shea, referring to the exhibition of market Chrysanthemums, to be held on the 13th inst., in the Floral Hall, Covent Garden, said it was good for the society and the market growers that the movement in connection with market flowers was associated with the society's auspices. Before concluding his remarks, the President referred to several matters that had been taken up by the National Rose Society, chiefly in regard to the literature it publishes, and recommended that the National Chrysanthemum Society might do something in the same way. The President concluded by advising the society to have a change of President at least every two years.

Following the celebration of this toast the presentation of the special prizes won at the November show took place. Mr. G. J. Hunt, Ashstead Park Gardens, Epsom, received the National Challenge Trophy on behalf of the Epsom Chrysanthemum Society, and Mr. Higgs, Fetcham Park Gardens, Leatherhead, received the Holmes' Memorial Cups offered for the best collection of 36 incurred blooms, and for a collection of 48 Japanese blooms.

The next toast was that of "The Donors of Special

Prizes," proposed by Mr. Tayler, the treasurer, and responded to by Mr. J. H. Cozens, manager to the Crystal Palace Company.

Mr. Brian Wynne proposed the toast of "The President, Vice-President, Treasurer, Secretaries, Committees, &c., of the Society," and notwithstanding the omnibus character of the toast, said something to the credit of all it included. The toast was responded to by Mr. R. Ballantyne, a Vice-President, who said he believed that he and Mr. Prickett were two of the oldest members of the society; Mr. Thomas Bevan, Chairman of Committees, who related interesting circumstances connected with the Committees, and Mr. C. Harman Payne, who amongst many other matters stated that the French National Chrysanthemum Society was practically started in Soho about 10 years ago.

The next toast was that of the "Affiliated Societies," proposed by Mr. D. B. Crane, who after stating that the society has an affiliated society in Tasmania, four in New Zealand, one in Denmark, some in France, one in Jersey, some in Scotland and Wales, but none in Ireland, made a vigorous appeal to the society to afford more encouragement to the sections of Chrysanthemums other than Japanese, which he rightly declared formed nine-tenths of the exhibits at the recent Crystal Palace Show. Mr. G. J. Hunt responded.

The toast of "The Chairman" was proposed by Mr. J. H. Witty, and that of "The Press" was proposed by Mr. D. Ingamells, and responded to by Mr. R. Hooper Pearson.

The musical part of the programme, arranged by Mr. T. Bennett-Griffin, was unusually good, and the tables were prettily decorated with flowers, among which Chrysanthemums were appropriately predominant. During the proceedings the President handed the Society's Gold Medal to Mr. Geo. Caselton, Garden Superintendent at the Crystal Palace, for valuable services rendered in connection with the exhibitions.

BRISTOL CHRYSANTHEMUM.

NOVEMBER 15, 16.—The above society's annual show in the Colston Hall, Bristol, on these dates was the forty-second held under its auspices, and was one of the best of the series. The classes devoted to Chrysanthemum flowers were remarkably well filled. Especially meritorious were the 36 Japanese blooms which secured for Mr. W. IGGULDEN, Lock's Hill Nursery, Frome, for the second season in succession, the Challenge Vase presented by the Colston Hall Company, and £5 by the society. It contained the best bloom—and example of F. S. Vallis—in the show. The quality of the blooms staged in the Vase classes was also good, Grapes and hardy fruits were extensively represented, and though we have seen the former of better quality at Bristol, the latter, and especially Apples, were excellent. Exhibits of specimen plants and Ferns made a prominent feature down the centre of the hall. Vegetables were numerous and of high quality. The arrangements of the show were highly satisfactory.

CUT BLOOMS.

Thirty-six Japanese in not fewer than twenty-four varieties.—Mr. IGGULDEN, amongst 10 competitors was an easy 1st prize winner with large, full, fresh, and highly coloured blooms, including examples of F. S. Vallis, Mad. Paolo Radaelli, Maurice Riviere, President Viger, Chrysanthemiste Montigne, J. R. Upton, Duchess of Sutherland, J. R. Silsbury, Mrs. Barkley, &c. Mr. Parsons, gr. to E. J. POOLE, Esq., was placed 2nd with good blooms of President Viger, Duchess of Sutherland, Mons. C. de Leche, Mad. P. Radelli, Mrs. F. W. Vallis, &c.

Twenty-four blooms, incurved.—Three growers only staged in this class, and of these Mr. DRAKE, Cathays, Cardiff, obtained the lead with large, symmetrical blooms of Frank Hammond, Jalene, Pantia Ralli, Ralph Hatton, Lady Phillips, N. Molyneux, &c.; 2nd, Mr. RUNNACLES, with slightly smaller blooms.

Twelve blooms, incurved.—Mr. Baker, gr. to Dr. COPIER, Port-Kewett, was placed 1st with a good set of fresh blooms, amongst which were Pantia Ralli, Miss N. Southam, Emblemé Poitevine, and Mrs. F. Judson; 2nd, Mr. PARSONS.

Twelve blooms, Japanese.—Here, again, Mr. BAKER took the lead with a good set of full blooms, including General Hutton, Mrs. F. W. Vallis, Mrs. Barkley, and J. H. Silsbury. Mr. Carpenter, gr. to Mrs. G. LANE, followed.

There were 10 entries in a class open only to Amateurs' and Gentlemen's Gardeners for 12 blooms of Japanese varieties. Mr. A. F. HILL won the 1st prize in this class.

Twelve blooms of large-flowered Anemone varieties.—Two exhibitors staged, Mr. Hack, gr. to Mrs. W. PETHICK, winning with beautiful blooms of W. Astor, Mrs. Gardiner, Le Chalonais, &c.

VASE CLASSES.

These were very attractive, the blooms being displayed to great advantage. In the class for six vases of distinct varieties, each containing five blooms, Mr. W. IGGULDEN was again the prize-winner amongst seven; 2nd, Mr. PARSONS.

Mr. IGGULDEN also led in the class for two vases of three blooms in each of any one white variety, having splendid examples of Mad. R. Oberthur; 2nd, Mr. PARSONS, with the variety Mrs. Lewis. There were seven entries for a similar exhibit of any yellow variety, Mr. IGGULDEN being placed 1st with the variety F. S. Vallis, Mr. MAY following with examples of Bessie Godfrey.

GROUPS.

Three creditable groups were arranged in the class for exhibits, each occupying an area of 50 square feet, the best being from Mr. G. F. Harford, gr. to H. VINCENT BARNARD, Esq. The exhibit possessed plants with large blooms of good colour, and well clothed with foliage. The other groups were arranged by Mr. McCulloch, gr. to J. COLLTHURST GODWIN, Esq., who was awarded the 2nd prize, and by Mr. E. Pape, gr. to G. W. H. BURY, Esq.

A class was provided for a group of Chrysanthemums, associated with ornamental foliage, plants, and ferns, the whole to occupy an area of 50 square feet. Of the two exhibitors who made arrangements in this class, Mr. Bannister, gr. to Mrs. ST. VINCENT AMES, took a good lead with a beautiful collection of well-grown plants.

In the class for a group of miscellaneous plants to occupy an area of 50 square feet, two collections that were similar in character were arranged, the one by Mr. F. Caul, gr. to Dr. R. C. W. EGAR, who secured the lead, and by Mr. McCulloch.

FRUIT.

A Collection of six dishes.—Amongst five growers who entered in this class, Mr. STRUGNELL secured the lead with good Alicante and Muscat of Alexandria Grapes, Marie Louise, and Beurré Bosc Pears, Cox's Orange Pippin Apples, and Coe's Golden Drop Plums; 2nd, Mr. A. E. Rakes, gr. to W. A. F. POWELL, Esq.

Grapes.—The 1st prize for Muscat of Alexandria Grapes was won by Mr. C. M. Holt, gr. to T. J. LENNARD, Esq., one bunch of which was awarded the prize given for the best bunch of Grapes in the show; 2nd, Mr. Hughes, gr. to Major-Gen. SAMPSON MAY. The best Alicante Grapes were staged by Mr. J. T. Curtis, gr. to Alderman W. HOWELL DARCISS. Mr. Spry, gr. to Mrs. F. G. COLEMAN, was placed 1st amongst five competitors, for Gros Colmar.

Pears.—Mr. BANNISTER staged the best six dishes of these fruits, having excellent examples of Doyenné du Comice and Beurré Bosc. Mr. STRUGNELL was awarded the 1st prize for four dishes of these fruits; 2nd, Mr. BANNISTER.

In the class for one dish of Pears Mr. G. RUNNACLES was placed 1st with the best dish in the show, a really grand one of Doyenné du Comice.

Apples.—Mr. BIBLE won the 1st prize for six dishes of dessert varieties, showing highly coloured fruits. Mr. VIRGO led in the class for four dishes of dessert Apples with Ribston, Cox's Allington Pippins, and Gascoyne's Seedling; 2nd, Mr. PAPE. Mr. PAPE had the best single dish of dessert Apples in well-coloured examples of Cox's Orange Pippin. Mr. RUNNACLES showed the best culinary varieties.

VEGETABLES.

Messrs. Jas. Carter & Co., High Holborn, London; Messrs. J. Garaway & Co., Bristol; Messrs. Sutton & Sons, Reading; and the Ichthemic Guano Co., each offered liberal prizes for collection of vegetables, for which remarkable good produce was staged, Messrs. BANNISTER, BAKER, and BENFIELD being the principal prize-winners.

Trade Exhibits were numerous. Mr. W. J. GODFREY, Exmouth, staged Chrysanthemums. Messrs. JAS. GARAWAY & Co., Bristol, had a large collection of Apples. Messrs. PARKER & SON, of Bristol, arranged floral devices.

YORK CHRYSANTHEMUM.

NOVEMBER 15, 16, 17.—The twenty-sixth annual autumn show of the above Society was held in the Exhibition Building on these dates. Thirteen groups of plants arranged down each side of the building produced an excellent effect, especially when viewed from the end of the room or from the galleries. The exhibits of cut blooms were arranged on tables down the centre of the building. The arrangements of the show left little to be desired.

PLANTS.

The leading prize was that for a group of Chrysanthemums interspersed with foliage plants and occupying a space of 100 square feet. Five growers competed, the collective exhibits making a bold and effective display. Mr. V. Waterhouse, gr. to Mrs. W. T. OWBRIDGE, The Grange, Cottingham, Hull, won the 1st prize with a bold if somewhat flat arrangement of good material; 2nd, Mr. L. Hanchant, gr. to the HOTEL MAJESTIC, Harrogate, who followed Mr. Waterhouse very closely. Exhibits of Chrysanthemum plants in groups, each group filling a space of 80 square feet, were numerous. Mr. J. HIELDS, 12, Barlow Street, Acomb, York, easily won the 1st prize with handsome blooms on dwarf well-grown plants; 2nd, Mr. Wilkinson, gr. to E. SMITH, Esq., The Crescent, Selby. The groups of plants above alluded to are known as pillar groups. The pillars supporting the gallery are 17 feet high and these are required to be decorated and furnished with a base of plants 6 feet in diameter. One class is for miscellaneous plants arranged for effect. Among the six competitors, Mr. W. Curtis, gr. to J. BLACKER, Esq., Thorpe Villas, Selby, was awarded the 1st prize for a light and effective arrangement of suitable plants in which *Humea elegans* was effectively employed on mounds; 2nd, Mr. G. COTTAM, Alma Gardens, Cottingham Road, Hull. In a similar class for decorative varieties of Chrysanthemums, interspersed with foliage plants, seven growers competed. Mr. COTTAM mainly used single-flowered varieties with good foliage plants, and he secured the leading prize; 2nd, Mr. CURTIS.

Specimen trained plants of Chrysanthemums are invariably well shown at York. In the class for four incurved varieties, Mr. Everard, gr. to Mrs. GUTCH, Holgate Lodge, York, won the 1st prize with well-flowered examples of the varieties C. H. Curtis and Topaze Orientale. Mr. EVERARD also won for one plant of an incurved variety with C. H. Curtis. The specimen carried three dozen good blooms. Mr. Wheatley, gr. to Judge RAIKES, Leate House, Norton, Malton, won, for four plants of Japanese varieties. Plants of single-flowered varieties were numerous and good, Mr. EVERARD won for four specimens, having the varieties Mrs. E. Roberts, Miss Beattie Rowden, and Mrs. R. M. Parkinson, all of which were of full size and carried good flowers.

CUT BLOOMS.

These were of good quality, but probably not in such numbers as hitherto. The leading class was that for 36 blooms, half Japanese and the remainder incurved. Mr. McPherson, gr. to Lord LONDESBOROUGH, Market Weighton, won quite easily by the superiority of his incurved flowers, and his meritorious Japanese blooms, all of which were well staged. Mr. F. W. JAMESON, Aston Hall, North Ferriby, Hull, secured the 2nd prize, having especially good incurved flowers. Mr. MCPHERSON also won for 18 and for 12 incurved blooms, with excellent examples of popular varieties.

Japanese varieties.—These were extensively shown. Mr. MCPHERSON again asserted his superiority by winning the 1st prizes in the classes for 18 varieties, for 12 varieties, distinct, and for six blooms of any white, and for six of any yellow varieties. Mr. D. Williams, gr. to Earl FEVERSHAM, Duncombe Park, Helmsley, came second in these several classes.

Single and decorative varieties.—Sixteen growers entered in the class for three sprays of single Chrysanthemums, Mr. EVERARD winning with fully developed flowers of Mrs. Parkinson, Miss D. Bainbridge, Miss Beattie Rowden, Miss A. Holden, and Mrs. Roberts.

The best 12 bunches of any decorative varieties were shown by Messrs. MEAKSTONE & SON, Hull Road, Grimsby, York, whose examples included the varieties Source d'Or, Lizzie Adcock, Lady Selborne, La Triomphante, and Soleil d'Octobre.

Mr. W. L. APPLETON, Oakville, Melbourne Street, York, was awarded the 1st prize for a basket of Chrysanthemums with the variety Source d'Or effectively displayed in a mass.

Messrs. MEAKSTONE was first among 22 competitors for a vase of Chrysanthemums suitable for a drawing-room. This exhibitor also used flowers of Source d'Or.

Displays of Fruit and Vegetables were numerous and good.

Messrs. SUTTON & SONS, seedsmen, Reading, were awarded a Gold Medal for a collection of Potatoes.

Messrs. G. BUNYARD & SON received a similar award for 140 dishes of Apples and Pears.

Messrs. J. BACKHOUSE & CO., York, received a Silver Gilt Medal for a collection of flowering plants, Cyclamens, Begonias, &c.

THE EDINBURGH CHRYSANTHEMUM SHOW.

In addition to the honorary exhibits mentioned on p. 383, a group of Coniferae and berried plants was shown by Mr. David W. Thomson, nurseryman, Edinburgh, and was awarded a Silver Medal.

Obituary.

COLONEL ARTHUR TREMAYNE, of Carlew, Cornwall, who died on the 14th ult., at the age of 78 years, was one of the "six hundred" of Balaclava fame. The deceased gentleman was a great lover of plants, and introduced, during his many travels, a great many new and rare half-hardy plants to Carlew. Even recently his garden has been noticed in these columns. Of a very genial disposition, many a poor man and woman had to thank him for words of encouragement and cheer which made life tolerable. The loss to the neighbourhood is incalculable. He was deeply interested in the Spring show of Daffodils and flowering shrubs, Rhododendrons, &c. He was buried on November 17 at Mylor, quite close to the blue waters of Falmouth Harbour, and in close proximity to the demesne he loved so well and did so much to beautify.

MR. MARSLÉN, whose death on the 21st ult. we noted in our last issue, was manager for many years to Messrs. Charles Lee & Son at their nurseries, Wood Lane, Isleworth. He was lately in the service of Mr. L. Russell, of Richmond. In these capacities he was widely known, and will be greatly missed. He leaves a widow, one son, and three daughters.

HENRY BILLINGHURST.—Many of the older salesmen at Covent Garden will learn with regret that Mr. Henry Billingham, of Park Nursery, Selhurst, passed away on Thursday, November 23, aged 72. Although deceased has not attended the market during the last fourteen years, his name is well known there, for he was one of the first to cultivate Chrysanthemums in pots for sale in the market, and there are no doubt many market men who can recall to mind his kindly face and cheerful disposition. The business will be carried on by his three sons as usual.

ENQUIRY.

ECKLINVILLE APPLE TREES.—Can any of your readers tell me why my 10 year old trees of Ecklinville Seedling Apple won't bear fruit. They are fine clean pyramids that always look well and are full of fruit buds; I have tried different kinds of pruning of both root and branch, also draining and manuring. The soil is of sandy loam and is not deficient in lime. From 50 trees I have not had 10 bushels of fruit in 10 years; the trees flower freely but no fruits set. Last year I tried grafting Cox's Orange Pippin on some of them, but from present appearances I doubt the success of the experiment. Bismarck, Bramley's Seedling, and Lane's Prince Albert do well in the same orchard, Duchess of Oldenburg and Beauty of Bath do fairly well. W. H. T.

[The failure is no doubt due to imperfect fertilization, but whether this is caused by an inherent deficiency in the flowers themselves, or from lack of Bees and other fertilizing agencies when the trees are in flower, or from unsuitable weather at the time we cannot say.—ED.]

COMMUNICATIONS RECEIVED.—Frank Reader—A. B.—J. V. C.—T. Coomber (thanks) S. W. F.—T. H. Cook—R. G. Confidential—E. H. W. H. E. Sec. Linn Soc.—E. T. C.—Rev. H. F.—D. W. T.—Jakeman and Carver—D. P.—W. G. S.—W. B. and Sons—H. E.—M. Brussels—T. C.—F. M.—T. H.—J. F. McL.—A. B.—P. M. T.—T. H.—J. W.—H. J. C.—G. P. M.—National Amateur Gardeners Association—H. A. P.—H. E. P.—J. R. B.—W. B. H. & Sons—J. C. W. & Son—C. Jones—D. Bliss—W. G. S.—A. H. P.—F. B.—J. T.—R. M. C. L.—Nice—A. B.—W. J. V.—J. I.—T. J. F.—L. R.—W. W.—R. J. A.—G. B.—F. J.—J. H.—J. R. W.—F. H. W.—W. J.—T.—R. L. C.—J. McC.—Smithfield Club—T. H. C.—N. D.

For Market and Weather Reports, see pages x. and xi.

ANSWERS TO CORRESPONDENTS.

APPLE BARK: W. W. C. & A. J. The bark is infested with the common Mussel-scale—*Mytilaspis pomorum*. It may be removed by thoroughly moistening the surface of the infested bark with lather of any kind of soap, and then scraping the surface with a blunt knife. The following mixture has also been found serviceable in destroying scale: One hogshead of lime-water (use half a bushel of lime to this quantity of water), add 4lbs. of flour of sulphur, six quarts of tobacco-water and 4lbs. of soft soap. The composition may be applied either by a brush or by syringing, and should be allowed to remain on for about a week or ten days, when it should be washed off with clear water.

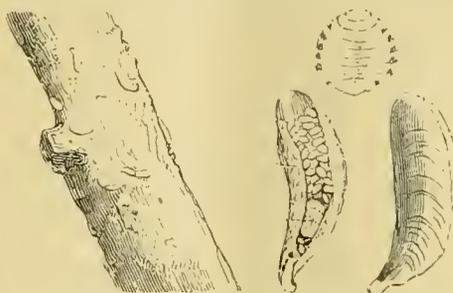


FIG. 150.—THE MUSSEL SCALE, MYTILASPIS POMORUM.

ARUM LILIES (RICHARDIA ÆTHIOPICA) IN CORNWALL: J. T. R. Several illustrations have been given in our pages of these plants growing in the open air at Trelassick Gardens, Truro, and as recently as in our issue for May 27, 1905, p. 324.

BEGONIA GLOIRE DE LORRAINE: J. S. The rusty appearance of the leaves is caused by mites invisible to the naked eye. Dip the plants in tobacco-water occasionally.

CANADIAN FRUIT FARMING: H. T. Apply to the Emigration Department, Canadian Offices, Parliament Street, Whitehall.

CELERY: R. H. Celery is none the worse for being left in the ground during severe frost, but owing to the frost hardening the soil it is sometimes a matter of considerable difficulty to lift the plants when required for use. Read the note on this subject under the heading "Kitchen Garden" on p. 301.

CHRYSANTHEMUM BUDS INJURED: C. Bros. The injury to the buds has been caused by frost.

CLUBBING IN BRASSICAS, ETC.: G. H. Procure a copy of *The Calendar of Garden Operations*, price 7½d post free, from our publishing department, and treat the ground according to the directions given there.

CYRIPEDIUM SEED: A. B. You will probably obtain the best results if you sow the seed at once; part on the surface of the compost in the pot containing the plant which bore the seed, and part on that of another which is kept continually moist. Place the plants on which the seeds are sown on inverted flower-pots and keep them under observation until the seeds germinate, when the young plants can be picked off as soon as they can be handled.

FERNS AND CYCLAMEN LEAVES: *Hibernia*. Both the Fern fronds and the Cyclamen leaves show indications of having been subjected to a too close atmosphere, resulting in attenuated weakly growth. We notice traces of thrip on the specimens. The small eruptions on the Cyclamen leaves have been caused by aphid punctures when the former were in a young state. Apply suitable ventilation to the plants, dip the Cyclamen foliage in tobacco water, and fumigate the Fernery judiciously with a suitable vaporiser such as the XL-All Compound.

FRUIT CULTIVATION: W. M. Your questions are too ambiguous. We are unable to determine the precise information you require.

GARDENERS' WAGES: G. W. The head gardener would be considered a domestic servant, but not the under gardener. We do not think you can demand full wages during illness caused by an accident sustained when off your employer's premises and not carrying out his work.

GOOSEBERRIES FOR DESSERT PURPOSES: A. Clifton. Half-a-dozen good varieties include Langley Gage, Langley Beauty, Whitesmith, Yellow Champagne, Greengage and Golden Gem.

HYACINTH: G. A. M. The plants are affected with basal rot. Get fresh stock.

MUSCAT GRAPES: W. L. L. The Canon Hall variety was raised at Canon Hall near Barnsley, and is generally considered to be of more robust growth than Muscat of Alexandria. The berries are rounder in shape and of larger size, therefore are more handsome in the long tapering bunches than those of Muscat of Alexandria, which, however, have richer flavour than the Canon Hall variety.

MUSHROOMS: P. B. We do not know of a book which deals exclusively with the subject. There is a small book by Mr. J. Wright entitled *Mushrooms for the Million* which you may be able to pick up at a second-hand bookstall. The cultivation of Mushrooms and Rhubarb would not produce specially poisonous gases, but their cultivation in cellars under a dwelling house is not to be recommended. Mustard and cress does not require to be grown in a dark room. If it is grown under such conditions the tiny plants will be drawn very weakly, and they will, of course, be blanched.

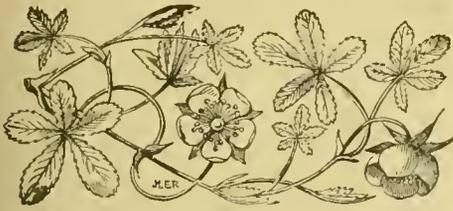
NAMES OF FRUITS: S. & S. 1, Olivier de Serres; 2, the specimen was decayed.—*Miss Hamilton*. 1, Lane's Prince Albert; 2, Margil; 3, Jolly Beggar.—*Carnarvon*. 1, Soldat Laboureur; 2, Marie Guise.—*J. M. S.* Cox's Orange Pippin.—*W. A. B.* 1, Wyken Pippin.—*C. C.* Maltster.—*C.*, Peterborough. 3, Nec Plus Meuris.

NAMES OF PLANTS: E. M. S. 1, Codium (Croton) var. Oerstedii; 2, C. Johannis; 3, C. Countess; 4, C. Mortii; 5, C. Emperor Alexander; 6, C. Reedi; 7, C. acubifolia; 8, C. Disraeli; 9, C. interruptus.—*Carnarvon*. The Orchid is *Oncidium ornithorhynchum*, and the Fern *Davallia canariensis*.—*H. J. Clayton*. *Catasetum* Trulla.—*G. D.* 1, Cedrus probably C. Deodara; 2, Cupressus pisifera; 3, The young state of Cupressus funebris; 4, Pernettya mucronata; 5, Thuya gigantea; 6, Cupressus Lawsoniana.—*W. T. G. L.* 1, Pernettya mucronata; 2, Piptanthus nepalensis; 3, Olearia Haastii.—*Hibernia*. 1, Adiantum capillus veneris var.; 2, A. assimile; 3, A. Waltoni; 4, Sibthorpia europaea; 5, Chaenostoma hispidum.—*R. T. H. O.* Chrysanthemums for naming should be sent to a nurseryman who has means of comparing them with his named plants.—*G. W.* Carnation Winter Cheer, or one of its newer sports, Winter Cheer is of relatively dwarf habit; its progeny are taller in growth.—*A. B.* 1, Cattleya labiata; 2, Oncidium pretectum.—*J. B.* Crataegus, probably tanacetifolius.

SOUVENIR DE LA MALMAISON CARNATION: E. L. 1. The plants are attacked by a fungus—*Helminthosporium*, of which the first stages are now apparent in the leaves. Burn all fallen and the worst of the diseased leaves and spray the remainder with a weak solution of Gibbur's Compound. 2. *The Florists' Exchange*, published at 2, 4, 6, 8, Duane Street, New York, and *The Florists' Review*, published at 520, Caxton Building, 334, Dearborn Street, Chicago, would suit your purpose for advertising.

VARIETIES OF CHRYSANTHEMUM SUITABLE FOR DECORATION UNDER LAMPLIGHT: J. D. C. Varieties selected for use under any artificial light should be such as have bright surface tints, which reflect distinctly from the ground colours, whether such ground colours be of white or yellow. The colours should not be a mere suffusion, as in the majority of so-called bronzes and pinks, nor should they be so intense that the ground colour is entirely unreflected, as in deep crimsons or purples. When we also allow for other considerations of adaptability, there is not such a wide choice as might at first appear likely. The following varieties are the most likely to suit your purpose. In bronze shades: Source d'Or, Lady Lennard, Souvenir de Lombrey, Old Gold, and Tuxedo. In pink shades: O. J. Quintus, Viviani Morel, and Framfield Pink. The flowering period of these varieties extends from early in October until December.

WEED IN TURF: W. B. The intruder is *Prunella vulgaris*. Heavy dressings of manure, or the application of sulphate of ammonia, will eventually cause its disappearance, but it will be better to remove the turf and supply fresh.



THE

Gardeners' Chronicle

No. 989.—SATURDAY, December 9, 1905.

CONTENTS.

Books, notices of—	Orphan Fund, Royal	409
Botanical Magazine,	Gardeners' ...	409
Glossary of Botanic	Pears, variation in ...	410
Terms ...	Pears, culinary, in Nov-	410
Future Forest Trees...	ember ...	410
The Garden that I	Phalænopsis Schilleriana	409
Love ...	Plants, adaptation of, to	401
Books, sale of gardening	environment ...	410
Carnations, a winter ex-	Potato census, a ...	409
hibition of ...	Rain-water in Yorkshire	409
Cattle Show, the Smith-	Rubber, Para ...	409
field ...	Seed Trade Assistants	409
Chrysanthemums ...	at Dinner ...	409
Crystallisation of fruits	Societies—	
and flowers, lecture	Aberdeen Chrys. ...	413
on the ...	Barnsley Chrys. ...	413
Cyrtopodium, The Baron	Battersea Amateur Chrys	414
Dyer, Sir William	Bolton Horticultural ...	413
Thiselton, retirement	British Gardeners' Asso-	414
of ...	ciation ...	414
Eleutherococcus Henryi	Chester Paxton ...	413
Eleutherococcus leu-	Coventry Chrysanthem-	413
chorizus ...	um ...	413
Gardeners and colonisa-	Leeds Paxton ...	414
tion ...	Liverpool Horticultural	413
Hardy flower border—	Manchester and North	412
Aspilia huphthalmi-	of England Orchid ...	412
flora ...	National Chrysanthem-	414
Hemp, the flowers of	um ...	414
the ...	Newport Chrysanthem-	413
Kew, Appointments	um ...	413
from ...	National Fruit Growers'	415
Law note ...	Federation ...	415
Mango, the ...	Putney and Wandsworth	415
Nursery notes—	Chrysanthemum ...	415
Messrs. T. Rivers &	Royal Horticultural ...	410
Sons, Sawbridge-	Société Royale Linné-	414
worth ...	enne de Bruxelles ...	414
Obituary—	Spray of flowers, What	410
Jaques, Mrs. ...	is a? ...	410
Fearnley-Sander, Mrs.	Victoria Park, Stafford	409
Ilchester, Lord ...	Week's work, the	406-407

Cyrtopodium x The Baron	405
Dyer, Sir William T. Thiselton—Portrait of	408
Eleutherococcus Henryi	403
Eleutherococcus leuochorizus	404
Ilchester, Lord, Portrait of the late	408
Landscape by a river's bank near Guildford (Supplementary Illustration)	412
Sophrro-Cattleya Doris	412

THE TRUE DARWINISM.

PRESENT-DAY ecologists* on the Continent, in America, and England, are discovering that the origin of adaptive vegetative structures in plants—which systematists regard as affording varietal, specific, or generic characters, as the case may be—is not due to natural selection. They express the cause by the single word "adaptation," implying the fact that structures alter themselves under changed conditions of life by means of a responsive power residing in the protoplasm and the nucleus.

This process is identical with that which Darwin described as "the direct action of the conditions of life" upon the organism, "leading to definite results," namely, those seen in adaptive structures.

It is this interpretation of botanical geography—or, in a word, evolution—which I have called "The True Darwinism"; as Darwin himself first supplied us with it.

It is somewhat rapidly replacing "Darwinism," i.e., "The Origin of Species by means of Natural Selection."

Darwin's description of his theory of natural

selection is as follows:—"Can we doubt (remembering that many more individuals are born than can possibly survive) that individuals having any advantage, however slight, over others, would have the best chance of surviving and of procreating their kind? On the other hand, we may feel sure that any variation in the least degree injurious would be rigidly destroyed. This preservation of favourable variations and the rejection of injurious variations I call Natural Selection." ("Origin of Species," Ed. 1., pp. 80, 81.)

In the introduction of the First Edition (1859), Natural Selection is described as being "the main, but not the exclusive means of modification"; for Darwin says (p. 11) "Some slight amount of change may, I think, be attributed to the direct action of the conditions of life." But on p. 480, in the "Conclusion" to the first edition, he seems to have forgotten to add the above, attributing evolution entirely to natural selection. "Species have been modified, during a long course of descent, by the preservation, or the natural selection, of many successive slight favourable variations."

To this sentence the following is added in a later edition—"Aided in an unimportant manner, that is in relation to adaptive structures, by the direct action of external conditions."

In 1868, or nine years after the "Origin" appeared, Darwin published his *Animals and Plants under Domestication*. In this work he gives a full explanation of the "Direct Action of the Conditions of Life," as follows: "By the term definite* action, I mean an action of such a nature that, where many individuals of the same variety are exposed during several generations to any change in their physical conditions of life, all, or nearly all the individuals, are modified in the same manner. A new sub-variety would thus be produced without the aid of selection." (Vol. II., p. 217.)

In the Sixth Edition of the "Origin" (but I have not seen any other than the First) there is added the second paragraph in Chap. I, containing the following:—"The effects [of the external conditions] on the offspring are either definite or indefinite. They may be considered as definite when all or nearly all the offspring of individuals exposed to certain conditions during several generations are modified in the same manner." (Ed. 6th, p. 6, 1878.)

We thus see that Darwin completely severs "the definite" results, produced in response to changed conditions of life, from the "indefinite" results, which require the aid of natural selection so that the fittest may survive. *Definite* results mean, then, that *all* the offspring have "favourable" adaptations, there being no "injurious" ones; while *indefinite* results consist of both; from which the majority must be injurious, and a few only favourable. The two processes are, therefore, according to Darwin, obviously *mutually exclusive*.

It may now be observed that, after 45 years, "the Origin of Species by means of Natural Selection" still remains an unproved theory. "No one," said Weismann, has ever seen natural selection in action"; nor has anyone ever seen "injurious" variations among any large batches of seedlings growing under "changed conditions of life."

One is not surprised, therefore, in reading Darwin's letter to Prof. Moritz Wagner, of Munich, in 1876, that he said:—"The greatest mistake I made was, I now think, that I did not attach sufficient weight to the direct influence of food, climate, etc., quite independently of Natural Selection. When I wrote my book, and for some years later, I could not find a good proof of the direct action of the environment on the species. Such proofs are now plentiful." (*Life*, vol. iii., p. 159.)

Now let us turn to the experiences of ecologists to-day.

Mr. J. A. Thomson, writing on "Synthetic Summary of the Influence of the Environment upon the Organism (Royal Phys. Soc. Ed., 1888), says:—"No attempt to explain the Adaptation of the Organism to its Environment can be complete without recognition that external influences, in the widest sense and in various degrees of directness, have, and have had, an important transforming and adaptive action."

Dr. W. G. Smith (Leeds), writing to me on his excellent survey work of plant distribution in Yorkshire, says:—"It is impossible to do this survey work without being impressed with Adaptation."

Prof. Warming, of Copenhagen, in describing adaptations among Xerophytic plants, remarks:—"I answer briefly to the question which arises, namely, whether these adaptations to the medium should be regarded as a result of Natural Selection, or whether they owe their origin to the action, in modifying forms, exercised directly by the conditions of the medium—I adopt this latter view. . . The characters of adaptation thus directly acquired have become fixed."

M. Costantin, speaking of arctic plants, says:—"We are led to think, so to say, inevitably, that one can only explain the general characters of arctic plants by adaptation, e.g., if all arctic plants are perennials, it is because they live near the pole. It is the conditions of life which have created this hereditary character." (*Les Végétaux et les milieux cosmiques*, p. 85.)

Dr. Weismann also said:—"We are driven to the conclusion that the ultimate origin of hereditary individual differences lies in the direct action of external influences upon the organism." (*Essays on Heredity*, p. 279.)

Although Weismann and others might say adaptations can be accounted for by Natural Selection, we have Darwin's authority for the statement that adaptations arise by the direct action of the environment, *without the aid of Natural Selection*.

The evidence lies in two directions, induction and experimental proofs. Though botanists often hesitate to accept the first, the accumulation of the latter is so abundant that it is difficult to understand why "Darwinism" is still preferred by many.

Numerous other writers and experimenters confirm the above, as Noll, Schenck, Bonnier, Flahault, as well as many in the United States.

It only remains to add that Natural Selection may be seen everywhere in action—to reverse Weismann's dictum—but it refers to the distribution, not to the origin, of Species. It may be described as the result of the struggle for existence between plants, with the survival of the better adapted under the circumstances. *George Henslow.*

* "Ecology" means "the study of plants at home," as "Economy" means "the right ordering of the home."

* He here applies the word "definite" for "direct"; otherwise it applies to the "variations."

CHRYSANTHEMUMS.

AMERICAN VARIETIES.

NOWADAYS there are but few of our growers who know much about the American seedling Chrysanthemums of nearly 20 years ago. Gradually they have ceased to be imported until very few of them are left, but in a few private collections, in the public parks and in the hands of the French growers, there are still some that remain.

These are some of the most effective and useful for decorative purposes: William Tricker, a dwarf growing, pretty, bright rosy-pink Japanese, is much appreciated and still retained in most of the parks. We have also seen this season J. H. Runchman, a bright golden yellow which reminds us of the Pitcher and Manda collection that passed into the hands of Mr. H. J. Jones, Hairy Wonder being another of the set. Delaware, the Anemone-flowered variety, is American, as is Mrs. Judge Benedict of the same section. Mutual Friend, a big white Japanese, has also been seen this season in good form. Louis Boehmer, the hairy novelty that followed Mrs. Alpheus Hardy, came to us from the States, and is still in the Battersea Park collection. Good Gracious, one of the most distinct Japanese in cultivation, is another. Mrs. E. G. Hill is an old variety, an early bloomer, very tall, but a useful back row plant for mixed groups. I have also noticed Simplicity, a white Japanese. The above are probably all the Americans that now remain in cultivation here, with the exception of a few others that may have been past their best at the time of my visits to the various Metropolitan parks.

NEW SEEDLINGS AT THE PARIS SHOW.

THERE were nearly 20 exhibitors of new Seedling Chrysanthemums at the recent Paris Show. An immense number of novelties of all kinds were submitted to the jury, and 56 first-class certificates were awarded. Yet, nevertheless, I was rather disappointed with the novelties as a whole. Most of the raisers present showed gains in a state of development that required great prophetic skill to decide satisfactorily as to their merits, and it is curious that upon comparing my notes of these new varieties with the official list of awards, there is, from an English standpoint, considerable diversity of opinion, many of those awarded certificates not being included in my notes, while others that did not secure such a distinction have been noted as promising varieties.

M. CALVAT's stand was the most imposing, and his flowers exhibited the highest degree of cultivation. Of his lot ten received first-class certificates, and the following is a list of his best varieties staged, viz. :—

Farfalt.—A very large Japanese flower with florets curling at the tips; very full and compact, a spreading flower in form; colour golden yellow tinged with bronze. (F. C. C.)

Lucile Duplessis (Japanese).—A full, double flower of excellent form and very large size; colour, lilac mauve passing to white in the centre.

Madagascar (Japanese).—Decidedly one of the largest, of much substance; a full, compactly built, grand flower, of a lovely shade of rich, golden yellow colour.

Mde. Simon Jossier (Japanese).—Of medium size only as shown, but very pretty in colour, which is white, slightly tinted and shaded with rosy purple.

Mme. L. M. Cochet (Japanese).—A fine flower of reflexing form; florets, long and drooping, bright rosy lilac mauve, with centre slightly tinged yellow. (F. C. C.)

Camille Desmoulins (Japanese).—Colour reddish orange and bronze, centre golden; reverse same colour. A fairly large variety.

Sergent Loyv.—A very fine Japanese, with good florets, which are rather broad; colour deep rich golden yellow. (F. C. C.)

President Loubet.—Immense in size, and only fit for the show board, where its size would tell. Colour dull creamy-white, slightly tinted pink in the centre; florets very long, curling at the tips. (F. C. C.)

Bébé la Neige.—Medium size, close and compact in build; colour a pretty shade of paper-white.

Mme. L. Roussel (Japanese).—This variety has narrow florets of rosy amaranth, and reverse of silver.

Fusée (Japanese).—This is one of the best, a big spreading flower with long florets that become shorter towards the centre; colour pure pale yellow; a fine bloom. (F. C. C.)

Etoile Polaire (Japanese).—A large white, solid-looking bloom, with very good florets.

Ernest Renan (Japanese).—This flower has broad florets, and is yellowish-bronze in colour.

Mme. E. Mulwain (Japanese).—A very good, large reflexing flower of a soft shade of pale blush pink. (F. C. C.)

Mme. E. Salètes (Japanese).—A very large flower with florets of medium length; colour bright rosy amaranth tinged with white and passing to white towards the tips. (F. C. C.)

President Gérard (Japanese).—A big globular flower with grooved and incurving florets, a compact and solid-looking bloom; colour deep rich golden bronze. (F. C. C.)

Janssen (Japanese).—A flower of considerable depth; white slightly tinted at the tips with mauve colour, centre pale yellow. (F. C. C.)

M. Loiseau Rousseau (Japanese).—A very large flower having long, grooved, pointed florets; colour lilac-mauve with silvery reverse. (F. C. C.)

Opale.—Not large, but a pretty flower of pearly-white, tinted with lilac-mauve.

Incandescence (Japanese).—A flower of spreading form; colour deep rich orange-shaded bronze-carmine, reverse golden.

Victoria and Albert (Japanese).—A large flower, very close in build, pale golden yellow.

MR. ROZAIN-BOUCHARLAT had a very good collection of seedlings; most of the blooms, however, were small. I think the following are the best :—

Pelican Jaune (Japanese).—A very large flower with long, twisted and intermingling florets which are rather broad; colour rich, deep golden yellow. (F. C. C.)

Boule de Laine (incurved).—Of excellent form but the colour rather against it. Dull creamy white, tinted. (F. C. C.)

MR. LIGER-LIGNEAU is also a raiser of some repute, but there is an art in staging new seedlings that requires to be studied. Most of this gentleman's seedlings were small, but in spite of that I think there is a future for—

Mme. De Pallier (incurved).—A globular flower of the old show type, florets broad and grooved, forming an excellent bloom in build, pure white. (F. C. C.)

The Marquis DE PINS was a long way behind his old form, and even now is a doubtful raiser. At any rate there were some excellent blooms of his raising all over the show, but they were less numerous than we had reason to expect. I say he is a doubtful raiser, chiefly because his old seedlings have not as yet done well in England for reasons I do not pretend to understand. Among his novelties were :—

Marie Couillard (Japanese).—A large flower with rather broad florets, colour creamy-white.

Baron Gérard (Japanese).—Very large with long florets, a spreading flower, pure white.

Simon Paquerette (Japanese).—Another large flower of lilac-mauve, centre white.

Souvenir de Paul Couillard (Japanese).—A large starry-shaped flower with broad, flat florets, colour salmon-rose on a golden ground, reverse golden. (F. C. C.)

Congrès de 1905 (Japanese).—A nice medium sized flower, not unlike a very big white Christine, very pure in colour. C. H. P.

CHRYSANTHEMUM GLITTER.

AT the early November meeting of the Royal Horticultural Society, Messrs. W. Wells and Co., Ltd., Merstham, exhibited a new variety of Chrysanthemum bearing the name of Glitter. The variety was placed before the Floral Committee as a "market variety," and while I am of opinion that the majority viewed the variety as one of much merit, it failed to obtain any award because

a section of the committee desired to see a plant. As this legitimate desire is hardly likely to be realised this season—the variety in question being more readily exhibited in the cut state—there is the possibility of an excellent variety not receiving its due share of notice.

The name "Glitter" is somewhat suggestive of the glistening richness of the flowers, which are coloured golden-yellow. The plant, I am informed, is only 3½ feet high, the flower-heads solid and compact, florets comparatively short and slightly drooping. An important point is the stiff character of the stems, and the short, rigid character of the peduncle. I was greatly impressed with the merit of this new variety, and regard it as one of the finest of its kind ever exhibited. E. H. Jenkins, Hampton Hill.

DECORATIVE VARIETIES.

NOT only in private gardens, but at all the autumn shows, are seen numerous examples of the type known as decorative, or free-flowering, Chrysanthemums. Cultivators and admirers of sections other than the huge Japanese blooms and the stiff-looking, globular specimens of the incurved sorts, realise how valuable are varieties that give a wealth of flower with but a minimum of labour. No one, not even the exhibiting enthusiast, can deny the great value of the decorative section and their utility for cut purposes in vases, or for grouping as plants. I notice visitors at flower shows stop and admire this type of flower, especially when they are arranged in vases with foliage other than their own. In this section I do not include the single-flowering varieties, which form a class by themselves. As a typical variety of the "decorative" section I name that universal favourite, Source d'Or. It is not too much to say that this is quite the most popular Chrysanthemum in existence at the present time. At Southampton, Cardiff, Birmingham, York, Sheffield and Edinburgh it was largely employed in classes where free flowering varieties were required. The bright orange-coloured florets, with their gold shading, at once attract attention. Huge masses of this flower, arranged lightly in baskets and in vases, at the recent York Show constituted a notable feature. As many as 26 exhibitors take part in these decorative classes. Other varieties noted as being extensively employed were, Lizzie Adcock, a clear yellow sport from Source d'Or; Soleil d'Octobre, a bright yellow variety; and the bronze sport from the last named; William Holmes, a rich crimson form; Viviand Morel, of a blush mauve shade, Niveum, white; Princess de Brancore, also white, but with green shading in the centre; Phœbus; Souvenir de Petite Amie; Mm. Louis Remy, a pleasing flower of chrome yellow colour; Elaine, still the purest white Chrysanthemum in existence; Mrs. J. Ritson, also white; Charles Davis, of yellow and bronzy buff colour; G. W. Childs, with florets of a dark velvety crimson shade; Lady Hanham, rosy cerise; Mde. Philippe Rivoire, a good white variety; N. C. S. Jubilee, a delicate shade of flesh pink; W. R. Church, the florets are crimson with a bronze-coloured reverse; La Triomphante, lilac, Yellow Triomphante; and F. W. Vallis, yellow. Many other suitable varieties might be added, but the above-named appear to be popular with exhibitors, which proves their value for furnishing a profusion of flowers. Classes for groups of decorative varieties are now provided in several Societies' prize schedules. E. M.

ELEUTHEROCOCCUS HENRYI.*

FIG. 151.

THIS curious and interesting member of the Aralia family forms a shrub 3-10 feet in height. The stems are brown, somewhat rough, and more or less clad with stout recurved prickles. Leaves alternate, digitately 5-foliolate, with ovate-lanceolate, serrate leaflets. The upper surface of the leaflet is scabrid, whilst the veins of the under side are covered with short brown

* Oliver, *Hooker's Icon. Pl.*, tab. 1,711.

hairs. The flowers, which are produced in August, are small, greenish-white, and collected into numerous terminal, long-stalked, nearly spherical umbels at the end of the current season's growth. These flowers are followed by dense heads of black fruits, and in this stage the plant is not uninteresting as an ornamental shrub. These fruits last on the plant until very late in the season. The species is a native of the woods and forests of Central China, between 3,000-5,000 feet, and was introduced into this country by Messrs. Veitch through their collector, E. H. Wilson. The root-bark of this plant is valued as a drug by the Chinese, whose name for the plant is Wu Chia p'i.

committees in the several departments of Botanical Science to revise these technical terms periodically, and to recommend which should be retained and which eliminated or ignored. Mr. Jackson's list would furnish an excellent basis to work upon. It contains, we see, the latest descriptive terms in "Ekology" and other departments of the science. How terrible some of these names are may be shown by one illustration, viz., "ergasiophygyter," a term applied to a plant that has escaped from cultivation! There are so many neologisms already inserted that we hesitate to suggest any increase in their number, but we note the absence of the word "ethology," to denote the adaptation of plants to their environment. "Allotrophic" is

This is convenient for the German student, but is of little value to the botanists and horticulturists of other nations. We hope that in a new edition an index of Latin names, corresponding to the German equivalents, will be given for the benefit of science generally and not of German students in particular.

Terms used in a scientific sense should be written in a language that is common to all educated men of science. In the present volume, for instance, we find "ankömmlinge" given as the equivalent of Watson's "Casuals." A German or a French reader would be as much inconvenienced by the English word as others by the German expression, but all would be catered for if a suitable Latin



FIG. 151.—ELEUTHEROCOCCUS HENRYI WITH FLORAL DETAILS.

NOTICES OF BOOKS.

TECHNICAL TERMS.

We are very glad to have the opportunity of welcoming the issue of a second edition of Mr. Daydon Jackson's valuable list of the technical terms made use of in Botany.* The explanation and the derivation of each word are given and so many additional words are inserted that this second edition comprises some 50 more pages than its predecessor. How many of these terms are mere synonyms, how many are obsolete or unnecessary, it was not for Mr. Jackson to decide, but looking at the alarming rate at which neologisms are being coined, it would seem that the application of some law of priority or of selection was called for. A Botanical Congress would do good work by appointing

another word made use of in the Brussels Botanic Gardens to signify plants which derive their nourishment from other living beings, whilst "Hydrochory" is applied to cases in which the seed is dispersed by means of water. It is clear then that finality in these matters is not to be expected. One imperative duty we have to perform is to thank Mr. Jackson for the conscientious way in which he has performed his troublesome task.

Mr. Camillo Karl Schneider's book* covers the same ground as Mr. Jackson's but is in some particulars more fully developed on the plan of E. Germain de Saint Pierre's Nouveau Dictionnaire de Botanique.

It is written wholly in German and the terms in that language are arranged in alphabetical order.

equivalent were devised. In the meantime, at the risk of being deemed inconsistent, we hope the terrible seven syllable word already alluded to will not be taken as a synonym for "Casuals." Mr. Schneider's book is provided with numerous illustrations which greatly add to its value.

"THE GARDEN THAT I LOVE."

READERS who are fond of reading about gardens, with a good deal of extraneous matter, will be charmed with an edition of the much appreciated book by the Poet Laureate bearing the above title and just issued by Adam and Charles Black. It is not necessary to say anything of the text, nor of the delicate lyrics by which it is graced, but we are constrained to mention the distinguishing features of the present edition, consisting of several dainty, coloured illustrations by Mr. G. S. Elgood, which add greatly to the attractions of the book and, what is better, give us an idea what it is like.

* A Glossary of Botanical Terms. By B. D. Jackson. Duckworth & Co.

* Illustriertes handwörterbuch der Botanik. Leipzig, W. Engelmann.

On p. 65 the name of a well known Rose is, as usual, misspelt. It should be Félicité et Perpétue.

FUTURE FOREST TREES. By A. Harold Unwin. (T. Fisher Unwin.)

This, we are told, is a translation from the German, the object being "to present, in the most concise manner, the results of numerous experiments chiefly made in Germany with some American trees, most of which are known as ornamental specimens, but have not received due attention in forest plantations here." The author enumerates many of the North American trees which have been introduced into Germany, some of which excel the German species in indifference as to soil requirements, in frost-hardiness and in rapid growth. Hickory, Walnut, Douglas Fir and White Pine are specially mentioned. The book is replete with statistical information relating to the importation of timber into Hamburg and other German ports, and to the exports from Canada and the United States. An alphabetical list of the American timber trees is given, with short references to their value in German forests. In reference to this latter matter special attention is called to *Pinus Banksiana*, which will exist under the extremest conditions of temperature and is stated to be superior to all other kinds of trees on the poorest, driest, sandy and gravelly soils, and even in swampy districts. It is of high value for the afforestation of waste-lands, the formation of protective forest, for fixing the soil of sand dunes and similar purposes where shelter and protection are required. On the whole, the most valuable acquisitions for forestry purposes are the Robinia or false Acacia, the Weymouth Pine, the Douglas Fir, and the Banksian Pine. Next come Hickory and Walnut (*Juglans nigra*). We miss any mention of *Pinus contorta* and *P. inops*, which are therefore presumably not hardy in Germany. Dr. Unwin's book is worthy the attention of all engaged in planting operations.

ELEUTHEROCOCCUS LEUCORRHIZUS.*—(FIG. 152.)

This species is closely allied to *E. Henryi*, but is of weaker growth and smaller stature. The stems are bright green, glabrous, with usually only an occasional prickle, and this immediately beneath the base of the leaf-stalk. The leaves are digitately 5-foliolate, with lanceolate, acuminate, bi-serrate leaflets. The leaves are membranous and covered with bristle-like hairs, which are strongly developed on the mid-ribs of the underside. The leaf-stalks are glabrous, and sometimes have one or two prickles on their lower side.

The flower and fruit are smaller than in *E. Henryi*, and are borne in the same manner and at the same time of year. Like the other species, this is a native of the mountains of Central China, and is one of Wilson's introductions to Messrs. Veitch's establishment. The root-bark is used as a drug, being distinguished as the White Wu Chia pi by the Chinese.

THE HARDY FLOWER BORDER.

ASPILIA BUPHTHALMIFLORA.

ALTHOUGH the genus *Aspilia* is a somewhat large one, consisting of more than 40 species distributed over Central and South America, Tropical Africa and Madagascar, it has not, I think, been hitherto represented in cultivation. In affinity it is closely allied to *Helianthus*, but cannot be compared to the members of that genus when considered as subjects for use in the garden. *A. bupthalmiflora* is a native of the Argentine region of South America, from whence seeds were received by Mr. Engelmann, of Saffron Walden, last spring. From these plants were raised which produced flowers in August. The plants are of bushy habit, growing about 18 inches high, with

rough hairy stems and lanceolate leaves, having irregularly toothed margins. The flowers are deep golden yellow in colour, after the style of those of *Heliosis laevis*, and are 2-3 inches in diameter. It is evidently only of annual duration, and while an acquisition from a botanical point of view, it will hardly, judging from present appearance, make a first-rate decorative plant. *W. Irving, Kew.*

NURSERY NOTES.

NOTES FROM MESSRS. T. RIVERS AND SONS, SAWBRIDGEWORTH.

THE Orange in about twenty varieties has long been cultivated in these nurseries, as well as several kinds of Lemon and Lime. The visitor to the nursery at this season will find in the span-roofed house set apart for the cultivation of these plants several large trees loaded with numerous fruits in the ripening stage, and some of last year's fruits. Those with the heaviest crops were Brown's, St. Michael's, and Bitten-court, all of which are growing in the borders. Others less well cropped this year are the Silver or Plata—a variety received from St. Michael's, of delicious flavour; the White, of good flavour and white pulp; the well-flavoured Egg variety, and Navel or Embiguo, whose fruit has a nipple-like excrescence at the top. Other varieties observed were St. Michael's, Tangierine, and Jaffa. As Messrs. Rivers observe in their catalogue, "Oranges can be grown in this country with a portion of the skill and care

that is bestowed upon Grapes." During late autumn, winter, and early spring, a genial minimum warmth of 50° to 55° Fahr. is needed to mature the crop of fruit, and in spring, to favour the setting of the blossoms. As the fruits are left on the trees till quite ripe, their flavour is superior to that of imported fruits, which obviously must be gathered some weeks before they are fully ripe.

In an orchard house there were noted the remaining trees of specimen Apples, dead ripe and possessing the exquisite colouring of these fruits when grown under glass. Conspicuous for size and colour were the varieties—the Queen, Belle de Pontoise, Gascoyne's Scarlet, King of Tompkin's County, etc. The potting and re-potting of fruit trees was in full swing, those for the former operation being shapely specimens of from 4-6 feet in height, lifted from the quarters, furnished with perfect "wigs" of roots and set with plenty of fruit buds, promising indeed for next year's cropping. The practice of cutting back the roots is much less carried out than formerly; and it appears to be more in accordance with reason, the reduction of rooting space by pot culture being a sufficient check on the over production of wood growth; and the timely application of nitrogenous manure mixed with heavy soil as a top dressing in the summer affords nourishment to the plants when that in the potting soil has become somewhat spent.

Fruit trees of all kinds appear to possess remarkably well ripened shoots, and none

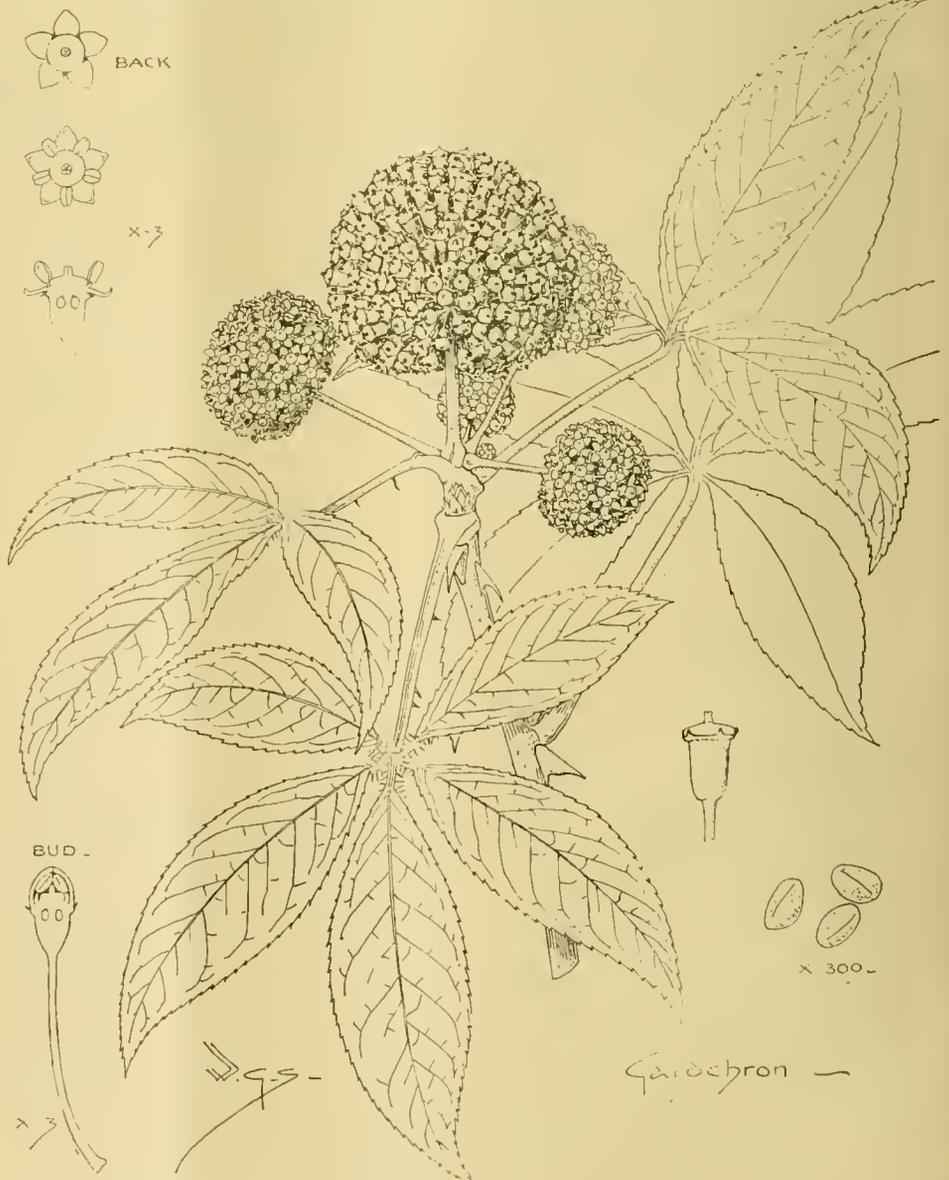


FIG. 152.—ELEUTHEROCOCCUS LEUCORRHIZUS WITH FLORAL DETAILS.

* Oliver, *Hooker's Icon. P.*, under tab. 1,711.

showed excessive strength. A novelty in Filberts was remarked in standard trees with stems from 4-5 feet in height, excellent alike for ornament as for nut bearing. Some half a dozen of the finer varieties, including the purple leaved and fruited Filbert. Grafted trees of this form make most prolific specimens, and require but little pruning. Some trees in the nursery are from 12-15 feet in height, and as much in diameter of the crown. I noticed in the fruit room the use of fine wood shavings for covering the shelves on which the fruit is laid, a capital substitute for straw, paper, or bracken, it being odourless, damp-proof and elastic—indeed, just the thing for the purpose. *F. M., November.*

CYPRIPEDIUM × THE BARON.

THE handsome hybrid *Cypripedium* depicted in our illustration (Fig. 153) was shown by Messrs. Sander and Sons, St. Albans, at the meeting of the Royal Horticultural Society, held on November 21, when it received a First Class Certificate. The parentage is *C. Hitchinsia* × *C. nitens* Sander's variety. The flower possesses excellent shape and substance, the latter being imparted to it by the strong element of *C. insigne* in its composition. The petals and the lip have a groundwork of yellow, and this is tinged and marked with purple. The large dorsal sepal is white, with a small green base, and is marked with a number of bold, rose-coloured spots.

MR. WILLIAM PAUL'S LIBRARY.

At their rooms in Wellington Street, Strand, London, on Monday, Tuesday and Wednesday, November 27th, 28th, 29th, Messrs. Sotheby, Wilkinson and Hodge disposed, by auction, of the botanical, horticultural and other books of the late Mr. William Paul, of Waltham Cross (by order of the executors). Subjoined is a list of some of the prices realised:—"The Heathery: a Monograph of the Genus *Erica*," by H. C. Andrews, 6 vols., 1845, £3 12s. 6d.; "A Dialogue or Familiar Discourse and Conference between the Husbandman and Fruit Trees, in his Nurseries, Orchards, and Gardens," by R. Austen, 1676 (only one other copy known), £2 2s.; H. Baillon's "Natural History of Plants," 8 vols., 1871-88, £1 10s.; G. Bentham's "Handbook of the British Flora," 2 vols., 1865, £1 5s.; G. Brookshaw's "Horticultural Repository: Delineations of English Fruits," 2 vols., 1823, £2 2s.; "The Art of Simpling, an Introduction to the Knowledge and Gathering of Plants," by W. Coles, 1656, £1 12s.; "Paradise Retriev'd: Method of Managing and Improving Fruit Trees against Walls or in Hedges," by Samuel Collins, 1717, very scarce, £1 2s.; Curtis' Botanical Magazine, from the commencement in 1787 to fourth series, Vol. 1., together 109 vols., besides "Companion to the Above," by W. J. Hooker, and general indexes, 1793-1905, £85 (Wesley); "Husbandry Anatomised, or an Enquiry into the Present Manner of Tilling and Manuring the Grounds in Scotland," by Jas. Donaldson, Edinburgh, 1697, £4 (Maggs); "A Short and Sure Guide in the Practise of Raising and Ordering of Fruit Trees, being the many years' Recreation and Experience of Francis Drope," Oxford, 1672, 16s.; "The New Botanic Garden," by S. Edwards, 2 vols., with 133 coloured plates, 1812, £1 5s.; Sydenham Edwards' "Botanical Register of Exotic Plants cultivated in British Gardens," three series complete, continued by Dr. Lindley, 34 vols., with about 3,000 coloured engravings, 1815-47, £35 (Wesley); "A ryghte profytable boke of Husbandrye, compyled sometyme by Mayster Fitz Herbarde," 1534, £3 10s.; Samuel Gilbert's "The Florist's Vade Mecum to which is added the Gardener's Almanack," 1683, £1 1s.; Sir W. J. Hooker's "Exotic Flora," 232 coloured plates, 3 vols., 1823, £4 14s. (Quaritch); Sir W. J. Hooker's "Botanic Miscellany,"

3 vols., 150 coloured and other engravings, 1830-33, £2 18s.; "The American Physitian: or a Treatise of the Roots, Plants, Trees, Fruits, etc., growing in the English Plantations in America," 1672, £7 (Quaritch); "The Pomological Magazine," by John Lindley, 3 vols., 1828-30, £3 (Arthur); "The Fossil Flora of Great Britain," by J. Lindley and W. Hutton, 1831-7, £1 6s.; Linnean Society of London's Journal and Proceedings, etc., 57 vols., £4 4s. (Edwards); "Arboretum et Fruticetum Britannicum," by J. C. Loudon, 8 vols., 1838, £3; E. J. Lowe's "Natural History of British Grasses," 1858, and "Beautiful Leaved Plants," 1865, 60 coloured plates, £1 5s.; H. C. Andrews' "Roses: a Monograph of the Genus *Rosa*," 129 coloured plates drawn from the living plants, 1805, £1 5s. (Quaritch); H. C. Andrews' "Monograph of the Genus *Geranium*," 70 plates, 1805; another volume on *Geraniums*, and "Camellia Britannica, introduced by Chandler and Buckingham" 1825, £1 18s.; R. Austen's "Treatise on Fruit Trees," 1657, and Thomas Hyll's "The Profitable Arte of Gardening," black letter, 1568, £1 10s.; A. Bivort's "Album de Pomologie," 4 vols., numerous coloured plates, Brussels, 1847, £3 5s. (Arthur); G. Brookshaw's "Pomona Britannica," 60 coloured plates, 1817, £3 (Arthur); "An Olde Thrift Newly Revived: wherein is declared the manner of Planting, Preserving, and Husbanding young Trees of

divers kindes for Timber and Fuell, and of sowing Acornes, Chestnuts, etc.," by R. Chambers, 1612, black letter, £5 (Quaritch); Piéro Crescentio's "De Agricultura Vulgare," Venice, 1511, £8 (Arthur); "Traité des Arbres Fruitiers," by Duhamel du Monceau, 1768, £1 12s.; W. Griffiths' "Indian Botanical Works," arranged by John Maclelland, being posthumous papers bequeathed to the Hon. East Indian Company, Calcutta, 1847-54, £5 2s. 6d.; "Herbolario volgare," with numerous curious woodcuts, Venice, 1522, £7 5s. (Arthur); Robert Hogg's "Herefordshire Pomona," with numerous illustrations drawn and coloured from nature by Miss Ellis and Miss Bull, 1876-85, £7 5s. (Wesley); "The Fruitfull Orchard, showing divers rare new secrets for the true ordering of all sortes of fruite in their due seasons," black letter, 1609, £3 8s.; A. B. Lambert's "Description of the Genus *Pinus*," 1832, £3 7s. 6d.; Conrad Loddiges and Sons' "Botanical Cabinet," consisting of coloured delineations of plants from all countries, with a short account of each, 20 vols., 2,000 coloured plates engraved by G. Cooke, 1817-33, £26 (Edwards); "A Booke of the Arte and Maner how to Plant and Grafte all sortes of trees, how to set stones and sowe Pepins, to make wylde trees to Grafte on, as also remedies and medicines," by Leonard Mascall, 1575, an excessively rare volume, and one of the earliest English treatises on the subject, £6 15s. (Leighton); B. Maund's "The Botanic Garden: Hardy Ornamental Flower-

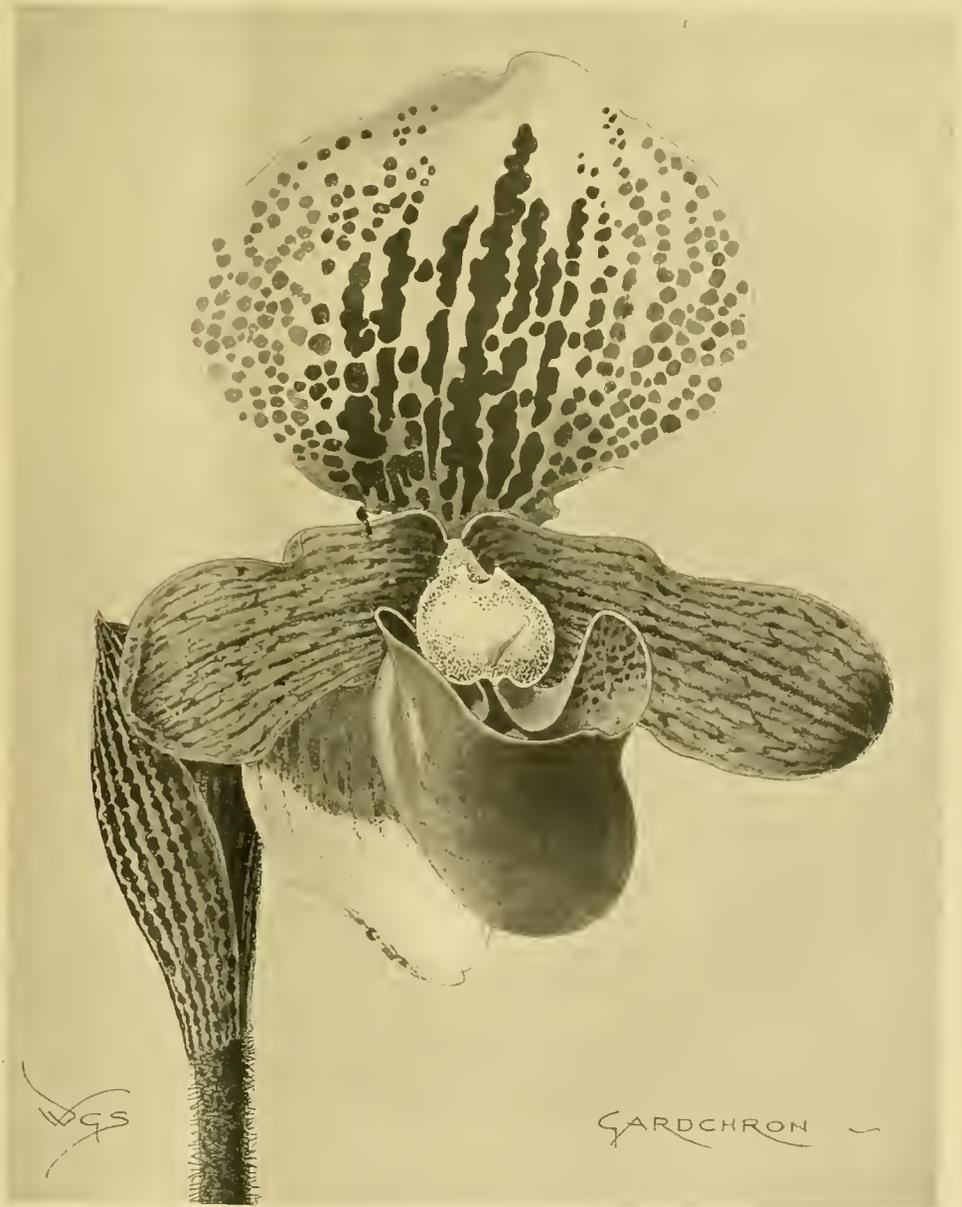


FIG. 153.—CYPRIPEDIUM × THE BARON, which obtained a First-class Certificate at the Royal Horticultural Society's Meeting, held on November 21.

ing Plants cultivated in Great Britain," "The Fruitist," "The Auctarium," etc., 1825, £7 (Maggs); "Histoire des Arbres Forestiers de l'Amérique Septentrionale," by F. André-Michaux, 3 vols., with fine coloured plates, 1813, £5 10s. (Quaritch); Joseph Paxton's "Magazine of Botany and Register of Flowering Plants," 16 vols., 1834-49, £3 4s.; Paxton's "Flower Garden," by John Lindley and Joseph Paxton, 3 vols., 1850-53, £1 4s.; P. J. Redouté's "Les Roses, avec le Texte par Cl. Anti Thory," 3 vols., with 160 coloured engravings of roses of their natural sizes, 1817-24, £30 (Bain); H. Repton's "Observations on the Theory and Practice of Landscape Gardening," coloured plates, 1803, £7 10s. (Quaritch); H. and J. A. Repton's "Fragments on the Theory and Practice of Landscape Gardening," coloured plates and movable slips, 1816, £9 5s. (Quaritch); Arthur Standish's "New Directions of Experience for the Planting of Timber and Firewood," 1613, £4 2s. 6d.; H. C. Andrews' "Coloured Engravings of Heaths, the drawings taken from Living Plants only," 3 vols., large coloured plates, with descriptions in Latin and English, 1802-9, £3 12s.; "Catalogue of Trees, Shrubs, Plants and Flowers which are propagated for sale in the Gardens near London," 1730, and "Eden, or a Compleat Body of Gardening," 1757, £4 17s. 6d.; Samuel Curtis' "Monograph of the Genus Camellia," 1819, £1 18s.; William Curtis' "Flora Londinensis: or figures and description of such plants as grow Wild in the Environs of London," 3 vols., original edition with large plates coloured by hand, 1777-98, £7 (Bain); "Flores a Petro Holsteyn ad vivum depicti," a series of 141 beautifully finished water-colour drawings of flowers, all drawn from nature (17th century), £8 12s. 6d. (Maggs); "Twelve Months of Flowers," by Robert Furber, P. Cassteels, and H. Fletcher, large coloured plates, etc., 1730, rare, £8; "The Grete Herball, which geveth the parfyte knowledge and understanding of all maner of herbes and there gracyous Vertues, etc., translated out of ye Frensshe into Englysshe," black letter, "imprentyd in Southwarke by me, Peter Treveris, in the yere 1526," £26 (Bain); "The Vegetable System: or Internal Structure and Life of Plants," by John Hill, 1770-73, £5 (Wheldon); J. D. Hooker's "Rhododendrons of Sikkim, Himalaya," edited by Sir W. J. Hooker, 30 large coloured plates, 1849, £1 12s.; William Hooker's "Pomona Londinensis," 49 coloured plates, 1818, £2 6s.; A. B. Lambert's "Description of the Genus Pinus," original edition, 47 coloured plates by F. Bauer, 1803, very rare (only 25 copies of this edition were coloured for sale), £6 6s. (Wesley); John Parkinson's "Theatrum Botanicum," 1640, £2 10s.; a series of 48 large and beautifully hand-painted plates of roses, drawn, painted and published by Miss Mary Lawrence, 1796, £11 5s. (Arthur); William Turner's "New Herball," black letter, 1551, £2 6s.; "Musaeum Tradescantianum, or a Collection of Rarities preserved at South Lambeth by John Tradescant," 1656, £3 16s.; "Nouvelle Iconographie des Caméllias," 13 vols., coloured plates, 1840-60, £5 5s. (Arthur); Robert Sweet's "British Flower Garden, containing figures and descriptions of Hardy Herbaceous Plants," 700 coloured plates, 1823-38, £7 (Quaritch); Robert Sweet's "Geraniaceae: the Natural Order of Gerania," illustrated by coloured figures and descriptions," complete with supplement, 500 coloured plates, 1820-30, £4 8s. (Quaritch); Robert Sweet's "Cistineae: the Natural Order of Cistus or Rock-Rose," 112 coloured plates, 1825-30, £3 3s.; Robert Sweet's "Flora Australasica," 1827, "The Florist's Guide," and other volumes, £3 13s.; James Sowerby's "English Botany," second edition, arranged according to the Linnaean Method, 12 vols., 2,580 coloured plates, 1832-46, £6 10s.; J. E. Sowerby's "The Grasses of Great Britain," and C. P. Johnson's "The Useful Plants of Great Britain," £1 4s.; Speed's "Adam out of Eden: or an abstract of divers excellent experiments touching the advancement of Husbandry," 1659, £1 16s.; "The English Vineyard Vindicated," by John Rose, gardener to His Majesty at his Royal Garden in St. James', 1666, £4; "The Scots Gard'ner, in two parts . . . published for the Climate of Scotland," by John Reid, with plates, Edinburgh, 1721, very scarce, £1 17s. The Paul library realised altogether about £805.

The Week's Work.

FRUITS UNDER GLASS.

By F. JORDAN, Gardener to Dr. CORBET, Impney Hall Gardens, Droitwich.

Earliest Pot Vines.—The buds on the earliest Vines which were started at the beginning of last month should now be on the move, and if this is the case, the atmospheric temperature may be advanced to 55° at night if the weather is cold and 60° if the weather is mild. A temperature of 60° should not be exceeded by day or night until the Vines approach the flowering stage. Add fresh fermenting material to that already in use, as this will afford more warmth, and therefore less fire heat will be necessary; see that the bottom heat does not exceed 70°. Ventilate the house a little every day if the weather will permit of this being done, always closing the house again early in the afternoon. Maintain a good supply of moisture in the atmosphere when the weather is bright by syringing the Vines at least twice daily until growth has commenced, when direct syringing should be discontinued. In dull and unsettled weather the same amount of moisture would be injurious, and at such a time do not throw water on the hot pipes, which would cause steam and be injurious to the young foliage. Tie the shoots of the Vines in position as soon as growth has commenced, and carefully do what disbudbing may be necessary, leaving only the best placed shoots, and those required for furnishing the Vines. Pay careful attention to watering; it is better to apply too little water than too much until root action has commenced, after which the soil must never be allowed to become dry. Any water that is applied should be warmed to the same temperature as that of the bed.

Early Vines in borders.—If ripe grapes are required from these Vines in May, no further time should be lost before closing the house. Small houses with shallow inside borders give the best results, but these are not always available, and where the borders are partly inside and partly out the outside border should be protected from heavy rains and severe frosts by a good layer of dry leaves or bracken. This is preferable to using fermenting stable manure at this season of the year. Young Vines which have not been forced before should have the points brought down to induce them to break regularly. Old Vines may be tied into position except the points. Supply the necessary moisture as advised for Pot Vines. Examine the inside borders and, if necessary, afford them a good watering with tepid water. No fire-heat will be necessary during the first fortnight unless severe frosts occur.

Later Vines.—Prune and clean later Vines as opportunity occurs and push the work forward so as to give the Vines as long a rest as possible. Cleanse the Vines and top dress the borders as was advised in the Calendar for November 4th. If red spider and mealy bug are observed on old Vines, all holes in the bark should be filled up with pure Gishurst Compound. Wash the Vines repeatedly, as well as all parts of the house. Even if this care and attention be given and the loose soil removed from the borders, it will be found that bug is most difficult to eradicate. Persistent attention is necessary, after the Vines have broken into growth, so that with a small brush and methylated spirits every bug that is seen may be destroyed. Do not put infested plants of any description into the vinery.

PLANTS UNDER GLASS.

By A. BULLOCK, Gardener to E. J. WYTHES, Esq., Copped Hall, Epping, Essex.

Forcing Azalea indica.—Plants intended for flowering during a period commencing in the middle of January should be stood in a closed but cool house for a fortnight, previous to their being placed in heat; select for early forcing plants with prominent flower-buds. When the plants are removed to their forcing quarters the pots should be plunged to their rims in a hot bed of leaves. Frequent sprayings with clear water overhead are essential in order to keep down red spider, thrip, &c.

Violets.—During the present month the greatest amount of care and attention will be necessary in order to maintain in a healthy condition plants grown in frames. Ventilation should be admitted on all favourable occasions, but during the prevalence of damp, cold weather it must be admitted with caution or withheld entirely. Decayed foliage should not be allowed to remain on plants. Violets

require very little water at this season of the year, but if the soil about the plants is very dry, a little clear water should be afforded them, using a rosed can for its application. Water should be applied on a favourable day and in such a manner that the foliage is not wetted during the process.

Mignonette.—Light and warmth are both essential to the proper development of flower heads, but the employment of too much heat, even with plants that are now developing their intorescences, will cause them to become drawn and weakly. A temperature of 55° at night is suitable, and the plants should be stood on shelves close to the glass. Plants intended for successional flowering must be kept perfectly cool and be placed as near to the light as convenient. After the flower-buds appear, the temperature should be gradually raised.

Herbaceous Calceolarias.—A low temperature is of advantage to these plants, but they must be protected from actual frost. Remove all decayed foliage and apply water sparingly. Fumigate if aphid is present.

Humca elegans.—These plants should be allowed a temperature of 55° at night in order to maintain active growth.

Fuchsias.—Cuttings of these plants that were inserted during September will now be ready for shifting into larger pots, using a light sandy compost as a potting medium. Maintain all the buds on Fuchsias intended for specimen plants. Gentle warmth and the maximum amount of light are necessary in order to keep the plants strong and sturdy.

Potting materials.—Unless soil intended for potting purposes has already been placed together in well-made stacks, preparations should be made for protecting it from rains and from frost. Boards, corrugated iron sheeting, old mats, or similar material can be used for this purpose. Opportunity should be taken of wet days for the cleansing and stacking of flower pots. They should be placed in their respective sizes, ready for the time when they are needed.

THE ORCHID HOUSES.

By W. H. YOUNG, Orchid Grower to Sir F. WIGAN, Bt., Clare Lawn, East Sheen, S.W.

Cypripedium requiring cool treatment.—Few Orchids give such excellent returns for the small initial outlay they entail, and are as little troublesome in cultivating as Cypripedium insigne. These plants have become very popular, especially since the importation of the many fine and distinct varieties. The flowers are not only pleasing in appearance, but can survive, in a fresh state, the various climatic influences of our winter, and that without exhausting the energies of the plants. Whilst in bloom the plants should be accommodated in a structure in which a temperature ranging between 53° to 60° is maintained, and one in which ventilation can be admitted whenever conditions will allow of the practice. The atmosphere of the house should be maintained in a moist condition by damping the floors and the staging of the structure. The plants will not require copious applications of water, but dryness at the base must be carefully guarded against. When the flower spikes have been removed the plants may be maintained in a somewhat drier condition, in order that a short rest may be allowed them before the potting season arrives; but absolute dryness at the roots must not be permitted, or the old foliage will turn to a yellow colour. In addition to the above-named species other cool growing kinds needing similar treatment, such as C. villosum, C. Boxalli, C. × nitens, C. × Arthurianum, C. × Niobe, C. × Lathomianum, C. × Godseffianum, and many another hybrid will furnish a supply of bloom for a considerable period. The beautiful varieties of which C. × Leeanum is the type, also the species C. Spicerianum, need somewhat more heat than those mentioned above, but, with this exception, the above cultural remarks apply equally to these and to most other winter flowering Cypripediums.

Lycastes.—The most important of these is L. Skinneri, one of robust habit, and which produces large, handsome blooms that remain in good condition for a considerable period. Providing a dozen or more of these plants are grown, a supply of the flowers is generally available during the winter months. At this season of the year these plants should be subjected to moderately dry and cool treatment, and be given sufficient water only

to prevent shrivelling in the pseudo-bulbs. The foliage usually presents a fresh appearance after the flowering period has passed, but should it fall away earlier no fear need be entertained, as in nature they are more or less deciduous. The true deciduous kinds, such as *L. aromatica*, *L. cochleata*, &c., should, as soon as their pseudo-bulbs have attained to their full dimensions, be given a very decided rest by withholding water for a lengthened period. As in the case of the first-named species, a moderately dry and cool position should be afforded them, a treatment applicable also to other common species and to the hybrid *L. × Ballia*. Slugs and other pests make their unwelcome presence known wherever flowering spikes or new roots are developing. In cool houses containing *Odontoglossums* of various kinds on which the inflorescences are in a forward condition, extra vigilance will be needed in order to combat these depredators. The old plan of placing cotton wool around the developing flowering spike is scarcely one to be recommended as thoroughly efficacious, though when this material is loosely placed around the peduncle it often checks the progress of small slugs and snails. Active search should be conducted after darkness has set in, especially on nights following on wet days. Wood-lice may be trapped on pieces of Potato or Turnip in which a cavity has been made, and placed about the house or on the plants. Cockroaches and crickets can be kept in check by placing about the houses at night "Phosphor Paste," spread on pieces of crocks. The poison should be collected in the morning, and placed out of the reach of animals, &c.

THE KITCHEN GARDEN.

By W. FYFE, Gardener to Lady WANTAGE, Locking Park, Wantage, Berks.

Tomatos.—From a plant of the variety Holme's Supreme I have just cut 6lb. of good fruit from 3 feet run of stem. These plants have been fruiting for the past three months, and to all appearance they will continue to yield for some time longer. Cold draughts, excess of moisture in the atmosphere, or at the roots, are at all times unfavourable to Tomato culture, and, in consequence, the greatest care is necessary at this season to prevent these conditions. In an atmospheric temperature of 55° to 60° the plants will continue to develop flowers and fruit. In order to secure the proper fertilisation of the flowers it is necessary to keep the atmosphere rather dry. Seeds that were sown early in November should be kept near to the glass in an atmospheric temperature of 60°. Seeds of Holme's Supreme and Carter's Sunrise may be sown at the present time.

Carrots in Frames.—At this season brick pits, in which leaves can be placed to the depth of 4 or 5 feet and made firm, for producing a gentle, lasting warmth, will answer for the cultivation of Carrots, provided that provision be made to exclude frost by the use of some light, warm covering. Over the leaves place about 10 or 12 inches deep of light, well-screened soil, and let the surface of the soil be about 8 inches from the glass. The soil should be in a sufficiently moist condition for the seeds to germinate in it, and the seeds may be sown broadcast or in drills, and covered very lightly with fine soil.

Turnips.—Late sown Turnips are now in fine condition, and should be allowed to remain to be pulled as required. When the roots have grown to the desired size, those remaining in the ground may be stored, if desired, in a cool, dry shed, but if soil be drawn over them and light leaves are allowed to remain amongst them, they will withstand very severe weather even in the open ground.

Seasonable Work.—Some gardeners are inclined to neglect the kitchen garden at this season, and almost until it is time to sow seeds in the spring. But the advantage to be gained by doing the work at the proper season is very great. The best time for digging is directly after the crops have been cleared from the ground; and when the work is well done, the surface is even, although cloddy, and the clods will fall asunder in the spring like air-slacked lime. Nothing better than this can be desired for the crops. If a garden is neglected in winter the soil is never in so favourable a condition for seed sowing in spring, and in summer the crops appear as if some detail in the management had been omitted. High-class crops, with but few ex-

ceptions, are the productions of deep, well-tilled soil; and no matter how rich or how poor the soil may be, it can always be improved by tillage, which liberates moisture, admits air, and thus renders the soil a warmer medium for the roots.

Parsnips may be left undisturbed if the ground is not wanted for other crops, and the roots will remain in the best condition possible. Parsnips succeed best in soil that has been deeply worked in the previous season and manure put at the bottom of the trenches, so that the roots are induced to strike straight down, and not produce fingered and fanged roots, as is so often the case when rank manure is present near to the surface.

THE HARDY FRUIT GARDEN.

By W. H. CLARKE, Gardener to Sir WILLIAM FLOWDEN, Aston Rowant House, Oxon.

Cordon Trained Trees.—Where it is necessary for the gardener to produce fruit of extra quality and size for exhibition or other purpose, there is no better method than by Cordons trained either against walls or on trellises extending across the garden and running parallel with the paths.

Cordon Pears should either be worked upon the Quince stock or be double grafted on it, and the trees planted from 18 inches to 2 feet apart. By this means a wall can be covered quickly. The trees should be trained obliquely, at an angle of about 45°, for then the sap will rise more gradually. The trees should now be taken from the wall, and if there are any signs of scale insects, scrub the branches with Gishurst Compound or other reliable remedies. When pruning some varieties the leading stem will require to be shortened so as to cause the side shoots to break into growth, but some other varieties will form these growths naturally. The side growths formed during the summer, and which were pinched, will now need to be pruned back to two or three eyes, and the spurs if placed too thickly should be thinned out. Use tarred twine for re-tying the trees to the wall, and shreds only for securing the young growths. The best varieties for Cordons are Williams' Bon Chretien, Beurré d'Amanlis, Durondeau, Beurré Superfin, Gratioli, Princess, Marie Benoist, Emile d'Heyst, Comte de Lamy, Doyenné du Comice, President Barabe and Winter Nelis.

Cordon Apples should be worked on the Paradise stock, and even on this stock, when grown on rich soil, the trees will require occasional root pruning. The treatment required at the present time is similar to that recommended for Pear trees, excepting in the case of strong growing varieties, when four "eyes" should be left instead of two and three. There will then be less risk of all the eyes breaking into growth, two generally doing this while the remaining two near the base will develop fruit-buds. If mussel-scale is present the insecticide will require well scrubbing into the different parts with a stiff brush, and it is often necessary to make two applications. A great many varieties are adapted for growing as Cordons, and the following list may be extended at the grower's desire:—**Dessert varieties:** Irish Peach, Devonshire Quarrenden, Worcester Pearmain, Cox's Orange Pippin, King of the Pippins, Adam's Pearmain, Fearn's Pippin, and Sturmer Pippin. **Culinary varieties:** Keswick Codlin, Duchess of Oldenburg, Pott's Seedling, Ecklinville Seedling, Stirling Castle, Prince Albert, Bismarck, Warner's King, and Newton Wonder.

Plum and Cherry Trees may also be successfully cultivated as Cordons, but summer pinching of the shoots must be rigorously followed up. Where this was done the side growths may now be shortened to about 3 inches, entirely removing some of them if they are too numerous. Frequent root-pruning is necessary. The Cherry should be worked on the Mahaleb stock if intended for Cordons.

Labelling of Trees.—Much interest is lost when trees lose their names, therefore at this season a general survey should be made of the trees to see these are intact. The most permanent label is the "Acme," the names being embossed on zinc. Wooden labels can be easily made from strong, stout lath wood, the end which has to go into the ground being dipped in hot tar. Two coats of white paint are applied to the planed surface, and the name printed thereon with a small brush, using Brunswick black. For future reference a plan should be kept of all fruit trees,

whether growing against walls or in plantations, and the names of the varieties indicated on the plan.

THE FLOWER GARDEN.

By W. A. MILLER, Gardener to LORD HENRI C. BENTINCK, M.P., Underley Hall, Westmoreland.

Christmas Roscs.—*Helleborus niger* and its varieties Madame Fourcade, maxima, and invernisi thrive best in rich, deep loam mixed with leaf-mould, on a sheltered and shady border. A temporary frame should be placed over the plants as soon as the inflorescences appear in order to keep the flowers clean. Single clumps can be given protection by handlights stood on bricks.

Border Clematis.—*C. Davidiana* and other varieties of Clematis planted in borders, can be protected from the ravages of slugs, etc., by strewing coal-ashes about the surfaces of the crowns.

Garden Walks.—The present is a suitable time to undertake the construction of new walks. Mark out the site of the intended path, remove the turf and sufficient of the underlying soil, and, should it be necessary, afford requisite drainage. After the levels have been properly adjusted, place the roughest of the stones, &c., in the bottom of the trench, the quantity of bottom "ballast" being governed by the amount of traffic the walk is intended to accommodate. Next place the finer material on the top, and cover this with a quantity of soil obtained from the surface of an old walk or "samel," for the purpose of binding the whole. Keep the edges of the walk 2 inches below the level of the grass verge, and have the centre raised so that the surface is slightly convex in form. Ensure perfect evenness and firmness by rolling, and finish with a coating of finely-screened gravel. Roll the walks and drives after frosts, as they become loose and soft when thawed.

Pergolas.—These garden ornaments are made of various materials, including iron, stone, brick and wood. After the structure has been constructed, a suitably-formed border about two feet deep and three feet wide will be required for the accommodation of the various creepers with which the Pergola is to be furnished. Covered-ways are, with the exception of walls, the most suitable objects for displaying climbers to advantage. Loggias, verandahs, arbours, &c., are also used for the training of fragile climbers. Creepers on established bowers should now be pruned and the growths made secure.

The Wild Garden.—The following tall-growing varieties of Phlox decussata are of strong and robust habit, and valuable for their beautiful effect in autumn. They revel in a moist loamy or vegetable soil. They should receive liberal treatment in the matter of manure when planting and a sprinkling of artificial manure during their growing season:—(White), Josephine Gerbaux, Madame Cornudet, Sylphide, Snowflake; (Pink), Beranger, Liberté, John Forbes, coccinea, Embracement, Jean Bart; (Crimson), Aurora, Coquelicot, Etna, Moliere, Mrs. Aberdeen, Pantheon, Pêcheur d'Islande; (Purple), Iris, Le Mohri; (Lilac), Eng. Danzanvilliers, Javanaise, Paul Bert.

Ornamental Fruiting Plants.—The following is a list of berried plants that will succeed in most localities:—*Aucuba japonica*, *Berberis Darwini*, *B. Thunbergii*, *Cotoncaster frigida*, *C. microphylla*, *C. Simonsi*, *Cratægus pyracantha Lelandi*, *Euonymus europæus*, *Gaultheria procumbens*, *G. Shallon*, *Hippophœ rhamnoides*, *Leycesteria formosa*, *Hypericum androsæmum*, *Pernettya mucronata*, *Pyrus* in variety, *Rosa rugosa*, *Skimmia japonica*, and *Symphoricarpos racemosus*. The following herbaceous plants have also showy coloured fruits: *Aralia californica*, *Iris foetidissima*, *Physalis alkekengi*, *P. Francheti*, and *Phytolacca decandra*.

"PUNCH" ALMANACK.—This publication will be found quite equal to, if it does not surpass in excellence, its predecessors. In its own words, far from being "too old at forty," the sixty-four-year-old is as amusing and capable as ever. In addition to numerous black and white illustrations, special attention must be drawn to a double-page colour-plate by Mr. Bernard Partridge, which shows a new idea cleverly wrought out and pleasantly presented. Mr. Punch is so independent of the course of time that he has not troubled to give a daily calendar!

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Letters for Publication, as well as specimens and plants for naming, should be addressed to the EDITOR, 41, Wellington Street, Covent Garden, London. Communications should be WRITTEN ON ONE SIDE ONLY OF THE PAPER, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

Special Notice to Correspondents.—The Editor does not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editor does not hold himself responsible for any opinions expressed by his correspondents.

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY, Dec. 12	{ Nat. Sweet Pea Society's Annual Meeting at Hotel Windsor, at 3.30 p.m.
WEDNESDAY, Dec. 13	{ Nat. Chrysanthemum Society's Exh. of Market Chrysanthemums in the Floral Market, Covent Garden.
FRIDAY, Dec. 15	Roy. Botanic Society Meet.
TUESDAY, Dec. 19	R.H.S. Committees Meet.

ACTUAL TEMPERATURES:—

LONDON.—Wednesday, Dec. 6 (6 P.M.): Max. 50°; Min. 40°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—Thursday, Dec. 7 (10 A.M.): Bar., 30°; Temp., 55°.

PROVINCES.—Wednesday, Dec. 6 (6 P.M.): Max. 54° S.W. Coast of Ireland; Min. 42° East Coast of Scotland.

SALES.

- MONDAY NEXT—
Sale of Plants, Bulbs, Lilies, &c., at Stevens' Rooms, King Street, Covent Garden.
- WEDNESDAY NEXT—
Sale of Palms, Plants, Lilies, &c., at Stevens' Rooms, King Street, Covent Garden.
- WEDNESDAY NEXT—
Dutch Bulbs in variety, at 11. Roses in assortment, at 3 and 5. Azaleas, Camellias, &c., at 5. By Protheroe & Morris.
- THURSDAY NEXT—
1,740 cases Japanese Liliums, Spiræas, Gladiolus, &c., at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 3.
- FRIDAY NEXT—
Imported and Established Orchids; 200 choice hybrid Cattleyas and Lælio-Cattleyas, &c., at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 12.30.

NOTES OF THE WEEK.

THE EARL OF ILCHESTER.—We greatly regret to have to announce the death, in his 59th year, of this nobleman at Holland House, Kensington, on the 6th inst. Lord ILCHESTER was well known in the horticultural world as an enthusiastic gardener, his establishments at Holland House being unique, and his collections of plants at Abbotsbury, Dorset, being very rich. Lord Ilchester was a member of the Council of the Royal Horticultural Society, and the generous manner in which he lent his park for the summer show is remembered with gratitude. The picturesque house and grounds of Holland House have often been figured in our columns.

A NEW DIRECTOR OF KEW.—SIR WILLIAM TURNER THISELTON-DYER, whose resignation of the post of Director of the Royal Botanic Gardens at Kew is announced, has held that appointment since 1885, and for ten years—1875-1885—before his promotion he was Assistant Director. His successor, Lieutenant-Colonel David Prain, had a distinguished University career at Aberdeen and Edinburgh before he entered the Indian Medical Service in 1884. Three years after his arrival in India he was nominated Curator of Calcutta Herbarium; in 1895 he became Professor of Botany at the Medical College, Calcutta, and superintendent of the Royal Botanic Garden there, and in 1898 he was appointed Director of the Botanical Survey of India. He is 48 years of age. *Times*.



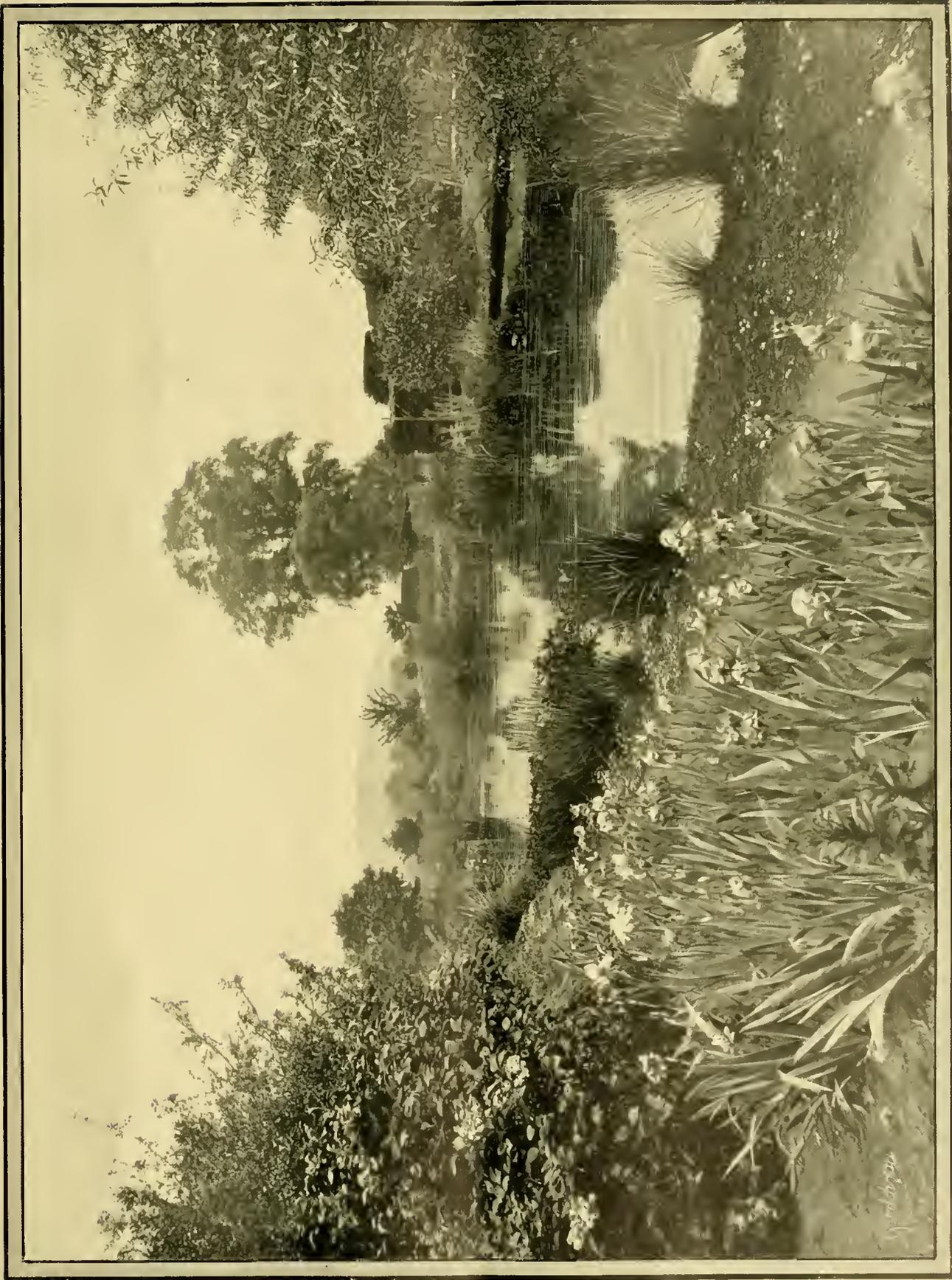
THE LATE EARL OF ILCHESTER.

THE FLOWERS OF THE HEMP.—The explanation of the construction of the female Flowers of the Hemp has occasioned much controversy but little definite knowledge. Lt.-Col. PRAIN, of the Indian Medical Service, has attacked the subject from the teratological side, and has published the results of his enquiries in No. 12 of the *Scientific Memoirs*, published by the Medical and Sanitary Departments of India. Col. PRAIN deals first with the normal structure of the male and female flowers, and then proceeds to the study of various abnormalities in the flowers of Cannabis. From a careful survey of all the evidence available the author concludes that the pistil is composed of two carpels, both of a foliar nature and capable of developing into leaves. Of these two the posterior is fertile. The ovule is considered to be axial, not however terminal, but axillary to the posterior carpel when it becomes fused and uplifted. The paper is illustrated by five plates full of detail bearing out the author's conclusions.



SIR WILLIAM TURNER THISELTON-DYER, K.C.M.G., &c., whose retirement from the Directorship of the Royal Gardens, Kew, is announced

THE SMITHFIELD CLUB SHOW.—Once again the Smithfield Club has held an exhibition of fat cattle in the Royal Agricultural Hall, Islington, and by this event we are reminded each year that the Christmas season is almost upon us. His MAJESTY THE KING, as usual, was an exhibitor, and won many important prizes. The best beast in the Show came from Scotland, as has happened on many former occasions, being in this case the property of Colonel A. MCINROY, C.B., The Burn, Edgell, Kincardineshire. The animal was a splendid specimen of the Aberdeen Black Angus breed, and weighed 16 cwt. 1 qr. 1 lb., although only as old as two years, ten months, three weeks and five days. But we shall not reproduce here any further details of the beasts that were on view in the Hall, for, important as they are at the present season, they are not exactly a subject such as is looked for in these pages. The gardener who visits this Show soon betakes himself upstairs, and is astounded at the immense size of the agricultural roots that are there shown. Messrs. SUTTON AND SONS, Reading, had a most imposing stand, upon which prominence was given to displays of immense roots of Mammoth Long Red, Sutton's Prizewinner, Golden Tankard, Golden Globe, and Intermediate Mangels; Crimson King, Magnum Bonum and First Prize Swedes; Favourite, Perfection, Green-top and Centenary Turnips; a collection of clear-skinned tubers of 48 varieties of Potatos, including the new one known as Gladiator, to be distributed next season as a First Early variety; and seeds of grain and leguminous crops. Mention may be made of a Mangel described as Suttons' Sugar Mangel—a long, whitish-looking root, said to be of unusually high feeding quality, which is largely used by the dairy farmers in Denmark. Messrs. J. CARTER AND CO., High Holborn, London, had also a very remarkable display of roots, among which the following varieties were given especial prominence: Goldfinder, Mammoth Long Red, Windsor, Golden Tankard, Carter's 1905 and Red Emperor Mangels, the last-named variety being a new one for distribution in 1906; Invicta, Kangaroo and Elephant Swedes, etc. They had also an attractive collection of Potatos, Carrots, Onions, Parsnips, etc., and agricultural seeds. Messrs. ED. WEBB AND SON, Wordsley, Stourbridge, never fail to make one of the most remarkable exhibits of roots and seeds at this Show. The firm's specialities in the root crops include: Imperial, Empire, Buffalo and Arctic Swedes; New Smithfield, Yellow Globe and New Lion Intermediate Mangels; and Invincible, Renown and Selected Green Globe Turnips. The Kinver Chevalier Barley occupies an important position among the cereal crops, which were represented by the best varieties of each kind, and a selection of Potatos, Carrots, Peas and Beans was included in the display. The stand was ornamented by the 100-guinea Challenge Cup which Messrs. WEBB presented at the Birmingham Show for the best animal in the classes for cattle, and which was won by the KING's Hereford steer a week or so ago. Messrs. GARTONS, Warrington, a firm renowned for its new breeds of cereals, etc., had excellent samples of their new variety of Chevalier Barley, named Ideal; Abundance Oat, Rival, a very fine black-seeded Oat; New Era Wheat, &c. Also, among the roots, specimens of their Turnip-Swede named Pioneer, in which the parentage is equal to two parts Turnip and one part Swede, although in appearance the roots mostly resemble Swedes. Other exhibitors of roots and seeds included:—Mr. J. H. KING, Coggeshall and Reading; Messrs. HARRISON AND SONS, Leicester, who, in addition, had a good display of garden root crops; Messrs. DICKSON, LTD., Chester, who also



JAPANESE IRISES BY RIVER BANK—NEAR GUILDFORD.

Photographed by Mason Good

exhibited Apples; Messrs. E. W. KING AND CO., Coggeshall; Messrs. R. SMITH AND CO., Worcester, whose display also included Apples; Messrs. TOOGOOD AND SONS, Southampton; and Mr. A. BLATCHFORD, Coventry. Two firms that specially exhibited hardy fruits were Messrs. W. HORNE AND SONS, Cliffe Nurseries, Rochester, and Messrs. W. AND J. BROWN, Stamford and Peterborough, both of whom had good fruits of selected varieties of Apples, and samples of various kinds of fruit trees as lifted from the ground. Exhibitors of Potato tubers exclusively appeared to be more numerous than ever, and the annual meeting of the National Potato Society was held in the Hall on Thursday as these pages were passing through the press. Messrs. FIDLER AND SONS, Reading, had, as usual, the largest collection of tubers, and other exhibitors included: Messrs. W. DENNIS AND SONS, Covent Garden Market, and Kirton, Lincolnshire; Mr. A. FINDLAY, Markinch, N.B.; Mr. W. J. MALDEN, Mr. D. WILSON, East Linton, E. Lothian; Mr. R. W. GREEN, Wisbech; Messrs. ISAAC POAD AND SONS, York; Mr. S. M. THOMSON, Edinburgh; and Mr. T. A. SCARLETT, 22, Market Street, Edinburgh. The display of agricultural and horticultural implements appeared to be greater than ever; indeed, they were so numerous that we cannot refer to them in detail, but, as we have remarked on former occasions, anyone who is interested in the tilling of land and reaping of crops cannot do better than visit the yearly Shows of the Smithfield Club.

OUR SUPPLEMENT.—The illustration which we give with the present issue affords an excellent example of an English landscape. The Japanese Irises in the foreground form a fine frame for the beautiful river scene in the middle of the picture, whilst the flatness is relieved by the noble Elm in the middle distance, and the low hills in the background convey a sense of distance and space, the whole forming a scene admirable in detail and effective as a whole. The view was taken near Guildford by Mr. MASON GOOD.

PARA RUBBER.—Mr. HERBERT WRIGHT has in the press a treatise on the botany, cultivation, chemical history, and diseases of *Hevea brasiliensis*, the tree which furnishes Para Rubber. Judging from the prospectus before us the book will be very complete, and in view of the great commercial importance of the subject, it will appeal to a large section of cultivators in the tropics. The work will be issued by Messrs. A. H. & J. FERGUSON, of Colombo, and through their European agents.

THE MANGO.—It is well known that in most parts of India the best kinds are not reproduced from seed, but need to be perpetuated by grafting. In Burma, however, as we are informed by Sir DIETRICH BRANDIS, the best-flavoured varieties may be, and are, perpetuated by seed. This is not only a fact of great practical value, but is one of much interest to those who are studying the problems of heredity.

AMATEUR GARDENING.—The Christmas number of *Amateur Gardening* contains, as usual, plenty of light, seasonable reading. For sixpence the purchaser obtains, also, a profusion of pictures, many of them from photographs, and a gay-coloured plate of Roses. The number is temptingly sent out in a coloured cover, and is sure to find many appreciative readers.

APPOINTMENTS FROM KEW.—The following appointments in the Colonies and India have been made during 1905 from members of the staff of the Royal Botanic Gardens, Kew, on the recommendation of the Director:—

Colonial Office.—William Robson, curator, Botanic Station, Montserrat; Thomas Jackson, curator, Botanic Station, Antigua; James Anderson, assistant curator, Botanic Station, Aburi.

Gold Coast. E. W. Davy, assistant forester, British Central Africa.

India Office.—A. E. Brown, probationer gardener, Royal Botanic Gardens, Calcutta; E. Little, probationer gardener, Royal Botanic Gardens, Calcutta; W. R. Mustoe, probationer gardener for service in Northern India.

THE LIFE HISTORY OF BRITISH FLOWERING PLANTS.—Lord AVEBURY has published through Messrs. MACMILLAN a work on this fascinating subject. For the present we can only acknowledge the receipt of the book, and defer a notice of its contents for a future occasion.

BOTANICAL MAGAZINE.—The December number, just issued, completes the first volume of the fourth series and is appropriately dedicated to Lady THISELTON-DYER, whose grandfather, Sir WILLIAM, and father, Sir JOSEPH HOOKER, successively edited the *Botanical Magazine* for three-quarters of a century, and who has herself contributed many illustrations to the time-honoured magazine now edited by her husband. Among the plants figured in the present number are the following:—

LISSOCHILUS MAHONI, Rolfe, tab., 8047. A very handsome novelty collected by Mr. Mahon, at Entebbe, Uganda, and sent by him to Kew, where it flowered in the Victoria House in the spring of the present year. It is a terrestrial Orchid with a flower-scape attaining 8 feet in height and bearing numerous large, rose-coloured flowers, the lip is greenish with purple stripes and marked on the upper surface with three prominent yellowish ridges.

SAXIFRAGA APICULATA, Engler, tab. 8048, *Gardeners' Chronicle*, 1894, I. 556, fig. 68, a yellow-flowered species, supposed to be of hybrid origin.

FELICIA ECHINATA, Nees, tab. 8049: a small shrub with short, sessile, recurved, oblong acute hairy leaves and terminal flower-heads, like those of an Aster. It is a native of South Africa, cultivated at Kew.

SCIADOPITYS VERTICILLATA, Siebold and Zuccarini, tab. 8050, the now well-known Umbrella-Pine. The figure was taken from the plant at Kew, "the second largest recorded specimen in the country." Where the taller specimen is is not stated.

PRIMULA VEITCHII, Duthie, tab. 8051, *Gardeners' Chronicle*, 1905, I. p. 344. Supplement.

ROYAL GARDENERS' ORPHAN FUND.—We are pleased to record the fact that the Committee of the Bradford Chrysanthemum Society has been again enabled to contribute the sum of £6 to this excellent but insufficiently supported charity, by means of a flower stall at their late exhibition. This effort, made on behalf of the Fund, shows how much the charity could be benefited by similar means in other places. We understand that all the flowers sold were contributed by friends—an arrangement which also shows how many could help the fund without contributing money at all.

FLOWERS IN SEASON.—Messrs. CLIBRANS, of Altrincham, Cheshire, send us cut specimens of several well-known flowering plants which bloom at this season. They are as follow: *Eupatorium petiolare*, *Lonicia gratissima*, *Clerodendron splendens speciosissimum*, *Manettia bicolor*, *Plumbago rosea coccinea superba* (an improved form of *P. rosea*), *Daphne indica rubra*, *Jasminum hirsutum*, *Salvia Bethelii*, and *Cyclamen Papilio*.

EDINBURGH SEED TRADE ASSISTANTS.—Mr. YOUNG, the Secretary, informs us that the eleventh annual dinner of the Edinburgh Seed Trade Assistants was held in Ferguson and Forrester's Restaurant, Princes Street, on December 1. About 100 assistants sat down under the presidency of the Chairman of Committee, Mr. A. SCOTT DENHOLM, of Messrs. DRUMMOND BROS., and the Croupiers were Messrs. P. M.

GREIG, W. TAIT, JOHN H. J. YOUNG, D. SYME WEBSTER and J. C. MACLURE. The toast of the evening, namely, "The Seed Trade Assistants," was proposed by Mr. H. R. ELLIOTT in a particularly humorous speech. Mr. J. C. MACLURE, in response, said that the dinner was a very happy event before the busy season, which would soon be upon them again. Mr. T. WATSON DODS proposed "The Nursery and Seed Trade," and Mr. HARRY ERSKINE, in responding, said that the trade had fallen on bad times, owing to much stock being sold by auction at a mere fraction of its actual value. Mr. TOM ALISON proposed "Kindred Societies," and Mr. JAS. H. PARKER, representing Glasgow assistants, responded.

VICTORIA PARK, STAFFORD.—A correspondent writes as follows: "Visitors from all parts of Staffordshire and district who know the ancient Isaak Walton Walk by the river Sow, by the Stafford railway station, will be interested in its extensions into the New Victoria Park. The design consists of a wide serpentine promenade by the river, which leads to and surrounds the bandstand, and terminates with a charming waterfall. Large beds of Rhododendrons are by the entrance, and a background to the wide borders is afforded by what will be in a few years' time an imposing avenue of Limes, Elms, Planes, Birch, and other forest trees. Messrs. TOM B. DOBBS AND CO., Landscape Gardeners, Wolverhampton, on behalf of the Corporation, are this autumn planting about one thousand trees and shrubs in variety, selected for flowering throughout the summer."

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his correspondents.)

PHALÆNOPSIS SCHILLERIANA.—I have to-day measured a leaf on one of our plants, and find it is 17½ inches long and 4½ inches broad. Is this leaf above the usual size for this plant in cultivation?—*J. Easter, Nostell Priory Gardens, Wakefield.*

RAIN WATER IN YORKSHIRE.—In reply to the note on p. 396, it may be mentioned that all rain water contains some amount of sulphuric acid, although in some cases it is only a trace, but in the vicinity of large manufacturing towns and of collieries the rain water is especially charged with this acid, as is shown by the following table. Amount of sulphuric acid in rain water collected in different districts, in parts per million:

England, country places, inland ...	5.52
England, towns ...	34.27
Scotland, country places, sea coast ...	5.64
Scotland, country places, inland ...	2.00
Scotland, towns ...	16.50
Scotland, Glasgow ...	70.19

The foregoing figures speak for themselves. Calculated to the acre, they mean that in English towns about 140 lbs. of sulphuric acid are contributed each year to land from the rainfall, and in Glasgow 292 lbs. are so contributed to each acre of land per year. These facts support the view that the sulphuric acid is to a great extent an oxydised product of the decomposition of organic matter. In determinations of sulphuric acid in the rain water which falls at Rothamsted, Hertfordshire, it has been found that the amount varies very little in different parts of the year; in fact, the similarity of the amounts of sulphuric acid in the summer and winter rains is very striking, especially in view of the great variations which are found in the chlorine results. About 17½ lbs. of sulphuric acid per acre is recorded in the Rothamsted rainfall each year. Sulphuric acid used in excess, even when supplied in low-grade superphosphates, or in very caustic coal-ashes, or in flue-dust, always injures plant life, consequently there is but little doubt that the evil effects of the West Riding rain water for horticultural purposes is due to the large quantities of sulphuric acid derived from the collieries and similar works. As a preventive to the injurious effects it would be advisable to collect the rain water in tanks into

which a good supply of quicklime has been placed, giving an occasional stirring with a stick, and then allowing the lime to settle before using the water. The water should be allowed to stand until the acid has become neutralised, which can be ascertained by the slight alkaline taste which the water will acquire. The lime must be renewed from time to time as circumstances may require. *W.*

VARIATION IN PEARS.—With reference to your remarks on p. 306, I may mention that we had a very similar case here this autumn with an Apple. A twenty-year-old Espalier tree of Warner's King had one fruit upon it quite distinct from the others, being, in shape, similar to a fine specimen of that old variety Catshead. In every respect but shape it was perfect, hence the variation was not caused by insects or any outside agency. Two or three other gardeners saw it and were of my opinion as to its similarity to the variety named. Perhaps Catshead was one of the parents of Warner's King, hence the reversion. The branch that produced the fruit in question has been marked with a bit of lead wire to see if this reversion will be repeated. *H. J. C., Grimston Gardens, Tadcaster.*

PEAS IN NOVEMBER.—Having observed in the last issue of the *Gardeners' Chronicle* that Peas were gathered in Guernsey on November 16, I may say that in the West Riding of Yorkshire, out of the Campsall Hall Gardens, we had several dishes of Ne Plus Ultra Pea in November, the last having been gathered on November 16. *Campsall Hall, Doncaster.*

A SPRAY OF FLOWERS.—Mr. Molyneux's remarks on the question "What is a Spray of Flowers?" (see p. 394) come very opportunely at this time. I know that the question has been raised in more than one Show in the North this autumn, and a Society with which I have to do, when revising that part of their schedule dealing with "Early Flowering" Chrysanthemums, proposes to make one class read thus: "12 bunches Chrysanthemums, not less than six varieties (not disbudged). A bunch to consist of three unbranched stems not more than 20 inches long." I shall be very glad if, through the medium of your columns, we may have the views of competitors and judges on the proper wording regarding sprays. Undoubtedly the subject has come to be one which, for competitors and judges alike, requires thrashing out. *P. M. T.*

A WINTER EXHIBITION OF CARNATIONS.—I quite endorse what Mr. E. H. Jenkins stated on this subject (see p. 380). But there should be some special arrangement made for exhibits of Carnations. I have seen many of the growers, and find most of them would be willing to give some financial support for a series of shows. If those specially interested in the culture of Carnations would come together and formulate a scheme to assist the Horticultural Society, and arrange that at some of the meetings special awards should be made for Carnations, we should be getting nearer to the end desired. At the meeting on November 21 there were some good exhibits of the American varieties, and those staged by Mr. A. F. Dutton and Mr. Mortimer were fine examples. The awards made for them, however, were, by many, considered inadequate. This might be arranged for in future by offering definite awards, with, of course, the power of withholding them should the exhibits prove unworthy. Another point of interest would be to try and get as many varieties of each shade of colour together as possible, so that comparisons could be made, and an award given for the best in each colour. During the past year or two there has been at least about half-a-dozen scarlet varieties shown, for which awards of merit have been given. The white varieties have not been quite so successful in gaining awards, but there are as many sorts, and it would be of great interest to bring them all together. When a variety is submitted for an award a plant should be shown as well as cut blooms. I am often asked for the names of the best varieties in the various colours, and though I have opportunities of seeing most of them growing, and also cut bloom in the market, I would not like to say definitely which two scarlet varieties would prove absolutely the best. If some definite move were made, growers would give their support both as exhibitors and financially. It may be too late to do much this winter, but a start could be made and one

special show held in February. December, January and February would be the best months in which to offer special inducements to Carnation growers, as there would not be much danger of them being crowded out, and if points were given at each of the three shows it would encourage the same exhibitors to come forward at all of them. *A. Hemsley.*

GARDENERS AND COLONISATION.—Many head gardeners, foremen, first-class journeymen, and single-handed gardeners are to-day in a most distressing position. The first three named are becoming more overcrowded year after year as there are no places to be filled. The single-handed gardener is pushed out of his legitimate occupation by incompetent men, who practically work for next to nothing, and employers imagine they are saving by giving employment to this alien to horticulture instead of to a trained man. In very many cases the pensioned something or other potters about for a year or two, working under the advice or doubtful instruction of the local florist and seedsman, indeed, until such time as the employer realises that the bills for grass seed and fertilizers are unnecessarily heavy. The gardener is the least complaining man of all trades and professions in these times, and is one of the last to apply for relief to the local charity. There are hundreds of practical, life-experienced gardeners who would gladly welcome a scheme of Government-aided colonisation that they might have a substantial start upon the lands so much advertised as available and adapted for high-class cultivation of Fruits, Cereals, etc. What better man could you have than this man of intelligence, who is resourceful, generally thrifty, and where, among them, the majority have an excellent knowledge of the land, system of rotation, forestry, stock, poultry, etc.? One cannot entirely separate agriculture from horticulture, as the subjects certainly run one into the other. Therefore I believe that a scheme of State-aided colonisation or emigration, so far as the practical gardener is concerned, would be a successful and welcome relief to an overcrowded community. *W. J. T. (M.B.G.A.)* [Why not apply to the Agents-General of the several Colonies? —*Ed.*]

THE POTATO CENSUS.—The particulars given in the last two issues of the *Gardeners' Chronicle* respecting the Potatos grown in the gardens of the United Kingdom are of much interest, and the value of such elections, when conducted on the right lines, cannot be over-estimated. They are applicable to many other occupants of gardens, and it is regrettable that they are not more frequently arranged for, as they might at least be taken at regular periods. This would enable cultivators to keep up with the advance or change in taste. A similar election to that just concluded would, if devoted to Potatos for commercial growth (i.e., on market gardens and farms), furnish important information. In reviewing the results given in the issues of November 25 and December 2, the first point which strikes a reader is the large number of varieties which are named—48 of Earlies, 80 of Mid-season group, and 50 of Late varieties; while of these, in the same order, the numbers of varieties which only secured one vote each are 20, 42, and 28 respectively. The second point is that experience seems to differ very greatly as to the season when certain varieties are at their best. This is not difficult to understand as regards Early and Mid-season Potatos, or the latter and Late varieties; but it seems strange now some of the last-named should be included under the first, like Reading Giant, for instance. The third point is that some varieties, which have proved of much value to growers for market, and which are of good general quality, are very low down in the lists. If the Editor could favour his readers with another election on the lines advocated above, though on a smaller scale, the results would prove of great interest. *R. L. C.*

LAW NOTE.

BREACH OF CONTRACT.

THIS case was tried before Judge Bacon, in the Bloomsbury County Court, on Friday, December 1. The dispute concerned the sale of Lobelia Kathleen Mallard, a double-flowered variety, which, it will be remembered, received an Award of Merit from the Floral Committee of the Royal Horticultural Society on August 29.

The defendant, Mr. John Osborne Clarke, Avenue Road, Regent's Park, London, is a head gardener, and he agreed to purchase the whole of the stock from the plaintiff, Mr. A. R. Mallard, Rainham, Kent, for a sum of £30, with the stipulation that plaintiff was to share the profits after defendant had reimbursed himself by the sales of his purchase money. A deposit of £5 was paid at the time of the sale, and plaintiff now sued for the remaining portion of the purchase money, producing an agreement, legally drawn up and signed, in support of his claim. Defendant refused to complete the contract owing to the discovery, since the agreement was signed, of an identical or similar variety in more than one nursery establishment, whereby the variety Kathleen Mallard could not be considered a novelty, although sold as such. The judge held that, by the terms of the agreement, plaintiff agreed to sell his stock of Kathleen Mallard, and not the whole of the double-blue varieties of Lobelias in existence, over which he could not possibly have control. Moreover, the document stated that his stock was eleven pots: thus other plants in existence were excluded from the agreement. As it was not proved that plaintiff had parted with any of his stock of this Lobelia to another person, but had delivered the whole of his eleven pots to defendant, his Honour gave judgment for plaintiff, with costs.

SOCIETIES.

ROYAL HORTICULTURAL.

DECEMBER 5.—The usual fortnightly meetings of the Committees of this society were held in the Hall, Vincent Square, Westminster, on Tuesday last, and in connection with this meeting there was an exhibition of Colonial grown fruits, &c. The exhibits taken collectively were sufficient to furnish the hall with a good display. The ORCHID COMMITTEE recommended awards to novelties which included four First-Class Certificates, and one Award of Merit. The FLORAL COMMITTEE recommended an Award of Merit to an incurved Chrysanthemum, and the FRUIT AND VEGETABLE COMMITTEE gave a similar award to a new Apple and a Potato. In the afternoon a lecture was given by Mr. C. Herman Senn, on the "Crystallisation of Fruits and Flowers."

Floral Committee.

Present: W. Marshall, Esq. (Chairman), and Messrs. H. B. May, Geo. Nicholson, Jas. Walker, Jno. Green, G. Reuthe, Chas. E. Shea, C. J. Salter, Chas. Jeffries, W. Bain, Chas. Dixon, H. J. Cutbush, Geo. Gordon, C. E. Pearson, W. Cuthbertson, W. P. Thomson, E. H. Jenkins, J. F. Mc. Leod, J. Jennings, C. Blick, R. Hooper Pearson, Chas. T. Drury and C. R. Fielder.

LEOPOLD DE ROTHSCHILD, Esq., Ascott, Leighton Buzzard (gr. Mr. J. Jennings), exhibited on the floor of the Hall a magnificent group of Carnations, principally of the "tree" type, a few plants of Souvenir de la Malmaison, "Princess of Wales" being also included. These latter were perfect specimens of this choice variety, the blooms being of extra large size, and the colour splendidly developed. The beautiful variety Enchantress was represented by several dozen plants, all developed to perfection. The variety Harry Fenn had flowers of rich crimson colour, that contrasted greatly with the adjacent pure white La Grandesse and La Purité. America (scarlet), Marquis (pink), Mrs. Lawson, and Mrs. Leopold de Rothschild, a dwarf-growing variety with salmon-pink coloured flowers, are other varieties that were much admired. (Gold Medal.)

Messrs. W. CUTBUSH & SON, Highgate, London, N., exhibited a grand lot of winter-flowering Carnations, some of which were exhibited to excellent effect in tall stands. The varieties Enchantress, White Lawson, Fair Maid (pink), Winter Cheer, Cardinal (crimson), Governor Woolcott (white), Mrs. S. J. Brookes, and General Kuroki (very bright red colour), and Lord Charles Beresford were capital. (Silver Flora Medal.)

Mr. S. MORTIMER, Rowledge Nurseries, Farnham, Surrey, made a pretty exhibit of Carnations arranged in stands of different heights and relieved with sprays of Asparagus. The variety Fair Maid was shown in excellent condition, and Lorna (white), Enchantress, Lady Bountiful, and others were very good. (Silver Banksian Medal.)

E. H. BROWN, Esq., Highwood, Roehampton, (gr. Mr. Bradford), exhibited fifty-six plants of Begonias Gloire de Lorraine and Turnford Hall. They were in 6-inch pots, and were trained as small pyramids, about

2½ feet high. All were well flowered, and showed good cultivation. (Silver Gilt Flora Medal.)

Mr. B. B. MAY, Dyson's Road Nurseries, Upper Edmonton, exhibited an excellent group of Begonias of the Gloire de Lorraine type, all the varieties which were shown at the previous meeting being again exhibited. (Silver Banksian Medal.)

Messrs. JAS. VEITCH & SONS, Royal Exotic Nurseries, King's Road, Chelsea, made a very fine exhibit of winter-flowering Begonias, of the type obtained from *B. socotrana*, crossed with the tuberous rooted varieties. The varieties Ensign, Winter Cheer and Julius were capital. *Jacobinia chrysostephana* and *J. coccinea*, &c., were shown in flower. (Silver Flora Medal.)

Messrs. HUGH, LOW & CO., Bush Hill Park, Enfield, Middlesex, staged a miscellaneous group of greenhouse plants and flowers, including Eupatorium odoratissimum; also salmon and red-coloured and white varieties of Cyclamen, a number of Cacti, Acacias, Roses, Carnations, &c.

Messrs. JOHN PEED & SON, West Norwood, London, exhibited a large number of Alpine plants, similar to those displayed by them at the last meeting. (Bronze Flora Medal.)

Messrs. THOS. S. WARE & CO., Feltham, exhibited a large collection of Alpine plants in pans—mostly not in flower; also a few plants of *Primula obconica*, in bloom, and flowers of decorative Chrysanthemums, &c. (Silver Banksian Medal.)

Messrs. W. WELLS & CO., Merstham, exhibited a single flowered, white Chrysanthemum, named Dorothy Fortescue, of somewhat singular appearance. It has a very large, prominent disc, and widely separated pure white florets, of varying length, some being more than 3 inches long. The same firm had a considerable display of Chrysanthemum flowers of most sections, and including a number of novelties. (Bronze Flora Medal.)

AWARD OF MERIT.

Chrysanthemum Triomphe de Montburn.—An incurved flower of considerable size and good outline, with well-developed, high centre. The colour is unattractive, the older florets being of very faint, rather washy lilac, and the younger florets of straw colour. Shown by Messrs. W. WELLS & CO., Merstham. This variety was raised by the Marquis de Pins.

Orchid Committee.

Present: J. Gurney Fowler, Esq., in the chair, and Messrs. Jas. O'Brien (Hon. Sec.), De B. Crawshay, W. A. Bilney, R. Brooman-White, F. Wellesley, J. Colman, R. G. Thwaites, G. F. Moore, F. J. Thorne, H. A. Tracy, W. H. Young, W. Boxall, H. Little, H. Ballantine, and Harry J. Veitch.

Baron Sir H. SCHRÖDER, The Dell, Egham (gr. Mr. H. Ballantine), staged a very fine group, for which a gold medal was awarded. It contained remarkably fine specimens of some of the older hybrid *Cypripediums*, including *C. × Pucherianum* with over 20 flowers; *C. × Mrs. Chas. Canham* with 24 flowers; and a good *C. × Leeanum* with 40 flowers. Others were proportionately fine, and *C. insigne*, Harefield Hall variety, *C. i. Sanderæ*, *C. × Gravesæ*, *C. × Leeanum giganteum*, and other *Cypripediums* were well displayed. Of the *Odontoglossums* of special merit *O. crispum* Princess Christian, a finely blotched form with a suspicion of *O. × Wilckeianum*; the purple *O. ioplocon*, *O. × Wilckeianum*; the fine *O. × Ruckerianum insigne*, which has been in the Dell Collection about 20 years, were noted. Among hybrid *Cattleyas* and *Lælio-Cattleyas* *Lælio-Cattleya × Bletchleyensis* Ruby King was a grand and richly-coloured rose and ruby-purple flower; and other fine things were *Cypripedium × Baron Schröder* with a very handsome purple-lined dorsal sepal; *C. × Rolfei*, *Lycaste × Balliana*, *Oncidium ornithorhynchum album* with several graceful spikes of flowers; *Odontoglossum bictonense album*, &c.

Messrs. J. CYPHER & SON, Queen's Road, Cheltenham, were awarded a Silver Gilt Flora Medal for a very fine group, in which were a remarkable number of *Cypripediums*, the central plant being an enormous specimen of *C. × Leeanum giganteum*, with fifty-six flowers, and for which a Cultural Commendation was awarded. Among the many forms of *C. insigne* and *C. × Leeanum*, prominent were *C. × Leeanum*, Cypher's variety, a model flower of the fine substance of *C. aureum*; five plants of *C. insigne*, Harefield Hall variety, a good example of the distinct *C. insigne giganteum*, good *C. i. Sanderæ*, *C. i. Sanderianum* and other yellow forms. The showiest of its class was *C. × Charlesworthianum*, Cypher's variety (*Leeanum magnificum × Sallieri Hyeantum*), a yellow-tinted flower, of fine size and substance, and with a clear white upper half to the dorsal sepal, which was spotted with brown on the greenish yellow base. Others

oted were *C. × triumphans*, *C. × Tityus*, *C. × Fascinator*, *C. × Memoria Moensii*; the now rare pure white *Dendrobium aqueum* (album), &c.

Messrs. CHARLESWORTH & CO., Heaton, Bradford, staged a select group, the most remarkable plant in which was their new hybrid *Odontoglossum × Smithii* (see Awards). With it were several other hybrid *Odontoglossums*; *Cypripedium × Hitchinsia*, with a fine white dorsal sepal spotted with rose colour; *C. × Leeanum giganteum* and other forms of *C. × Leeanum*; *C. insigne*, Harefield Hall variety; *C. × Rosita* (*Charlesworthii × callosum*), a fine light purple-tinted flower; *C. × Gravesæ* and other *Cypripediums*; the yellow *Lælio-Cattleya × Lydia* (*Cowani × Gaskelliana alba*); *Promenaea lentiginosa*, the singular little *Cælogyne sulphurea*, and a finely-flowered *Trichopilia suavis*. (Silver Flora Medal.)

FRANCIS WELLESLEY, Esq., Westfield, Woking (gr. Mr. Hopkins) sent the fine yellow *Cypripedium insigne* Mrs. F. W. Moore, the large *C. insigne* Hopkinsianum, *C. × Leeanum* Mrs. Francis Wellesley, a very finely shaped and distinctly marked flower, the dorsal sepal of which had a yellowish green base, the rest being pure white with delicate dotted lines of rose colour; also *C. × Niobe* Oakwood variety, *C. × Juno magnificum*, *C. × Prospero Sedeni*, and a compact plant of *C. insigne Sanderianum*, with six flowers.

Mrs. HAYWOOD, Woodhatch, Reigate (gr. Mr. C. J. Salter) sent *Cypripedium × Lady Tripp* (*Harrisianum superbum × Euryades*), an intensely dark rosy purple flower.

Sir WM. MARRIOTT, BART., Down House, Blandford (gr. Mr. T. Denny), sent flowers of *Sophræ-Lælia × Marriottiana aurea*; *Cattleya × Armainvillerensis* (*Mendelii × Warscewiczii*), and a form of *C. labiata*. Messrs. JAS. VEITCH & SONS, Chelsea, showed *Brasso-Lælia × Rolfei* (*L. crispæ × B. Digbyana*), a bluish-white flower with an elongated fringed lip.

JEREMIAH COLMAN, Esq., Gatton Park (gr. Mr. W. P. Bound), showed *Lælio-Cattleya × Cornelia* (*C. labiata × L. pumila*), and several cut Orchids.

AWARDS.

FIRST CLASS CERTIFICATES were awarded as follow:—

Lælia Sanderiana, Chillingham variety, from the Right Hon. the Earl of TANKERVILLE, Chillingham Castle, Northumberland (gr. Mr. Hunter). A very fine variety, with large, almost-circular flowers, the upper part of which is clear pale rose and the lower bronzy yellow heavily netted and tinged with purple brown. The dwarf compact plant of three growth bore on two of them five spikes bearing together 36 flowers. It was splendidly grown, and a cultural commendation to Mr. Hunter was also voted.

Odontoglossum × Smithii (*Rossii rubescens × Harryano-crispum*) from Messrs. Charlesworth and Co., Heaton, Bradford. One of the most remarkable and beautiful hybrid *Odontoglossums* yet raised. The plant resembles an enlarged *O. Rossii*. The flowers in size and form approach those of *O. × Harryano-crispum*. The sepals and petals, which are fairly broad, are nearly equal, prominently margined and tipped with clear rose-purple, the inner portions being white with a slight greenish tint and a profusion of clearly-defined dark chocolate-purple spots. The lip is elongated, slightly twisted, clear rose-purple with a white base bearing a few dark markings, and a yellow crest. The little plant shown had an erect spike of three flowers, and bore evidence of even better things when strong.

Lælio-Cattleya × Epicasta, Gatton Park variety (*C. Warscewiczii × L. pumila præstans*). From JEREMIAH COLMAN, Esq., Gatton Park (gr. Mr. W. P. Bound). A beautiful flower equal in size to that of *Cattleya Mendelii* and of perfect form. Sepals and broad petals white with a slight yellowish tinge at the margin and a delicate pink flush over the surface. Lip broad purplish crimson in front, sulphur yellow at the base.

AN AWARD OF MERIT

was awarded to:—

Cypripedium Actæus "F. H. Cann" (*insigne magnificum × Leeanum giganteum*), from G. F. MOORE, Esq., Bourton-on-the-Water (gr. Mr. Page). A handsome flower closely resembling a large greenish *C. insigne* with a very broad dorsal sepal, the upper half of which is clear white.

Fruit and Vegetable Committee.

Present: Geo. Bunyard, Esq., Chairman, and Messrs. Jos. Cheal, W. Bates, S. Mortimer, A. Dean, H. Parr, Ed. Beckett, W. Fyfe, W. Pope, J. Lyne, F. Q. Lane, C. Foster, J. Willard, W. H. Divers, Owen Thomas, A. H. Pearson, J. H. Goodacre, Geo. Wythes and Jno. Wright.

A Silver Gilt Knightian Medal was awarded to His Grace the Duke of RUTLAND, Belvoir Castle (gr. Mr.

W. H. Divers), for a collection of out-of-doors fruit, consisting of 31 varieties of Pears and 36 of Apples. The latter were nearly all the produce of standard trees, the blossoms of which were unaffected by the severe frosts which destroyed those on bushes, espaliers and pyramids of low growth. Good specimens of Apples were noted in Gloucester Quoining, Northern Greening, Gloria Mundi, The Queen, Blenheim Pippin, Bramley's Seedling, Ribston Pippin, Betty Geeson, Guernsey Pippin, Reinette du Caux, Allington Pippin, &c. The finer Pears were Délices d'Hardenpont, Doyenné du Comice, British Queen, Huyshe's Victoria, a fine Pear rarely seen now; Doyenné Boussoch and others.

Messrs. H. CANNELL & SONS, Swanley and Eynsford, Kent, made an extensive and showy exhibit of Apples—very rich in colour and of large size, for the varieties. Of these there were 110. Of culinary varieties, in which the exhibit was rich, very superior fruits were those of Bismarck, Cox's Pomona, Hoary Morning, Bramley's and Pott's Seedlings. The Queen, Peasgood's Nonsuch, Warner's King, Emperor Alexander, Lord Derby, Prince Albert, Cellini Pippin, and Gascoyne's Scarlet. Dessert varieties in excellent form were Worcester Pearmain, Ribston Pippin, Lady Sudeley, Allington Pippin, Chelmsford Wonder, Chas. Ross, &c. (Silver Gilt Knightian Medal.)

The HOGG MEMORIAL Medal for Fruit was awarded to Mr. J. H. GOODACRE, Elvaston Castle Gardens, Derby, for a collection of Apples and Grapes. The latter were in every instance of superb quality, and there were several bunches of Muscat of Alexandria and four of Black Alicante. The Apples numbered 28 dishes of well-grown cooking and dessert varieties of a high colour generally, and were presumably from trees grown in pots, though this circumstance was not stated as it should have been if such were the case.

Mrs. T. FIELDER, Grimston Park, Tadcaster (gr. Mr. H. J. Clayton), showed fruits of *Citrus decumana* (the Shaddock). The parent tree, in Yorkshire, is known to have been growing as far back as the early part of the 19th century. (Cultural Commendation.)

Sir WALTER GILBEY, Elsenham, Essex, showed a number of highly-coloured examples of Ribston Pippin Apples. The trees had received a special manuring in the form of a mixture of super-phosphate of lime, nitrates of potash and soda, and sulphate of lime. (Cultural Commendation.)

Sir EDMUND C. LODER, Leonardslee, Sussex (gr. W. A. Cook), was awarded a Cultural Commendation for a basket of excellent Mushrooms.

POTATOS.

There were several important exhibits of Potatoes observed on this occasion that are deserving of detailed notice in so far as judgment can be passed on uncooked tubers. One of these came from Messrs. Dobbie and Co., Rothesay, and it consisted of 60 varieties in as many dishes. The land at Rothesay on which they were grown is a medium sandy loam overlying some kind of rock, and the tubers, as one might expect from such a soil and its southerly aspect, were shapely, clear of skin and without scabbiness. We noted nice samples of the Dean, Queen of the Veldt, Eightyfold and Edgecote Purple, with purple skins; of red ones—Mr. Bresse, Adirondack, King Edward, Selected Russet, Rouge Royal, Mr. Ambrose, General White, Waverley, Dalmeny Red; and of whites—Snowdrop, Royal Kidney, The Crofter, Village Blacksmith, Eldorado, Eureka, Early Puritan, White Elephant (a light pink), The Factor, Nobleman, Up-to-Date, and Sir J. Llewellyn, &c. (A Silver Knightian Medal was awarded.)

Messrs. G. MASSEY & SONS, Spalding, Lincs., exhibited 36 varieties in considerable quantity in baskets and heaps, mostly white-skinned tubers that were getting green, in some instances, from long exposure to the light. Fine and shapely were Sutton's Superlative, Twentieth Century, Victor, The Leader, Macpherson's Early Champion, Myatt's Prolific, Ashleaf, Northern Star, and Chas. Fidler, both of these being apparently fine cottagers' varieties; Evergood, Eldorado, Excelsior, Dalmeny Acme, Dalmeny Early, and Milecross Early. (Silver Banksian Medal.)

Mr. W. DEAL, Brooklands, Kelvedon, Essex, showed a quantity of tubers of varieties already in commerce, as well as some at present untried seedlings in their first year and consisting of the entire produce of a plant. These were chiefly white-skinned kidneys and round. Of the older varieties shown the tubers were smooth skinned and shapely, and among them there were observed The Factor, Recorder, Sensation, Evergood, Royal Kidney, Sir J. Llewellyn, Pearl, Early Gem, Eldorado, Market King and several others.

A fine lot of Sutton's Ailsa Craig onions, many of the bulbs measuring 5 and 6 inches in diameter, and of uniformly good shape, was shown by Mr.

DAVISON, Little Gaddesden (gr. Mr. A. G. Gentle), and gained a Silver Banksian Medal.

Prizes were offered for collections of preserved Fruits, Jams and Jellies. Mrs. W. H. PLOWMAN, Heath Cottage, Beddington Corner, Mitcham, Surrey, was awarded a Silver Cup, in the open classes, for a collection of 26 bottles of preserved fruits, jams and jellies, and the same lady also won the 1st prize in that for 12 bottles. Mr. GEO. PENWILL, Totnes, Devon, was awarded the 2nd prize in the open class. In the smaller class, for 18 bottles, Mrs. E. BECKETT, The Gardens, Aldenham House, Elstree, was placed 1st, followed by Mrs. GEORGINA BANKS, 102, Park Street, W.

AWARDS OF MERIT

were recommended as follow :—

Apple James Kirk.—This is a dessert variety, raised from Blenheim Pippin × King of the Pippins. It largely partakes of the characters of the first-named parent, and is moreover about the size of that variety. The eye is formed in a shallow basin, and from it radiate slightly raised ridges. The stalk is set in a somewhat deep cavity, which is marked with russet-green. The colour on the side next the sun is flushed and streaked with red, that on the opposite side being yellow.

Shown by Messrs. Cross and Son, Wisbech.

Potato Peacemaker.—Shown by Mr. Scarlett, Edinburgh.

COLONIAL PRODUCTIONS.

The Department of Agriculture, NOVA SCOTIA, made an extensive display of Apples, the whole collection consisting of not over large specimens, having, in almost every instance, unusually bright colouring and spotless rind. Most of the varieties are known by name on this side of the Atlantic, and some are also grown in this country. Of these last mentioned Blenheim Orange Pippin and Ribston differed much in colour from home-grown fruits. The best of the Nova Scotia varieties were Fallawater, King of Tompkins' County, Northern Spy, Ben Davis and Stark.

Of varieties finding favour in this country we may instance Grime's Golden, Newtown Pippin, White Winter Pearmain, Fall Pippin, Northern Spy, Ben Davis, Esopus Spitzbergen, and Flushing Spitzbergen. A model was shown of a fruit of Beitingheimer, that weighed 2 lbs. Another interesting exhibit on this stand was a Potato measuring 13 inches in length, and the same in circumference. The total exhibit of this province consisted of about 100 bushels of Apples in boxes and half that quantity shown in flat baskets and plates.

BRITISH COLOMBIA.

The chief districts from which the exhibit from British Columbia was collected were Okanagan, Lytton, Kootenay, Vancouver Island and Spence's Bridge. Apples, it may here be remarked, form the major proportion of the fruit cultivated in British Columbia, the produce finding ready sale in the New North Western territory, which has a climate too severe for the Apple. The fruit industry is still in its infancy, but the results so far secured are convincing as to its future importance. In 1904 the area under fruit had increased to 13,430 acres. Two hundred and fifty thousand trees were planted in 1903, and 700,000 in 1904. The value of the fruit of that year was 240,000 dollars.

THE WEST INDIAN SECTION of the Exhibition was organised by the West India Committee, which utilised many of the exhibits that formed part of the display lately shown at the Crystal Palace. The collective exhibits occupied the whole of the west side of the Hall facing the entrance. Messrs. JAMES PHILIP & Co., 4, Fenchurch Buildings, E.C., displayed a group of miscellaneous products ranging from cigars to pickles. They had West Indian Fruits in dried, crystallised, bottled, and sweet-meat form. We noticed yams, oranges, limes, sugar, cordials, wines, pickles, sauces, mangos, shaddocks, and a host of other such like things, the majority of which are rarely seen in our grocers' shops. (Silver Gilt Knightian Medal.)

THE ROYAL MAIL STEAM PACKET COMPANY showed a number of fresh fruits—Bananas, including the claret-coloured variety. Avocado Pears, limes, paw-paws, citrons, also bottled specimens of soursop, guavas, chritophenes, peppers, &c. (Silver Gilt Knightian Medal.)

THE BRITISH WEST INDIAN FRUIT COMPANY, LTD., showed bunches of bananas and tropical fruits preserved in bottles. Hon. J. COX FILLAN, Dominica, was awarded a Silver Banksian Medal for a display of limes.

From GRENADA came spices, cocoa, cotton and bottled fruits. Dominica sent fruits of the Colony, including limes, shaddocks, grape fruit, &c.

JAMAICA showed tobacco in the manufactured state, including cigars, also sugar and a cattle-food made from the waste products of the sugar industry named molascuit. From BARBADOS came sugar, rum, molasses, cotton, pickles, and other preserves, &c. Messrs. McDODDIES and Co., Finsbury, E.C., showed desiccated vegetables.

LECTURE ON THE CRYSTALLISATION OF FRUIT AND FLOWERS.

At the general meeting of the society held the same afternoon Mr. George Gordon, V.M.H., was in the Chair. A lecture was delivered by Mr. C. Herman, senr., on "The Crystallisation of Fruit and Flowers," illustrated by samples of crystallised fruit and flowers, prepared in the South of France, where the industry thrives. The French appear to have a monopoly in the business, and although their preparations are all that can be desired, they also beat all competitors in the way they put up and pack their wares. The lecturer showed how private persons, as well as firms, might aspire to perform the work of crystallising themselves, and besides giving instructions as to what to do in the several operations of boiling, soaking, packing, and drying, he showed what to avoid. The operations of preparing preserves of this description are lengthy, and require the utmost care from the selection of the fruit to the arrangement in the boxes when complete.

Mr. R. Palmer, secretary of the Bureau of Information of British Columbia, contributed a lecture on "Fruit Growing in that Colony," illustrated by lantern slides.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

NOVEMBER 23.—There was a good display of plants at the meeting held on this date.

Groups were shown by Messrs. J. CYPHER & SONS, of Cheltenham, which contained a good number of choice Cypripediums, such forms as C. × Fascinator, C. insigne var. Luciani, several good forms of C. × Leeanum, a fine form of C. insigne, Harefield Hall var., and the beautiful but now scarce *Miltonia vexillaria* var. Leopoldi. (Silver Medal.)

G. W. LAW-SCHOFIELD, Esq., Rawtenstall (gr. Mr. Shiel), again displayed a good collection of Cypripediums, showing evidence of good cultivation and careful selection. (Silver Gilt Medal.)

J. H. CRAVEN, Esq., Keighley, Yorks (gr. F. Corney), exhibited a varied group of plants, which were brightened considerably by several nice plants of *Epidendrum vitellinum*, autumn-flowering variety. (Silver Gilt Medal.)

WALTER LAVERTON, Esq., Nantwich, Cheshire (gr. Mr. Smith), sent a dozen good Cypripediums, notable in which was a fine form of C. × Actæus, C. × Lathamianum and "yellow insigne." (Bronze Medal.)

Messrs. A. J. KEELING & SONS, Bradford, obtained a Bronze Medal for a miscellaneous group.

Messrs. CHARLESWORTH & Co., Bradford, exhibited a good form of *Odontoglossum crispum*, the flowers being beautifully marked.

Messrs. W. BULL & SONS, Chelsea, had a few good novelties, including *Odontoglossum crispum* var. Coronet, *Cattleya labiata* var. Amesiana, and

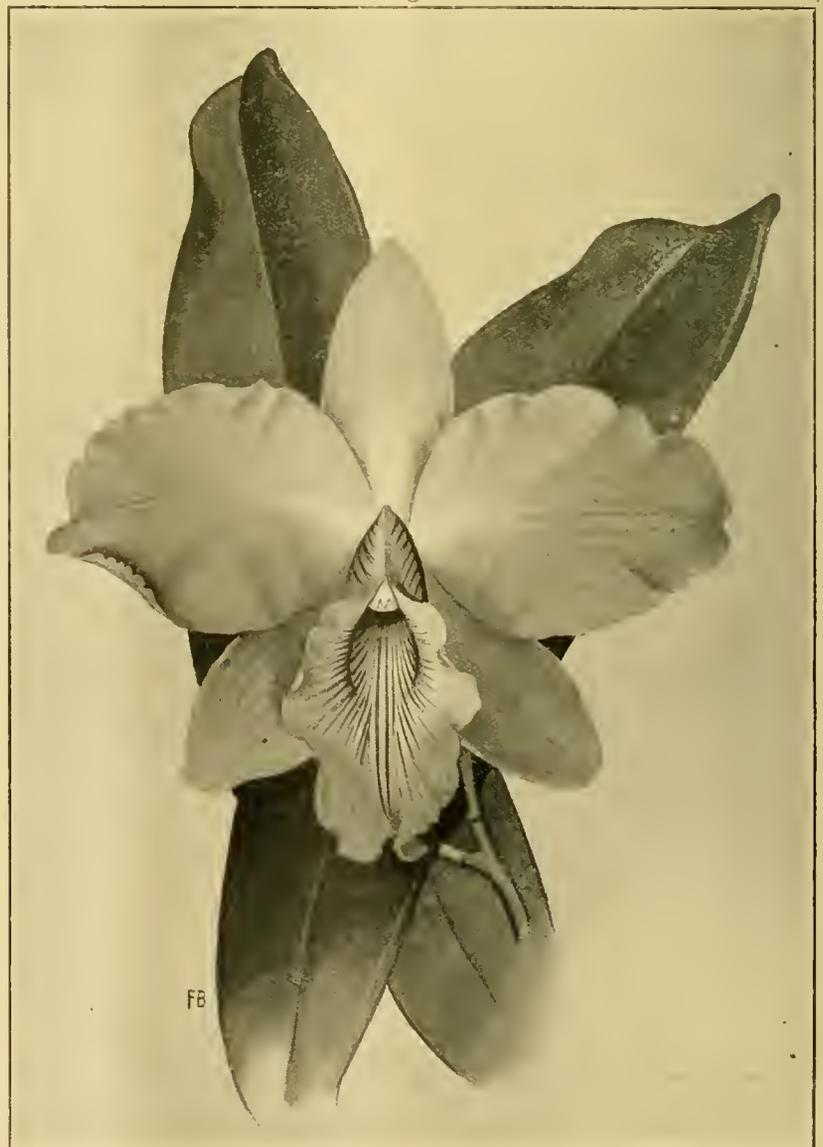


FIG. 154.—SOPHRO-CATTELEYA "DORIS,"

awarded a First-class Certificate at Manchester, when shown by Messrs. W. Bull & Sons. Colour of sepals and petals vermilion scarlet. (See page 413, col. 1.)

Sophro-Cattleya × Doris, the latter a rich scarlet flower.

FIRST CLASS CERTIFICATES

were awarded to—

Sophro-Cattleya × Doris, see Fig. 154 (W. BULL & SONS); Cypripedium × Euryades var. splendens (G. W. LAW-SCHOFIELD, Esq.).

AWARD OF MERIT.

Cypripedium × Actæus, Redclyffe var. (W. LAVERTON); C. × Leeaunum, New Hall Hey var. (G. W. LAW-SCHOFIELD, Esq.); C. × Bookeri (G. W. LAW-SCHOFIELD).

P. W.

CHESTER PAXTON.

NOVEMBER 15, 16.—The seventeenth annual exhibition of Chrysanthemums and fruit in connection with the Chester Paxton Society was held in the Chester Town Hall. The number of entries exceeded that of any previous show. The chief attractions were the groups of double and single-flowered Chrysanthemum plants. Last year the popular President of the society, Major MACGILLYCUDDY, carried off first honours in these classes, including two challenge cups, but this year he had to be content with second place in both classes. The 1st prize and the Challenge Cup for the large double varieties were secured by T. GIBBONS FROST, Esq., Mollington Banastre, (gr. Mr. Thomas Gilbert), whilst the 1st prize and Challenge Cup for single varieties were gained by Dr. LAWRENCE, of Upton Asylum, Chester (gr. Mr. A. Ellis). Other classes for pot plants were well represented, as were also the classes for cut blooms, the single varieties being especially beautiful. A feature of the exhibition was a Table Decoration Competition for ladies, the exhibits being arranged in the Council Chamber. This year, for the first time, a Silver Challenge Cup was offered by Mrs. James G. Frost, of Boughton Hall, and the 1st prize and this trophy were secured by Miss NORA SMITH, Pulford, who was closely followed by Mrs. WALTER WELSBY, Liverpool Road, who won in the same competition last year. The prominent feature in the Fruit Classes was the display of kitchen and dessert Apples. The principal prize winners in this section were: Sir GEORGE MEYRICK, Bodogan, Anglesey; Mr. J. SAUNDERSON, Bodnant; the Rev. L. GARNETT, Christleton; and Mr. R. WAKEFIELD, Newton Hall. In the large assembly room a beautiful table of miscellaneous fruit and flowers was staged by Mr. N. F. Barnes, head gr. to Duke of WESTMINSTER, to which the judges awarded a Gold Medal. Trade exhibits were made by Messrs. DICKSON, Ltd., Chester, and Messrs. CLIBRANS, Altrincham, both of whom were awarded Silver Medals; Messrs. McHATTIE & Co. and Mr. F. W. DUTTON, both of Chester, received Bronze Medals for non-competitive displays.

ABERDEEN CHRYSANTHEMUM.

NOVEMBER 17, 18.—The annual exhibition of the above society was held in the Music Hall Buildings, Aberdeen, on these dates, and was one of the most successful ever held in the north of Scotland. This society continues to grow in popularity, as evidenced by the large number of entries, which totalled over 700, and by the large attendance of the general public during the time the exhibition was open. The courteous secretary is Mr. Magnus H. Sinclair, Union Street, Aberdeen.

POT PLANTS.

These, with the exception of the groups, were displayed in the ballroom, and a splendid show resulted. The tables accommodating pot plants in groups were arranged down the centre of the main hall, where they made a fine show, although the plants were somewhat lacking in the fullness and freshness which have characterised them at previous exhibitions. Premier honours were taken by Mr. J. A. Grigor, gr. to Sir DAVID STEWART, of Banchory. The group, of which Ferns and Palms comprised the groundwork, formed a pleasing picture. Mr. A. Duncan, gr. to Mr. ADAM MAITLAND, Albyn Place, Aberdeen, followed with an exhibit that ran the first-prize entry very closely for supremacy.

In the class for a group of plants some very meritorious entries were noticed. Mr. GRIGOR, Banchory House, was again to the fore, his decorative Chrysanthemums being especially deserving of mention. Mr. Alex. Archibald, gr. to Mr. GRAY, Dunalistair, Aberdeen, had also a fine exhibit in this class.

The leading places in the classes for Orchids, Palms, Ferns, Primulas, Cinerarias, and Begonias were taken by Mr. W. PATERSON, Balmedie; Mr. W. MACKIE, Morken; Mr. ANDREW REID, Durriss House; Mr. JOHN A. GRIGOR, Banchory House; and Mr. GEORGE MILNE, Langley. Special mention must be made of

a display of winter-flowering Begonias set up by Mr. A. Hutton, gr. to GEORGE KEITH, Esq., of Usan House, Montrose.

CUT FLOWERS.

With the exception of the groups of pot-plants, the beautifully decorated Music Hall was devoted to the display of cut blooms. The leading exhibit of twelve vases of Japanese Chrysanthemums, with three blooms in each, gained the President's handsome Silver Challenge Cup for Mr. ANDREW HUTTON, Usan House, Montrose, who had a magnificent collection of very choice flowers. 2nd, Mr. E. GOSS, Sunnyside House, Montrose, whose exhibit contained several blooms of exceptional quality. In Mr. HUTTON's entry were the biggest bloom in the show and the bloom of premier quality. These secured two special prizes. The prize for the biggest bloom was awarded to a specimen of the yellow Mrs. F. S. Vallis. The special prize for the premier bloom was awarded to a specimen of the variety Madame R. Cadbury. Other leading prize winners in the cut flower section included Mr. JOHN PETRIE, Crathes Castle; Mr. ANDREW REID, Durriss House; Mr. J. GRIGOR, Banchory House; Mr. J. TOUGH, Aberdeen; Mr. W. PATERSON, Balmedie; Mr. W. ELLIS, Ballgreen, and Mr. J. JENKINS, Clifton Road, Aberdeen, the last-named being an amateur exhibitor.

FRUIT AND VEGETABLES.

The display of fruit was a very fine one. Leading honours went to Mr. W. M. MOIR, Rosehaugh, for Apples and Pears; to Mr. J. ROBERTSON, Arbroath, for culinary Apples; to Mr. JOHN PIRIE, Stricken House, for dessert Apples; to Mr. GEORGE JAMIESON, Burton, Loughborough, for Pears; and to Mr. JOHN PETRIE, Crathes Castle, for Grapes.

The collections of vegetables occupied the whole of the Square Room. The leading prize winners were Mr. JOSS, Sunnyside House, Montrose, who staged a splendid collection of vegetables, among which Brussels Sprouts were especially noticeable; 2nd, Mr. JOHN OGSTON, gr., Bourtie House, Old Meldrum. Mr. J. FERGUSON, Linton House, who carried off the chief honours for Potatoes, Mr. D. MCKENZIE, Lower Buxburn (who had the best Savoys and Cauliflowers), Mr. JOHN THOMSON, Sunnyside, Aberdeen (Cabbages).

NON-COMPETITIVE EXHIBITS.

A great feature of the Aberdeen show is display of the groups of plants, &c., exhibited by the local florists and seedsmen.

Mr. A. BURNS, jun., New Market, Aberdeen, and Messrs. KNOWLES & SONS, Aberdeen, both received a Silver Medal for a magnificent display of plants, &c.

Exhibits of fruit were staged by Messrs. T. RIVERS & SONS, Sawbridgeworth, Hertfordshire, and by Messrs. G. BUNYARD & Co., Maidstone, Kent.

Messrs. WELLS & Co., Surrey, showed a fine collection of Chrysanthemums.

Mr. W. A. DUSTAN, Aberdeen, had specimens of Chrysanthemum Autumn Queen.

Messrs. JAMES STRACHAN & Co., Aberdeen, had a splendid collection of fruit, for which they were awarded the Silver Medal of the society.

BARNSELY CHRYSANTHEMUM.

NOVEMBER 16, 17.—This year's exhibition of the above Society contained a larger number of entries than at previous shows, and the quality of the exhibits was better than ever. Further, the public patronage was quite up to the standard of the past two or three years.

The total entries numbered 420, as against 350 last year, and they were grouped into 54 classes.

The Japanese varieties formed an all-round, excellent show, the Incurred being, perhaps, a little coarse in quality. For years past Mr. J. D. ELLIS, of Worksop (gr. Mr. A. Alderman), has won in the principal classes, but this year Mr. W. A. H. BASS, Burton-on-Trent (gr. Mr. R. Nisbett), was to the fore with some magnificent specimens that secured premier honours.

The displays of plants and vegetables were each above the average seen at Barnsley, while the displays of Fruit were exceptionally fine.

The Silver Challenge Cup, value 14 guineas, offered in the class for 24 cut blooms, was carried off for the third and last time by Mr. B. FISH, Cawthorne.

AWARDS.—CUT FLOWERS.

Eighteen incurred Chrysanthemums, not fewer than 12 varieties.—1st, W. A. H. BASS, Burton-on-Trent (gr. Mr. R. Nisbett); 2nd, J. D. ELLIS, Worksop (gr. A. Alderman); 3rd, J. HARRISON, Sheffield.

W. A. H. BASS, Esq., Burton-on-Trent (gr. Mr. R. Nisbett), showed the best 18 blooms of incurred varieties, the best 18 blooms of Japanese flowers, thereby winning the Micklethwaite Challenge Trophy

and a Gold Medal presented by the Mayor of Barnsley; and the best 12 incurred blooms in not fewer than eight varieties.

LIVERPOOL HORTICULTURAL.

NOVEMBER 15, 16.—The twenty-sixth annual autumn show of Chrysanthemums, plants, and fruit of this society was held in the St. George's Hall on the above dates. The Committee is to be congratulated on the success achieved. The competition in all classes was very keen. In the class for 24 incurred and 24 Japanese blooms in distinct varieties, the society offered a Silver Challenge Cup, value 20 guineas; this was won by J. B. HANKEY, Esq., of Leatherhead, Surrey (gr. W. Higgs). This gentleman showed the finest incurred blooms ever seen in St. George's Hall; 2nd, Mr. E. ELLIS, of Heswall, Cheshire. Alderman W. H. WATTS gained the 1st prize for the best group of Chrysanthemums and foliage plants. For 18 Japanese blooms Mrs. E. P. SMITH was placed 1st; while in the class for 18 incurred blooms Mr. A. COOK gained premier honours. In the Fruit Classes the competition was very keen, the principal prizes being won by Mrs. H. A. BRIGHT, Mr. H. CUNNINGHAM, Colonel J. I. BLACKBURNE, Mr. J. LEE, Mr. W. MACKERELL, Mr. J. BOULT, and Mr. T. B. KENDALL. J. P.

NEWPORT CHRYSANTHEMUM.

NOVEMBER 16.—The annual show of the Newport (Monmouthshire) and District Chrysanthemum Society, held on the above date, was a very successful one, the principal prize winners being Mrs. F. S. WILLIAMS, Brynglas; Mr. J. DUFF, who secured five firsts and two second prizes, including a challenge bowl and silver cup value 14 guineas; W. F. DAWSON, Esq., Llantarnam Hall, who took the Challenge and the Silver Cup value eight guineas; and Mr. W. H. HOLLINGDALE, Java Villa, who won five first prizes, including a challenge bowl, a challenge cup, and the N.C.S. Silver Medal.

BOLTON HORTICULTURAL AND CHRYSANTHEMUM.

NOVEMBER 17, 18.—The nineteenth exhibition of the above society was held in the Albert Hall, Bolton, on the above dates, and was again a success, the number of entries showing an increase over those of former shows. Four excellent groups of miscellaneous plants arranged for effect were displayed, the best being that put up by Mr. W. Burgess, gr. to J. HARWOOD, Esq., J.P., Woodleigh, Bolton, who thus secures the Challenge Cup given by E. T. Cook, Esq., J.P.

One entry only was seen in the class for a circular group of Chrysanthemum plants arranged with foliage plants. This was staged by A. H. Drinkwater, gr. to HERBERT T. PARKE, Esq., Withnell Fold, who was awarded the 1st prize.

The Mayor's prize of a Silver Challenge Cup in the class for a semi-circular group of plants arranged for effective display was won by Mr. Joseph Abbott, gr. to J. MUSGRAVE, Esq., Knowsley Grange.

The premier stand of 12 incurred, and 12 Japanese blooms, distinct, was shown by Mr. J. B. HANKEY, Leatherhead; 2nd, Mr. E. ELLIS, Heswall.

Mr. F. S. VALLIS, Chippenham, won in both the class for 36 Japanese blooms, and in that for six vases of large-flowering varieties, in distinct varieties. Mr. J. HORROCKS, gr. to Mrs. TILLOTSON, Hillside, had the best vases of single flowers.

The President's Cup in the Amateur's classes was won by E. T. COOK, Esq., J.P., Cleveland, gr. Mr. J. Wainwright.

Mrs. TILLOTSON showed the best incurred, and Rev. G. TEEBAY the best Japanese blooms in the amateur section.

COVENTRY CHRYSANTHEMUM.

NOVEMBER 16, 17, 18.—The eleventh annual exhibition of the Coventry and District Chrysanthemum and Floral Society was held on these dates at the Baths Assembly Hall. Taken on the whole, the exhibition surpassed that of 1904, the blooms being of superior quality and the competition keener. The displays of cut blooms were twice as numerous as on the last occasion, and superior in quality. The new class for Begonias and single Chrysanthemums was well taken up by exhibitors. The only section in which improvement was not maintained comprised the vegetable classes, in which there was a falling off in competition, though there was little wanting in regard to quality. The groups of Chrysanthemum plants attracted much attention. Mr. G. SINGER, Coundon Court, gr. Mr. J. Collier, was awarded first honours for a well-balanced group, arranged with

attention to effects of colour and shape. Two groups of miscellaneous foliage and flowering plants were shown, and here again Mr. G. SINGER secured the premier position. Mr. W. FINCH won the 2nd prize in this class with a group scarcely less attractive. Messrs. PERKINS & SON, Coventry, displayed floral designs executed with the taste and skill for which this firm's work is so well known.

The 1st prize for 24 Japanese blooms was secured by Col. BEECH, Brandon (gr. Mr. E. J. Brooks); 2nd, Mr. G. SINGER. The smaller class for 12 Japanese blooms was also won by Col. BEECH, and he also surpassed all other exhibitors in the class for six vases of Japanese Chrysanthemums. Mr. W. FINCH, Coventry; Messrs. WEBB & SONS, Mr. H. STURMEY, Mr. W. F. BENNETT, and Mr. W. HOWE are other prominent prize winners.

BRITISH GARDENERS' ASSOCIATION (Plymouth and District Branch).

NOVEMBER 18.—The members met at the Corn Exchange, Plymouth, on the above date, Mr. Theodore J. R. Chalice in the chair. A paper was read by Mr. W. G. Edwards, head-gardener at South Wembury Gardens, on "Mistakes often made in Potting, Watering and Ventilating." The lecturer dealt with his subject in a very able manner, and a discussion followed. Mr. EDWARDS showed some fine Chrysanthemum blooms, also good examples of Ailsa Craig Onion. Mr. H. Ruse, gr. to Messrs. RICHARDSON, Crown Hill, displayed sprays of Eupatorium Weinmannianum, Eugenia Ugni and Benthania fragifera. W. S. E. C.

SOCIÉTÉ ROYALE LINNÉENNE DE BRUXELLES.

NOVEMBER 19.—The weather was very cold but dry, and the exhibits were numerous. About 120 plants were shown and two sets of fruit.

ORCHIDS.

Diplomas of Honour.—Cattleya, Leopold II., a wonderful variety from M. DE BIEVRE, the King's gardener, Laeken; *Odontoglossum ardentissimum luminosum* (well marked, crispum × *Pescatorei*) from M. J. HYE, Ghent.

Certificates of Merit for a splendid plant of *Calanthe Veitchii*, with over 20 flower spikes, from M. DE BIEVRE; *Cypripedium Helen II. roseum* (insigne *Chantini Lindeni* × *bellatulum*), from M. LAMBEAU, Brussels; *Odontoglossum amabile Doris* (*O. crispum* Franz Masereel × *O. Harryo* × *crispum*), *O. Harryo crispum*, *La Perle* (*O. Alexandræ* × *O. Harryanum*), *O. Loochristiense eximium* (*O. triumphans* × *O. crispum* Franz Masereel), from M. VUYLSTEKE, Loochristy; and *Odontonia Lairesseæ* (*O. crispum* × *Miltonia Warszewiczii*), from M. DE LAIRESSE, Liège.

Certificates of Merit were allotted to *Cypripedium Elmiranum* (Charlesworthi × *insigne Sanderæ*), from MM. DUCHESNE ET LANTHOINE, Watermael; *Cattleya labiata* var. *Watermaeliensis*, from the same growers; *Cypripedium Spicero-Chamberlainianum* var. *Biévreaum* (*Chamberlainianum* × *Spicerianum*), *Lælio-Cattleya Canhamiæ* (*L. purpurata* × *C. Monia*), from M. DE BIEVRE; × *Cattleya* × *C. Harrisoni*, × *Lælia præstans* × *C. aurea*, from MME. MADOUX, Auderghem; *Lælio-Cattleya* × *Iecir* (*C. aurea* × *L. Perrini*), from MM. DUCHESNE ET LANTHOINE; *Cypripedium Pomone* (*Spicerianum* × *Sallierianum*), from M. J. IVE; *C. insigne Sanderæ*, *C. Rolfeæ superbum* (*Rothschildianum* × *bellatulum*), *C. Helen* (insigne *Chantini Lindeni* × *bellatulum*), *C. insigne Edmondi*, *C. Mme. Charles Dietrich* (*C. insigne Sanderæ* × *Leeanum giganteum*), *C. Fanny* (*Druryi* × *superbiens*), *C. Phœbe* (*laevigatum* × *bellatulum*), from M. LAMBEAU, Brussels; *Miltonia vexillaria robusta dulcis* (*M. v. gigantea* × *M. v. Leopoldi*), from M. VUYLSTEKE; a *Lælio Cattleya* (*C. Harrisoniæ* × *L. flava*), *Phalænopsis sumatrana*, Pauwels' variety, from M. PAUWELS, Meirelbeke; the *Lælio-Cattleya* was sown April 12, 1903, and the hybrid, two years and a half old, has been in flower since November 10. The Pauwels' variety of *P. sumatrana* has a longer flower spike than this type, the flowers are larger and the ramification of the spike seems to be characteristic.

Botanical Certificates were awarded to *Polystachya Laurenti* and *Listrostachys Monteiræ*, two splendid species from the Congo, exhibited by the BRUSSELS BOTANIC GARDEN; and *Bulbophyllum crassipes*, a very interesting Madagascarian orchid, from MM. DUCHESNE ET LANTHOINE.

Honorary Mention fell to *Cattleya labiata* (group), *Cypripedium insigne* var. *Leopoldi*, from M. DRAPS DOM, Laeken; a group of natural hybrids of *Odontoglossum crispum* from Colombia (M. CLAES); *Cyp.*

John Hamilton (argus *Moensii* × *Charlesworthi*), *C. insigne Lindeni*, from M. LAMBEAU, Brussels.

Honorary Mention was awarded for a group of *Platyclinis Cobbiana*, *Cymbidium elegans*, Lindley, *Cypripedium* (*Paphiopedilum*), *Lubbersii* (*P. barbatum nigrum* × *P. politum*), *Lycaste Skinneri roseum*, *Masdevallia tovarensis*, Rehb. f., *Epidendrum radiatum*, Lindl., from the BOTANIC GARDEN, Brussels; also to *Cypripedium callo-Veitchii superbum* (*C. Veitchii* × *callosum*), and *C. hirsuto Leeanum* (*Leeanum* × *hirsutissimum*), from M. STEPAN DE MESSEMAEKER.

MISCELLANEOUS PLANTS.

Certificates of Merit (félicitations du Jury) for a remarkable collection of Coffee plants, natives of the Congo, exhibited by the BOTANIC GARDEN, Brussels, including *Coffea arabica*, *C. congensis ubangensis*, *C. liberica*, *C. Laurenti*, *C. robusta*, *C. arabica* var. *maragogipes*, *C. canephora*, *C. c. Kwiluensis*, *C. stenophylla*, *C. Dybowski*, *C. Dewevrei*, and *C. Humboldtii*.

Certificates of Merit (par acclamation) for cultivation for a splendid specimen of *Lomaria Drapsiana* with 30 fronds from M. DRAPS DOM, Laeken; for a fine group of *Begonia Gloire de Lorraine* et *Turnford Hall* var., from M. STEPAN DE MESSEMAEKER; for a group of three varieties of *Primula chinensis fimbriata*, and splendidly grown, by M. BECQUEREAU, Laeken; to *Marattia Stanleyana*, Linden, a new species from the Congo from the BOTANIC GARDEN, Brussels; for *Chrysanthemum Souvenir Desmet*, a remarkable sport from Mme. Paolo Radaelli, from M. PARDON.

A *Botanical Certificate* to *Ceropegia debilis* from the BOTANIC GARDEN, Brussels, and *Honorary Mention* for eight fine varieties of *Pompon Chrysanthemum* in full bloom from M. BECQUEREAU; and for *Dracæna Souvenir dell Patin*, from the BOTANIC GARDEN, Brussels.

FRUITS.

Honorary Mention.—For Pears, Charles, Ernest, and Le Lectier, from M. PARAS, chief fruit grower to the King, Laeken. L. G.

LEEDS PAXTON CHRYSANTHEMUM.

NOVEMBER 21, 22.—The seventeenth annual exhibition of the above Society was held in the City Hall, Leeds, on these dates. The display surpassed all records at Leeds, both in the quality and in the quantity of the exhibits. Mr. Carter, the energetic secretary, has every reason to be proud of his efforts.

GROUPS.

Group of Miscellaneous Plants.—Mr. J. Donoghue, gr. to J. PICKERSGILL, Esq., Burdon Hill, Weetwood, Leeds, won the premier prize with a group of very attractive appearance; 2nd, Mr. H. Harrison, gr. to — BECKWORTH, Esq., Headingley Castle, Leeds.

Group of Chrysanthemums.—The best group of Chrysanthemums, interspersed with six foliage plants and having a margin composed of Ferns, was put up by Mr. A. Lupton, gr. to T. GREEN, Esq., Oak Leigh, Adel; 2nd, Mr. J. DONOGHUE. The last-named exhibitor, had the best table group of miscellaneous plants. Mr. C. Dennet, gr. to THOS. WINN, Esq., Moor Bank, Headingley, staged the best drawing room or mirror group of plants.

CUT BLOOMS.

The class for 18 incurved and 18 Japanese blooms created keen competition, and the judges must have experienced much difficulty in awarding the prizes. However, the first place was given to Mr. Nisbet, gr. to HAMAR BASS, Esq., Berkley Lodge, Burton, Stafford. The principal feature of the winning stand was supplied by the Japanese varieties, but whether they more than counterbalanced the magnificent examples of incurved flowers shown in the second prize exhibit belonging to Mr. Jennings, gr. to F. JAMESON, Esq., Ashton Hall, Ferraby, was a debatable point. These same growers also won in a similar order in the class for 12 Japanese blooms, but reversed their positions in the class for 12 incurved blooms.

Other prize winners in the Cut Bloom Classes were: Mr. C. Shaw, gr. to — BOYLE, Esq., Roundhay; Mr. T. Leech, gr. to Mrs. WILSON, Roundhay; Mr. F. NORMAN, The Elms, Weetwood; Mr. F. MOORE; Mr. A. COATE; Mr. WM. MOORE.

FRUIT

has never before been exhibited at Leeds of such fine quality. The following are the principal prize winners in the Fruit Class:—Mr. A. DAWES, Templenewsam; Mr. F. NORMAN and Mr. E. HILL, Melton Park, Doncaster.

Amongst the honorary exhibits was a magnificent group of foliage plants from the City Parks, Leeds. Numerous trade exhibits of good quality were displayed.

BATTERSEA AMATEUR CHRYSANTHEMUM.

THE Battersea, Clapham and Wandsworth Amateur Chrysanthemum and Horticultural Society held its annual exhibition this year in the Battersea Town Hall, when a much better display was made than that of last season.

It is a distinctly urban society of most enthusiastic amateur plant cultivators, and it does not spend all its energies on the holding of an exhibition, but monthly meetings are held, when lectures are delivered on gardening subjects, which are followed by debates. This year, as last year also, the society was appealed to by the Battersea Borough Council to judge the interesting competitions arranged by the Council in the matters of window-box and back-garden cultivation by tenants in the Council's flats and cottages. At the recent Chrysanthemum show the best collection of 18 Japanese blooms in not fewer than 12 varieties (open class) was shown by Mr. C. PAYNE, Sandhills Gardens, Bletchworth. There were seven collections. The best blooms in the section for amateurs were shown by Mr. W. FORTH, 40, Westover Road, Wandsworth.

There were two good groups of Chrysanthemums in pots, the 1st prize being won by Mr. H. KLOSS, St. John's Hill, Wandsworth, and the 2nd prize by Mr. L. STRINGER, 67, Faybridge Road, Lavender Hill, the society's treasurer.

Mr. R. Bradford, gr. to E. H. BROWN, Esq., Highwood, Roehampton, arranged a very pretty group of well-cultivated plants of miscellaneous character and some unusually well-coloured *Codiaeums* (*Crotons*).

The society is a useful means for the encouragement of plant cultivation in the district. The secretary is Mr. G. J. Niunes, 57, Montholme Road, New Wandsworth.

NATIONAL CHRYSANTHEMUM.

DECEMBER 6, 7. The winter exhibition of the National Chrysanthemum Society was held at the Crystal Palace on these dates.

The weather on the opening day was glorious, but even this factor did not induce many of the general public to visit the exhibition.

The display was quite equal to those of former years; indeed, the entries showed an advance in numbers over those at the similar show held last year. Three new varieties were awarded the society's Certificate of Merit.

Among the miscellaneous exhibits, outstanding features were the display of Chrysanthemums shown by Mr. JONES, and the collection of 48 blooms of incurved varieties shown by Mr. W. HIGGS.

OPEN CLASSES.

CUT BLOOMS.

Twenty-four Japanese blooms, in not fewer than eighteen varieties.—Three exhibits were staged in this class, the best being that displayed by Mr. G. Hunt, gr. to PANTIA RALLI, Esq., Ashted Park, Epsom, who showed *Mary Inglis*, General Hutton, Valerie Greenham, Ben Wells (white), Godfrey's Pride (an excellent flower of great substance), *Mary Inglis*, Dorothy Pywell, Marquis V. Venusto, Duke of Devonshire, W. R. Church (a variety possessing crimson petals with a lighter-coloured reverse), *Beauty of Leigh*, J. H. Silsbury, Mad. Cadbury, Algernon Davis (an excellent example; the long lax petals are tinged with crimson on a ground-work of yellow), Mrs. R. Oberthur (a magnificent specimen; the colour is pure white, the ends of the petals recurving, impart a pleasing form to the flower), E. Shrimpton, C. J. Salter, Dora Stevens, Duchess of Sutherland (one of the richest yellow varieties), and Valerie Greenham. Mr. W. Mease, gr. to A. TATE, Esq., Downside, Leatherhead, followed with a collection but little inferior to the 1st prize exhibit. The examples were a trifle less in substance than those shown by Mr. Hunt, but they formed a bright lot. The best examples were Mrs. Thirkell, Algernon Davis, Duchess of Sutherland, *Beauty of Sussex*, and Mrs. J. Bryant. Third, Mr. J. Simon, gr. to W. W. MANN, Esq., Ravenswood, Bexley, Kent.

Twelve Japanese blooms, distinct.—This smaller class was represented by six entries, none of which was of exceptional merit. The best was adjudged to be that shown by Mr. H. Parr, gr. to F. A. BEVAN, Esq., Trent Park, New Barnet. The variety G. J. Warren was prominent in the winning group; the colour of this flower is pale sulphur-yellow. 2nd, Mr. G. Hunt, gr. to PANTIA RALLI, Esq., Epsom. We remarked a grand example of Algernon Davis in this stand. 3rd, Mr. W. SEWARD, The Beeches, Hanwell, W.

Six Japanese blooms, distinct.—Only one entry was staged in this class. It was put up by Mr. John Aplin,

gr. to W. MEATH BAKER, Esq., Hasfield Court, Gloucester, and comprised as notable a half-dozen flowers as any seen in the Japanese classes. The examples were Mrs. F. W. Vallis, Mrs. J. E. Dunn, Mrs. Swinburne (a superb specimen), General Hutton, W. R. Church (a notable flower), and Mrs. Barkley. Mr. APLIN was deservedly awarded the 1st Prize.

Incurved Blooms.—A class was included for 12 incurved varieties in not fewer than six kinds, and this was contested by seven growers. Mr. HUNT was easily 1st, his flowers being far superior to the others displayed, the examples being not only of large size, but also of good form, and in our opinion equal to the majority of those seen earlier in the season. The varieties comprised F. Hammond, Mdle. Lucie Faure (grand flower), May Phillips, The Major, Egyptian (nice specimen), Miss A. Dighton, May Bell and Triomphe de Montbrun; 2nd, Mr. W. MEASE, who had the varieties Frank Hammond and Ralph Hatton in excellent form; 3rd, Mr. JOHN APLIN.

Twenty-four Bunches of Chrysanthemums, of any Section, displayed in Vases.—Mr. GEO. HEMMING, Alexandra Park, London, had the best display among three, his examples being mainly decorative varieties, although both the Anemone and the single types of flowers were included. 2nd, Mr. James Lock, gr. to SIR C. SWINFEN EADY, Otlands Lodge, Weybridge, who displayed flowers of all types from pompons to large specimen Japanese blooms. 3rd, Mr. JOHN APLIN, who staged Japanese and incurved blooms exclusively. Mr. HEMMING won also in the Class for 12 vases of Japanese varieties in not fewer than six varieties.

Single Varieties.—Two classes were appropriated to singles, one for six bunches of large flowering varieties, and another for six bunches of smaller kinds. Mr. C. BROWN, High Street, Abbot's Langley, Herts., won the 1st prize in both classes, being followed by Mr. W. C. Pagram, gr. to J. COURTENAY, Esq., The Whim, Weybridge, in both cases.

Group of Chrysanthemums and Suitable Foliage Plants.—Mr. W. Howe, gr. to Lady TATE, Park Hill, Streatham Common, was awarded the 1st prize for a good display that was arranged in a semi-circular manner. It contained a number of commendable Japanese Chrysanthemum plants, with Poinsettias, Liliums, Astilbe (Spirea), Crotons, Ferns, Palms, &c., interspersed; 2nd, Mr. ROBERT FOSTER, The Cemetery, Nunhead. Mr. HOWE also won in the class for a collection of plants arranged for effect, and occupying a table space measuring 9 feet by 6 feet.

AMATEUR CLASSES.

The best 12 Japanese blooms in the Amateurs' Classes were staged by Mr. CHAS. M. COLLINGWOOD, St. David's Hill, Exeter, whose examples included Mrs. F. W. Vallis, Geo. Mileham, Mrs. J. C. Neville, General Hutton, Dorothy Pywell, Mrs. T. Dalton, Mrs. Thinkell, President Viger, Mafeking Hero, Elsie Fulton, Mad. Paolo Radaelli and Mrs. Mease; 2nd, Mr. C. Hæselgrove, gr. to W. BRANDER, Esq., 13, Crescent Wood Road, Sydenham Hill, S.E. Mr. H. PESTELL, Elstow, Beds; Mr. Osmond, gr. to A. KEMPT, Esq., 15, Ross Road, South Norwood; Mr. W. G. PRUDEN CLARK, York Road, Hitchin; Mr. Cook, gr. to N. F. FENNER, Esq., The Lodge, Hoincastle; and Mr. D. B. CRANE, Highgate, were other prominent winners in the Amateurs' Classes.

Mr. F. G. OLIVER, 97, Tollington Park, N., had the best vase of Chrysanthemums arranged with ornamental foliage.

Miss C. B. COLE, The Vineyard, Feltham, arranged the best basket of Chrysanthemums, with suitable foliage and berries, the best vase of pompon Chrysanthemums, and the best vase of Chrysanthemums from which pompon varieties were excluded.

CERTIFICATED FLOWERS.

Mrs. Swinburne.—This variety is by no means new, having been raised by Mr. Weeks about four years ago. It is a large Japanese variety, with recurving white, petals white. It forms an admirable variety for late growing. Shown by Mr. H. J. JONES, Lewisham.

Mrs. George Beech.—This flower is a yellow sport from Mrs. Swinburne. The colour is rich yellow. Shown by Mr. NORMAN DAVIS.

Miss Miriam Hankey.—A very large Japanese incurved flower, with pleasing mauve-pink coloured petals. It is of Australian origin, and is described as being of robust growth, and easy of cultivation. Shown by Mr. W. WELLS.

MISCELLANEOUS GROUPS.

Mr. W. Higgs, gr. to J. B. HANKEY, Esq., Fetcham Park, Leatherhead, was awarded a Gold Medal for a magnificent collection of 48 incurved Chrysanthemum blooms.

Mr. H. J. JONES, Lewisham and Keston, Kent, put up a magnificent group of Chrysanthemums, arranged in tall tripods with Ferns, Palms, &c., interspersed. The group was by far the best display in the building. The Japanese blooms were especially meritorious, (Large Gold Medal.) Mr. NORMAN DAVIS, Framfield, Sussex, exhibited some well-grown Japanese Chrysanthemums, with a few "singles" interspersed. A stand of the variety Mrs. G. Beech was very noteworthy. (Gold Medal.) Messrs. H. CANNELL & SONS, Swanley, Kent, staged vases of Chrysanthemums, also Begonias, Primulas, and Zonal Pelargoniums. (Gold Medal.)

Messrs. W. WELLS & Co., Merstham, Surrey, staged a miscellaneous collection of Chrysanthemums. (Silver Gilt Medal.)

Mr. A. WEEKS, The Green Nursery, Welling, Kent, showed a group of dwarf plants of market varieties of Chrysanthemums. (Silver Medal.)

Mr. ROBERT FOSTER, The Cemetery, Nunhead, S.E., displayed a semi-circular group of plants, including Chrysanthemums, Cypripediums, Solanums, with Ferns, Palms, &c., intermixed. (Silver Medal.)

Messrs. HUGH LOW & Co., Bush Hill Park Nurseries, Enfield, N., staged a miscellaneous group of greenhouse plants and cut flowers. (Silver Gilt Medal.)

PUTNEY & WANDSWORTH CHRYSANTHEMUM.

NOVEMBER 30.—This vigorous suburban society held its annual dinner at Putney on the above date, when about 100 members and friends were present, and Councillor J. Lindsay presided, Mr. Rawlings (Treasurer) being in the vice-chair. The Chairman proposed the toast of "The Society," and responses were made to this and other toasts by Messrs. Mahood, Rawlings, Bartley, and the Secretary, Mr. J. Reynolds, J. F. McLeod, R. Hooper Pearson, &c. It is evident that the same enthusiasm prevails among the members as formerly, and there is every indication that it will be maintained.

Mr. Rawlings, the Treasurer, said he had been a member of the Committee of the Society for ten or twelve years, and in the first year he joined they had to make a collection. This year they had not so many entries as in previous years, but the flowers, in his opinion, were considerably better than they had ever been. The total receipts during the year had been £125, and there was in hand £7 12s. 7d., in addition to £10 16s. 8d. in the Post Office. The prize money this year amounted to £30 7s. 6d., against £56 odd last year.

An excellent programme of music was carried through under the direction of Mr. J. F. Berry.

NATIONAL FRUIT GROWERS' FEDERATION.

DECEMBER 4.—The monthly meeting of the Council was held on the above date, at the Royal Horticultural Hall, Vincent Square, Westminster. Colonel C. W. Long, M.P., presided.

The Council appointed Mr. T. G. Rawlins, Chartered Accountant, as Official Auditor, and Mr. A. Griffith Boscawen, M.P., and Mr. Hugh Andrews were added to the Council. Mr. T. Waghorn, barrister-at-law, a well-known expert authority on Railway law, was appointed as Hon. Official Adviser to the Federation on all Railway questions.

A long discussion on the subject of rebates on large consignments of fruit then took place, and as there is reason to suppose that many cases occur where these are not allowed for want of claims from senders being sent in, the Secretary was directed to collect certain information and report to the next meeting of the Council.

The action of the Fruit and Potato Trades Federation in the appointment of a Joint Committee on Railway Grievances and Re-classification of Rates was considered, and it was decided to appoint a member of this Federation to act as its representative.

Other business was transacted and the next meeting fixed for January 8.

GARDENERS' DEBATING SOCIETIES.

BATH GARDENERS' SELF-HELP AND DEBATING.—A large attendance of members assembled at the Foresters' Hall on Monday evening, November 27, Dr. Wilson Paton in the chair. The Challenge Vase and other Special Prizes offered at the society's recent Chrysanthemum Show were presented to the successful exhibitors. Mr. Parrott announced that the total receipts at the show were £109 15s. 8d., and that they intended holding a similar show next year, at about the same time. Mr. W. J. Stokes followed with a paper on "Hardy Herbaceous Plants." A fine display of exhibits were staged at the meeting. Six new members were elected.

BRISTOL & DISTRICT GARDENERS'.—The above society met on Thursday, November 30, when Mr. I. House delivered a lecture on "A Trip to New Zealand." Mr. House gave much interesting information concerning the flora of New Zealand, and exhibited several mementos of his visit.

NURSERY IMPORTS.—We take the following figures from the *Florists' Review of Chicago*. It will be seen how very largely Belgium preponderates in the exportation of plants, and to a less extent Germany in the case of seeds. The Bureau of Statistics of the U. S. Department of Agriculture has published the following table of the total value of stock imported by American nurserymen in the years mentioned, with the countries from which consigned:—

Country.	1902.	1903.	1904.
Belgium	\$207,503	\$239,637	\$224,357
Germany	92,047	93,139	111,371
United Kingdom ..	85,815	99,847	95,513
Japan	66,982	61,257	68,584
Bermuda	31,422	49,726	32,954
Chinese Empire ..	3,641	2,671	5,766
Colombia	1,258	2,070	5,060
Hong Kong	4,072	3,573	4,121
Brazil	2,509	2,955	3,594
Canada	1,889	5,000	2,970
Italy	2,771	4,806	2,714
British West Indies	1,991	2,668	1,648
Mexico	2,070	4,152	1,370
Cuba	328	459	1,501
Venezuela	378	48	1,014
Costa Rica	1,075	70	113
Other Countries ..	2,126	3,953	5,222
Total	\$1,172,570	\$1,373,198	\$1,496,427

SEEDS.—The U. S. Department of Agriculture has published the following table of the values of seeds other than flaxseed or linseed imported by American seedsmen in the years mentioned, with the countries from which consigned:—

Country.	1902.	1903.	1904.
Germany	\$732,649	\$827,250	\$1,012,052
United Kingdom ..	609,479	709,130	824,584
Canada	395,049	133,049	423,219
France	213,709	367,209	490,023
Netherlands	294,300	290,428	263,203
Italy	12,935	45,346	114,870
Turkey (European) ..	38,236	30,231	70,871
Brazil	75,370	67,441	68,314
British Australasia ..	31,453	33,377	44,006
Denmark	22,406	27,395	37,389
Russia (European) ..	14,789	29,182	33,000
Spain	5,390	4,601	15,550
Austria-Hungary ..	17,470	13,933	14,554
Africa, n.e.s.	353	6,259	10,820
Belgium	11,095	13,610	10,136
British East Indies ..	8,574	6,904	7,352
Mexico	3,741	441	6,038
Spanish Africa	6,650	9,470	5,879
Japan	3,222	3,480	4,417
Turkey (Asiatic) ..	258	6,358	3,037
Hong Kong	3,435	3,432	2,239
Chinese Empire	2,565	2,705	1,888
Russia (Asiatic) ..	.....	.....	1,888
Canary Islands	2,270	932	1,680
Haiti .. .. .	.....	230	1,292
Portuguese Africa ..	.....	.....	1,183
Chili	3,121	1,865	752
French Africa .. ..	.....	1,330	477
Malta and Cyprus ..	1,786	.....	471
Colombia	5,210	.....	32
Argentina	8,010	51	.....
Other countries	1,835	2,061	3,479
Total	\$2,528,070	\$2,637,255	\$3,386,245

THE JOURNAL OF THE BOARD OF AGRICULTURE.—It is a very encouraging sign to see that the Board of Agriculture is now, and has for some time past been issuing not only a Journal but a series of leaflets for the purpose of diffusing information on cultural matters. We have often occasion to note the enormous extent to which the American Government and the various State Colleges circulate information of this character. We cannot hope to overtake our transatlantic friends, but we may heartily thank the officials of the Board of Agriculture for the steps they are now taking to diffuse accurate and useful information. In the November number of the Journal we note an interesting article on the hybridisation of wheat, written from a Mendelian point of view, and a useful note on the Curl in potato.

Obituary.

MRS. JAQUES.—The sympathy of many gardening friends will go to Mr. Jaques, of Waddesden (late of Waddesden Gardens), in the death of his wife, who passed away on the 30th ult., after a long and painful illness.

ROSE MARGUERITE FEARNLEY-SANDER.—The wife of Mr. C. Fearnley-Sander, and daughter of Joseph Autrand, French Protestant Minister, Avignon (Vaucluse), France, died at "Les Doms," St. André, Bruges, Belgium, on the 25th ult., in her 30th year.

THE WEATHER.

METEOROLOGICAL OBSERVATIONS taken in the Royal Horticultural Society's Gardens at Wisley, Surrey. Height above sea-level 150 feet. The following are the "mean" readings for the week ending December 2, 1905:—

1905.	TEMPERATURE OF THE AIR.				TEMPERATURE OF THE SOIL AT 9 A.M.			RAINFALL.	SUNSHINE.
	At 9 A.M.		DAY.	NIGHT.	LOWEST TEMPERATURE ON GRASS.	At 1-foot deep.	At 2-foot deep.		
NOVEMBER 25 TO DECEMBER 2.	Dry Bulb.	Wet Bulb.	Highest.	Lowest.	deg.	deg.	deg.	ins.	hr. min.
MEANS	44	43	47	38	35	42	44	0.69	1 39

GENERAL OBSERVATIONS.

THE FOLLOWING SUMMARY RECORD of the weather throughout the British Islands, for the week ending December 2, is furnished from the Meteorological Office:—

The weather during this period was of a very unsettled type over the whole Kingdom, but the rain was more frequent and heavy in the west than in the east. Thunder and lightning were experienced at some Scottish stations on Thursday.

THE WEATHER IN WEST HERTS.

A gloomy week.—This was, on the whole, rather a warm week. There, however, occurred one cold day when the temperature in the thermometer screen did not rise above 37°. On no night did the exposed thermometer show more than 8° of frost. The ground is at the present time about 1° colder than is seasonable at two feet deep, but at about an average temperature at one foot deep. Rain fell on three days, to the total depth of nearly half an inch, but on the remaining four days of the week over two-hundredths of an inch of moisture was altogether deposited in the funnel of the rain gauge by fog. About two gallons of rain water came through the bare soil percolating gauge, and 1½ gallons through the gauge on which short grass is growing. The sun shone, on an average, for only a quarter of an hour a day. Four days were altogether sunless, and on the other three days the record amounted to less than an hour a day. Light airs and calms alone prevailed during the week. On the calmest day the rate of movement at 30 feet above the ground was only about a quarter of a mile an hour. The mean amount of moisture in the air at 3 o'clock in the afternoon was 7 per cent. in excess of the average quantity for that hour.

NOVEMBER.

A remarkably cold month. In the last twenty years there have been only two colder Novembers. The nights were, as a rule, more unseasonably cold than the days. In fact, taking the average night temperature alone it was the lowest I have yet recorded here in November. The coldest period occurred in the middle of the month, and lasted ten days. On one night during that period the exposed thermometer registered 15° of frost—an exceptionally low reading for the time of year. Rain fell on seventeen days, to the total depth of 3½ inches, which is about half an inch in excess of the average for the month. There were a few flakes of snow on one day. Very nearly all the rainfall came through the percolation gauge on which short grass is growing, while the percolation through the bare soil gauge exceeded the rainfall for the month. This was, of course, owing to the heavy falls at the end of October. The sun shone on an average for very nearly two hours a day, or for about ten minutes a day longer than usual. This was a very calm month, but on one day towards its close there occurred the highest wind for nearly twelve months. The mean amount of moisture in the air at 3 p.m. exceeded a seasonable quantity for that hour by one per cent.

THE AUTUMN.

A dry, singularly cold, and rather dull season.—The three autumn months were all cold, and in October and November the mean temperature was exceptionally low. Taking the season as a whole, it was the coldest autumn since 1887, or for 18 years. In September and October the rainfall proved light, but was rather in excess of the average in November—the total deficiency for the quarter amounting to 1½ inches. The sun shone on an average for 3 hours a day, which is about 10 minutes a day short of the mean record for the autumn.

On Underground Water Supply.—Since the winter half of the drainage year began in October the aggregate rainfall has fallen short of that for the same two months in the previous forty-nine years by nearly an inch—which is equivalent to a loss on each acre in this district of about 20,000 gallons. *Berkhamstead, December 6, 1905.*

ENQUIRY.

LIABILITY FOR INJURY TO STOCK.—I rent some land adjoining a wood where Yew trees grow, and on going to look at my stock one morning I found that the woodman had thrown a quantity up the land where my stock was grazing, with the result that several were poisoned. The Yew when growing was out of reach of the cattle. Who is responsible the employer of the man, the man himself, or no one? F. B.

[The case is one for a lawyer, but we should suppose that the owner of the wood is liable for damages. Ed.]

ANSWERS TO CORRESPONDENTS.

BEGONIA PLANTS MONÆCIOUS: E. & F. B. The case is unusual; but all plants that commonly produce flowers of one sex only sometimes bear flowers of both sexes. You should endeavour to obtain seed from the plants.

Books: R. M. C. L., Nice. We do not know of such a book.

BULB MITES: Anxious. No doubt the mites might be conveyed in the soil. We have seen them, if we remember rightly, in the packing material in which bulbs are sent to this country.

CHEMICAL MANURE FOR APPLE TREES: I. L. All kinds of fruit contain plant-food, a considerable part of which has been derived from the soil, and many old orchards and fruit trees have been making large demands on the soil for perhaps 25 years or more without obtaining any return in the shape of manure. It is, therefore, not to be expected that old trees will respond very quickly to fertilisers. For a worn-out orchard a dressing of artificial manure at the following rate per acre may be applied:—100 lbs. dried blood, 150 lbs. sulphate of potash, and 500 lbs. superphosphate. These may be mixed together, sifted finely, and sown in January or February. For single trees about 6 ounces per square yard of the manurial mixture may be applied over an area about two yards from the trunk of the tree. The next step is to till the ground by loosening the surface soil, for tillage is as essential as manure; it will help the fertilisers in their work of renovation. In spring as soon as the blossoms have set, apply 4 ounces of nitrate of soda per square yard of surface as directed for the mixture. A little short, partially rotted farm-yard or stable manure, placed immediately under the trees to insure a winter's mulch will be beneficial to bring the fibrous roots to the surface and away from the clay sub-soil; this will induce fruitfulness, and the ripening process of the fruits will be facilitated.

CYPRIPEDIUM LEAVES: C. S. The injury is due to a fungus—*Leptothyrium discoideum*—whose development is greatly favoured by excess of moisture condensing on the surface of the foliage. Sponge the leaves thoroughly with soft soap dissolved in a rose-red solution of Condy's Fluid. Keep the atmosphere as free from moisture as circumstances will admit until the pest is removed.

EUCHARIS: F. K. E. Why address the publisher on such matters? Your flower is a "Siamese twin," consisting of two completely united, except the two styles which are free.

FUMIGATING WITH HYDROCYANIC ACID VAPOUR: Buys. The area of house in the Royal Botanic Gardens, Regent's Park recently treated by this process was 34,500 cubic feet. The insects to be destroyed were mealy bug, red spider, thrips and common scale. The quantity of materials used per 1,000 cubic feet were: 1 oz. sodium cyanide, 130 per cent. ("Poison"), 2 fluid oz. sulphuric acid, 1.8 sp. gr., 5 fluid oz. water. The sodium cyanide was placed in an earthenware pan, and the dilute sulphuric acid in bottles, having two V-shaped grooves in the cork, arranged on a tilting stand just above the cyanide pan. The bottles were held in position by a light prop, the top of which was in contact with the diffusing fans or boards, all of which were connected together by a string. One end of the string was outside the house, and on being pulled by the operator the bottles fell and gradually empty their contents on the cyanide. The diffusing fans were worked 10 minutes. The exposure was for 50 minutes. The atmosphere was dry at the time, and the temperature 55°. The results were satisfactory. You cannot be too careful in the use of this substance on account of its poisonous qualities. The packet should hang just over the dish containing the acid. Close the house and let no one remain in it. Then when all is ready lower from the outside of the house the packet containing the cyanide into the acid. Keep the house closed for an hour, then open the doors but do not enter yourself for three or four hours afterwards.

GAS LIME: J. T. Apply the fresh gas lime at once, at the rate of not more than ¾ lb. to the square yard, and do not dig it in deeply. We note that you will not plant a crop on the same soil for a period of at least seven months. The lime will destroy insect pests, and eventually increase the fertility of the soil.

HOLLY: T. M. We know of no means of determining the age of a holly other than cutting a branch and counting the rings, not an easy matter in a holly. For the rest you must judge by the size and general appearance.

INDIA RUBBER: B. Apply to the Imperial Institute, South Kensington, London, S.W.

MARGUERITES: Anxious. The frost is enough to account for the condition of your plants.

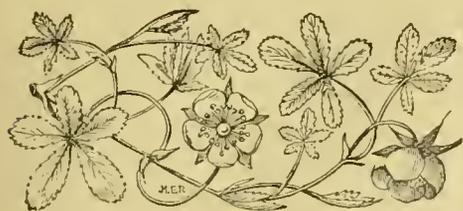
NAMES OF FRUITS: J. C. W. & Sons. Tibbett's Pearmain.—W. B. H. & Son. 1, Lady Heniker; 2, Beauty of Hants. In some parts of the country this variety is known as Bastard Blenheim.—H. G. P. 1, Glou Morceau; 2, rotten; 3, Fondante du Comice; a variety quite distinct from Doyenné du Comice, which it resembles in appearance, but not in quality.—Booth. Pear, Knights' Monarch; Apple, not recognised; it exactly corresponds, in appearance, however, with "Tower of Glamis," but is much sweeter than that variety. We suspect it is a local sort, of good quality.

NAMES OF PLANTS: Old Reader. 1, *Diplopappus chrysophyllus*; 2, *Daphne Laureola*; 3, perhaps *Lavandula Stœchas* (no flowers)?—X. The two mosses on one fern-stem were 1, *Hypopterygium Muelleri* of Hampe, and 2, *Pterigophyllum denticulatum*, Mitten. The specimens were not normal, having been grown under artificial conditions.—A. C. H. *Oncidium*—1, *O. pratextum*; 2, *O. Forbesi*. *Cypripedium*—1, *C. × Dautbieri*; 2, *callosum*; 3, *C. × Crossianum*.—A. B. 1, *Oncidium cheiroporum*; 2, *Masdevallia peristeria*; 3, *Bulbophyllum suavissimum*.—IV. 1, *Calanthe vestita luteo-oculata*; 2, *Nægelia cinnabarrina*; 3, *Nægelia zebrina*; 4, *Aspidium aculeatum*; 5, *Ceterach officinarum*; 6, *Asplenium adiantum nigrum*.—H. W. *Chlorophytum elatum*.—H. A. P. *Catasetum Garnettianum* figured in *The Botanical Magazine*, t. 7, 069.

TULIPS: A. H. P. You can hardly expect the plants to submit to such treatment and still yield the best results of which they would otherwise be capable. But necessity knows no law, and as you appear to have forced the plants more quickly than was desirable, and are now anxious to delay their flowering until the third week in the present month, the only thing to be done is to remove the boxes to a cooler atmosphere. It is a severe change from 70° to 45°, and might produce a serious check to the opening flowers. It will be safer to have a temperature of 50°.

VINE BORDER: A. B. Nine feet in width will be ample for the border, irrespective of the length and breadth of Vinery, unless another set of Vines is to be planted against and trained up the back wall and, perhaps, hip-roof, in which case the border should be made the full width of the house; doing this, however, in instalments of 3 feet in width each succeeding year until the specified space is made up. The border should be 2½ feet deep at the front wall, and slope downwards to a depth of 2 feet at the back wall; 6 inches deep of drainage is included in these measurements. If the Vines are to be planted in an outside border and taken into the house through openings left in the brickwork, the border should, as a matter of course, slope 6 inches in a downward direction, 9 feet out from the front wall, the depth being as indicated above. One cartload of horse-droppings to four loads of good loam will be sufficient manure, and should you add two loads of lime-rubble or wood-ashes to this a good compost will thereby be provided for the Vines. If lime-rubble is not easily obtained, three bushels of charcoal should be added to each five loads of the loam and manure. If the Vines are cut-backs—that is, of this year's growth—the end of February or early in March will be the best time to plant them, shaking every particle of soil from the roots in doing so; but if Vines to be rooted in next January or February are intended to be planted the month of May will be soon enough to insert them.

COMMUNICATIONS RECEIVED.—B. S. W.—H. J. E.—W. B. J. S. R.—A. G., with thanks.—S. Sprenger—G. P., Harrogate—D. W. T.—G. R.—E. M.—D. B.—Reader—E. W.—W. D. & Sons—J. C. W. & Sons—H. S. B.—C. B.—W. G.—C. A.—H. T. M.—Constant Reader—H. J. C.—J. T.—A. L.—X. Y. Z.—N. D.—W. C.—E. H. J.—C. S.—H. W.—C. H. P.—J. H.—H. F.—B. W.—F. G. L.—T.—L.—C. C.



THE

Gardeners' Chronicle

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CONTENTS.

Apple, Warner's King... 420	Odontoglossum Smithii 427
Apples from British Columbia ... 425	Opuntia, a spineless ... 425
Astilbe grandis ... 426	Orchid notes and gleanings—
Carnations, winter-flowering ... 429	Orchids at Fairlawn, Putney ... 417
China, plant collecting in... 420	Penang, an agri-horticultural show at ... 425
Chrysanthemums for market ... 418	Plants new or noteworthy—
Cymbidium Gammieanum ... 427	Cymbidium erythrostylum ... 427
Fig trees in the opeo, protecting ... 428	Potatos, old varieties of. Root-pruning ... 429
Flowers, pin and thrum eyed ... 426	Societies—
Flowers, summer, in the south-west ... 429	Horticultural Club ... 431
Fruit register—	Lionear... 425
Pear Countess of Paris 422	National Caraoation 425
Forestry, Belgian ... 426	National Chrysaetheum ... 430
Fruit culture, area devoted to ... 425	National Potato ... 430
Glasgow parks and gardens in winter... 419	National Rose... 424
Hewell Gardens, Red-ditch ... 429	National Sweet Pea ... 431
Hibiscus hybrids ... 425	Royal Botanic... 425
Horticulture in Kent ... 426	Royal Horticultural ... 426
Kew Gardens, changes at... 424, 425, 429	(Scientific Committee) ... 430
Obituary—	Spray, what is a? ... 428
Eckford, Henry ... 431	Trees, transplanting ... 428
Meulenaere, M. de ... 431	Trentham Hall, a gift for the purposes of the higher education ... 425
	Unemployed, relief for 425
	Wew's work, the 422-423

ILLUSTRATIONS.

Astilbe grandis (Supplementary Illustration)	428
Barrow for transplanting trees, a ...	419
Chrysanthemum Souvenir de Petite Amie ...	418
Chrysanthemums, a house of market ...	427
Cymbidium Gammieanum ...	432
Eckford, the late Henry, portrait of ...	428
Flower-sprays, forms of ...	427
Odontoglossum Smithii ...	421
Trentham Hall, North Staffordshire, view of the front flower-garden at ...	421

OLD VARIETIES OF POTATOS.

IT was gratifying to note among the names of varieties given in the lists lately published in the *Gardeners' Chronicle* those of some few that were famous in the middle of the nineteenth century, which in some instances have run great risk of being ousted by the heavier croppers of the present day. These varieties introduced in bygone times, seeing that they have survived so long, must be endowed with a good sound constitution to have withstood the long course of ill-treatment to which they have been exposed as "sets," and the almost constant attacks of disease in and out of the soil. Otherwise, they must possess qualities as regards texture of the flesh, fine flavour, pleasant appearance when cooked, or other points that mark them as being superior to other new or old varieties, and at any rate their continued cultivation does not favour the current idea that Potatos deteriorate when properly grown and cared for. There may be named in this connection the several forms of Ashleaf, such as the "Old," Myatt's, River's, and Sutton's, which are selections from the original Ashleaf, with, perhaps, the one exception of the second named. Besides these there were the walnut-leaved, whose leaves were shining and smooth, and the Egyptian Kidney—a tuber with protuberances—a rather

more abundant cropper, but as liable to be attacked by disease as the foregoing. Some persons prefer Myatt's Ashleaf to any of the others, owing to its being a more abundant cropper. Mona's Pride seemed to have at one time a good future, its tubers being small, symmetrical in shape, and of a uniform size; and only its light cropping quality has been against its popularity, for the flavour and other good points of the tuber could not be gainsaid. Early Rose or American Rose has been grown in gardens and fields for about 40 years, and is a prolific but uncertain cropper, owing to its liability to attacks of disease; moreover, the tuber requires the closest attention when being boiled. Flounder, an Irish variety of the Lapstone shape, ponderous, and of a regular outline, is an ideal cottager's Potato, good either boiled or baked; a heavy cropper, and a great favourite in the sister isle. The pink-skinned variety of Beauty of Hebron dates from the late 'sixties, and it is still much grown in some parts. It is perhaps a mistake to quote Magnum Bonum as a mid-season variety, seeing that, as a rule, its proper season is from December onwards till new Potatos are fit for consumption. We have had to purchase it at 7s. per cwt. at the end of the month of February, and it had at that date in cool cellars and "buries" out of doors scarcely put forth a sprout. Myatt's Prolific is probably the same as Myatt's Ashleaf. The absence of varieties from the list may or may not point to their entire loss to cultivation, and here reference may be made to Sutton's red-skinned Flourball (which fetched 5s. per lb. 30 years ago), an excellent, well-flavoured tuber, very much affected by the disease in moist summers; Lapstone, a handsome, nice flavoured white Kidney; Dalmahoy, a large round, with a white skin, and of a peculiar, pleasant flavour. It was highly recommended for field culture, but it did not come up to expectations and was superseded by varieties upon which more reliance could be placed.

Although there are varieties that have not deteriorated as the years have gone by, because perhaps of their qualities having become fixed owing to selection to a certain extent having been exercised by gardeners, the raising of new varieties should be encouraged if only for the reason that crossbreeds possess more robustness than others which have been long under cultivation, but which owing to unskilful or negligent treatment in stores or cellars have lost their vigour.

Nothing has such a weakening effect on the Potato as permitting it to form sprouts before putting it into the soil, and the produce from sets so weakened is likely to be impaired likewise, and to such an extent as to lead to a great reduction of the crop, and lessen the ability to resist attacks of disease.

Many readers of the *Gardeners' Chronicle* would welcome any remarks from the senders of the various reports on such points as the weight per perch of dug tubers of the different varieties, the use of whole or cut sets, the date of planting, together with information whether the sets were obtained from a distant part of the country and from a different kind of soil.

The prices of novelties, as are many of them, militate against extensive planting, so that we must wait for more trustworthy information concerning them till more extensive trials have been made. F. M.

ORCHID NOTES AND GLEANINGS.

ORCHIDS AT FAIRLAWN, PUTNEY.

IN new or renovated houses the steadily increasing collection of Orchids in the gardens of H. S. Goodson, Esq., under the skilful care of his gardener, Mr. G. E. Day, constantly improves. Cattleyas, Lælias, Cypripediums, and Odontoglossums form, the bulk of the species grown, and of these, exceptionally fine varieties and albinos are most prominent. Hybrids equal the species in numbers, and of some of the favourite sections, such as the hybrids of *Brassavola Digbyana*, there are large numbers, embracing most of the forms obtainable. Some are as yet unflowered, but many were in sheath at the time of our visit, including *Brasso-Cattleya* × *Digbyana-Leopoldi*, a very promising cross, is anticipated with interest.

The show of bloom at the end of the large Cattleya house was made up of very fine varieties of *Cattleya labiata*, the dark coloured varieties predominating; some good *C.* × *Mantini nobilior* and *C.* × *John Baguley*; a number of *C.* × *Portia*, varying very much both in the habit of growth and size and colour of the flowers; *C. Bowringiana*, *Lælio-Cattleya* × *callistoglossa*, *Lælia* × *splendens*, which somewhat resembles *L.C.* × *exoniensis*, and a few others. The handsome *Lælio-Cattleya* × *Masangeana Harry Goodson*, which only a few months ago secured an Award of Merit, and large plants of *Cattleya Mossiae Wageri*, *C. M. The Pearl*, *C. M. Reineckiana*, and other albinos were well furnished with flower sheaths.

Two large spare houses are devoted to Cattleyas, Lælias, and other intermediate house Orchids, and all were in satisfactory condition. In one a batch of species and hybrids of *Phaius*; a nice lot of *Miltonia vexillaria*, including the varieties *Leopoldi* and *superba*; *M.* × *Bleueana*, etc., were vigorous and promised well for bloom. The new *Odontoglossum* house suits its occupants admirably. Some five thousand plants as yet unflowered were approaching maturity, and among those already flowered are several very handsomely blotched varieties; also *O.* × *ardentissimum*, *O.* × *Rolfæ*, and others. In one of the cool houses the *Cypripediums* were good; *Oncidium ornithorhynchum*, a showy lot of *O. varicosum*, *O. Forbestii*, the winter-flowering *Epidendrum vitellinum*, and others were in bloom, with a batch of varieties of *Cypripedium insigne*, *C.* × *Lea-num*, and other hybrids in one of the coolest houses; *Cypripedium Fairrieanum* was in flower, and gave evidence of liking its cool quarters.

In a warmer range was a good collection of *Cypripediums*; *C. callosum Sanderæ*, *C. insigne Sanderæ*; hybrids of *C. bellatum*, and other favourites being well represented. These and the specimens of *C. niveum* and hybrids thrive well on a shelf near to the glass of the roof. One of the most beautiful is *C.* × *Godefroyæ leucocheilum*, Goodson's variety which gained an Award of Merit on August 29. A number of plants of *C. Spicernum* were in bloom; so also *C.* × *Katherinæ*, *C. ciliolare*, *C.* × *Memoria Moensii*, and others. One of the most prized in the collection is *C.* × *H. S. Goodson* (*Sanderianum* × *Youngianum superbum*), a very distinct hybrid and a pretty plant, even when not in flower, its broad leaves being finely netted with dark green on an ivory white ground.

All the members of the Goodson family are equally interested in Orchids.

In the ornamental conservatory adjoining the house was a show of *Cattleya labiata* in five varieties, and with them were good specimens in flower of *Lælio-Cattleya* × *Dominiana*, *L.C.* × *Bletchleyensis*, *L.C.* × *Gottoiana*, *L.C.* × *Haroldiana*, *Cattleya* × *Mantini*, *C.* × *Mrs. W. J. Whiteley*, an exceptionally fine *C.* × *Hardy-*

ana, a very large and finely coloured *C. × Portia* of uniform rosy crimson colour; *Cypripedium × Carnusianum*, *C. × Harrisianum* varieties; and other *Cypripediums*, fine specimens of *Pleione lagenaria* with many flowers; a number of good *Dendrobium formosum giganteum*; good *Odontoglossum grande*, one specimen having 16 large flowers; and a large plant of *Lycaste leuconitha* with many blooms. *B.*, November.

CHRYSANTHEMUMS.

CHRYSANTHEMUMS IN MARKET NURSERIES.

At Enfield Highway there is quite a colony of market-growers, and most of them cultivate some Chrysanthemums. I had recently an

opportunity of inspecting several of the nurseries. At Messrs. PRICKETT & SONS, who have upwards of sixty large houses, mostly 200 feet long, Chrysanthemums were then the chief feature. I have previously referred to their success in securing valuable sports from *Soleil d'Octobre*, and they are ever on the look out for sports from any variety. There lies the secret in successful culture for market, for even where no great or distinct variation occurs, there may be some plants which are more desirable for affording stock than others, and it is by careful selection that market growers cultivate the different sorts to such fine condition. I found at Messrs. Prickett's that such old sorts as *W. H. Lincoln*, *Cullingfordi* and *Souvenir de Petite Amie* were among those just coming into condi-

tion for cutting. *Western King*, grown in large batches, was very promising. *Elaine* was nearly over; this remains a favourite with most growers. A few late struck plants of *Moneymaker* were flowering well, but properly this should come in early in October. From all I have seen of it I feel sure it will prove one of the best varieties for that season. The variety *A. J. Balfour* is grown extensively, and seems to come in a little earlier than *Framfield Pink* (or *Madame F. Perrin*). *Christmas Cheer* (the deeper coloured variety) was just showing flower; but *Market Red* was nearly past. *Putney George* is a favourite, and *Source d'Or* still holds its place. A selected variety of a deeper shade of colour was good; also the yellow variety, *Vivian d'Or*, and the varieties *C. Davis* and *Lady Hanham*, though not grown in such large quantities, are found very useful. *Mrs. Thompson*,

was nearly over. *Allman's Yellow*, just opening its first blooms, was very prolific. *Putney George* is a favourite here also. *Nagoya* is found to be one of the best late yellow varieties. *W. Holmes* succeeds well. *Clinton Chalfont*, *A. J. Balfour*, *Guy Hamilton*, *Cecil Coutts*, and a few others are grown in large quantities, but for supplying blooms for cutting only. All the plants are grown in pots, and are kept very clean.

MR. M. LARSEN,

another grower in the district, does not give quite so much space to Chrysanthemums, and grows them only for selling as pot plants. He cultivates a few sorts remarkably well. The sorts he has grown so well are *La Pactole*, *Kathleen Thompson*, and *Boule de Neige*. Large houses full of Carnations, mostly American sorts, were an interesting feature here. One



FIG. 155.—VIEW OF CHRYSANTHEMUMS AS GROWN FOR MARKET IN MR. BILLINGHURST'S NURSERIES.

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At Messrs. PRICKETT & SONS, who have upwards of sixty large houses, mostly 200 feet long, Chrysanthemums were then the chief feature. I have previously referred to their success in securing valuable sports from *Soleil d'Octobre*, and they are ever on the look out for sports from any variety. There lies the secret in successful culture for market, for even where no great or distinct variation occurs, there may be some plants which are more desirable for affording stock than others, and it is by careful selection that market growers cultivate the different sorts to such fine condition. I found at Messrs. Prickett's that such old sorts as *W. H. Lincoln*, *Cullingfordi* and *Souvenir de Petite Amie* were among those just coming into condi-

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MR. J. WEIR,

who has another nursery close by, does not cultivate quite so many sorts, and most of those seen were much forwarder than those of Mr. Prickett. *Western King*, with the first blooms just ready to cut, was looking grand. *Niveum* was also fine. *Dazzler*, a good crimson flower,

English variety, *Victory*, which recently received a first-class certificate, was worthy of special note. A large batch of plants just coming into bloom looked very promising, the foliage having the beautiful glaucous tint which indicates health and vigour. *A. H.*

MR. H. BILLINGHURST.

AN idea of the Chrysanthemums at this nursery at Selhurst, near Croydon, is afforded by the illustrations at Figs. 155 and 156. The house includes at the far end a good group of plants of the variety *Pink Ivory*, with 6 or more good blooms on each, and excellent foliage. On the right is an equally good group of the variety *White Ivory*, very useful by reason of the plants being so dwarf. Adjoining the variety *Pink Ivory* is a little batch of

Souvenir de Petite Amie. Next is a group of the new sport, Kathleen Thompson, a market favourite. At the extreme back are a few plants of William Holmes. At the front are three plants of Souvenir de Petite Amie, all grown in 48 and 40 sized pots. Chrysanthemums have been grown on the same ground for over a dozen years, and this without the use of manures. In such a dry season as the early part of the past summer, growth was made under adverse circumstances, yet the plants having

men illustrated at Fig. 156 is only a sample of the hundreds of plants grown by this successful cultivator for market. Mr. Billinghurst's plants stand almost alone in the market, and they have realised as much as from 24s. to 30s. per dozen. *Stephen Castle.*

MARKET CHRYSANTHEMUMS AT THE EDINBURGH SHOW.

Quite an interesting feature was the class for a display of cut blooms open to market-growers

but the bunches were rather too tightly tied, which made them look "squat" in the vases. The varieties were Soleil d'Octobre, Mr. W. Holmes, La Triomphante and its yellow sport, Mdme. August Nonin pink, and another. In the second prize award Mr. J. Bruce included three single-flowered varieties, beautifully arranged, but the flowers of Mary Anderson and its yellow sport—Annie Holden—were of irregular quality.

SINGLE-FLOWERED CHRYSANTHEMUMS.

EVERY lover of the Chrysanthemum for its winter decorative value will support Mr. D. B. Crane in his remarks at the recent dinner respecting the scarcity of the single flowered varieties at shows, and especially at the Crystal Palace exhibition. There may be, of course, some few who admire the Japanese section exclusively, and will scoff at the idea of encouraging these, to him, "weedy-looking flowers without a centre." Such have only an eye for the florist's ideal. If societies were to offer half, or even a quarter, of the value in prizes for this section that they now offer for Japanese varieties, there would soon be an ample display of them. Instead of that, committees are content with offering ten shillings for six bunches of single flowers! Give exhibitors reasonable encouragement and we should soon see single-flowered Chrysanthemums taking their proper position as one of the most charming decorative features of the autumn show. Now is the time for the executive of the N.C.S. to set an example to other societies by formulating a class that would thoroughly enable this type to be displayed as it deserves to be. *E. M.*

GLASGOW PARKS & GARDENS IN WINTER.

(Concluded from page 385.)

CAMPBILL.

In the favourite Queen's Park the glass-houses at Campbell are always worth visiting, as besides the more popular flowers in bloom many interesting plants not generally seen in public parks are to be found in the houses. In November, however, the Chrysanthemums are the plants which elicit the most admiration, their handsome flowers and fine colours being greatly appreciated by the visitors to the park. This year the flowers were generally better than last season, and the display of large blooms was very fine, the manner in which they were arranged in undulating groups assisting the general effect in a marked degree. In all, some 4,500 plants are cultivated, the People's Palace on Glasgow Green being supplied from this park also. The blooms here were rather later than those at the Botanic Gardens—an advantage as prolonging the display available for the public. Single-flowered varieties were grouped plentifully; and many plants are grown naturally for supplying flowers for cutting.

Among the other plants in bloom in the houses were Zonal Pelargoniums, cultivated for winter bloom, and giving a welcome brightness in the dull season. Unfortunately, the fog, that bane of flower-growing in a city like Glasgow, affects these badly, but as fresh flowers succeed those destroyed the loss is not so much felt as it would otherwise be.

Winter-flowering Begonias are also very largely employed; and Gloire de Lorraine and its forms are found to be the best, although such as Winter Cheer, Gloire de Sceaux, and others are cultivated. Primula obconica, and Primula sinensis are also largely cultivated for winter bloom, and give great pleasure in their season. Cyclamens are also in large numbers. A good Amaryllis (*Hippeastrum*), which is being increased for its value at this season, is Mrs. W. Lee, a pleasing pink variety which I have observed here before. The



FIG. 156.—SPECIMEN OF SOUVENIR DE PETITE AMIE CHRYSANTHEMUM, as grown for market by Mr. Billinghurst: flowers white.

formed their buds it only required cultured skill after they were lifted and potted, together with the best stimulants, to produce the results as shown. Earlier in the season Mr. Billinghurst grows the varieties of Mdle. Masee, Lady Fitzwygram, Soleil d'Octobre, and others.

Chrysanthemum Souvenir de Petite Amie, as grown for market by Mr. H. Billinghurst, is extremely popular in Covent Garden. The speci-

only. The idea was to display to the public a typical market-bunch of cut flowers. The Society offered a reasonable inducement to growers to compete for six bunches in distinct varieties as grown for market, arranging them in vases. There were but three competitors. Messrs. James Craig and Sons, Bantongate Nurseries, Davidson's Mains, won the leading prize with a bright and fresh-looking exhibit;

white *Nerine undulata* was also in one of the houses.

A large bank of stellate *Cinerarias* give promise of plenty of bloom in a short time, and a batch of the *Marguerite Carnations* are found exceedingly useful, their bright flowers are much enjoyed when others are over. Many greenhouse and hardy *Rhododendrons*, and *Camellias* were well set with buds for a later period of the winter. The collection of greenhouse *Rhododendrons* here is a large and choice one.

Orchids are in great numbers, and these consist of the leading genera and species, with many hybrids, a considerable number of the hybrids having been raised at Camphill. The Orchids, as a whole, do very well here, but the *Cattleyas*, of which there are a large number, are the least satisfactory, on account of the dense fogs. *C. labiata*, of which there are some fine forms, suffers greatly, and it was painful on the occasion of my visit to see the effects upon some fine flowers. The cool treatment which Mr. Whitton approves of for *Dendrobiums* is carried out successfully, and the plants show its value in the magnificent growths they have made.

Of *Cypripediums*, as at the Botanic Gardens, some hybrids raised here are of considerable merit. The pretty *Masdevallias* were also in large numbers, and *M. tovarensis* was particularly good. *Stenoglottis longifolia*, an old favourite of mine, which I used to grow in a cool house, was represented in several pots, each having some nice spikes of the pleasing flowers. The *Odontoglossums*, although only a few were in flower, were a sight in themselves, so thriving were they, and many celebrated growers would envy the Glasgow citizen the plants cultivated for his pleasure. The whole collection of Orchids reflects credit upon Mr. M'iver and his staff, who have charge of this park.

At all seasons the succulents, of which there is a good collection, please the Glaswegians, but the pressure upon the space does not permit of their having a house to themselves, and a few are not so happy as one would like to see them. The collection includes a number of the *Phyllocacti*, *Echinocacti*, *Cereuses*, *Opuntias*, *Mamillarias*, *Aloes*, *Agaves*, *Kleinias*, *Hechtias*, *Crassulas*, and many other genera. Unfortunately the singularity of the plants is too much for the good behaviour of some of the people who come to the park, and several plants have suffered from the curiosity of the visitors.

Ferns are largely represented in the houses, and are generally very fine, although the atmosphere of the city chambers on festive occasions, when they are sent there for decorative purposes, is not conducive to their welfare. Many *Adiantums*, *Aspleniums*, *Pterises*, and others, with some fine specimen *Dicksonias* and *Cyatheas* are cultivated here. A like demand necessitates the growth of many specimen and other Palms, *Bamboos*, *Dracenas*, the fine *Xanthorrhoea australis*, of which there is a splendid specimen here, and many other plants of imposing or graceful appearance.

Mention must also be made of a nice group of *Sarracenias*, which, together with several *Nepenthes* attracted notice. Among the *Sarracenias* are *Drummondii*, *D. alba*, *Chelsoni*, *Patersoni*, *purpurea*, *Courti*, *flava*, and *flava major*. Other plants noticed were *Ruellia macrantha*, *Eupatoriums*, *Salvias*, *Acalyphas*, and many others.

Reference must be made to the corridors, with their foliage plants and their climbers along the rafters and up the pillars. Among the climbers was *Lonicera Hildebrandtii*, of which Mr. Whitton does not think much here. Much more useful are the *Passifloras*, and, although deciduous, the *Fuchsias* on the rafters in one of the houses. The more frequently one visits the Camphill houses the more is one impressed by the immense advantages the plant lovers of Glasgow enjoy.

TOLL-CROSS,

Although on a much smaller scale than the Camphill establishment, the Winter Garden at Tollcross Park, which is under the charge of Mr. Wilson, ranks with it in the cultural skill shown by its contents. In both summer and winter there is always a good display of flower in addition to the other plants which are cultivated for their foliage alone. The houses are, however, fewer and more limited in size, and in consequence a smaller proportion of out-of-the-way plants are cultivated.

The *Chrysanthemums*, although less numerous than at Camphill, are very well done, and the

houses in which they have been displayed have been brilliant. A good group of the single-flowered variety *Miss Rose* has been effective, and many of the popular large-flowered varieties have been grown with three blooms to a plant.

A notable feature here was a splendid bank of *Gloire de Lorraine Begonias*, these including several varieties, such as *Turnford Hall*, which seems synonymous with *grandiflora alba*, the type of which is grown here, and *Baron Rothschild's* variety. These are exceedingly well cultivated. There are also a large number of plants of *Cineraria Moorei*, *Primula sinensis* and *P. obconica*; whilst there are also *Marguerite Carnations* and a large number of plants, excellently grown, of *Salvia splendens*; but, unfortunately, this is one of the plants which suffer greatly from fog, and its blooms are soon destroyed by it. Just going out of flower was the white *Vallota*, and a fine lot of *Cyclamens* will keep up a display for a long time.

A number of choice *Rhododendrons* in pots, well set with buds, were ready to be housed for blooming by and by. The popular *Pink Pearl* was among these.

Here, again, Orchids are largely cultivated, and new hybrids are being raised in considerable numbers. *Cypripediums* are among the most useful Orchids here, and some of the new hybrids raised are decided acquisitions. *Cattleyas* suffer from fog here also, but their appearance otherwise gives no ground for complaint; while *Odontoglossums* are in considerable numbers, there being among them some very fine forms of *O. crispum*. *Cymbidiums*, *Dendrobiums*, *Zygopetalum Mackayi*, *Masdevallias* and other species are well cultivated. The portions of the houses open to the public are kept attractive throughout the year with flowering and foliage plants.

SPRINGBURN.

At Springburn and at the People's Palace on Glasgow Green there has also been an excellent display of *Chrysanthemums*, and at the former place *Begonias*, zonal *Pelargoniums*, *Primulas*, and other winter-flowering plants make a good display. Mr. Thomson, who is now in charge at Springburn, has considerably improved this park, and the winter garden has been attractive all the season. Mr. Whitton and his able staff deserve high credit for their work. *S. Arnott*.

LEAVES FROM MY CHINESE NOTE-BOOK.

(Continued from page 389.)

ASCENT OF MOUNT WA.

The ascent of the mountain commences a hundred yards or so from the inn; cultivation ceases at 6,200 feet. Above this for 1,000 feet comes a belt, which has been cleared for cultivation but is now densely clad with coarse weeds and quantities of *Rodgersia pinnata alba*, *Spiræa Aruncus*, *Astilbe* spp., and *Pedicularis* spp., with a few bushes of *Deutzia*, *Philadelphus*, and *Rhus Toxicodendron* interspersed. Above this, for 500 feet, comes a dense thicket of Bamboo scrub (*Arundinaria nitida*)—a species of remarkably dense growth with thin culms, averaging 6 feet in height. Next above this till the plateau (8,500 feet) is reached comes a belt of mixed shrubs and herbs, conspicuous amongst which are *Syringa Emodi*, *Hydrangea scandens*, *H. pubescens*, *H. aspera*, *Neillia affinis*, *Dipelta floribunda*, *Ribes longiracemosum*, *Enkianthus himalaicus*, *Styrax* sp., *Deutzia* (2 spp.), *Rubus* (5 spp.), *Viburnum* (4 spp.), *Spiræa* (4 spp.), *Acer* spp., *Pyrus* spp., *Mecopopsis chelidoniæfolia*, *Fragaria filipendula*, *Lilium giganteum*, *Trigonotis* sp., and the herbs of the lower belt. A few *Rhododendrons* occur chiefly on the limestone cliffs.

The plateau (8,500 feet) is about half a mile across, marshy in places, and densely clad with shrubby vegetation and Bamboo scrub. In addition to those noted for the belt below, we here found *Rosa sericea* and *Aralia spinosa*, also a species of *Caltha*, and a few Conifers. *Rhododendrons* became more abundant as we advanced.

Crossing this plateau we reached the north-

west angle of the upper storey, and scrambled upwards by a narrow, rocky, tortuous path through dense thickets of mixed shrubs, gradually giving place to *Rhododendrons* as the narrow ledge at 10,000 feet is reached. *Rosa sericea*, which was past flowering below, was here a mass of lovely white. Two or three species of *Lonicera* and various *Labiates* occur within this belt, and on shady rocks at least three species of *Primula*, including *P. ovalifolia*.

From 10,000 feet to the summit *Rhododendrons* account for fully 99 per cent. of the ligneous vegetation. A few Conifers, *Lonicera* sp., *Rosa sericea*, *Clematis montana* var., *Pieris* sp., and *Vaccinium* sp. make up the odd 1 per cent. Amongst herbs, the genus *Primula* is the most noteworthy. Of this genus five fresh species occur, and amongst them, though uncommon, the lovely *P. Prattii*. A blue-flowered *Corydalis*, *Cypripedium luteum*, with large yellow flowers, and two herbaceous species of *Rubus*, are other interesting plants. On shady rocks the curious *Berneuxia tibetica* abounds. This plant was first referred to the genus *Shortia* by Franchet. *Decaisne* made it the type of a new genus. The flowers are small and insignificant, white or pale bluish in colour. On bare rocks I gathered the pretty white-bellied *Cassiope selaginoides*.

My attention and interest, however, were chiefly taken up with the *Rhododendrons*. Their gorgeous beauty defies description. They were there in thousands and hundreds of thousands. Bushes of all sizes, many fully 30 feet in height and more in diameter, all clad with a wealth of flowers almost hiding the foliage. Some had crimson, some bright red, some flesh-coloured, some silvery-pink, and others pure white flowers. Their huge rugged stems, gnarled and twisted into every conceivable shape, were draped with pendent mosses and lichens, prominent amongst which is *Usnea barbata*. How they find root-hold on these wild crags and cliffs is a marvel. Many also grow on the fallen trunks of the Silver Fir and some are epiphytic. Beneath them *Sphagnum* moss luxuriates, and makes a pretty, if treacherous, carpet. On bare, exposed cliffs I gathered two diminutive species of *Rhododendron*, each only a few inches in height, one with deep purple and the other with pale yellow flowers.

Dense mists obscured our view, though about 10 o'clock the sun tried to break through and made a rift in the clouds of mist, disclosing a scene which made one hunger for more. In one place we leant over a precipice two or three thousand feet in depth, and could hear the roar of a torrent below. Nearing the summit three vertical precipices, each 40 or 50 feet in height, have to be ascended by means of wooden ladders. Up these I carried my dog, never thinking of the descent. On returning he got frightened, and, though we blind-folded him, he struggled much, and on one occasion his struggles all but upset my balance. I was heartily thankful when solid ground was reached. It required all one's nerve to mount a ladder, with no balustrade, fixed to a cliff 40 feet vertical, and on either side a yawning abyss lost in the clouds. *Baber* refers to more than three ladders, and I did note the remains of a fourth covered with humus. It is at 10,700 feet—a narrow ridge not 8 feet broad—that the first ladder is encountered. From here to within a few feet of the summit the path was terribly steep, difficult, and dangerous. Clearing the topmost ladder and the remains of another, we unexpectedly reached the summit by the easiest path imaginable—for all the world like a woodland path at home.

The summit is a slightly undulating plateau, many acres in extent, with thickets of *Rhododendrons* festooned with *Clematis montana*, and clumps of Silver Fir, the remnant and offspring of giants which once clothed this magnificent mountain, alternating with glades carpeted with *Anemones* and *Primulas*, and tiny streamlets meandering hither and thither. As

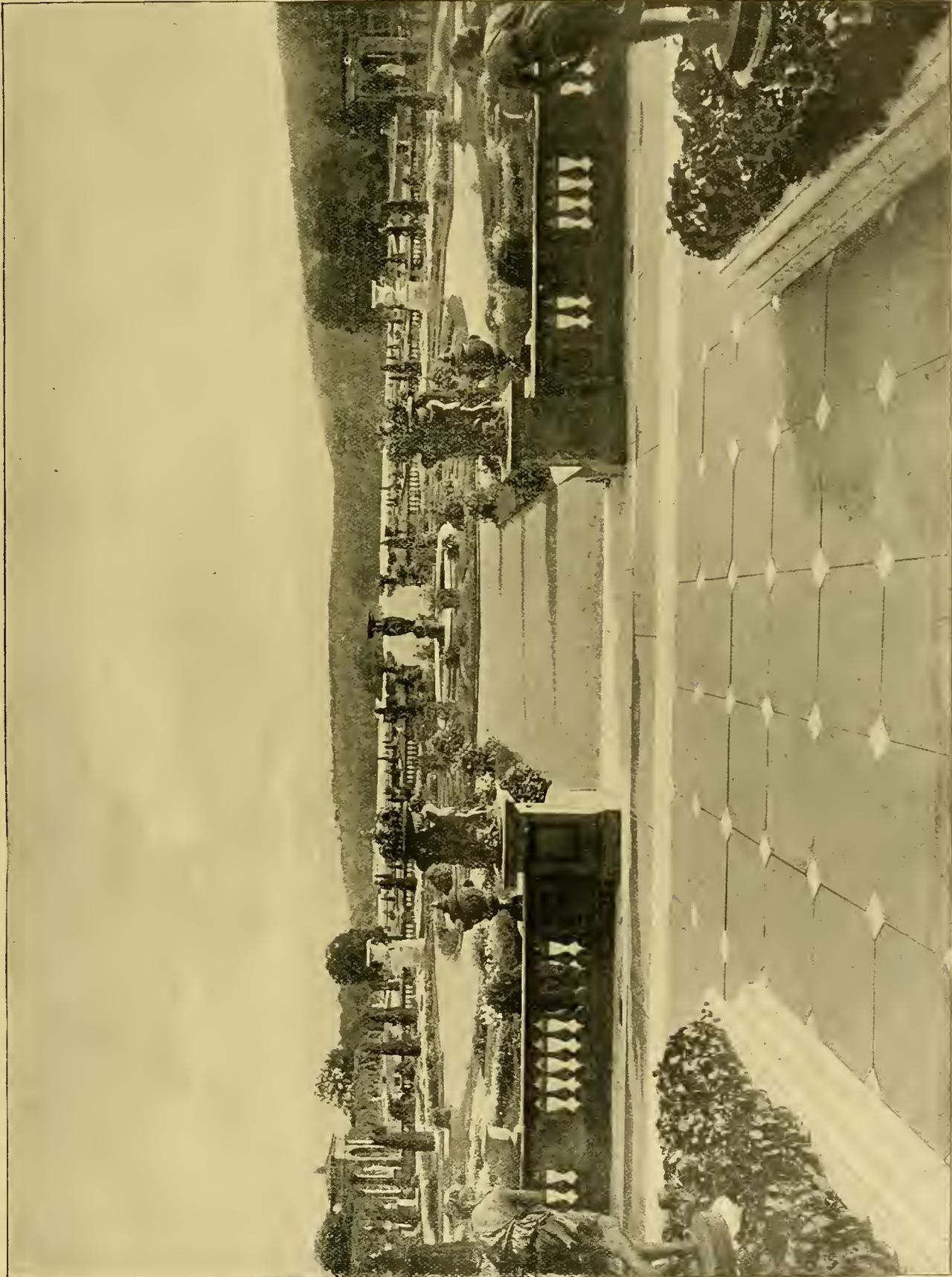


FIG. 157.—VIEW OF THE FRONT FLOWER GARDEN, TRENTHAM HALL, NORTH STAFFORDSHIRE.
[Trentham has just been given to the local authorities by the Duke of Sutherland for purposes of technical education. See page 425.]

Baber rightly says: "The most charming natural park in the world."

In times past several temples existed on the summit, of which ruins only now remain. At present there is but one temple, which contains an image of P'u-hsien-p'u-ssa seated on a plaster elephant. It is built of timber of the Silver Fir and is in excellent repair. Near the temple is a small patch of medicinal Rhubarb (*Rheum officinale*), cultivated by the priests. A few Cabbage and a tiny patch of Irish Potatoes were the only other plants cultivated.

The altitude of the temple I made to be 11,200 feet. The thermometer stood at 53° F. inside the temple, but it felt much colder; the mists seemed to penetrate to the marrow of one's bones.

The partly shrubby *Sambucus javanica* and several herbs, including *Pedicularis* sp., *Trigonotis* sp., *Fragaria filipendula*, and *F. elatior*, range from base to summit. *Fragaria filipendula* is a new plant and worthy of note; its fruits are red, more or less cylindrical in shape, often more than an inch in length, and of very good flavour. Later, at Tatién-lu, I enjoyed many a dish of these fruits with cream from yak's milk.

Two days later I ascended a lofty spur (10,000 feet) of this mountain and added several fresh plants to my collection. Of these I may mention *Paeonia anomala*, *Rubus xanthocarpus*, *Clematis Pratii*, *Ribes pachysandroides*, *Potentilla fruticosa* var., *Pyrola rotundifolia*, *Styrax* sp. nov., *Aristolochia* sp., *Acer* sp., *Anemone* (2 spp.), *Pyrus* sp., *Berberis* sp., and *Primula* (2 spp.). High up on the cliff *Leontopodium alpinum*, and several species of *Anaphalis* abound. Amongst the *Sphagnum* at least three species of *Lycopodium* occur. On dripping, shady rocks and trunks of *Rhododendrons* *Hymenophyllum* *Henryi* is abundant.

During the four days I botanised on this mountain I added some 220 odd species to my collection. On each of these days the work was excessively hard, and "drenched to the skin" but mildly describes our plight each evening as we reached our inn. On one occasion, through treading on some loose débris, I was only saved from being precipitated over a steep precipice by the presence of mind of a coolie who happened to be near me at the moment.

Zoologically, Mount Wa and the surrounding wilderness is particularly interesting as being one of the few places in China where wild cattle (*Budorcas taxicolor*) are to be found. I saw their foot-prints only; they were nearly as large as those of the cow. These cattle are described as being both fierce and revengeful. They are doubtless the "Beyamini" of Marco Polo.

Ornithologically, Mount Wa is interesting as being the home of at least five species of Pheasants, including the "Golden" and "Amherst" pheasants. I have climbed and botanised on many mountains in different parts of China, some much higher than this, but none have I found richer in cool temperate plants, and more especially in flowering shrubs. Altogether, with its rich flora, peculiar fauna, its singular formation, and its magnificent natural park on the summit, this mountain commands a place to itself. In my mind Mount Wa stands apart, unapproached, and unapproachable. E. H. Wilson.

(To be continued.)

FRUIT REGISTER.

PEAR—COUNTESS OF PARIS.

A MEDIUM sized Pear raised in France. It is pyriform in shape, with a short stalk inserted obliquely; rind yellowish green russetty near the extremities, and with small scattered reddish brown spots and blotches diffused over the surface. Flesh white, somewhat granular, flavour like that of *Besi de Chaumontel*. The fruit is ripe in December. The tree does well on the Quince. It is figured in the October number of the *Bulletin d'Arboriculture*, etc.

The Week's Work.

FRUITS UNDER GLASS.

By F. JORDAN, Gardener to Dr. CORBET, Impney Hall Gardens, Droitwich.

Pines.—Let plants now fruiting be kept in an atmospheric temperature of 65° to 70° at night, or in very cold or windy weather 65°. Cover up the pits at night with mats or other protective material in order to render less fire-heat necessary, especially if any difficulty is experienced in maintaining the temperature required. Allow a rise of 10° or 15° during day with sun-heat, and keep the bottom-heat steady at from 85° to 90°. Examine the plants once each week, and be careful to afford water only to those plants whose roots are dry. Maintain the necessary degree of moisture in the atmosphere by damping the paths, and on fine days by spraying water over the surface of the beds.

Early Queens.—These plants will have been quietly resting for some time. Examine the plunging material to ascertain if it is so dry that it is absorbing what little moisture is required for the plants, in which case carefully moisten the plunging material with tepid water. This applies more especially to those plants that are plunged near to or upon the hot-water pipes. As the plants will not be required to be started before the beginning of the year, it is much better to apply tepid water to the tan or leaves if moisture is required, rather than to the roots at this season. Preparations should now be made to have the Pine stove ready for starting by the beginning of the year, in order that the plants may ripen fruits by the end of May or beginning of June, when other choice fruits are scarce. Thoroughly cleanse the pits and clear out all the old plunging material, which should be cleansed and returned together with the necessary quantity of fresh oak leaves or tan, whichever are used. Some little delay will occur if much fresh fermenting material is added, because the bottom heat will need to fall to 90° before the pots may be plunged. When the bed has been made ready, select those plants having thick collars and a number of short leaves in the centre, as these will be most likely to produce fruits in the shortest time. Remove any loose soil from the surface, and a few of the short, lower leaves afterwards, top-dressing the plants with a compost of rough fibrous loam, bone-meal, and a little soot added, which should be rammed firmly round the collars.

Succession plants.—The same temperatures as were mentioned in the Calendar of October 21 are still suitable for houses containing these plants, allowing a few degrees more or less, according to the condition of the outside atmosphere. The plants must be examined once a week, and any that require moisture must only be given clear, tepid water. The plants should never be allowed to suffer by becoming too dry at the roots. Sufficient atmospheric moisture will be provided by damping the paths and walls.

Figs.—The early pot-trees which were placed in a bed of fermenting leaves at the middle of last month will soon be unfolding their leaves. Fresh material should be added to keep up the bottom-heat to 70°. Increase the temperature of the house at night to 55° with a further rise of 10° or 15° with sun-heat during the day. Pay careful attention to ventilation, admitting a little air daily during mild weather. Syringe the trees moderately with tepid water in the morning and early in the afternoons on fine days, and see that the soil about the roots is kept in a moderately moist condition. Have the houses containing the permanent, early and successional trees thoroughly cleansed, the borders top-dressed, and the trees trained, so that all may be in readiness for starting the trees when required.

PLANTS UNDER GLASS.

By A. BULLOCK, Gardener to E. J. WYTHES, Esq., Copped Hall, Epping, Essex.

Hippeastrum (Amaryllis).—Plants that were raised in the early part of the year from seeds are mostly in a fit condition for the final potting previous to flowering. Pots measuring 6 inches in diameter should be employed for this purpose. Good drainage, formed of broken pots made into suitable sizes, is essential. Employ similar compost to that advised in my Calendar for January 14. In transferring the plants into the larger pots, take great care not to bruise

the roots. Remove a little of the surface soil so that the bulbs will be about two-thirds clear of the surface after the operation of potting has been performed. Afford water sparingly until the roots are growing freely in the new soil. Maintain an atmospheric temperature of 60° by night in the structure containing the plants. Thrips are liable to cause much damage to the plants at this stage and often before the young growth appears; therefore, fumigate the structure once each week with the X.L. All vaporiser, and this will be an effective check to them.

Dormant Bulbs.—Inspect these occasionally, and let any that show signs of pushing their flower sheath be shaken out, repotted, and placed in a warmer atmosphere. (See the Calendar in the issue for January 14 last.)

Richardia Elliottiana.—To provide an early flowering batch let a few of the stronger bulbs which have had a long period of rest be started into growth. (See the Calendar for February 4 last.)

Lilium speciosum (lancifolium) rubrum and L. s. album.—These varieties are amongst the most useful Lilies for culture in pots, but they should not at any time be subjected to hard forcing. Bulbs may be potted at the present time.

Bouvardias that have ceased to be effective should have the water supply gradually reduced from the roots and eventually withheld altogether, placing them in a cool and dry structure to ensure a thorough ripening of the wood.

Pelargoniums.—Afford these a minimum atmospheric temperature of 45° by night, with a rise of 5° by day. If aphid be present, let them be fumigated with the X.L. All vaporiser.

Cyclamen.—Liquid manure should not be afforded the plants after the flowers begin to develop. Maintain a dry atmosphere about the plants, and remove any decayed foliage.

Decorative Chrysanthemums.—During damp and sunless weather, late flowering plants need to have a little artificial heat afforded them—just sufficient to dry the atmosphere around them.

THE ORCHID HOUSES.

By W. H. YOUNG, Orchid Grower to Sir F. WIGAN, Bt., Clare Lawn, East Sheen, S.W.

Maxillarias.—Few of these plants are considered to be worth cultivation, excepting in collections where the so-called "botanical orchids" are appreciated. There are several, however, which produce flowers of considerable attractiveness, such, for instance, as *M. Sanderiana*. Plants of *M. Sanderiana* are now projecting their downward-growing flower spikes, and if it is not desirable that they should penetrate the material about the roots, a small piece of glass should be inserted beneath the tip of the developing spike to induce it to grow above ground. The majority of *Maxillarias* grow in a cool, intermediate temperature, and throughout the winter months only a very limited quantity of water is needed to keep them in a sound condition. *M. Sanderiana* is no exception to that rule, and should it be suspended along with *Masdevallia chimæra*, the atmospheric moisture necessary for the *Masdevallia* will furnish the *Maxillaria* with sufficient for long periods. When water is really needed, give care to the projecting spikes when dipping the baskets to the upper bars. *M. grandiflora* and *M. venusta*, both of large growth and vigorous habit, are now flowering, producing white blooms of good size and quality. These are pot plants, and there being a little loam in the rooting medium, it will remain moist for a considerable time after the affording of water. It is unnecessary to specify other common species, as the above remarks as to watering will hold good in every case.

Miltonias.—Those of the *M. vexillaria* section will now be slowly developing their growths, and will need frequent examination to see that the young leaves are not retarded by their edges adhering to each other. Where they do adhere, the leaves should be liberated carefully by means of the handle of a budding knife or other thin and smooth implement. Keep the rooting medium moist, but preferably under rather than over wet. Afford as much air as is consistent with outside conditions, and keep the glass above them in a clean condition. To keep the plants free from thrips, an occasional

bright morning should be taken advantage of to spray the plants over with some safe and efficacious insecticide. *M. Rœzlii*, growing under warmer conditions, may, now that fire-heat is so much used, be watered freely overhead whenever it approaches to dryness. Those comprising the *M. spectabilis* group, growing in a warm, intermediate compartment, would suffer more from an excess of moisture at the base than from comparative drought. On bright mornings they may be sprayed with tepid rain-water to keep them free from their common enemy, red spider. *M. Clowesii*, *M. Regnellii*, *M. candida*, and others of a similar character need an intermediate temperature, little water, and all the light obtainable at this season. *M. Weltoni* and *M. Schröderiana*, both of which are probably making growth, need a favoured position at the coolest end of a Cattleya house. Much water must not be supplied them, nor must drought be very prolonged.

Light being so essential to plant life, it is imperative that the roof-glass, both outside and in, should be kept clean. Sooty deposits, resulting from visitations of fog, cannot be washed off without scrubbing, and to do this efficiently it is desirable that it be done with an ordinary scrubbing brush.

THE FLOWER GARDEN.

By W. A. MILLER, Gardener to LORD HENRY C. BENTINCK, M.P., Underley Hall, Westmoreland.

Carnations.—Layers that were planted in September, in beds and borders, should be examined after frosts, and if any appear loosened press them firmly into the ground. Choose a day when the weather is dry for this operation, and lay two light boards down the alley to stand upon. Reserve-plants in frames should be kept on the dry side and scrupulously clean. Afford abundant ventilation on all favourable occasions, for a stagnant and damp environment favours the attacks of *Uredo diarthi* (spot) and *Helminthosporium echinulatum* (rust). If these fungoid growths do appear on the plants, pick off all affected leaves. Rare and tender varieties are best wintered on a shelf in a greenhouse. Maintain a careful watch also over layers and seedlings, and prevent the Carnation maggot (*Hylemia nigrescens*) from destroying the central growths. Destroy green-fly on its first appearance by applying Tobacco powder, or by fumigating the plants. Do not crush the insects on the leaves, as the juices contained in them are capable of injuring the foliage.

Calceolarias, Violas, Phloxes, and Pentstemons, &c.—Admit air to these plants each day when the weather is favourable. Do not allow moss to grow on the surface of the soil. *Calceolarias* must never be subjected to a temperature as low as the freezing point; therefore during severe frosts the coverings used must be proportionate to the degree of cold, and be kept on till the frost has ceased.

The Wild Garden.—Blue flowering plants are always in request, as they appear to be least in number. Delphiniums flower early in summer, and in autumn may be had in flower *Aconitum autumnale*, *A. californicum*, *A. japonicum*, *A. longibracteatum*, *A. strictum*, and *A. volubile*. They will thrive in ordinary soil, in a sunny or partly shaded position. *Aster acris* and *A. a. var. draconculoides*, also *A. Amellus* and its varieties, afford good effect when planted in masses. *Anchusa italica* continues in flower for many weeks, and the flowers are of a rich gentian blue colour. The *Dropmore* variety is an improved form. Tall *Campanulas* of the *C. latifolia* group, *C. laetiflora*, *C. pyramidalis*, and *C. elegans* are good. *Clematis heracleifolia Davidiana* is distinct. *Echinops ruthenicus* and the handsome *Eryngiums* require rich, sandy loam. *Elymus arenarius*, a blue-grey grass, thrives in dry places. *Galega officinalis compacta* and *G. Hartlandi* are excellent plants for any aspect. *Gentiana asclepiadea* flowers in late summer, and is very effective. *Lobelia siphilitica* is indispensable for cultivation in damp situations. *Meconopsis Wallichii* is a very ornamental biennial. It requires moisture and shade. *Platycodons* are interesting plants. *Primula capitata* should be cultivated in a choice nook, and it often flowers in autumn. *Statice latifolia*, *S. Limonium*, and *S. superba*

are useful plants for sandy loams. The old *Viola cornuta* affords a profusion of blue flowers over a long period. Amongst purple flowering plants are *Eupatorium purpureum*, *Lobelia Milleri*, *Lophospermum purpurea-cœruleum*, *Prunella Webbiana*, and *Spiraea Davidiana*.

Tree Pests.—Should the Beech bark-louse (*Cryptococcus fagi*) be found, clean the trunk of the tree with a winter wash such as concentrated alkali or dissolve separately one pound of caustic soda and one pound of crude potash. Mix the solutions together and stir up three-quarters of a pound of soft soap in the mixture, afterwards adding water to make ten gallons.

THE HARDY FRUIT GARDEN.

By W. H. CLARKE, Gardener to SIR WILLIAM PLOWDEN, Aston Rowant House, Oxon.

Cleansing the Bark of Fruit Trees.—Every fruit grower should give attention to this work at the present season. The cleansing can be best performed after all the pruning and tying of the branches has been completed, but before the trees are afforded their annual mulching. The operation may be safely carried out until within a short time of the trees showing signs of life in the spring, but at that time other work is very pressing, and it is best to cleanse the trees in December or early in January.

Spraying.—The spraying of the trees with a caustic solution is the most simple and effective means to employ. This preparation not only destroys all mosses and lichen, but, if properly applied, it will eradicate from every part of the tree all kinds of insects and their eggs, red spider, and aphides. The best means by which to apply the liquid is a Knapsack Sprayer. Vermorel's particular make I have found as good as any; it has jets of different size, which can be used to suit various purposes. If a small number of trees only require to be sprayed, one of the small hand syringes is the best, to which a spraying nozzle can be attached. Only a fine spray is needed, and every part of the tree should be wetted, likewise the wall behind it. The liquid is the more effectual when used at a temperature of 120° Fahr., and is quite safe when so used.

Preparation of the Wash.—Take one pound of ground caustic soda (Greenbank's 98 per cent.) and one pound of crude commercial potash. Dissolve each substance in warm water in separate wooden vessels, and afterwards put them together into ten gallons of rain water. This can be safely used for Cherry, Peach, Nectarine, and Apricot trees, but the addition of half pound of soft soap, thoroughly dissolved in hot water and added to the above quantity, will make the liquid more effective and safe to use on Apple, Pear, and Plum trees. As this solution is capable of burning, the hands must be protected by gloves, and old clothes should be worn by the operator. Old Apple and Pear trees which are badly infested with moss and lichen will need a second application.

Black Currant Bud-Mite.—Although hand picking will not exterminate this pest, it will minimise it, and in addition the bushes should be treated with a solution of half a pint of quassia extract in three gallons of water, to which a handful of flowers of sulphur and a small quantity of lime have been added. Apply this liquid by means of the syringe. Afford manure to the trees liberally, as strong growths are not so liable to attack. New plantations should be made at a considerable distance from the infested trees.

The Gooseberry Sawfly.—If the caterpillars of this pest attacked the bushes last season, some of the pupæ will be exposed if the soil under the bushes be lightly forked over. The birds will then be likely to devour them. If fowls are allowed in the plantations they will also help in destroying them. Another good plan is to remove the surface soil entirely, and char it, or make it the bottom spit on some ground which is being trenched.

Birds.—Wall trees should be protected from birds by fish-netting, and other trees afforded similar protection as much as possible.

Fruit Room.—Carefully examine the fruit once each week, and remove all decaying or speckled fruits. Let the atmosphere be kept at a uni-

form temperature, which should never be lower than 35°, and if other means are not available during severe frosts, a small paraffin stove will serve to keep the required temperature. Exclude every ray of light.

THE KITCHEN GARDEN.

By W. FYFE, Gardener to Lady WANTAGE, Lockinge Park, Wantage, Berks.

French Beans in Pots need at this season a temperature of 60° to 70°, and much moisture in the atmosphere except when the plants are in flower. Let the glass of the structure be kept scrupulously clean. When the plants have well filled the pots with roots, apply weak liquid manure to the roots at each alternate watering. Small-growing varieties are the best for forcing in winter, and, for these, pots which are 6 or 7 inches in diameter will be large enough. Use light, turfy loam pulled to pieces by hand, and add some manure obtained from an old mushroom bed, together with a little half-decayed leaf soil. Beans require rather loose soil, through which the water will pass very freely. The practice of sowing seeds in small pots and re-potting the plants afterwards has nothing to recommend it, nor has the practice of merely half filling the pots with soil at the time of sowing the seeds. Enough seeds should be put in each pot to ensure getting five good plants. To hasten the germination of the seeds, place the pots on the hot-water pipes. Support the plants in good time by means of a few twigs cut from birch brooms. A good variety for sowing at this season is Vetch's Early Favourite.

Mushrooms.—During the winter months the preparation of Mushroom beds is an important matter. The manure must be prepared under cover in a shed exposed to the open on one side, and when sufficient has been collected, make it up into ridge form for a few days. Then turn it, and in doing so bring the centre of the heap to the outside. After 10 or 12 days it will be in a fit condition to be placed in the Mushroom house, putting it evenly in layers from one end of the bed to the other, treading it with the feet as the work proceeds to make it equally firm all over. When the heat has declined to between 75° and 80°, the spawn may be inserted in pieces about as big as a large walnut, putting them at about 6 inches apart all over the bed, and pressing them firmly in the bed. When it has been ascertained that the temperature will not rise above 80°, the beds may be covered with about 2 inches of soil and made smooth by beating it with the back of the spade. In order to preserve the heat in the beds, cover them with thick mats.

Broccoli.—The damage done up to the present through severe cold is very little, but when the heads become fit for use they soon get blackened by frost, therefore they had better be lifted and placed in some sheltered position, when they can be easily covered with mats or some other material that is light and warm. Such varieties as Snow's Winter White should keep up the supply for at least six weeks.

Cauliflowers.—Plants that are wintered in frames must not be coddled. Admit plenty of air on all occasions where there is not severe frost. If the plants chosen were of the correct size, they will then remain dwarf and stocky. Dampness will be the greatest evil to guard against. Allow no decaying matter to remain near the plants. Stir the surface soil occasionally.

BACTERIAL DISEASE OF TOMATOS.—Leaflet No. 152 of the Board of Agriculture is devoted to the description and illustration of a disease caused by bacteria. It begins as a blackish patch around the base of the style, eventually spreading till, ultimately, the whole fruit is reduced to a soft decayed mass. Infection takes place during the flowering stage by means of flies which visit the flowers and deposit the bacteria on the stigma. Destruction of the affected fruit and the use of an insecticide are recommended as the only means of preventing the malady.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Letters for Publication, as well as specimens and plants for naming, should be addressed to the EDITOR, 41, Wellington Street, Covent Garden, London. Communications should be WRITTEN ON ONE SIDE ONLY OF THE PAPER, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

Special Notice to Correspondents.—The Editor does not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editor does not hold himself responsible for any opinions expressed by his correspondents.

Illustrations.—The Editor will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens, or of remarkable plants, flowers, trees, &c.; but he cannot be responsible for loss or injury.

Newspapers.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

Local News.—Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

APPOINTMENTS FOR THE ENSUING WEEK.

SATURDAY, Dec. 16 { Annual Meeting of Carnation and Picotee Society.
TUESDAY, Dec. 19 { R.H.S. Committees Meet.
National Dahlia Society's Annual Meeting.

AVERAGE TEMPERATURE for the ensuing week, deduced from observations of Forty-three Years at Chiswick—39°5'.

ACTUAL TEMPERATURES:—

LONDON.—Wednesday, Dec. 13 (6 P.M.): Max. 42°; Min. 35°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—Thursday, Dec. 14 (10 A.M.): Bar., 30°5'; Temp., 47°; Weather—Dull, with slight fog.

PROVINCES.—Wednesday, Dec. 13 (6 P.M.): Max. 40° N.-W. Coast of Ireland; Min. 38° E. Midlands.

SALES.

MONDAY NEXT—

At 12 o'Clock; Dutch Bulbs of all kinds at 67 & 68 Cheapside, E.C., by Protheroe & Morris.

WEDNESDAY NEXT—

At 11 o'Clock; Dutch Bulbs, Miscellaneous and Hardy Border Plants, &c.; at 3.0 and 5.0; 2,000 Roses in variety; at 5.0, Palms, Plants, Azaleas, Rhododendrons, Fruit trees, &c., at 67 & 68 Cheapside, by Protheroe & Morris.

THURSDAY NEXT—

At 12.30; Special Sale of Flowering Orchids, at 67 & 68 Cheapside, E.C., by Protheroe & Morris.

The National Rose Society.

THE extraordinary popularity of the Rose and the keen enthusiasm of rosarians were exemplified at the annual meeting of the National Rose Society, held on Thursday, the 7th inst., after our pages had gone to press. The large room at the Hotel Windsor was packed, the speakers were numerous, and the business of the meeting became so involved as to elicit a striking amount of skill and good management on the part of the president, Mr. Shea. The most important business had reference to the date on which the Metropolitan Show should be held, and to judge from the interest manifested, greater zeal could hardly have been evinced had the question been one relating to fiscal policy or to Home Rule. For all that, it was only a question of whether the show should be held two or three days earlier or later, as the case might be. This was a point of interest as regards the conflicting requirements of North and of South, but one that is almost wholly dependent on the vagaries of the weather, and to that extent beyond the control of any general meeting. After much discussion, a compromise was arrived at. It was decided that as a rule the exhibition should not be held earlier than the

third of July or later than the ninth of the same month. Thursday, the fifth of July, was selected as the date for the Metropolitan Show. The decision was arrived at unanimously, mainly, it would seem, from the influence of Mr. Mawley's statistics. In the compilation of these, various factors had been taken into consideration, the general result going to show that the best date, all things considered, is "about the sixth of July." As to the locality, it was decided to hold the show in the Royal Botanic Gardens, Regent's Park. The result of holding the show in those gardens last year was very satisfactory, and a great improvement on the show held in the Temple Gardens. Moreover, there is every probability that the means of access to the Regent's Park from central London will speedily be greatly improved.

The autumn exhibition was fixed for Wednesday, September 19, at the Royal Horticultural Hall, Vincent Square, the show to last one day only instead of two, as this year.

The annual report revealed a most prosperous state of things, no fewer than 422 new members having been elected in the year, and the finances being in a sound condition. The publication of the little treatise on Pruning was considered to have contributed in no slight degree to this result.

The Society's receipts for the year, including a balance at bankers of £318 19s. 11d., and £4 11s. 1d. interest earned on deposit account, was £1,851 13s. 10d., and the expenditure, for the same period, £1,410 13s. 11d.

Of course it was not possible to hold such a meeting without sympathetic allusion to the decease of the founder of the Society, the Rev. H. H. D'Ombraïn. How well he laid the foundations of the Society and controlled its superstructure is shown by its flourishing state, a condition for which the Society has also to thank the present secretary, Mr. E. Mawley.

A CHANGE in the Directorate at Kew. Kew has as much interest for the horticultural public as the appointment of a new ministry in the political sphere. In the one case scientific attainments and administrative capacity are alone to be considered; in the other, party prejudices and personal predilections cannot be entirely excluded.

Sir William Thiselton-Dyer's retirement from the Directorate of Kew was announced in our last issue. After some ten years' service as Assistant-Director, Sir William Dyer assumed the Directorate on the retirement of Sir Joseph Hooker. To have to follow in the steps of two such very distinguished men as Sir William and Sir Joseph Hooker might well have engendered misgivings. The requirements of the office are as onerous as they are varied. The general public look on the establishment mainly as a pleasure ground. To them the only considerations are the general amenity of the gardens and the brilliancy of the flower beds. To gardeners, Kew is much more; they expect, in a word, to see there the best of everything cultivated in the very best manner. The requirements of the botanists are even more exacting. They want to see and to study the most interesting, the most rare, the most novel, the most economically important plants

accurately named, and grown and disposed in such a way as to illustrate the affinities of the plants, their geographical distribution, and their adaptation to particular circumstances and requirements. To them the museums, the laboratories, the herbaria, the library, the picture galleries are of greater consequence than the merely decorative features of the establishment, features which can be seen more or less in any of the public and private parks of the country. As a botanical establishment Kew is still unique. Berlin, New York, and other cities are striving to emulate the Royal Gardens, but they have not yet succeeded in rivalling them. The circumstances at Calcutta, Buitenzorg, Sydney, or Peradeniya are so different that comparison is not possible. The mention of the names of these famous gardens serves, however, to illustrate one other function of Kew, one of enormous importance to the Colonies and to India, though little, if at all, known to the general public. Kew acts, in fact, as a general bond of communication—a "clearing house," as it were, for all the botanical establishments of the Empire. It acts as a distributing centre not only for ornamental plants which attract the passer-by, but for the cinchonas, the rubber-plants, the teas, the fibre-plants and others which are of such vast commercial importance at the present time. Again, Kew has become the centre for the investigation of plant-diseases in the tropics and elsewhere, and this department will doubtless be considerably extended in future.

We mention these matters to show the nature and extent of the labours that fall on the Director in his work of supervision and administration. The glorious record of the Hookers, father and son, is known to all botanists. Naturally, since their time the responsibilities and duties have materially increased. During the time that Sir William Thiselton-Dyer has been in charge even more attention than before has been paid to the horticultural department; the Temperate house has been completed, and is now by far the largest establishment in the world. Many of the other houses have been enlarged or renovated, the Herbarium has been more than doubled in size, the Museums have been overhauled, and the Library has been rearranged and largely added to.

For general efficiency in all departments Kew never stood higher than it does at present.

All this administrative work has no doubt to some extent interfered with the literary output from Kew. The issue of the Bulletin has apparently ceased definitely. The publication of the Colonial Floras has been delayed, but of late great efforts have been made to hasten their appearance, and even as we write a new part of the Flora of Tropical Africa has been issued, and the Flora of South Africa, as we may call it, has been pushed forward. The Hand-Lists that have been issued have proved of great utility. Sir William Dyer's successor will have no light task to maintain the efficiency of all departments of the establishment and to increase it according to the ever-growing requirements of science and commerce. Col. Prain's brilliant academic achievements, his experience in India, and his personal qualifications offer the best guarantee that in his hands the noble traditions of Kew will be not only maintained but extended.



ASTILBE GRANDIS, A NEWLY-INTRODUCED CHINESE PLANT, EXHIBITED BY
MESSRS. JAMES VEITCH & SONS.
FLOWERS WHITE, INFLORESCENCE 4 FEET IN LENGTH.

KEW.—It is stated that the post of Assistant Director is to be revived, and that considerable developments may be expected in the departments of forestry and agriculture, including, as we trust, the study of plant-diseases of all kinds. Cambridge Cottage on Kew Green has been allotted for the purposes of the establishment by His MAJESTY. This will be a great addition to the convenience and efficiency of the garden. Cambridge Cottage was long the residence of the late Duchess of CAMBRIDGE and her daughter the Princess MARY, afterwards Duchess of TECK.

THE NATIONAL DAHLIA SOCIETY.—The annual meeting is announced to take place at 2.45 p.m. on Tuesday, December 19, in the North Room, Hotel Windsor, Westminster.

ROYAL BOTANIC SOCIETY.—Mr. SOWERBY contributes "by order" to the *Times* a letter relating to the affairs of the Society and to the results of the late meeting, from which we extract the following passage:—" . . . The first thing of all to be done is to get the finances straight. The council submitted a proposal with this object (increase of subscription), which, having received the support of large majorities of the Fellows, both by postcard and in person, failed on the 24th ult. to obtain the requisite and very strict majority of three-fourths by one vote only. The vote having been taken, and the result recorded, the council was called together with the least possible delay, and at a meeting held on the 28th ult. they passed unanimously the following resolution, which has since been circulated to all the Fellows:—'That a general meeting of the Fellows should be convened, soon after Christmas, to discuss privately and unreservedly with the council any grounds of dissatisfaction, as well as suggestions of a practical character, with a view to promote the prosperity of the Society.' This course has the additional recommendation of being in conformity with the recommendation made by one of the Fellows at the meeting on the 24th ult. The council hope that advantage will be taken of this opportunity by the Fellows, and that, in words used by Mr. RUBINSTEIN in his letter published in the *Times* of December 1st, they may, 'with the co-operation of the Fellows, find, if possible, a way out of the present difficulties.'"

RELIEF FOR THE UNEMPLOYED.—Writing to the LORD MAYOR of London with reference to the Queen's Unemployed Fund, Lord CARRINGTON said:—"I wish to subscribe 200 guineas towards the Queen's fund, but instead of enclosing a cheque for this sum I propose to spend this amount in wages for 14 unemployed heads of houses at High Wycombe (six of whom I have already engaged and started at work) at the standard rate of wages for unskilled labour in this district. Thanks to the Queen's kindly sympathy and promptitude, it is evident that a large sum of money will be subscribed, but the difficulty of providing immediate work remains. If landowners could start relief works on their own estates in the country it might perhaps diminish the influx of unemployed into London. Where life-owners are unable to start such temporary employment out of income, trustees of settled estates can, under the Settled Land Act, advance money for permanent improvements, such as road-making, embanking, draining, &c., which would provide employment for unskilled labour." Lord CARRINGTON's scheme and example is one which we do not doubt will commend itself to a large number of landowners, not only by reason that it may check the influx of unemployed into the Metropolis, but also because it will tend to relieve the sufferings of the people with whom the donor is more immediately concerned, and for whom he not unnaturally sympathises the most. And while by the initiation of such relief works the landowner will have the satisfaction of knowing that he has mitigated the sufferings of his lowly neighbours, he will at the same time know that his estate has benefited. But the great point in Lord CARRINGTON's letter is this: that landowners able

to provide work should do so now when work is scarce, rather than postpone improvements until the summer, when the unskilled labourer is able to find employment in other directions. *The Estate Magazine*.

LINNEAN SOCIETY.—An evening meeting will be held on Thursday, December 21, 1905, at 8 p.m., when the following papers will be read:—1. Reports on the Vienna Botanical Congress, by Dr. A. B. RENDLE, M.A., F.L.S.; 2. *Cyrtandra* Malayanæ novæ, by Dr. FRANZ KRANZLIN; 3. On *Characeæ* from the Cape, collected by Major A. H. WOLLEY-DOD, by Messrs. H. and I. GROVES; 4. Note on the distribution of *Shortia*, by Mr. B. DAYDON JACKSON, Gen. Sec., L.S.

APPLES FROM BRITISH COLUMBIA.—We have received several fruits from the Agent-General of British Columbia, Finsbury Circus, London, which are similar to many that were shown at the exhibition of colonial fruit reported in our last issue. They have wonderful colour development, but possess less flavour than specimens grown in England; besides which they are deficient in juices. At the same time the general public is to be congratulated that at such a season as the present, when English Apples are almost unobtainable, the colonies can send large quantities of such fruits as were exhibited from British Columbia and Nova Scotia.

NATIONAL CARNATION AND PICOTEE SOCIETY.—The annual general meeting of the above society will be held in the room of the Horticultural Club, Hotel Windsor, Victoria Street, Westminster, on Saturday, December 16, 1905, at 3.15 p.m. After the transaction of the business of the meeting the president of the society proposes to move the following resolution:—"That this meeting of members of the Carnation Society is of opinion that too much encouragement has of late years been given in the prize lists of the society to exhibition of 'dressed' flowers, and they would wish the schedule of Prizes, for the year 1906, to offer increased opportunities to the exhibitors of undressed flowers. The floral committee is therefore requested to take this matter into their consideration, and at their earliest convenience to submit to the committee of the society suggestions for a revision of the prize list for 1906 in the direction indicated." We sincerely trust the members will support the president in this attempt to do away with the childish practice of dressing which has little relation to gardening.

GIFT OF TRENTHAM HALL FOR PURPOSES OF HIGHER EDUCATION.—At a meeting of the Staffordshire County Council on Saturday, as reported in the *Times*, Lord HATHERTON said a letter had been received from the Duke of SUTHERLAND stating that he had decided to give Trentham House to the Council for the purposes of the higher education. The council passed a cordial vote of thanks to the Duke and Duchess of SUTHERLAND for their magnificent offer, which exceeded anything in the annals of the county, and the offer was referred to the Education Committee for consideration. Trentham House is situated in a magnificent park about four miles from Stoke-on-Trent, and has long been in the possession of the Sutherland family. A short time ago some correspondence took place between the Duke and the Stoke Town Council with reference to the alleged pollution of the Trent, which runs near the hall, by sewage from the town being drained into it. His Grace threatened that, unless the nuisance complained of was abated, he would give up residence at Trentham. Whilst the Duke's public-spirited action is universally appreciated, there is a feeling of regret that the giving up of Trentham House will result in the severance of ties which have linked the Sutherland family with the Potteries for very many years. Trentham has been celebrated for its extensive and well-equipped gardens for a long period, and a large number of gardeners now holding important positions have served for a time under one or other of the well-known men who

have been head gardeners to successive Dukes. Their names are almost household words amongst gardeners, especially those of FLEMING and STEVENS. Mr. STEVENS was succeeded by Mr. PETER BLAIR, the present gardener. Some of the best-known features of Trentham include the large formal flower garden in front of the mansion (see illustration on p. 421); the magnificent lake which stretches over a very large area beyond the flower garden; the unusually large conservatory, the numerous fruit houses, some of which are extremely long ranges of glass; and the great collection of Orchids which was formed to a considerable extent by the late ZADOK STEVENS.

HIBISCUS HYBRIDS.—We extract the following from an American journal:—"A few days ago I had the pleasure of visiting the nursery of THOMAS MEEHAN AND SONS, and there I saw one of the finest sights it has ever been my good fortune to see. They were the achievements of a modest young Kewite, ERNEST HEMMING, and the plants operated upon were the herbaceous Hibiscus. The plants were in full bloom, 6 to 8 feet high, and the colours were both brilliant and charming, and in all shades from pure white to rich crimson. In most cases a darker colour prevailed in the centre of the flower, as is the case with most varieties of the Hibiscus syriacus, the flowering shrub, but, in no instance was there the suggestion of the purple shades of colouring too often seen in the species just referred to, and the flowers were much larger in the new hybrids, being in many instances 8 inches across. These valuable hybrids are the result of intercrossing between Hibiscus Moscheutos, the marsh Hibiscus, *H. militaris* and *H. coccineus*. It is from the latter that the crimsons come. The plants I saw were two years old from seed, and they were certainly a thrifty looking lot. *Edwin Lonsdale*."

FRUIT CULTURE.—The total acreage in England devoted to the culture of small fruit in 1905 is given in the *Agricultural Returns* as 71,119 acres; orchards occupy 238,021. In the county of Kent no fewer than 22,050 acres are given up to small fruit culture, and 29,304 to orchards. Devonshire, Hereford, Worcester, Somerset come next as regards orchards, but are very far behind Kent in the culture of small fruits.

FLORA OF TROPICAL AFRICA.—A new part of this valuable publication, edited by Sir W. T. THISELTON-DYER, has just been issued. It contains an enumeration of the Hydrophyllaceæ and Boraginaceæ by Mr. J. G. BAKER, with additions by Mr. N. E. BROWN and Mr. C. H. WRIGHT, and of the Convolvulaceæ by Mr. BAKER and Dr. RENDLE.

THE GENUS EUCALYPTUS.—The seventh part of Mr. J. H. MAIDEN's valuable Critical Revision of the genus Eucalyptus contains four plates illustrating Eucalyptus regnans, vitrea, vitellina, dives, Andrewsii, and diversifolia.

AGRI-HORTICULTURAL SHOW IN PENANG.—A successful show was held in Penang of agri-horticultural products last August. There were many competitors and great numbers of native visitors. The Agricultural Produce Section proved most interesting, and in the Flowers, Fruits and Vegetables Division there were nearly three hundred exhibitors. Great credit is due to the president, Hon. J. K. BIRCH, to the hon. general secretary, Mr. WALTER FOX, and to the committee and officials in general.

SPINELESS OPUNTIA.—Much has been said lately about Mr. BURBANKS' "Prickly Pear" without prickles. The Rev. E. P. HOLTON, as cited in *Indian Planting and Gardening*, has found a similar variety in Southern India, and has succeeded in propagating it. It is supposed to have been introduced from the Mediterranean shores by some of the Jesuit Fathers.

BETTING.—A trusted employee in the service of a well-known Covent Garden firm was lately charged with embezzling £613, received on behalf of the pension fund of which he was treasurer, and was sentenced to nine months' imprisonment. Another man in the employ of a Covent Garden firm was committed for trial on a charge of embezzling money to the extent of £4,055. Both these cases are said by the *Fruit Trades Journal* to have been due to betting.

POTATOS.—Mr. WILLIAM DEAL, of Kelvedon, Essex, reminds us that he was awarded a Silver Banksian Medal for the exhibit of Potatoes staged by him at the last meeting of the Royal Horticultural Society.

PIN EYES AND THRUM EYES.—Since DARWIN drew attention to the long, as contrasted with the short, style of Primroses and other plants, many have been the observations and inferences made from these phenomena. The "florists" had long been familiar with them, but were content to dally with their pin-eyed and thrum-eyed flowers without heed to their significance. Mr. BATESON is one of the latest to take up the matter seriously, and he has had the advantage of availing himself for purposes of study of the vast collections of Messrs. SUTTON. In a paper recently contributed by him in association with Mr. GREGORY to the *Proceedings of the Royal Society*, November 9, 1905, Mr. BATESON suggested that the contrasted length of the style in *Primula* might be considered as an illustration of MENDEL'S views as to inheritance, and he shows that in the Chinese Primrose *P. sinensis* the short-styled state is "dominant," the long-styled condition "recessive." "Horticultural experience," says Mr. BATESON, "as to the production of long and short-styled offspring is in general harmony with our results. Fashion has decreed that *P. sinensis* shall be exhibited in the long-styled form alone. This being the recessive, breeds true, and short-styled plants are consequently absent from selected strains, being even difficult to procure at the present time. The florist's *Arnicula*, on the contrary, must be exhibited in the short-styled or "thrum" form, but as this is the dominant, long-styled *Arniculas* continue abundant. In the wild Primrose (*P. acaulis*, of Jacquin), the two forms are about equally numerous in nature. Experiments with this species, now in progress, give indications that the inheritance of the two types follows the same rules. From the greater sterility of its illegitimate unions the Primrose is less easy to work with, and as might be expected, from the same cause, all short-styled wild plants so far tested have been found to be heterozygous in respect of style. In the case of *P. sinensis*, by making use of the fact that green stem and pinnate leaf are recessive to red stem and palmate leaf, it was possible to arrange double pollinations in such a way that the paternity of each resulting seedling would be apparent, and thus the number of individuals derived from each set of pollen grains could be ascertained." The paper is not one that can be conveniently condensed, but is one that should be carefully studied by experimenters. Cross-breeding, which up till now has been more or less fortuitous, is gradually becoming precise in its results.

HORTICULTURE UNDER THE KENT EDUCATION COMMITTEE.—Very favourable reports are issued concerning the past year's horticultural work under the auspices of the Kent Education Committee. The Superintendent, Mr. W. P. WRIGHT, says that the average number of competitors was greater than in any past year. He adds that: "The returns show a very high standard of merit, and with good work supported by some genial rains, which did much to counteract the injurious effects of the May frosts, excellent results are shown." The crops are a little in advance of last year. In 1904 the best Cottage Garden earned

243 marks; this year it earns 247. The best Allotment in 1904 earned 215 marks; this year it earned 217. The Champion Centre is Woodnesborough, which was second last year. It has earned £3 1s. more than it did in 1904. Situate in the fine gardening district of Sandwich, and supported by a large number of earnest cultivators (the average attendance at the winter lectures exceeded 70), it is a centre that is bound to do well. To secure the championship in this, its second season, is an unprecedented feat. The winner of the certificate for the best Cottage Garden is Mr. G. WAGHORN, of Staplehurst, who was also victorious last year. He is a splendid worker, and wrestles with his stiff cold clay nobly. The winner of the certificate for the best Allotment, Mr. G. JULL, of Sandwich (Woodnesborough Centre), was second last year. He is a most earnest and enthusiastic gardener, a regular attendant at all gardening meetings, and ever to the fore in competitions. No one better deserves the honour he has won after several attempts.

THE LATE LORD LEIGH.—We regret to hear that the gardens at Stoneleigh Abbey, Kenilworth, are not to be kept up as they were until the recent death of Lord Leigh. In consequence of this, Mr. H. T. Martin, the gardener at Stoneleigh, will be open to accept another engagement. An account of the gardens was published in these pages October 29, 1898.

ROYAL HORTICULTURAL SOCIETY.—The Public Parks Examination to be held on January 11, 1906, is specially intended for gardeners employed in public parks and gardens belonging to County Councils, City Corporations, and similar bodies, and will be held in the Royal Horticultural Society's Hall, Vincent Square, Westminster, S.W. The Examination, which will commence at 10 a.m., will be partly written, partly *viva voce*, and will occupy three hours for the written portion, and about 20 minutes each candidate's *viva voce*. A syllabus, with entry form attached, can be obtained on application to the Secretary, R.H.S., Vincent Square, Westminster, to whom intending candidates should send in their names as soon as possible. No entry can be accepted after December 31, 1905.

Judging Rules.—The third revised edition of the Society's Code of Rules for Judging and suggestions to Schedule-Makers, Judges, and Exhibitors, for use at Horticultural Exhibitions, has just been issued, and can be obtained from the Society's Offices, Vincent Square, Westminster, price 1s. 6d.

Varieties of Fruits.—The society has just published a new and revised edition of the little pamphlet on "Varieties of Fruits," useful for private gardens and for small farmers and cottagers. It is divided into chapters on Apples for Eating, Pears for Eating, for Orchard, for Cooking, Plums for Eating and for Cooking, Damsons, Cherries, Raspberries, Currants, Gooseberries, Strawberries; Notes on Planting, on Pruning, on Root-Pruning, on Manuring, on Artificial Manure. There is further an added list for enthusiastic amateurs which gives some of the newer fruits which have thus far promised well, but are hardly sufficiently proved, or for some other reason not included in the general recommendations. It is a useful little pamphlet for 2d., or 25 copies for 2s., 50 for 3s., 100 for 4s.

ASTILBE GRANDIS.*

(See Supplementary Illustration.)

This new species is a worthy companion to the now well-known *A. Davidii*, being similar in habit and vigour of growth, but with pure white flowers. Both species are natives of China, but the plant here figured is much more local in its distribution. It occurs sparingly in the mountains of Central China, at elevations between 6,000 to 7,500 feet. In the far west of China it is very common on grass or scrub-clad mountain-sides, the margins

of woods and the sides of streamlets, between 6,000 to 8,000 feet. Even in a wild state it frequently attains a height of 6 feet, and it is doubtful if it has yet been seen at its best in this country. Nevertheless, the plant exhibited by Messrs. Veitch before the Royal Horticultural Society, on July 18, 1905, when it received an Award of Merit, will long be remembered by all who saw it. Like *A. Davidii*, it was introduced into the Veitchian Nurseries, from Central China, by the writer when collecting for that firm.

To get the best results from this and all other species of *Astilbe*, they should be planted in good rich soil and afforded plenty of moisture when growing. Bees are very fond of these flowers, and unless protected in some way they quickly spoil them.

Radical leaves numerous, bipinnate or tripinnate, 2 to 3 feet long, 1½ to 2 feet wide; leaflets scabrid, oblong or oblong-ovate, shortly acuminate, base slightly cordate, bidentate, teeth mucronate; rhachis clothed with long brownish hairs. Flowering stems 6 feet high, bearing 3 or 4 leavessimilar to, but smaller than, the above. Inflorescence large, much-branched, plumose; panicle, 2 to 2½ feet long, densely clothed with a short reddish-brown indumentum; lateral branches 3 to 8 inches long, erect, spreading, very pubescent. Flowers large for the genus, shortly stalked, and densely crowded on the branches. Sepals broadly ovate, pale brown. Petals persistent white, ligulate, 3 times the length of the sepals. Stamens longer than the petals, very conspicuous. Carpels glabrous. *E. H. Wilson.*

FORESTRY.

BELGIAN FORESTRY.

Sir Herbert Maxwell's perplexity over the definition of "yield per acre" is probably due to the fact that I omitted to prefix the word "nett" to the term. Otherwise, I do not think my remarks are difficult to understand.

Sir Herbert Maxwell asks if a single element adverse to the production of first-class timber can be found in the British climate. I should be inclined to name one element in particular which I think is more pronounced here than in Belgium. This is the element of persistent west wind in combination with a low summer temperature. I do say that this element necessarily interferes with the production of first-class timber, but it certainly prevents, as I stated before, the same yield of timber being obtained per acre per annum as would be the case if it were absent. The rates of growth quoted by Sir Herbert prove little beyond the fact that individual trees grow quite fast enough under favourable conditions. Successful forestry does not depend upon the rate of growth of a few individuals, but upon the average rate of growth of masses of trees growing upon comparatively poor soil. If the economic forester could pick and choose his ground, there would be little difficulty about getting good results; but when he has to take ground which the agriculturist does not consider worth having, which he is bound to do if he wants huge and compact acres, then the question of climate becomes of great importance.

I do not think occasional gales or even late frosts retard the growth of hardy trees so much as long periods of comparatively low temperature, such as we usually experience in May and June. Some species, of course, are affected more than others, and Conifers less than many broad-leaved trees, but my contention is that height-growth, which affects the yield per acre per annum as much as anything, is less the further north one goes, making due allowance for soil and situation. If, for instance, investigations are confined to individual trees, it is not

* *Astilbe grandis*, Stapf. MSS., in Kew Herb.



FIG. 158.—ODONTOGLOSSUM SMITHII. (See text.)

difficult to prove that many species attain as great a girth or circumference at 5 feet from the ground in the north as in the south of Great Britain. But if two individuals or plantations of the same species, the same age, and growing under exactly the same conditions as to soil, elevation, exposure, etc., climate alone excepted, are observed, it will at once be seen that the last-named factor is important enough to affect both height, growth, and quantity of timber produced in a given time, even with such hardy species as Scotch Pine, Silver Fir, or Spruce. In the case of Larch, I should not like to say that the climate of the north is far behind that of the south after the first 20 or 30 years growth have been made, as a cool, a moist climate appears more favourable to the development of this species than in the case of many trees.

As regards railway rates, I can scarcely do better than refer Sir Herbert Maxwell to the recent report in these pages of the Royal Horticultural Society's conference on this important subject, in which numerous cases are quoted to show the disadvantage under which home-grown timber labours when it is necessary to place it on rail for a short distance.

I do not wish to make excuses for bad forestry in Great Britain, but it is useless to shut our eyes to the fact that the British climate, when compared with that of France, Belgium, and a great deal of Germany, leaves much to be desired when the growth of tall, straight timber is the object in view, and it is this class of timber which helps the grower to obtain a profit nowadays. *A. C. Forbes.*

ODONTOGLOSSUM × SMITHII.
(ROSSII RUBESCENS × HARRYANO-CRISPUM.)

OUR illustration (Fig. 158) represents the fine novelty in hybrid *Odontoglossums* for which Messrs. Charlesworth & Co., of Heaton, Bradford, received a first-class certificate at the Royal Horticultural Society's meeting on December 5 last. It is a charming novelty. The sepals and petals are margined and tipped with clear rose-purple colour. The central area of the segments is white with a faint green line over part of the surface, the spotting being of dark chocolate purple colour. The yellow crest of the lip is on a white ground and the lip itself is of rose-purple.

out that *C. longifolium* and not *C. giganteum* was the second parent of *C. Gammieanum*. What is the history of the plant named *C. Maggie Fowler*? *W. W., Kew.*

NEW AND NOTEWORTHY PLANTS.

CYMBIDIUM ERYTHROSTYLUM,
ROLFE, N. SP.*

It is evident that in Annam and the adjacent territory we have a large comparatively unexplored area, for the recent collections received by Messrs. Sander and Sons, through their collector, W. Nicholitz, contain a large proportion of novelties, as also proved to be the case in the adjacent territory of Yunnan, where considerable explorations have been made during recent years. Messrs. Sander's importations are now known to contain a handsome new *Cymbidium* allied to *C. Parishii*, Rehb. f., and *C. eburneum*, Lindl. It has just flowered at the Royal Botanic Garden, Glasnevin, under the care of Mr. F. W. Moore, A.L.S., who has forwarded materials to Kew from which a plate has been prepared for the *Botanical Magazine*. Mr. Moore remarks that the novelty is more slender in habit than its allies, and that its appearance is very graceful. The leaves are over a foot long by half an inch broad, and the inflorescence, which springs from the axil of a leaf at the base of the pseudo-bulb, produced four flowers. These are white, with a few rows of purple dots down the centre of the petals below the middle, while the three-lobed lip is closely lined with red-purple. The column is remarkable for its bright, crimson colour, in allusion to which the name is given. Full particulars are given in the accompanying technical description. *R. A. Rolfe.*

* *Cymbidium erythrostylum*, Rolfe.—Pseudo-bulbs ovate-oblong, over an inch long, several-leaved. Leaves elongate-linear, acute, 10 to 15 inches long by about half an inch broad, arcuate, sheathed at the base. Inflorescence axillary from the base of the pseudo-bulb, over a foot long, with several lanceolate acute sheaths near the base; raceme at present four-flowered. Bracts lanceolate, acute, 1 to 1½ inches long. Pedicels 1¼ to 1¾ inches long. Sepals elliptical, apiculate, concave, 1¾ inches long

CYMBIDIUM GAMMIEANUM.

THE illustration herewith represents a plant, now in flower at Kew, which was purchased in 1902, along with other Indian Orchids, from Mr. C. A. Martin, of Ealing. It flowered the following year and was named *C. Gammieanum* by Mr. Rolfe, who agrees with me in saying that it does not differ from the plant named *C. Maggie Fowler*. As to the parentage, I may point out that the authors of *C. Gammieanum* stated that "It may possibly be a natural hybrid between *C. giganteum* and *C. elegans*, as its flowers combine the characters of these species." They also state that *C. Gammieanum* varies in shade of colour and density of raceme, and that some have flowers suggestive of *C. longifolium*. Mr. Rolfe afterwards pointed



FIG. 159.—CYMBIDIUM GAMMIEANUM,
as grown in the Royal Gardens, Kew. (See also notes in the issues for November 25 and December 2.)

by 1 inch broad, white, the lateral pair somewhat keeled behind. Petals obovate-elliptical, apiculate, rather shorter than the sepals, white, with about three rows of minute purple dots down the centre of the basal half. Lip broadly obovate, three-lobed at the apex, as long as the petals, $1\frac{1}{2}$ inches broad at the apex, much narrowed towards the base, side lobes obtusely rounded, front lobe short, broad and obtuse; colour, yellowish white, rather deeper towards the apex, and lined throughout with red-purple, the lines breaking up into dots at the margin of the side lobes, and more or less thickened and somewhat villous on the disc and front lobe; disc with five slender keels, thickened about the middle into a prominent three-lobed crest, the middle lobe exceeding the lateral pair. Column clavate, arcuate, an inch long, and wholly crimson in colour—a striking feature, in allusion to which the name is given. Native of Annam. *R. A. Rolfe.*

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his correspondents.)

PROTECTING FIG TREES OUT OF DOORS FROM INJURY BY FROST.—On p. 391 it is stated that "In many parts of the country it is necessary to afford protection to Fig trees from severe frost, the writer recommending that the branches of very large trees should be removed from the wall and tied up in bunches and then thatched with straw, the whole secured to the wall to prevent the bundle from being blown about." Speaking from a long experience in the management of Fig trees out of doors, I strongly recommend that the Fig trees be left undisturbed in the positions they have occupied on the walls since they were pruned and trained in May last. I will briefly state my reasons. Some 36 years ago when living at an old Kentish baronial garden—situate within the Metropolitan area—a few old Fig trees were annually treated as recommended by the writer of the paragraph referred to above. These trees were uncovered at the end of the following March or early in April, and the becoddled branches, and in some instances the blanched young growths, were rearranged and secured in position on the wall. The result in the way of a crop was about half-a-dozen fruits on each tree; so much for protection. Now for "No-Protection." In the park attached to the same place several large bushy trees of the Fig were in the open and they appeared never to have had any attention afforded them, nevertheless they bore heavy crops of fine fruit every year. This was a conclusive and useful experience for the writer, who, when he left Kent to take charge of gardens some 85 miles south-west of London, found some 250 feet run of wall-space was devoted to Fig trees, and that the practice of drawing the nails and taking the shoots half-way down the wall on either side the centre of each tree and tying them together and then securing the bundles of branches to the wall and hanging mats over them had been followed every year on the approach of winter, and the trees were then left until the following April. In order to be on the safe side (that part of the country being new to me), I allowed all the trees to be protected as before except one, which was left as it had been all the season. And it bore a better crop of fruit than the protected trees did. After this experience, it is almost needless to say, during the many years that I had charge of them, no protection of any kind whatever was afforded, no matter how severe the winter happened to be. In some severe winters the points of the unripened shoots were killed down for a few inches, but that did not signify in the least, as there were always sufficient young shoots left to take the place of the older and partly-bare branches which were cut out early in May every year. I always made a point of cutting out as many old branches as I could possibly dispense with to make space for the younger ones, retaining, as a matter of course, those shoots which were best furnished with young fruit, a selection which the cultivator is able to make if he defers the pruning of his trees till the first week in May. Another advantage from this practice is that as the trees are coming into leaf at the time very little bleeding follows. *Ficus Carica.*

[The note on p. 391 was written for the general reader over the whole country and not specially for

those residing in the Metropolitan area or in the more favoured south-west districts. *Ficus Carica* bases his remarks on his experiences in these localities alone. In my experience, which is less by eight years than that of the above writer, I once had charge of some gardens in the coldest and wettest county in this island, and on a subsequent occasion 200 miles north-west of London. Protection for Fig trees in each place was absolutely necessary. Now I am only about forty miles from the Metropolis, but I still find it necessary to give some protection. Here, it is not altogether on account of the cold weather experienced, but of the cold, retentive nature of the soil. The two conditions combined are disastrous to the Fig. When living in a favoured part of the south-west counties I had excellent opportunities for visiting many gardens, and I found that protection was not necessary, especially near to the coast, and in more than one place do I know of large standard Figs the size of small orchard trees which carry good crops of fine fruits. When serving under the late esteemed gardener, Mr. A. Pettigrew, of Cardiff Castle, a large standard Fig tree was growing close to the base of that historical, Ivy-mantled pile of ruins, belonging to the order of Monks, the Grey Friars, situated within the kitchen garden. Excavations of recent years have unearthed the chapel with its mosaic floor, and many human remains. This Fig tree, in a good season, bore small but good edible fruits, but was not so prolific as the vineyards are at Castle Coch and Swanbridge. *Ficus Carica* states that in some severe winters the points of the unripened shoots were killed down a few inches, but if careful disbudding is done when the growth is sufficiently long to be removed—a great many more being made than can develop properly—and a subsequent thinning of the branches after the fruit is gathered, few, if any, unripened shoots remain. It is much better to rub off the shoots at an early stage than to remove a quantity of growths later; by so doing just sufficient branches are left as will become thoroughly ripened and set with embryo fruit, and there is then no risk of premature growth being made under the straw protection. *W. H. Clarke, Aston Rowant, Oxon.*

TRANSPLANTING.—In most private gardens a considerable amount of transplanting has to be done by the gardener, and the article by Mr. Bean on pp. 353, 354 and 373 was therefore particularly useful. The gardener has not always the necessary means to carry out successfully the work of removing large trees, and I therefore send a sketch (see fig. 160) showing a simple and inexpensive machine, which can be made by any good carpenter, and is capable of removing trees weighing upwards of half a ton. It has a solid wood roller underneath it, and can be used upon grass lawns without fear of the machine cutting or seriously marking the grass. I have used it for many years, and during the last three seasons have moved successfully hundreds of evergreen and deciduous ornamental trees and shrubs,

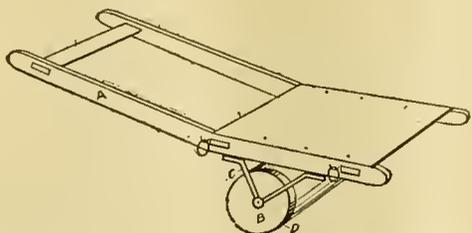


FIG. 160.—A HOME-MADE TRANSPLANTING MACHINE.

including Conifers, fruit trees, etc., which had balls of earth attached which weighed from 1 to 10 cwt. each. The machine is so arranged that it has a great amount of leverage, and this is often useful in weighing down the trolley when a heavy ball is on the bed. It will be seen from the illustration that when the ball of the tree has been prepared for removal, the front part of the trolley can be almost brought on a level with the base of the ball, which, if well secured from falling to pieces, can with ease be slipped on to the bed of the machine. If a gentle slope be cut from the bottom of the hole to the ground level, the machine can be pushed up this by three or four men without the fear of its sinking into the soil. The letter A in the illustration represents one piece of well-seasoned

Ash; B a roller formed from the trunk of an Apple tree, a strong spindle or axle being securely fastened into each end. Two strong iron supports, in which the axle revolves at one end, support the trolley at the other, and are made of the shape shown. C shows two iron bands, one at each end of the roller, which considerably strengthens them; D indicates iron bands round the wheel. *W. H. Clarke, Aston Rowant, Oxon.*

THE DEFINITION OF A SPRAY.—I am glad Mr. Molyneux has raised the question of what constitutes a spray—as applied more especially to Chrysanthemums. I have often had the same trouble when acting as a judge at Chrysanthemum shows. The trouble arises not so much from what really is a spray, but rather from not knowing what are the intentions of the framers of the schedules. It generally happens that committeemen when appealed to are just as much at sea as the judges. Mr. Molyneux is quite right as to the lax way in which schedules are often



FIG. 161.—WHAT IS A SPRAY? (See text.)

framed. The idea of the framers would seem to be, as in the case of the monthly magazines, to fill as many pages with advertisements as possible, and the least possible space with what the public requires to know. Even the National Chrysanthemum Society is none too explicit in many instances, notwithstanding that it has so many affiliated societies looking to it for guidance. If you ask why the terms used are not better defined, you are sometimes told the description is left to the judges. For myself, I generally pass the matter back to the committee; it is the only way to get a better definition another time. The secretary will sometimes say, "Oh, we don't want to lay down any hard and fast lines." I acknowledge that scope often brings out ideas which prove of educational value, but I object that when a special thing is asked for it should mean anything the exhibitors like to take it for. I cannot quite agree with Mr. Molyneux that a terminal shoot of a foot in length is a spray. I call such growth a spike—as we term it in Phloxes or Pentstemons. It consists of a number of lateral shoots, terminating in a cluster of buds as a last effort. What I should term a spray is a shoot from a branch having no subdivision of branches, or from the main growth as in Sweet Peas. A branch may mean anything, as Chrysanthemums differ so in growth; some are short-jointed and branch again and again. Others are long-jointed and, in some instances, make one branch only, which we call a break, and go right on to the terminal growth without branching again; surely such growths are something more than sprays! I would define a spray as already mentioned, "A shoot having no sub-

division of branches"; and when something more is asked for, I would term it a truss, "A branch shoot terminating in not more than, say, three or five sprays, all produced from one common stem." *Explanation of figure.*—(A) A terminal growth with laterals, each lateral growth generally producing more than one flower; consequently the whole forms a cluster of sprays. (B) A simple spray, there being no sub-division of branches. (C) A branch divided into three sprays or a truss. (D) A plant showing more than one dividing branch, and often cut off as at F, the portion being exhibited as a spray. *Norman Davis, Framfield.*

WINTER-FLOWERING CARNATIONS.—While the exhibits of cut flowers of Carnations should do much to call public attention to the value of the Carnation as a winter flower, the very handsome group of pot-grown plants from Mr. Leopold de Rothschild's garden at Ascott, shown at the last meeting, for which the gold medal of the Royal Horticultural Society was given, should go a step farther and afford an additional impetus to cultivation at an opportune moment. Pot grown examples such as those of the group in question are not merely interesting, or beautiful to look upon—they are all this, of course, and much more—they are educational because affording that evidence of habit, freedom of flowering, good or indifferent constitution, and the like, each and all of which are of the greatest possible value to the amateur or the beginner in the cultivation of this type of Carnation. Mr. Jennings, the gardener at Ascott, has exhibited Carnations before in good style, and readers of the *Gardeners' Chronicle* may still recall a splendid group of the variety Miss Joliffe Improved that years ago made a fine display in the old vinery at Chiswick. On the 5th inst. Mr. Jennings contented himself by bringing an exhibit chiefly of the newer American kinds. Special note should be made of the variety Mrs. Leopold de Rothschild, the handsome blossoms of quite exceptional size and fulness, on compact, faultless bushes. It was noted that the plants were grown in glazed pots, the drainage of which is perfect, and their non-porosity was obviously not detrimental to the plants. *E. H. Jenkins, Hampton Hill.*

THE DIRECTORSHIP AT KEW.—Although it was known that Sir William Dyer's time for retirement was approaching, the announcement last week must have come as a surprise to many who are interested in our great national garden. It is not long since I had the pleasure of hearing him speak in public, and it was then remarked that his energetic manner and vigour of intellect seemed as fresh as in the stormy times of the Royal Horticultural Society, now long past. As one who has been familiar with Kew Gardens during the whole period of Sir William's connection with that establishment, I can bear testimony to the substantial and well-maintained progress that has been made under his directorship. Never have the gardens been in better condition, or the occupants of the houses shown better cultivation than at the present time, and the interest of the great collections increases every year. The director has been ably supported by skilled assistants in every department, but that has been largely due to the judgment displayed in his selection of men for responsible posts. A keen, and to some extent, perhaps, a merciless critic—if he did not spare others he certainly did not spare himself—he has not only put good work into his charge, but he has had an irresistible way of extracting the best results from all those under him. As a far-seeing organiser with solid scientific judgment of what is required in such an establishment he leaves a useful record for a successor to study. The importance of Kew both in a practical and scientific sense must continue to advance while horticulture is being raised to a higher level, and there is ample work before all concerned in the management. *An Old Horticulturist.*

SUMMER FLOWERS IN THE SOUTH-WEST.—The interesting note by Mr. Fitzherbert on p. 369 will doubtless, as you say in your leader, "cause a feeling not unmixed with envy by those resident in less favoured localities." But all the South-west coast is not equally favoured. The information contributed by Mr. Fitzherbert would have been more valuable had he mentioned the locality and described the nature of the soil in which the many plants he names were growing. I can quite believe that the neighbourhood of Torquay,

Kingswear, and Dartmouth would be favourable to the growth of the plants noted. At Mount Edgcombe one may see many plants growing in the open facing the Channel, which are generally found cultivated under glass. *Cassia corymbosa* is noted in the list. This flowers with us on a wall between a greenhouse and a stove, but the plant is really inside the greenhouse, and although the shoots push through between the wall and the house, and flower profusely late in summer, all the growth outside the house is killed every winter by the cold. I have tried to establish many plants known to survive the winters in some parts of Devonshire, but there are very few which will survive the damp. We have tried *Rehmannia angulata*, but the recent frosts even destroyed a plant growing at the foot of a west wall. Yet, I believe, at Killerton, two miles distant, it has survived the winter. We are about 70 feet above sea level—Killerton is, perhaps, 50 feet higher—but it is not the degree of elevation so much as the nature of the soil that affects the plants. The pleasure grounds at the last-named place are partly on the rock, and for this reason many plants thrive there which would fail at Poltimore. My experience of Devonshire leads me to think that the soil is the principal factor in the cultivation of these tender plants, and I doubt if there is another county in England where such variation of soil exists. Three or four kinds may be found in as many yards, and for valuation purposes an intimate knowledge of it is necessary. During the past fortnight we have registered frosts varying from 5° to 21°. Gardeners living in low lying situations, with heavy soil to work, and a moisture laden atmosphere, will understand the effects such weather produces on ordinary vegetation. Our rainfall for the year to the end of November is 24.40 inches. May was the driest month, followed by July and February. August was the wettest with 5.11 inches, March 4.29 inches, November 4.68 inches. The winter of 1904 and 1905 was remarkably dry with us, while the land at the present time can only be described as moist and just fit for planting. *T. H. Slade, Poltimore Park, near Exeter.*

APPLE (WARNER'S KING).—I am interested in the remarks on p. 410 respecting Apple (Warner's King). This year in these nurseries a fine young pyramid tree of this well-known variety, which produced a crop of 20 fruits, has one branch which bore three fruits which resembled those of Golden Noble. When they had been gathered and placed before experts, it was wondered whether Golden Noble was one of the parents of Warner's King. Probably Catshead and Golden Noble are the parents. It is rare after a variety has been cultivated so long as Warner's King that it reverts. Our pyramid tree is probably six or seven years old. It is proposed to propagate from this branch next March, and in course of time we shall hope to see if it retains its new character. *John Smith (Keynes, Williams & Co., Salisbury).*

HEWELL GARDENS, REDDITCH.—A walk around these extensive gardens is always interesting and instructive. I noticed recently that the late Vinery contained a very heavy crop of Gros Colmar grapes, very fine in bunch and berry. In another Vinery were some excellent specimens of the variety Lady Hutt. The early Fig house was thrown open, and the wood of the trees exposed as much as possible to the winds and weather, with the object of giving the trees a thorough rest. The early Peach house contained an abundant supply of well-developed fruit-bearing wood, which will tell its profitable tale in due course. Mr. Pettigrew grows a large quantity of particular kinds of decorative plants both under glass and out-of-doors, and in autumn under glass are masses of porcelain-blue and orange-coloured *Torenia*s, scarlet *Salvia*s, celestial-blue *Agathæ*s, and rosy *Jacobinia magnifica*. On the outside borders of a Vinery and a stove are rows of the sweet and lovely *Amaryllis belladonna* (*Belladonna Lily*); these I first saw grown in this manner at Gunnersbury towards the end of the time that the late Mr. Richards was gardener there. *Calanthes* are also grown numerously and well at Hewell. On a border at the front of the Fig house was a superb strain of *Pentstemon*s, said to have been supplied by Forbes. Glorious masses of mauve and purple-coloured *Asters* (*Michaelmas Daisies*) appealed to the eye many yards in advance; the most beautiful

among which were *Aster Amellus*, *Riverslea* variety; and close neighbours was the golden-coloured *Helianthus mollis*. In the kitchen garden quarters were the usual liberal supplies for the culinary department of a large establishment during the shooting season: thousands of Broccoli and Endive, Celery and Chicory, Carrots and Cabbage, Turnips and Savoys, Kale, Leeks and herbs. Many improvements have been made during recent years in the hardy fruit department; and yet more in the flower garden and pleasure grounds, a notable feature being the Water Tower slopes or terraces. *J. U.* [See illustration in *Gardeners' Chronicle*, April 2, 1904.]

ROOT PRUNING.

At this season of the year when there is relatively little activity in the living cells of the plant the gardener may perform operations such as transplanting, pruning, root-pruning, training operations, &c., which, if undertaken during the period when growth is active, would involve a severe check to the plant, and re-act injuriously upon it. The gardener cultivates his fruit trees with a definite object—that is, the production of fruit at the earliest possible period in the life history of the plant. It is questionable if this is a desideratum viewed from the standpoint of the plant, for fructification is not the primary object in the life cycle of the individual, but rather the duration of its vegetative period, and this is positively shortened by excessive fruiting. If it is taken as an axiom "that when the life of a plant is threatened it tends to reproduce itself," then the converse must necessarily be true, and to anticipate fruiting by artificial means must induce weakness. That this is so is easily seen in our present system of intense pruning, training, and dwarfing fruit trees for the purpose of inducing early fruiting, which invariably shortens their lives, so that the trees wear out at a comparatively early period. Fruit trees, especially taller growing members such as Apples, Pears, Plums, &c., belong to a class of plants which, in their natural habitat, are moderately-sized trees, 20 or more feet in height. They assume these proportions in order to rear themselves above the undergrowth, and it is only when fully exposed to air and sunlight, that they are enabled to properly develop their fruit, a function requiring the highest efforts of the plants. In cultivation we aid the plant in this direction, from the time it is planted, and allow it to have the maximum amount of light and air, and in addition favour it with other desirable concomitants, such as an enriched soil, a warm situation and beneficial manures, nor must we forget the influence of the dwarfing stock, which, possessing only surface growing roots draws its sap from an area that is warmer and richer in plant food—in consequence of higher oxydisation and other disintegrating factors. The food, moreover, is of a more assimilable nature than that furnished by the weak watery sap drawn up by the so-called tap roots. The tap root to the forest tree is essential: it has to perform a physical as well as physiological function. It serves as an anchor to resist the pulling strains of high winds and storms, and owing to an extended leaf area must draw large supplies of water to the leaves to meet the demands of transpiration. This less concentrated sap is by its nature suited to the development of strong growth and leafage, and when trained trees are seen putting on this kind of growth it is an indication of the presence of deeply plunging roots—probably a reversion of the stock to its ancestral character—and that root-pruning is necessary.

In addition to being strong, the growth is generally light in colour, has a tendency to grow perpendicularly, and is usually more vigorous towards the upper portions of the tree. The internodes are lengthened and the phyllotaxis is well marked, the wood has large lenticels, and there are few or no fruiting spurs developed. Wrinkled growth, which is associated with fruiting wood, is entirely absent. The tree may flower freely, but fails to set its fruit, directing all its

energies to the production of wood. The gardener should have no hesitation in using drastic measures; these roots must be severed. Happily the tree is in a favourable condition for meeting the loss that this treatment entails, for the growths which drained the tree in the early season filled the tissues with large reserve material in the autumn, and this is ready when growth commences afresh to aid in the development of other roots and to swell the remaining buds.

When root-pruning has been decided on, open a trench round the tree at a suitable distance from the stem—about the distance one would observe when lifting the tree for transplanting, taking care to conserve intact all the fibrous roots that are met with, and to sever with a sharp knife any thick downward-growing roots. The soil may be carefully worked from beneath the "ball" of the tree in order to discover any tap roots that may be present there. These must also be severed, and if the tree is not too large it can be tested to see if any undesirable roots still remain, by the solidity with which it resists a pulling strain applied by the operator. Wherever possible direct the portion of the root remaining toward the surface, always remembering that a clean cut heals quicker than one that is lacerated, and is less liable to form a nidus for fungus spores. When filling in the trench dispose the roots evenly, and consolidate the soil about them, which may be enriched by adding some old potting material. It is not advisable to place manure in the trench; this will be best applied as a mulching. By many practitioners the plan of root-pruning one half only of the tree at one time is practised. G. F. T.

SOCIETIES.

ROYAL HORTICULTURAL.

Scientific Committee.

DECEMBER 5.—*Present*: Dr. M. T. Masters, F.R.S. (in the chair), Canon Ellacombe, Messrs. Worsley, Massee, Saunders, Gussow, Holmes, Pickering, Gordon, Bowles, and Chittenden (hon. sec.).

Lindley Library.—Dr. MASTERS remarked on the fact that this was the first time the committee had met in the room set apart for the Lindley Library, and gave some historical information relating to the library and to the formation of the committee.

Troublesome Weed.—An enquiry was received from Las Palmas regarding a weed known as "juncia" or "chufas," which is exceedingly troublesome in the Banana plantations there. The weed has a creeping rhizome bearing numerous tuber-like growths, and spreads very rapidly. Mr. MASSEE said, "This pest (*Cyperus rotundus*, Linn.) is found in nearly all tropical and sub-tropical countries. Like couch grass, this weed is not eradicated but spread by ordinary cultivation, each tuber being capable of propagating the plant. It should be removed with a fork and the roots and tubers collected."

Fungus on Vine Roots.—Mr. SAUNDERS showed some soil permeated with the mycelium of a fungus which had caused considerable trouble in a vine border, but in the absence of fruit it was impossible to say to which of the higher fungi it belonged.

Variation in Hazel Leaf.—Mr. SPENCER PICKERING, F.R.S., showed a leaf from a Hazel bush, one side of which bore a large proportion of variegated leaves. The greater part of the leaf shown was devoid of chlorophyll. He remarked upon the fact that many leaves during the past season seemed to be lacking in chlorophyll; for example, Apple leaves showed veins more clearly than usual.

Scarlet Runner Poisoning.—In connection with this question, which was raised at the last meeting, Dr. MASTERS pointed out that Lindley, in the *Vegetable Kingdom*, p. 548, states that "the roots of *Phaseolus radiatus* are narcotic, and so are those of *P. multiflorus*, the scarlet runner Kidney Bean, which is recorded to have poisoned some children at Chelsea who had partaken of the seeds." In the *Treasury of Botany* is a reference to the narcotic and poisonous properties of the plant (l. c. pt. ii., p. 874).

Grapes Diseased.—Mr. GORDON showed some Grapes which had spots round the stalk. The trouble was restricted to one house, and the Grapes had become spotted in a similar fashion for several years, sub-

sequently decaying. There is no trace of red spider in the house.

Irritation Caused by Leaves of Californian Bay.—Canon ELLACOMBE showed leaves of this plant, *Umbellularia californica*, and drew attention to the very pleasant scent which they emit. He stated, however, that with some people the scent caused violent sneezing and headache. He recounted the experience of a lady who, after handling the leaves, had probably got some of the juice upon her handkerchief, and so to her nose. In the evening she suffered from considerable tingling in the nose, and in the morning her face had become much swollen, particularly under the eyes. Douglas states that he could not sleep near the bush.

Electricity in Horticulture.—Canon ELLACOMBE also remarked on some experiments which were being carried out by a gardener in his neighbourhood with plants in relation to electricity. Wires were run over the plots, and at intervals points projecting downwards over the plants were placed; through the wires a current of electricity was passed. An increase of 80 per cent. in the Strawberry crop was reported, and a similar increase in Tomatos; but with Broad Beans a decrease was shown.

Colours of Seeds.—Canon ELLACOMBE also enquired whether it was known if the colours of seeds served any useful purpose in the life of the plant. In certain cases no doubt, as Kerner points out, the bright colour such as is seen in *Pæonia*, *Magnolia*, and *Euonymus*, serves to render the ripe seeds attractive to birds, and so aid in their distribution, but many cases remain to be explained.

Oranges from West Indies.—Mr. WORSLEY drew attention to the fact that there are two well-marked varieties of Oranges known as "Tangerines" in this country, that are distinguished by different names in the West Indies, the form of the ordinary Orange shape called the "Tangerine," and a more pyriform variety known as the "Mandarin."

Beech attacked by Scale and Fungi.—Mr. SAUNDERS reported on some specimens from Eccleshall, Notts, as follows:—"The insect on the pieces of Beech bark is *Cryptococcus fagi*. It is one of the commonest and most destructive of our British Coccidæ, or 'scale insects' (but this insect and the mealy bugs and a few others do not form scales). It is widely distributed, being found in Scotland, Wales, in most parts of England, and in one locality, if not more, in Ireland. It only attacks the Beech, and has not been found infesting any other kind of tree or plant, but it appears to be spreading rapidly on the Beech in many parts of England. The females lay their eggs in July, and the young are hatched in the autumn or in the spring. They do not, as a rule, move far from the place of their birth, but make their way directly into some crevice in the bark and at once begin to feed on the juices of the tree, covering themselves with a white waxy secretion, which forms a felt-like mass round the insect. The stems of trees which have been infested for many years are sometimes covered with this white material which has been formed by many successive generations, to the depth of an eighth of an inch or more. Owing to its waxy nature the rain has no effect on it. It is a curious fact that though this insect is so common, the male is unknown. It appears to be remarkably free from natural enemies, and is seldom attacked by parasites, and the birds do not seem to eat it. When the stem of a tree is thickly coated with this insect, the best thing to do is to spread sacking or some similar material on the ground round the base of the stem, and to scrape off as much of the coating as possible, and then scrub the stem with a stiff brush dipped in a paraffin emulsion, working the mixture well into the inequalities of the bark. Spraying is of no use, as it cannot be done with sufficient force to break up the felt-like mass. This remedy should be applied as soon as any sign of this insect is seen on a tree. If a stem be only slightly attacked, there is no necessity to scrape the bark before scrubbing it." The tree was also attacked by two fungi—a species of gilled fungus which Dr. COOKE said was too immature to even guess at the genus, and by *Polyporus spumeus*.

Peach Roots Dying.—Some roots of Peach were received which were in a dying condition. No insects or fungi were present, and it was thought that the condition of the border was probably such as to account for the trouble.

Botanical Certificate.—Flowers of *Chrysanthemum indicum* were shown by Messrs. CANNELL, and a botanical certificate was awarded to this plant, which has given rise to so many forms of value in the garden. It was introduced many years ago (1835, or perhaps prior to that). The history of the plant by Mr. Hemsley and Dr. Henry has been detailed in the columns of the *Gardeners' Chronicle*.

NATIONAL POTATO.

ANNUAL MEETING.

DECEMBER 7.—The general annual meeting of the above society was held on the above date, 1905, in the Prince's Saloon at the Agricultural Hall, Islington, N., Mr. G. Gordon, V.M.H., in the chair, and was largely attended.

The balance-sheet showed that the society had a balance on the year's working of £81 11s.

Mr. A. D. Hall opened a discussion respecting the society's trials to be made during 1906. He suggested that the society should enter into an agreement with the Cambridge University agricultural department. The secretary stated that he had seen Professor Middleton on the subject, and this gentleman had given an encouraging reply. Several members spoke very highly of the Cambridge trials of 1905.

The secretary moved that the maximum charge for testing any one variety be 10s.; this was seconded by Mr. Cuthbertson and carried unanimously.

Mr. W. P. Wright also suggested the appointment of Mr. G. M. Taylor, of Pinkie Hill, Inveresk, as honorary assistant secretary for Scotland. Mr. Scarlett made a formal motion to this effect, which was carried unanimously.

NATIONAL CHRYSANTHEMUM.

DECEMBER 11.—The Executive Committee of the above society held a meeting at Carr's Restaurant, Strand, when Mr. Thomas Bevan occupied the chair.

Most of the business was of a purely routine nature, such as the fixing of dates for shows and meetings as mentioned below. A financial statement was read by Mr. Gerald Dean, the secretary *pro tem.*, and he subsequently announced that prize money to the amount of £39 5s. had been awarded at the society's December show at the Crystal Palace, an amount somewhat in excess of that awarded at the same show last year.

Mr. Harman Payne, the foreign secretary, presented a copy of the French N.C.S. "Répertoire des Couleurs," and explained the intention and use of this interesting work. It was resolved that a copy be purchased for use by the Floral Committee. It was also resolved that the same committee, acting as the Classification Committee, should meet on the first day of each show next year. The dates of the Executive Committee meetings were fixed as follow:—September 17, October 29, November 19, December 10, 1906, and January 14, 1907. It was also resolved that the meetings of the Floral Committee during 1906 be held on September 17, October 3, 15, and 29, November 7 and 19, and December 5.

The Exhibitions of the society for 1906 will be held at the Crystal Palace as follow:—The early show on October 3 and 4, the great Autumn Festival on November 7, 8, and 9, and the late show on December 5 and 6. The election of new members brought the meeting to a close.

DECEMBER 13.—The second exhibition of market varieties of *Chrysanthemums*, held under the auspices of the National *Chrysanthemum* Society, was a success. The site this year was the French Flower Market, Covent Garden, the building having been kindly lent for the purpose by the Duke of Bedford. Interested persons were delighted with the results, and it promises to become an annual institution. Many of the exhibits were not labelled, a fact to be regretted, as the proper naming of varieties is of great educational value and a guide to cultivators. That such a beautiful and varied display of these flowers is available at this late season is demonstrative of the enormous strides made in the culture of the *Chrysanthemum* in recent years.

MARKET GROWERS.

CUT BLOOMS.—COLLECTION OF MARKET CHRYSANTHEMUM BLOOMS IN BUNCHES, STAGED IN VASES.

Each bunch was supposed to consist of 12 blooms, and the whole were required to occupy a table space measuring 15 feet x 3 feet. Three displays were staged, the best being that shown by Mr. PHILIP LADDS, Swanley Junction, Kent. Among three good collections the premier one stood out prominently. The blooms were beautifully fresh in appearance, and the colours well developed. Prominent varieties were Mabel Morgan (yellow), Lord Brooke (light bronze), Lady Roberts, Winter Königin (a remarkably fine variety, the colour is pale rose shading to white, the form is also good), Matthew Hodgson (a fine dark red variety); Snowdrift (white); Western King; Lord Hopetoun (crimson, with a lighter reverse); Tuxedo (pale bronze); Framfield Pink, and C. H. Curtis. (Gold Medal.)

MESSRS. CRAGG, HARRISON & CRAGG, Merrivale Nurseries, Heston, Middlesex, were awarded the 2nd

prize. Mrs. F. Judson (white), Tuxedo, Ralph Hatton, and Mad. L. Charvet are a few of the prominent varieties in this excellent display. (Silver Gilt Medal.) 3rd, Mr. JOSEPH TULLEY, Rose Nursery, Enfield Highway. (Silver Medal.)

TWELVE VASES OF MARKET CHRYSANTHEMUMS IN NOT FEWER THAN SIX VARIETIES.

The best, and much the best, display was shown by Messrs. CRAGG, HARRISON & CRAGG. They staged Mrs. W. Judson, Frank Hammond, Yellow Brook, W. H. Riemann, &c., in splendid style. (Silver Gilt Medal.) 2nd, Mr. PHILIP LADDS. (Silver Medal.) 3rd, Mr. A. SMITH, The Nursery, Enfield Highway. (Bronze Medal.)

COLLECTION OF MARKET CHRYSANTHEMUMS, IN BUNCHES, NOT DISBUDED.

Mr. G. PRICKETT, Floral Nurseries, St. Ann's Road, South Tottenham, was awarded a Gold Medal for a grand display, principally of the small Japanese type known as decorative Chrysanthemums. We may mention as noteworthy the varieties Old Gold, Gold Standard, Snowdrift, Putney George, Christmas Cheer and Mad. Roger (green); 2nd, Messrs. CRAGG, HARRISON AND CRAGG, who had mostly single varieties. (Silver Gilt Medal.)

TWELVE VASES OF MARKET CHRYSANTHEMUMS, IN SPRAYS, NOT DISBUDED.

Mr. PHILIP LADDS was awarded a large Silver Medal for a bright collection of well-grown flowers.

PLANTS.

Nothing remarkable was observed in the class for six plants of decorative Chrysanthemums, and only two exhibits were staged, the best being that shown by Mr. F. G. GOUNDRIE, Heatherside Nursery, Dartford Heath, Kent, whose plants were dwarf and in 5-inch pots. Mr. GOUNDRIE was also first for a group of pot-grown market Chrysanthemums to occupy a half-circular space measuring 9 feet by 6 feet. The variety W. H. Lincoln was well grown, many of the dwarf plants carrying 12 to 14 blooms. (Silver Gilt Medal.)

Mr. WEEKS, The Green Nursery, Welling, Kent, who also showed in both the last-mentioned classes, had an excellent group, but confined his varieties to three—Niveum, Julia, a dark red pompon; and Phœbus (yellow.) (Large Silver Medal.)

CLASSES OPEN TO COMMISSION SALESMEN ONLY.

Cut Blooms.—Mr. DAVID INGAMELLS, 27, Catherine Street, Covent Garden, London, was awarded a Gold Medal for the only exhibit in the class for a collection of market Chrysanthemums, occupying a space of 12 feet by 3 feet. The flowers were displayed in vases and formed a choice collection. King of Plumes, a yellow fimbriated variety, was shown in grand form; Madame Ed. Roger, a green form, was also admired. Mr. Ingamells was the only exhibitor in this section of two boxes of cut blooms packed for market. (Large Silver Medal.)

OPEN CLASSES.—CUT BLOOMS.

Mr. TULLEY staged the best three vases of a yellow market Chrysanthemum, having the variety Nagoya in fine form. The colour of this variety is deep and rich, and the quilled petals droop gracefully. Seven entries were staged in this class.

The best three vases of a bronze variety were shown by Mr. A. SMITH, The Nursery, Enfield Highway, who had the variety Mrs. Cooper. This variety is known as bronze coloured in the market, but it more nearly approaches a red colour.

In the class for three vases of white Chrysanthemums some splendid exhibits were noticed. The best were adjudged to be those shown by Mr. A. SMITH, but the judges must have had a difficult task in arriving at their decision, the majority of the exhibits being splendid. Mrs. J. Thompson was the variety in the winning exhibit. (Large Silver Medal.) Other notable "whites" in this class were Madame Panckoucke, Western King, Niveum, and Mrs. A. Duncan.

The best three vases of a pink variety were put up by Messrs. CRAGG, HARRISON & CRAGG, who had large exhibition blooms of Mad. L. Charvet. (Large Silver Medal.) Mr. SMITH won in the class for three vases of crimson Chrysanthemums with the variety Exmouth Crimson.

Messrs. CRAGG, HARRISON & CRAGG showed the best two boxes of Chrysanthemums, packed as for transit to market. (Large Silver Medal.) 2nd, Mr. A. SMITH.

The BEST TABLE of one variety only of a market variety of Chrysanthemums was that shown by Messrs. B. SHEARN & SON, 231, Tottenham Court Road, London, who showed the well-known Framfield Pink. (Large Silver Medal.) Messrs. J. & F. CHATFIELD, Southwick, near Brighton, had the fine white variety Mrs. J. Thompson.

NOVELTIES.

The best new variety was adjudged to be Bronze Thompson, a sport from the yellow Mrs. Thompson. The colour is pale bronze or red, suffused on a ground-work of yellow; in other respects it resembles its progenitor. It was shown by Mr. ISAAC GODBER, of New Town Nurseries, Bedford. (Large Silver Medal.)

Messrs. W. WELLS & Co., Merstham, Surrey, showed a variety named Old Gold. It is a big Japanese bloom of colour justifying its name with a slight suffusion of red in some of the petals. (Silver Medal.)

Another good thing is the variety Miss Hilda Weeks, a sport from Niveum, also white, but with fimbriated apices to the petals, which are narrower than those of its parent.

NATIONAL SWEET PEA.

ANNUAL MEETING.

DECEMBER 12.—The annual general meeting of the members of this society was held at the Hotel Windsor, London, S.W., on the foregoing date, Mr. Percy Waterer, President, in the chair. At the commencement of the proceedings the decease of the society's late President, Mr. H. Eckford, was touchingly referred to, and it was decided to forward a letter expressing deepest regret and condolence with Mrs. Eckford.

In presenting the report and financial statement for the past year the committee congratulated the members on the progress that has been made since the last general meeting. No fewer than 150 new members have joined. The subscriptions have correspondingly increased, and the general interest in the society has been maintained. The exhibition which was held in the Royal Horticultural Hall, in conjunction with a meeting of the Royal Horticultural Society, was a distinct success, for not only were there more flowers staged, but the quality of the exhibits was superior, and they were displayed in a more artistic manner than at previous exhibitions of the society. The hall on the occasion of the show was filled with visitors. With a view to extending the influence of the society, provincial prizes were instituted in the year 1904. During the past year prizes and medals were awarded at exhibitions held at Saltaire, Ulverston and Dublin. In each case the class was a conspicuous success. As stated above, the society has largely increased its membership and subscriptions, but the expenses have also increased; yet notwithstanding this, the receipts show an increase over expenditure of £21 7s. 10d., and this must be taken in addition to the value of various properties, &c., worth at least £30. Satisfactory as the first *Sweet Pea Annual* proved to be, the forthcoming issue will be much superior. Members of the society will receive a copy free of charge, and the price to other persons will be 1s. 3d. post free. During the coming year it has been resolved to hold two Exhibitions. The first of these, and the more important, will again be held in the Royal Horticultural Hall, the day and date being Thursday, July 5. Upon this occasion the R.H.S. does not contribute to the prize fund, but gives the hall free of charge; while the society admits Fellows of the R.H.S. and takes the gate money. The provincial Show will be held at Ulverston on Friday, July 20. The balance sheet showed a total receipt from all sources of £249 17s., with an expenditure of £228 9s. 2d., leaving a credit balance of £21 7s. 10d. The report and balance sheet were adopted.

Mr. Alfred Watkins, of the firm of Messrs. Watkins & Simpson, was unanimously elected president for the ensuing year, Mr. N. N. Sherwood, V.M.H., treasurer, and Mr. John Green chairman of committees in succession to Mr. Breadmore.

Mr. Horace Wright was by acclamation again elected secretary, and given an honorarium of ten guineas from the funds of the society.

The retiring committeemen were re-elected with the addition of Mr. H. J. R. Diggs, Donnybrook, Dublin, Ireland; Mr. Alex. Malcolm, Townhouse, Duns; Mr. Thos. Jones, Wales; and Mr. F. J. Foster, Reading College.

HORTICULTURAL CLUB.

DECEMBER 5.—The ordinary house dinner of the members of the Horticultural Club took place on the above date, when Mr. HARRY J. VEITCH presided. There was an unusually good attendance. The subject of the subsequent lecture was "Bird Life," by Mr. READ, who delivered a very interesting discourse which was illustrated by numerous lantern slides obtained from photographs of birds' nests taken *in situ*. The lecturer introduced the subject of ornithology by referring to the earliest literature dealing with birds, and made a humorous allusion to the description in Gerarde's *Herball* of the evolution of the Barnacle from a shell-

fish. Much literature has been written about birds since those days, and ornithology is now a science embracing several branches, each of which has its special devotees, who study it in preference to the whole science. Mr. Read is primarily an oologist, and therefore studies birds' eggs rather than birds. There are as many as 13,000 species of birds now known to science, and some ornithologists would probably split them into twice that number of species. In Britain there are about 130 species that are resident here throughout the year. During winter the number is increased by about 50 species, which are winter migrants, and in summer by from 50 to 60 species known as summer migrants. The summer migrants are all of the type known as insectivorous birds, and they migrate from England in winter, not because the cold weather would injure them, but that it would cut off or seriously diminish their supply of food. Many interesting circumstances connected with the migration of birds were related, and the opinion was expressed that the habit of migration was acquired during the glacial periods. Mr. Read referred to the curious history of the Great Auk, a bird that was once so common on the Coast of Newfoundland, and is now believed to be extinct; also to the Knot and other species, and explained that birds' eggs usually approximated in colour to their surroundings, and it is protective, like the colour of the feathers of the parent, or parents, which sit during the incubation of the eggs.

The first nests of which photographs were thrown on the screen were those of the Whitethroat and Willow Warbler, both of which are summer migrants, and wholly insectivorous in their food. It is the Tits that are prone to eat the Peas, and the Whitethroats visit them solely for the small insects to be found on the plants. Next were the Chiff Chaff, Wood Warbler and Bullfinch. The Bullfinch is a seed-eating bird, and, as every gardener knows, is very destructive to fruit buds, &c., but the lecturer had a good word even for the Bullfinch and Sparrow, and said that during the summer season they destroy an immense number of green caterpillars, and feed their young with them or the Cuckoo would never lay its eggs in their nests, as young Cuckoos must have such food. Other nests shown included those of the Robin, Reed Warbler, Sedge Warbler, Moorhen, Wild Duck, Reed Bunting, Norfolk Plover, Ring Plover, Kentish Plover, Lapwing, and Black Headed Gull, also some very interesting and beautiful views of nests photographed in Scotland, principally of water fowl, and of less common species—photographed by the lecturer during a trip to Norway and Sweden. A few interesting particulars were related of every species, and these remarks, together with the excellent photographs, were much appreciated.

Obituary.

M. DE MEULENAERE.—Yet another well-known Ghent horticulturist has passed away in the person of M. Octave de Meulenaere, a prominent member of the Société Royale d'Agriculture et de Botanique. He introduced the English method of Chrysanthemum growing into Belgium, and his plants won him many distinctions every year. He wrote several interesting papers upon these plants, and in 1890 published a descriptive list of winter Chrysanthemums, which is still of considerable interest. He was an intelligent and erudite plant-lover. He took a prominent place in municipal affairs in Belgium, being first President of the Cour d'Appel of Flanders, Commander of the Order of Leopold, bore the decoration of the Order of the Crown of Prussia, &c. M. de Meulenaere was an eminent jurist, and had published various legal works that are held in high estimation. It was he who published a French translation of the important work of the great jurist of Germany, Von Thering. De Meulenaere was born at Ghent, June 7, 1840; he died on December 7, 1905, at the Château at Gentbrugge.

HENRY ECKFORD.—We regret to have to record the death at Wem on the 5th inst. of this venerable and much-respected gardener. He was born at Stenhouse, in the parish of Liberton, Midlothian, May 17, 1823, and in December, 1838, he travelled by coach from Edinburgh to Beaufort Castle, the seat of Lord Lovat. The journey lasted no fewer than three days, during intense cold and blinding snowstorms. At Beaufort Castle he was apprenticed to Mr. Joseph Bain

and afterwards served in the garden of James Hogg, Esq., of Newliston, under Mr Gibson, and in the establishment of Sir Peter Murray, under Mr. Peter Lome. From there he went to Penicuik under Mr. Ramsay, and subsequently to the Earl of Stair, at Oxenfoord Castle, under Mr. Robert Gardiner. In 1847, on the recommendation of Mr. McNab, of the Edinburgh Botanic Garden, he entered the service of Mr. Low, of Clapton, by whom he was recommended to Mr. Dodds, gr. to Col. Baker at Salisbury, famous as a Dahlia grower. Trentham next secured his services, till in 1854 he received the appointment of head gardener to the Earl of Radnor, Coleshill, Berks., where he remained till 1874. He then became gardener at Sandywells, Gloucestershire, to Dr. Sankey, a noted florist at that time. During this period Eckford raised many Verbenas which were held in high esteem. Eventually, in 1888, Eckford became



THE LATE HENRY ECKFORD, V.M.H.

established in business at Wem, in Shropshire. Here, as most of our readers know, he became famous as a raiser of Sweet Peas, and the favour in which these flowers are now held is in great measure due to his successful achievements. Sweet Peas, however, did not monopolise his attention. Culinary Peas were also improved by him, as well as various florists' flowers. His services to horticulture are shown by this bare enumeration to have been great. Personally, he secured the respect of all with whom he came in contact, and the affection of those with whom he was brought into closer relations. The business will, we learn, be carried on without change.

ENQUIRIES.

PROTECTING PEACHES, NECTARINES AND APRICOTS ON WALLS.—Owing to disastrous late frosts being common when these are in flower, it would be of general interest to growers if it could be made known that there is a cheap system of protecting the flowers. Perhaps some correspondent could give a description of how this could best be done other than by the expensive method of erecting glass copings. G. K.

[Has our correspondent tried the use of several thicknesses of old fish-netting or of thin tiffany?—ED.]

PLANTS FOR AZALEA BED.—I shall be glad of a suggestion of something suitable to plant in a bed of peat containing hardy Azaleas to bloom at a different, preferably a later, season, and which would not interfere with the growth of the Azaleas. A difficulty is that heavy mulchings of manure seem essential for the Azaleas, but are detrimental to many bulbs, &c., from which I fear it would be impossible during wet weather to prevent some manure reaching. X. Y. Z.

[Has our correspondent tried *Lilium auratum* and *L. speciosum*? Lilies succeed admirably at Kew in similar beds.—ED.]

ANSWERS TO CORRESPONDENTS.

APPRENTICE: T. P. Assuming the circumstances to be exactly as stated by you, the treatment you have received has been most ungenerous. We believe, however, that you cannot compel an employer to give you a reference, but you may prosecute him if he does give one which is defamatory, or in opposition to facts.

ASPARAGUS: C. B. We have not noticed any such alteration as you allege in the characteristics of Asparagus. Its action upon the kidneys is as pronounced as formerly, and we suspect that those who are not so affected by its consumption are those who by eating it repeatedly have become less sensitive to its influence. Asparagus is a very wholesome food.

BEGONIAS: J. H. W. We do not find either insects or fungi. The appearances are consistent with those produced by cold draughts or the use of too cold water.

BOOKS: H. A. We do not know of such a book as you require. *Noms.* We do not know who A. H. B. was. *Scutis* is J. E. Nelson.

CELERIAC TURNING BLACK AFTER BEING COOKED: W. G. We expect this is due to the roots having been bruised before cooking; or if in the interior, it may be due to the action of bacteria. We have no certain knowledge on the subject.

FRENCH FERN: A. H. B. The proper designation of the plant sold in Covent Garden under this name is *Asplenium adiantum nigrum*. It is perfectly hardy, and though not very common is found growing wild in various parts of England. The plants vary considerably under different conditions. As usually seen in England they have short, thick fronds, while those which come from France have larger and more distinctly divided fronds with long stalks. We get such fronds from France all the year through, but it is during the winter that they are most appreciated, and during the past few weeks they have arrived in large quantities and have been of very good quality. Some English growers have tried to cultivate the plant, and, although they have been successful in raising spores and growing the plants, we believe they have not succeeded in getting them to produce the large fronds, or in making them profitable as a source of supply of fronds for marketing after they have been cut. The plants grow very slowly and make neat specimens for cultivation in small pots. They last well, but would not be profitable owing to the long time needed for them to form specimens.

FUMIGATING WITH HYDROCYANIC ACID GAS: R. C. Sodium cyanide was first applied to horticulture as a fumigant by Mr. G. F. Strawson, and has been employed in all recent experiments at the Royal Botanic Gardens. Most writers have advised potassium cyanide and the methods employed on the Continent, which are unsuitable for the safe and satisfactory fumigation of large glass houses. Potassium cyanide varies from 35 to 98 per cent. strength, yet all being apparently the same article. This has often led to confusing results in the absence of standard strength. By using the article commercially termed "Sodium cyanide 130 per cent." a smaller amount is required, and being comparatively new in horticulture it does not vary so much as potassium cyanide. The latter will, however, answer the same purpose provided a standard strength, or its equivalent, is used. Never forget you are dealing with a most potent poison.

HAND-PLOUGH: E. W. The instrument you mean is known as the Planet, Junr., Hoe, and it is extremely useful for the purpose. It was recently advertised in our columns by the Four Oaks Nursery Company, Fernlea, Sutton Coldfield, Birmingham. This hoe may be obtained in several sizes, and varying a little in make.

HORTICULTURAL PAPER IN SAN FRANCISCO: Correspondent. The *Pacific Rural Press*, established about thirty years ago.

INSECTS ON LARCH: J. Shaw. The "flies" are a species of *Lachnus* (possibly *L. pinicolus*); but the larvæ of the Syrphid fly, which you enclose with them, had sucked their bodies dry, so that it is impossible to definitely fix the species.

MUSHROOM BEDS: W. E. R. You will find all the information asked for if you refer to the weekly calendar in "The Kitchen Garden," which appears on p. 423.

NAMES OF PLANTS: Ten Years' Subscriber. 1, probably *Pinus Pallasiana*; 2, probably *Pinus par-*

viflora; 3, *Sequoia sempervirens* (very glaucous); 4, *Abies concolor*; 5, *Cupressus Lawsoniana erecta viridis*; 6, *Cupressus Lawsoniana var. aurea*.—E. W. 1, *Prunus elegans*; 2, *Juniperus excelsa*; 3, *Cupressus Lawsoniana*; 4, *Libocedrus decurrens*; 5, *Thuja japonica* alias *Standishii*; 6, *Juniperus virginiana*; 7, *Cupressus pisifera*; 8, *Thuyopsis dolabrata*; 9, *Thuja plicata* alias *gigantea*. These determinations are approximate as it is impossible to name such specimens with certainty.—T. H. Perhaps the *Myrobalan Plum*. Send flowers and foliage next season.—B. W. G. What you have as *Calycanthus floridus* seems to be a *Cistus*—the *Chimonanthus fragrans* is correct.—C. N. 1, *Pinus excelsa*; 2, perhaps *P. monticola*. We cannot tell without the cone; 3, perhaps *Pinus Pinaster*; 4, perhaps *P. insignis*, but without cones it is impossible to say; 5, *Cupressus sempervirens*; 6, probably a *Cupressus*.—A. Y. L. 1, *Cypripedium Appletonianum*; 2, *Cypripedium siamense*; 3, *Cypripedium Boxalli*.—J. P. 1, *Begonia Gloire de Sceaux*; 2, *Lælia anceps*; 3, *Begonia Rex hybrid*; 4, *Adiantum pubescens*; 5, *Adiantum decorum*.—V. H. 1, *Oncidium cucullatum*; 2, *Oncidium Forbesii*; 3, *Ada aurantiaca*; 4, *Maxillaria picta*.—A. W. S. *Thuyopsis dolabrata*, The Composite next week.—W. J. W. *Retinospora squarrosa* of gardens. It is really a juvenile state of *Cupressus pisifera*.

NAMES OF FRUITS: J. C. W. 1, Sweet Lading; 2, Scarlet Leadington.—D. W. D. & Sons. 1, Lord Lennox; 2, Striped Beefing; 3, Marble Pippin.—M. O. Apple-Niton House; Pears, 1, Bergamot d'Espereu; 2, Josephine d'Malines.

ODONTOGLOSSUM LEAVES INJURED: G. C. *Odontoglossum* often have the tips of the leaves affected in the manner shown by the specimens received, where the plants are grown in foggy districts, or in unsuitable houses, in which the atmosphere is kept at too high a temperature, or wherein the heat of the house is not allowed to fall five degrees or so lower at night than in the daytime. Wash the pots and re-arrange the plants. Re-pot any which are growing in bad compost, and prepare them for doing better when the dull weather has passed. The browning of the tips of the leaves is not set up by disease; it is a consequence of something unsuitable in the surroundings.

PROTECTING LARGE PLANTATIONS OF FRUIT TREES FROM SPRING FROSTS: Harvey, S. H. B. We know of no practicable means of protecting the flowers over such an area except by the method commonly practised in continental vineyards in the month of May. Recognizing that it is not so much the frost as the rapid thawing that injures the plants, the cultivators light huge bonfires on the side of the vineyard from which the wind is blowing. They are lit early in the morning, and are caused to smoulder in order to produce a large volume of smoke, which the wind carries over the vineyard, thus preserving the vines from the influence of the sun, and allowing them to regain their normal condition as slowly as possible.

RETARDING LILY OF THE VALLEY: Valley. We believe that it is only necessary to have the temperature a degree or so below the freezing point.

VINES: A Reader. We are surprised to be asked at this date if it would be wise to open a Vine border containing living roots, for the purpose of putting horseflesh into it! There are much better methods of supplying food to the Vines than by burying carrion, which, in decaying, would be almost sure to injure the points of the tender rootlets. Blood obtained from the slaughter-house is a powerful nitrogenous manure, but the best way of employing it would be to pour the blood over some loam, and turn the loam occasionally, after which it would be valuable for use as a top-dressing. Read the directions given week by week under the heading Fruits under Glass, in "The Week's Work," published in these pages.

COMMUNICATIONS RECEIVED.—E. H., Cape Town—A. G. L.—W. T. T. D.—J. L. E.—A. W. S.—Enquirer, we know nothing of the plan you describe.—G. A. D.—R. A. R.—D. D.—J. E. F.—R. J. A.—E. B., often figured.—E. M. H.—S. W. F.—A. G. L.—J. S. I.—R. N.—P. S. G.—H. J. W.—Comte de K.—L. L. Brussels.—J. T.—W. L.—W. W. N. B.—L. F.—H. J.—D. Bros.—G. B.—C. R.—H. J. P.—W. H. W.—J. G.—J. B.—L. H. E.—F. M.—T. B.—V. A. C.—W. J. B.—F. B. S.—F. G. L.—K. M. C.—G. W. L.—S. W. F.—C. T. D.—J. Batters—G. Masseé—Rev. G. H.—H. W.—J. Wallis—W. A. Cook—N. D.—W. H.

For Market and Weather Reports, see pages x. and xi.

THE
Gardeners' Chronicle

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CONTENTS.

Azalea beds, plants for ground-work ...	443	Obituary—	
Beet, sugar producing...	441	Hislop, Mrs. ...	418
Books, notices of—		Pettigrew, Mrs. ...	448
English Idioms and Colloquialisms ...	437	Orchid notes and gleanings—	
Index Filicum ...	441	Odontoglossum Lambeauianum exquisitum ...	434
Notes on the Life History of British Flowering Plants ...	436	Pinus radiata (insignis) a large tree of... ..	435
Publications received	437	Plant portraits ...	441
Who's Who? ...	441	Planting, seannable ...	435
Carnations, winter-flowering ...	443	Plants new or noteworthy—	
Castanospermum australe, seeds of... ..	441	New species of Cyananthus ...	434
Christmas Chrysanthemums ...	441	Rubber producing plant, a	441
Christmas Pears ...	443	Trees and shrubs, deciduous ...	437
Christmas Roses ...	444	Sandringham, garden at	430
Cypripedium debile ...	442	Societies—	
Eckford, Henry, the late	444	Dublin Seed and Nursery Employees' ...	447
Ferns, a process for preserving ...	444	Edinburgh Market Gardeners' ...	448
Flowers, arranging ...	442	Gardeners' Debating Society—	
Flowers, summer, in the south-west ...	444	Manchester and North of England Orchid ...	447
Forestry—		Royal Horticultural ...	445
Forestry on small areas	443	Royal Horticultural of Aberdeen ...	447
The Locust Tree ...	442	Spray, what is a? ...	444
Fruit, exhibiting ...	444	Unemployed, the, and estate labour ...	443
Fruits, sterile ...	441	Vanda Sanderiana ...	437
Fungoid diseases and the need for legislation	433	Worm, a new garden ...	434
Gardening in the olden times ...	436	Week's work, the	
Hibiscus, hybrid ...	443	Flower garden, the ...	439
Horticulture, the economic side of ...	440	Fruits under glass ...	438
Judges, boycotting ...	441	Hardy fruit garden ...	438
Kew gardens, the changes in the directorate at ...	440	Kitchen garden, the ...	439
Lynch, Mr. R. I., honour conferred on ...	441	Orchid houses, the ...	439
		Plants under glass ...	439

ILLUSTRATIONS.

Citrus japonica ...	445
Cypripedium debile ...	442
Flowers, cut, an arrangement of ...	442
Gardening in the seventeenth century ...	436
Odontoglossum Lambeauianum exquisitum ...	434
Pinus radiata (insignis), a large specimen of ...	435
Sandringham, the front garden at (Supplementary Illustration) ...	430
Vanda Sanderiana, "Chillingham variety" ...	438

LEGISLATION, AND THE SPREAD OF PLANT DISEASES CAUSED BY FUNGI.

It is well within the mark to state that the annual loss throughout the world due to injury caused to cultivated plants by parasitic fungi exceeds £150,000,000 sterling. Probably double this amount would be nearer the truth. The following specific cases may be quoted in support of this statement.

According to the Prussian Statistics Bureau, the losses in Prussia during the year 1891 from grain rust attacking wheat, oats and rye, amounted to £20,628,147. The Year Book of the United States Department of Agriculture for 1897 estimated the injury caused by fungi during that year in the United States as amounting to about £40,000,000. In Australia, the loss in the wheat harvest of 1890-91, on account of rust, was estimated at £2,500,000. Data of a similar nature for this country are not forthcoming, but our average annual loss is probably not less than that of other countries, as mildew, rust, etc., are always more or less in evidence.

Can this serious annual loss be prevented, or reduced in amount? is the question which naturally suggests itself.

Undoubtedly yes, as proved by results obtained, more especially in the United States and in some European countries; but, speaking broadly, attempts in this direction have been confined to checking the spread of

a given disease after its appearance, and have not touched the root of the matter. The primary cause must be removed before any enduring benefit can result. Legislation has also been called in aid, but again, as will be shown, minor details have received much consideration, whereas broad underlying principles have been overlooked.

HOW DISEASES ARE SPREAD.

It is a well-known fact that diseases are constantly appearing in new localities, and a point of primary importance is to determine with certainty by what means such diseases are conveyed. This subject can be most conveniently discussed under two distinct headings, as follows:—

- (1) Diseases that appear when the host-plant is introduced to distant localities, even to a new continent, where the fungus was not known to exist previous to the introduction of its host-plant.
- (2) Diseases that spread from an area known to be infected to adjoining areas hitherto free from disease.

Instances falling under No. 1 will first be given.

Previous to the introduction of wheat into Australia, the wheat rust fungus (*Puccinia graminis*) was unknown in that country, but almost at once after the cultivation of wheat commenced rust appeared in full force; and at the present day wheat in Australia suffers as much from rust as in any other part of the world.

The Hollyhock, imported to Europe from Chile, was followed by its natural enemy, Hollyhock rust (*Puccinia malvacearum*), which not only at one time threatened to exterminate this plant in Europe, but has also attacked all European wild species of plants allied to the Hollyhock.

Quite recently diseased French beans were sent to Kew for investigation from the Botanic Station, Nairobi, British East Africa. It was stated that the plants had been grown there for the first time, and promised to yield a good crop, when they were suddenly all destroyed by some disease. On investigation it proved that both the leaves and fruit were attacked by the same kind of fungus respectively from which they so frequently succumb at home, the parasite on the leaves being *Uromyces phaseoli*; that on the fruit was *Colletotrichum lindemuthianum*.

Lucerne suffers in America, Australia, and the Transvaal from the same fungus that destroys it in Europe.

Maize smut is now common in Europe.

Seedlings of Verbena raised in Brisbane have been destroyed by the same kind of fungus attacking Verbenas in Europe. These are a very few of the cases that could be cited where European plants cultivated in distant parts of the world have been attacked there by the same kind of fungus from which they suffer at home.

A point of importance in connection with the above examples is the fact that in every instance the introduction to a new country must necessarily have been by means of seed.

METHODS OF INFECTION.

Next comes the question, How did these plants become infected in the first instance, in a new country, with the same kind of fungus from which they had been accustomed to suffer at home?

Two possible answers suggest themselves. Either the fungus was previously present in the new country, and happened to be growing in the immediate neighbourhood where the introducing plants were first grown, or,

secondly, the spores of the fungus were imported along with the seed adhering to its surface.

The first supposition may be dismissed at once, as not having a shred of evidence in its support. The latter supposition is strongly supported by facts, and may without doubt be accepted as the true solution. It has long been known that smut and bunt in cereals are mainly perpetuated by the spores of these fungi adhering to the outside of the grain, and that by proper treatment the spores can be destroyed, a practice commonly followed. This method of treating seed before sowing could be greatly extended with advantage.

Packets of a dozen kinds of seed purchased at random were carefully examined in the Jodrell Laboratory at Kew, and in four instances spores of the fungus well known as causing a disease on the plant in question were obtained from the seeds.

The theory that fungus spores may be carried by air currents for long distances, even from Europe to Australia, cannot be entertained.

Now in the case of seeds, legislation has played little or no part, yet it is almost certain that many of the most destructive diseases have been introduced into new areas through the spores of the fungus adhering to seed.

A second source of dispersion of disease, which in these days of rapid transit is easily accomplished, is where the mycelium of a parasitic fungus hibernates in the vegetative portion of a plant that is used for reproduction in place of seed. Tubers and bulbs may be cited as examples.

THE POTATO BLIGHT.

It is well known that when potatoes are attacked by "Potato blight" (*Phytophthora infestans*) the tubers are usually more or less diseased, the external indication of which is the presence of brown stains in the flesh of the tuber. If a browned portion of a tuber is examined under the microscope, the living mycelium of *Phytophthora* can always be found; in fact, the mycelium of the fungus is the definite cause of the browning. The point to bear in mind is the fact that if such a diseased tuber is planted, the mycelium present in its substance grows into the young sprouts, follows up the inside of the haulm, and finally appears as "Potato blight" on the leaves, if conditions are favourable for its development. It may be argued that obviously diseased potatoes would not be planted; perhaps not, but potatoes often contain the mycelium of *Phytophthora* when there is no evidence in the way of discoloured blotches on the surface, and but scanty naked eye evidence when cut. Nevertheless, the comparatively small amount of living mycelium present may suffice for continuing the disease in the way indicated above. It is more than probable that in many instances the rapid spread of disease in a potato field, usually attributed to the conveyance of spores from diseased to healthy plants by wind, rain, movements of animals, etc., is in reality due to the fact that slightly diseased tubers have been planted; and that under those atmospheric conditions so well known as being favourable to the appearance of potato blight, the disease already lurking in the haulm, and having originated from the tuber, quickly manifests itself; whereas, if such favourable climatic conditions had not been forthcoming, the fungus would have remained undeveloped in the haulm and the crop matured free from disease. When slightly diseased tubers are grown for experimental purposes, and ex-

posed to those conditions known to favour the appearance of the disease—dull light, excess of moisture in the air, and a fairly high temperature, special care being exercised to prevent external infection, the disease almost invariably appears; whereas if a second portion of the same tubers used for the above experiment are planted in the open air, and there is an absence of the exceptional climatic conditions indicated above, no outward trace of the disease may appear. However, if a few of the leaves from the apparently healthy plants grown in the open air are placed in damp air under a bell-jar in a dull light, within two or three days the leaves will show a copious development of potato blight, proving that the fungus was present in the tissues, and only awaiting those conditions favourable for its complete development. *George Massee.*

(To be continued.)

NEW AND NOTEWORTHY PLANTS.

NEW SPECIES OF CYANANTHUS.

TILL quite recently this genus was only represented in cultivation by the Himalayan *C. lobatus*, which forms large carpets on the mountain sides in its native country, Sikkim, where it is found at an elevation of from 12,000 to 14,000 feet. This plant was introduced into cultivation in the year 1845, and is still one of the choicest of our late summer flowering rock-plants. It forms low cushions of prostrate, wiry stems, and produces freely its large purple-blue flowers of campanulate shape, each with a whitish centre.

Another species which has been in cultivation from time to time, but never to any great extent, is the Sikkim annual *C. inflatus*. It is a high Alpine plant, reaching an altitude of 16,000 feet, and is of freely branching habit with small leaves and small purplish-blue flowers. It is remarkable for its inflated calyx, from which it derives its specific name. Owing to its annual habit and the scarcity with which it produces seeds, it is seldom or never seen outside botanic gardens.

The genus is essentially a Himalayan one, and seven species are enumerated in the Flora of British India, of which two (*C. inflatus* and *C. Hookeri*) are annuals. Representatives of the genus, however, extend into Tibet and Western China, and differ but slightly from those found on the Himalayas. Species of recent introduction are:—

C. linifolius, a native of the Kumaon Himalayas, where it grows on the banks of rivers at an altitude of 11,000 feet. The stems are very slender and wiry, with small entire leaves, and are produced freely from a woody rootstock reaching a length of 4 to 10 inches. The flowers are similar to those of *C. lobatus*, with a densely hairy throat, but the spreading segments are somewhat longer and narrower than in that plant. It also thrives under the same conditions, but, so far, has not proved to be quite so free flowering. Seeds of this species were received at the Royal Gardens, Kew, from Saharanpur in the year 1900, and the resulting plants flowered in August, 1903, and annually since.

C. incanus var. *leiocalyx* (syn. *yunnanensis*). The type of this species is a native of Alpine Sikkim, where it is found at elevations of 12,000 to 16,000 feet. It has wiry stems, many from one rootstock, small, nearly entire leaves, and yellow campanulate flowers of good size. The calyx is covered with brown silky hairs, and the throat of the corolla is also bearded with white silky hairs. *C. incanus* var. *leiocalyx* is the Chinese form of this species, and only differs in having a less hairy calyx. It occurs at high elevations in Western China and Tibet, and was

found by Mr. Wilson, Messrs. Veitch's collector in Western Szechuan. Plants flowered in their nurseries during the summer. It will evidently prove a suitable companion for *C. lobatus*.

C. Hookeri var. *hispida* (Syn. *C. micranthus*). The type of this species is also a native of the Eastern Himalayas. It is an annual with wiry stems, small, entire leaves, and small blue flowers. The Chinese variety is more hispid, and was also found by Messrs. Veitch's collector, who sent seeds from which plants flowered this summer. It is only of botanical interest, as, though freely produced, its flowers are small. *W. Irving, Kew.*

ORCHID NOTES AND GLEANINGS.

ODONTOGLOSSUM LAMBEAUIANUM EXQUISITUM.

THIS grand variety has soon followed its predecessor, and presents some characters which are not contained in the type plant of this

The type plant was of similar form to its mother (*crispum*), except in the lip, where it reverted to the grandfather (*Harryanum*). Our subject reverts in form to *Harryanum* even in the slightly forward position of its petals; its markings, too, are all derived from *Harryanum*, and conform to those of *O. Rolfeæ*, only they are somewhat intensified by *crispum*. In agreement with this, the column is unspotted on the back and spotted beneath (the reverse of the type plant), thus reverting from the coloured column of *crispum* Madame Falcke to the white column of both *O. Harryanum* and *O. Pescatorei*. *O. Pescatorei* has often some small spottings on the underside of the column, and our subject has this small though important factor in determining parentage. Following the rest of the flower, its crest is more like that of *O. Harryanum* than the type plant, which tended towards *crispum*.

M. Peeters showed this variety at the Ghent Chambre Syndicale on November 5, 1905. *de B. Crawshaw.*

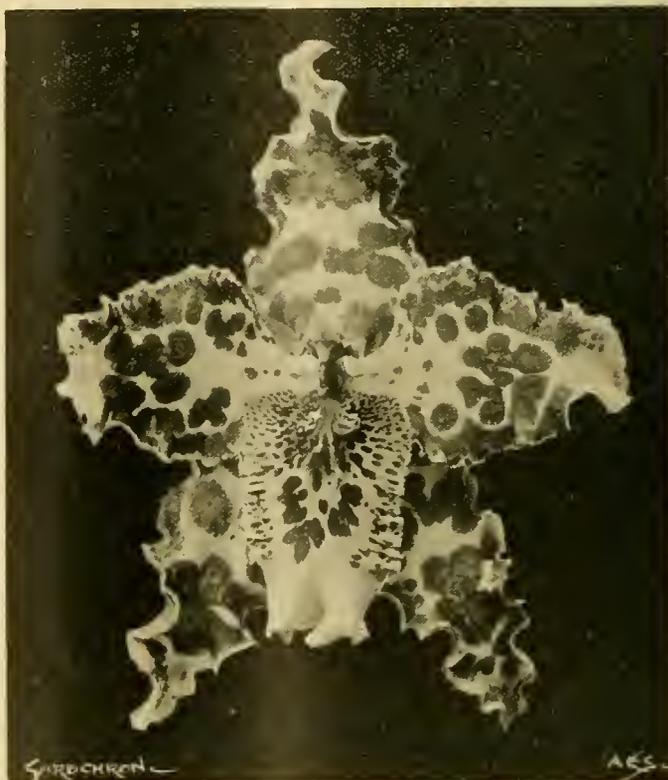


FIG. 162.—ODONTOGLOSSUM LAMBEAUIANUM EXQUISITUM.

Flower natural size.

hybrid, which appeared in the *Gardeners' Chronicle* for November 4, 1905, p. 324.

The sepals and petals have a creamy white ground, the former having the posterior stripe of rosy mauve purple. The whole of the markings are shown upon the backs of these segments, the actual tips beyond the spotting being stained on the lower surface with deep mauve purple. The basal colour of the principal groups of blotches in both sepals and petals is rich purple brown; superposed upon this is a sheeny layer of crimson; this superficial layer is not present in the marginal markings at all.

The lip is white, the spots being rich brown; the crest and filaments yellow; the column creamy white upon the back, but minutely spotted on the under side with rich brown, as upon the lip and channel; its wings are slightly lacerate and faintly spotted with very light brown colour.

With dried blooms and photographs before me of our present subject, its predecessor, its parents, and grandparents, it is very interesting to see how certain characteristics predominate.

CAMBRIDGE BOTANIC GARDENS

A NEW GARDEN WORM.

WHILE at Cambridge recently I availed myself of the opportunity of visiting the Botanic Gardens. So far as I am aware no one has ever studied the Earthworms here, and I hoped that I might be rewarded by the discovery of something new. In this I was not disappointed. In the absence of Mr. Lynch, the Curator, Mr. Allard very kindly responded to my request for material, and in a short time I had collected a goodly number of specimens. On examination it became apparent that some good work might be expected, and I am able to report, as the result of my first investigation, the discovery of one species new to our lists, while I am able also to deal with a question about which a good deal of doubt has hitherto existed.

Let me begin by placing on record the first list of Cambridge Earthworms. Only one species of *Lumbricus* was obtained, the whole of the gleanings with this exception belonging to the Genus *Alloobophora*. The common Earthworm (*Lumbricus hercules*) is the largest form we have. It often attains a length of six or eight inches, and may be known by its warm sienna brown

colour, iridescent in sunlight, and its flattened tail. It is often confused with the long worm (*Allolobophora terrestris*), which is usually found in the same localities as at Cambridge. The two, however, differ widely in shape and colour, as well as in specific details. The long worm is a dirty-looking worm, the colour varying a good deal. The type is of a dull, raw sienna colour, and it is cylindrical in shape, the tail not being flattened as in the true Earthworm. Next comes the Brandling (*A. fœtida*), well known by its brown bands mixed with yellow stripes. It is always found in decayed manure and compost, and when irritated gives off a yellow fluid with an odour which some liken to cabbage water, and others to garlic. Another species somewhat nearly related to the Brandling (*A. subrubicunda*) was found to be plentiful, as was also the rosy worm (*A. rosea*). The sixth species was the green worm (*A. chlorotica*), a sluggish creature which varies very largely, and is widely distributed. All the foregoing are well-known British annelids and in consequence need no further comment.

I had the pleasure, however, to rediscover a worm which I named some years ago (*A. cambrica*), from material received from Monmouth. It has one feature in common with the green worm, inasmuch as the girdle with its peculiar tubercula falls on the same segments. For this reason some investigators who have never seen the two species in a living state imagine them to be only varieties of the same species. I find it impossible, however, to identify the one with the other. And if anything were needed to show their striking difference I would appeal to the following fact, showing that while the green worm is exceedingly sluggish, its rival (*A. cambrica*) is just as active. My gleanings were placed in a tin box filled with damp moss, and provided with four good sized holes for purposes of ventilation. There were eight different species of worms among the forty or fifty specimens, and yet, though all except the largest specimens could easily have escaped, all remained in captivity save the three specimens of *A. cambrica*. These were so restless that they found their way out of the box on to the table, then on to the floor, and here they roamed till they could travel no further, thus showing a peculiarly vigorous and active disposition. I hope now to be able to examine the two different species internally, with a view to noting the differences of structure, which I believe are as great as are the external differences of colour and shape.

And now it remains only to call attention to a new British Earthworm. I had the good fortune to find more than one in Oxford last year, and it is therefore all the more gratifying to be able to enlarge our lists by the addition of yet another species. The new species has been known since the days of Savigny and Dugès. The former named it in 1826 *Enterion ictericum*, (Savigny.) In 1886 De Rosa gave an account of it in his Revision, from which I take the following: "The length of *A. ictericum* is from six to eight centimetres, and the largest diameter five millimetres. There are from 140 to 190 segments, and the form is cylindrical. The girdle, according to Savigny, extends over segments 35 to 44, according to Dugès from 33 to 44, and according to Rosa from 33 or 34 to 42, 43 or 44. There is a similar uncertainty respecting the segments which bear the tubercula. The first dorsal pore is between segments 6 and 7, and from these pores a yellow liquid is poured when the worm is irritated. Savigny records it from the neighbourhood of Paris, and Rosa from Valenciennes and the Piedmontese Alps." Beddard (Monograph of *Oligochaeta*, 708) has a note on Rosa's account, but did not personally know the worms. The fullest and best description of the worm is that supplied by Ribaucourt in his study of the Worms of Switzerland, 1806. He collected a large series, and has been able to give (pp. 57-9) a very full account, together with an illustration. At first sight the worm, as found at Cambridge, suggests the trapeze worm (*A. trapezoidea*), but the position of the girdle at once serves to differentiate them.

The following is a list of the worms which my visit to the gardens yielded, and I hope shortly to

be able greatly to enlarge it:—1, *Lumbricus herculeus* (Savigny); 2, *Allolobophora terrestris* (Savigny); 3, *Allolobophora fœtida* (Savigny); 4, *Allolobophora rosea* (Savigny); 5, *Allolobophora subrubicunda* (Eisen); 6, *Allolobophora chlorotica* (Savigny); 7, *Allolobophora cambrica* (Friend); 8, *Allolobophora icterica* (Savigny).
Hilderic Friend, Mildenhall, Suffolk.

PINUS RADIATA.

THE specimen of *Pinus radiata* (*insignis*) shown at Fig. 163 is the largest of this species that I know;

Pines; their rounded heads also contrasting with the spicate heads of *P. sylvestris*. *P. radiata* revels in a good well-drained soil, but this is not absolutely necessary. I notice, however, that those trees which were planted on mounds or banks on the sides of cuttings usually appear to be most at home. It would seem that early planters were diffident because of the species making growth rather late, but this is no detriment here. We have no rampant disease, and squirrels are the worst enemy of the Pine. *H. W., Trevince Gardens, Rebruth.*

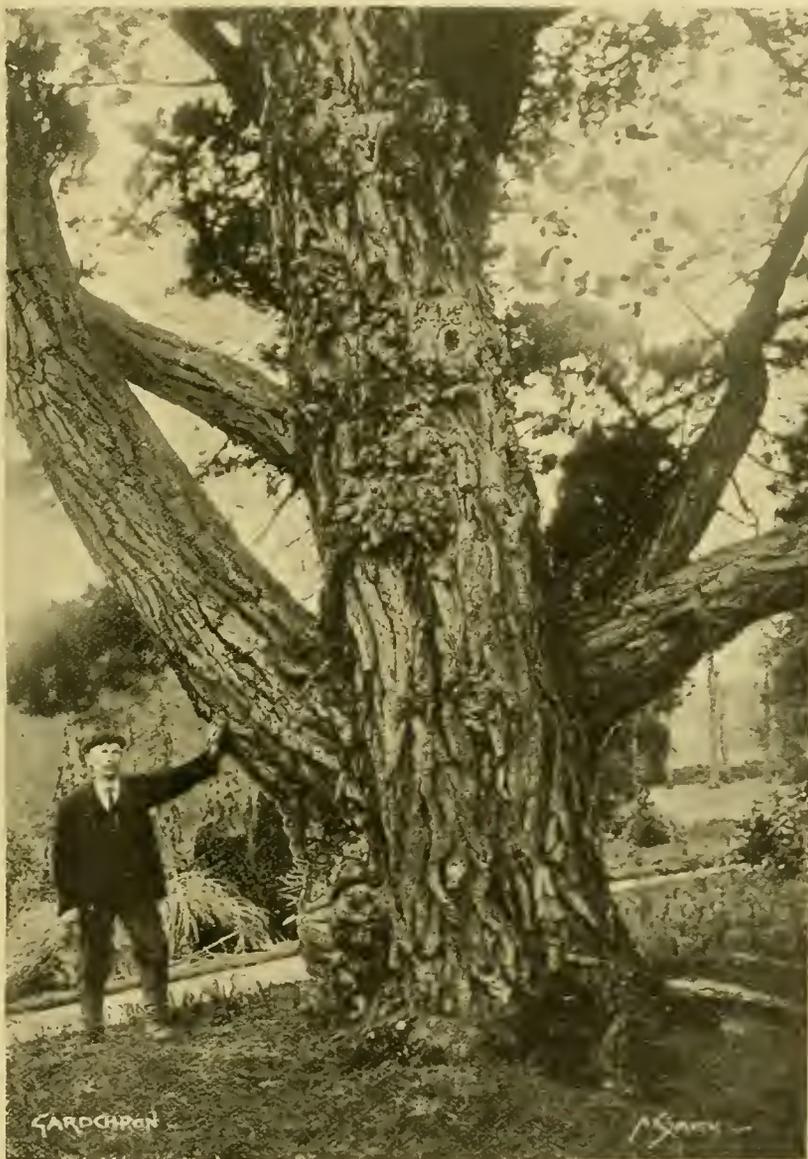


FIG. 163.—PINUS RADIATA.

Height 75 feet, girth at 3 feet from the ground 12 feet.

its height being 75 feet, and its girth 12 feet when measured at a point 3 feet from the ground; the base of the branch nearest the man is $8\frac{1}{2}$ feet in girth. The tree was planted about 70 years ago near, if not in, what was then a walled-in kitchen garden which probably accounts for its rapid growth. Oddly enough some of the largest branches still retain some cones near the main trunk. These cones look singularly out of place, stuck like so many excrescences upon rough, deeply-grooved bark.

This species does well in Cornwall if planted with some little consideration; but the density of its growth prevents the wind passing through the trees, consequently isolated specimens in exposed positions often come to grief. Planted in groups for shelter they are effectual. In the plantation with *P. sylvestris* they show up conspicuously their mellow green colour against the silver of the Scotch

THE PERIOD OF PREPARATION.

It cannot be affirmed, with perfect truthfulness, that nature is entirely inactive at this season of the year. It is, indeed, to some perceptible extent, a period of repose; the myriad plants which flowered so luxuriantly during last spring, summer, and autumn are resting from their manifold, varied exertions: nevertheless, they are not inactive; they are silently yet assiduously preparing for their future work; their unseen yet earnest embryonic preparation will hereafter create the floral splendour of the year. How many glorious exhibitions are condensed within those bulbs, patiently growing underground!

Following in the gracious footsteps of nature, the horticulturist should also now be anticipating, to some realisable degree, his future activities. If root-formation, the subtle, mysterious

process by which plants achieve their adequate evolution is—as we know it to be—of momentous importance, then in the planting of vernal-flowering bulbs delays are dangerous. As early as the beginning of the month of September I added to my already extensive collection of Narcissi many precious varieties, to be naturalised in grass, including a Daffodil, partly derived from Emperor, which bears my own name. I have also planted for the first time Victoria, a very effective hybrid, with golden coloured trumpet and creamy perianth, raised by the Messrs. Barr; Madame de Graaff, the queen of ivory-white Daffodils in dimensions and in beauty, Peter Barr (somewhat larger but not more lustrous), Colleen Bawn, of delicate, silvery-white aspect; Triandrus albus, or Angel's tears, another gem, as Thomas Gray would have written, "of purest ray serene"; and the refinedly beautiful N. Johnstoni, Queen of Spain. To these, with such richly-decorative varieties of "bicolor" distinction as Empress, Horsfieldii, and grandis, I have assigned very prominent situations in the lawn right opposite my study window, where many grand Narcissi, including N. poeticus poetarum, the uniquely graceful moschatus of Haworth, and the Spanish N. albicans succeeded admirably last year, chiefly because planted so early as to give them every chance of success. I have been gratified to find that the finest Tulips, not less than the grandest Narcissi, succeed marvellously everywhere in sheltered situations when growing in grass, unless, indeed, when attacked and destroyed—as they invariably have been at Logan House in this parish—by the monstrous regiment of rats. My own precious Tulips, with their environment of Narcissi, have most providentially escaped this crucial visitation for the last two years.

To my roses I have recently had the honour and privilege of adding two beautiful namesakes of my own; one from Newtownards, in Ireland; the other from Waltham Cross. The former is velvety crimson in colour, deeply shaded with maroon, a distinctive complexion among hybrid Teas; the latter (of which its raisers think very highly, and have already exhibited effectively) is a hybrid perpetual of soft carmine-rose hue, with satin-like petals and most fascinating fragrance, an important qualification too frequently ignored. Other valuable additions to my garden are Earl of Warwick, Dr. William Gordon, Charles Grahame, which perpetuates in an exquisitely appreciative manner the name of an earnest amateur rosarian; Countess Annesley, and that loveliest of recent Continental introductions, Etoile de France.

In connection with this subject, I would recommend early planting, which, like partial autumnal pruning, is, I fear, very frequently and fatally neglected even by cultivators who might be expected to know something from experience of the requirements of the Rose. I am ashamed to confess that in previous years I have lost many varieties of exceptional interest by delaying their planting till February or March. I am convinced that the result would have been widely different had they been carefully consigned to their proper positions in the end of October. Late planting simply signifies, when the growing season has come, imperfect establishment, inadequate root formation, and, consequently, in many instances, premature decay. *David R. Williamson.*

GARDENING IN THE SEVENTEENTH CENTURY.

Our illustration (Fig. 164) is taken from a picture (one of a series) in the Museum at Antwerp. It represents a gardening scene in the early part of the 17th century. The garden is in the rigid, formal style of the period, and wielders of spade and rake are shown as busy in making a fine tilth under the inspection, pre-

sumably, of the lady of the manor and her daughter. Nowadays, we should not care to have the farm-yard or the sheep-pen quite so near to the flower-garden, or we should plant a screen of trees and shrubs to separate one from the other.

In any case, from a gardening point of view, apart from its formality, we might object to the too careful preparation of the soil. A somewhat less fine condition would, for various reasons, be preferable. A lawn with clipped trees, forming a platform shaded by a tier of branches and surmounted by a ball-shaped head like a mop-headed Acacia, indicates the taste of the times, and the plants in tubs have evidently been just removed from their winter quarters, in order to form the central objects in the beds.

Abel Grimmer, the painter of this picture, is supposed to have been the son (or, more probably, the grandson) of Jacob Grimmer (who was born in Antwerp in 1510). Abel Grimmer is known to have exercised his art in 1608, and pictures from his brush, dated 1614, are in the Brussels Gallery.



FIG. 164.—GARDENING IN SPRING IN THE SEVENTEENTH CENTURY.
From a picture by Abel Grimmer in the Museum at Antwerp.

NOTICES OF BOOKS.

NOTES ON THE LIFE HISTORY OF BRITISH FLOWERING PLANTS by the Rt. Hon. Lord Avebury. Macmillan & Co.

It is almost impossible to convey to those who are not naturalists the delight experienced by the young botanist in his rambles, or the eagerness of his search for rare or interesting plants. Football, cricket, golf, horse-racing have their attractions for the many, but we question whether the numerous votaries of athleticism get so much real gratification out of the objects of their cult as do the field naturalists; certainly the delight is not so abiding. This might have been said truly enough in olden times, when collecting was the main object, when the search for and the discovery of some treasure of a plant or an insect filled one with joy. At that time the structure and conformation of the plant was by no means ignored, but the interest they excited was subordinate to the gratification of securing the wished-for prize. At the time we speak of, the "life history," as it is now called, was comparatively little studied. This was the more remarkable as the interest in the examination of plants and objects of natural history generally is vastly enhanced by the consideration of the meaning and significance

of the structures observed. The practical applications, too, of natural history are naturally increased by the study of the life-history of the plants we grow and of the insects and fungi which are for good or ill associated with them. The great change which has come over biological science during the last half century is of course mainly due to the publications of Darwin. He it was who showed us the importance and significance of many a structure to which observers had formerly attached no importance. That some of his followers were led into extravagances and jumped at conclusions from inadequate premises is of course true, but that evil is steadily being corrected.

Lord Avebury, better known under his former title of Sir John Lubbock, is one of those careful observers who has not allowed his imagination to run riot. Whether we agree with him in his deductions or not we can and always do respect his opinions, because we know them to be founded on careful and continuous observation. His present book is largely a summary of some previous works on the life-history of

flowering plants, on "Flowers, Fruits, and Leaves," on "Seedlings," on "Buds and Stipules," and various others.

The author points out that in the ordinary British florist, attention is mainly devoted to the technical details necessary to distinguish one plant from another, and little space is given to the why and wherefore of the plant's structure. Why is the stem of some plants square, of others round? Why are the leaves lobed in the one case, unbranched in the other? How is one plant adapted to thrive in a salt-marsh, another in an alpine pasture? These are the kinds of problems which Lord Avebury endeavours to solve. In so doing he passes in review a large proportion of our common wild-plants, describes them lucidly from his point of view, and illustrates them with numerous and appropriate figures. There are still many people who wonder at Tennyson's powers of observation when he wrote of the black Ash buds in March. What they will say to the innumerable similar facts laid before them by Lord Avebury we can hardly imagine. In any case, we can assure them that they will find an unending source of interest in endeavouring to follow up and extend (as it will be easy to do) the author's observations. To botanists and gardeners the book will appeal specially, and the more so that it may

be taken up at any season of the year, and that its interest is by no means confined to the summer months. The book is not written for the professed botanist, but it is "popular" in the best sense of the term, accurate, lucid, and well arranged. The introduction comprises an excellent general survey of our present state of knowledge. The work is well printed, with very few printer's errors, is abundantly illustrated, and possesses a glossary and a good index.

ENGLISH IDIOMS AND COLLOQUIALISMS.

Under this title Mr. Arthur Burvenich, the son of the well-known pomologist of Ghent, has published through M. Ad. Herckenrath, of Lederberg, near Ghent, a small book which will be very useful to those desirous of translating colloquial English into French or Dutch, or of knowing the equivalent expression in either of the two languages mentioned. It is very difficult to draw a hard and fast line between colloquialisms and good, pure English, for the slang of to-day may become the correct expressions of to-morrow. As an instance we may note the words "awful, awfully"—applied as they usually are to any or all subjects concerning which no awe is really felt. So general has the use of these expressions become that in a very short time all trace of the original vulgarity will be eliminated; the words will be used as a matter of course by our best writers, and find their way as accepted expressions into our dictionaries, like any other reputable word. We have no doubt the word "dreadful" used, as it often is, where no feeling of dread is connoted, and to which now-a-days no imputation of looseness of expression or of vulgarity is attached, had a similar origin. We may mention another instance of a colloquialism which afforded us some amusement at the time. We were travelling with a well-educated Tyrolean gentleman, who spoke fluent English, but informed us that he had a "beastly cold." Noticing that we smiled at the expression he hastened to improve matters, as he thought, by saying "Ah! I should have said a 'beast of a cold.'" Turning to M. Burvenich's book we find the word "abominable" given in this case as the French equivalent. It is not within our province to offer criticism on M. Burvenich's book, beyond saying that occasionally a literal translation is given rather than a French or Dutch equivalent mode of speech, perhaps because no phrase exactly corresponding exists. In any case, we can but admire the indefatigable industry and research which have been bestowed on this publication, and the remarkable freedom from errors. Those who are not familiar with colloquial French (or Dutch) but speak and write, in stumbling fashion, the French of dictionaries and grammars, will be glad to possess this book. On the one hand we must warn the busy reader to exercise restraint, or he will lose time and be irresistibly led on from subject to subject away from the object of his search. On the other hand there are few more instructive and amusing methods of passing leisure moments than can be obtained by the perusal of this excellent little book.

PUBLICATIONS RECEIVED.—*Annual Report of the Government Gardens and Parks, Mysore, 1904-5*: For garden cultivation the season was favourable, and various experiments were made with Cotton, Rubber, and other economic plants.—*The Queensland Agricultural Journal*; October. Contents: Native Grasses and Herbage, H. C. Quodling; Nature Study and State Schools in Queensland, H. Newport; Contributions to the Flora of Queensland, F. M. Bailey; &c.—*Annual Report of the Department of Agriculture and Stock, Queensland; 1904-5*. Among the most important contents are the Report of the Colonial Botanist, Mr. F. M. Bailey, which is a record of valuable work accomplished under difficulties, and dealing with the concerns of a vast territory, and that of Mr. Tryon, the Entomologist, who also treats of investigations carried on over a large country where "the enterprise of the inhabitants identified with the promotion of primary industries of a rural nature is concerned with such diverse and important products."—*Transactions of the Massachusetts Horticultural Society, for 1905*. Parts I and II.

contain papers on: Recently Introduced Weeds, M. L. Fernald; Forest Planting for Profit, T. F. Borst; Bacteria as Fertilizers, Dr. G. T. Moore; and Reports of the various Committees.—From the United States Department of Agriculture: Division of Entomology: Bulletin No. 45.—*The Mexican Cotton Boll Weevil*, W. D. Hunter and W. E. Hinds; and Bureau of Entomology: Bulletin No. 47.—*Catalogue of the Exhibit of Economic Entomology at the Louisiana Exposition, 1904*, by E. G. Titus and F. C. Pratt.—*The Agricultural Gazette of New South Wales*; October. This contains an article upon Mortality in Cattle, caused by eating the Poison Tulip, *Homeria miniata*. The plant has proved injurious to stock in South Africa, Victoria, and South Australia, and Mr. Maiden urges all owners of pastures to at once eradicate the pest when once discovered. Another paper in the *Gazette* gives a description and illustrations of the Queensland Nut, *Macadamia ternifolia*, previously figured in our own columns 1870, p. 1181.—*La Vulgarisation Scientifique*. Tome II., No. 11. Among the contents we note a paper, by M. G. Mottet, on *Un arbre singulier*. The tree is a weeping Ash in Dr. Bardet's garden, and it has grown in a singularly distorted fashion, causing it to resemble the artificially produced abortions of Japanese growers.—*Agricultural Handbook and Diary, 1906*, edited by C. Adeane and Richardson Carr. Published by the County Gentleman, Ltd., Dean Street, High Holborn. Contains useful and topical information on British and other agricultural matters, and a handy calendar and diary.—From the Royal Gardens, Kew. Bulletin of Miscellaneous Information. Appendix I., 1906. *List of Seeds of Hardy Herbaceous Plants and of Trees and Shrubs.—La France Coloniale*, November 15. Contains notes on and from the chief French colonies.—Department of Agriculture, Central Experimental Farm, Ottawa, Canada. Bulletin 52. *Insects Injurious to Grain and Fodder Crops, Root Crops, and Vegetables*. By James Fletcher, LL.D.—*West Indian Bulletin*. The following are the subjects treated of in the recently issued part: Manurial Experiments with Cotton in the Leeward Islands, by the Hon. Francis Watts, C.M.G., D.Sc.; Manurial Experiments with Cacao at Dominica, by the Hon. Francis Watts, C.M.G., D.Sc., and Joseph Jones; The Soils of Montserrat, by the Hon. Francis Watts, C.M.G., D.Sc., and H. A. Tempany, B.Sc., A.I.C.; Grape Fruit and Shaddocks; Cacao Experiments in Ceylon; Cacao Disease in Ceylon; Para Rubber in Ceylon; Bud-rot of the Coconut Palm; and Naudet Patent Process for Extracting and Purifying Cane Juice.—*Bulletin of the Department of Agriculture, Jamaica*, November. The contents of this issue deals with: Rubber at the Agricultural Conference, Recent Developments in Agricultural Science, and Palm Oil and Shea-Butter.—*The Woman's Agricultural Times*, Autumn, 1905. This is the official organ of the Mercia, late Studley Castle, Agricultural Association, and now appears quarterly. It is published by Messrs. Simpkin, Marshall and Co., 23, Paternoster Row.—*Proceedings and Journal of the Agricultural and Horticultural Society of India*, January to June, 1905. The garden (in Calcutta) has been improved and the whole report is satisfactory.

TREES AND SHRUBS.

DECIDUOUS FLOWERING SPECIES.

It will be confessed by most unprejudiced persons who are well acquainted with our gardens, great and small, that the preponderance of evergreens, as conifers and shrubs, has displaced much of the former floral display afforded by deciduous species. The ordinary sort of shrubbery is a very tame, unsatisfactory affair, in which none but the stronger growers, deciduous and evergreen alike, ever develop as they should do. The owner and his gardener, if they yearn after better things, usually feel this, and make efforts to introduce a lightsome, cheerful and more satisfying effect by planting among the masses of evergreens deciduous trees and shrubs. This method, however, seldom succeeds, although there may be outer borders of herbaceous hardy perennials and tender exotics, annuals, etc.

The results of thus dealing with the subject are seldom such as commend themselves to either owner or gardener. The heterogeneous nature of the mixture remains, and the monotonous picture is presented as before. As usually planned, the shrubbery forms a hedge-like boundary, albeit a wide-spreading one, a boundary, a screen hiding the ground behind, a belittling of the spaciousness of a circumscribed area, which, in most gardens, excepting those of great extent, is undesirable. A closely-planted shrubbery along the boundary of a garden on the sides exposed

to a public road or path may be called for to ensure privacy, or to serve as a wind screen, or to afford a warm promenade, or as a means of masking outhouses, woodyards, drying grounds, and other necessary adjuncts to a country residence. Such shrubberies should, from the needs of winter as well as of summer, consist mainly of evergreen trees and shrubs, and the fewer the species employed the better. When a garden is of small extent much space is saved if hedges are substituted for shrubberies, the plants selected being: Holly, *Thuja plicata* (gigantea), Common Yew, *Thuja occidentalis*, *Thuja orientalis*, Portugal Laurel, *Phillyrea angustifolia*, *Rhamnus Alaternus*, *Escallonia* of species, *Euonymus japonicus*, and *Garrya elliptica*, choosing such as are suitable to the climate and aspect. Hedges formed of the species named will, in the course of time, and with proper attention as to cutting back, clipping, and occasional manuring and top dressing, form impenetrable screens of an ornamental character. The shrubs may be kept neat and trim by the use of the hedging shears, whereas subjects with larger leaves must be kept in shape by the knife—a work, where there is much of this kind of thing, that takes much labour, and has to be done twice in the year. Hedges of the kind here advocated may have the lawn or strips of turf running quite close to them, which may or may not be planted with deciduous and evergreen shrubs, conifers, groups of hardy perennial flowering plants, at wide distances apart and in irregular order; or a gravel path may be carried along the front of them.

No garden can be considered well furnished from which flowering deciduous shrubs and small-growing trees are banished, or but sparingly employed. Instead of planting them exclusively among the evergreens in shrubberies, they may be far more effectively grown as solitary examples, and in small or large groups on turf in numbers commensurate with the areas of the several lawns or grass plots. In such positions these flowering shrubs and trees, if properly planted in well-prepared soil, and at distances apart sufficient to allow of the fullest development, will flower abundantly and impart much more beauty to the garden and pleasure grounds than is possible if they are mixed with evergreens in heterogeneous fashion in shrubberies. For the sake of contrast, conifers and evergreen shrubs of an ornamental character may be intermixed with them in small numbers, as solitary plants or groups, or as a background, if such be required. These will afford some amount of shelter, besides giving a better furnished appearance in the late autumn and winter seasons; moreover, some evergreens flower freely, or make agreeable effects with their fruits, and these should have the preference. I may mention a few, viz.:—*Rhododendrons*, *Kalmias*, *Zenobias*, Portugal Laurel, *Crataegus pyracantha*, *Arbutus Unedo*, *Viburnum Tinus* and others, *Camellias* (single and double flowered varieties), *Garrya elliptica*, and *Aralias*, also *Bamboos*. M.

(To be continued.)

VANDA SANDERIANA.

This remarkable species, one of the finest Orchids ever discovered, was first imported by Messrs. Sander and Sons from Davao, on the south-east of Mindanao, one of the Philippine Isles, and flowered in the collection of William Lee, Esq., then at Downside, Leatherhead, in October, 1883, the plant being duly recorded and illustrated in *The Gardeners' Chronicle*. Other specimens flowered later and were much admired, but not until J. Gurney Fowler, Esq., Glebelands, South Woodford, now treasurer of the Royal Horticultural Society, and chairman of the Orchid

Committee, showed his large specimen, for which a Gold Medal was awarded on October 13, 1896, was the plant seen at its best. That specimen had seven growths, three of them 3 feet 6 inches in height, the other four being shorter and forming a leafy base. It had twelve spikes, which bore an aggregate of 137 flowers (127 when shown, the earliest spike having passed) of large size and fine colour. The plant had been grown in the East Indian House, on the centre stage, over a tank of water, and it was always in good condition and flowered satisfactorily. Lately the specimen was divided, and the several plants thus obtained are still doing well.

Our illustration at fig. 165 represents the fine specimen of *Vanda Sanderiana*, "Chillingham variety," for which variety the Earl of Tankerville, Chillingham Castle, Northumberland (gr. Mr. Hunter), received a First Class Certificate, and his gardener a Cultural Commendation, at the Royal Horticultural Society's meeting on December 5 last. It is a very fine variety, the lighter, upper part of the flowers being of a soft rose-tint, and the lower parts bronzy-yellow netted with purple-brown. This plant was also grown in a warm, moist atmosphere, of even temperature. The season of growth of *Vanda Sanderiana* is from April onward throughout the summer, and at that period it requires the greatest degree of heat and moisture. Usually the flower-buds expand in October, and during the time the flowers are open a drier air is beneficial to the colouring and duration of the flowers. The plant can be grown in any stove-house, as it does not require special treatment; but, as for *Phalænopsis*, the temperature should not fluctuate.

The Week's Work.

FRUITS UNDER GLASS.

By F. JORDAN, Gardener to Dr. CORBET, Impney Hall Gardens, Droitwich.

Late Grapes.—Preparations should now be made for the cutting and bottling of all late Grapes. Have the bottles cleansed and fill them with soft water, with or without the addition of a small piece of charcoal. Place the bottles in position in the Grape-room and fully ventilate the room afterwards, in order that the atmosphere may become quite dry before cutting the grapes. Choose a fine, dry day for cutting them and take every care to avoid rubbing the berries. Leave as much wood attached below each bunch as can be spared, and all of that beyond the bunch. Carefully examine every bunch for any faulty berries, and keep a sharp look-out afterwards for any which may have been overlooked. The Grapes will absorb a considerable quantity of water during the first few weeks, and it will be necessary to examine the bottles and refill them with water when more is required. Keep the atmosphere of the room free from damp, and let it be well ventilated; the temperature should be about 45°. Under such conditions the Grapes will keep better than on the vines and be more easily examined. Use a little fire-heat during the first few days to dispel any moisture which may have been caused during the process of housing the Grapes. After the Grapes have been cut, prune the vines without delay, for although the borders have been kept on the dry side, and there is a strong desire to rush to the hose pipe and afford water, it is better to get the pruning done first, open the ventilators, and wait a week before applying the water. The vines will then be less likely to bleed, and the borders can afterwards be gradually brought into a medium state of moisture. If the outside borders have been protected in any way from heavy rains, the protection may now be removed, and a light covering of litter placed over the borders to keep out frost. If any alteration or addition is to be made to the borders, this should be done without delay; but only one border should be disturbed this season. Cleanse the vines and remove the surface soil from the borders, afterwards applying a surface dressing as recommended in the Calendar for November 4.

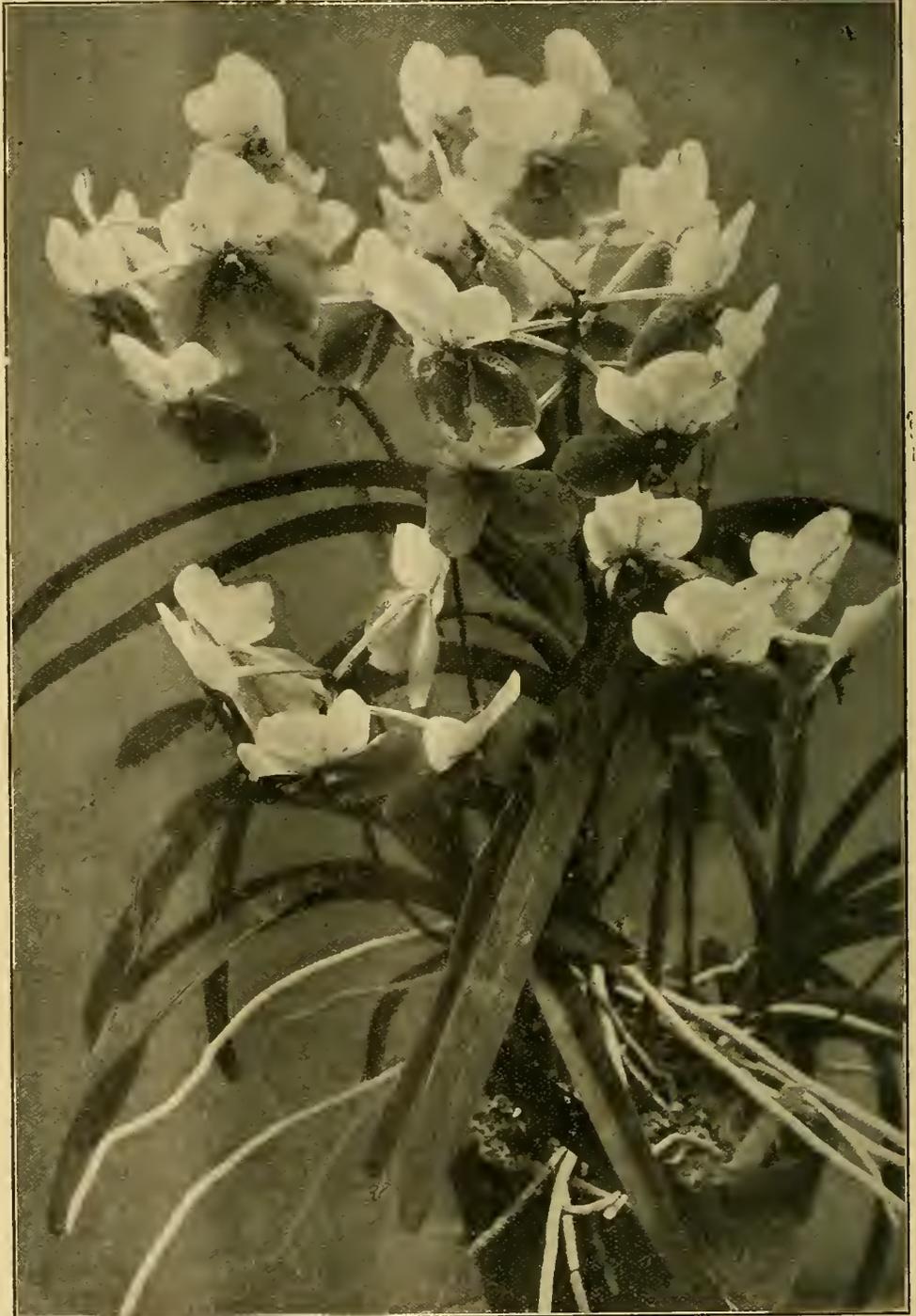
Berries.—Those plants which were placed

inside last month will now have made a start, and as soon as the flower spikes can be seen the plants should be moved to the warmest and lightest part of the house. Afford plenty of fresh air on all favourable occasions, but prevent draughts, and let the atmospheric temperature range from 50° to 55°, not exceeding the latter figure until after the fruits have set. Let the pipes be heated a little extra early in the morning, so that freer ventilation may be given, and supply a moderate amount of atmospheric moisture by damping the floors, &c., and syringing whenever the weather is favourable.

THE HARDY FRUIT GARDEN.

By W. H. CLARKE, Gardener to Sir WILLIAM FLOWDEN, Aston Rowant House, Oxon.

Peaches and Nectarines.—In localities where late spring frosts often prove disastrous to this crop it will be well to delay the flowering of the trees by removing the branches entirely from the walls at the present time, and securing them at a little distance from the wall to strong stakes fixed firmly into the soil. Under this treatment the trees will flower a day or two later than they would otherwise, and an additional advantage is that the



From a photograph by J. Gregory.

FIG. 165.—VANDA SANDERIANA "CHILLINGHAM VARIETY."

(See page 437.)

Carefully examine the plants each day, and keep the roots in a medium state of moisture. Let the house be fumigated lightly with the XL All Vaporiser on one or two occasions before the plants come into flower, to ensure them being free from aphid at that time. Introduce fresh batches of plants according to requirements, washing the pots and examining each plant to see that the drainage is clear. Let the plants start in a temperature at night which does not exceed 45°, and prevent the plants suffering the slightest check by giving careful attention to each detail.

wood will become more thoroughly hardened and matured. Any of the shoots which will not be required in spring for tying to the wires, or nailing to the walls, as the case may be, should be removed, likewise any that are unhealthy, or that have much barren wood, retaining only those which are of medium strength and are in a healthful and fruiting condition. In warmer localities where this retarding process need not be practised the trees may be trained at the present time. Before commencing the operation, take a general survey of the tree and remove all branches and shoots

which are not required for laying-in. The operator can do this much better before the tree has been unfastened. As a general rule, those shoots which carried fruits last season, and any that appear green and unripened, should be removed, but where it is possible to prune to a wood or growth bud at the base of these shoots it is advisable to do so. Each bud should be on the upper side of the branch. Cleanse the trees thoroughly before retaining them, using a reliable and safe insecticide. In some instances the old wood will need to be scrubbed, but the young shoots should be washed with a soft hair brush, drawing this along them from base to apex.

Training.—The main branches should first be fixed into position, equally disposing them on either side of the tree. This done, secure the younger growths in the intervening spaces, allowing a distance of 4 inches between them, and, keeping the shoots as straight as possible. Cut back to a growth or treble bud any shoots that appear to be unmaturing at the points, likewise those which have grown beyond their limit of space.

Planting.—Push forward this work as quickly as possible during mild, fair weather. It is prudent to have a piece of ground on which to grow a reserve stock of trees, that can be used for filling up any vacancies as they occur. Maiden trees of various kinds can be planted on such ground and be pruned back, and subsequently trained in accordance with the will of the grower. Thus may a stock of all varieties of fruit be made available for use when any re-arrangement of the fruit quarters has to be done.

THE ORCHID HOUSES.

By W. H. YOUNG, Orchid Grower to Sir F. WIGAN, Bt.,
Clare Lawn, East Sheen, S.W.

Odontoglossum Edwardsi, &c.—This Equadorean species shares with the rare *O. ioplocon* the distinction of being the only member of a large genus that produces blue flowers. It has also the additional quality of being sweetly scented, a character possessed by very few other species. The plants grow vigorously and develop strong, numerous-branched flower spikes, and purplish-mauve coloured flowers, rather small in size, but very numerous. Some very old plants here have become rejuvenated after being cultivated in a leaf-mixture, and are now developing healthy flower spikes. The species requires the atmosphere of a cool intermediate compartment, and at the present time, when the pseudo-bulbs have attained to their full size, very infrequent waterings will be sufficient to keep the pseudo-bulbs plump. *O. hastilabium* is another excellent species requiring the conditions of the cool intermediate house. The plants, if in a healthy condition, should now be pushing forth their flower spikes from the completed new pseudo-bulbs, and consequently a very moderate supply of water suffices to keep the plants in proper condition. Excessive drought must not be allowed, though a few days' dryness will do more good than harm when the weather is mild and damp. Weak plants should not be allowed to develop any flower spike they may produce, as the process of blooming is long and exhausting.

Aerides vandarium.—This distinct plant is now in flower; its graceful habit, and the purity of its blooms render it a very interesting species at this season. The plants thrive in a cool intermediate temperature along with *Sobralias*, &c., being fixed in a pot with ample drainage and surfaced with sphagnum-moss, the slender growths being secured to upright stakes. During the next three months, small doses of water only will be needed, though dryness must not be sufficiently prolonged to cause its terete leaves to shrivel.

Dendrobium Wardianum, &c.—The floral buds are now pushing from the nodes of the young pseudo-bulbs of *D. Wardianum* and of *D. crassinode*, and care must be exercised when handling them, or damage may be done. Young growths are also appearing, but these circumstances should not induce the grower to apply more water, nor afford better growing conditions, or both the floral and vegetative growths may be ruined. Plants that have been suspended in a vinery or similar structure may be removed to develop their flowers in a Cattleya house, and placed in a position where they will not be exposed to cold draughts. If practicable, the flowering pseudo-bulbs should be allowed to hang naturally, for in this way more flowers are produced than when they are staked in an upright position. The above-named species and other *Dendrobiums*, now pushing their flower buds, will need water occasionally, but the longer its application can be deferred

without the pseudo-bulbs shrivelling, the better it will be for their future welfare. Plants of *D. Phalaenopsis* and allied species should need no further waterings until early in spring, for by the time they have done flowering the new pseudo-bulbs should be thoroughly matured. The above remarks apply equally to *D. formosum*.

PLANTS UNDER GLASS.

By A. BULLOCK, Gardener to E. J. WYTHES, Esq.,
Copped Hall, Epping, Essex.

Jacobinia chrysocephala.—Plants that were propagated two years ago and were repotted after flowering last season, have given great satisfaction. Ten and twelve trusses of flowers to a plant may be obtained if suitable plants are selected for growing on a second year, and those plants which show a tendency to break into growth at the base should be chosen for the purpose. Now that the plants are passing out of bloom, it should be decided which are to be reserved for potting-on, and these marked accordingly. Let the withered flower truss be carefully removed and the plants thoroughly cleansed. They should be afforded a period of rest for a few weeks by lessening the supply of water to the roots, and placing them in an atmospheric temperature that does not fall below 55° at night. Plants intended for furnishing a supply of cuttings should be thoroughly cleansed before the cuttings are taken and treated precisely as those plants it is intended to grow on.

Winter-flowering Begonias.—Select a few of the most promising plants of *Gloire de Lorraine* for producing a supply of cuttings for propagating plants for flowering next year. This may be done from those that have passed out of bloom. Cut the growths back to within an inch or two of the base, and place them in an atmosphere of intermediate temperature for a few weeks, affording them very little water in the meantime. If these plants are grown on for a second year, they are not worth the trouble taken on them.

Begonia Winter Cheer, *Ensign*, *Mrs. John Heal*, and others of this type, when they have ceased to be effective must not be stood away out of sight and neglected. Water should be afforded them occasionally, and the plants should only be allowed to become moderately dry at any time.

Begonia Gloire de Sceaux.—It afforded careful treatment a long season of usefulness may be confidently anticipated from these plants. Sufficient humidity in the atmosphere can be obtained without the use of the syringe by frequently damping the stages, &c. Do not afford them any other liquid than clean water, and thoroughly soak the whole of the roots each time water is afforded, allowing the soil to become nearly dry before repeating the operation.

Need for light.—Cleanse the outside of the glass roof and sides of the houses, removing any deposit that is obstructing the little sunlight there is at this season.

THE FLOWER GARDEN.

By W. A. MILLER, Gardener to LORD HENRY C. BENTINCK,
M.P., Underley Hall, Westmoreland.

Creeping and Climbing Plants.—The training, tying, or nailing of creepers should be completed if possible before inclement weather sets in. Spread the branches out at equal distances, and let the ties be neatly made. Take care that no old ties are allowed to cut into the bark, and when making fresh ties leave a good sized loop to allow of the swelling of the shoot. If there is much pressure caused when straightening a branch, slip a piece of old india-rubber tubing between the string and the bark. Evergreen climbers of moderate growth are often planted against walls for producing a good effect in winter. The walls should be such as have a southern aspect and the border be made 2 feet deep and 3 feet wide, using turfy loam and some well-decayed manure. The following species are distinct and attractive:—*Azara microphylla*, *Berberidopsis corallina*, *Euonymus radicans* variegata, *Garrya elliptica*, *Lardizabala biterinata*, *Magnolia grandiflora*, *Pittosporum tenuifolium*, *Tecurium fruticosum*. Creepers and climbers of more rapid growth are necessary when immediate effect is required. *Ampelopsis hederacea* (quinquefolia) and its varieties, *Aristolochia Sipho*, *Lycium europaeum*, *Polygonum baldschuanicum* are excellent for such a purpose. *Vitis inconstans* (*Ampelopsis Veitchii*) is probably the most widely-known plant of the present day, and is a favourite for palace or cottage. It withstands smoke and heat and is self-clinging. *Vitis Coignetæ* has large foliage of a leathery texture, which in autumn assumes the most

brilliant hues of red, crimson, and golden yellow. If given ample space, and reasonable care is taken when planting, the growths will eventually ramble for great distances. *V. Thunbergii* has enormous leaves, *V. Thomsoni* has purple foliage and stems of a graceful contour. Other quick growing creepers are *Wistaria sinensis*, *Humulus*, *Celastrus scandens*, and *Periploca græca*.

List of Evergreen Shrubs for Foregrounds of Shrubberies.—*Abies excelsa* clunbrassilliana, *A. e. pygmaea*, *A. e. Remontii*, *Arbutus*, *Andromeda axillaris*, *A. floribunda*, *Berberis dulcis* var. *nana*, *Cotoneaster congesta*, *C. horizontalis*, *Cupressus Lawsoniana* erecta *viridis*, *Eleagnus* of sorts, *Ericas*, *Euonymus radicans* var., *Gaultheria Shallon*, *Hedera arborea*, *Ilex cassine*, *Juniperus sabina* tamariscifolia, *J. canadensis* aurea, *J. Waukegan*, *Kalmia angustifolia*, *K. latifolia*, *Ledum*, *Menziesia polifolia* and the variety *alba*, *Osmanthus ilicifolius*, *Pernettya mucronata*, *Rhamnus Alaternus* var., *Ruscus aculeatus*, *Retinospora ericoides*, *R. filicoides* tetragona aurea, *R. obtusa* pygmaea, *Skimmia japonica*, *Veronica Traversi*, *Vaccinium Vitis-Idæa*, *Yucca filamentosa*, *Y. gloriosa*.

THE KITCHEN GARDEN.

By W. FYFE, Gardener to Lady WANTAGE, Lockinge Park,
Wantage, Berks.

Forcing Seakale.—In order to maintain a daily supply of seakale, constant attention will be necessary. The "heads" should be cut before they have grown too long, and fresh batches need to be introduced to heat in regular quantities that will satisfy the demand. Keep the atmosphere in the forcing department in a proper condition, and take care to provide sufficient moisture. We make it a practice here to cover the crowns to the depth of 6 inches with light, clean leaves after the leaves have been pressed through a fine meshed sieve. This enables us at times to afford freer ventilation, which we consider has the effect of improving the flavour of the Seakale, conserves the heat, and increases the darkness. The length of the Seakale stems are never allowed to exceed the depth of the covering, and they thus become perfectly bleached.

Asparagus.—A considerable degree of heat, together with much light and air, are necessary in order to obtain forced Asparagus of the best quality. For furnishing these conditions, pits that are heated with hot water pipes and filled with leaves to within 12 inches of the glass, are most useful. A layer of soil should be placed on the leaves, and after laying the Asparagus roots on this, cover the crowns with not more than 2 inches deep of light soil. The grass will then be green throughout its entire length, and therefore eatable. Let the bottom-heat be 70°, and the atmospheric heat 60°.

Rhubarb.—If the roots are lifted in the autumn and have been exposed to several degrees of frost, little difficulty will be likely to be experienced in obtaining an early supply of forced Rhubarb of good quality. Empty barrels or crates may be used in which to place the roots, and the whole should be covered by mats and plenty of leaves, which will supply the necessary amount of heat. The Mushroom house is also a suitable structure in which to force Rhubarb.

Trenching.—This work is best performed in cold weather when the days are short, for the amount of work that can be conveniently done by one man is equal to what he could do on a longer day if the weather were warm. That trenching is likely to increase the productive power of the soil, if the work is well done, say, once every four or five years, there is abundant evidence to prove. The objects are to loosen the subsoil, and in the garden to well mix with it manure or any garden refuse of a suitable character. But if the ground has not been trenched before, or if the subsoil is of an undesirable description, it may be well not to bring the subsoil or bottom spit to the surface. In some instances where this has been done, it has resulted in causing severe injury to succeeding crops. But if the ground is trenched for the second time, the bottom spit may advantageously be brought to the surface. In order to find profitable employment for spademen at this season, we generally cover a part of the garden with leaves and litter obtained from exhausted hotbeds. When this is done, digging or trenching can be proceeded with, even during hard frost or rains, and no injury will be caused by treading on an over wet soil.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Letters for Publication, as well as specimens and plants for naming, should be addressed to the EDITOR, 41, Wellington Street, Covent Garden, London. Communications should be WRITTEN ON ONE SIDE ONLY OF THE PAPER, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

Special Notice to Correspondents.—The Editor does not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editor does not hold himself responsible for any opinions expressed by his correspondents.

Illustrations.—The Editor will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens, or of remarkable plants, flowers, trees, &c.; but he cannot be responsible for loss or injury.

Newspapers.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

Local News.—Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY, Dec. 25. Christmas Day.
TUESDAY, Dec. 26. Bank Holiday.

AVERAGE TEMPERATURE for the ensuing week, deduced from observations of Forty-three Years at Chiswick—37.9°.

ACTUAL TEMPERATURES:—

LONDON.—Wednesday, Dec. 20 (6 P.M.): Max. 49°; Min. 38°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—Thursday, Dec. 21 (10 A.M.): Bar., 30.3; Temp., 51°; Weather—Dull.

PROVINCES.—Wednesday, Dec. 20 (6 P.M.): Max. 52° W. Coast of Ireland; Min. 45° Guildford.

On Saturday, December 16, an interesting ceremony took place at Kew. The heads of departments and the members of the staff took formal leave of the late Director, and presented him with a farewell address signed by the whole of the assistants. In this address mention was specially made of the numerous improvements and additions which have been carried out during the directorship of Sir William Thiselton-Dyer.

On the same occasion the members of the Executive were presented to the new Director. Dr. Prain, whose appointment has given so much satisfaction to the botanical community, was Lt.-Colonel in the Indian Medical Service and, till now, Director of the Royal Botanic Gardens, Calcutta. His qualifications for the office were mentioned in issue for the 9th inst., and from them it will be seen that we have an excellent guarantee that the traditions of Kew will be worthily maintained.

In enumerating the claims of Sir William Thiselton-Dyer to grateful recognition for services rendered to Kew, we omitted to mention the successful efforts he made to restrain the smoke nuisance in Brentford, which seriously impaired the health and appearance of the trees and shrubs in the Royal Gardens. A very considerable amendment is now perceptible.

By this means it may be that the Arboretum may be preserved for many years and that the necessity for establishing another plantation in the country may be postponed. In any case, we hope that nothing may be done to interfere with the scientific character of the collections of trees at Kew.

Teaching Horticulture to the Masses.

As population increases in these islands farming carried out on small areas is much more likely to be the outcome of the prevailing economic conditions than the management of extensive farms. The spade is likely to take the place of the plough in the cultivation of the land. As a means of facilitating this desirable change from methods no longer fitted for the people of these densely-peopled islands, the owners of land will at length perceive the need of a great and radical change in the system of land-tenure. That day must come if we are ever to be more independent of the assistance of the foreign and colonial grower of those cereals, fruits, vegetables which can be grown here as well as abroad. From this point of view it is depressing to read of the quantities of foreign arrivals of such productions as Potatoes, Onions, Cherries, Tomatoes, Grapes, Apples, Pears, Apricots, Plums, small fruits and Horseradish, the quantities of which are every year mounting higher and higher in spite of the fact that a large proportion of these products can be, and should be, grown at home. Although the conditions under which land is at present held do not admit of a prudent tenant launching out into great expense in the planting of fruit, they do not prohibit the cultivation of certain bushes and vegetables that are either of annual growth or live for 10 to 15 years; as for example Gooseberries, Currants, Apples on the Paradise stock, Raspberries, Nut bushes, Strawberries, Horseradish, &c., so that though we may have to wait some years for the needful alteration in the laws that govern land tenancy and in the restrictions as to cropping, the occupiers of farms could, were they so inclined, commence forthwith to set apart some portion of their farms for the cultivation and raising of such productions as we have indicated. The fact that ordinary farm-land can be readily made to grow abundant crops, by the aid of farmyard manure, and the proper use of chemical fertilizers as top-dressing during the seasons of growth, is fairly well understood by farmers. Were this matter taken in hand by a few men in every county, we should soon witness a reduction in the outgoings of our wealth to the more wideawake foreigner and a corresponding addition to the resources of the farming fraternity and the working man at home.

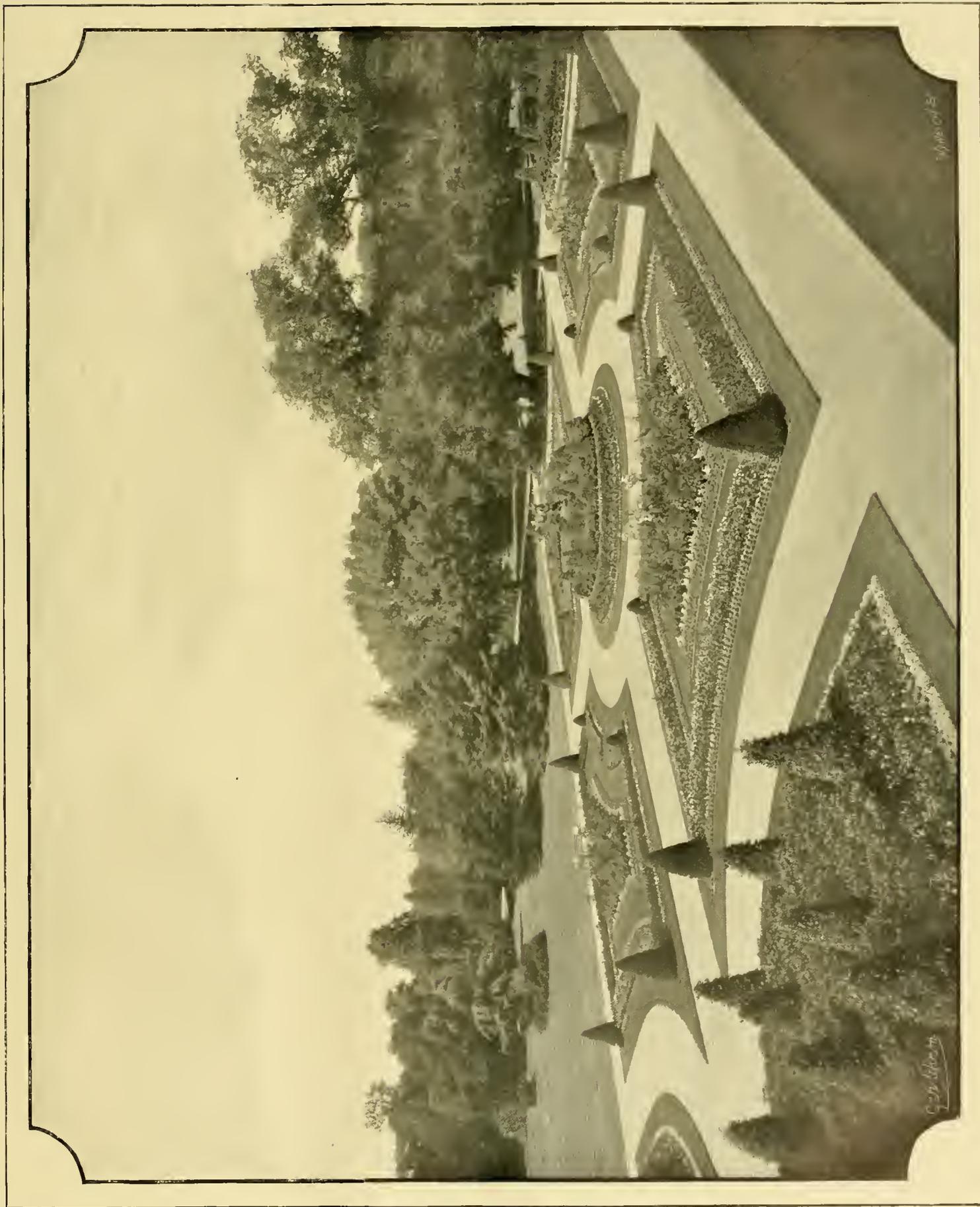
Among the results accruing from the much-needed *petite culture* would certainly be a check to the exodus from the country to the towns, and the consequent overcrowding of dwellings, the lessening of the frightful struggle for employment, which has become chronic, and a betterment in the health of the rural population as a whole. How few farmers or their labourers know the money value of, say, an acre of Onions, French Beans, early Potatoes, Cauliflowers, Brussels Sprouts, Broccoli, Celery, Celeriac, Scarlet Runner Beans, Radishes, dwarf growing Peas, or of Raspberries, Strawberries, Black Currants? If they knew, we imagine the area now laid down with permanent grasses would soon be curtailed and the labour bill considerably increased, with great pecuniary advantage to themselves and to the rural labourers. In this connection we may state that from one square perch of flinty soil overlying the green sand formation in a Hampshire garden, Onions to the number of 1,225 were grown at 4 inches apart and 8 inches between the rows, filling 4-bushels heaped measure,

and of a value, at the least, of 10s. wholesale, 12s. to 14s. retail, or £80 per acre retail, a price not returned by any purely farm crop, unless it be a very good one of Potatoes, and those of a superior variety. The outlay for seed, manure and cultivation would be under sixpence per perch, or from £6 to £8 per acre, according to locality, the entire course being but of five months' duration.

Other vegetable crops cost relatively less to produce, but none pay better than onions. If cultivators could be got to co-operate, it would pay good returns to make the bulk of the soft fruit into jam or jelly, or to bottle it and sell to the traders in the adjacent towns. This trade is at present in the hands mostly of wealthy firms—is in fact a monopoly. By buying in bulk, and by use of more or less pernicious preservatives in the case of some of them, they are enabled to keep the "stuff" till winter and then boil it down at their leisure. Co-operators would be obliged to expend a little at first in providing a boiling-house, coppers, steaming apparatus, bottles, jars, &c., and to secure the services of a few capable persons to superintend the various operations; but this done, the subsequent outlay would be small, and advertising if done judiciously would do the rest.

* * * OUR ALMANAC.—According to our usual practice, we shall shortly issue a *Gardeners' Chronicle Almanac* for the year 1906. In order to make it as complete as possible, we shall be obliged if Secretaries of Horticultural, Botanical, and Allied Societies, or any of our correspondents will send us IMMEDIATE INTIMATION of all fixtures for the coming year.

SANDRINGHAM.—Our Supplementary Illustration, given by express permission, represents one of the flower gardens at the KING's residence at Sandringham as it appeared last summer. The extent of this garden is 80 yards by 40 yards. The central bed in each of the four portions of the design was decorated with subtropical plants, but all the rest of the planting was of a strictly formal type, the object being to obtain a bright and cheerful-looking picture immediately below the windows on the west of the mansion. The portion of the central design almost at the front of the illustration had long stretches of Pelargoniums H. Jacoby, Salmon Bedder, Mrs. Holden, and bronze Harry Hiever. Each of these Pelargonium borders was edged with two rows of Pyrethrum selaginoides and blue-flowered Lobelia. In the corner beds outside the design, and in the central bed, Rhododendrons were massed for effect, but interspersed with them were some very fine pyramidal plants of green and golden leaved varieties. These are very bright in colour and of good shape, as are also the golden Yews at the corners of the other beds. In the corner beds, and planted in front of the Rhododendrons, were Ivy-leaved Pelargonium, Mad. Crousse, yellow-flowered Calceolarias, Pelargonium H. Jacoby, and an edging of *Koniga maritima*. The bronze statue of Venus in the central bed is intended to increase the Italian character of the garden. On the right-hand side of the picture can just be seen a portion of the terrace bank. Since the photograph was taken, the garden has been planted with bulbs and other spring flowering plants to furnish an effect in the months of April and May. Their Majesties usually spend the Christmas season at Sandringham, and they are expected to arrive there on the day this journal is published. We have on former occasions referred to the efficient manner in which the Sandringham Gardens are managed by the present gardener, Mr. T. H. Cook, whose efforts are much appreciated.



THE FRONT FLOWER-GARDEN AT SANDRINGHAM, PHOTOGRAPHED BY PERMISSION OF H.M. THE KING.
Photo by Mr. Ralph, Dersingham.

MR. R. I. LYNCH.—We are delighted to hear that the University of Cambridge is about to confer the degree of Master of Arts, *honoris causa*, on the curator of the University Botanic Garden. His qualifications are appreciated far beyond the limits of the University.

DR. EWART, of the University of Birmingham, has, says *Nature*, been appointed Professor of Botany in the University of Melbourne, in succession to the late Baron Sir FERDINAND VON MUELLER.

SOCIETY FOR HORTICULTURAL SCIENCE.—We understand that the third annual meeting of this society will be held in connection with the meeting of the American Association for the Advancement of Science at New Orleans during the Christmas week.

MIDLAND CARNATION SHOW.—We are informed by the Honorary Secretary, Mr. T. HUMPHREYS, that the next exhibition of the Midland Carnation and Picotee Society, will be held on August 1 and 2, 1906, in the Botanical Gardens, Edgbaston, Birmingham.

THE GARDEN ALBUM AND REVIEW.—This is the title of a new monthly magazine to be devoted to the illustration, description, history, culture, &c., of the most beautiful and useful garden plants and fruits. Each issue will contain four coloured plates, as well as reproductions from photographs and drawings. The price of the magazine is 7d. for a single number, 7s. 6d. per annum. The publishers are Messrs. SIMPKIN, MARSHALL & Co., E.C. We wish the new venture every success. No editor's name is given.

THE SURVEYORS' INSTITUTION.—The next ordinary general meeting will be held in the Lecture Hall of the Institution on Monday, January 15, 1906, at 8 p.m., when a paper by Mr. A. T. WALMSLEY (Fellow), entitled "Modern Surveying Instruments," will be read.

CASTANOSPERMUM AUSTRALE.—In a note relating to this plant in a recent issue it was stated that the seeds are edible when roasted. A Queensland correspondent tells us the seeds are looked on with suspicion as injurious to cattle. The natives of Northern Queensland eat them, but only after careful preparation. It may well be that the poisonous matter is dissipated by heat.

PARTHENOCARPIC FRUITS.—M. TH. SOLACOLU publishes, in a recent number of the *Comptes Rendus*, an account of parthenocarpic fruits: that is to say, of sterile fruits developed without the intervention of the pollen. M. SOLACOLU concludes that the reserve materials accumulated at the base of the flower or in neighbouring parts, to be used up in the normal development of the pistil after fertilisation, are made use of in certain species, even when fertilisation does not take place. When fertilisation does not occur, the plant devotes its reserve materials to the production of parthenocarpic fruits, organs which may be called "mock fruits" (*faux fruits*).

BOARD OF AGRICULTURE.—Earl CARRINGTON, G.C.M.G., President of the Board of Agriculture and Fisheries, has appointed Mr. F. L. C. FLOUDD to be his Private Secretary, and Mr. R. WINFREY to be his Assistant Private Secretary (unpaid).

PLANTING FRUIT TREES, &c.—The Board of Agriculture has circulated a leaflet (No. 148) devoted to the subject of planting Fruit Trees and to an enumeration of the best varieties to plant for general market purposes. Copies can be had free of charge on application to the Secretary of the Board of Agriculture, 4, Whitehall Place, London.

SUGAR BEET.—At the Society of Arts recently, Mr. SIGISMUND STEIN read a paper in which he claimed to have grown sugar beet in nearly every county of Great Britain and Ireland, and to have proved that we can grow better roots than they

can on the Continent, and more tons per acre (from 17 tons to as many as 40 tons per acre), with an average of 17 per cent. of sugar, an amount which compares favourably with the sugar-content of Continental grown beets. The cost of production leaves a considerable profit balance now that free trade in sugar production is ensured by the abolition of the bounties. We have sent abroad three hundred millions sterling that might have been retained in the country. The difficulty at present consists in the fact that the farmers have no factory to send their beets to, whilst the capitalists have not erected factories because, as they say, no beet is grown in the country. Some of the speakers pointed out that the culture could not be made remunerative unless the political and fiscal conditions could be altered. Another speaker said that sugar beet could be largely grown to great advantage in India, and that this country might furnish the seed for the purpose.

CAOUTCHOUC.—Any plant producing this substance is nowadays invested with special interest. M. MAHEU recently laid before the Academy of Sciences a note in which he pointed out the existence of this substance in several species of *Tinomisium*—a Menispermaceous genus. The presence of Caoutchouc has not previously been recorded in this natural order.

THE "GUAYULE" PLANT.—A Composite tree, native of moderate altitudes in Mexico and adjoining States, is said, by the *India Rubber World*, to furnish "rubber." The plant has been determined as *Partbenium argentatum*. That caoutchouc should be furnished by a tree of this genus seems improbable.

INDEX FILICUM.—We note the publication of the 5th Part of CARL CHRISTENSEN's most useful Index Filicum. This, it will be remembered, comprises an enumeration of genera, species and synonyms of all known Ferns with full references to the literature of the subject. The parts are obtainable from H. HAGERUP (Copenhagen), or from WILLIAMS & NORGATE. The present Part extends as far as the genus *Gleichenia*.

BRISBANE BOTANIC GARDEN.—Mr. J. F. BAILEY has been appointed Director of the Botanic Gardens in succession to Mr. P. MAHON who has been transferred to the Forest Department as Inspector. Mr. J. F. BAILEY has acted for several years as assistant to his father, Mr. F. MANSON BAILEY, the author of the Flora of Queensland, and is therefore well equipped for the duties of his new post. Mr. J. F. BAILEY has been Secretary to the Horticultural Society of Queensland for many years, and holds, or has held, numerous scientific appointments.

WHO'S WHO, AND WHO'S WHO YEAR-BOOK.—Who's Who for 1906 is an even bulkier record than usual this year. It contains, as before, a list of the members of the Royal Family, an Obituary for the past year, and Biographies of living men and women of eminence. The various tables of names of Royalty, Ambassadors, Church Dignitaries, Peers, Magazines, &c., are now crowded out of the larger volume and published separately under the title of "Who's Who Year-Book." We note that at the request of the British Medical Association the table of leading London specialists which appeared in the last issue has been deleted. These two valuable reference-books are issued by ADAM & CHARLES BLACK, Soho Square. It should be added that occurrences of a later date than September 30, 1905, are not recorded; therefore the important ministerial and other recent changes such as those at Kew are not chronicled.

SMALL HOLDINGS.—The Right Hon. the Earl CARRINGTON, G.C.M.G., President of the Board of Agriculture and Fisheries, has resigned his membership of the Departmental Committee on Small Holdings, and has appointed Mr. R. C. MUNRO-FERGUSON, M.P., to be a member of the Committee in his place.

PLANT PORTRAITS.

- TILLANDSIA DIANTHOIDES.**—*Revue Horticole*, October 1.
SOLANUM COMMERSONI, DUDAL.—*Wittmack in Garten Flora*, September 1, t. 1542.
KALANCHOE KEWENSIS.—A cross between *K. Bentii* and *K. flammula*. *Garten Welt*, October 8.
RENANTHERA MATUTINA.—*Revue de l'Horticulture Belge*, November 1.
HELIOPHILA PILOSA VAR. **INTEGRIFOLIA.**—*Icon. Select. Hort. Thénens*, v. t. clxxxii.
PLAGIOSPERMUM SINENSE, OLIVER.—*Icon. Select. Hort. Thénens*, t. clxxxii.
CASSIA CORYMBOSA, LAMARCK.—*Icon. Select. Hort. Thénens*, t. clxxxiii.
EUCALYPTUS OCCIDENTALIS, ENDLICHER.—*Icon. Select. Hort. Thénens*, t. clxxxiv.
TOWNSENDIA WILCOXIANA.—*Icon. Select. Hort. Thénens*, t. clxxxv.
AMPELOPSIS SERJANIEFOLIA, REGEL.—*Icon. Select. Hort. Thénens*, t. clxxxvi.
ARGYROLOBUM ANDREWSIANUM, STEUDEL.—*Icon. Select. Hort. Thénens*, t. clxxxvii.
CYTISUS HILLEBRANDTII, BRIQUET.—*Icon. Select. Hort. Thénens*, t. clxxxviii.
FLUECRIGERA ROSEO-ENEA. De Wildeman, nom., nov.—*Ladenbergia*, Lemaire.—*Icon. Select. Hort. Thénens*, t. clxxxix.
LAMBERTIA FORMOSA, SMITH.—*Icon. Select. Hort. Thénens*, tab. clxxx.
CERBERA JAMESONI, BOLUS in *Garten Flora*, December 1, 1905. *Gardeners' Chronicle*, 1889, v. 773, fig.
SCHIZANTHUS WISETONENSIS, *Garten Flora*, t. 1544.

FLORISTS' FLOWERS.

CHRISTMAS CHRYSANTHEMUMS.

OFTEN at this festive season of the year a large demand is made upon the resources of the gardener for cut flowers, and he is expected to be ready to supply blooms of the colours requisite for various purposes, in consequence of which I grow a large stock of plants, among which the following varieties have proved very useful, as they possess shades of colouring that will suit a variety of tastes.

This season I have grown as bush plants the variety *W. Dnckham*, and have found it to be very satisfactory; its colour is of pale mauve, and it is much appreciated because it is of a delicate shade such as is most suitable for indoor decorations. More decided and fixed colours are apt to clash with the surroundings. Another variety of beautiful soft colouring is *Mdme. P. Radaelli*. Flowers of *Miss Alice Byron* can be arranged to very good effect in vases. *Lady Osborne* is also well adapted for flowering late in the season and lasts for a long time after being cut. The variety *Glorions* (crimson or scarlet) is particularly beautiful at this season, and admirably adapted for associating with white flowers where a striking contrast is desired. In its earlier stages this variety is a weak grower, and more than ordinary care is needed in affording water to the plants. *Mrs. Greenfield*, of rich yellow colour and having long stems, rivals the old variety *W. H. Lincoln*. It has an elegant appearance when arranged, but is not a variety to be recommended where much packing has to be done, the petals being so easily bruised. I still grow the old incurved *Harold Wells*, of pale primrose colour, and it is very floriferous. *Mdme. Louise Charvet* is a variety well worthy of extended cultivation; the sprays of flowers are of large size, well supported on long, stiff stalks, and the colour is of a beautiful rich rose. *Guy Hamilton* is a first-class white variety useful alike for cutting and for cultivation as a pot plant on account of its dwarf habit and excellent foliage. Other varieties generally well known and proving useful now are *François Pilan*, *Mons. C. Molin*, *F. S. Vallis*, *Niveum*, and *Prince of Pinks*. Useful single flowered varieties are *Mrs. Brown Potter*, *Sir George Bullough*, *Golden Star*, *Star of Honour*. *W. H. Clarke*, *Aston Rowant*, *Oxon*.

[Our correspondent has sent us a large box of beautiful flowers of the varieties mentioned. They indicate excellent cultivation.—ED.]

CYPRIPEDIUM DEBILE.*

MESSRS. L. BOEHMER AND Co., of Yokohama, enable us to give a reduced figure of a curious Orchid native of Japan, and originally described by Reichenbach from a Japanese drawing (see fig. 166). The plant which is in cultivation is one of that miscellaneous group known as Botanical Orchids. It has leaves like those

under such conditions as doomed to certain failure. Nor were the difficulties to be encountered exaggerated, for the gales are often so severe it is almost necessary not only to make the plants secure but to prevent the garden itself from being blown away! Indomitable perseverance, however, had its reward, and Mr. Broome not only succeeded in having a garden, but he made

which flowers three times in the year, the handsome *Pittosporum Mayii*, with its black stems and silvery green leaves. The Edelweiss (*Leontopodium alpinum*) succeeds very well on the flat rockery, and, together with two of the wild plants of the district, *Veronica spicata* and the Common Bedstraws, affords Mr. Broome much pleasure. From the very first he took an especial interest in Orchids, and soon formed a collection that won considerable notoriety. Illustrations from Mr. Broome's garden were published in these pages on October 1, 1898, December 22, 1900, and January 25, 1902.



FIG. 166.—CYPRIPEDIUM DEBILE, FROM A JAPANESE DRAWING, FLOWERS GREEN MARKED WITH PURPLE.

of our wild *Listera ovata*. The slender flower-stalk is deflexed and bears a linear recurved bract. The solitary flower is about $1\frac{1}{2}$ inches (3 centimetres) across, of a greenish colour marked with purplish veins and blotches. We have not had the opportunity of examining the flower, but, judging from the material before us, the plant appears to be one which will appeal to the connoisseur and plant-lover. It would probably grow in loamy soil with a good admixture of leaf mould and sand, and require the protection of a frame in this country.

ARRANGING CUT FLOWERS.

At the present season, when most gardeners have to make arrangements of cut flowers for the decoration of dwelling-rooms and churches, the illustration at Fig. 167 may have unusual interest. So much depends upon the taste exhibited in arranging flowers that it is frequently the case that the choicest blooms are made comparatively unattractive. Our illustration shows an arrangement that was made in one of the rooms at Mr. Joseph Broome's residence at Sunny Hill, Llandudno, and has been reproduced from a photograph he obligingly gave us in August when we had the pleasure of inspecting his remarkable garden at the same place. It will be seen that the flowers arranged in the jardinière and in the Venetian glasses at the sides are of species which flower early in the summer, such as Roses, Astilbes, Sweet Williams, Antirrhinums, Pinks, etc.; but it is not so much the flowers used as the tasteful disposition of them that is needful in the making of an attractive picture. Mr. Broome is an enthusiastic amateur gardener, and, as we have already remarked, his garden is noteworthy from several points of view. In the first place, he had it made himself some years ago when he removed to Llandudno, on a wind-swept site, almost at the foot of the Little Orme, and but a very short distance from the shore. Local people regarded the attempt to make a garden

it specially interesting to plant lovers by reason of the tender species of plants he has cultivated out of doors to a surprising degree of perfection. It is curious to note the little artifices and schemes that have been adopted to provide tiny "spots" which are sheltered as much as may be from the winds, for it is only where such shelter is provided that good results can be looked for. A friendly wall, a thick hedge, or a purposely-made bank have a wonderful effect on the plants cultivated on the sheltered side, as is testified by the fine specimens of *Ceanothus*, the Tree Paeonies, the *Arbutus*, *Cytisus fragrans*,

FORESTRY.

THE LOCUST TREE.

At the same time that I received your article relating to the Locust tree another paper reached me which corroborated the statements made by T. C., Bagshot.

In the number for July 1, this year, there appeared an article by Professor Vadas, of the Royal Hungarian High School of Forestry,* upon the "Anatomy of the Robinia Wood." This article, in analysing the structure, &c., of the wood, gives the results of certain careful experiments in the following words: "The early formation of heart-wood increases the suitability of *Acacia* timber for technical purposes (vine and pit-props, carpenter's work, railway-sleepers, &c.) to such a degree that we must allow the *Robinia* a first and foremost place among our deciduous trees."

This testimonial is the more conclusive and valuable as it comes from a country where the only successful afforesting of the vast sandy Hungarian plains can be made by means of the Locust tree.

So we see that William Cobbett was right in his views, and that he did not at all overrate the good qualities of the Locust. That this most valuable tree has not been more generally planted in England is certainly not the fault of Cobbett, nor of those who followed him in recommending the *Acacia*.

It is the same with us in Germany where forestry is said to be on a high level. It is only a very few years ago that I publicly op-

* Naturwissenschaftliche Zeitschrift von Dr. von Tubeuf, Universität, München.



FIG. 167.—A PRETTY ARRANGEMENT OF CUT FLOWERS.

* *Cypripedium debile*, Rehb. f., *Xenia* Orchidacea ff (1874), p. 223; Yokohama Nursery Co. Catalogue (1895), with coloured figure.

posed a head forester and director of a forest academy when while teaching his pupils he said that the Acacia is only fit for planting on soil where the Peach will grow.

I believe it was Lord Avebury who said that our ignorance cost us more than our education. *John Booth, Berlin.*

FORESTRY ON SMALL AREAS.

I WAS rather surprised to see a practical forester like Sir Herbert Maxwell (see p. 380) endorsing the idea that forestry would not pay, except on large areas. Why not? As private estates are laid out in this country, how can planting be carried out except on comparatively small areas? There is only one obstacle to planting small areas, and that is the slightly higher cost of fencing.

As to culture, timber of the best quality may be grown just as successfully on one acre as on one thousand, provided the margins are kept dense. The Dutch grow dense patches of Scotch Fir on allotments of much less than one acre, and some of these allotments may be seen stocked to their utmost capacity. There is seldom need, however, in this country to have such small areas. Numbers of private estates have woods of 20, 50, and 100 acres and upwards. The big area stumbling-block has only been started since the Continental "climate and soil," etc., has been disposed of. That plea of the old school was a failure. *J. Simpson.*

FRUIT REGISTER.

CHRISTMAS PEARS.

PEARS at this season are much in request. There are several varieties which are at their best at about this time, or which can be retarded or hastened as the case may be; but in either case the fruits must be such as were fully matured on the tree before they were gathered, and the storing must have been done with care. Pears at this time of the year are always better after having been placed in a little artificial heat, but only a day or so before required for the table, in which case they should be each wrapped in tissue paper and laid on some white wood-wool, and they should be taken to the dessert table in such condition. Only enough to make the required dishes should be put into heat at one time, or they will soon get past their best.

Beurré Alexander Lucas is a nice fruit when kept back for Christmas. The fruits are above average size, with tender and juicy flesh. The tree is a strong and good grower, and succeeds as single or double cordons.

Beurré d'Arenberg is a prolific bearer, and the fruits are of medium size, melting and juicy. It will succeed well as a cordon or as a fan-trained tree.

Beurré Bachelier is a large and good Pear, and succeeds well as a cordon or pyramid. It is an excellent stewing Pear.

Beurré Dumont is an average-sized fruit, with flavour somewhat like that of Williams' Bon Chretien.

Beurré d'Anjou is a fine fruit of good flavour. It succeeds well as a pyramid, and should be in every collection.

Charles Ernest is a large and handsome Pear, with a crimson colour next the sun. The flesh is melting and exceedingly juicy. The tree makes a fine pyramid and succeeds as a cordon or Espalier.

Crassane, an old favourite that is very delicious when it succeeds well. It is best when grown against a wall. The fruits should be carefully thinned out.

Easter Beurré.—This is a grand Pear at Christmas time, the fruits being of large size and the flesh buttery and melting. It succeeds as a

cordon or as a fan or horizontally trained tree against a south or south-west wall. The fruits need much sun to develop their true character.

Glou Morceau is large, and when well ripened is of good flavour, but must be thoroughly matured. The trees require a wall and a somewhat sheltered spot.

Le Lectier, large, with mottled-green skin, rich, melting, and juicy, highly perfumed, and of fine flavour. The tree is a good bearer.

Marie Benoist is a very prolific bearer, of large size and rich flavour. It is one of the best keeping Pears, and the trees make fine cordons or pyramids.

Ne Plus Meuris.—This Pear is best when cultivated against a wall. The fruits should be thinned early, as the variety bears usually in large clusters. The fruits are of good flavour, and by judicious management can be kept till March.

Nouvelle Fulvie.—This Pear has a melting flesh of rich flavour. It succeeds as a cordon against a south-west or south-east wall.

President Barabé.—The fruits are of medium size, with lemon yellow-coloured skin. The flesh is melting and juicy, and has a pleasant aroma.

Princess, a fine Pear that comes into season in November, but can be easily kept till Christmas. It succeeds as a pyramid or cordon on the Quince stock.

Triomphe de Jodcigne, a large and handsome fruit, which is covered with russet dots; juicy, and with a rich musky flavour.

Winter Nelis, of medium to small size, but a delicious Pear when in good condition. It is a somewhat delicate grower and should be planted against a wall, and it will grow there very well. The fruits should be allowed to thoroughly develop before they are stored. *W. A. Cook, Leonardslee Gardens, Horsham.*

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his correspondents.)

WINTER FLOWERING CARNATIONS.—Mr. Hemsley struck the key-note in his letter on p. 410, when he said that a winter Carnation show would afford opportunities for comparing varieties. At the present time this is most essential, but what will it be in three years time? Every Carnation grower in England and America has his own seedlings, and few of us can see faults in our own children, so that unless there is the opportunity of testing new varieties in a competitive class at an annual winter Carnation show many will be tempted to buy new but inferior varieties, while again, this will do away with the so-called new winter flowering Carnation which appears in the early spring. We all want the survival of the fittest. The "Souvenir de la Malmaison" Class is also growing out of hand, and every grower of this flower knows that many so-called "Malmaisons" which have even obtained an Award of Merit are not "Malmaisons" at all, but merely hybrid border varieties. A thoroughly representative Carnation society should be formed, to work in conjunction with the Royal Horticultural Society. The committee should be composed of Carnation specialists, whose business it is to know about all classes; three shows could be held—in winter, spring, and in summer; one for each class of carnation, so that if a nurseryman obtained an award or prize for a new variety it would be of some commercial value and a guarantee to all horticulturists that it was an improvement. This society could work in conjunction with the American Carnation Society respecting nomenclature, and put a stop to the reintroduction of old varieties. *Montagu Allwood, Bush Hill Park.*

—I have pleasure in informing you that an informal meeting of Carnation growers was held at the Vincent Hall on the 5th inst., at which Messrs. Dutton, Cutbush and others

were present. It was the opinion of those present, and of those who had communicated by letter, that a society in the interests of these flowers was desirable, but as the difficulty of reaching the various growers with a view to gaining a personal expression of opinion was great, it was decided that with the kind permission of the Royal Horticultural Society, growers should be invited to exhibit at one of the R.H.S. meetings late in February or early in March, and that the R.H.S. should be asked to grant medals and certificates for such exhibits. The reason for this decision was that such an exhibition might reasonably be expected to bring growers together from all parts of the country, and that a meeting could be held at the show for the purpose of forming a society with a duly-elected executive, and a definite programme drawn up for the furtherance of the aims of a Winter Flowering Carnation Society. As growers must of necessity be more or less unprepared for competitive classes, it was determined that no restrictions should be placed on exhibitors, except with regard to the amount of space occupied, and that in order to ensure support from large, medium, and small growers, three classes should be recognised, viz., those occupying 5, 15 and 30 feet of tabling respectively. Exhibitors may show cut bloom or pot plants, or a mixture of both accompanied by any description of foliage or foliage plants, but flowers other than Carnations are not admissible. In order that the general public may gain an idea of the magnificent sight afforded by a large mass of Carnations, it is earnestly hoped that every grower will do his utmost to support the show, both by exhibiting and attending personally, and thus accord to the Queen of Winter flowering plants the honour that is undoubtedly her due. Date and particulars of show can be had on application. *Hayward Mathias, Thames Ditton, Surrey.*

HIBISCUS HYBRIDS.—I have tried for three years to flower plants of these in the open, but have not succeeded. The plants make growths 5 feet high every year, with stout stems, good leaves, and plenty of healthy-looking buds, but all to no purpose; they are too late forming to open their flowers. This year I have had some at the foot of a south wall in a sunny position, but with the same result. *E. Molyneux.*

RELIEF FOR THE UNEMPLOYED.—A fortnight before Earl Carrington's letter appeared in the *Times* Mr. Myers informed me he would spend the money he had intended sending to the Queen's fund in labour on his estate and for the benefit of persons in his own neighbourhood. Having to cut 8,000 Larch trees this autumn, I find the labour most useful, and the employment is appreciated by those for whom it is intended—married men with families—who are unable to find employment elsewhere at this time of the year. After the Larch has been cleared, we intend to grub the roots, farm the land, eventually laying it down to pasture. *E. Molyneux, Swanmore Park, Bishop's Waltham, Hants.*

SUITABLE PLANTS FOR AZALEA BED.—"X.Y.Z." was recommended on p. 432 to plant *L. auratum* and *L. speciosum* in Azalea beds. I am of opinion the former is not likely to prove a permanent success, and that its variety, *L. a. platyphyllum*, would be much more serviceable and reliable. With respect to *L. speciosum*, there is in all probability no group of Lilies more admirably suited for the purpose in view. The red-flowered forms would be of especial value, and of these *L. s. cruentum* and *L. s. Melpomene* are the best. Were I asked to recommend any bulbous plant for a position in which the free use of manure as a mulch was regarded as essential, I should unhesitatingly say *Lilium speciosum*, which, among Lilies, may be cited as a gross feeder and, therefore, most unlikely to be injured by the application of manure. When planting the varieties of this Lily in this district, where the light loam overlies gravel and sand of great depth, I have purposely employed heavy dressings of cow manure 6-8 inches below the bulbs, and a further and less liberal application above the bulbs, or at about 4 inches from the surface. All the varieties of *L. speciosum* are stem rooters, and the mat of roots produced annually quickly exhausts the surface soil unless a mulch of manure is applied each year. The bulbs of this Lily should be planted at not less than 8 inches deep, and a good dressing of manure placed well below the bulbs.

When covering the bulbs with soil add more manure, as before suggested. In subsequent years the annual mulch will meet the requirements of the case. Formerly, manure was regarded as so much poison for all Lilies, but as a matter of fact, all the stem rooting species are benefited by its use. *L. auratum* and its varieties are of the stem-rooting class, and should be catered for accordingly. If "X.Y.Z." has a desire for more variety than is given, this may be increased by the addition of *Lilium pardalinum*, which will be quite at home in company with the Azaleas and their annual mulch of manure. *E. H. Jenkins, Hampton Hill.* [Our correspondent "X.Y.Z." states that he has endeavoured for two years to grow *L. auratum platyphyllum*, but the fungus *Botrytis elliptica* has rendered the attempt a failure.—Ed.]

—I have found that the following plants always succeed well in such a bed, and last for many years if given protection during winter with a mulching of leaf-mould:—*Tritoma uvaria* and its varieties, *Tropæolum speciosum*, *Lilium auratum*, and many other Lilies of different colours, and varieties of *Gladiolus*. The mulch is removed in spring. *Tropæolum speciosum* I always planted near to the Azaleas that they might root amongst the roots of the Azaleas and grow up and twine about their stems; they had thus a most pleasing effect with their beautiful scarlet flowers and small leaves. *Wm. Smythe, 48, New Town Road, Hove.*

THE DEFINITION OF A SPRAY.—Does not Mr. Davis take two bad examples in describing a spike—Phlox and Pentstemon. The former has panicles of flower and the latter racemes. Mr. Davis, in his illustration on p. 429, has defined the matter capitably. The next point is how to word the matter without causing inconvenience to schedule-makers. How would this do: "Three sprays, having no sub-division"? *E. Molyneux.*

—As an exhibitor and judge on occasions, may I suggest that when revising the schedule it should be made to read "12 sprays, or vases of decorative early flowering single or pompon Chrysanthemums, three collective stems to be wired or arranged so as to form one spray, showing not more than 12 inches of unbranched stem above the top of the vase." I would suggest that the wire be placed at the bottom of the stems, not too tightly, so that when the flowers are in the vase they would fall slightly outward and have a pleasing effect. Both exhibitors and judges would then know exactly what to do, and the effect would increase the attractiveness of the decorative part of the show, for we should get rid of the unsatisfactory arrangements often seen in some of the decorative classes. I agree with Mr. Molyneux that in defining the word "spray" it should be taken to mean the terminal shoot with all the flower buds and blooms left in a natural way with about 12 or 14 inches of unbranched stem. *G. W. Lilley, Gaddesby, Leicesters.*

SUMMER FLOWERS IN THE SOUTH-WEST.—As my notes on the above subject were compiled from between twenty and thirty gardens on the south coast of Devon and Cornwall, it would have been difficult, as suggested by Mr. T. H. Slade, page 429, to have stated in each case the nature of the soil in which the plants were growing. I think that temperature rather than soil is the chief element of success or the reverse in the culture of tender plants in the open air, for in many instances the same subject was to be seen doing equally well in various soils, but, in all these cases, a fall of temperature to many degrees below freezing point would have been disastrous. Mr. Slade's statement as to the variability of the Devon soil is well exemplified at Kingswear. The soil of the steep river banks on either side of the harbour's mouth is light and shaly, whereas in the surrounding country it is heavy red loam. *Cassia corymbosa*, spoken of by Mr. Slade as being grown practically under glass at Poltimore Park, does excellently entirely in the open in numbers of gardens. At Trebah a large portion of the front of the house is covered with it, and at Tregye there is a fine specimen, a supplementary illustration of which appeared on April 12th, 1902. This *Cassia*, which commences its floral display in August, may often be seen bearing flowers as late as Christmas. A plant, which I have known for two years in a Cornish garden, but which I did not allude to

in my former notes, is *Dahlia imperialis*. Though this survives the winter, I have never known it to perfect flowers. Mr. Slade reports 21st of frost at Poltimore Park. At Kingswear our severest frost this winter has been 5°. In rainfall we are considerably ahead, having registered, up to the end of November, about 6 inches in excess of the 24.40 inches reported by Mr. Slade. *S. W. Fitzherbert.*

HELLEBORUS NIGER (CHRISTMAS ROSE).—If several varieties of the above are grown, a succession of flowers may be obtained throughout the winter months. All are perfectly hardy, and will grow well in a deep, moist loam. A border facing to the north suits them well, providing the plants are protected from winds in spring when developing their leaves. Plant them early in the season, and never allow them to suffer from drought. They should be transplanted very seldom. Plants that are allowed to get thoroughly established flower much more freely than those which are frequently disturbed. To obtain pure white and clean flowers, handlights or temporary frames must be placed over the plants as they commence to throw up their flower-buds. Good varieties are *H. major*, pure white flowers, very good; *H. maximus*, very early, frequently commencing to flower in November, flowers large, slightly shaded with rose, very free; *H. Madame Fourcade*, of dwarf habit, and having light green foliage and pure white flowers; *H. angustifolius* (St. Brigid), flowers pure white, produced very freely, foliage distinct and light green; *H. vernalis*, of very vigorous habit, having leaves of deep glaucous green colour, and white flowers, tinged with purple, fragrant. The plant is suitable for exposed positions. *C. Ruse, Munden Gardens, Watford.*

APPLE WARNER'S KING.—I gathered four fruits from a tree planted in the gardens here in 1901, and I don't think an expert could have told them from Golden Noble. The tree produced 18 Apples. Other gardeners saw them and described the fruits as "fine Golden Nobles." *T. Pateman, The Node Gardens, Welwyn, Herts.*

PRESERVED FERNS.—There are few persons who undertake the duty of decorating the house and dinner table, the making of bouquets and "buttonholes," who have not had to lament the too early drooping of many of the more fragile subjects by reason of heat or close atmosphere, thereby neutralising to a great extent the effect the floral designs were intended to produce. Many expedients have been suggested to combat the evil, some going so far as entirely to employ artificial flowers and foliage. At Christmas-time, when festive and social gatherings are especially frequent, the difficulty is more acutely felt, perhaps, than at any other season of the year; but with at least two subjects very frequently employed for floral decoration the trouble seems in a way to be entirely removed. I was shown some bunches of *Adiantum cuneatum* and a bunch and length of *Asparagus plumosus* so well preserved that it was very difficult—especially in the case of the *Asparagus*—to discern that they had undergone any process of "preservation." The slight gradation of colour from the base to the termination of the spray of *A. plumosus* is as evident as in the fresh state. The delicate capillary-like stalks which carry the small leaves of the plant are not changed by the process employed in the preservation, and the spores show the various stages of development; even the fragile end of the fronds and the minute leaves are uninjured. There is no suggestion of rigidity pointing to the use of gum in solution, the Fern responding to a shake in a perfectly natural manner. The preserved Ferns will last flexible for years. I was shown two specimens (roots and all) of *Cyrtomium falcatum* and *Lastrea aristata variegata* Ferns, which had rested on a mantelshelf in a London sitting-room for longer than two years, and were uninjured, being only covered by a deposit of dirt, easily washed off. The preserved specimens would serve admirably as examples to a botanical class, being more suitable for the purpose than book illustrations or dried specimens. There is a great future for a process that will conserve the natural colours and forms of leaves and flowers; not only would it give pleasure in an æsthetic sense, but it would prove eminently useful in herbaria for

comparison. Experiments should be made further in this direction. Mr. Groome, of 8, Seckforde Street, Clerkenwell, E.C., owns the secret of the preserving process, and the profit of the sale of treated Ferns, etc., are entirely devoted to the Cripples' Industrial Training Branch of the Watercress and Flower Girls' Mission, the Clacton-on-Sea Home, and other philanthropic institutions. *R. T. Hesketh.*

BOYCOTTING JUDGES.—I agree with Mr. Challis (see p. 396) that judges have much to contend with. Some exhibitors who "travel the country," making a business of showing and collecting all the "plums" of the shows, should know better than to make such scenes as they do occasionally when they chance to meet with a more successful rival. Such exhibitors sometimes depend upon the same blooms of *Chrysanthemums* to do duty at a number of shows, and when they meet a more formidable opponent, possibly on his own ground with fresh flowers, they are so chagrined at the check received that they lavish remarks right and left, saying "the judging here is as rotten to-day as it was at 'Smoketown' yesterday!" Nowadays, when competition is keen, owing mainly to the excessive prizes given to induce exhibitors to visit certain shows, it very often happens that there are but a very few points separating the three first sets of flowers. No man can judge these accurately by just glancing at them; each has to be weighed in the mind, and every weak point considered before a just decision can be arrived at. It is an easy matter for an aggrieved person to collect his friends around a stand of blooms and ventilate his grievances; there are always willing hearers. I have known an exhibitor lodge a formal protest, even going so far as to deposit the usual fee required with the secretary, against the judge's award, solely because the result did not coincide with his wishes, especially when a win would have settled in his favour a valuable challenge cup. Exhibitors enter such competitions with their eyes open, when there is a clause in which it distinctly states, "The award of the judges is final." This, of course, applies to the merit of the exhibit, and not to a question of disqualification for not conforming to the rules. Instead of the suggestion that an appeal be made to a referee, it would be much better if the secretary were to quote a London policeman's well-known saying, "Pass along, please." I have always made a practice, when properly approached, of giving my reason for any award to an unsuccessful exhibitor, but from my experience during the late season I think it will be more wise in the future to act on a famous judge's advice to a jury, "Give your decision, but never give your reason." When you find a second prize winner asks where he is wrong, and you point out to him the weak points in his exhibit, he thanks you and says he is thoroughly satisfied, and you hear him say within a few days, "I never saw such judging as there was at 'Parkinson' the other day," and you know he is referring to the award over which he was so profuse in his thanks for information. Such conduct is enough to make one think harsh things of exhibitors. *A Judge.*

THE LATE HENRY ECKFORD.—The late grand old man of the Sweet Pea world has left behind one memorial which should be dear to the hearts of all growers of the beautiful annual, and cherished by them *in memoriam*, for all time. I mean that beautiful variety so worthily named after himself, and trust at the next exhibition of the National Sweet Pea Society exceptional prominence and a specially honoured class will be allotted to "Henry Eckford." *D.*

EXHIBITING FRUIT.—Will you allow me to draw the attention of fruit growers, particularly of those who are Fellows of the Royal Horticultural Society, to the very one-sided manner in which the schedule for their autumn fruit show is drawn up? Out of 111 classes at this show 105 are confined to amateurs, and only two classes are open to market-gardeners. When so much is being done to encourage our English growers to compete with foreign producers, it seems strange that they should be practically excluded from our most important fruit show. I do not suggest that special classes for market growers be added to the schedule, but that many of the existing classes should be thrown open, that all may compete on equal grounds. *K. M. Courtauld, F.R.H.S.*

SOCIETIES.

ROYAL HORTICULTURAL.

DECEMBER 19.—The last of the society's meetings for the year, held on this date, was favoured with glorious weather, so that there was a bright display of seasonable flowers, including several magnificent groups of Orchids. Fruit and vegetables were also represented, and although the exhibition was not the largest the hall has accommodated, it was equal in quality to the majority of those that have preceded it. There was no lack of novelties, for the Floral Committee recommended no fewer than 5 Awards of Merit, while the Orchid Committee recommended 1 First-Class Certificate and 6 Awards of Merit.

The two exhibits in the fruit and vegetable section were notable features, the display of Apples and Pears staged by Messrs. JAMES VEITCH & SONS being highly meritorious. In the afternoon 24 new Fellows were added to the roll of the society's members, and a

paper by Mr. John Craig, Professor of Horticulture at the Cornell University, Ithaca, U.S.A., on "A Glimpse of the Commercial Side of Fruit Growing in the United States," was read by the Assistant Secretary.

Floral Committee.

Present: Wm. Marshall, Esq. (in the chair), and Messrs. Chas. T. Druery, H. B. May, Geo. Nicholson, John Green, R. C. Notcutt, G. Reuthe, Wm. Howe, C. R. Fielder, James Walker, Chas. Dixon, C. Jefferies, H. J. Cuthbush, C. Shea, W. P. Thomson, E. H. Jenkins, W. James, Geo. Paul, James Hudson, and Ed. Mawley.

W. S. LAYCOCK, Esq., Oakbrook, Sheffield (gr. Mr. P. Massey), contributed an admirable display of winter flowering Begonias of the Gloire de Lorraine type. In addition to plants of the original variety were others, including Turnford Hall, and a new one, labelled Mrs. W. S. Laycock. This last-named possesses somewhat brighter and larger flowers than the well-known Gloire de Lorraine, and is of rather stronger growth than its

parent. The whole were admirably grown, and interspersed with flowering spikes of Calanthes, and with other foils such as foliage plants, &c. (Silver Gilt Banksian Medal.)

Messrs. ROCHFORD & SONS, Turnford Hall Nurseries, Broxbourne, Herts, also showed a batch of Begonia Gloire de Lorraine, with a few plants of the white variety Turnford Hall interspersed. The plants were growing in 48-size pots, but they were literally covered with their pretty inflorescences of bright pink-coloured flowers. Some larger specimens in teak baskets, adapted for suspending, were accommodated at the back-ground of the display. (Silver Flora Medal.)

Another good display of these useful winter-flowering subjects was staged by Messrs. CANNELL & SONS, Swailey, Kent. Here again were seen plants of the highest culture, the specimens being perfect pyramids of flowers. In addition to Gloire de Lorraine and Turnford Hall were observed small well-flowered plants of *B. Agatha compacta*. (Silver Flora Medal.)



FIG. 168.—CITRUS JAPONICA, FOR A VARIETY OF WHICH AN AWARD OF MERIT WAS RECOMMENDED ON TUESDAY LAST BY THE R.H.S. FLORAL COMMITTEE.

Messrs. VEITCH & SONS, LTD., Kings Road, Chelsea, showed a grand batch of *Jacobinia chrysocephala*, with a few taller plants of *J. coccinea* at the back, ground. At either end of the *Jacobinias* was a group of winter-flowering *Begonias*, including the fine semi-double Winter Cheer, also Julius, Agatha and the species *B. Socotrana*, that has contributed largely in the raising of the many beautiful winter-flowering *Begonias*. Messrs. VEITCH also displayed plants of the long-fruited Japanese Orange, *Citrus japonicus fructu elliptico*. (See Awards). (Silver Banksian Medal.)

Messrs. WM. BULL & SONS, Kings Road, Chelsea, showed a collection of ornamental foliage plants; all useful subjects for stove and greenhouse decoration.

Mr. H. B. MAY, Dyson's Lane Nurseries, Upper Edmonton, exhibited Ferns and various greenhouse plants including *Camellias*, a large batch of *Eranthemum pulchellum*, *Begonia* Mrs. Leopold de Rothschild, and some tiny, well-flowered plants of *Daphne indica alba*. (Silver Banksian Medal.)

Messrs. WM. CUTBUSH & SON, Highgate, N., exhibited a miscellaneous group of flowering plants, many of which had been subjected to the retarding process. These included *Lilacs*, *Liliums*, *Azaleas*, *Lily of the Valley*, &c. Among these were interspersed such things as *Begonias*, *Ericas*, *Astilbes* (*Spiræas*), *Citrus sinensis*—with numerous fruits, and a batch of the fragrant *Daphne indica rubra*. A number of choice *Carnations* completed the display. (Silver Gilt Banksian Medal.)

Mr. H. MORTIMER, Rowledge, Farnham, Surrey, showed vases of *Carnations*—*Enchantress*, *Nelson Fisher*, *Lady Bountiful*, *Mrs. T. Lawson*, &c. (Bronze Flora Medal.)

Mr. C. F. WATERS, Deanland Nursery, Balcombe, Sussex, in addition to vases of *Carnations*, showed pot plants of these flowers. The plants were all of the variety *Pride of Exmouth*, but the cut blooms embraced several, including *Floriana* (dark pink), *Harry Fenn* (crimson), *Mrs. S. J. Brooks* (white), *Enchantress*, &c. (Bronze Flora Medal.)

The Misses HOPKINS, Mere, Knutsford, Cheshire, showed a number of Alpine plants, including *Petasites fragrans*, coloured *Primroses*, *Polygala chaemebuxus*, and a delightful basket of *Christmas Roses*. (Bronze Banksian Medal.)

Messrs. JOHN PEED & SON, West Norwood, London, S.E., showed a number of Alpine plants. A small staging in the centre of the group was furnished with a collection of hardy succulents. (Bronze Flora Medal.)

Messrs. THOS. WARE, LTD., Feltham, Middlesex, showed a number of Alpine plants, *Chrysanthemum* flowers, plants of *Primula obconica* that were flowering well, and some commendable *Carnations*. (Bronze Flora Medal.)

Mr. GEO. BEAN, The Gardens, Cheswood, Worthing, showed a new incurved Japanese *Chrysanthemum* named *Cheswood Beauty*. The colour is deep bronze.

AWARDS OF MERIT.

Carnation Aurora.—A flaked variety, the ground being pale buff or deep cream-coloured, with bright red markings. The edges of the petals are slightly crenated. The flowers are of moderate size, and appear to possess non-splitting calyces. Shown by Mr. H. BURNETT, St. Margaret's Vineries, Forest Road, Guernsey.

Carnation Fair Maid.—This variety has enjoyed great popularity among *Carnation* growers, and is by no means a new acquisition. The flowers, which are developed on long stalks, are rose-pink in colour, and have fimbriated petals. The calyx is non-splitting. Shown by Mr. MORTIMER, Rowledge, Farnham, Surrey.

Chrysanthemum Dr. Enguehard.—This is a variety of French origin that has met with great favour in the United States of America. The flowers are pink, of rather stiff appearance, and of medium size. The florets are tubular for about three-fourths of their length. The plants are said to be very free in flowering, robust in constitution, and bushy in habit, and are admirably adapted for furnishing flowers that, when cut, will remain fresh for a long period in water. Shown by Messrs. R. H. BATH & CO., Wisbech.

Orange: Long-fruited Japanese [see fig. 168].—An ornamental greenhouse variety. The small trees, as shown in pots, were furnished with several dozen of small oval-shaped fruits, each about 1½ inches in length and 1 inch in diameter. The plants were about 2 feet in height, upright in habit, and of a highly decorative character. Shown by Messrs. JAS. VEITCH & SONS, Chelsea.

Nepholopis exaltata superba.—A crested form of great beauty, the fronds being plumose for the whole of their length. The principal bifurcations are in the apices of the pinnæ, which are often divided to the

third and fourth degree. The pinnæ are disposed obliquely to the rachis, and the whole frond has the appearance of a beautiful plume. Shown by Mr. H. B. MAY, Upper Edmonton.

Orchid Committee.

Present: J. Gurney Fowler, Esq. (in the chair), and Messrs. Jas. O'Brien (Hon. Sec.), de B. Crawshaw, N. C. Cookson, F. Wellesley, W. A. Binley, J. Douglas, W. Cobb, R. G. Thwaites, H. T. Pitt, A. A. McBean, F. W. Ashton, G. F. Moon, H. A. Tracy, T. W. Bond, J. W. Odell, W. H. Young, W. Boxall, W. H. White, R. Brooman-White, and Harry J. Veitch.

There was a grand show of Orchids, *Cypripediums* predominating.

F. MENTEITH OGILVIE, Esq., The Shrubbery, Oxford (gr. Mr. Balmforth), was voted a Gold Medal for a noble group extending 50 feet and occupying the end staging in the hall. Varieties of *Cypripedium* insigne were in profusion, nearly 500 flowers appearing, 100 of them being on the central batch of *C. insigne* *Sanderæ*. Arrangements of *Lælia anceps*, including the varieties *Chamberlainiana* and *Amesiana* were effectively displayed and graceful sprays of *Oncidium varicosum* arched over from the back, the whole being very tastefully arranged with foliage plants. Most of the best *Cypripedium* insigne were represented and other good ones not yet perfected. Also *C. × Venus*, *C. × Maudia*, and other hybrids; a selection of good *Phalænopsis*, *Lycaste × hybrida*, fine examples of *Masdevallia tovarensis*, &c.

JEREMIAH COLMAN, Esq., Gatton Park, (gr. Mr. W. B. Bound) was awarded a Silver Gilt Flora Medal for a very fine group, in which the *Calanthes* were splendidly grown and finely flowered, over 200 spikes appearing. The chief kinds were *C. × Bryan*, *C. × Wm. Murray*, *C. × Veitchii* and its variety *alba*, *C. × bella*, &c., the perfection of the flowers and their colouring being remarkable. The *Calanthes* were separated into sections by groups of *Lælia anceps*, including the true *L. a. alba*; the darkest and richest in colour, *L. a. Mrs. Jeremiah Colman*, and other leading kinds. Other *Lælias* were good, *L. autumnalis* *L. a. alba*; and *L. Gouldiana*. A selection of good *Cypripediums* set up with scarlet *Sophranitis*; a few early *Dendrobiums*, *Masdevallia cucullata*, with nine dark purple flowers, &c.

G. F. MOORE, Esq., Chardwar, Bourton-on-the-Water (gr. Mr. Page) was awarded a Silver Gilt Flora Medal for a fine group of splendidly-grown *Cypripediums*, including fine examples of *C. × aureum virginalis*, and other forms of that favourite hybrid; *C. × Chapmani*; *C. × Mrs. Tautz*; *C. × Minor* varieties; *C. × Niobe*; *C. × nitens*, of several handsome varieties; the pretty *C. × Blanche Moore*; *C. × Nandii*; *C. × Amy Moore*; varieties of *C. × Leeanum* and *C. insigne*; and the massive *C. × Beekmani*, one of the finest of *Cypripediums*.

Messrs. J. CYPHER & SONS, Queen's Road Nurseries, Cheltenham, secured a Silver Flora Medal for a fine group, set in their usual effective manner with *Odontoglossums*, &c. *Cypripediums* were in great profusion, some of the best noted being: *C. × Charlesianum*, *Cypher's* variety, a noble flower; *C. × triumphans*; *C. × Titius*; *C. × Alcibiades*; *C. × nitens*, *Arle Court* variety, a showy form; *C. × Euryades*, and its attractive variety, *viride*. Most of the best *C. × Leeanum*, *aureum giganteum*, and *Cypher's* variety being distinct; *C. insigne* varieties, including *Luciani*, *Sanderæ*, *Sanderianum*, and the distinct form *mosum grandiflorum*.

Messrs. SANDER & SONS, St. Albans, were awarded a Silver Flora Medal for a very interesting and effective group, in which were good specimens of *Cymbidium longifolium* and *C. elegans*; the singular *Habenaria bonatea*, a fine specimen of *Cœlogyne fuscescens*, *C. Massangeana*, and other species. The hybrids included the very dark and richly-coloured *C. × St. Albans* (*Antigone × Harrisianum* *Baron Schröder's* variety); *C. × Fairriana-Io* (*Fairrieanum × Io*), a pretty variety with bluish-rose feathered lines in the dorsal sepal; *C. × aureum* with yellow and white flower; *C. × Niobe*, *Shortbills* variety, and other hybrids.

The Hon. WALTER ROTHSCHILD, Tring Park, Tring, (gr. Mr. A. Dye) was awarded a Silver Banksian Medal for a very interesting group of rare Orchids, including *Pleurothallis Roezlii* with many racemes of its large chocolate-purple flowers; the pretty *P. scapha*, and the dwarf *P. pernambucensis*; *Masdevallia macrura*, with large fleshy yellow and red flowers; *M. striatella*, *M. platyglossa*, *M. cupularis*, *M. Mooreana*, *M. Reichenbachiana*, *M. triangularis*; the rare and pretty *M. trinema*, *M. bella*, *M. simula*, *M. tovarensis*, *Restrepia aspasiensium*, *Aeranthus Leonis*, and a graceful *Epidendrum* with a branched

spike of fragrant cream white flowers with downy ovaries. Probably a larger form of *E. lanipes*.

Messrs. CHARLESWORTH & CO., Bradford, were awarded a Silver Banksian Medal for a group in which the pretty rose and white *Trichopilia suavis* formed the centre. Others noted were *Cypripedium × Cardosianum* finely tinted with purple; *C. × Actæus magnificum*, still one of the best; *C. × Gravesiæ*, *C. Leeanum* varieties, *Lælio-Cattleya × Alcyone*, *Lælia × Lydia*, &c.

Messrs. HUGH LOW & CO., Enfield, received a Silver Banksian Medal for a group in which the yellow forms of *Cypripedium insigne*, including *C. i. Mrs. F. W. Moore*, were well represented; also varieties of *C. × Euryades*, *C. × Leeanum*, *C. insigne*, &c.

FRANCIS WELLESLEY, Esq., Westfield, Woking (gr. Mr. Hopkins), in a selection of hybrid *Cypripediums* showed the plant of the day—*C. × Thalia* *Mrs. Francis Wellesley*—which secured the only First Class Certificate (see Awards). The others were *C. × Mrs. de Vere Beauclerk* (*ciliolare × Fairrieanum*), a pretty flower of the *C. × vexillarium* class, and very delicately tinted; *C. × Hera exquisitum*, a large flower with fine, white, dorsal sepal spotted with purple, &c.

Baron SCHRÖDER (gr. Mr. Ballantine), sent *Odontoglossum × Wilckeanum Schröderianum* (see Awards O. × *Orphanum*, a prettily marked flower and *O. × Loochristyense*).

NORMAN C. COOKSON, Esq., Oakwood, Wylam (gr. Mr. Chapman), showed the very fine *Cypripedium × Leeanum Clinkaberryanum* with twelve very large flowers (Cultural Commendation), *C. × Sanderæ*, No. II., a brighter yellow than in the form shown before, and *C. insigne Sanderæ*.

Major G. L. HOLFORD, C.I.E., Westonbirt (gr. Mr. Alexander), showed the fine *Lælio-Cattleya × Clive*, *Westonbirt variety* (see Awards), and *L. C. × Clive delicata* (*L. præstans*, *Cypher's* variety, × *C. aurea*) with bluish white sepals and petals and rich ruby purple lip.

H. T. PITT, Esq., Rosslyn, Stamford Hill (gr. Mr. Thurgood) showed *Disa pulchra* and *Gomesa Barkeri*.

DREWETT O. DREWETT, Esq., Riding-Mill-on-Tyne (gr. Mr. Renwick), sent *Cypripedium × John Heale* (*Druryii × Youngianum superbum*), a neat flower, ivory white, with a greenish tinge, and spotting and marking of reddish purple; *C. × Ruby*, a large flower of the rubens class; *C. × villma* (*Norma × villosum*); *C. × Viola Lee* (*insigne* var., × *Leeanum*), a form of *Actæus*; *C. villosum auriferum*, and two others.

Mrs. HOLLAND, Wonham, Bampton, sent several hybrid *Cypripediums*.

C. D. PHILLIPS, Esq., J.P., Newport, Mon., sent the rather rare *Lycaste lasioglossa*.

J. BRADSHAW, Esq., Southgate (gr. Mr. Whitelegge), showed three fine plants of *Odontoglossum × crispollaryanum*, one having a branched spike, and *Lycaste Skinneri armeniaca*.

M. CHAS. VUYLSTEKE, Loochristy, Ghent, sent two good forms of *Odontoglossum × ardentissimum*, two fine *O. × Wilckeanum* and another hybrid.

Messrs. HEATH & SONS, Cheltenham, sent varieties of *Cypripedium × Leeanum*.

AWARDS.

FIRST-CLASS CERTIFICATES.

Cypripedium × Thalia, *Mrs. Francis Wellesley* (*insigne* var. × *Baron Schröder*), from FRANCIS WELLESLEY, Esq., Westfield, Woking (gr. Mr. Hopkins). Seemingly the best possible in its class, a model in shape, beautiful in outline, and fine in colour. The dorsal sepal, which is circular and quite flat, is white, with a small shining green base and evenly distributed rich purple spotted lines extending almost to the margin. Petals honey-yellow, tinged and veined with purple brown, a few darker spots being on the lower half near the centre of the flower. Tip tinged with red-brown, staminode yellow.

AWARDS OF MERIT.

Odontoglossum × Wilckeanum Schröderianum from Baron SCHRÖDER, The Dell, Egham (gr. Mr. Ballantine). A very fine flower, broad in all its parts, pale yellow, heavily blotched with red-brown.

Lælio-Cattleya × Clive, *Westonbirt variety* (*L. præstans magnifica × C. Dowiana aurea*). Flowers as large as those of a good *Cattleya labiata*. Petals, bright rose, extending 6½ inches, each 2½ inches across. Lip-veined with orange at the base, the broad front crimson.

Schomburgkia rhionodora from Sir TREVOR LAWRENCE, Bart., Burford (gr. Mr. W. H. White). A very pretty and distinct species with pure white flowers. The rose-purple coloured variety *Kimballiana* was also shown.

Cypripedium tessellatum rubens (concolor × *barbatum grandiflorum*), from Messrs. SANDER & SONS, St. Albans. A very attractive and distinct flower, unique in colour, it being of a uniform dark red tint with a shade of yellow and some purple spotting.

Cypripedium insigne "Aberdeen," from DREWETT O. DREWETT, Esq., Riding-Mill-on-Tyne (gr. Mr. Renwick). A fine flower closely approaching the variety Harefield Hall, but with smaller and darker spotting and rose blotches on the top of the dorsal sepal.

Cypripedium × *Mary Lee, Drewett's var.* (*Arthurianum* × *Leeanum*), from DREWETT O. DREWETT, Esq. A great improvement on the best forms of *C. Arthurianum*, the upper half of the dorsal sepal being white and bearing dotted purple lines.

CYPRIPEDIUM × MAGGIE FOWLER (*giganteum* × *elegans*), and *C. × Gammieanum* (*longifolium* × *elegans*). In consequence of the remarks by a correspondent in the *Gardeners' Chronicle* as to the identity of these two Orchids, the Committee had before them the Plate of *C. × Gammieanum*, from King and Pantlin's Orchids of the Sikkim Himalaya, and the drawing of *C. × Maggie Fowler*, together with other material considered before, as stated in the *Gardeners' Chronicle*, December 2, p. 388, and they unanimously agreed that there was no reason for considering the two plants as identical, and therefore the Award of Merit given to *C. × Maggie Fowler* must be sustained. The plant in question was, it was stated, obtained from Messrs. Charlesworth.

Fruit and Vegetable Committee.

Present: Geo. Bunyard, Esq., in the chair, and Messrs. Jas. Cheal, S. Mortimer, Wm. Pope, Alex. Dean, H. Markham, H. J. Wright, H. Parr, C. Foster, Geo. Kelf, W. Poupert, A. H. Pearson, and John Lyne.

Messrs. JAS. VEITCH & SONS, King's Road, Chelsea, exhibited a collection of 118 dishes of well-grown Apples and Pears. The more prominent dishes included, of Apples—Newton Wonder, Alfriston, Calville des Femmes, King Harry, St. Edmund Pippin, Belle Pontoise, Hornead Pearmain, Washington, American Mother, Dumelow's Seedling, Cornish Aromatic, Beauty of Kent, and Burnham Pippin (new.) Of Pears—Beurré Baltet Père, Winter Nelis, Easter Beurré, and Olivier de Serres. All the fruits were in a good condition. (Hogg Memorial Medal.)

The Apple John Kirk, that received an Award of Merit at the last meeting, has since been found synonymous with a well-known variety, consequently the award was rescinded by the committee.

Mr. FOSTER exhibited a collection of vegetables from the University College, Reading. These were of moderate size, and comprised clean, well-grown produce. Many winter salads were included in the collection. He had Chicory, Cardoons—splendid examples of this little grown vegetable—broad-leaved Batavian Endive, Radishes, Tomatos, &c. We also noticed well-grown "Albert" Rhubarb, Celeriac and Onions. (Silver Gilt Knightian Medal.)

THE LECTURE.

At the meeting held in the afternoon, under the Chairmanship of Mr. Geo. Bunyard, V.M.H., a paper written by Professor John Craig, of Cornell University, U.S.A., on "A Glimpse of the Commercial Side of Fruit Growing in the United States," was read by the Assistant Secretary. The earlier settlers in the United States had to rely upon European varieties of fruits, but the present day grower has evolved a race more suited to the requirements of the country, for he has infused the hardy character of the Russian Apples into his varieties with great success; and in the matter of other fruits, such as Grapes and Strawberries, he has inter-crossed the European with the hardy native varieties. The fruit industry is making rapid strides in the United States. In March, 1904, 3,000,000 barrels of Apples were awaiting shipment, while more than three million Peach trees were planted in Central Georgia in 1904-5. Cold storage has proved of incalculable value to the grower. It allows fruit to be sent in condition 1,200 to 2,000 miles; it lessens the evils of gluts, and puts an embargo on the avaricious buyer. The distance of planting the trees, tillage, pruning, spraying, picking, grading, &c., were all dealt with in the paper. An interesting point was that dealing with spraying, to which the American fruit grower devoted considerable attention. The principal sprays used are the Bordeaux mixture, with which can be added arsenical compounds, and sulphur wash, the latter being a boiled composition of lime, sulphur, and salt, applied during the dormant season.

The following table is the result of experiments conducted in spraying:—

	Average yield.	Value in dollars.
Unsprayed	328	103
Sprayed once	346	139
" twice	374	143
" thrice	414	184
" five times	569	211

A series of lantern slides were shown to illustrate the paper.

Mr. Bunyard offered some remarks on the paper, and contrasted our Apples to their advantage with those from America. None of the American varieties had been found to succeed in this country with the exception of Mother, King of Tompkin's County and Wealthy. It was found that the majority of kinds were a long time before they reached the fruiting stage. The speaker had waited 21 years before a tree of Northern Spy had borne fruit, while he had never known Rhode Island Greening to even form fruit buds in this country.

ROYAL HORTICULTURAL SOCIETY OF ABERDEEN.

ANNUAL MEETING.

DECEMBER 2.—The annual meeting of this society was held on the above date; Mr. Samuel Pope, vice-chairman, occupied the chair.

The Secretary, Mr. J. B. Rennett, Advocate, Aberdeen, submitted the annual report and accounts, which showed a deficiency on their annual exhibition, which was held on August 24, 25 and 26 last, of £77 12s. 11d., accounted for by the bad weather experienced on the days of the show, and especially the last day.

A letter was read from the Governors of the Aberdeen and North of Scotland College of Agriculture, intimating that they had decided to establish a course of lectures for horticulturists and all concerned free of charge. The lectures are to be delivered by Dr. John Wilson, agricultural department of the University of St. Andrew's.

LINNEAN SOCIETY OF LONDON.

DECEMBER 7.—Prof. W. A. Herdman, F.R.S., President, in the chair.

Mr. W. T. Hindmarsh, F.L.S. sent three photographs taken by Mr. J. C. Ruddock in April last of a plant of *Shortia uniflora*, Maximowicz, in his rock-garden at Albank, Alnwick; the plant this year had 60 blooms, more than double the number it had the previous year.

Mr. H. J. Elwes and Mr. Frank Crisp spoke on the difficulty of inducing the plant to flower in cultivation, and Mr. E. M. Holmes also contributed some remarks.

Dr. A. B. Rendle, F.L.S., showed a branch of a *Widdringtonia* from a farm belonging to the late Cecil Rhodes in Rhodesia, showing two forms of leaves.

Mr. James Saunders, A.L.S., showed a series of lantern-slides illustrating the habits of Mycetozoa. His observations were practically confined to species seen within a radius of ten miles from Luton. Out of 207 species catalogued by Mr. A. Lister from the whole world, no fewer than 96, or 46 per cent., have been found in the district specified. The species shown were *Badhamia utricularis*, *Trichia varia*, *Chondroderma radiatum* and *Physarum leucopus*, with remarks on their irregular and uncertain appearance, and the distribution in certain parts of the world.

The President commented on the exhibition, and mentioned that a small dried-up plasmodium had long served him for demonstration to his junior classes on the phenomenon of restoration to activity by moisture and warmth.

Dr. Jonathan Hutchinson, F.R.S., then gave a résumé of his paper "On the Ætiology of Leprosy," which was communicated by the Rev. T. R. R. Stebbing, F.R.S., Sec. L.S., and in which the author attributed the cause of the disease to the consumption of decaying fish.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

DECEMBER 7.—If the above society may be allowed to claim a "red letter day," it would be on the above date, for never before was the dingy Coal Exchange so beautifully brightened by the choice products of Nature.

First and foremost was a magnificent display of plants, the property of that genial amateur, Mr. G. F. MOORE, of Bourton-on-the-Water, in Gloucestershire. When it is known that the collection staged by this grower required two pantechneon vans for its conveyance to Manchester, it can easily be imagined that a fine show was the result.

We occasionally see some good shows in our northern city, and we have amongst us some of the best and

most enthusiastic of cultivators, but, to the credit of Mr. MOORE be it said, there has never yet been staged such a well-grown display of Orchids—principally *Cypripediums*—as the group shown by him on this date.

The group occupied about 60 feet run of wide tabling and was most effectively arranged; in the background were graceful Palms and a few bright *Codiaeums*, while nodding gracefully over the more sober coloured *Cypripediums* were some fine plants of *Oncidium varicosum* var. *Rogersii* and *Dendrobium Phalaenopsis* var. *Schröderiana*. Varieties of *Cypripedium insigne* were perhaps the most notable things in the group, there being dozens of distinct and named varieties, a few of which were given awards by the committee. (See Awards.)

The award of the society to this group was a Gold Medal and a special vote of thanks.

A. WARBURTON, Esq., Hazlingden (gr. Mr. T. Raven), staged a nice group of plants, in which were noticed half-a-dozen good plants of *Cypripedium insigne*, Harefield Hall var., several good forms of *Odontoglossum crispum*, *Cypripedium* × *Thalia* var. *magnifica*, *C. × Mary Beatrice*, a richly-coloured hybrid and *C. × aureum* var. *Purity*. (Silver Medal.)

R. ASHWORTH, Esq., Newchurch (gr. Mr. Pidsley), exhibited a collection of *Odontoglossums*, one being of exceptionally nice quality called *O. crispum* var. *Miss Lucienne Linden*, unfortunately the spike had been disbudded and in consequence the committee could not deal with it for "honours." (Silver Medal.)

Messrs. JAMES CYPHER & SONS, Cheltenham, put up an attractive group of plants, one plant alone, viz., *Cypripedium* × *Leeanum* var. *gigantea*, with over 50 flowers, received a Silver Medal. Other good things in this group were several yellow *Cypripedes* and good examples of *C. Harefield Hall*. (Silver Medal.)

Messrs. CHARLESWORTH & Co., Bradford, in addition to a good show of various plants, sent the wonderful *Odontoglossum* × *Smithii* (see p. 427, fig. 158). As an appreciation of good hybridisation and selection the committee awarded this plant a F.C.C., a Gold Medal, and for the group a Silver Medal.

Messrs. SANDER & SONS, St. Albans, staged a nice group of hybrid *Cypripediums*, several good forms of *C. × Hitchensæ* being noted. (Vote of Thanks.)

Mr. D. McLEOD, Chorlton-cum-Hardy, exhibited a few *Cypripediums*, in which were noted the seldom seen *C. × Morganæ*, a fine form of *C. × nitens*, and some yellow forms. (Vote of Thanks.)

Other exhibitors included Mr. J. ROBSON, Messrs. A. J. KELLING & SONS, S. GRATRICK, Esq. (see Awards), H. H. CLEGG, Esq., CH. VUYLSTERE, G. W. LAW-SCHOFIELD, WALTER LAVERTON, Esq., R. BRIGGS BURY, J.P., J. LEEMANN, Esq.

FIRST CLASS CERTIFICATES

were awarded to the following plants:—

Odontoglossum Wilckeanum Rex, from Mr. C. VUYLSTERE; *Cypripedium Thalia* *magnifica* and *C. Mary Beatrice*, from A. WARBURTON, Esq.; *Cypripedium F. H. Cann* (*insigne montanum magnificum* × *Leeanum magnificum*) and *C. insigne Sylhetense giganteum*, from G. F. MOORE, Esq.; *Odontoglossum Smithii* (*Rossii rubescens* × *Harryano crispum*), from Messrs. CHARLESWORTH & Co.

AWARDS OF MERIT.

Cypripedium × *Westpointense* (*callosum* *Sanderæ* × *bellatulum album*) and *C. F. Sander*, from S. GRATRICK, Esq.; *C. × Tityus*, *Schofield's var.*, from G. LAW-SCHOFIELD, Esq.; *C. × aureum* var. *Purity*, from A. WARBURTON, Esq.; *C. insigne* var. *Leo*, *C. × Arthurianum*, *Leemann's var.*, and *C. × Standard*, from J. LEEMANN, Esq.; *C. × Blanche Moore* and *C. insigne Kathleen Corser*, from G. F. MOORE, Esq. P. II.

DUBLIN SEED AND NURSERY EMPLOYEES' ASSOCIATION.

DECEMBER 9.—The third annual dinner and social reunion of this progressive association was held on the above date at the Gresham Hotel, Dublin. Mr. J. J. Egan, J.P., presided.

Mr. Houston, in proposing the toast of "The Association," said it had had a brilliant career during the last year. The membership had increased, more employers had come to their aid, they had undertaken four excursions, held two public lectures, while they had also inaugurated a series of plant-class lectures in connection with which the members had to do real study, and carry out certain experiments. The junior members had been particularly earnest in this, and the average attendance at the classes was the large one of 40. They also showed great activity in regard to the competitions. He hoped the next advance to be recorded would be the establishment of a home where

the members could meet and where they might keep such collections of plants and grasses as were the outcome of competitions.

Mr. J. J. Egan, in reply, said that the intelligent application of the science of botany in regard to agriculture and horticulture was essential to the members of their trade, especially considering the many things a seedsman was supposed to know.

In proposing "Our Employers," Mr. R. Burn said the Association could not have done so much had it not been for the interest of their employers.

Mr. D. MacLeod, in reply, said the Association had received at the hands of employers support it well deserved, and the more they saw of its members the better they liked them. It had been suggested that they wanted a habitation of their own, and he hoped the time was not far distant when that would be forthcoming. In conclusion he strongly urged them to "go on."

EDINBURGH MARKET GARDENERS'.

DECEMBER 19.—The annual meeting of the Edinburgh Market Gardeners' Society was held on the above date, in No. 5, St. Andrew's Square, Edinburgh, at 10.30 a.m. The President, Mr. Alexander Douglas, Brunstane Bank, Portobello, said the past year had been exceptional in some respects. They had enjoyed a remarkable degree of sunshine, and dry weather, and taken as a whole, the season had been a fair one to all gardeners. Mr. Douglas referred to their affiliation with the Chamber of Agriculture, by which they had an opportunity of ventilating their grievances, such as the opposing of the lighting of common carts, the regulating of the speed of motors on roads, and the apportioning of the upkeep of the roads by taxes on the motors. He mentioned that in past years the conveners of the Markets Committee of the Town Council had given expression to the desire to assist the gardeners in providing for their convenience and comfort, and the gardeners had been fairly well treated in that respect.

The Secretary, Mr. Peter Gemmill, then read the minutes of the last annual meeting, and also of the committee meetings which had taken place during the year, showing that the Waverley Market had been requisitioned very frequently for various purposes. The Committee had to be often called together to safeguard the interests of the Market Gardeners, their efforts in this direction being on the whole satisfactory.

Mr. James W. Scarlett, the Treasurer, reported that the income for the year amounted to £73 13s. and the expenditure to £43 14s. 3d., allowing a balance of £29 18s. 9d. to be carried to the capital account. The reports being adopted, office-bearers were elected, and thereafter the stances were drawn by ballot, four new applicants being admitted and two transfers.

Obituary.

MRS. PETTIGREW.—The widow of the late Mr. Andrew Pettigrew, who was for many years gardener to the Marquis of Bute, at Cardiff Castle, passed away on the 16th inst., after a few days' illness which resulted from a chill. Mrs. Pettigrew was in her 74th year, and was well known by a large number of gardeners, including the present writer, who have at various times been employed at Cardiff Castle, all of whom will cherish her memory with feelings of the deepest respect, for her character was universally admired. Mrs. Pettigrew has not long survived her husband, who died on April 26, 1903. She leaves three sons, all head gardeners, and one daughter, with whom much sympathy will be felt in their bereavement. *R. H. P.*

MRS. HISLOP.—Friends of Mr. A. Hislop, The Gardens, Bletchley Park, Bletchley, will regret to hear of the loss sustained by him in the death of his wife, at the age of 61 years.

GARDENERS' DEBATING SOCIETIES.

BATH GARDENERS'.—Mr. T. Parrott presided over the fortnightly meeting of this Society, held at the Foresters' Hall, Bath, on Monday, the 11th inst. There was a large attendance, and the exhibits displayed were beautiful and numerous, chief among them being some fine Primulas shown by Messrs. H. Sparey and A. Parker. Mr. Butt exhibited a fine collection of Vegetables, and Mr. Bickerstaff an excellent dish of "Winter Beauty" Tomatoes. The Chairman made a statement regarding the future plans of the Society. A good programme of lectures was arranged for the New Year, and the second annual smoking concert will be held on January 8. The Chairman read an instructive

paper on "Begonia Gloire de Lorraine," of which he made a special study. An interesting debate followed. Four new members were elected.

BECKENHAM HORTICULTURAL.—Mr. R. B. Leech, F.R.H.S., gave an interesting lecture before the members of this Society, on Friday, December 8, on the methods of bottling fruit. The Rector (the Rev. H. Araft) presided. For stone fruit fill bottles to within three-quarters of an inch of the top. Next place half a pound of cane sugar in a jug and add a quart of hot water to melt the sugar. This should be poured over the fruit until the bottles are about two-thirds full, and then the bottles would be ready to place in the boiler. Next three parts fill the boiler with cold water, and place the same on a fire and bring the water to the heat of 160 degrees. The bottles must remain at this heat for 15 minutes, after which they should be drawn to the side to gently cool. The lid must not be taken off the boiler while the fruit is being sterilised. For all small fruit, such as Currants, Raspberries, Strawberries, &c., they should first be put into an enamel saucepan and brought to the boil, and let the fruit be placed into the bottles and then into the boiler as for the stone fruit. The Rector handed Mr. Webster a handsome eight-day clock in polished birch case, with an inscribed plate as follows:—"B.H.S. Presented to Mr. Mark Webster by appreciative friends on his retirement from the office of librarian, November, 1905."

BIRKENHEAD AND DISTRICT GARDENERS'. On Thursday, December 14, in the Y.M.C.A. Rooms, Birkenhead, a lecture was given before the members of the above Association by Mr. Herbert May, Westwood Gardens, on the "Cultivation of the Cyclamen." The lecture proved very interesting, and a discussion followed. The syllabus of lectures arranged by the Association for the session promise some very useful and instructive gatherings. The next of the series is to be held on January 4, when the subject is "The Diseases of Plants due to Parasitic Fungi: with Remedies." *H. M.*

CHELMSFORD AND DISTRICT GARDENERS'.—The lecture at the recent meeting of the above Society was given by Mr. Williams, the subject being "Sweet Peas, their History, Development, and Culture." The lecturer referred sympathetically to Mr. Eckford and his work among this flower. *W. C. S.*

EGHAM AND DISTRICT GARDENERS'.—At the meeting of this Society, held on December 6, Mr. W. Swan in the chair, Mr. Deadman, of the South-Eastern Agricultural College, Wye, gave a lecture on "Bush and Small Fruits, including Black and Red Currants, Gooseberries, and Raspberries." The lecturer gave useful information on choosing the land, draining the same, planting, pruning, and destroying insect pests. In the case of Black Currants, he advised planting the young bushes in threes, and cropping them as hard as possible, and when the mite made its appearance to grub them and burn them. Mr. Sturt exhibited a collection of cut Chrysanthemum blooms, and Mr. Wilkins, gardener to Mrs. Barber, Park House, Englefield Green, exhibited some well-grown plants of Calanthe Veitchii, among which was a plant with two flowering spikes, the flowers of one inflorescence being beautiful flesh-pink colour, while those of the other were of the usual colour.

REDHILL, AND REIGATE DISTRICT GARDENERS'.—A meeting of the above Society was held on Tuesday, December 12, Mr. W. P. Bound in the chair. About 100 members were present to hear Mr. F. C. Legge, Patteson Court Gardens, Nutfield, read a paper on "The Cultivation of Violets for Winter Flowering." The lecturer gave a very clear and practical description of his method of culture of these flowers. Several questions were asked, and a capital discussion followed. The meeting proved to be one of the most interesting and instructive held by the Society. A collection at the close of the meeting was made on behalf of Mr. Burdett, who has become incapacitated through illness, and in consequence the sum of £4 3s. will be forwarded to Mr. Burdett by the Secretary. *T. H.*

ENQUIRIES.

MR. C. PALMER.—Will this gentleman, who compiled so many important statistics relating to the Coniferæ, oblige by communicating his present address to the Editor?

GARDEN WEED.—How can I eradicate the Barmido weed [?], or Wild Convolvulus that has been growing for a long period in my garden in the Isle of Wight and has got a firm hold? *J. B.*

ANSWERS TO CORRESPONDENTS.

AUSTRALIAN FLAME FLOWER: Saloph. There is no such name as Pousiana gloria. Perhaps you refer to Poinciana regia, which, however, is not Australian, but a native of Madagascar, and India. If you can give us more particulars we will try and help you.

BEETLE: A. C. The insect is the common Water Beetle, *Dytiscus marginalis*.

BEGONIA GLOIRE DE LORRAINE: Failure. The plant has all the appearances of having suffered a check, such as would be caused by cold draughts, or even watering with very cold water. Each sample of loam appears to be very heavy and close in texture. The soil should all be incorporated with some substance such as farmyard manure, in order to supply humus, and to make them friable and pervious to the atmospheric gases.

BOOKS: Perplexed. We expect you refer to "Gardens, Old and New," a book published by George Newnes, Ltd., at the office of *Country Life*.—*F. E. G.* "Fern Growing," by E. J. Lowe, published by John C. Nimmo, 14, King William Street, Strand, in 1895. A less expensive work, but a thoroughly reliable one, "Choice Ferns for Amateurs," by George Schneider, published by L. Upcott Gill, Bazaar Buildings, Drury Lane, or it can be had from our publishing department.

CARNATION: J. O. C., and B. V., Silesia. The plants are attacked by a fungus, probably *Helminthosporium*. Destroy the affected leaves at once.

CHRYSANTHEMUMS: Grower, Yorks. The condition is familiar enough to cultivators of these plants, especially late in the season. We have ourselves frequently seen plants set flower buds in December, and instead of developing them normally, in the new year have started into fresh growth, thus causing the flower buds to remain dormant. In your case it may be partly due to the plants having been subjected to more heat and moisture than was desirable. The condition is physiological and is not caused by mites or fungus pests.

HYACINTH BULBS: G. A. We can discover no disease, neither do there appear to be any bulb-mites. The failure may be due to some detail in the cultivation.

INOCULATION OF SEEDS: M. D. We know nothing of such a practice as you describe.

MONOGRAPH OF THE GENUS GERANIUM: F. B. S. We have no clue to the purchaser. Apply to the auctioneers, Messrs. Sotheby, Wilkinson and Hodge, Wellington Street, Strand, W.C.

NAMES OF FRUITS: G. B. Apple, Winter Hawthornden; Pear, Madame Eliza.—*W. H. N. B.* Apple, Catshead, a very old sort; Pear, Winter Nelis.—*L. Foxbrook.* The fruits were shrivelled and partly decayed. They appear to have been gathered much too soon.—*D. Bros.* Beurré Dumont.—*W. Lowday.* Graham or Kentish Deux Aus.—*W. H.* Gooseberry Pippin.

NAMES OF PLANTS: Iris. *Iris foetidissima*, variegated variety.—*A. M. S.* *Cosmos sulphureus*.—*R. M.* *Moschosma riparium*. See fig. 13 in our issue for January 9, 1904.—*Stephen Castle.* *Melia Azedarach*, the Pepper Tree. A native of India, commonly grown in the Riviera.—*T. S.* Essex Common Chickweed, *Stellaria media*.

PACKING ORCHIDS: E. C., Java. The terrestrial Orchids should be sent in the resting stage, as resting tubers. Place the tubers in a tin box or a box made of some other material which will not permit much evaporation. When the box is nearly full of tubers run in between the tubers enough fine, sandy, moist soil to fill the box when properly shaken down. Then fasten down the lid and forward at once. The soil must be moist, but not too wet when used for packing. Strong-growing Orchids such as Phaius require no preparation. All the Phaienopsis you mention are varieties of *P. amabilis*, Blume.

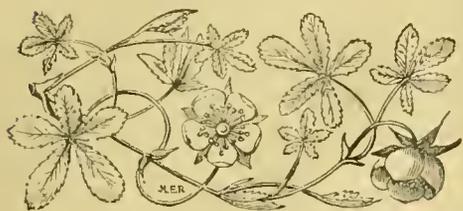
PEARS: W. H. Your Pears have the appearance of having been frozen whilst on the trees. We cannot account for the condition in any other way.

PRUNING: W. F. B. Apple and Pear trees out of doors should be pruned without delay, also the out-of-doors Grape vine, and that in the cool house provided all the fruit has been cut.

RESIDUE FROM CESSPOOL: Reader. Assuming that it is night soil of which you have written, it will not be advisable to apply it to the soil until the material has undergone further preparation, although it has lain for two months. Mix with it a quantity of lime, road scrapings, wood ashes, etc., and turn over the whole mass occasionally, after which it may be used early in the month of March for any of the crops in the kitchen garden that require animal manure.

TURF FOR PURCHASE: L. H. E. Apply to the nearest nurseryman, who will be sure to give you the information required.

COMMUNICATIONS RECEIVED.—Comte de K.—S. W. F.—W. W.—F. C.—R. J. A.—J. F. B., Queensland—A. S.—R. N.—E. B.—J. E. T.—G. D.—R. A. R.—Geo. Hansen, Berkeley, California—C. T. D.—A. F. G.—H. J. E.—W. J. V.—D. D.—G. B. M.—H. J. C.—J. Mc. D.—W. J. B.—W. H. D.—D. P.—J. F. P.—G. H.—W. W.—C.—A. C.—J. E. S.—A. E. L.—C. A. M.—J. T.—R. Y.—J. B.—W. J. B.—H. J. B.—W. E. G.—R. E. F.—D. W.—J. G.—W. H. D.—H. W. T.—J. J. D.—J.—Quill—T. S.—R. S.



THE

Gardeners' Chronicle

No. 992.—SATURDAY, December 30, 1905.

CONTENTS.

Agapanthus umbellatus globosus ... 459	London markets, the ... 451
Apple, Lord Suffield, hardness of the blossom of ... 457	Nile, the flooding of the Obituary—
Azalea beds, suitable plants for ... 456	Burbridge, F. W. ... 460
Books, notices of—	Orchids at Chillingham Castle ... 456
The Italian Lakes ... 451	Plants, new or noteworthy ... 449, 450
Carnation exhibition in winter, a ... 457	Rain-water in Yorkshire ... 457
Carnation, origin of the name ... 449	Salvia Pitcheri ... 460
China, plant collecting in	Senecio (Ligularia) Veitchianus ... 455
Cypripedium flower, an abnormal ... 450	Shrubberies ... 457
Dickson, Mr. George, Events of the Year ... 454	Societies—
Fig-trees out-of-doors, Fungoid diseases, and the need for legislation ... 458	National Dahlia ... 460
Galingale, the edible ... 457	Royal Horticultural ... 459
(risks of Russo-Turkistan ... 455	Soil, effect of plant growth and manures on the ... 455
Japanese Maples ... 457	Thalictrum Delavayi ... 450
Kew, literary output of ... 456	Trees and Shrubs, deciduous ... 458
	Trees, some pyramidal and columnar shaped ... 457
	Vanda Sanderiana, 'Chillingham variety' ... 455
	Week's work, the ... 452-453

ILLUSTRATIONS.

Bullock, A., portrait of ... 453
Burbridge, F. W., portrait of the late ... 460
Clarke, W. H., portrait of ... 453
Cypripedium flower, an abnormal ... 451
Eyre, W., portrait of ... 453
Jordan, F., portrait of ... 452
Miller, W. A., portrait of ... 453
Senecio (Ligularia) Veitchianus (Supplementary Illustration)
Thalictrum Delavayi ... 450
Young, W. H., portrait of ... 452

THE ORIGIN OF THE NAME "CARNATION."

There seems to have been some difficulty felt by etymologists in discovering the origin of the word "Carnation" as a name; though there is no doubt as to that of the use of the word to indicate colour. In the 16th century that meant "flesh-colour," from "Fr. carnation (Littre)—Lat. acc. carnationem, fleshiness" —(Skeat),

Dodoens, in his "History," uses it in this sense:—"Some be of colour white, some carnation or of a lively flesh colour, some be of a cleare bright red," &c. This is in reference to varieties of the carnation.

In the numerous (about 70) entries of the names and descriptions of the carnation in Caspar Bauhin's *Pinax* (1671), the words *carneus* and *incarnatus* were never used as descriptive terms of *Caryophyllus* (the usual name) until 1612, by T. Theodorus de Bry and Emanuelus Svvertius. In the 16th century the red colour was always designated by *ruber*, *purpureus* and other words.

The earliest use of the word *carnation* as a name for the flower appears to be in an edition of Dodoens in 1578; hence we must look for some other origin than *caro*, *carnis*, "flesh for the name."

Referring again to the *Pinax*, it appears that Conrad Gesner first added the term *coronaria* to *Vetonica altilis*, a name Dodoens adopted from Pliny in his *De Hortis Germaniae Liber*, 1561.

Coronaria refers to the fact that it was one of the flowers grown in the *Area coronalis*, or

"border for chaplet-flowers," according to Carolus Stephanus, in his *De Re Hortensi, Libellus*, 1536.

In a somewhat imperfect edition of Dodoens' *History of Plants*, the date being lost, occurs the following sentence:—"Vetonica altilis and V. coronaria, in English, garden gilliflowers; and the greatest and bravest sort of them are called coronations and coronations." This repetition of the last word is clearly a misprint; for in other, doubtless later editions, it is "coronations or coronations." The first name occurs in Spencer's "Shepherde's Calendar"—"Bring coronations and sops in wine." These stood for varieties of the carnation. The date would be about 1570.

LOBEL in his *Plantarum seu Stirpium Historia* (1576) figured a double-flowered Carnation under the name *Caryophyllus*, saying, *Nostrates Caryophylli, an Cantabrica, Plinii?* Authors were divided as to which of the two plants *Vetonica* and *Cantabrica* mentioned by Pliny meant (if either?) the Carnation. LOBEL then gives as the English names, "Coronations and dole Gilliflowers, also Gelyflows and Gelouers." *Caryophyllus* was the official name suggested by the scent of Cloves; for Gerarde says: "The Clove Gilliflower is called of the later Herbarists *Caryophylleus flos*." This title of *Flos Caryophyllorum* appears to have been given to the flowers by Adamus Lonicerus of Frankfurt.

In a work (oblong folio) containing 61 copper plates, with 120 figures of flowers, fruits, &c., but without title page or date, the double Carnation is figured under the name *Caryophyllus maximus*, Angl. "Coronations double." The Latin text runs as follows:—"Cariophylleus maximus inter coronarias herbas, familiam ducere creditur *Caryophylleus flos*. This shows that the flower had acquired a special distinction as *coronarius*.

The name "Carnation" would seem to fix the date as about the same as LOBEL's work, or 1576.

Now, in a copy of Dodoens' *History of Plants*, 1578, the sentence I have quoted from in all probability the earliest edition, is as follows:—"Vetonica altilis, Carnations, and the double Clove Gilliflowers."

This appears to be the earliest use of "Carnations" for "Coronations," and it gives us the date of the change.

In Gerarde's *Herbal* (1597) we read:—"The great double Carnation (figured as three inches in diameter) is called *Caryophyllus maximus multiplex*; but the small variety is called *Caryophyllus multiplex*, the double Clove Gilliflower."

Speaking of the different varieties of "Clove Gilliflowers" Gerarde says:—"Some whereof are called Carnations, others Clove Gilliflowers, some Sops in Wine, some Pagiants or Pagion, colour horseflesh, bluncket, purple, white, &c. This passage shows that the name "Carnation" had superseded "Carnation" and "Coronation." Moreover, Gerarde does not here connect "Carnation" with the colour, which is described as "horse-flesh."

We now come to the question, how did the flower acquire the name of "Coronation," to begin with?

I offer the following as most probably the true explanation.

We have seen that no Latin word derived from *caro*, *carnis* ("flesh"), was ever given to this plant in the 16th century. The first

approach was the descriptive title *Coronaria*, added to *Vetonica altilis*.

Now, anyone familiar with the way in which gardeners, farmers and rustics mispronounce the names of plants, will have no difficulty in suspecting that "Coronation" was the nearest approach ignorant persons would make to anglicise *coronaria*—for strict etymology does not trouble them. They always take some familiar word which sounds to them something like the word misunderstood, as, e.g., *Wooden Enemies* (another variant is *Wooden Emilies*) for *Wood Anemones*; *Royal Horse-monger* was the nearest approach a rustic in Devonshire could make to *Osmunda regalis*! Greengrocers generally call *Asparagus*, *Spar-rergrass*, or even shorten it to "Grass."

Hence, we presumably get "coronation" for "coronaria." Then, if it be pronounced rather fast, the second o vanishes and we get "cor'nation."

Lastly, that the sound *or* can be readily changed to *ar* is seen to occur in numerous cases. Thus, "Chorle's Wain," a country name for the Great Bear, is now "Charles' Wain." "Chore" has become "char" in charwoman. Gorge and gargle, gore and char (a fish, red below), are respectively allied words, while George is frequently pronounced Gearge by rustics.

Hence, it would seem to be pretty clear how "Carnation," as a name, has been derived through "Carnation," from "Coronation," a corruption of "Coronaria."

It is a mere accident that it finally arrived at the same spelling as "carnation," the colour. *George Henslow*. (See *Ellacombe: Plant Lore of Shakspeare ed. II.*, p. 47. Ed.)

NEW AND NOTEWORTHY PLANTS.

ERIA GLOBIFERA, ROLFE, N. SP.*

THIS is another interesting novelty from Annam, which has flowered at the Royal Botanic Garden, Glasnevin, and has been forwarded to Kew for determination. It is one of the discoveries of Mr. W. Micholitz, collector for Messrs. Sander and Sons, and his corresponding dried specimen is localised as "found at Lang Bian, at 1,400 metres elevation." The species is allied to *E. leiophylla*, Lindley, which its author referred to the section *Trichotosia*, and for which Sir Joseph Hooker proposed a new section, under the name of *Pellaianthus*, though the plant is now better referred to the section *Dendrolirium*. It is not a showy plant, but is distinguished by its globose pseudo-bulbs, which are borne at short distances apart on a stout creeping rhizome, and bear a single oblong leaf at their apex—closely resembling those of *E. leiophylla*—and its single-flowered peduncles of light yellow flowers, striped with red-purple at the base of the segments, and covered outside with a very dense white tomentum. The pollinia are eight, and quite typical in character. *R. A. Rolfe*.

* *Eria globifera*, Rolfe.—Rhizomes creeping, stout. Pseudobulbs ovoid-globose, 6-8 lines broad, monophyllous, approximate, or less than their diameter apart, bearing at their base a pair of ovate-oblong veined sheaths, which envelop the base of the leaf and scape, but soon perish. Leaves oblong to linear-oblong, apiculate, narrowed at the base, coriaceous, 2-5 inches long, 4-6 lines broad; scapes erect, slender, 1½-2 inches long, densely white-tomentose, one-flowered. Bracts ovate, apiculate, about 2 lines long. Sepals densely white-tomentose outside; dorsal elliptical-oblong, obtuse, 7-8 lines long; lateral

oblique and broader at the base; colour inside light yellow, with three light red-purple lines at the base. Petals elliptical-oblong, obtuse, light yellow, lined with red-purple at the base. Lip recurved, about as long as the petals, three-lobed; side lobes rounded at the apex, narrowed below, white, closely striped with red-purple; front lobe elliptical-oblong, obtuse, yellow at the margin and somewhat thickened; disc white, lower half bearing a pair of broad undulate keels, somewhat clavate at the apex, with a slender intermediate keel. Column clavate, three lines long, white, its foot rather longer. *R. A. Rolfe.*

BONATEA ANTENNIFERA, ROLFE, N. SP.*

THE well-known *Bonatea speciosa*, Willd. (*Bot. Mag.*, t. 2296), is one of the most complex in structure among South African Orchids, if not indeed in the whole family, for the specialisation of organs is carried to such an extent that it is difficult to make out what some of them represent. Darwin remarked: "I should doubt whether any member of the Orchidean Order has been more profoundly modified in its whole structure." An allied, but very distinct, species has been sent from Rhodesia by C. F. H. Munro, Esq., and is now flowering in the collection at Kew. It is much taller, being 3 feet high, and has longer leaves, and a laxer inflorescence of equally large flowers, with the lobes of the lip and petals much more slender, about 2 inches long and antenna-like, in allusion to which the name is given. The colour shows no difference, being green and white in both species. Its characters are pointed out in the annexed description. *R. A. Rolfe.*

* *Bonatea antennifera*, Rolfe.—Plant about 3 feet high, with somewhat glaucous stem, leafy up to the inflorescence. Leaves oblong, subacute, spreading, with an amplexicaul base, 3-6 inches long, the upper somewhat smaller, and passing into the bracts. Raceme lax, many-flowered, about 9 inches long. Bracts lanceolate, acuminate, convolute round the pedicels at the base, 1-2 inches long. Pedicels $2\frac{1}{2}$ inches long. Dorsal sepal elliptical, acuminate, very concave, 11 lines long; lateral pair obliquely oblong, acuminate, recurved at the apex, an inch long, with an acute tooth on the inner margin near the apex. Petals deeply bipartite, the posterior lobe linear, acute, appressed to the margin of the dorsal sepal, anterior lobe filiform, $1\frac{3}{8}$ inches long. Lip tripartite; side lobes filiform, over 2 inches long; front lobe linear, recurved, sharply bent about the middle, $1\frac{1}{2}$ inches long; spur $1\frac{3}{8}$ inches long, slightly thickened at the apex. Column and three-lobed rostellum each 4 lines long. Stigmas clavate, 10 lines long. *R. A. Rolfe.*

THALICTRUM DELAVAYI.

THIS species, described by Franchet, and known as the Chinese Meadow Rue, is a very distinct and showy plant, graceful both in flower and foliage and distinct from many *Thalictnums* in having persistent petals of beautiful colouring.

The rooting system is exceedingly slender and the plant requires a damp sandy soil in a cool situation suitably enriched with manures. The stems are very slender, black, 4 to 5 feet high, and they are furnished with many pinnuled leaves that resemble the Maidenhair Fern in shape of pinnule and leaf. The numerous flowers are borne in terminal and axillary sprays and they are coloured pale mauve, cupola-shaped, with tiny tassels of pale yellow anthers projecting from each. These flowers bear some resemblance to those of *Solanum Dulcamara*, but the central clusters contain some hundreds of the tiny domes of mauve. The plant is quite hardy, is very free in flowering, refined in colouring, and graceful in habit. The foliage throughout summer is of a deep green colour with French grey reverse, but in autumn the colours change to a bright ruddy crimson and last in good condition for many

weeks in this state. *Thalictrum Delavayi* is a recent introduction, and the species received the Royal Horticultural Society's Award of Merit last summer, when exhibited by Messrs. Wallace & Co., Colchester. It should be planted or removed in spring only. *G. B. Mallett.*

from the axil of a normal bract, Br. 1, and projecting from the centre of the outer surface was a second bract, Br. 2, suggestive of the development of a second flower-stalk united with the side of the ovary for some distance. The cavity contained three placentas, which occupied only



FIG. 169.—*THALICTRUM DELAVAYI*, FLOWERS LILAC, WITH YELLOW ANTHERS.

AN ERRATIC CYPRIPIEDUM.

THE flower of which a representation and plan are given on p. 451 was so peculiar in its appearance, and its conformation so intricate that, without waiting to dissect it, we forwarded it to Mr. Worthington Smith, whose drawing at Fig. 170 serves to give an idea of its peculiarities. On pulling it to pieces subsequently we found indications of the existence of three flowers, more or less amalgamated. The ovary sprang

a portion of the ovary, leaving a relatively large space devoid of ovules. The standard or upper sepal, Sep. 1, was normal; the two lower sepals, Sep. 2, Sep. 3, were disunited, but in their normal position.

The next whorl was also fairly normal, consisting of two lateral petals, Pet. 2, Pet. 3, and a lip, Lab. 1. Within these were two other lips, Lab. 2, Lab. 3. Succeeding these was a confused mass consisting of petals and distorted lips.

and some segments, partially petaloid, partially lip-like. These are represented on the plan by the letters P. 3, P. 4, P. 5, and L. 4, L. 5. There were indications of two stigmas 1, 2, and of four stamens, 1, 2, 3, 4. It is clear then that there was amalgam of two or more flowers, but of exactly how many it is not easy to say.

THE LONDON MARKETS AND THEIR SUPPLIES.

THE existence of adequate and convenient markets is a highly important aid to the economical distribution of horticultural produce, and it is of vital interest in all the large centres of population. Lord Onslow's Fruit Committee touched upon this subject so far as it concerned its own special object, but the evidence offered and the conclusions arrived at are equally applicable to vegetables, flowers, and plants. The necessity for large central wholesale markets was fully recognised, and the advantages they afford are easily comprehended; in fact, in many cases their extension is urgently required. But the provision of more local markets is also a need of the age, and to this view the committee gave their strong support. They recommended that more local markets, similar to that at Kew Bridge, should be established in the suburbs of London. That as regards the large distributing markets in provincial centres, it is desirable certain of these should be extended and improved. That retail markets in many country towns are urgently needed, and very good results would be likely to follow if the council of other towns followed the example set by Hereford in establishing a fruit market under their own authority.

The evidence given by Sir William Thiselton-Dyer was very interesting in this particular, as showing "that the formation of a fresh market at a new centre may supply a decided local want, and create a fresh demand." The Kew Bridge, or Brentford Market, originated from the circumstance that the carters stopped at that point on their way to Covent Garden; and in the course of about seven years the business in the very modest market-place first provided developed far beyond the accommodation. This led to the addition of three acres, which space is being covered at a total cost of over £40,000. When the whole market is completed there is little doubt that a wide district in the western suburbs of London will be supplied from that source.

The system which prevails so widely is distinctly opposed to the interests of producers and consumers, and even the middlemen or shopkeepers do not reap as much advantage as they might do under more economical methods. In the Metropolitan district, as well as in other large cities in which I have had an opportunity of investigating the markets, such as Birmingham, Manchester, Newcastle-on-Tyne, or Gateshead, the same general plan is in operation. Produce is carted into the central parts of the towns by the growers, and conveyed back again by the retailers, often to within a mile or two of the locality where it was grown. The cost of carriage is in the first case deducted from the growers' profits, and both are added to the price the consumer has to pay. The amount thus practically lost by faulty distribution is an exceedingly heavy tax upon fruits and vegetables grown within a moderate distance of dense populations. To many people such products have become essential articles of diet, and the only deterrent to extended use is the price demanded by retailers. The itinerant dealers have done something to facilitate communication between producers and consumers, but the establishment of an additional number of local markets would assist the work on a larger scale, while relieving the central markets of the congestion which frequently arises under the present system, to the manifest disadvantage of all concerned.

The facts stated in no respect lessen the importance and necessity of the large wholesale markets, for without them the distribution of home-grown and imported produce in bulk would be very

difficult. The requirements of London are enormous, and to supply six millions of people with even a portion of their food is a gigantic business of which only those familiar with the great markets can form an approximate idea. Statistics directly bearing on the point are difficult to obtain. Plenty of official records are available concerning the gross imports of the

the chief markets of the kingdom would, under present methods, be a formidable task. Yet having organised a system of market reports as to prices from accredited representatives, the Board of Agriculture might well go a step farther and obtain records of the proportions assumed by various imported products in the different centres. R. L. C.

(To be continued.)

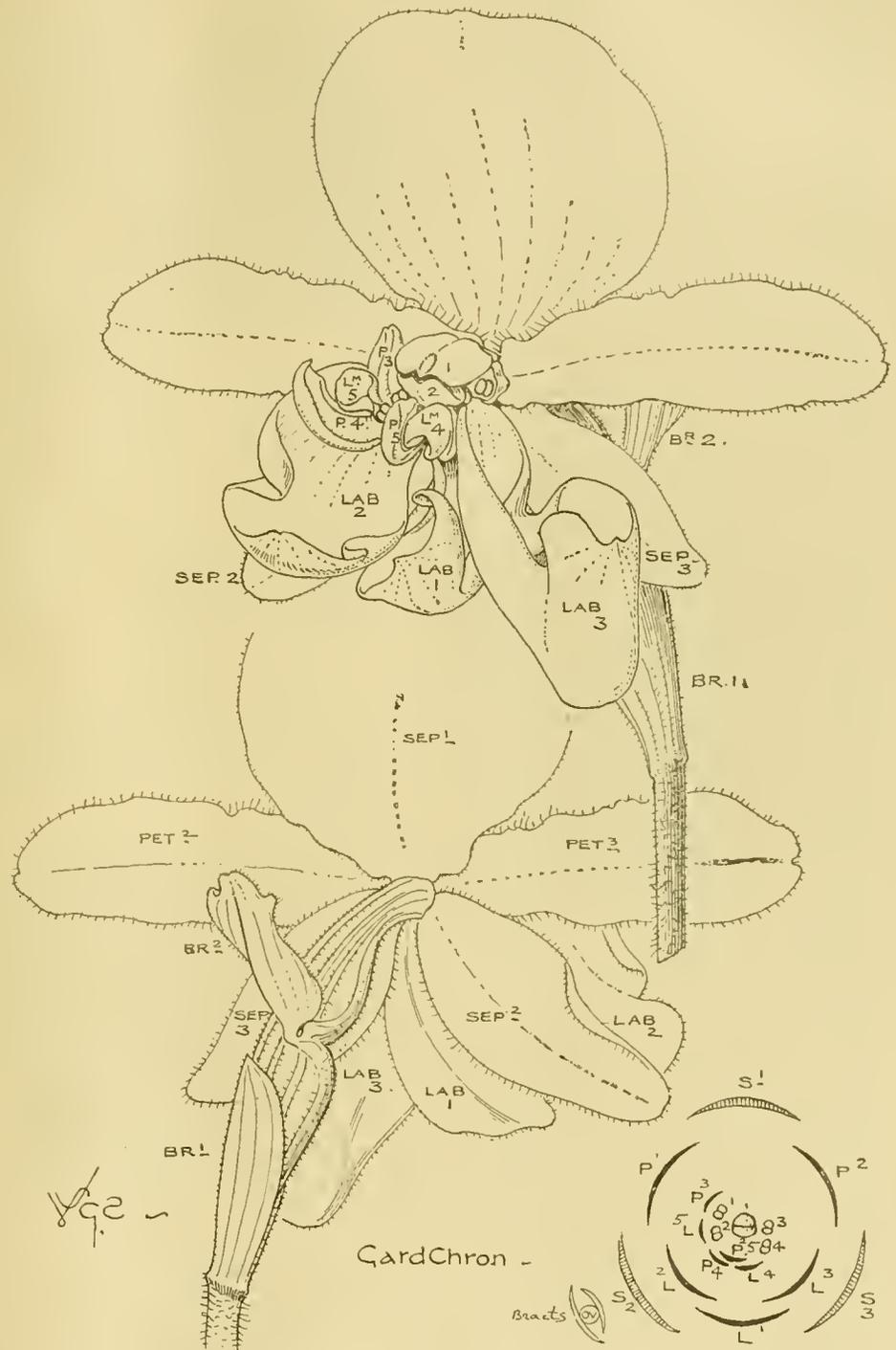


FIG. 170.—A SYNANTHIC CYPRIPEDIUM SEEN FROM THE FRONT AND FROM BEHIND. THE LETTERS AND FIGURES INDICATE THE SEVERAL PARTS ENTERING INTO THE COMPOSITION OF THE FLOWER, AS EXPLAINED IN THE TEXT.

(See page 450.)

principal fruits and vegetables, but their special destinations cannot be readily ascertained. For example, the records published by the Board of Agriculture, in reference to foreign and colonial importations of raw fruits and vegetables, convey the information that in round numbers 188,000 tons of Apples were brought into the United Kingdom in 1904, and of this total over four-fifths were sent from the United States and Canada; but beyond that the figures do not take us. To trace the distribution of this great amount through

NOTICES OF BOOKS.

THE ITALIAN LAKES. Painted by Ella Du Cane, described by Richard Bagot. (Black, Soho Square, London)

Under this title we find a beautifully printed and artistically executed work with a large number of illustrations in colour printing. Messrs. A. & C. Black, the publishers, have issued a series of beautiful books about Italy,

the last of which, dealing chiefly with Lake Como and Lake Maggiore, is really a collection of charming little sketches in colour of many of the celebrated gardens in and about that neighbourhood. "The Italian Lakes" is, therefore, from our point of view an incomplete title, and we are sure that any of our readers who know what it is to pass a short time in the region either of Lake Como or Maggiore, and who have visited some of the gardens there would regard the book on opening it, and glancing at many of the exquisite little bits of colour, as a work illustrative of the horticultural beauties of the lakes. The text, of course, is not strictly horticultural, but has a wider scope, dealing chiefly with the scenery, the history, and the artistic traditions of this interesting district. But, nevertheless, as so many of the painter's best efforts have depicted garden scenes and views that are largely horticultural, there is necessarily some verbal description of such places as the terraced gardens of Isola Bella and Isola Madre, and of others, not perhaps so open to criticism of an adverse character. As an instance of which the writer, in referring to the Isola di San Giulio, says: "Gardens blazing with red and white Oleanders, and fragrant with Roses and Magnolias, seem to fill every available spot between the houses, while drooping willows and purple blossomed Catalpas, wild vines and flowering creepers, Cactus and Pelargonium growing to the very edge of the lake, are reflected in its clear blue depths." If the author gives us such word painting, what shall we say of the artist who has done so much to embellish the book with so many charming little bits of Italian lake scenery suggestive of all that the gardens supply? In fact, by far the greater number of the pictures may be properly termed garden views, for flowers and trees and shrubs abound, without forgetting many of the adjuncts as steps and terraces and balustrades so frequently met with in the Italian garden. We can only briefly direct attention to a few of these delightful little works of art. The frontispiece is entitled "A Garden at Cadenabbia." Another is "Menaggio." Very exquisite in colour is "Azaleas," which represents a fine show of colour by the side of a garden path on the edge of the Lake Como. "Pallanza from Isola Bella" is quite a typical view. "A Garden by the Lake d'Orta" is another. "Hydrangeas Isola Bella" will easily be recalled by anyone who has visited the spot. "A Terrace Wall, Lago Maggiore," is strongly suggestive of Isola Bella, the flower pots and statue being peculiarly characteristic. "A Doorway at Varenna," with scarlet pelargoniums in pots in the foreground, and other flowers, is essentially Italian in its composition. "Villa Serbelloni," a pretty garden scene on Lake Como; "A Group of Yuccas, Villa Melzi," and "Villa Carlotta," both on the same lake, are charming garden scenes, pure and simple, lake and mountains in the distance being mere accessories. We could linger still further over this delightful volume, but have said enough to give our readers an idea of its contents. Artist, author, and publisher alike are to be congratulated on having produced such a beautiful and interesting book, which has been got up in excellent style, typographically and otherwise. Although somewhat expensive in price, "Italian Lakes" is sure to find a number of purchasers when once its merits are fully known.

TRADE NOTICE.

Owing to the recent death of Mr. GEORGE COOPER, Seedsman, Bedford, we are informed that the firm will henceforth be known as GEORGE COOPER & SON.

The Week's Work.

THE ORCHID HOUSES.

By W. H. YOUNG, Orchid Grower to Sir F. WIGAN, Bt., Clare Lawn, East Sheen, S.W.

A review of the year that is now almost at an end will again force upon Orchid growers the fact that the meteorological conditions have a very great influence upon the welfare of their plants. Speaking generally, the weather throughout the season has been fair, but so far as the Thames valley is concerned it has been very different and inconsistent. There has never been what might be termed any "set fine" weather.



Throughout the whole of the summer there was not a single day which, from beginning to end, was bright and cloudless. The weather during the early portion of the year was characterised here by its extreme changeability, a large number of wet days, and more or less heavy downfalls of rain. The summer was not at all genial, though easterly winds were not very prevalent. On many occasions there was the prospect in the early morning of a glorious day, but it was seldom, or never, realised, and the difficulties of keeping the proper cultural treatment for the plants inside were greatly accentuated. The autumn was damp, cold and rough. The early winter was characterised by sudden and severe spells of frost, and had fogs, with intermittent mild and damp weather. To many readers this may appear a very pessimistic account of the weather, but it is true of this neighbourhood. Fortunately, from a point a few miles north of the Thames much more favourable climatic conditions have prevailed, though in the northern section of England prolonged drought and late frosts in the spring did not favour Orchid culture.

Old methods of cultivation are gradually being superseded by others of a more or less experimental nature, but I think the use of decaying leaves, now largely employed in the rooting medium afforded most Orchids, will stand the test of time when the proper accompanying treatment has been mastered and practised. Its use is not to be recommended for the genus *Cypripedium* or *Dendrobium*, taken as a whole, but when applied to most Brazilian and Columbian Orchids the results are generally satisfactory. For seedling and other orchids which need to be repotted every year or alternate year, a leaf mixture may be used to advantage, but for large specimens, which are seldom disturbed, leaves should not be used, because their nutritive value disappears after the lapse of a season or two, and they afterwards clog the drainage or otherwise prove detrimental to the plants. To get the best results from the leaf mixture, the plants grown in it should be well exposed to the influences of light and air, for when densely shaded, or otherwise "coddled," the growth made will be tender and too ill-conditioned to give good floral results. Plants cultivated in peat and sphagnum-moss are not now so shallowly potted as formerly, and where *Polypodium* fibre is favoured, the depth of the compost is usually equal to that where a leaf mixture is employed. A practice that is gaining in favour is not to admit air simultaneously at the top and bottom of a house, many preferring to use the roof-ventilators exclusively. I would recommend this practice where no plants are suspended from the roof bars, but should many be so suspended, their proximity to the ventilators would render it extremely unwise to open these during unfavourable periods of the year. Enough roof ventilation during the winter months is generally secured through the laps of the glass, promoted by heat radiation and a little ventilation at the bottom of the house.

The popularity of Orchids during the year has been more than maintained, as evidenced by the large and diversified exhibits at the various shows held throughout the country. In the case of the more generally grown species, the standard of cultivation thus seen has in most instances been above reproach.

FRUITS UNDER GLASS.

By F. JORDAN, Gardener to Dr. CORBET, Impney Hall Gardens, Droghda.

Winter Cucumbers.—These plants will need great care and attention during the next few weeks, if a constant supply of fruit is to be maintained. Top dressings of light, rich soil should be afforded at short intervals,

or as soon as fresh roots appear on the surface. The compost to be added should consist of roughly broken fibrous loam, leaf-mould, and manure from an old mushroom bed, with a few sprinklings of Thomson's Vine Manure. Crop



the plants lightly, and do not allow the temperature at night to fall below 65°, or if the weather is mild 70°. Keep the roof-glass in a clean condition, and if cold winds or frosts prevail, cover the pits at night with mats, or some other warm material. Raise the atmospheric temperature to 75° during the day with fire-heat, and it may rise to 85° with sun-heat. Admit a little air each day, whenever the weather will permit of this being done with safety. Damp the paths and other available spaces in the house frequently. Allow the plants to grow freely in order to encourage fresh root action, and train the growths out thinly that air may circulate around them. Where good pits are available sow some seeds, at the present time, of Telegraph, or some other approved variety, to provide succession plants. Sow the seeds in 3-inch pots, and plunge the pots in a bottom-heat of 80°, where they may remain until the plants are well through the soil, when they should be removed to a position near to the glass. Make preparations for the planting out of these plants by having the pits cleansed, and fresh beds made up in them. If good oak leaves are obtainable, use two parts of these to one of litter, and over the leaves place mounds of good compost at about three feet apart. The surface of the bed should be only a little distance from the glass. When the soil has become warmed through, set the plants out if they have made three leaves, or sow two seeds in each mound if there are no plants in readiness. The weaker of the two plants can be removed subsequently. Let the atmosphere of the pit be kept in a moist condition.

Early Melons.—In preparation for obtaining early Melons let the house be thoroughly cleansed and every part of the walls well washed with hot limewash. Much bottom and atmospheric heat will be necessary, and for furnishing the bottom heat the fermenting material should be composed chiefly of leaves which should be made firm by treading. Leaves are more lasting and produce more equable heat than that furnished by litter. The beds must be made well up to the glass, and if the plants are to be grown in pots, let some 12 inch pots be well drained and three parts filled with a compost consisting of loam of medium texture, wood-ashes and lime-rubble, afterwards plunging the pots in the bed. If pots are not to be used place some turf on the beds, putting it grass side downwards, and afterwards make a ridge of the above compost for receiving the plants. The soil should be made moderately firm, and when it has become warmed through sow the seeds one or two feet apart, selecting some reliable variety which is likely to grow quickly and set its flowers freely. Maintain the atmosphere in a moist condition, and let the temperature at night be 65° to 70°, varying a little according to the state of the weather. A rise of 10° may be allowed during the day, and the bottom heat should remain steady at about 85°.

Tomatoes.—Plants in bearing will require a warm, dry atmosphere, and the temperature at night should be 60° in mild weather. Admit a little ventilation whenever the weather is favourable, but do not expose the plants to cold draughts. Pollinate the flowers daily during the brightest part of the day, and when they are in a dry condition exercise care when affording water to the plants, and let top dressings be applied before the plants become impoverished. Sow seeds of the varieties Frogmore Selected, Carter's Sunrise, or some other early maturing variety, for fruiting in spring.

THE FLOWER GARDEN.

By W. A. MILLER, Gardener to LORD HENRY C. BENTINCK, M.P., Underley Hall, Westmoreland.

The Rock Garden.—The present is a good time to remodel the Alpine garden or make a new one. Choose the most suitable situation, and study its character, in order to get the greatest diversity of site in the available space. Those are fortunate who can obtain mountain limestone with its water and weather-worn blocks, which are either compact or shelly. These form scars and inclined, vertical, or contorted stratifications, where amongst the stones may be prepared pockets, level places, fissures, elevated spots, dry chinks and crevices, caves,

etc., to suit all kinds of sun and shade-loving plants. Keep in view the welfare of the plants, and try to manage that they may derive the full benefit from rains, etc. To effect this, it is necessary to place the stones in such a manner that moisture will drain to the roots. An ample depth of soil is essential, as roots of many plants naturally ramble long distances. Make the soil firm amongst the stones by ramming, etc., so that there will be no cavities. Depressions will be available for bog and water plants. Sandstone, grit, limestone, and peat will be required for the different species of plants, but ordinary garden soil will suit many of them. There must be thorough drainage, or the plants will fail to thrive. Stone chippings can be used for top-dressing, as these will impart a finished appearance, and in addition serve to check evaporation.

Alpine plants now wintering in frames need constant ventilation, and for this purpose "pigeon holes" made in the sides of brick frames will answer, and the glass lights can then be kept in position, thus protecting the plants from damp and remaining more safe from damage by wind than they would be if tilted. Examine all plants frequently, and remove any decaying leaves.

THE HARDY FRUIT GARDEN.

By W. H. CLARKE, Gardener to Sir WILLIAM PLOWDEN, Aston Rowant House, Oxon.

Affording Manure.—When the annual pruning, training, and cleansing of the fruit trees have been completed, let all refuse or rubbish be collected and burnt, afterwards returning the ashes to the soil. When affording manure to the trees the gardener must discriminate between those which actually require manure and others which, owing to free root action, or the light crops they have recently carried, do not require it. At this season farmyard manure should be



spread on the surface over the roots, choosing a day when there is not very severe frost for carrying out the work, as it can then be accomplished more satisfactorily.

Manure water may with great advantage be applied to the roots of all kinds of trees requiring extra support, performing this work when the ground is free from frost. The roots of trees absorb nutriment from the soil, even during the winter months, except in very severe weather.

Lime is very necessary to successful fruit culture, especially for trees whose seeds are enclosed in a hard shell or "stone." Thus if lime is deficient in the soil, Peaches, Nectarines and Plums fail to set satisfactory crops. Soils which are rich in humus from the continued application of organic manures will be much improved by the application of

newly slaked lime, at the rate of one pound to the square yard of ground.

Potash is also essential, and the colour of the fruit will be increased or lessened according to the available supply in the soil. In order to provide Potash, all kinds of garden refuse should be burnt and the ashes, when they have cooled, may be applied over the roots of the trees. If the ashes were allowed to lie in a heap, much of the value would be washed away by the rains. Half a pound of potash per square yard is a sufficient dressing at one application.

Nitrogenous manures, if of chemical origin, give better results if applied in the spring, when the leaves of the trees are about to unfold; the flowers are thereby strengthened. Liquid farmyard manure, however, is rich in potash, nitrogen, and organic matter, each of which is of infinite value to the fruit grower.

Fruit tree borders.—Wall trees should have a space of at least three feet in width left for the roots to grow in, and as all fruit trees succeed best in a rooting medium that is firm the surface of the border should only be lightly forked over or pricked up, which is necessary in order that light and air may penetrate the soil. If the border is wider than three feet the remaining portion should be as lightly dugged as possible.

Fruit plantations may be afforded their annual dressing of manure. Any old refuse soil is beneficial to them, likewise any charred refuse. The ground may be lightly forked over, but where Gooseberry and Currant bushes are grown between the trees, care should be taken not to damage the surface-roots.

Raspberries.—Assuming the canes to have been trained and made secure, the points may be left unshortened until spring. Do not dig the ground between the canes, as the Raspberry is a surface rooting plant, but apply a heavy dressing of well-rotted manure. New plantations should be made without further delay, and the ground about the plants mulched with short stable litter.

PLANTS UNDER GLASS.

By A. BULLOCK, Gardener to E. J. WYTHES, Esq., Copped Hall, Epping, Essex.

Preparation.—At the close of the old year one's thoughts naturally turn to the advent of the new. Much work may even now be done in preparation

for the start to be made presently. Of chief importance is the need for a thorough cleansing of all plant structures both inside and outside. If this work has not been already performed it should be carried out at once. A period of mild weather affords a good opportunity which should not be lost.

Propagating.—The means for propagating

plants should be considered so that the work may be commenced as soon as this is desirable. If the frame to be used for this purpose has been in constant use let it be given a good scrubbing with soft soap and water, afterwards standing the structure in the open air for a week or two to sweeten. The material which has been used for the plunging of pots should be replaced with fresh, or, if used again, be thoroughly sterilised as was advised in my Calendar for January 21. Pots of various sizes should be made ready for use, labels painted, stakes assorted, etc. The importance of getting such work done now will be better appreciated later on, when the demands upon time are more pressing.

Chrysanthemums.—Let any cuttings which have rooted be removed from the propagating frame, but if the pots have been plunged in ashes or cocoa-nut fibre they should be stood on the surface of the material for a day or two, that the little plants may get used to the altered conditions before removal to another pit. A good brick pit that is unheated, but which can be protected from frost, and where the plants may be placed close to the glass, is much better than a pit artificially heated. At



the same time it will be necessary to guard against sudden changes of the weather that would be liable to cause the plants to suffer a check. Afford suitable protection for the old "stools" that are being reserved for the purpose of furnishing cuttings at a later date.

Carnations.—Cuttings that were inserted according to the directions given in a recent Calendar, and that are now rooted, should not be allowed to become "drawn" by being kept longer in so close an atmosphere, but it is very important they be not placed in a draught. Do not pinch out the points in order to cause plants to break into growth at the base until they are growing freely, otherwise the plants would be liable to suffer a check.

Forcing.—Maintain a supply of plants in flower for furnishing rooms, and for cutting purposes, by introducing regularly into heat batches of the various subjects that were provided for the purpose.

Ventilation.—Pay special attention to the ventilation of houses, pits and frames. Guard against cold draughts at all times, but afford air carefully on every favourable occasion, as a means of keeping the atmosphere in the best condition.

THE KITCHEN GARDEN.

By W. FYFE, Gardener to Lady WANTAGE, Lockinge Park, Wantage, Berks.

Hot-beds in Frames.—The time is near at hand when preparations for such early crops as Potatoes, Carrots, Turnips, Radishes, &c., will claim attention;



and much of the success to be obtained will depend upon the proper management of the hot-bed material. It is of the greatest importance that the beds shall be capable of lasting for a considerable time, and if leaves and stable-litter be used in well-proportioned quantities, thoroughly mixed together and made moderately firm by treading, this

result will be likely to be secured, especially if the pit is in a position that is sheltered from cold winds, or better still if the ground for the pit is excavated to the depth of 4 or 5 feet. Put the frames and soil in position early, to become warmed and enriched by the rising vapour, and for the destruction of insects hidden in the soil.

Carrots and Asparagus.—Frames made up earlier as recommended for Carrots and Asparagus may be planted at once. Also Potato tubers that have been brought on as advised and that are now starting freely may be planted at a depth of 3 or 4 inches in a moderately light and loose soil. Duke of York is an excellent variety for this purpose.

Peas.—I neither practise nor advise the sowing of Peas in the autumn. The time I select is as early in the new year as the proper working of the soil on a south border will permit. The ground should be prepared in readiness to receive the Peas whether they are sown in the open or whether they are planted from pots or boxes. Over-rich soil is of no advantage in the growth of first early varieties of Peas. I prefer a light, open, warm soil that is suitable for growing early varieties of Potatoes one season and early Peas the next with suitable catch crops between. Carter's Little Marvel and Mayflower are both excellent varieties of Peas for early supply.

Cucumbers.—To maintain a succession of fruits, allow only sufficient of the crop to remain on the plants as will meet the demand. The fruits should be cut when in a young state and as soon as they reach a serviceable size. Allow the lateral shoots freedom of growth and apply water to the plants carefully. Pay close attention in the matter of top and bottom heat, and regulate the atmospheric temperature of the house according to the weather. Apply the syringe when the weather is bright and favourable only. Admit air at every favourable opportunity, maintaining a temperature of 75° in the daytime, with a drop of 10° or 15° at night.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Letters for Publication, as well as specimens and plants for naming, should be addressed to the EDITOR, 41, Wellington Street, Covent Garden, London. Communications should be WRITTEN ON ONE SIDE ONLY OF THE PAPER, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

Special Notice to Correspondents.—The Editor does not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editor does not hold himself responsible for any opinions expressed by his correspondents.

Illustrations.—The Editor will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens, or of remarkable plants, flowers, trees, &c.; but he cannot be responsible for loss or injury.

Newspapers.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

Local News.—Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

APPOINTMENTS FOR JANUARY.

TUESDAY,	Jan. 2	{ Nat. Amateur Gardeners' Assoc. meet.
TUESDAY,	Jan. 9	{ Royal Horticultural Society's Committees meet.
THURSDAY,	Jan. 18	{ Linnean Society meet. Annual Meeting and Election of Pensioners of the Gardeners' Royal Benevolent Institution at Simpson's Restaurant, Strand.
TUESDAY,	Jan. 23	{ Royal Horticultural Society's Committees meet.
WEDNESDAY,	Jan. 24	{ Annual Dinner of the Croydon Horticultural Society.
FRIDAY,	Jan. 26	{ Royal Botanic Society meet.
SATURDAY,	Jan. 27	{ Nat. Auricula Society's (Northern Section) Annual Meeting, at Manchester.

AVERAGE TEMPERATURE for the ensuing week, deduced from observations of Forty-three Years at Chiswick—37°9'.

ACTUAL TEMPERATURES:—

LONDON.—Wednesday, Dec. 27 (6 P.M.): Max. 43°; Min. 35°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—Thursday, Dec. 28 (10 A.M.): Bar., 29°5'; Temp., 44°; Weather—Some rain, with fog.

PROVINCES.—Wednesday, Dec. 27 (6 P.M.): Max. 51° N.W. Coast of Ireland; Min 38° Oxford.

SALES.

WEDNESDAY AND FRIDAY NEXT—

Dutch Bulbs, Hardy Border and Herbaceous plants, Azaleas, Roses, &c., by Protheroe & Morris, at 67 and 68, Cheapside, E.C., at 12 o'clock.

WEDNESDAY NEXT—

Dutch Bulbs, Herbaceous and Border plants, Roses, Azaleas, Fruit trees, Palms, &c., at 67 and 68, Cheapside, E.C., by Protheroe & Morris, at 12 o'clock.

WEDNESDAY NEXT—

2,273 cases Japanese Lilliums received direct, also Spiræas, L. of Valley, &c., at 67 and 68, Cheapside, E.C., by Protheroe & Morris, at 3 o'clock.

FRIDAY NEXT—

Imported and Established Orchids, at 67 and 68, Cheapside, E.C., by Protheroe & Morris, at 12.30.

In the last number for each succeeding year it has been our custom to pass in review the leading events that have occurred during the previous twelve months. Necessarily, this review has always had to be a cursory one. We have been forced to select, and it is probable that, as time goes on and events show themselves in their due proportion, it will be found that the selection has not always been so truly representative as it might have been. If this defect be of general occurrence, it must surely be more especially marked this year. Events of one kind or another interesting to the gardening fraternity have been so unusually numerous during the year that is now at an end that time must elapse before the due significance of each can be fully appreciated.

The weather on the whole was not unpropitious to gardening operations. One great exception has to be noted in the havoc wrought

on the fruit crops by May frosts, so that our report on the fruit crops showed a condition of things worse than on any former occasion except in 1903.

Among the many practical matters discussed have been the cultivation of Orchids, the results of Hybridisation and cross-breeding, the growth and choice of Potatoes, the cultivation of Fruit trees, and the improvement of Forestry.

A large—a very large—proportion of our space has been occupied with reports of flower shows which become more numerous every year. In one sense this is satisfactory as an indication of the ever widening interest in matters horticultural. Still, we would urge upon those who have the management of these exhibitions the desirability of making them of less ephemeral interest, and of more permanent utility. To witness the same sort of contest every year and to see the prizes carried off by the same competitors, or by a relatively small number of exhibitors, give rise to the suspicion that the benefit conferred on horticulture is small in proportion to the efforts made or to the amount of money expended. The "shows" have been exceptionally numerous this year, and some of unusual importance. In addition to the fortnightly "meetings" of the Royal Horticultural Society, we have had shows of first-class merit at the Temple, in the gardens at Chelsea, at Shrewsbury, at Edinburgh, at the Regent's Park, in Paris and Vienna. We have had special exhibitions of Roses, Carnations, Dahlias, Auriculas, Tulips, Chrysanthemums galore, Potatoes, Vegetables, of Fruit, British and Colonial, and we know not what beside. Looked at as exhibitions only, none of these claims special comment for they were, for the most part, repetitions of what we have had in previous years. Reports of such functions by telegram have of course been common for a long time past, but this year showed a variation in the form of a report in our columns of a show at the Crystal Palace by telephone! It was necessarily short, but we do not think that brevity will be in the long run any disadvantage in such cases. Of much more permanent value than the exhibitions themselves have been the conferences held in connection with some of them. The Conference on Fruit Growing, held under the auspices of the Royal Horticultural Society and the National Fruit Growers' Federation, though presenting no great novelty, was of unusual interest and importance, and will, we trust, be prolific in good results.

The discussion inaugurated at the Scientific Committee of the Royal Horticultural Society on the alleged degeneration of plants propagated by means of their buds rather than by their seeds was made special in its application to Potatoes and was productive of some very interesting and valuable comments.

The Vienna Conference dealt especially with the nomenclature question—one specially important to botanists, but also one in which practical horticulturists are deeply interested. We shall have another opportunity of alluding to this matter when the full report reaches us. In the meantime we venture to repeat what we have so often urged that a name should be a name and nothing else. The attempt to weave into the designation of a plant its genealogy and history seems to us to mix up the distinctive name with other matters which should find

a separate place in the records, catalogues, or text-books. Now that cross-breeding and hybridisation take so large a place in horticulture, it is most desirable that accurate records should be kept, but the names themselves should be free from the entanglement of crosses (×) and other sources of embarrassment. To our Orchid friends in particular we would suggest that the artificially produced cross-breeds should receive some arbitrary but simple name by which the plant may be known. The history and parentage should indeed be most accurately and carefully detailed in the records, but not made, as they are now, part of the name.

Before quitting the topic of Societies and their doings we must allude to the formation of the British Science Guild, the object of which is to introduce more method into our practical work and to further the application of scientific discoveries to every-day uses. On the eve of a general election, when matters of the utmost moment to the nation will be fiercely discussed, we shall have in all probability another flagrant instance of the inadequacy and even futility of our present manner of discussing political matters. Of course, in these columns, we have happily nothing whatever to do with party-politics. We call attention to them only with a view of showing how ludicrously unscientific, and often irrelevant are the proceedings on these occasions and how much scope there is for the work of the British Science Guild.

Another association whose steady progress during the year excites our sympathy is the British Gardeners' Association. When we compare the lengthened period of preparation which a gardener has to undergo, the forethought he must exercise, the responsibilities cast upon him, with the meagre remuneration offered him, and his inferior social position as compared with that of other employees often far less well equipped than himself and with much fewer responsibilities, we are not surprised at the attempt that is now being made to remedy these incongruities. Conducted with prudence and with a due regard for the liberties and rights of others, we cannot doubt but that the new association will confer great benefits both on employer and on employed.

The visit of the Evesham gardeners to the market-gardens around the French capital can hardly fail to be of advantage, and the courtesies extended by the National Horticultural Society of France to a deputation from our own Society will, we trust, cement that feeling of mutual good-will which happily exists amongst us.

The introduction of many first-class novelties collected for Messrs. James Veitch and Sons in China by Mr. E. H. Wilson cannot be passed over even in a brief summary like this. The re-introduction of *Cypripedium Fairieanum* is also one of the notable occurrences of the year. In the following issue we shall follow our usual custom of commenting on the novelties in the way of plants, whether introduced or raised within our own borders, so that for the present further notice is not necessary in this place.

The changes at Kew are too recent to need further detailed comment on this occasion. The great improvements and extensions in the horticultural department effected under the regime of the retiring Director are universally acknowledged, whilst the appointment of



SENECIO LIGULARIA, A CHINESE HERBACEOUS PLANT, EXHIBITED BY
MESSRS. JAS. VEITCH & SONS. FLOWERS YELLOW.

Lt.-Col. Prain has been hailed with acclamation by those conversant with his capabilities and his works. One of the very latest, if not the latest, of his contributions to the literature of garden-plants is to be found in the valuable paper on the species of *Meconopsis* with which he favoured us in our issue for June 17, last.

The Obituary record of the year is a long one, and contains many names of men of no little repute in the horticultural world. While some, such as Prof. Errera, of Brussels, Bidgood, of Newcastle, David Laird, of Edinburgh, Moon, the artist, have been called away, as it would seem, before their life's work was completed, so others—the majority—were veterans whose work we appreciated, and whose persons we venerated. Among them it is sufficient to mention William Paul, John Rashleigh, Sir Hugh Low, Neill Fraser, Charles Moore, Henry Eckford, Honeywood D'Ombrian, and Richard Dean, whilst, even as we write, comes the sad news of the death of F. W. Burbidge, to whose labours allusion is made in another column. A mere glance at these names suffices to recall the value of the services rendered to horticulture by the men who bore them. A chronicle of their deeds will be found in our pages, and should form an example to be followed by the numerous workers striving to fill their places, and to achieve a reputation as well earned as theirs.

SENECIO (LIGULARIA) VEITCHIANUS.—(See Supplementary Illustration).—This bold and striking relative of the humble groundsel is a new species from the highlands of Central and Western China. In those regions Mr. E. H. WILSON tells us the plant is fairly common in moist and marshy places, at elevations between 4,000-8,000 feet. It is a particular feature of the flora of woodland glades, margins of mountain rills, and streams. A social plant, it occurs in large numbers, and when in flower its scores of tall *Eremurus*-like spikes of clear yellow flowers, subtended with large, broad leaves, present a scene not easily forgotten. The plant is well figured in the accompanying illustration. The radical leaves are numerous, broadly triangular-cordate, 10-24 inches wide, 8-20 inches long, sharply toothed; petioles solid, 1½-2 feet long, deeply channelled on the upper side. Flower stems 3-6 feet high, bearing a few leaves, smaller than the radical ones, and with sheathing petioles. Inflorescence a dense, nearly cylindrical, unbranched raceme, often more than 2½ feet long. Individual flower-heads 2½ inches across, bright yellow, enclosed when young in conspicuously large, concave, ovate, toothed, deciduous bracts. For the waterside, wild or woodland garden, or any situation where it can enjoy moisture and plenty of room, this new plant will be found very effective. It seeds freely, and will quickly establish itself wherever planted. The species was, as has been said, introduced from the mountains of Central China to the Veitchian Nurseries, together with the now well-known *Senecio clivorum* and *S. tanguticus*, under the name of *Senecio Ligularia* var. *speciosa*. The specimen illustrated was exhibited, under that name, before the Royal Horticultural Society on July 18, and received an Award of Merit. Subsequently [*Gardeners' Chronicle*, vol. xxxviii. (1905), p. 212] Mr. HEMSLEY overhauled the Chinese *Senecios* of the *Ligularia* section, and proved this plant to be very different to the true variety *speciosa*, and therefore described it as a new species, naming it in compliment to Messrs. VEITCH.

VANDA SANDERIANA "CHILLINGHAM VARIETY."—MR. GEO. HUNTER, gr. to the Right Hon. the Earl of TANKERVILLE, gives the following

particulars of his treatment of the fine specimen which was illustrated at p. 438:—"We grow *Vanda Sanderiana* at the end of a house facing the South, so that the plants get the benefit of full sunshine. After the ending of the growing season we pot the plants (if necessary) in peat and sphagnum-moss with a little silver sand and leaf-soil added, and make the surface of Sphagnum-moss, so as to help in retaining the moisture. The temperature during the growing season is 75° Fahr. by day and 70° at night. On bright days in summer we syringe the plants three times each day, thoroughly drenching them, so that the water stands in the axils of the leaves. Owing to the sunny position in which the plants grow they dry quickly. In bright weather we shade them from 10 a.m. to 3.30 p.m. Under this cultivation the plant shown made four pairs of leaves on each of the seven growths during the last growing season. Air is admitted exclusively through the bottom ventilators. I close the house at 5 p.m. and admit air by means of the bottom ventilators again at 7 p.m., and it remains so all night. In winter the temperature is allowed to fall to about 66° by day and 60° at night, but I do not allow the plants to suffer from dryness at the root even at that season, though care is taken not to apply too much water. I believe that want of success in the culture of *V. Sanderiana* may often be traced to the plants having been kept too dry whilst making their growth."

PRESENTATION TO A GARDENER.—MR. THOMAS HOGG, who was for many years Gardener at Woodside, Paisley, and who has now retired, was waited upon at his house on Saturday afternoon last by a deputation of friends and presented with a gold watch. The watch had the following inscription:—"Presented to Mr. THOMAS HOGG by his well-wishers on the occasion of his leaving Woodside Gardens, November 11, 1905."

MR. C. T. DRUERY.—Many of our readers look with something like awe on this gentleman as possessing an amount of knowledge concerning Ferns, and an enthusiasm in their culture which are not granted to the commonalty. Those who are acquainted with him personally know that his profound Fern-love is accompanied by a keen sense of humour which relieves the dry technicalities of life by its sparkling scintillations. It will be a matter of gratification to many to hear that Mr. DRUERY is about to publish in collected form a series of his humorous papers, if a sufficiently large public can be ensured. Intending subscribers should send their names to Mr. C. T. DRUERY, 11, Shaa Road, Acton. The price of the book will probably be about 2s. 6d.

PRESENTATION TO A NURSERYMAN.—MR. GEORGE DICKSON, head of the firm of Messrs. ALEX. DICKSON AND SONS, who has been connected with the Newtownards Horticultural Society for upwards of half a century, was presented by the members of that Society with his portrait in oils at their annual gathering held in the Town Hall, Newtownards, on the 13th inst. An inscription at the bottom of the picture reads as follows:—"Presented by the committee of the Newtownards Horticultural and Horse Jumping Society to GEORGE DICKSON, Esq., J.P., C.C., the worthy and esteemed president of the society, and the only surviving member of the committee formed 50 years ago. Newtownards, December 12th, 1905."

EFFECT OF PLANT GROWTH AND MANURES ON THE SOIL.—A recent issue of the *Proceedings of the Royal Society* includes a paper by Mr. A. D. HALL and Dr. N. H. J. MILLER upon the Effect of Plant Growth and of Manures upon the Retention of Bases by the Soil. The authors, having superintended many experiments on the subject, summarise the results as follows:—"(1) Arable soils which contain upwards of 1 per cent. of calcium carbonate are

subject to a normal loss of that constituent in the drainage water amounting to about 800lb. to 1,000lb. per acre per annum. (2) The loss is increased by the use of ammoniacal manures by an amount equivalent to the combined acid of the manure. The loss is diminished by the use of sodium nitrate or organic *débris* like farmyard manure. (3) The growth of plants normally returns to the soil a large proportion of the bases in the neutral salts, which the soil provides for the nutrition of plants. (4) The calcium oxalate and other organic salts of calcium present in plant residues are converted by bacterial action in the soil into calcium carbonate. (5) The return of base by the growth of plants and the production of calcium carbonate by the decay of plant residues are sufficient to maintain soils neutral which are poor in calcium carbonate, and to replace the bases which have been consumed in nitrification and similar changes."

THE IRISES OF RUSSO-TURKESTAN.—MADAME OLGA and M. BORIS FEDTCHENKO have published a descriptive catalogue of the Irises of Turkestan, with abstracts of the principal literature dealing with these plants and short descriptions of their habitats. The paper is included in the *Bulletin of the Imperial Botanic Garden, St. Petersburg, 1905*, and is based upon minute observations of the wild and cultivated species, and upon an ample supply of herbarium material. Not only have the authors studied their own and other collections, but they have also had access to the rich collection in the Imperial Botanic Garden of St. Petersburg, which had, until now, been only partially examined. Thirty-five species of *Iris*, three of *Gladiolus* and two of *Crocus* are enumerated. Among the newly described species are *Iris dengerensis*, *I. Kuscha-kewiczii*, *I. naryensis*. The descriptions are in Latin; the comments in Russian.

THE FLOODING NILE.—One of our Cairo correspondents sends us the following interesting account of the Nile when in flood, and its effect upon the surrounding country:—"All the water in Egypt is got from the Nile, which every year is flooded by the heavy rains and torrents rushing down the hills in Abyssinia. The Nile courses down through Nubia, Soudan and Egypt to Alexandria and into the Mediterranean. The ancient Egyptians made many efforts to save the water instead of letting it run to waste, for in a very short time the Nile gets low again, and only that land can be cultivated which has been flooded. Nowadays, the English dams, barrages, locks, &c., keep the waters back, and many canals are cut in the banks of the Nile and governed by locks. These canals run miles into the country that otherwise would get no water, and branch canals conduct the waters back again to the Nile. It is a wonderful sight to see all the land covered with water, which is drained off again very quickly. A few days after this, seeds, &c., are planted, and in a week or two the fields are green. We were lately detained for some hours when travelling by train, as it was found that a bridge over one of the large canals not far from Cairo was broken. A lock-guardian had left his gate open, and the Nile waters rushed in, covering the lands far and near, washing roads away (these are always made above water-level), and breaking more than one bridge. To make matters worse the lands had all been planted, as the waters had all been up and left them. It was a beautiful sight; the water everywhere, on both sides of the line, and the Palms, of which there are hundreds about there, looked so grand standing in the blue water, which was like glass; indeed it was a picture to be remembered. We had to leave the train and cross the bridge on foot. As we went over we could look down and see the water rushing and foaming under. The noise it made was dreadful. Of course the land there all

slopes towards the Nile, so you can guess how it went along. We went over safely, but the Arabs were so scared, and several people remained in the train and would not venture. We had a beautiful day followed by a lovely night; starlight, with a new moon shining through the Palms, which were reflected in the water. The flood lasted for several days before all was drained from the land; only then could the bridges be repaired."

ORCHID NOTES AND GLEANINGS.

ORCHIDS AT CHILLINGHAM CASTLE.

PREVIOUS to the erection of the ranges of Orchid houses at Chillingham last year, the Earl of Tankerville had been for some years collecting meritorious plants at Thornington House, Mindrum. It is not, therefore, surprising that when visiting the place in the autumn I found his well-stocked houses practically filled with the most choice and beautiful Orchids possible to procure. The situation chosen is enclosed by the kitchen-garden walls, in a valley snugly sheltered from the north and easterly winds, but having an open aspect on the south and west. There are nine houses, and the whole of the outer walls are carried with 9 inch brick walls to the eaves of the roof, the glass sides being dispensed with altogether, thus perfectly protecting the plants from chill arising from outside conditions in winter and injury from scorching and excessive sun-heat in summer. This system might well be adopted in many Orchid establishments, especially where lofty houses are provided, and are so easily affected by strong winds that an excessive degree of fire heat has to be used during winter and spring months.

The plants generally were vigorous and in a clean and healthy condition. The Cattleyas and allied genera were the predominant feature. Prominent amongst the plants in flower were several Cattleya Iris (bicolor \times aurea), displaying the remarkable variation of this hybrid from plants derived from the same seed pod. C. \times Mrs. Pitt (Harrisonæ \times aurea), a fine variety of C. Mantinii (Bowringiana \times aurea) and a noble specimen of C. M. nobilior was just coming into flower. C. Germania, Lælio-Cattleya callistoglossa, L.-C. Gottoiana magna, with deep lilac sepals and petals and rich crimson front lobe of the lip, Sophro-Lælia Nydia (Sophronitis grandiflora \times C. calummata) with a scape of three flowers is by far the finest of this section of hybrids, the flowers being rich scarlet shading to yellow at the base of the segments, Sophro-Cattleya Charlesworthii, and S.-C. eximia. These bigeneric hybrids are evidently favourites with Lord Tankerville, for he has nearly a complete collection of the known crosses.

White-flowered Cattleyas also find particular favour. They include two very fine healthy plants of the rare C. Warneri alba, C. Gaskelliana alba, C. Trianæ alba, C. Luddemanniana alba, C. Mossiæ Wagneri, C. M. Reineckiana, C. labiata Amesiae, C. intermedia alba, and the hybrid albino C. \times Mrs. M. Peeters. It is remarkable to note how the albinos of the Cattleya species retain their normal vigour while the coloured or typical varieties are so often found to deteriorate under cultivation.

Hybrid Cattleyas and Lælio-Cattleyas are represented extensively. Brasso-Cattleyas include such exquisite varieties among them as B.-C. King Edward VII., B.-C. Mdme. C. Maron, Lady Tankerville's variety of B.-C. Digbyano-Schröderæ, and B.-C. Digbyano-Mossiæ, the whole of which were producing vigorous growths and flower sheaths.

I noted a very fine plant of Lælia anceps Amesiae, "Temple's var." L. autumnalis had its flower scapes in a forward condition, as also

has the rare natural hybrid L. Finckeniana (albida \times anceps Sanderiana).

The East Indian section of Orchids is represented by several plants of the newly-imported Phalænopsis grandiflora, growing finely, as were also plants of P. Schilleriana, P. amabilis, and other species. Vandas, Aerides, and Angreæcums were making satisfactory progress.

Four of the houses were devoted to cool house Orchids, Odontoglossums principally, ranging from recently-imported plants to those reaching the flowering stage—some 6,000 plants. One of the houses was filled with large, established plants of O. crispum, Oncidiums in variety, Masdevallias, and other cool growing subjects. Prominent among the varieties of Odontoglossum crispum were O. c. Marie, O. c. xanthotes Charlesworthii, O. c. Milky-Way, O. c. Queen Victoria, O. c. Princess Maud, O. c. "The Earl," O. c. Purity, and O. Tankervilleæ. A painting of the last-named plant represents the flower to be of fine shape, with many small spots over the surface of the segments. The hybrids were also well represented, Odontoglossum \times ardentissimum in its better form, a grand plant of O. \times Rolfeæ, O. \times excellens, O. \times Hallio-crispum, O. Waltonense, O. \times Harryano-crispum, the whole growing splendidly. In equally good cultural conditions were unflowered hybrids of the following crosses: O. cirrhosum \times O. Pescatorei, O. Hallii \times O. Pescatorei, O. luteopurpureum \times Hallii leucoglossum, O. luteopurpureum \times O. \times Rolfeæ, O. \times triumphans \times O. \times Wilckeanum Golden Queen, O. crispum \times O. \times Loochristyense.

The Cypripediums have evidently been selected after keen observation and knowledge of the desirable characteristics possessed by this genus of Orchids. Many of these had their flower scapes in a forward state. A fine plant of the recently introduced C. Fairieanum had three flowers expanded. A small plant of the same species gave remarkable promise, the flower bud being one of the darkest I have seen. The lovely C. triumphans was not so dark as I have seen it, but this can only be from its early expanding, as the plant was in fine health, and the whole stock was derived originally from one plant; therefore, there can be only one variety. The C. Fairieanum section of hybrids were noteworthy, and included C. Baron Schröder, C. Niobe, C. Juno, C. Arturianum, C. insigne in many of the best types and the leading hybrids derived from their influence are extensively grown. Nearly the whole of the albino varieties of the species and the hybrid C. Maudiae (Lawrenceanum Ilyeanum \times callosum Sanderæ) were growing vigorously.

The most remarkable perhaps among the Cypripediums were the hybrids derived from the influence of C. niveum and C. bellatulum as their parents; these are not met with as a rule in such vigour as all the kinds were here. They included such desirable varieties as C. \times Venus, C. \times Queen of Italy, C. \times Mrs. E. V. Low, C. \times Robert Etty, C. \times Dora Crawshaw, C. \times Chapmani, C. \times Helen, C. \times niveo-Argus, C. \times Mrs. F. Hardy, C. \times Measuresiæ, and a number of others, so that Mr. Hunter, who has the plants in charge, is to be congratulated on his successful cultivation of these generally-considered difficult subjects.

The general collection includes most of the useful kinds of Cypripediums both of species and of hybrids and of Selenipediums.

Dendrobium has a division devoted to their culture. They include a comprehensive collection of the species and practically all the hybrids that are in cultivation. These have made good progress. Miltonias, Cymbidium, Epidendrum and other intermediate house kinds had a division set apart for their inclusion, Cymbidium Traceyanum being in flower, representing one of

the darkest kinds. The rare Miltonia \times Peetersii and M. Clowesii were in flower here.

Thousands of seedling Cattleyas and allied genera, also Cypripediums, and bigeneric crosses of various kinds, the results of hybridisation, will require considerably more space than is afforded by the present erections. Every facility has been provided for the raising of seedlings and for encouraging growth in the plants whilst they are in a small state.

In conversation with Lord Tankerville about two years ago, his lordship remarked that it was his intention to form ultimately a choice collection of Orchids, but I hardly expected to find so fine an assemblage. The remarkable health of the plants should encourage him to acquire and raise one of the finest series of Orchids in this country. To-day it compares favourably with most of the leading collections. Mr. Hunter has given much energy and close attention to the cultivation of the plants.
H. J. C.

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his correspondents.)

SUITABLE PLANTS FOR AZALEA BEDS (see p. 443).—My best thanks are given to Mr. Jenkins and Mr. Smythe for the trouble they have taken. My note last week explains a difficulty as to Lilies, and Mr. Smythe appears to be thinking of much larger Azaleas than mine, which, having only been planted during the past 12 months, are too small to admit Tritoma uvaria or Tropæolum speciosum, and the locality being in the North of England, Gladiolus gandavensis and Lilium speciosum and L. auratum are late in blooming, and dislike bad weather. Would Ericas or Colchicums be suitable? X. Y. Z. [We should think so.—ED.]

NEW LITERARY OUTPUT.—There is one point in the very sympathetic article on my retirement in the *Gardeners' Chronicle* for December 16, the kind feeling of which towards Kew and myself I appreciate deeply, on which I may be permitted to say a few words in justice to my late staff. The administrative work which has been carried out with its loyal co-operation, often under circumstances of great pressure and some inconvenience, is no doubt very great. But I do not think that it has to "some extent," if, indeed, to any, "interfered with the literary output from Kew." This has, in fact, taking it in bulk, been greater than at any past period in the history of the establishment. The work of Kew is essentially co-operative. The name of an individual member of the staff may be attached to an undertaking of which he has charge and for the publication of which he is responsible. But he draws on resources to the organisation of which many hands have contributed. For a particular purpose I had a statement drawn up of the "output from all sources," i.e., including the work of both the executive and scientific staff for a single year—1894. This is printed in detail on p. 98 of the evidence given before the Departmental Committee on Botanical Work presented to Parliament in 1901. The total for that year amounted to 3,079 pages, with 224 plates. I cannot assent to the statement that "the publication of the Colonial Floras has been delayed." When I became Director in 1885 the immediate and pressing necessity seemed to me the completion of the Flora of British India, which Sir Joseph Hooker carried through with indomitable courage and tenacity. But it must be remembered that he could only come to Kew from a considerable distance. For some years all the available time of the herbarium staff was devoted to arranging and sifting the necessary material into a shape in which he could most expeditiously use it. As soon as the Flora of British India was disposed of, the Index Kewensis was carried through, and then the two African Floras were vigorously attacked. Starting from 1885, in which the Flora of Bermuda and St. Helena were published, I find that down to the present year, 15 volumes of Colonial and Indian Floras, including the three volumes of the Index Floræ Sinensis, have been issued. Of course, this has been done with a good deal of outside help, for which I am most

grateful. But, considering that our scientific staff is a very small one, and that its primary duty is not publication at all, I regard the result as something a good deal more than creditable. I am glad, at any rate, to have an opportunity of saying how much I appreciate the devotion of my staff, and the way in which each and all have never failed to respond to my demands. I have always held that collections, museums, herbaria and libraries are not ends in themselves, but that their real use is as instruments for the advancement of knowledge. We have always been a united and happy family at Kew, and my staff accepted cheerfully the extended view I took of their duties, though they occasionally suggested good-humouredly that the resulting tension of work was rapidly approaching the breaking point. Perhaps, in my own case, it has reached it; but I see no failing vitality in my late colleagues. I might have referred to the Botanical Magazine, the *Icones Plantarum*, and the profusion of papers on every branch of botanical science which has flowed from Kew. But those tell their own story. I think I may say that every one of my officers has not been content to be a mere wheel in a machine, but has identified himself with some branch of research. Long may it continue to be so. One word about the Bulletin. It has practically done the work for which it was started; yet, though for the moment more or less dormant, it is not dead. *W. T. Thiselton-Dyer, Kew, December 23, 1905.*

A CARNATION SOCIETY.—I fully endorse every word in the letter of Mr. Montagu Allwood, printed on p. 443, and while a Winter Carnation Society is being formed, why not co-operate with the National Carnation and Picotee Society, so as to have one society to deal with all classes, in exactly the same way as the National Chrysanthemum Society does? Why should the *Souvenir de la Malmaison* section be left out in the cold? *R. S. R., Bowdon, Manchester.*

PROTECTING FIG-TREES OUT OF DOORS.—Mr. Clarke says that his note on this subject (p. 391) was written for the general reader over the whole country, and not specially for those residing in the metropolitan area or in the more favoured south-west districts. My note printed at p. 428 was also penned for the benefit of readers of the *Gardeners' Chronicle* residing in all parts of the United Kingdom who grow Figs out of doors, feeling sure that if cultivators who have hitherto followed without question the old-world method of thatching over their Fig-trees on the approach of winter will only test the matter for themselves, as I did, they will never again adopt protection in this direction. Mr. Clarke says that he had "experience" in a place in the wettest and coldest county in this island, and on a subsequent occasion in a place 200 miles north-west of London, where, he stated, protection for Fig-trees in each place was absolutely necessary. So it was considered to be in the places I referred to at p. 428, and for no better reason than that the Fig-trees had been thatched over or protected by mats during the winter by the several gardeners in charge of those places for generations back. Prior to my experience in the old baronial Kentish garden referred to in my note (p. 428) I had several years' practice in gardens some 600 or 700 miles north of London, and also in places nearly the same distance westward from London; but it by no means follows that because Fig-trees were afforded protection out of doors in some of those places that protection was "absolutely necessary." On the contrary, judged by my subsequent experience, I should say without hesitation that the trees would in most cases be far better and more fruitful, without protection. Mr. Clarke says, "Now I am only 40 miles from the metropolis, but I still find it necessary to give some protection." Has he ever tried non-protection at Aston Rowant? If not, may I ask how does he know that protection is necessary? Now is the time to test the efficacy or otherwise of non-protection of Fig-trees out of doors. Mr. Clarke stated that it is more on account of the cold, retentive nature of the soil at Aston Rowant than of the cold weather experienced there that protection is afforded, adding that "the two conditions combined are disastrous to the Fig." I admit that cold clayey soil is unsuitable to the growth of the Fig, but I fail to see that the conditions indicated are necessary conjunctions to disaster in Fig culture. Are we to understand that the Fig-trees at Aston Rowant have been planted

and are still growing in cold, retentive soil? In gardens in which the natural soil answers this description prior to planting Fig-trees, or, for the matter of that, Peach, Nectarine, and Apricot trees, the gardener in charge should excavate holes, provide good artificial drainage, and a compost suitable for the trees that are being planted. With reference to my remark that in "some severe winters the points of unripened shoots were killed down a few inches," I should have said when severe winters followed wet autumns. The Fig-trees in question (South-west of England) were trained almost on the same system as Peach-trees in the way of budding, laying in the retained shoots and afterwards stopping them at two feet, and the pinching out of all foregoing growths. We cut out at pruning time as much of the old wood and main branches as could be dispensed with, as the Fig, like the Peach, bears fruit on wood made in the previous year. Although the main stems of many of the Fig-trees referred to were one foot or 15 inches in diameter, the wall space was furnished from bottom to top with young shoots, in some cases single trees covering 70 feet run of wall, 9 feet high, every shoot being trained in its proper place close to the wall at the correct angle, the trees being gone over by the head nailer at regular intervals during the summer and autumn months. I may add that the Figs from these trees were shown in winning collections of fruit at the leading shows in the south-west and at the Crystal Palace. The Fig tree is not half so tender as many people imagine it to be. *Ficus Carica.*

THE EOIBLE GALINGALE.—This new and apparently excellent vegetable is described under "Chronique Horticole," in the second part of the December number of the *Revue Horticole* (Paris), p. 574. It is in the form of tubers produced by a somewhat scarce native plant, *Cyperus esculentus*, also known as *C. longus*, which is described as a tall perennial sedge with erect red-brown glumes, and is sparingly found in the South of England, Wales and the Channel Islands. The tubers are said to possess a sweet and pleasant flavour resembling that of the sweet Chestnut. They are fully described by Messrs. Paillex and Bois, in their work entitled *Le Potager d'un curieux*, pp. 571-2. The tubers closely resemble a goose-egg in form, and are known in France as *Amande de terre*. These tubers are much used in Spain for making an agreeable flavouring for ices, and a popular beverage resembling the French Orgeat, and known in Spain as *Chufa*. In other countries cakes are made from them; they also furnish an excellent oil and a good spirit of the nature of brandy. These tubers should be well worth a trial by all possessors of a watery or marshy garden, and should be a welcome addition to our curious vegetables. *W. E. Gumbleton.*

JAPANESE MAPLES are very effective in all styles of gardening when placed in suitable situations. A warm, sheltered position having a moderate slope to the south should be chosen, as they start into growth early, and are apt to get crippled by late spring frosts. They soon grow into conspicuous objects if all the conditions are favourable. Prepare the ground by trenching, and work in some good soil during the process. The following varieties succeed well at Underley, Westmoreland. *Acer japonicum aureum*, *A. palmatum*, *A. p. ampelopsifolium*, *A. p. dissectum*, *A. p. roseo-marginatum*, and *A. septemlobum atropurpureum*. *W. M.*

RAIN WATER IN YORKSHIRE.—In reference to the advice given to *Sufferer* on p. 409 concerning the addition of lime. This would certainly destroy the evil effects of the acid, but at the same time the lime introduced into the water would be very objectionable to gardeners. Water is capable of holding in solution very nearly 100 grains of quicklime per gallon of water, and water containing such a quantity of lime is quite unfit for syringing purposes; the foliage of plants and trees, as well as the glass, would very soon be very thickly covered with the lime remaining after the evaporation of the water, and gardeners have a very strong objection to see their plants in such a condition, as it causes a great amount of work in the course of a year in sponging the leaves. I prefer to use rock ammonia for the purpose. When the wind is in the west, the direction of the coal-pits, etc., the wind, laden with obnoxious gases, sweeps over this locality, and the rain water collected at these times contains a dangerous amount of free acid. I have found

in the rain water collected here from westerly rains, in parts per million:—

Combined sulphuric acid	... 3 to 5	} approx.
Free " "	... 8 to 10	
Chlorides	... 1½ to 3½	

Now 1 part of acid in 1 million parts of water

$$= \frac{1,000,000}{70,000} = 1 \text{ grain of acid in } 14\frac{1}{2} \text{ gallons of}$$

water, therefore it is quite easy to calculate the amount of acid in the water contained in a tank of known dimensions. Rock ammonia—which is the sesquicarbonate of ammonia—is somewhat uncertain in its composition, chiefly on account of the volatility of the carbonate of ammonia, but for our present purpose 1 lb. of rock ammonia contains sufficient ammonia to neutralise 11 to 12 oz. of the acid, therefore 1 part of acid in 1 million parts of water requires 1½ grain of rock ammonia for every 14½ gallons of water. Supposing the tank to hold 2,000 gallons of water, and the water is found to contain 10 parts of acid per million parts of water, the amount of rock ammonia required in order to neutralise the acid would be $= \frac{2,000}{14\frac{1}{2}} \times 1\frac{1}{2} \times 10 = 1,840 \text{ grains} = 4\frac{1}{2} \text{ oz. (approx.)}$. It is best to dissolve the rock ammonia in a bucket of water, and then throw the whole in the tank so as to insure a thorough diffusion. *W. H. Dobson, Stapleton Park Gardens, Pontefract.*

HARDINESS OF LORD SUFFIELD APPLE WHEN IN FLOWER.—Does this variety usually withstand frost, when in flower, better than most other kinds? I ask this because two bush trees of it were the only bush trees that bore a crop of fruit in the kitchen garden here this season. We have large bush trees of forty-two other varieties, and young trees of many others, all of which are near to the Lord Suffield trees, and yet they failed to yield a crop. Of these, Lane's Prince Albert, Gascoyne's Seedling, Newton Wonder, Barnack Beauty, Cox's Orange Pippin, and others, were, like Lord Suffield, in full flower when the frost of May 23 caused the destruction of the crop. Other varieties, including Bismarck, Emperor Alexander, The Queen, Warner's King, Ribston Pippin, St. Edmund's Pippin, Rosemary Russet, Worcester Pearmain, Duchess' Favourite, James Grieve, and Red Bietigheimer, set their blossoms; but they also lost their crop like the first section, and I cannot account in any way for Lord Suffield escaping, unless it is naturally more hardy in its flowers than the majority of varieties. The lowest temperature registered here on the above date was 19° on the grass, and 25° fully exposed 4 feet above the ground. Fortunately we have many large standard trees, and were able to secure a good supply from the tops of these, because they were above the line of severe frost. The Oak and Walnut trees near them afforded sure indications how far the frost reached up from the ground, as their leaves were all killed up to 12 or 15 feet high, but were alive above that. Bess Pool was the only Apple not in flower; its first flowers opened on May 25, and some large trees of that kind yielded a good crop. *W. H. Divers, Belvoir Castle Gardens, Grantham.*

SHRUBBERIES.—Instead of putting rare and choice shrubs when received from other localities at once into permanent stations, it is wiser to prepare a sheltered border in the nursery or reserve garden, and to place the new arrivals there for a season or so. They thus become acclimatised, and make a good quantity of fibrous roots, and by gaining a little in size are enabled the better to bear exposure. Let each specimen have sufficient room for development. Trim the broken roots with a sharp knife, making an upward cut. Use a generous mixture of rotted leaf mould and rich soil, adding a top-dressing of well decomposed manure. Prune deciduous trees so as to keep a well-balanced head and one leader to each specimen. Cut away suckers and growths from stocks that hybrid Rhododendrons are grafted upon. Collect berries of Hollies, Hawthorn, Yew, etc., and mix them with sand until sowing time. Shake off heavy falls of snow from rare Conifers, etc. *X.*

PYRAMIDAL AND COLUMNAR TREES are pleasing objects in a landscape. The undermentioned are some of the more effective:—*Abies excelsa pyramidalis*, *Cupressus Lawsoniana* varieties, *Cryptomeria japonica*, *Ilex madeirensis*, *Juniperus chinensis*, *J. hibernica*, *J. suecica*, *Libocedrus decurrens* (some old specimens of these trees form a quite spiral growth), *Pinus Cembra* (conical in shape), *Taxus hibernica*, *T. stricta* and *Thuja Lobbi*. *W. A. M.*

LEGISLATION, AND THE SPREAD OF PLANT DISEASES CAUSED BY FUNGI.

(Continued from page 431.)

Phytophthora has only one form of reproduction by means of spores, and these are produced only on the living leaves of the potato plant. Furthermore, these are not resting-spores, but germinate the moment they are mature, and perish within a very short period of time unless they happen to be located on the leaf of a suitable host-plant. It is thus impossible for the European outbreak of potato disease to have originated from the spores.

The disease must have come from the New World under the form of hibernating mycelium in the tuber, and by the same means it has unknowingly been sent from Europe to various parts of the world.

At the present day *Phytophthora* has spread from the potato to some allied European wild plants, a fact to be borne in mind in connection with the possible means by which a crop may be infected.

BULBS.

As regards bulbs. *Chionodoxa Luciliae*, a beautiful early spring flowering bulbous plant came to us from Asia Minor. Some time after its introduction, a variety of this plant, described as differing in the possession of a "black eye," was imported. The "black eye" proved to be due to the presence of a smut fungus developed in the anthers. Further investigation showed that a perennial mycelium of this fungus was present in the "cushion" or flattened stem from which the bulb-scales spring. This mycelium grows up inside the flower stem, and produces its spores in the anthers. The mycelium also passes from the parent bulb into the young bulbs to which it gives origin. Hence every bulb is infected, and, in the majority of instances, bears smutted anthers, but not always. Smutted plants have been under observation for the past ten years at Kew, and, although in the majority of instances the anthers have been smutted, every now and again flowers free from smut have appeared, although examination of the bulb in such instances showed the presence of living mycelium.

Special stress is laid on the fact that tubers or bulbs proved to contain the germs of a disease do not necessarily always develop that disease in their offspring, because potato growers often discredit the statement that the potato disease can be transmitted through the tubers. Their argument is that on occasions healthy plants have grown from obviously diseased tubers that have been thrown on one side, and grown spontaneously. Undoubtedly so; a fungus, like every other plant, has its limitations, and under certain climatic conditions, favourable to the potato, and consequently unfavourable for the fungus, the latter would be unable to assert itself. Notwithstanding, it is not wise to plant potatoes or bulbs known to be diseased; as the risk is too great.

It is not necessary to remind those who have paid attention to the cultivation of bulbous plants of the danger arising from the use of lily or snowdrop bulbs attacked by the fungus called *Botrytis*.

Legislation has not dealt in any way with the sources of danger indicated above, neither is it conceivable how it could do so. If attempted, to secure any prospect of success, potatoes would have to be cut into slices in search for specks of browning, and the cushion of each bulb would require to be examined microscopically. This state-

ment, of course, does not apply to potatoes and bulbs only.

A third source of danger of introducing new diseases into distant countries is through the medium of living plants and ripe fruit.

IMPORTATION OF LIVING PLANTS, FRUITS, ETC.

In the case of fruit trees, among the most destructive diseases are "Apple tree canker" (*Nectria ditissima*), which in its advanced stage is very conspicuous, but in its incipient condition on young trees such as are exported, it is very doubtful whether its presence would be detected in a cursory examination at the port of entry. "Apple tree mildew" (*Sphaerotheca mali*) is very conspicuous on the foliage, but if the foliage is not present it would not be detected, but would certainly reveal itself when new leaves appeared, as the mycelium of this fungus hibernates in the branches.

GOOSEBERRY MILDEW.

Much has been said relating to the recent appearance of the American gooseberry mildew in Ireland. How was it introduced? No one knows, or, if they do know, they do not appear to be inclined to tell. The point is, was it introduced on living plants in its fully developed conspicuous condition, in which case it could not have escaped the eye of an official on the look out for diseases? or did it come under the form of spores adhering to the plant, which in due season produced the disease? In the latter case no official, however observant, could have detected its presence. To state that if legislation on the point had been in force the disease would not have entered Ireland is only the expression of an enthusiast, and will not bear criticism.

PEACH-CURL.

Another very destructive disease that has found its way from one country to another is "Peach leaf-curl" (*Exoascus deformans*). When the diseased foliage is present this disease is unmistakable, but after the foliage has fallen, the tree may show no trace of its presence. Nevertheless the disease is present, as the mycelium is perennial in the branches, and would probably reveal itself the following season. *George Massee*.

(To be continued.)

TREES AND SHRUBS.

DECIDUOUS FLOWERING SPECIES.

(Concluded from page 437.)

Taking the more beautiful of the deciduous species in alphabetical order, there are the *Abelias* (neat, low-growing shrubs); *Æsculus* (*Pavia*) *macrostachya* (a white-flowered Horsechestnut, growing on an average about six feet high, spreading to twice that extent in width); *Amelanchier canadensis*, *A. c. florida*, *A. c. sanguinea* (all of which are most abundant bloomers); the Common Almond, *Amygdalus communis amara*, *A. Davidiana*, *A. dulcis* (in variety); *A. persica* (the double-flowering peach); and of other Peaches and species of *Pyrus* several very beautiful and floriferous kinds; *Benthamia fragifera*, *Berberis* (of much beauty in flower or in their fruits); *Buddleia Colvillei*, *B. globosa*, *B. Lindleyana*, and the magnificent *B. variabilis*; *Cæsalpinia japonica*, *Calycanthus* (several species with flowers of delicious fragrance); *Caryopteris Mastacanthus* (with long spikes of blue-coloured blossoms); *Catalpa bignonioides*, *C. b. aurea*, and others; *Cerasus* (of many species, and all of them beautiful when in bloom); *Cercis siliquastrum* (having rosy purple-coloured pea-like blossoms in early spring) and *C. virginica*; *Colutea arborescens*, and one or two other species; *Cornus* (numerous species,

very desirable for floral and leaf effects); *Craetagus* (in double and single flowered species and varieties, with white, pink and scarlet flowers); *Cydonia japonica* (of many varieties), handsome in flower, and carrying quaint-looking fruits, the common Quinces being worthy of a place in the pleasure grounds on account of the abundance of their large white blossoms and handsome fruits, *C. Maulei*; the white and the yellow flowered *Broom* (*Cytisus*); *Daphne Mezereum* (in several varieties, having fragrant flowers, which appear early in the summer); *Deutzias* (of many species and varieties, which are very suitable as solitary plants or small groups); *Eucryphia pinnatifolia* (a distinct-looking plant, with large, white, single flowers, and leaves like those of a rose); a Chilean species (fine for a group or as a solitary plant). *Forsythia suspensa* and *F. viridissima* and the forms of these are desirable, being very early bloomers; *Hamamelis* (*Witch Hazel*), with brown and yellow coloured flowers, which appear very early in the new year before the foliage expands, should not be forgotten; *Hibiscus syriacus*, single and double flowered, are showy plants, growing to a height of 10 feet; *Hydrangea Hortensia* (excellent free-flowering shrubs in the milder counties); *H. paniculata grandiflora*, and other species; *Hypericum* (low-growing shrubs or creepers, of which the common *St. John's wort*, *H. calycinum*, is well known); *Kölreuteria paniculata* (a small tree, bearing deep orange-coloured flowers in panicles); *Laburnum*, in many varieties; *Lonicera* (shrubby Honeysuckles, some of them, notably *L. Standishii*, flowering in early spring); *Magnolias* in great variety (capital solitary plants, possessing Tulip-like flowers, and varying from white to purple); *Ornus europæa* (with enormously long pendulous panicles of greenish blooms. *Pæonia Moutan* (*Tree Pæony*) should never be left out of south country gardens, the flowers affording gorgeous effects, especially when the plants are grouped, as also do the species of *Philadelphus* (*Mock Orange*), *P. coronarius*, in many varieties; *P. Gordonianus*; *P. grandiflorus*, and its varieties; the half-a-dozen hybrids raised by *M. Lemoine* of Nancy, and *P. microphyllus* (a most profusely flowering species); *Pyrus* (*Apple and Pear*, of which there are numerous species and varieties, including *Crabs*, *Chinese*, *Japanese* and *Siberian*), which are indispensable owing to their beauty; *Rhus Cotinus* (the *Wig plant*), *Rhus glabra*, and *R. g. laciniata*, *R. typhina* and others (having quaint forms and beautiful leafage); *Ribes* (flowering *Currant*) *aureum*, *R. a. præcox*, and *R. sanguineum*, in its several forms. The genus *Spiræa* affords numerous species of value for their flowers and foliage; *Stuartia pentagyna* and *S. Pseudo-Camellia* (*Japanese shrubs*, with clear white flowers and *Camellia*-like leaves, which take on brilliant tints in the autumn); *Syringa* (*Lilac*) *Emodi*, and *S. E. variegata*, *S. persica*, and its white variety, *S. Josikæa*; and the many fine varieties of *S. vulgaris* are grand plants when placed in good soil, apart from trees and other shrubs, and in soil not too damp. As seen in mixed shrubberies, their ornamental value is seldom brought out; the bushes run to too great a height, and lose their lower branches, thus becoming unsightly objects. The *Viburnums* make fine specimen plants, more especially *V. Lentago*, *V. macrocephalum*, *V. Opulus* (the *Guedres Rose*), and its varieties, *nanum* and *sterile*. *V. plicatum* is a showy plant, with large white flower heads, succeeded by black fruits. I will close my list with *Weigela rosea*, of which there are many varieties of much beauty of flower, and of leaf colouring, especially in one, namely, *W. Looymansii aurea*.

Those possessors of gardens who will

adopt group planting and use the more common subjects for forming shelter shrubberies, or dividing the area—in some cases employing hedges instead of shrubberies—will be pleased with the enhanced summer effects thereby obtained, which are due to greater vigour of growth and beauty of form and flower of the grouped plants which result from a more abundant food-supply and freer access of sunshine. There are some species of Rose of which the gardener may make great decorative use, as solitary or group plants, viz., the various Ramblers, Turner's, Paul's and others; beautiful single-flowered species, as *R. macrantha* and *R. moschata*; the Briars of Lord Penzance's raising, Austrian Briars, Scotch Roses, and the stronger growing varieties of Hybrid Perpetual, China, Bourbon, and Ayrshire Rambler, and Prairie Roses. All of these may be made use of in the garden and pleasure grounds as solitary plants, festoons, pillar, climbing, pyramidal, and other forms, without encroaching on the domain of the "Rose Garden" proper. How and at what season the changes here advocated in the garden should be carried out are matters that must be left to the decision of owners of gardens and their gardeners; but I will conclude with the hint that the present season is the proper one in which to make a beginning, at the least, with the preparation of the soil, deferring planting till the winter is past. *F. M.*

LEAVES FROM MY CHINESE NOTE-BOOK.

(Continued from page 422.)

WA-SHAN TO FULIN.

JULY 5TH.—We left our inn at Ta-t'ien-ch'ih at 5.30 a.m., and struck the main road to Fulin almost immediately. The morning was fine, and we got a good view of Mount Wa for the first time. About 200 yards from our inn we passed a good-sized tree of *Davidia involucreta*. Crossing a narrow gap we left the tiny valley of Ta-t'ien-ch'ih, skirted the side of a small lake and entered a long narrow valley. This valley contained a wealth of flowers, including those of *Hydrangea*, *Deutzia*, *Philadelphus*, *Spiræa*, *Senecio*, *Rodgersia pinnata alba*, *Primula pulverulenta*, with a host of other shrubs and herbs which made the scene a very gay one.

At 8.15 we reached a solitary hut, at an altitude of 8,000 feet, and rested there, having become enveloped in a dense chilly mist. This quickly cleared, and we continued the ascent, which became more steep as we neared the head of the valley. The flora grew more luxuriant than ever; *Spiræa canescens* var. *sulphurea*—a lovely plant—was common here; so also were *Meconopsis chelidoniaefolia* and *Rodgersia pinnata alba*.

At the head of this floral paradise we commenced to scramble up the steep mountain side to the So-i-ling Pass. We rested at a salt-likin barrier, altitude 8,900 feet, where the ground was simply covered with *Primula pulverulenta* in full flower. I subsequently secured seeds of this fine plant from this locality, and succeeded in introducing it to this country with others. We passed many coolies struggling along with eighty to a hundred cattles of salt on their backs. Salt seems to be the sole traffic towards Fulin, and at this likin post each load pays a duty of 16 cash.

Continuing, we reached the So-i-ling at 10 a.m. I made out the altitude to be 9,100 feet; this is 300 feet in excess of what Baber gave. The neck of the pass is only a few feet wide; and then comes a very precipitous descent. We reached some houses at 11 a.m. and lunched there.

Leaving again, our road became more easy,

and we entered a cultivated area. Wheat and Barley are grown here, and were then about a foot high; these, with Potatoes (Irish) and Buckwheat, are the chief crops. Small plots of *Nicotiana rustica* were cultivated hereabouts.

The road, which was there a good one, slowly but surely descended, and eventually led us into a magnificent glen with steep limestone cliffs on either side. The flora is extremely rich, and I collected many specimens. The plants noted in the morning were still with us. Of herbs, the palm must be given to *Rodgersia pinnata alba*. All the moist rocky places were one mass of this lovely plant in full flower; often a hundred square yards of a sloping bank contained nothing else but this plant. Hereabouts it takes the place of *Rodgersia æsculifolia*. I examined many of the flowers, and found them all perfect; in this the species differ from *R. æsculifolia*, where the flowers are often polygamous. *R. pinnata alba* is also fragrant. At the head of this glen we found our inn, the place being called Yin-Kou, altitude 6,600 feet, 20 miles from Ta-t'ien-ch'ih. The coolies reached here at 2.50 p.m., but it was 5 o'clock ere I arrived.

Our inn was a large one, built in the form of a quadrangle with a small courtyard in the middle, through which the road passed. Doors at either end barred admittance after dark. The inn was the darkest, dampest and filthiest I had seen. A lighted candle only seemed to make the darkness more intense. How people can live in such dark holes passes my understanding. Nevertheless they all looked healthy and strong, though they are exceedingly filthy even for Chinese. The women all have feet not distorted as in other parts of China, and do most of the work in the fields.

Our inn was surrounded on three sides with a tiny belt of virgin forest. This belt was perhaps 50 yards deep and 300 yards round. The trees were of huge size, and gave one a faint idea of what the country was like before the forests were destroyed. I walked through and around it, and noted the following trees:—*Tetracentron sinense* (80 feet); *Magnolia Yulan* (40 feet); *Davidia involucreta* (50 feet); *Cornus macrophylla* (20-40 feet); *Cerasus cornuta* (60 feet); *Betula utilis* (80 feet); *Fagus longipes* (80 feet); *Ulmus castaneæfolia* (60 feet); *Evodia* sp. (50 feet); *Juglans* sp., *Salix* two species, *Æsculus chinensis*, and two large trees with which I was unacquainted. The size of these trees, especially of the Birch, Beech, Walnut, and *Tetracentron*, quite astonished me. The *Davidia*, of which there was only one, was covered with young fruits; *Æsculus chinensis* was in flower. A couple of miles before reaching our inn we passed a gigantic specimen of *Magnolia Yulan*; it was fully 80 feet high, and had a tremendous leaf area. Large trees of *Pterocarya hupehensis* were common during the day.

The day was not long enough to drink in all the charms of the journey, and as for being tired, who could be tired amidst such scenery and such a flora? Apart from those already mentioned, the following were perhaps the more interesting plants noted to-day:—*Spiræa Henryi*, *Buddleia Veitchiana*, *Sambucus racemosa*, *Corylus tibetica*, *Clethra canescens*, *Aspilbe Davidii*, *Acer tetramerum*, *Picea* sp., *Berberis* sp., *Lonicera* sp. nov., *Populus* sp., and a species of *Dracocephalum*. *E. H. W.*

(To be continued.)

FOREIGN CORRESPONDENCE.

AGAPANTHUS.

It seems to me that the fine *Agapanthus umbellatus globosus*, figured in your column, page 237, is the same as my *Agapanthus caulescens* (figured in the *Gartenflora*, 1901, Plate 1487, page 21), as it comes from the same country. It is, indeed, a noble plant, and would be hardy in your country. In the open air it has not the globose character, but the single flowers are deeper in colour than that of the *A. umbellatus*. It is a good species and not a variety. It is a very robust plant, *C. Sprenger, Yomero-Naples*.

SOCIETIES.

ROYAL HORTICULTURAL.

Scientific Committee.

DECEMBER 19.—Present: G. Massee, V.M.H. (in the chair), Dr. Rendle, Messrs. Gussöw, Bowles, Odell, Worsley, Douglas, Saunders and Chittenden (hon. sec.), visitor, Mr. W. M. Webb, F.L.S.

Big Bud in Black Currants.—Mr. DE MONTMORENCY, of Carrickmines, Dublin, sent specimens of this well-known trouble. Mr. SAUNDERS said: "The buds are attacked by the Black Currant mite (*Eriophyes ribis*). There are not at present any living mites in them, as the buds are dead, and the mites have probably migrated to the living buds. These mites are so small that they cannot be seen without the aid of a strong magnifying glass, so that it has been very difficult to make out their life history, in fact, there is still something to learn. No remedy for the use of the fruit grower has yet been discovered. The mites may be found in the living buds at all seasons of the year. They appear to migrate from the buds in which they have passed the winter to the young buds which are forming at the base of the leaves in June or July. The action of the mites feeding on the embryo leaves that they contain causes the buds to swell, and become much larger and rounder than the others. They never open properly. A large number of experiments have been made, and remedies tried without success, and various investigations are now being carried out with the hope of finding some method of stopping the ravages of these little mites. Picking off the swollen buds and burning them as soon as they are noticed is a partial remedy when the attack is slight, and if the removal of the infested buds is properly done. Spraying with the following mixture has also met with some success. Mix 1lb of flowers of sulphur with a little water till it is of about the thickness of gruel, and dissolve 12lb of soft soap in two gallons of water, stir the two mixtures well together, then mix in slowly enough water to make 25 gallons. Neither of these remedies, however, will free the bushes entirely from this pest. Cutting down the bushes to within 2 inches or 3 inches of the ground and dressing them with an insecticide has even proved ineffectual, for though at first the buds seemed to be all right, in the course of two or three years the mites again made their appearance. By far the best thing to do, as far as is known at present, is to burn the infested bushes, and obtain fresh ones from an untainted source, and to plant them in fresh soil. In cuttings it is not sufficient to see that there are no swollen buds on them, but they must be taken from bushes that are free from this pest. These mites are easily, and I have no doubt are frequently, carried by birds and insects from one bush to another; but if the growers of Black Currants would combine together, and destroy every bush that is in any degree infested with this mite, the pest might be stamped out. If combined efforts were made by neighbouring fruit growers, many other pest, both animal and vegetable, might be practically annihilated."

Pelargonium Attacked by Botrytis.—Leaves and flowers of *Pelargonium Raspail* were sent from Chesnut, and the fungus was said to "attack both old leaves and new ones as they break. I find it also attacks the flower. A 90ft. house of the *Pelargoniums* up to a fortnight ago looked a picture, but the plants are now suffering from disease." Mr. MASSEE reported: "The disease is due to the presence of a fungus, *Botrytis vulgaris*, which only becomes a destructive parasite when an excess of moisture is present. Spray the plants with a solution of sulphide of potassium, 1oz. in 6 gallons of water, and add 4oz. of soft soap. Admit as much air as circumstances will allow."

Fungus in Greenhouse.—A fungus growing near the roots of *Cycas revoluta*, in a warm house, was sent from Cornwall. Mr. MASSEE reported: "The fungus is *Clavaria fragilis*, Fr., a British species that often appears among moss, &c., and sometimes crops up in flower-pots. It is not parasitic nor in any way injurious."

Grapes and Arums Diseased.—Mr. MASSEE said that no fungus was present on either the Grapes or *Richarda* shown at the last meeting.

West Indian Oranges.—Mr. WORSLEY said that the fruit he exhibited at the last meeting under the name of "Mandarin" Orange does not appear to be the same as that mentioned by Rivers in Nicholson's "Gardeners' Dictionary." He treats it as distinct from the Tangierine. Yet it may be a garden form of the Chinese Orange, possibly that mentioned by Rivers as grown in the Azores. This is not improbable. The seeds have long, horn-shaped ends, more developed even than in the Blood Orange of Malta

and Palermo. The class of Blood Orange is also Japanese (or Chinese), and used to be imported 50 years ago to Palermo from Japanese gardens in the form of dwarf grafted trees only a few inches high. The appearance of the seeds lends colour to the view that the specimen of the Mandarin we had is also of Chinese stock, even if altered in appearance (of the fruit) by new conditions. The fruit I found juicy, but more acid than the Tangierine. The amount of seed points to the tree being a seedling. Nearly all the Jamaican Oranges are seedlings, and this is why they are so crammed with seeds. I noted this when in Jamaica in 1895. When they begin to "garden in Jamaica they will soon produce very fine Oranges."

Larch Cone with Elongated Axis.—Mr. WEBB showed a cone of *Larix europæa* in which the axis had elongated beyond the scales of the cone some 3 inches or 4 inches. The cone was one of several similar growing on a tree near Burnham Beeches. Dr. Masters described this condition in *Veg. Teratology*, p. 435.

Tomatos in Winter.—Mr. WORSLEY showed some Tomatos he had gathered in the first week in October, and which had been kept in a cellar since then. He stated that it was easy to keep Tomatos in this way until the beginning of the new year, if care was taken to choose varieties which were pointed at the end where the style grows. Varieties which were open at that end very soon decay. The flavour, however, rapidly deteriorates, but the fruits remain quite good for cooking.

Magnolia Shoot with Fungus.—Miss KING, of Wotton-under-Edge, sent a shoot of *Magnolia conspicua* bearing numerous red spots, the fruits of the fungus *Tubercularia vulgaris*.

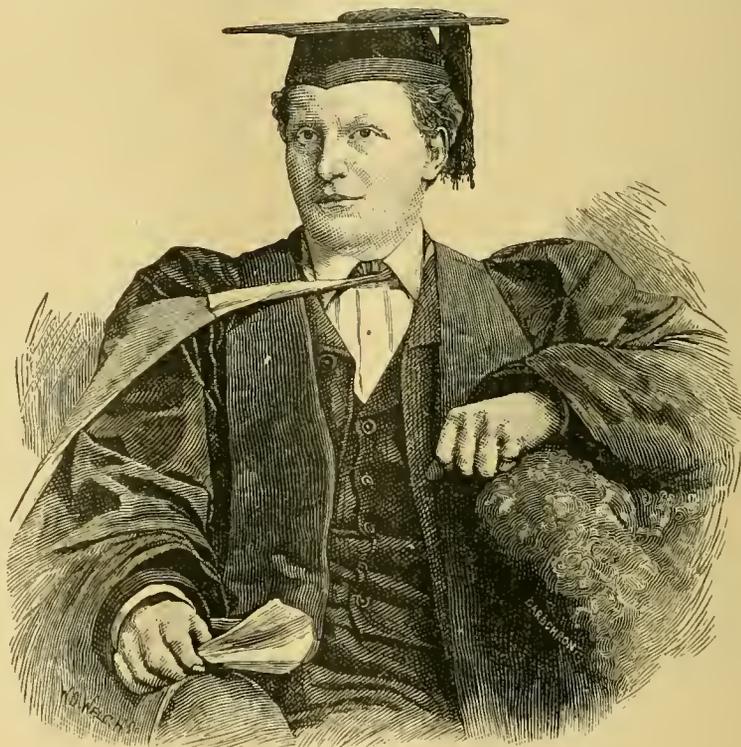
NATIONAL DAHLIA.

DECEMBER 22.—The annual meeting of the above Society was held on the above date, at the Hotel Windsor, Victoria Street, Westminster, Mr. E. Mawley, V.M.H., presiding. The report, presented by the hon. secretary, was generally satisfactory. The exhibition, held at the Crystal Palace, was a success, and the classes for amateurs were well represented. The new members joining during the year amounted to 32, which is, however, partly neutralised by resignations and deaths. The total income from all sources amounted to £181 14s. 6d., and the expenditure to £161 1s. 1d. The annual exhibition, in 1906, will be held at the Crystal Palace on September 6, 7. The question of the proper naming of flowers at the exhibition was brought forward and it was resolved to alter the rules to the effect that all blooms must be legibly named under penalty of disqualification. The officers of the Society were all re-elected, and included in the names of the committee were those of Messrs. H. J. Jones, E. Doncaster and W. Stevens, to take the place of 3 members who did not desire re-election.

Obituary.

F. W. BURBIDGE.—It is with great concern that we have to announce the death on Sunday last of this distinguished botanist-gardener. According to the information we have received, he died in his sleep, as we may hope, peacefully and painlessly. Mr. Burbidge is known to have suffered for some time from an affection of the heart. To us who have known him from the time he entered the gardening profession at Chiswick, and have watched his career ever since with sympathetic interest, the sense of loss is great. Indeed, Mr. Frederick Moore, who writes to us from Glasnevin, well sums up the feelings entertained by Mr. Burbidge's friends and associates. "When I say," writes Mr. Moore, "that Burbidge's death leaves a gap in gardening circles, not only in Ireland, but wherever gardening is loved and practised, which cannot well be filled, it is not mere perfunctory phraseology. It is over 26 years since F. W. Burbidge was appointed Curator of Trinity College Botanic Garden, Dublin, a position he has held ever since. During these years no living man has done more to encourage gardening pursuits in Ireland than he has done, and no man brought greater love and enthusiasm to bear on everything connected with his work. I remember distinctly the first occasion on which

I went round Glasnevin with him, and how much I was impressed with his minute and wide-reaching knowledge of plants. By 'minute knowledge' I mean knowledge of small structural details which served to impress the individuality of each plant on one's memory, and his knowledge of the history of plants. This was subsequently intensified, and I always looked forward to an opportunity of spending an hour or two in his company in a good garden. Burbidge became a great favourite in Ireland, not only with the owners of gardens, but with gardeners. Everywhere he was a welcome visitor, and his advice was eagerly sought and readily and generously given. It has been my privilege to have been on terms of intimate friendship with him since he came to Ireland, and some of the pleasantest and most interesting of my gardening experiences have been in his company. He had a very quick eye for a good plant, and even in a starved and crowded condition he would pick out a plant with which he



THE LATE F. W. BURBIDGE, M.A., V.M.H.

was unfamiliar, and gauge its possibilities under more favourable conditions, detecting at a glance small details of structure and habit which a less discerning eye would have passed over. Burbidge's strong characteristic was his staunch adherence and devotion to anyone whom he regarded as one of his friends, a trait which gained for him the respect of everyone. He allowed no evil word to be said in his presence of anyone he liked. May he rest in peace."

CULTURAL MEMORANDA.

SALVIA PITCHERI

SYN. S. AZUREA GRANDIFLORA.

THIS plant is not grown so much, nor is it so well known as its merits deserve. A batch of plants propagated in February, and grown on, are very welcome at this season. They should be grown in a mixture of loam, leaf-mould, and spent mushroom-bed manure, with enough silver sand to keep the whole porous. Firm potting is very necessary. The plants should be "stopped" once at an early stage of their growth. During the summer they should be placed outside, and, as the pots become full of roots, given occasional waterings with well diluted manure water. *C. Ruse, Munden Gardens, Watford.*

ANSWERS TO CORRESPONDENTS.

ASH: *A. M.* The disease is due to a fungus having first attacked the leaves, and from thence passed into the stem and killed the buds. No remedy can be suggested until diseased leaves are seen.

CARNATIONS DISEASED: *B. V. Silesi.* The plants are attacked with a fungus, *Helminthosporium*. Burn all the diseased stock and start afresh.

CORRECTION: At p. 443, for "Peach" read "Beech."

GRAPES: *Vitis vinifera.* The atmospheric temperature of the Grape room need not be maintained beyond 45°, but the atmosphere needs to be rather dry. Has the shrivelling been caused by inattention to the refilling of the bottles with water? The length of time bottled Grapes may be expected to keep in good condition varies considerably, but your fruits of Black Alicante bottled at the end of November should be perfectly good at the present time. The best keeping Grapes are those that were best matured before being cut from the Vine. Read the directions pub-

lished in the weekly calendar on p. 435, of our last issue.

LEAVES IN SHRUBBERIES: *Trees.* You are quite right in thinking that the fallen leaves would be valuable to the roots of the older trees, as well as of the younger shrubs. The raking out of fallen leaves for the sake of obtaining tidiness has the effect of impoverishing the soil. If you dig or "point" in the leaves, you must take care that the roots of the trees are not damaged more than can be helped, and therefore the tool should not be worked near to the stem of an individual specimen. Remembering that the only point to be gained by digging leaves in is that of preventing them being blown away, it will be apparent that the digging tool need only be inserted very shallowly. Shrubberies that are treated in this manner present a very neat appearance.

NAMES OF PLANTS: *C. A. M.* Seedling variety of *Veronica Andersoni*.

WASH FOR APPLE AND PEAR TREES, &c.: *W. F. B.* Read the directions given on p. 423, in the issue for December 16, under the heading "The Hardy Fruit Garden."

COMMUNICATIONS RECEIVED.—*R. B. W.*—Louis Gentil.—*H. C. Brown* (too late), *J. W., W. H., J. G. W.*—*E. H. W.*—*F. M.*—*J. K. K. & Sons* (we regret the misprint).—*W. S.*—*W. C.*—*J. O. C.*—*J. E. S.*—*A. C.*—*A. E. L.*—*W. H. D.*—*D. W.*—*H. S. K.*—*L. F.*—*Sir H. Maxwell.*—*H. H.*—*R. G. F.*—*A. D.*—*T. D.*—*D. B.*—*T. B.*—*F. M.*

For Market and Weather Reports, see page 2

