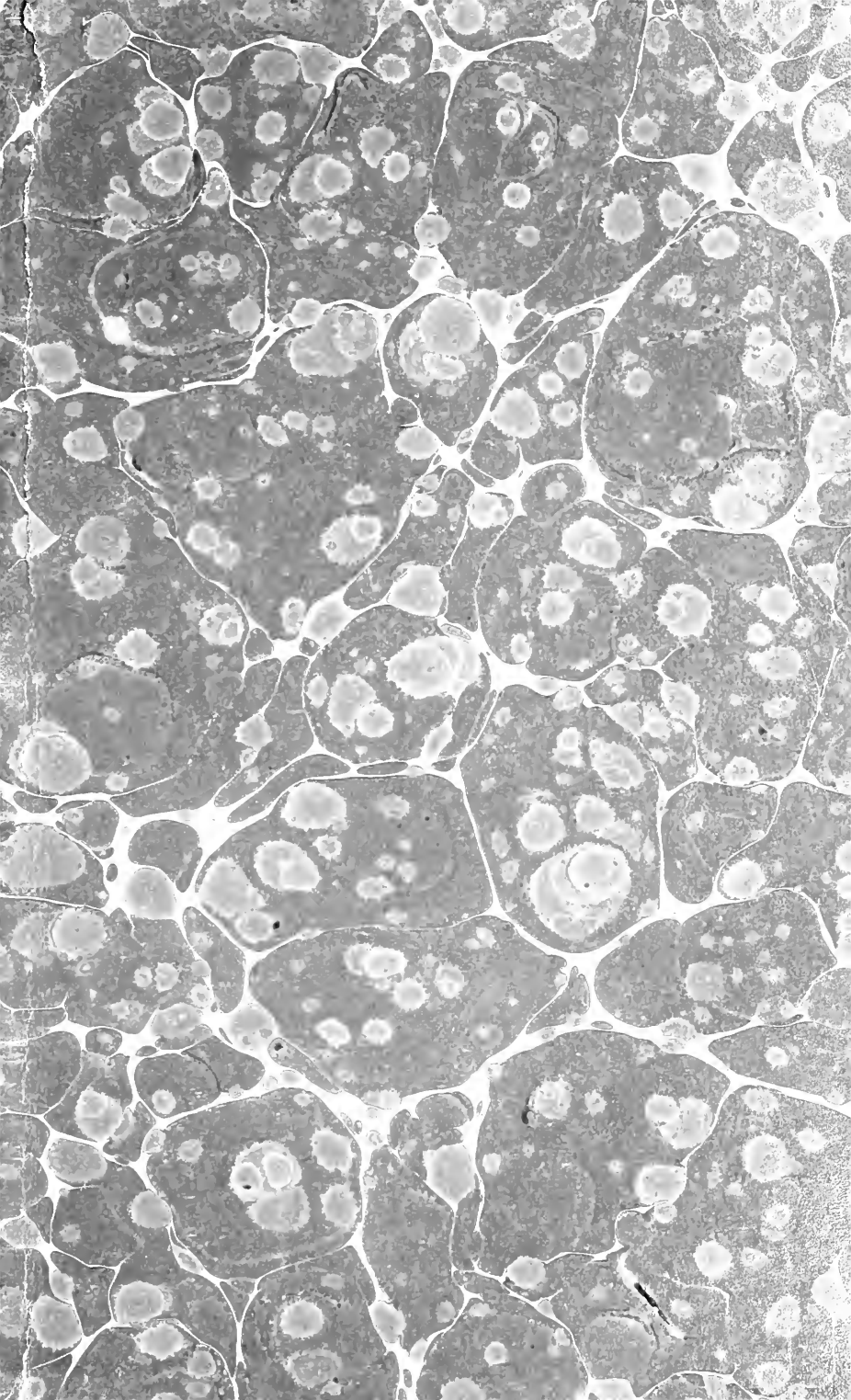


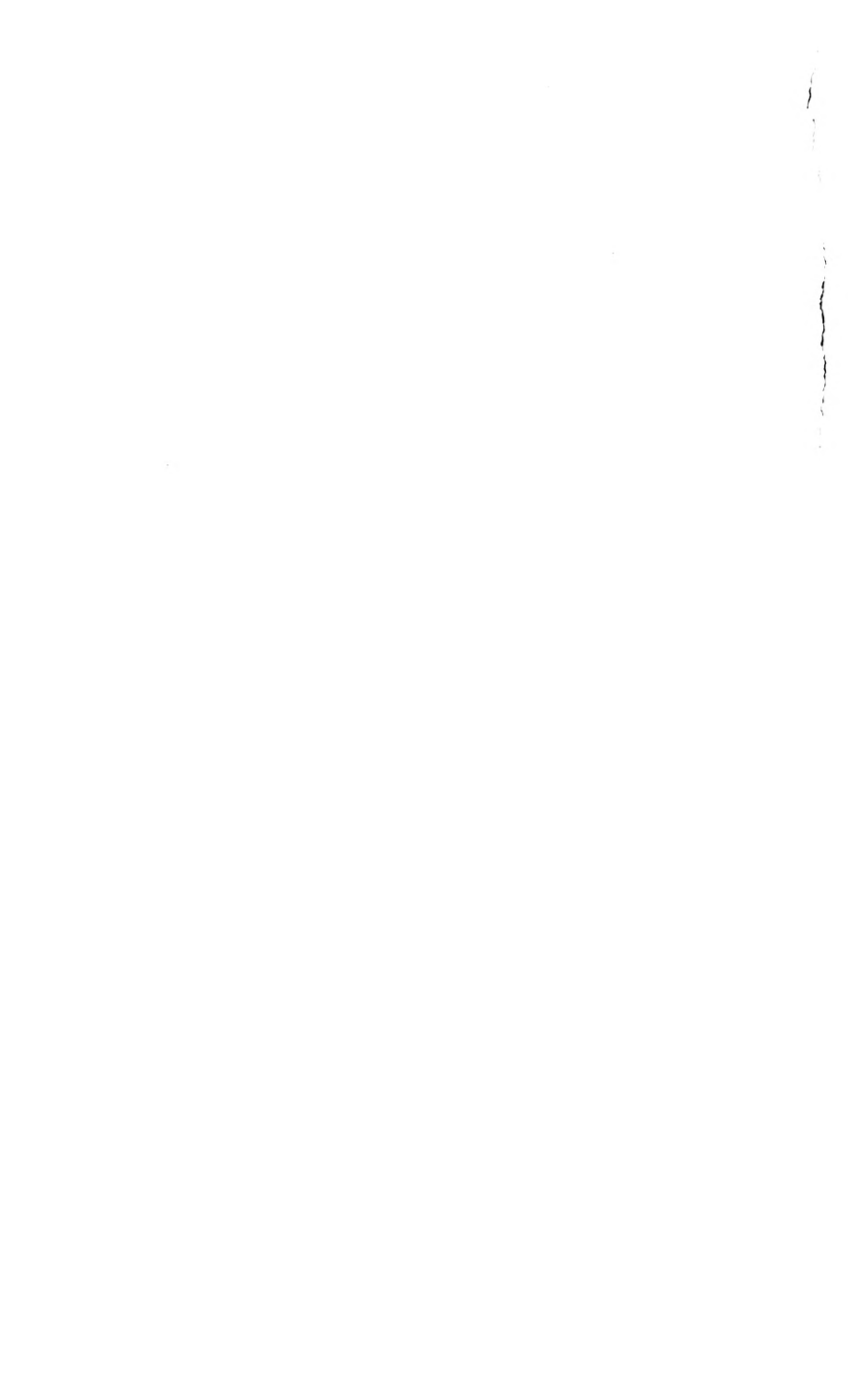


Class

Book

SMITHSONIAN DEPOSIT







THE
ENTOMOLOGIST'S
MONTHLY MAGAZINE:

CONDUCTED BY

G. C. CHAMPION, F.Z.S. J. E. COLLIN, F.E.S.

W. W. FOWLER, D.Sc., M.A., F.L.S.

R. W. LLOYD, F.E.S. G. T. PORRITT, F.L.S.

J. J. WALKER, M.A., R.N., F.L.S.

73
-73
15

SECOND SERIES—VOL. XXIV.

[VOL. XLIX.]

“ It was his faith—perhaps is mine—
That life in all its forms is one,
And that its secret conduits run
Unseen, but in unbroken line,
From the great fountain-head divine,
Through man and beast, through grain and grass.”

LONGFELLOW.



LONDON:
GURNEY & JACKSON (MR. VAN VOORST'S SUCCESSORS),
33, PATERNOSTER ROW.

1913.

Q-L-11
3-2

LONDON:

A. NAPIER, PRINTER, SEYMOUR STREET, EUSTON SQUARE, N.W.

1913.

INDEX.

CONTRIBUTORS.....	PAGE	SPECIAL INDEX (<i>continued</i>)—	PAGE
	i	Mallophaga	xi
GENERAL INDEX	ii	Neuroptera and Trichoptera	xii
SPECIAL INDEX—		Orthoptera	xiii
Anoplura	vii	Protura	xiv
Coleoptera	vii	Siphonaptera	xiv
Diptera	viii	Thysanoptera	xiv
Hemiptera	ix	GENERA AND SPECIES NEW TO BRITAIN ...	xiv
Hymenoptera	ix	" " " " " SCIENCE ...	xvi
Lepidoptera.....	x	ERRATA	xvii
		EXPLANATION OF PLATES	xviii

INDEX TO CONTRIBUTORS.

CONTRIBUTORS.....	PAGE	CONTRIBUTORS.....	PAGE
Barber, H. S.....	243	Harwood, B. S.	214, 230
Bagnall, R. S., F.L.S.	171, 227, 263, 264	Hudson, G. V., F.E.S.....	185, 205, 250
Bayford, E. G., F.E.S.	111, 275	Jacobs, Capt. J. J., R.E., M.I.M.E., F.E.S.	117, 189, 233
Beare, Prof. T. H., B.Sc., F.R.S.E., F.E.S.	111, 213	Jenkinson, F.	64, 65
Black, J. E., F.E.S.	34	Jennings, F. B., F.E.S.	15
Blair, K. G., F.E.S.	222	Johnston, H. B.....	259
Cameron, M., M.B., R.N., F.E.S.	78, 135, 275	Joicey, J. J., F.E.S.	160
Carey, W. A.....	187	Joy, N. H., M.R.C.S., F.E.S.	25, 57, 76, 100, 154, 212, 224, 275
Carter, A. E. J.	17, 180	Knab, F.	54
Champion, G. C., F.Z.S.	2, 32, 33, 34, 55, 63, 88, 109, 187, 211, 256, 275	Lindiger, Dr. L.	103
Champion, H. G., B.A.....	35, 36, 89, 254	Mansbridge, W.....	42, 66, 91, 114, 163
Chapman, T. A., M.D., F.Z.S.....	8, 81, 137, 182	Morice, Rev. F. D., M.A., F.E.S.	137, 140, 253
Collin, J. E., F.E.S.....	104, 130, 171	Morley, Claude, F.Z.S.	276
Collins, J.	229	Morse, E. W.....	187
Day, F. H., F.E.S.	136, 187, 255	Mortimer, C. H., F.E.S.	90, 215
de la Garde, P. H., R.N., F.E.S.	7	Morton, K. J., F.E.S.	295, 271
Dollman, H. C., F.E.S.	14	Munro, J. W., B.Sc.....	257, 258
Dudgeon, G. C., F.E.S.	294	Newbery, E. A.	126, 154, 213, 226
Eaton, Rev. A. E., M.A., F.E.S.	230	Nurse, Col. G. C., F.E.S.	83
Edwards, F. W., F.E.S.....	107, 110, 209, 217	Perkins, R. C. L., D.Sc., M.A., F.L.S.	10, 62, 111, 166
Edwards, J., F.E.S.	70, 146, 251	Porritt, G. T., F.L.S.....	16, 38, 63, 79, 260
Fergusson, A.	136	Poulton, Prof. E. B., D.Sc., M.A., F.R.S.	177
Fordham, W. J.....	257	Rogers, Rev. K. St. A., M.A., F.E.S.	45, 94, 127
Fowler, Rev. W. W., D.Sc., M.A., F.L.S.....	27, 109	Rothschild, Hon. N. C., M.A., F.L.S.	16, 90, 102, 159, 182, 207, 258,
Fryer, H. F., F.E.S.	246, 266	Sharp, D., M.A., F.R.S.	1, 34, 54, 75, 101, 108, 109, 125, 135, 150, 151, 186, 187
Gardner, Willoughby, F.L.S.	89		
Green, E. E., F.E.S.	37, 138		

	PAGE		PAGE
Sharp, W. E., F.E.S.	14, 255	Walker, J. J., M.A., R.N., F.L.S.	135, 136, 160, 213, 229
Sich, A., F.E.S.	89	Waterston, Rev. J., B.Sc.	18, 36, 113
Sladen, F. W. L., F.E.S.	171	Wheeler, Rev. G., M.A., F.Z.S.	23, 43, 68, 93, 115, 139, 165, 216, 262, 279
Stenton, R., F.E.S.	89	Wood, J. H., M.B.	13, 59, 84, 112, 268
Thompson, M. L., F.E.S.	161	Yerbury, Col. J. W., R.A., F.Z.S.	65
Tomlin, J. R. le B., M.A., F.E.S.	100, 229		
Turner, H. J., F.E.S.	21, 40, 67, 92, 114, 163, 189, 215, 231, 261		

GENERAL INDEX.

	PAGE
<i>Acalyptus rufipennis</i> , Gyll., in Oxfordshire	135
<i>Actobius</i> , Description of a new species of	101
<i>Acythopeus</i> (<i>Baridius</i>) <i>aterrimus</i> , C. Waterh., in the orchid house at Kew ...	33
<i>Agabus abbreviatus</i> , F., &c., at Soham	14
<i>Agraylea pallidula</i> , McLach., added to the British fauna, 230; distribution of	259
<i>Andrena minutula</i> , K. group, Notes on the British species of, and correction of an error, 166; <i>niveata</i> , Friese, probably wrongly recorded as British, 111; <i>rosea</i> , Panz., the races of	10
Anthomyiæ, Four unrecorded British; two of them at the same time being new to science	84
<i>Apion</i> , On a new species of, 104; <i>selousi</i> , Newb., and other species of ...	226
Apterous females of certain Lepidoptera, 8; or semi-apterous of certain Lepidoptera, 63; of Winter Moths	81
<i>Aspidiotus bavaricus</i> , Ldgr., a scale-insect new to the British list ...	103
<i>Atheta</i> (<i>Microdota</i>), Description of a new species of, 78; <i>hybrida</i> , Sharp, in Scotland, 275; three new species of, 57; two new British species of ...	77
<i>Bagous claudicans</i> , Boh., Note on the <i>Equisetum</i> -eating larva of	88
Beetles in hard wood, A hint for collecting	109
<i>Bembidium velox</i> , Er., Note on	135
<i>Berytus clavipes</i> , F., A contribution towards the life-history of	28
<i>Bledii</i> , On various, recently added to the British list	256
<i>Bledius</i> , Description of a new species of, 1; <i>gulielmi</i> , Sharp, note on the capture of, 14; <i>secerdensis</i> , Joy, &c., note on	34
<i>Bostrichus capucinus</i> , L., in Cumberland	136
<i>Bradycellus distinctus</i> , Dej., in England	54
British insects, Some interesting (with two coloured plates)	171
British Museum, The new Keepership of Entomology at the	18
<i>Bruchus pectinicornis</i> , L., in the New Forest	187
Butterflies collected during the last ten years in British East Africa, A list of	45, 94, 127
<i>Bythinus</i> , Leach, On the British species of	217
<i>Cacodmus</i> , On the genus	102
<i>Carpophilus sexpustulatus</i> , F., &c., in Sherwood Forest	187
<i>Carabus cancellatus</i> , Ill., A hitherto unrecorded occurrence of, in Britain, 110; note on a recorded capture of, in Britain	275

Cephenomyia rufibarbis in Inverness-shire	235
Ceratophyllus borealis, Roths. (1906), Description of the male of (with Plate)	182
Cerceris 5-fasciata preying on Strophosomus faber	230
Ceuthorrhynchus rapae, Gyll., A note on, 15; querceti, Gyll., the food-plant of	213
Chironomidae, On the humming of	37
Chrysis, The dentate margin of the abdomen in	182
Chrysomela fastuosa, Scop., in Devon, 275; sanguinolenta and marginalis of British collections, Note on the	211
Cicindela hybrida, L., and maritima, Latr., On, 146; maritima, Dej., on the coast of Kent	229
Claviger longicornis, Müll., The host of, in England...	146
Coccinellidae, Pairing of different species of	229
Codiosoma spadix, Herbst, in New Zealand	32
Coleophora agrammella, Wood, in Sussex	89
Coleoptera, &c., in Bromeliads, 2; in Cambridgeshire and Huntingdonshire, 246, 266; in South Durham, 161; at Grange-over-Sands, 255; from British Honduras, 256; in Kent, 160; localities, &c., additional for various, recently added to the British list, 176; in Orchids, 55; new species of, allied to Xantholinus ochraceus, 224; from Sutherland, some	212
Colias edusa in June, 188; &c., in Kent	213
Conveyance of a semi-apterous female moth by the male	89
Cordylomera suturalis, Chev., an introduced West African Longicorn, 63; (introduced) in Yorkshire	257
Cryptobia, The British synonymical note	186
Cryptobium, A second British species of	150
Cryptorrhynchus lapathi, L., in Aberdeenshire	257
Ctenophthalmus calceatus, Waterst., ♂, Description of (see under Listrosylla)	
Culex geniculatus, Olivier, The identity of	107
Cyphonidae (Coleoptera), Larvæ of, in Bromeliaceæ	54
Decticus verrucivorus, Linn., Forficula lesnei, Finot, and Apterygida albipennis, Meg., in East Kent	260
Diptera, British, Thirty additions to the list of, 104, 130; two (Limnobiidæ) new to Britain...	180
Docophorus megacephalus, Denny, in Shetland	113
Druce Collections of Lepidoptera, The	160
Dufourea haliectula (Nyl.) at Byfleet, Surrey	215
Dyschirius angustatus, Putz., in Cumberland	187
Echinophthirius phocæ, Lucas, in North Mavine, Shetland	113
Editorial	1
Empidæ and their prey in relation to courtship	177
Enicmus fungicola, Thoms., Note on the life-history of	34
Entomological Monthly Journal, A new	88
Entomology, The, of an opossum's nest, 111; the Review of Applied	38
Equisetum-eating larva of Bagöus claudicans, Boh., Note on the	88
Euryphene from West Africa, Description of a new species of	204
Eudectus whitei, Sharp, A recent record of, from Ingleborough, Yorkshire	275

	PAGE
Gabrius, Some new species of (with Plate)	25
Geometer, The wingless	59, 79, 112
Gnorimus nobilis, &c., at Colechester	230
Haliplus, On an overlooked new species of, in Britain	62
Haliplus browneanus, nec H. browni, 108; description of a new species of	75
Haplithrips, On two species of, new to the British fauna	227
Hedychridium coriaceum and Crabro albilabris, 137; parasitic on Crabro albilabris	90
Heer's types [of Homalota] in the British Museum, Remarks on some of ...	157
Helophorus, Note on a table of the British species of, appearing in this Magazine (Vol. XLIV, p. 218)	110
Help-notes towards the determination of British Tenthredinidæ, &c. (31)	140
Hilara albocingulata, sp. n.	13
Homalota (Liogluta) aquatilis, Thoms. (? — sericans, Rey), a species of Coleoptera new to Britain, 7; cribriceps, Sharp, note on, 135; fungicola, on some allies of, 151; Remarks on some of Heer's types of ...	157
Hydroporus bilineatus, Sturm, in England	109
Hymenoptera Aculeata, Notes on British, 90; two species new to Britain	83
Insects caught by an Orchid	254
Langurinae, Notes on a small collection of	27
Lepidoptera, Apterous females of certain, 8; from Gibraltar and the surrounding country, notes on, 117, 189, 233; on semi-apterous females in, 205; in Surrey in 1912	35
Liothoids (Mallophaga), A suggestion for securing certain	36
Listropsylla, A new, and the ♂ of Ctenophthalmus calceatus, Waterst. (1912), both from South Africa (with Plate)	207
Longicorn, An introduced West African, Cordylomera suturalis, Chev. ...	63
Lophyrus, Note on two species of the genus	214
Magdalis carbonaria, L., in Morayshire	257
Melanism and wet climates	185
Melanophila on charred pines	109
Melanothrips (Thysanoptera), On a new species of, from Tunisia	263
Mesophylax impunctatus, &c., in Perthshire	259
Micromalthidae, a new family of beetles, The life-history of	243
Musicoderus (Staphylinidæ), Description of a new species of, from Jamaica	175
Nature Reserves, Society for the Promotion of, The	90
Nemosoma elongatum, L., in the Oxford district	229
Nirmus interruptus, Piaget, What is the true host of?	18
Norellia spinigera, Ztt., in Perthshire	17
Notiophili, A contribution to the knowledge of the British	70
Nycteribiid, A new British	258
OBITUARIES:—Avebury, Lord, F.R.S., &c., 162; Boyd, Thomas, 38; Brabant, Edouard, 21; Cameron, Peter, 20; de la Garde, Philip, R.N., 161; Druce, Herbert, F.L.S., 277; Jeffrey, W. R., 38; Kirby, W. F., F.L.S., 19; Pagenstecher, Dr. Arnold, 278; Puton, Dr. Auguste, 278; Reuter, Prof. O. M., Hon. F.E.S. (with Portrait), 230; Wallace, Alfred Russel, O.M., D.C.L., F.R.S.	276
Odonata, Trichoptera, Neuroptera, and Plecoptera of Wood Walton Fen, Huntingdonshire	271

	PAGE
<i>Opomyza lineatopunctata</i> , v. Ros., at Crowborough	65
<i>Omalius cæsum</i> , Grav., and its supposed variety <i>tricolor</i> , Muls. et Rey ..	212
<i>Ornithopsylla lætitia</i> , Rothsch., The host of	90
<i>Ortheziola vejdvovskyi</i> (fam. Coccidæ) in Scotland	138
<i>Pachycoleus rufescens</i> , Sahlb., in the New Forest	187
<i>Philonthus scoticus</i> , sp. nov., a beetle new to Britain, 100; <i>varius</i> , Gyll., var. <i>shetlandicus</i> , Poppius	136
<i>Phleodes crenana</i> , Note on the emergence of	64
<i>Phosphuga subrotundata</i> , Steph., The range of	255
<i>Phoxopteryx biarcuana</i> : a correction	89
<i>Platyceles roeselii</i> , Hagen., &c., on the Lincolnshire coast	16
<i>Platyptilia miantodactyla</i> , Some notes on	159
<i>Polygonia c-album</i> , Notes on the distribution of	89
<i>Psyllopsis</i> , F. Loew, A new species of, from Britain	251
<i>Pterostichus anthracinus</i> , Re; a belated correction	34
<i>Pyraucis atalanta</i> in N. Mavine, Shetland	214
<i>Quedius</i> , description of a new species from the New Forest, Hants ..	77
<i>Rabocerus bishopi</i> , Sharp, Re-occurrence of, in Scotland	213
REVIEWS:—"British Butterflies," by A. M. Stewart, 66; "Cardiff Naturalists' Society, Report and Transactions of the," Vol. XLV, 1912, 260; "Carlisle Natural History Society, Transactions of the," Vol. II, 1912, 113; "A Catalogue of the Lepidoptera of Northumber- land, Durham, and Newcastle-on-Tyne," by John E. Robson, F.E.S., edited by John Gardner, F.E.S.; "The Coleoptera of the British Islands," Vol. VI (supplement), by W. W. Fowler, D.Sc., M.A., F.L.S., and H. St. J. Donisthorpe, F.Z.S., 138; "The Dictionary of Ento- mology," by Nigel K. Jardine, F.E.S., 139; "How to use the Microscope; a guide for the Novice," by the Rev. Chas. A. Hall, 66; "Psyllidarum Catalogus," by Dr. G. Aulmann, 65; "Transactions of the 2nd International Congress of Entomology"	278
<i>Rhabdophaga albipennis</i> , Houard, in Aberdeenshire	258
<i>Rhagium bifasciatum</i> , F., attacking birch, &c.	258
<i>Rhizophagus oblongocollis</i> , Blatch and Horner: synonymical note ..	256
<i>Sciara</i> , Sexual dimorphism in a species of	209
<i>Scirtes</i> , Note on the larva of	32
<i>Scoparia</i> , A new British species of, 138; a new, from New Zealand ..	250
<i>Sesia</i> , Notes on the food-plants of certain Russian species of	16
SOCIETIES:—Entomological Society of London, 23, 43, 68, 93, 115, 140, 165, 216, 262, 279; Lancashire and Cheshire Entomological Society, 42, 66, 91, 114, 163; South London Entomological Society, 21, 40, 67, 92, 114, 163, 189, 215, 231, 261, 279; Yorkshire Naturalists' Union, Entomo- logical Section	38
Society for the Promotion of Nature Reserves, The	90
Staphylinidæ, Description of three new	154
<i>Stenus oscillator</i> , Rye, in Ireland, 88; supplementary note on	109
Stylophisation, A note concerning certain cases of	253
<i>Tachys</i> , Description of a new species of	125
<i>Thinobius longicornis</i> , Joy: a correction	275

	PAGE
<i>Thrypticus nigricauda</i> , a new species; and a few other Dolichopodidae from Herefordshire	268
Thysanoptera (Tubulifera), Descriptions of some new species of British...	263
<i>Trachypheus digitalis</i> , Gyll., an addition to the British list of Coleoptera	126
<i>Tribolium castaneum</i> , Herbst - <i>ferrugineum</i> , Auct. (nec Fab.)	222
<i>Typhloceras poppei</i> , Wagn., Variation in the genal comb of	18
<i>Vespa vulgaris</i> in November	276
Wasp attacking Peacock Butterfly	64
Wood Walton Fen, Huntingdonshire, The Odonata, Trichoptera, Neuroptera, and Plecoptera of	271
<i>Xantholinus substrigosus</i> , Joy: a correction	275
<i>Zygana tilipendula</i> ab. <i>hippocrepidis</i> , at Streatley, Berks	36

SPECIAL INDEX.

ANOPLURA.		PAGE	PAGE	
Echinophthirius phoece		113	Chariesthes auronotata	256
COLEOPTERA.				
Acalyptus rufipennis		135	Chrysomela crassicornis, 211; fastuosa, 275; orichalcica, var. hobsoni, 161; sanguinolenta, &c.	211
Acythoepus aterrimus		33	Cicindela hybrida, 146; maritima	147, 229
Acrulia inflata		213	Claviger longicornis	136
Actobius ytenensis (sp. n.)	101, 125,	176	Clythra quadrimaculata	161, 213
Agabus abbreviatus		14	Coccinellide (pairing)	229
Agathidium atrum, seminulum		213	Codiosoma spadix	32
Agrilus biguttatus		187	Conolanguria oculata (sp. n.)	27
Alegoria dilatata		3	Cononica puncticollis	135
Aleochara ruficornis		160	Cordylomera suturalis	63, 257
Amphicyllis globus		160	Cotinis pulverulentus	256
Anadastus shelfordi (sp. n.)		27	Cryptobium brevipenne, 150; glaberrimum	186
Anisoxya fuscata		160	Cryptorrhynchus lapathi	257
Anomala bimaculata		256	Diaxenes dendrobii	56
Anthrenomus rosinae		161	Distenia pilatei	257
Anthrophagus alpinus		212	Dyschirius angustatus, nitidus, politus, salinus	187
Apion breviatum, 227; medianum, 227, selousi (sp. n.)	154,	226	Dyscinetus lavipunctatus	256
Atheta brittani (sp. n.), 154; debilis, 157; deformis, 213; diversa, 213; doderoi, 78; eximia, 157; hybrida, 275; magniceps, 77, 213; malleus (sp. n.), 58; melanocera (sp. n.), 57; obtusangula (sp. n.), 58; subtilissima, 157; terminalis, 78; tomlini (sp. n.)		58	Dytiscide (Hunts. and Cambs.)	249
Bagous claudicans		88	Emus hirtus	160
Baris aterrimus, orchivora		33	Enicmus fungicola, 34; histrio, 213; rugosus	187
Batriscus venustus		187	Epurea parvula	160
Bembidium lampros, var. cyaneotinctum, 135; lunatum, 187; velox		135, 187	Eryx ater	230
Bledius atricapillus, 187, 255; campi, defensus, diota, &c., 256; fracticornis, hirtulus, latior, gulielmi (sp. n.), 1, 14, 256; occidentalis, sacerdensis, subniger, &c., 34; terebrans		256	Euchroma goliath	256
Bostrichus capucinus		136	Eudectus giraudi, whitei	275
Bradycellus distinctus, 54; sharpi	54,	176	Euphoria yucateca	256
Bruchus pectinicornis		187	Euthia plicata	160
Bythinus burellii, 218; clavicornis, 220; distinctus, 219; glabratus, 221; puncticollis		217	Gabrinus appendiculatus, 26; cyphonotus (sp. n.), 25; latro (sp. n.), pennatus, 26; primigenius (sp. n.), 25; sacerdotalis (sp. n.), stipes, subnigritulus (sp. n.), suffragani (sp. n.), tornus (sp. n.), toxotes (sp. n.)	26
Cænopsis fissirostris		160	Gnorimus nobilis	230
Carabide (Hunts. and Cambs.)		248	Gymnetis chevrolati	256
Carabus cancellatus	110,	275	Gymnetron melanarius	160
Carpophilus sexpustulatus		160, 178	Haliplide (Hunts. and Cambs.)	249
Ceuthorrhynchus euphorbiae, 160; nasturtii, 160; querceti, 213; rapae		15	Haliplus brownei (sp. n.), 75 (= brownneanus, 108); cinereus, 14; confinis, 15; multipunctatus, 108; variegatus	15
Chaetocnema arida		125	Helophorus porculus	213
Chalcolepidius rugatus		256	Henoticus germanicus, serratus	176
			Hilipus circuliferus	257
			Homalota aquatilis, 7; cribriceps, 135; fungicola, 151; gynandrica (sp. n.), 153; inoptata (sp. n.), reperta (sp. n.), 152; subquadrata (sp. n.)	153
			Hydaticus transversalis	15

	PAGE		PAGE
Hydrophilidae (Hunts. and Camb.)	250	Rabocerus bishopi	213
Hydroporus bilineatus, hopfgarteni	109	Rhagium bifasciatum	258
Hylesinus vittatus	229	Rhagonycha translucida	160
Laccobius purpurascens	176	Rhantus grapii	15
Lagocheilus araneiformis	257	Rhizophagus oblongocollis, simplex	256
Lathrobium letzeri	31	Saperda scalaris	187
Leptacinus batycheus	275	Scirtes championi, 54; grandis (larva), 32, sp.	3
Lesteva sharpi	212	Scymnus minimus	15
Liosomus pyrenicus	160	Silis ruficollis	213
Longitarsus plantago-maritimus, 160; suturellus	161	Staphylimide (Hunts. and Camb.)	266
Magdalis carbonaria	187, 257	Stenus carbonarius, 161, 213; latifrons, 161; oscillator	88, 109
Malachius vulneratus	160	Strophylom auratum	256
Malthodes flavoguttatus	213	Strophosomus faber	230
Mecaspis lucida	256	Tachypus pallipes	187
Melanophila notata	109	Tachys parvulus, 101, 174; walkerianus (sp. n.)	125, 176
Metamasius cinnamatus, 5; dimidiati- pennis, hebetatus, 3; ochreofascia- tus, 5; bromeliadicola (sp. n.)	5	Telephorus darwinianus	160
Microglossa nidicola	213	Tetratoma ancora	160
Micromalthidae	243	Thalassella crotchii	3
Micromalthus debilis	243	Thinobius longicornis (sp. n.), 156; longi- pennis, 157; macroceros	275
Micropeplus porcatus	213	Tillus elongatus	160, 230
Mordellistena cattleyana (sp. n.)	56	Trachodes hispidus	160
Muscoderus nigrocaeruleus (sp. n.), 175; spiniicornis (sp. n.)	4	Trachyderes elegans	257
Nautes chrysomeloides	256	Trachyphleus digitalis	126, 177
Nemosoma elongatum	229	Trachys punila	160
Neuraphes angulatus	160	Tribolionides (gen. nov.)	224
Notiophilus (British species of)	70	Tribolium castaneum, ferrugineum	222
Nototheeta flavipes	213	Trochoideus americanus, goudoti	3
Oedemera virescens	187	Trogophleus hemerinus (sp. n.)	156
Omalium casum, var. tricolor, 212; grandiloqua, 213; heeri	213	Trypodendron bilineatum	258
Parnus anglicanus	15	Xantholimus ochraceus, 224; scoticus, (sp. n.), 226; substrigosus (sp. n.), Leptacinus batycheus, Gyll.	226, 275
Pasimachus rotundipennis	256	Xyleborus dispar	110
Pediacus dermestoides	187		
Pelidnota punctata	256		
Philonthus scoticus (sp. n.), 100; varius, var. shetlandicus	136		
Phosphuga subrotundata	255		
Planeustomus flavicollis	176		
Pleuromenus baccifer	257		
Polydrusus chrysomela	255		
Pseudopsis sulcata	160		
Pterostichus anthracinus	34		
Ptychopus angulatus	256		
Pyrophorus pellucens	256		
Quedius nigrocaeruleus, 276; puncticol- lis, 213; talparum othiniensis, 176; subapicalis (sp. nov.)	76		

DIPTERA

	PAGE
Achaleus cinereus	269
Aeropsilus niger	131
Acyphona areolata	181
Amictus variegatus	210
Anthomyza bifasciata	171
Anthrax sp.	210
Aphanosoma approximatum, quadrino- tatum	134

	PAGE
<i>Polistes gallicus</i>	84
<i>Pompilus approximatus</i>	90
<i>Prosopis genalis</i> , 90; <i>bipunctata</i> , <i>gibba</i> , <i>rubicola</i> , <i>variegata</i>	254
<i>Psithyrus distinctus</i> , <i>vestalis</i>	174
<i>Sapyga 5-punctata</i>	90
<i>Sphex holosericea</i> , <i>sabulosa</i> , <i>tydei</i>	254
<i>Stizus distinguendus</i> , 253; <i>peregrinus</i>	254
<i>Tapinoma erraticum</i>	254
<i>Vespa vulgaris</i>	276

LEPIDOPTERA.

<i>Abantis</i> (East Africa)	128
<i>Abraxas grossulariata</i> vars. <i>lacticolor</i> , <i>nigra</i> , <i>nigrosparvata</i> , 40; var. <i>var-</i> <i>leyata</i> , 22, 40, <i>pantaria</i>	121, 203
<i>Acentropus nivens</i>	42
<i>Acidalia imitaria</i> , 121; <i>virgularia</i> , 93; (Gibraltar)	204, 212
<i>Acleros</i> (East Africa)	129
<i>Acontia lucida</i> , 199; <i>luctuosa</i>	200
<i>Acræa</i> (East Africa)	17
<i>Acromesis neander</i>	130
<i>Acronycta albi</i> , 39; <i>rumicis</i>	197
<i>Adopæa</i> (Gibraltar)	195
<i>Aglossa cuprealis</i>	22
<i>Agriades coridon</i> , var. <i>semisyngrapha</i> , 22; <i>polonus</i> , 41; <i>thetis</i> , ab. <i>urania</i> ..	69
<i>Agrotis cinerea</i> , 40; <i>cursoria</i> , 67; <i>luni-</i> <i>gera</i> , 261; <i>nigricans</i> , <i>sancia</i> , 17; (Gibraltar)	197, 212
<i>Alena picta</i>	53
<i>Alcides taikosana</i>	95
<i>Amauris</i> (East Africa)	16
<i>Amphidrina agrotina</i>	199
<i>Andronymus philander</i>	130
<i>Anotsia plexippus</i>	241
<i>Antitype dubia</i>	198
<i>Anthocharis belia</i>	92
<i>Apaïdia mesogona</i>	231
<i>Aphniolans pallene</i>	95
<i>Araschnia levana</i>	262
<i>Arctia fuliginosa</i> , 17, 211; <i>latreillei</i> , 234; <i>villica</i>	233
<i>Argynnis auresiana</i> , 21; <i>latona</i> , 241; <i>pandora</i>	192
<i>Asopia glaucinalis</i>	243
<i>Atella columbina</i> , <i>phalantha</i>	49
<i>Axioceres</i> (East Africa)	95

	PAGE
<i>Azanus</i> (East Africa)	96
<i>Baoris</i> (East Africa).....	129
<i>Beleuois</i> (East Africa)	98
<i>Biston strataria</i>	203
<i>Boarmia repandata</i>	42
<i>Brentlis freija</i> , <i>frigga</i> , 22; <i>hammingtonii</i> , 49; <i>pales</i> , 22, 43; <i>polaris</i>	22
<i>Cryophila muralis</i> (Gibraltar), 198; var. <i>impar</i>	40
<i>Cacyreus</i> (East Africa)	96
<i>Caprona pillana</i>	128
<i>Caradrina</i> (Gibraltar)	199
<i>Carcharodus alcea</i> , <i>althea</i>	195
<i>Castalius</i> (East Africa).....	96
<i>Catacroptera cloanthe</i>	50
<i>Catoeala</i> (Gibraltar)	200, 242
<i>Catochrysops</i> (East Africa)	97
<i>Catoptria juliana</i>	36
<i>Celastrina argiolus</i>	215
<i>Celenorrhina bettini</i> , <i>galenus</i>	128
<i>Ceroeala scapulosa</i>	242
<i>Charaxes jasius</i> , 191; (East Africa)	52
<i>Cheimatobia brunata</i>	81
<i>Chelonia plantaginis</i> var.	40
<i>Chesias rufata</i>	203
<i>Chilades mahallokoana</i>	97
<i>Choreutes millerana</i>	36
<i>Choroseles pseudogeritis</i>	95
<i>Chrysophanus abboti</i> , 97; <i>alciphron</i>	115
<i>Cidaria miata</i> , <i>psittacata</i>	59
<i>Cleipsis rusticana</i>	35
<i>Cnephasia politana</i>	36
<i>Coccyx coniferana</i> , <i>cosmophorana</i>	35
<i>Cornides cylindra</i>	130
<i>Cremnophya</i> (Gibraltar).....	193
<i>Coleophora agrammella</i> , 40, 89; <i>imula</i> , 60; <i>trigeminella</i>	40
<i>Colias edusa</i> , 188, 213, 260; var. 262; <i>hecla</i> , 21; <i>hyale</i>	241
<i>Cossus ligniperda</i>	241
<i>Craunbus fascinelinus</i> , 40; (Gibraltar)...	235
<i>Crenis</i> (East Africa)	50
<i>Crymodes exulis</i>	115
<i>Cupidopsis cissus</i> , <i>jobates</i>	97
<i>Cyclopides</i> (East Africa)	129
<i>Cymatophora octogesima</i>	42
<i>Cyrestis camillus</i>	50
<i>Declana floccosa</i>	207
<i>Deilephila euphorbiae</i> , <i>livornica</i>	196
<i>Deloneura ochraceus</i>	94
<i>Domias coryli</i>	75

	PAGE		PAGE
Dianthecia capsophila	198	Grammodes algira	200
Dichelia hyerana	238	Harma (sp. n.)	51
Depressaria (Gibraltar)	239	Heliorthis dipsacea, 35; incarnata	242
Dicrorampha simpliciana	35	Hellula undalis	237
Drepanodes muriferata	207	Hemerophila japygaria	204
Dryas pandora, 115; paphia, ab. dives ..	41	Hermnia crinalis	201
Dryobota saportæ	198	Hesperia actæon, nostradamus, 121 ; (East Africa), 128 ; (Gibraltar).....	195, 241
Duponchelia fovealis	236	Himera pennaria	79
Eagris (East Africa).....	128	Homeosoma sinnella	35, 235
Econista agaritharia	233	Hyalina albida	235
Emmelesia unifasciata	35	Hybernia aurantiaria, var. fusca, 40 ; marginaria	89
Emmilia trabealis	242	Hydrelia unca	35
Epamera (East Africa)	94	Hypanartia hippomene, schœneia	41
Ephippiphora fœnella	35	Hypena lividalis, obsitalis	201
Ephyra (Gibraltar)	202	Hypocyæna (East Africa)	94
Epinephele (Gibraltar)	193	Hypsipetes ruberata	35
Epirranthis alectoraria, hemipteraria ..	207	Hyria auroraria	35
Epmda lichenea, 92; nigra	43	Hema apicalis.....	234
Eremobia ochroleuca	214	Ino statice	35
Eronia cleodora, leda	99	Kedestes (East Africa)	129
Euchloe cardamines, 215; eupheno, euphenoides, 122; tagis, 121; (Gib- raltar)	190	Lachnoptera ayresi	49
Eucrostis beryllaria, menadaria	201	Laesopis roboris	193
Eugonia quercaria	242	Lamoria jordanis	235
Euphadra eleus, neophron, 51; themis, ravola	45	Lampides (Gibraltar)	194
Eupithecia (Gibraltar)	203	Larentia (Gibraltar)	203, 243
Eupœcilia alimana, subroseana	36	Lasiocampa trifolii	197
Euprepia pudica	234	Lecithocera luticornella	239
Euptera kinugnana	51	Leioptilus liegicianus	35
Euralia (East Africa)	50	Leptidia sinapis	191
Eurhipia adulatrix	199	Leptomyrina hirundo, lara	95
Eurranthus pennigeraria, plumistaria.....	233	Leucania albipuncta, 40; vitellina, 261 ; (Gibraltar)	199
Euryphene ashantina (sp. n.), 204 ; chriemhilda, senegalensis.....	51	Leucœronia argia, 99; thalassina	100
Euryphra achlys	51	Libythea celtis, 115; laius	53
Eurytela hiarbas, dryope	50	Ligia opacaria	242
Euxanthe tiberius, 52; wakefieldi.....	51	Lithocolletis adenocarpi	239
Everes hippocrates, micylus	97	Lithosia caniola.....	234
Evergestis politalis	237	Lobophora sexualisata	35
Fidonia famula	242	Lophopteryx carmelita.....	35
Gegenes nostradamus	129	Lozopera mauritanica	238
Glottula pancreatii	188	Lycœna adonis, 260; arion, 115; (Gib- raltar)	194, 241
Glyphodes unionalis	237	Lycenesthes (East Africa)	95
Gnophodes parmeno	46	Mamestra (Gibraltar)	198
Gnophos asperaria, mucidaria, 233 ; respersaria	242	Mecyna polygonalis	237
Gonepteryx cleopatra, rhamni	191	Melanargia ines, syllius	192
Gonoptera libatrix	17	Melanippe galiata	35
Gracilipalpus ephialtes.....	199	Melinda formosa	46

	PAGE		PAGE
Melitaea trivialis, 115; aurinia, 148; 121; (Gibraltar)	192, 211	Phylaria cyara	96
Mellmia ocellaris	43	Pieris brassicae var., 40; ergane, manni, 92; (Gibraltar)	190
Messaga monteironis	14	Pinacopteryx (East Africa)	98
Metasia suppaudalis	237	Pionea (Gibraltar)	237
Metoptria monogrammus	200	Planema (East Africa)	49
Metrocampa honoraria, 203; margaritata ..	24	Platyptilia miantodaetyla	159
Mycalosis dentata, kemia	46	Plusia chalcites, 121; hohenwarthii, 261; (Gibraltar)	200
Myceloides ceratoniae, cribrella	236	Ploetzia circynica	130
Mylothris (East Africa)	97	Polia chi	40
Myrina dermeoptera, licedula	94	Polygona e-album, 89; ogea	115
Nacaduba sicula	96	Polygonatus icarus, 44; phleas, 60; ab. radiata, 35, ab. schmidtii	66
Nemobrylia plantaginis, var. hospita, 43; rassula	36	Pontia daplidice	92
Nemotoxis latreillellus	239	Precis (East Africa)	49
Neptidopsis fulgurata, ophione	50	Pseudaraea (East Africa)	51
Neptis lucilla, 115; (East Africa)	50	Pterophorus (Gibraltar)	237
Neuria reticulata	43	Pyraucis abyssinica, 49; atalanta, 214; cardui	49, 214
Nemoria herbaria, 242; pulmentaria	201	Pyrausta (Gibraltar)	237
Noctua stigmatica	40	Pyrrhocaltia iphis	44
Noctuella floralis, isatidalis	238	Raphia hybris	242
Nola cicutarialis	241	Retinia turionosa	36
Nonagraia arundineta, 40; dissoluta, 24; elymi, 17; sparganii, typhae	232	Rhinusia formosella	239
Notodonta chaonia, dodonea	35	Rhodophaea formosa	35
Nycteola falsalis	233	Rhodostrophia calabraria	202
Nymphula stagnalis	236	Rhopalocampa (East Africa)	130
Nyssia zonaria	43	Salamis (East Africa)	50
Oeneria atlantica, 241; dispar	120, 196	Sarangesa (East Africa)	128
Oeneis jutta, noma	22	Saturnia carpini, 242; pyri	197
Olethreutes ochroleucana	67	Satyrus (Gibraltar)	192
Oncocera ahenella	40	Schenobius forficellus, mucronellus	42
Ophiura bifasciata	242	Sciapteron tabaniforme	241
Oreos telisignata	130	Scodiona belgiana	163
Oreynia calcarata, tarsalis	67	Scoparia galactalis (sp. n.), 250; lineola, 237; vafra (sp. n.)	158
Orgyia antiqua, 9; josephinae, 241; tri- gotephras	120, 196	Scotosia dubitata	59, 80
Ortholitha peribolata	243	Selidosema dejectaria, fenerata, 207; plumaria	242
Oxybia transversella	236	Sesamia nonagrioides	198
Pachnobia faceta	197	Sesia allantiformis, astatiformis, chal- cidiformis, cirgisa, 16; (Gibraltar) ..	235
Papilio andraemon, caecus, 22; dar- danus, var. leighi, 93; helleri, 22; polytes, 165; (East Africa), 127; (Gibraltar)	189	Spalgis lemolea	95
Pardalodes incertus	129	Spilosoma urticae	232
Parnara (East Africa)	129, 195	Spindasis (East Africa)	96
Parosmodes (East Africa)	129	Spintherops spectrum	242
Pentila amenaia, penectia	53	Stegania trimaculata	203
Phleodes crenana, 61; demarniana	35	Stemmatophora gadesialis	243
Phoxopteryx derasana, 35; inornatana ..	89	Stenia brugnieralis, 236; punctalis	237
Phrissura (East Africa)	98	Stugeta bowkeri	94
Phryxus livornica	40, 93, 261		

	PAGE
<i>Stygia australis</i>	235
<i>Tapinostola muscosa</i>	242
<i>Taragama repanda</i>	197
<i>Tarucus louise, telicauus</i>	96
<i>Telipna rogersi</i>	53
<i>Tephronia codetaria</i>	204
<i>Tephrosia luridata</i>	42
<i>Teracolus</i> (East Africa)	98
<i>Terias</i> (East Africa)	100
<i>Teriomima</i> (East Africa).....	94
<i>Terpomicta dilectaria</i>	242
<i>Thais rumina</i>	190
<i>Thalpochares ostrina</i> , 216; (Gibraltar) ..	200
<i>Thamnonoma gesticularia</i> , 242; semi-canaria.....	233
<i>Thecla ilicis, spini</i>	193
<i>Thera variata</i>	114
<i>Thestor ballus</i> , 193; mauritanicus	241
<i>Tinea pallescentella</i> , 116; (Gibraltar) ..	239
<i>Taniocampa gracilis</i> , var.	165
<i>Tortrix pronubana</i>	67, 238
<i>Trichura cerberus</i>	67
<i>Trigonophora flammea</i>	242
<i>Uranothauma</i> (East Africa)	96
<i>Vanessa io</i> , 64; polychloros, 192; uttice, 214, 241	214, 241
<i>Venusia verriculata</i>	207
<i>Virachola</i> (East Africa)	94
<i>Xanthia aurago</i> , 39; citrigo, 67; ocellaris	43
<i>Xanthorhoe lucidata, rosearia</i>	207
<i>Zegris eupheme</i>	191
<i>Zephyrus quercus</i>	193
<i>Zizeeria</i> (East Africa)	97
<i>Zophodia convolutella</i>	236
<i>Zophopetes drysemiphila</i>	130
<i>Zygæna hippocrepidis</i> , 36; (Gibraltar)...	234

MALLOPHAGA.

<i>Ancistrona gigas</i>	36
<i>Colpocephalum importunum</i>	36
<i>Docophorus celedoxus, megacephalus, merguli</i>	113
<i>Liotheids</i>	36
<i>Nirmus interruptus</i>	18

NEUROPTERA AND TRICHOPTERA.

	PAGE
<i>Æschna borealis</i> (æerulea), 23; cyanea, grandis	272
<i>Agraylea pallidula</i>	230, 259
<i>Agrion puella, pulchellum</i>	272
<i>Agrypnia pagetana</i>	273
<i>Anax imperator</i>	241
<i>Brachytron hafniense</i>	272
<i>Calopteryx hamorrhoidalis</i>	241
<i>Chrysopa flava, phyllochroma, tenella,</i> <i>vulgaris</i>	273
<i>Colpotaulius incisus</i>	17, 273
<i>Coniopteryx tineiformis</i>	116
<i>Cyrnus flavidus</i>	273
<i>Enallagma cyathigerum</i>	272
<i>Glyptotetius pellucidus</i>	17
<i>Grammotaulius atomarius</i> , 273; nitidus.. 17, 273	17, 273
<i>Holocentropus stagnalis</i>	273
<i>Hemerobius lutescens, subnebulosus</i>	273
<i>Ischnura elegans</i>	17
<i>Lertha barbara</i>	41
<i>Lestes viridis</i> , 241; sponsa	271
<i>Libellula quadrimaculata</i>	273
<i>Limnophilus affinis, flavicornis</i> , 17, 273; marmoratus	273
<i>Mesophylax impunctatus</i>	259
<i>Nemoura variegata</i>	274
<i>Nemoptera bipennis, coa</i>	41
<i>Oecetis lacustris, ochracea</i>	273
<i>Onychogomphus uncatu</i>	241
<i>Palpares libelluloides</i>	241
<i>Panorpa communis</i>	17, 273
<i>Phryganea grandis</i>	273
<i>Polycentropus flavomaculatus</i>	273
<i>Pyrrhosoma nymphula</i>	272
<i>Rhaphidia notata</i>	114
<i>Sialis lutaria</i>	272
<i>Somatochlora alpestris</i>	23
<i>Stenophylax permistus</i> , 17, 273; stellatus	259
<i>Sympetrum sanguineum</i> , 241, 273; strio- latum	17, 273
<i>Trianodes bicolor</i>	273

ORTHOPTERA.

<i>Acheta bimaculata</i>	164
<i>Acerida nasuta</i>	241
<i>Acridium ægyptium</i>	164
<i>Apterygida albipennis</i>	260

	PAGE
<i>Blabera cubensis</i>	164
<i>Decticus verrucivorus</i>	260
<i>Diastrammena marmorata</i>	262
<i>Forficula lesnei</i>	260
<i>Gomphocerus rufus</i>	261
<i>Iris oratoria</i>	241
<i>Labidura riparia</i>	21, 241
<i>Mantis religiosa</i>	241
<i>Oedipoda caerulea</i> , <i>fuscocincta</i>	241
<i>Pachytylus emeraescens</i>	241
<i>Platycoleis roeselii</i>	16, 68
<i>Thaumotrix cinereus</i>	232, 260
<i>Stenobothrus bicolor</i> , 17, 260; <i>elegans</i> , 17; <i>lineatus</i> , <i>parallellus</i> , <i>viridulus</i>	260

PROTURA.

	PAGE
<i>Acerentomon affine</i> , <i>doderoi</i> (sp. n.)	173

SIPHONAPTERA.

	PAGE
<i>Ceratophyllus borealis</i>	182
<i>Ctenophthalmus calceatus</i>	208
<i>Listropsylla chelura</i> (sp. n.)	207
<i>Ornithopsylla laticornis</i>	90
<i>Typhloceras poppei</i>	18

THYSANOPTERA.

<i>Cryptothrips dentipes</i>	172
<i>Haplothrips cephalotes</i> (sp. n.), 265; <i>distinguendus</i> , 228; <i>juncorum</i> (sp. n.), 227, 264; <i>obscuripennis</i> (sp. n.), 264; <i>oryzae</i>	264
<i>Megathrips bonannii</i> , <i>lativentris</i> , 173; <i>nobilis</i>	172
<i>Melanothrips nigricornis</i> (sp. n.), 263; <i>species of</i>	264
<i>Trichothrips caespitis</i> , <i>longisetis</i> , <i>pedicu-</i> <i>laris</i> , <i>propinquus</i>	172

ADDITIONS TO THE BRITISH INSECT FAUNA BROUGHT FORWARD IN THIS VOLUME.

COLEOPTERA.

SPECIES.	PAGE
<i>Actobius ytenensis</i> , <i>Sharp</i>	101
<i>Apion humile</i> , <i>Germ.</i> , var. <i>medianum</i> , <i>Th.</i>	227
,, <i>selousi</i> , <i>Newbery</i> (= <i>subulatum</i> , <i>Kirby</i> , anom.)	154, 212
<i>Atheta brittani</i> , <i>Joy</i>	154
,, <i>magniceps</i> , <i>Sahlb.</i>	77
,, <i>malleus</i> , <i>Joy</i>	58
,, <i>melanocera</i> , <i>Joy</i>	57
,, <i>obtusangula</i> , <i>Joy</i>	58
,, <i>terminalis</i> , <i>Grav.</i>	78
,, <i>tomlini</i> , <i>Joy</i>	58
<i>Bembidium velox</i> , <i>Er.</i> , var. <i>cyaneotinctu-</i> <i>tum</i> , <i>Reitt.</i>	135
<i>Bledius guelchmi</i> , <i>Sharp</i> (= <i>defensus</i> , <i>Faurv.</i>)	1, 256
<i>Bradycellus distinctus</i> , <i>Dej.</i>	54
<i>Chrysomela crassicornis</i> , <i>Helliesen</i>	211
<i>Cryptobium glaberrimum</i> , <i>Payk.</i>	150, 186
<i>Halipilus browni</i> , <i>Sharp</i> , 75 (= <i>browni-</i> <i>anus</i> , <i>Sharp</i>)	108
<i>Homalota aquatilis</i> , <i>Thoms.</i>	7
,, <i>fulvipes</i> , <i>Muls. et Rey</i>	151
,, <i>gynandrica</i> , <i>Sharp</i>	152
,, <i>inoptata</i> , <i>Sharp</i>	152
,, <i>reperta</i> , <i>Sharp</i>	152
,, <i>subquadrata</i> , <i>Sharp</i>	152
<i>Lathrobium letzneri</i>	34
<i>Philonthus scoticus</i> , <i>Joy and Tomlin</i> ..	100
,, <i>varius</i> , <i>Gyll.</i> , var. <i>shotlandicus</i> , <i>Poppius</i>	136
<i>Quedius subapicalis</i> , <i>Joy</i>	76
<i>Tachys walkerianus</i> , <i>Sharp</i>	125
<i>Thinobius macrocerus</i> (= <i>longicornis</i>), <i>Joy</i>	156, 275
<i>Trachyphleus digitalis</i> , <i>Gyll.</i>	126
<i>Trogophloeus hemerinus</i> , <i>Joy</i>	155
<i>Xantholinus scoticus</i> , <i>Joy</i>	226
,, <i>substrigosus</i> , <i>Joy</i>	226
= <i>Leptacinus batychnus</i> , <i>Gyll.</i>	276

LIST OF NEW GENERA AND SPECIES, &c.,
DESCRIBED IN THIS VOLUME.

APHANIPTERA.	PAGE	TINIDAE	PAGE
<i>Listropsylla chelura</i> , N. C. Rothschild.		<i>Tinobius macrocerus</i> (= <i>longicornis</i>), <i>Joy, Britain</i>	156, 275
—————	207	<i>Trogophloeus hemerinus</i> , ,, ,, ..	155
—————	f	<i>Xantholinus scoticus</i> , ,, ,, ..	226
—————		,, <i>substrigosus</i> , ,, ,, ..	226
—————		(= <i>Leptacinus batyehrus</i> , <i>Gyll.</i>) ..	276
—————		—————	
COLEOPTERA.		DIPTERA.	
GENUS.		SPECIES.	
TRIBOLLOIDES (Gen. nov.), <i>Blair</i> .		<i>Conosia stigmatica</i> , <i>Wood, England</i> ..	87
—————	224	<i>Hilara albocingulata</i> , ,, ,, ..	13
SPECIES.		<i>Pegomyia dulcamara</i> , ,, ,, ..	85
<i>Actobius ytenensis</i> , <i>Sharp, New Forest</i> ..	101	<i>Sciara semialata</i> , <i>Edwards</i> , ,, ..	210
<i>Anadastus shelfordi</i> , <i>Fowler, Borneo</i> ..	27	<i>Thypticus nigricauda</i> , <i>Wood</i> , ,, ..	268
<i>Apion selousi</i> , <i>Neuberger, Britain</i> (—subul- lata, <i>Kirby</i> , anon.) ..	151, 226	—————	
<i>Atheta britteni</i> , <i>Joy, Britain</i> ..	151	HEMIPTERA.	
,, <i>doderoi</i> , <i>Cameron, Gibraltar</i> ..	78	SPECIES.	
,, <i>malleus</i> , <i>Joy, Britain</i> ..	58	<i>Pamera alboannulata</i> , <i>Champion, Costa</i> <i>Rica</i> ..	6
,, <i>melanocera</i> , <i>Joy, Britain</i> ..	57	<i>Psyllopsis distinguendus</i> , <i>J. Edwards</i> , <i>New Forest, England</i> ..	251
,, <i>obtusangula</i> , <i>Joy, Britain</i> ..	58	—————	
,, <i>tomlini</i> , <i>Joy, Britain</i> ..	58	HYMENOPTERA.	
<i>Bledius gulielmi</i> , <i>Sharp, Britain</i> ..	1	SPECIES.	
<i>Ctenolaguria oculata</i> , <i>Fowler, Borneo</i> ..	27	<i>Halictus decipiens</i> , <i>Perkins, England</i> ..	62
<i>Gabrus cyphonotus</i> , <i>Joy, Caucasus</i> ..	25	—————	
,, <i>latro</i> , <i>Joy, Caucasus</i> ..	26	LEPIDOPTERA.	
,, <i>primigenius</i> , <i>Joy, N.W. Spain</i> ..	25	SPECIES.	
,, <i>sacerdotalis</i> , <i>Joy, Caucasus</i> ..	26	<i>Euryphene asiantina</i> , <i>Dudgeon, West</i> <i>Africa</i> ..	204
,, <i>subnigritulus</i> , <i>Joy, Caucasus</i> ..	26	<i>Scoparia galactalis</i> , <i>Hudson, New Zea-</i> <i>land</i> ..	250
,, <i>suffragani</i> , <i>Joy, Dalmatia</i> ..	26	<i>Scoparia vafra</i> , <i>Meyrick, England</i> ..	158
,, <i>tormus</i> , <i>Joy, Caucasus</i> ..	26	—————	
,, <i>toxotes</i> , <i>Joy, Dalmatia</i> ..	26	THYSANOPTERA.	
<i>Haliphus browni</i> , <i>Sharp, New Forest</i> ..	75	SPECIES.	
,, <i>brownianus</i> , <i>Sharp, New Forest</i> ..	108	<i>Haplothrips cephalotes</i> , <i>Bagnall</i> , <i>Oxfordshire</i> ..	265
<i>Homalota gynandrica</i> , ,, ,, ..	153	,, <i>juncorum</i> , <i>Bagnall</i> , <i>Oxfordshire</i> ..	227
,, <i>inoptata</i> , ,, ,, ..	152	,, <i>obscuripennis</i> , <i>Bagnall</i> , <i>Oxfordshire</i> ..	264
,, <i>reperta</i> , ,, ,, ..	152	<i>Melanothrips nigricornis</i> , <i>Bagnall</i> , <i>Tunisia</i> ..	263
,, <i>subquadrata</i> , ,, ,, ..	153		
<i>Metamasius bromeliadicola</i> , <i>Champion</i> , <i>Costa Rica</i> ..	5		
<i>Mordellistena cattlesiana</i> , <i>Champion</i> , <i>Venezuela</i> (?) ..	56		
<i>Muscoderus nigrocaeruleus</i> , <i>Cameron</i> , <i>Jamaica</i> ..	175		
,, <i>spinicornis</i> , <i>Champion</i> , <i>Costa Rica</i> ..	4		
<i>Philonthus scoticus</i> , <i>Joy and Tomlin</i> , <i>Scotland</i> ..	100		
<i>Quedius subapicalis</i> , <i>Joy, New Forest</i> ..	76		
<i>Tachys walkerianus</i> , <i>Sharp, New Forest</i> ..	125		

E R R A T A

- Page 9, line 9 from bottom, for "*O. brumata*" read "*C. brumata*."
 ,, 41, ,, 24 ,, bottom, insert "of" before "*Hydriomena*."
 ,, 129, ,, 39, top for "*incertas*" read "*incertus*."
 ,, 162, ,, 2 ,, top, for "*Arachnid*" read "*Arachnids*."
 ,, 170, ,, 9 ,, bottom, for "*schenkella*" read "*schenckella*."
 ,, 215, ,, 6 ,, bottom, for "*gallica*" read "*gallicus*."
 ,, 259, ,, 6 ,, bottom, for "trees" read "scree."

 EXPLANATION OF PLATES.

- Plate I.—Some new Species of *Gabrius* (see pp. 25, 26).
 ,, II-III.—Some interesting British Insects (see pp. 172-174).
 ,, IV.—*Ceratophyllus borealis*, Rothsch., ♂ (see p. 182).
 ,, V.—*Listropsylla chelura*, Rothsch., ♂ ♀, and *Ctenophthalmus calceatus*, Waterst. ♂ (see pp. 207-8).
 Portrait—Prof. Odo Morannal Reuter, Hon. F.E.S. (see pp. 230-1).
-

4
1913
C. 1913
Second Series, No. 277.]
[No. 584.]

JANUARY, 1913. [PRICE 6d. NET

THE
ENTOMOLOGIST'S
MONTHLY MAGAZINE.

EDITED BY

G. C. CHAMPION, F.Z.S. J. E. COLLIN, F.E.S.

W. W. FOWLER, D.Sc., M.A., F.L.S.

R. W. LLOYD, F.E.S. G. T. PORRITT, F.L.S.

J. J. WALKER, M.A., R.N., F.L.S.

SECOND SERIES—VOL. XXIV.

[VOL. XLIX.]

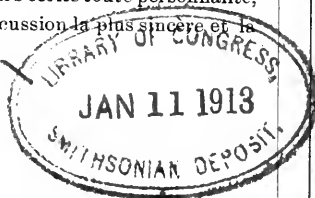
—◆—
"J'engage donc tous à éviter dans leurs écrits toute personnalité,
toute allusion dépassant les limites de la discussion la plus sincère et la
plus courtoise." — *Laboulbène*.

—◆—
LONDON :

GURNEY & JACKSON (MR. VAN VOORST'S SUCCESSORS),
33, PATERNOSTER ROW, E.C.

SOLD IN GERMANY BY FRIEDLÄNDER UND SOHN, BERLIN.

NAPIER, PRINTER, SEYMOUR STREET, EUSTON SQUARE.



REDUCED PRICES FOR BACK VOLUMES.

FIRST SERIES.

This can only be obtained in complete Volumes (bound or unbound).

A limited number of sets, from Vol. x to Vol. xxv can still be obtained at £2 15s. per set net (in parts). or of five consecutive Vols. at £1 per set net (if bound, 1s. per Vol. extra).

Certain of the Vols. i to ix can be had separately at 10s. each.

SECOND SERIES.

Vols. i to xv. are now offered at £3 per set net (in parts), or £1 2s. 6d. for five consecutive Vols. (if bound, 1/- per Vol. extra).

Apply to the Publishers.

NOTE.—Subscriptions for 1913 (6s. per annum, post free) are now due, and should be paid to R. W. LLOYD, I. 5, Albany, Piccadilly, London, W.

It would be a great convenience to the Editors in keeping the accounts if these were paid promptly, as having to send reminders entails a considerable amount of extra work.

The Coloured Plates issued in September, 1909, January and September, 1910, and September, 1911, having been so much appreciated by our readers, a fifth (devoted to *Dermaptera*) was given with the October, 1911, number. The Editors would be greatly obliged if the Subscribers to this Magazine would use their best endeavours to bring it to the notice of their entomological friends, and induce them to subscribe also.

THE CANADIAN ENTOMOLOGIST.

A MONTHLY MAGAZINE DEVOTED TO THE STUDY OF SCIENTIFIC ENTOMOLOGY.

Volume 44 is now in course of publication. Back volumes can be supplied. It is the oldest established Magazine of the kind in America, and has a world-wide circulation. Subscription, \$1 per annum, which includes a copy of the Annual Report of the Entomological Society of Ontario to the Legislature. Editor, Dr. E. M. Walker, Biological Department, University of Toronto, Toronto, Canada.

Address: Entomological Society of Ontario, Guelph, Canada.

ENTOMOLOGICAL NEWS.

A forty-eight page illustrated magazine, issued monthly, except in August and September, devoted to the study of INSECT LIFE. It contains a resumé of the proceedings of a number of Entomological Societies, and also articles by the leading Entomologists in the United States and Canada. Valuable information for the beginner, the economic entomologist, and the systemist. TWO DOLLARS a year in advance. Single copies, 25 cents. Address—

ENTOMOLOGICAL NEWS,

The Academy of Natural Sciences,

1900 RACE STREET, PHILADELPHIA, PA.

THE

ENTOMOLOGIST'S

MONTHLY MAGAZINE:

SECOND SERIES—VOL. XXIV.

[VOLUME XLIX].

EDITORIAL.

In consequence of his permanent residence abroad, Lord Walsingham announces, with much regret, that he finds himself unable to continue his services as joint Editor of this Magazine, and desires to withdraw his name from the list of our staff. We, on our part, equally regret the loss of so valuable and efficient a colleague, whose vacant place in his special department will not readily be filled.

DESCRIPTION OF A NEW SPECIES OF *BLEDIUS*.

BY D. SHARP, M.A., F.R.S.

BLEDIUS GULIELMI, sp. n.

Niger, ore, palpis, antennis pedibusque (his cumque coxis) flavis; prothorace vix transverso, crebrius fortiterque punctato, minus subtiliter pubescente; elytris prothorace paulo longioribus, ad humeros angustatis, crebre subtiliterque punctatis; abdomine basin versus angustato. Long. 4 mm.

Hab.: Anglia bor.

Closely allied to *B. annæ* (D. Sharp, Ent. Mo. Mag., xlvii, p. 31), agreeing with that species in the clear yellow colour of the antennæ and legs, but distinguished by the coarser and closer punctuation of the thorax, and its longer pubescence, as well as by the abdomen strongly narrowed at the base. As it is, as it were, an exaggeration of *B. annæ* it is not likely to be confounded with any other species.

Described from three specimens found by Mr. W. E. Sharp in Yorkshire, and named in his honour.

A note by him on the circumstances of its capture will be found on p. 14.

Brockenhurst:

December 8th, 1912.

COLEOPTERA, &c., IN BROMELIADS.

BY G. C. CHAMPION, F.Z.S.

In Vol. xlvii of this Magazine, pp. 17, 18 (1911), we published an extract from one of Prof. P. P. Calvert's interesting papers on the *Odonata* larvæ observed by him in epiphytic Bromeliads in Costa Rica. In another of his articles, entitled "Studies on Costa Rican Odonata" [Ent. News, xxii, pp. 401-411 (Nov., 1911)], he alludes to various *Coleoptera*, &c. (larvæ and imagines) occurring in these plants. The insects mentioned in this paper were presented by Calvert to the U. S. National Museum at Washington, and some of the beetles have recently been sent me for determination by the authorities of that institution. Mons. C. Picado, of Paris, too, has also forwarded to me, or to Mr. Gahan, certain *Coleoptera* and *Hemiptera* obtained from Costa Rican Bromeliads, and as he has been kind enough to allow us to retain these insects for the British Museum, I take the opportunity of publishing some remarks upon them and describing three new forms. Another paper bearing on this subject, entitled "A Contribution to the Knowledge of the Fauna of Bromeliaceæ," by Mr. Hugh Scott, was published in October last [Ann. and Mag. Nat. Hist. (8) x, pp. 424-438, pl. 10]. This paper gives an account of the author's observations in Trinidad, Dominica, and the Seychelle Islands, and notes upon various insects, including a peculiar Dytiscid (*Aglymbus bromeliarum*, Scott), and a remarkable Hemipteron (*Microvelia insignis*, Dist.) from Trinidad, &c. The "Helodine" larva from Trinidad and Dominica mentioned by him, may be that of a *Scirtes**, M. Picado having bred a species of this genus from a larva found in a Costa Rican Bromeliad. The former is described by Mr. Scott as "long and narrow, not tapering much towards the posterior extremity, flattened dorso-ventrally, with filamentous antennæ nearly as long as the body, and a group of rectal gills." It is apparently very like that of *Helodes minuta*.

The *Coleoptera* enumerated by Mr. Scott and Prof. Calvert belong to *Dytiscidæ*, *Hydrophilidæ*, *Staphylinidæ*, *Trichopterygidæ*, *Copridæ*, *Elateridæ*, *Dascillidæ*, *Lampyridæ*, *Endomychidæ*, *Erotylidæ*, *Tenebrionidæ*, and *Curculionidæ*. The Costa Rican forms before me include: *Colpodes purpuratus*, Reiche, a Carabid said by M. Picado to be abundant everywhere in Bromeliads. *Phænonotum tarsale*, Sharp, a Hydrophilid, and an allied smaller form (gen. near *Perochthes*) belonging to the same family (both noted by Calvert), Juan Viñas.

* M. Severin, of the Brussels Museum, has recently sent me two species of the allied genus *Oo.* Clark, from Trinidad, for determination: one is referable to *O. macrorata*, Champ., the other is a new species allied to *O. nigricornis*.

Philonthus ochromerus, Sharp, a common Central American insect not previously recorded from Costa Rica, Orosi. *Muscoderus*, n. sp., Pitahaya. *Ophiomedon stipes*, Sharp, two specimens, with the disc of the elytra infuscate near the suture, Orosi; the types were from Guatemala and Nicaragua. *Cryptobium*, n. sp., one specimen found by Calvert, and now in the U. S. Nat. Museum, Juan Viñas. *Colastus ater*, Murray, a Nitidulid, Orosi. *Scaphidinum variabile*, Matth., Orosi. *Thallisella crotchi*, Gorham, an Erotylid (noted by Calvert), Pitahaya. *Trochoideus americanus*, Buquet, one female (= *T. goudoti*, Guér.) (noted by Calvert as a new Endomychid genus), Juan Viñas; both sexes were found by the present writer in Chiriqui. *Scirtes*, n. sp.† *Metamasius dimidiatipennis*, Jekel, Juan Viñas (noted by Calvert); *M. cincinnatus* and *M. ochreofasciatus*, Champ., and *M. hebetatus*, Gyll., Orosi, and a n. sp. of the same genus, La Estrella. Prof. Calvert also records *Alegoria dilatata*, Cast., a Tenebrionid not hitherto noted from Costa Rica, from Juan Viñas; and the larvæ mentioned by him (*op. cit.*) are said to belong to genera near *Semiotus*, *Dolopius*, and *Photuris*. Mr. Scott, in the article above referred to, justly remarks that "the fauna inhabiting the spaces between the bases of leaves of Monocotyledonous plants in the tropics offers for investigation a fascinating field, in which that of the *Bromeliaceæ* is pre-eminent in its interest. The curious funnel-like form and closely fitting leaf-bases of these plants adapting them for the holding of water and organic detritus, their distribution throughout the richest parts of the Neotropical Region, their vast numbers of individuals and frequent epiphytic habit, all lead to the expectation that they may contain a rich and interesting series of animal forms." According to Ohaus, the water in Bromeliads does not altogether disappear in the dry season, even in places where sometimes rain does not fall for months. From this it can be seen that the fauna is likely to be largely amphibious or aquatic in nature. We now know that a Dytiscid, three Hydrophilids, a Dascillid (*Scirtes*), the larvæ of various Odonates, a caddis-fly, a Stratiomyid, &c., live in the water collected in these plants; and the presence of five large Calandrids of the genus *Metamasius* in a small collection made in Costa Rica clearly indicates that the larvæ of these weevils must (like those of the Elaterids mentioned by Calvert) attack the leaf-bases of the Bromeliads.

Some remarks on the Calandrids and descriptions of the new *Muscoderus* (a genus very closely related to *Philonthus*) and *Metamasius*, are appended below. A new Lygæid was also sent by M. Picado, and a description of this insect is also given.

† M. Picado informs me that he intends shortly to publish a description of this insect and its larva.

COLEOPTERA.
 STAPHYLINIDÆ.
 MUSICODERUS.

Musicoderus, Sharp, Biol. Centr.-Am., Coleopt. i. 2, p. 455 (1885.)

MUSICODERUS SPINICORNIS, n. sp.

Black, the mandibles and fifth tarsal joint piecous, the claws testaceous; the elytra and hind body clothed with long scattered decumbent hairs intermixed with very long erect black setæ; the punctures on the head and thorax each bearing a long erect seta; the legs pilose; the tibiæ with a row of spines on their outer edge; the anterior femora with numerous closely placed long spines beneath in ♂, and four spines in ♀. Antennæ setulose, rather stout, moderately long; joints 5-10 subquadrate, becoming shorter outwards; 6-10 transverse in ♀; joint 1 armed with three long spines (the intermediate one longer than the others) at the tip beneath in ♂. Mandibles about as long as the head in ♀, much longer in ♂. Head not wider than the thorax in ♀, much broader in ♂, depressed and obsolete canaliculate in the centre between the eyes in both sexes, and impressed with scattered coarse punctures, except along the middle. Thorax with a dorsal series of five punctures and also with other scattered coarse punctures towards the sides. Scutellum coarsely punctate. Elytra broad, much longer than the thorax, impressed with scattered moderately coarse punctures. Hind body somewhat closely, coarsely punctate...

Length, 10½ mm.

Hab: COSTA RICA, Pitahaya; alt. 1400 metres.

One pair, found in November. Near *M. cephalotes*, Sharp, from Panama; but with the antennæ and hind body entirely black, the antennæ shorter and stouter, the second joint of the labial palpi not longer than the first, the elytra much longer, the posterior femora without true spines, the anterior femora closely spinose beneath in the male, and the first antennal joint armed with three spines at the tip in that sex. Numerous specimens of *M. cephalotes* were captured by myself in Chiriqui, but unfortunately no note was made as to their habits. The diagnosis of *Musicoderus* requires modification to include *M. spinicornis*, the long second joint of the labial palpi having been selected as one of the generic characters; but in the armature of the femora, &c., the present species agrees perfectly with *M. cephalotes* and *M. gracilis*. The allied genus *Outhostygnus*, Sharp, has also been found in Bromeliads, and it is highly probable that *Misanthius* lives in similar plants.

CALANDRIDÆ.

METAMASIUS.

Metamasius, Horn, Proc. Am. Phil. Soc. xiii, pp. 408, 410 (1873);
 Champion, Biol. Centr.-Am., Coleopt. iv, 7, p. 103 (1910).

Prof. Calvert (Ent. News, xxii, p. 405 (1911)], has recorded one species of this genus, *M. dimidiatipennis*, Jekel (figured by me in the "Biologia"), from Bromeliads. Four others are represented in the material sent me by M. Picado. One of these, from Orosi, is *M. (Sphenophorus) hebetatus*, Gyll. (also figured by me in the "Biologia"), and, like *M. dimidiatipennis*, already known from Costa Rica; the remaining three are enumerated below.

METAMASIVS CININNATUS.

Metamasius cincinnatus, Champ. (*loc. cit.*) p. 110, pl. 5, fig. 18 (♂).

Hab.: COSTA RICA, La Mica, Orosi; alt. 1300 metres.

One male, much infested with *Acari*, found in January, differing from the unique discoloured Nicaraguan male, in having the rostrum, femora, tibiæ, metasternum, and basal half of the abdomen in great part rufous, and the black marking on the disc of the thorax reduced to a short posteriorly bifurcate median vitta on the anterior half. The posterior tibiæ have a dense tuft of long curled fulvous hairs near the middle of the inner margin, and a few long hairs between this and the tip.

METAMASIVS OCHREOFASCIATUS.

Metamasius ochreofasciatus, Champ. (*loc. cit.*) p. 113, pl. 5, fig. 28 (♀).

♂. Rostium narrowly sulcate beneath and with the margins of the groove very feebly crenulate; posterior tibiæ with a tuft of long curled fulvous hairs at about the middle of the inner margin; ventral excavation very broad and deep, extending from about the centre of the metasternum to near the second abdominal suture: the fifth segment transversely depressed at the apex, and with the coarse punctures along the middle each bearing a long erect hair.

Hab.: COSTA RICA, Orosi; alt. 1300 metres.

Three males and two females. The type, from Azahar de Cartago, was a female. The male proves, as anticipated by me (*l. c.*, p. 104), to have long hairs on the hind tibiæ. In one of the Orosi specimens the narrow ochreous fascia on the elytra is reduced to a small spot and in another it is entirely wanting.

METAMASIVS BROMELIADICOLA, n. sp.

♂. Elongate, subfusiform, somewhat shining; black, the antennal scape, the base of the femora, the tibiæ and tarsi in part, and some indefinite spots along the sides of the body beneath, rufous; the prothorax rufous, with a sagittiform median vitta, and an elongate stripe on each side of it on the posterior half, these markings becoming coalescent at about the middle of the disc, and the sides anteriorly, black; the elytra sordid ochreous, with various black streaks and spots, the streaks tending to form a transverse post-basal

fascia and a triangular patch on the disc before the middle. Rostrum curved, rather slender, shorter than the prothorax, thickened at the base, sparsely very finely punctate; the frontal fovea small. Prothorax elongate, subconical, with a few coarse deep punctures along the middle of the disc at the base, and a row of punctures along the basal margin; the apical constriction also punctate, the rest of the dorsal surface almost smooth. Scutellum elongate, smooth. Elytra long, narrowed posteriorly, rather coarsely punctate-striate; the interstices with widely scattered excessively minute punctures, 1-5 more or less convex, the others flat. Pygidium coarsely, densely punctate. Beneath coarsely punctate, except along a broad space down the middle of the metasternum and the ventral segments 1-4, which is much smoother; ventral depression broad, reaching the first suture; the fifth segment transversely depressed at the apex and with the coarse punctures along the middle each bearing an erect hair. Tibiæ without tooth at the inner apical angle, the posterior pair densely ciliate with long fulvous hairs from near the base to the apex...

Length, 12 mm. Breadth, $4\frac{1}{2}$ mm.

Hab.: COSTA RICA, La Estrella; alt. 2000 metres.

One male, found in September. Near *M. quadrilineatus*, Champ., from Mexico and Guatemala, but with very different elytral markings; the fulvous hairs on the posterior tibiæ (♂) extending along the inner margin to the tip, and not clustered into a median tuft. The rostrum is narrowly grooved beneath, as in the females of various allied forms. *M. connexus* has similarly formed hind tibiæ in the male, but it is not very nearly allied to the present species.

HEMIPTERA.

LYGÆIDÆ.

PAMERA.

Pamera, Say, Heteropt. Hemipt. N. Am. (1831); Distant, Biol. Centr.-Am., Rhynchota, i, p. 206 (1882).

PAMERA ALBOANNULATA, n. sp.

Elongate, narrow; black or brownish-black, the posterior lobe of the pronotum sometimes fuscous and with the lateral angles, basal margin, and two minute spots in front, ochreous; the tip of the scutellum, two transverse fasciæ on the corium, the outer margin of the latter to about the middle, and a triangular patch at its base, whitish, and an oblong or oblique spot near the inner apical angle of the corium, and the tip of the euneus ochreous; the second joint of the antennæ ochreous or brown, the fourth with a broad white annulus near the base; the base of the femora, the tibiæ, and the first two joints of the tarsi pale ochreous; the rostrum pale brown; the surface finely pubescent, the head, pronotum, and scutellum with intermixed long scattered erect hairs; the femora and the intermediate and posterior tibiæ set with scattered stiff projecting setæ: the anterior femora armed with two or three short spines towards the apex beneath. Head densely punctate, the basal portion short;

the eyes large and prominent; antennæ very finely pubescent, rather slender, about reaching the cuneus, joint 2 very elongate, longer than 3, 3 and 4 sub-equal in length, 3 distinctly thickened outwards; rostrum reaching the middle coxæ. Pronotum moderately constricted at the sides, feebly arcuate-emarginate at the base; finely punctate. Hemelytra sub-parallel, very little narrower than the pronotum; finely punctate. Terminal abdominal segment of ♂ reaching beyond the membrane, curved upwards at the tip and sulcate behind. *Nymph*: Brownish-black, the hemelytra with a large, posteriorly tridentate, ochreous patch at the base; the abdomen fuscous, variegated with ochraceous; antennæ with joint 2 ochreous, and 4 with a broad white annulus at the base; tibiæ and tarsi ochreous; femora blackish-brown. Antennæ stout, joint 2 not longer than 4, 3 a little shorter and thickened outwards; head smaller and shorter than in imago, the eyes smaller, the ocelli wanting; legs shorter than in imago, the setæ shorter; the anterior femora armed with two or three short spines; tarsi with two joints of equal length...

Length, 5½-6½ mm. Breadth, 1½-1¾ mm. (♂ ♀.)

Hab.: COSTA RICA, Orosi; alt. 1200 metres.

One male, three females, and two nymphs, received from M. Picado, and stated to have been found in Bromeliads. Very near *P. vicinalis*, Dist. (Biol. Centr.-Am., Rhynch. i, p. 207, pl. 19, fig. 13), from Alta Vera Paz, from which it differs in having the first joint of the antennæ black, the fourth sharply albo-annulate near the base, and the third longer than the second; the corium albo-bifasciate; the membrane black to the tip; and the anterior femora armed with two or three spines only. The nymph has the second antennal joint relatively shorter, the third stouter, and the annulus on the fourth extending to the base.

Heatherside, Horsell, Woking:

December, 1912.

HOMALOTA (LIOGLUTA) AQUATILIS, THOMS. (? = *SERICANS*, REY),
A SPECIES OF *COLEOPTERA* NEW TO BRITAIN.

BY PHILIP DE LA GARDE, R.N., F.E.S.

Form rather broad and robust. Head and thorax dull brassy-black; elytra brown; hind-body shining pitchy-black, with apex somewhat lighter. Thorax and elytra plainly pubescent. Antennæ dark, with lighter base. Legs reddish-or brownish-yellow.

Head large and transverse, not much narrower than thorax, finely alutaceous on vertex and slightly asperate behind eyes. Antennæ long and gradually thickened; none of the joints transverse; third joint longer than second, fourth shorter than fifth, 5-10 about equal in length, but gradually becoming broader so that the tenth is about as long as broad; last joint half as long again as tenth. Thorax subquadrate, one fourth broader than long, with

sides nearly straight and parallel, posterior angles marked; finely alutaceous and moderately closely sprinkled with minute asperities; with a broad depression at base. Elytra about the length of, and slightly broader than, thorax; alutaceous and thickly covered with little asperities, far more strongly sculptured than thorax. Abdomen slightly narrowed from middle to apex; punctuation fine and very sparse at base, getting less towards sixth segment, which (except sometimes at apex) is practically smooth; last segment asperately punctured. Male with apex of seventh dorsal segment strongly emarginate, generally in the segment of a circle but sometimes nearly angularly, the emargination being more or less obsolete crenulate. Female with apex of seventh dorsal segment slightly and simply emarginate; fourth joint of antennæ a little longer proportionately than that of the male; otherwise there appears to be no visible difference between the sexes. Length, 4 mm.

This insect has occasionally occurred to me in flood-rubbish at Buckfastleigh and Christow, and to Mr. S. G. Rendel at Tiverton; in rill moss at S. Brent and Loddiswell; and, more freely, in a swamp at Dawlish—this particular spot is, unfortunately, now useless. On showing it to Mr. Newbery he suggested that the species was *H. aquatilis*, Thoms., and, later on, Dr. Cameron kindly submitted specimens to Dr. Bernhauer who has confirmed the name. From *H. aquatica*, which perhaps it most resembles, the present species can be roughly distinguished by the longer antennæ, broader front parts, and shorter elytra, as well as by the ♂ characters. It has also considerable relationship to *H. graminicola*, in the same group (*Liogluta*) with which it is placed by Thomson.

S, Queen's Terrace,

St. David's, Exeter:

November 22nd, 1912.

APTEROUS FEMALES OF CERTAIN LEPIDOPTERA.

BY T. A. CHAPMAN, M.D., F.Z.S.

I have taken considerable interest in Mr. Hudson's notes on this subject, in the last two numbers of the Ent. Mo. Mag., having attempted an explanation of the known facts in a short paper which Mr. Hudson does not appear to have seen, which I communicated to the Entomologists' Record some ten years ago (Vol. xv, p. 43).

As others may be ignorant of my views, a brief comparison of them with the conclusions arrived at by Mr. Hudson may be of use.

On the fundamental point we are in absolute agreement, that is, that the dominating circumstance is that the moth may be enabled to lay her eggs in the proper place.

I arrived at this conclusion first by the non-winter apterous moths, which Mr. Hudson leaves on one side. Of these, those I had studied for other reasons, Psychids (macro and micro) *Orgyias*, Heterogynids, &c., all lay their eggs on or in their cocoons or pupa-shells (and certain Arctiids are approximating to this position). For these the possession of wings would be an obvious danger.

For the winter moths, Mr. Hudson agrees with me that separation from the neighbourhood of the food-plant is the danger to be escaped. He considers that a winged moth might be too much numbed by cold and unable to return if it flew away from the food-plant. Such a danger no doubt exists to an appreciable extent, but it is obvious that if a moth was too much numbed to return to the food-plant it would be also too lethargic to lay any eggs if it had remained there. Yet we do not find the eggs of these moths laid anywhere, as by incapacitated individuals, but always in places duly selected.

The point on which Mr. Hudson's explanation differs from mine is precisely here. I do not think cold *per se* has any appreciable effect, but that the dominating cause that would prevent the insect from finding the original or some other food-plant, is not, were it able to fly, a secondary inability due to cold, but a primary one, that with full powers of flight it could not find the food-plant. Nocturnal *Lepidoptera* on the wing, no doubt discover the food-plant by scent. When vegetation is dormant in winter the scent will be trifling, for a moth on the wing, practically non-existent. Therefore, a moth once taking a flight will not again find the food-plant. There is probably, however, enough scent or other sufficient indication to be detected by the moth when at the close quarters demanded by travel on foot.

Mr. Hudson is also on sure ground when he says that these species affect plants that are more or less gregarious in hedges and thickets.

It may be noted that some of the commonest of these insects, *O. brumata*, *C. fagella*, &c., have larvæ that live spun up, and that the dissemination of the species in these cases must be by the wandering of these apterous females. In the other large section, of summer species, whose eggs are laid on or in the cocoon, the wanderings of the larvæ must be the means of extending their habitats.

It is perhaps desirable to note, in reference to one remark of Mr. Hudson's, that there is a general agreement that *O. antiqua* in England has only one brood in the year, but that there is a great range in the periods of the eggs hatching, even of one batch, and

much variation in the rapidity of the feeding up of the larvæ, so that moths may be on the wing from midsummer till winter. In the south of France, however, *O. antiqua* appears to be double-brooded. In England, if this ever occurs, it must be exceptionally. Mr. Merrifield found the single-brooded habit could be overcome in temperature experiments.

Betula, Reigate:

December 6th, 1912.

THE RACES OF *ANDRENA ROSÆ*, PANZ.

BY R. C. L. PERKINS, M.A., D.Sc., F.E.S.

In the *Deutsch. Ent. Zeitschr.* for 1911, p. 457, there is an interesting paper on the races of *Andrena rosæ*, Panz., by Herr J. D. Alfken, and as he received British material from the late Edward Saunders and the Rev. F. D. Morice, his conclusions are of interest to the students of British bees. These conclusions are given in a dichotomous table, which, translated, is as follows:—

FEMALES.

1. Abdomen and thorax above almost bare.
Abdomen and thorax above more or less densely hairy 3
2. Vertex with black or dark brown hairs; face below the antennæ with dark brown hairs; anal fringe dark; anal plate (pygidium) closely and strongly granulate..... *A. teutonica*, n. st.
Vertex with grey hairs, intermixed with dark hairs; face below the antennæ with yellowish brown hairs; anal fringe blackish-brown, overlaid with yellow hairs; pygidial area hardly perceptibly granulate...
A. rosæ, Panz. (= *A. austriaca*, Schm. nec Panz.)
3. Abdomen more or less red †
Abdomen black, only the hind-margin of the segments transparently testaceous..... *A. trimmerana*, K.
4. Face below the antennæ with brownish-black hairs...
A. spinigera, K. (? *A. lombardica*, Schm.)
Face below the antennæ with dusky yellow-brown hairs...
A. anglica, st. n. (? *A. lombardica*, Schm.)

MALES.

1. Abdomen above almost bare 2
Abdomen, at least in the middle of the second segment, with a tuft of hairs 3
2. Cheeks with a long dark spine; face mostly with purely dark hairs...
A. teutonica, st. n.

- Cheeks without a spine, only a little uneven; face between the antennæ with yellow-brown hair tufts *A. rosæ*, Panz.
3. Abdomen more or less red 4
 Abdomen black, only the apical margin of the segments more or less clear testaceous; cheeks without a spine.
4. Cheeks spined *A. spinigera*, K.
 Cheeks not spined *A. anglica*, n. st.

All the four races distinguished in this table occur in England. *Andrena trimmerana*, K., is one of the commonest of British bees. It is single-brooded always. In North Wiltshire and adjoining parts of Gloucestershire, where I collected for many years, it was the only form that occurred, and even in the hottest summers no second brood was produced, though rarely there was a sparse second generation of its common parasite, *Nomada alternata*.

In Devonshire *A. trimmerana* is antedated in its appearance by *A. spinigera*, which may be abroad on any warm day in March, but before the latter has at all passed, the former may be already out, so that the two are often taken in company in my garden. *A. anglica* in the same localities appears in July, and is the summer generation of *A. spinigera*.

Both *A. spinigera* and *A. trimmerana* are frequently stylopized, and some of these parasitized individuals are difficult to assign to their proper species. I have not taken a stylopized example of *A. anglica*.

From my study of *A. spinigera* and its summer generation, *A. anglica*, I have no doubt that *A. rosæ* is likewise the summer brood of *A. teutonica*. The latter does not seem to occur in the coastal district of Devonshire in places where *spinigera* and *anglica* are common, or at least I have not found it, but it is found inland on Dartmoor (where *spinigera* is also found), and no doubt a search in this locality would produce *A. rosæ* in the summer. *A. anglica* and *spinigera* seem to be commoner in England than *rosæ* and *teutonica*, but owing to the fact that Saunders did not distinguish all these races the distribution is uncertain. I have not met with true *rosæ* myself, not having had the opportunity to visit in summer the localities where I have taken *teutonica* in the spring, but Mr. A. H. Hamm, of Oxford, has just sent me a beautiful example of Panzer's insect from near Matley Bog in the New Forest.

The position then with regard to these insects appears to be that there are three distinct races in England:—(1) The single-brooded *A. trimmerana*, K., the most abundant of all; (2) *A. rosæ*, Panz., with

a spring brood, *A. teutonica*, Alfk.; (3) *A. spinigera*, K., with a summer brood, *A. anglica*, Alfk.

I have studied the variation in many examples of *A. trimmerana*, *A. spinigera*, and *A. anglica*, with regard to some characters which have been used for the separation of the races by Saunders and Alfken.

In North Wiltshire where *trimmerana* only occurred, in many hundreds examined two examples of the ♂ were found with well-developed genal spine, the spines being quite visible to the naked eye and as long as in many true *spinigera*. None of the other characters of *spinigera* were shown by these examples, which otherwise were typical *trimmerana*. One of the most constant distinctive characters of *trimmerana* ♀ is to be found in the *scopa* of the hind tibiae, which, beneath, is of almost silvery whiteness. Very rarely indeed is it of an ochreous colour, exactly as in the ♀ of *anglica*. The 8th ventral segment of *trimmerana* was deeply emarginate in all the examples examined, and the pygidial area of the ♀ always distinctly densely punctate.

In *spinigera* ♂ 10 per cent. had the 8th ventral segment much less deeply emarginate than normal; one ♀ had the sculpture of the pygidial area obsolete, and in two it was subobsolete. All the ♂♂ had distinct genal spines visible to the naked eye, though varying somewhat in length.

In *anglica*, fourteen ♂♂ taken at random were examined. Of these eight had the 8th ventral segment deeply emarginate, two very slightly or not at all, and four were intermediate between these. Nine of these had no genal spine, five had a distinct one visible to the naked eye, but usually of from $\frac{1}{2}$ – $\frac{1}{3}$ the length of that of fully developed *spinigera*. None of these showed any trace of the dark facial clothing of the spring brood. Of 19 females, also selected at random, two had the pygidial area as strongly sculptured as in *trimmerana*, two rather less strongly, in four the sculpture was faint, while in eleven it was very faint. One female (not included in the above) which was sent to Saunders many years ago, entirely without red colouring and with strongly punctured pygidial area, was returned by him as *trimmerana*. It, however, had the ochreous or yellow hairs on the *scopa* characteristic of *anglica*, but as mentioned above, very unusual in *trimmerana*. This specimen was taken off flowers of *Rubus* in company with normal *anglica*.

In the spring *trimmerana*, *spinigera*, and *teutonica* may all occur at the same time and place (as they do on Dartmoor), or either of them

may occur without the presence of the other, except that *trimmerana*, which is ubiquitous and emerges a little later in the season, is certain then to be found with the others. The two summer forms also may occur in the same locality or apart. I think it very doubtful whether the three spring forms interbreed, or whether the summer generations of the two of them do so.

The material on which these remarks are mainly based has been specially collected by me to supplement the fine series of these particularly interesting insects which are in the collection of Cambridge University Museum.

Park Hill House, Paignton :

November 24th, 1912.

HILARA ALBOCINGULATA, SP. N.

BY JOHN H. WOOD, M.B.

A small and delicate species, with long slender yellow legs and simple metatarsi, and remarkable for the white semi-transparent abdomen of the male.

♂ ♀. Thorax and scutellum grey, the former scarcely shining and indistinctly two-striped; dorso-central bristles in a single row, acrostichal in two rows and about half the size of the dorso-central; scutellum with four bristles. Male abdomen white and semi-transparent, except on the last one or two segments which are more or less black; female abdomen variable, from reddish-yellow to brown. Male hypopygium black and rather large. Legs yellow, but darkened on all the last three tarsal joints; very long and slender, the tarsi especially so, and armed as in *cingulata*. Wings almost clear, veins brown and well marked, stigma faint; the dusky halteres yellow-stalked.

The male can be recognised at once by its strikingly coloured abdomen; but the female presents some difficulty, as it bears a strong general resemblance to the female of *cingulata*. The wholly black antennæ (in *cingulata* the basal joints are red), and the dusky halteres are, however, sure means of distinguishing it, whilst other characters less easy to grasp are the darker and not absolutely dull thorax with its fainter stripes, and the longer and more slender legs.

It is to be found on the Mowmow, after the river has come out from the foot hills of the Black Mountain range to meander for a few miles in an open valley, before being shut in again by high ground on its way to join the Wye. Here occur the shingle beds and deposits of sand which I have found so rich in interesting things, from coast insects, such as *Myopina reflexa* and *Tephritis absinthii*, to extreme northern forms as *Thereva lunulata* and *Porphyrops rivalis*. Here in such surroundings the insect is to be met with not uncommonly in

July. The only other locality I know of is a rocky stream near the centre of the county, where on one occasion I captured a single example.

I learn from Mr. Collin that there is a *Hilura albiventris*, v. Ros., but as the whole description consisted of "*abdumine albo, apice fusco*," one seems to be justified, where a genus so large and intricate as *Hilura* is concerned, in treating it as little better than a catalogue name.

Tarrington, Hereford:

November, 1912.

Note on the capture of Bledius guillemi, Sharp.—I captured four specimens of a *Bledius*, which Dr. Sharp has described (*antea*, p. 1) as new to science under the name of *B. guillemi*, at Linthorpe, near Middlesbrough, in July, 1911, when on a visit to my friend, W. G. B. Walsh, who then resided in that vicinity. They were taken in the sandy banks of a small stream, which might with perhaps greater accuracy be called a ditch, and with them, and in greater numbers, were *Bledius pallipes* and such common species as *Stenus gullula*, *Homalota elongatula*, &c. The locality was the reverse of secluded, being surrounded by the erections of a rapidly growing suburb, nor could the rivulet be at all correctly described as pellucid—in fact it was a matter of surprise to me that *Coleoptera* of any kind should be discovered in its banks, but no doubt these beetles had persisted from a period when happier conditions prevailed in that immediate locality.—W. E. SHARP, 9, Queens Road, South Norwood: December 11th, 1912.

Agabus abbreviatus, F., &c., at Soham.—On April 24th of this year, afield quite early enough even for so perfect a spring morning as it was, I left Soham railway station; my intention was straightway to walk to Wicken Fen. Immediately without the station, however, I was strongly tempted by a "likely looking" ditch; I unpacked my water net and began some rapid dredging. Very great was my gratification on soon fishing up an *Agabus abbreviatus*, this most beautiful and distinct species seeming to have entirely deserted the Cambridge fen-land for many years. After a little further work, I took another example, but during the half-hour that ensued, no others were netted. *Limnebius papposus*, Muls., was common in this ditch, the ♀♀ outnumbering the ♂♂ by about three to one. I took nearly all the *Limnebius* I saw, expecting to find both the larger species present; all those I examined, however, proved to be *papposus*. In the overflow pools from the river here, I found *Haliplus cinereus*, Aubé, swimming about in great numbers. It was now quite time for me to push on fen-wards; this I did, reaching Wicken Fen at about 10 o'clock.

In the short time left for the fen (having to leave before 3 p.m.), I did not find beetles very abundant, except among the aquatic forms, to which, however, I confess, most of my attention was directed. By beating some faggot bundles

just without the fen, I took two interesting species, *Scymnus minimus*, Rossi, and *Throscus obtusus*, Curt., in profusion. By sifting the sedge-stacks, the usual fen beetles were seen, but by no means in their wonted numbers, *Parnus anglicanus*, Edwards, and *Galerucella pusilla*, Weise, being the most interesting among them. In the water-net, the great abundance of *Halypus variegatus*, Sturm, was a noticeable feature, with its congeners, *confusus*, Steph., and *obliquus*, Er., in lesser numbers. *Hydaticus transversalis*, Bergst. (9 or 10), *Rhantus grapii*, Gyll., *Ilybius obscurus*, Marsh., *Hydrophilus*, and other typical fen water-beetles rejoiced the eye, and materially increased my collection, but must not tempt me to enlarge thereon!—HEREWARD C. DOLLMAN, Hove House, Bedford Park, W.

A note on Ceuthorrhynchus rapæ, Gyll.—Owing to its having been formerly taken in the Tottenham Marshes by the Messrs. Waterhouse, as recorded by Fowler, I had been on the look-out for this weevil on the marshes here for many years, but entirely without result up to the present year. On the 5th May last, however, I had the good fortune to find an individual of *Ceuthorrhynchus rapæ* sitting in the sun on one of the upper shoots of a tall plant of the garlic mustard (*Alliaria officinalis*) growing at the side of a marsh ditch. A prolonged investigation of all the cruciferous plants in the vicinity failed, however, to produce any more, either then or since.

Curiously enough, however, the species has recently turned up in another and somewhat unexpected locality, Mr. W. West having shown me an undoubted example of *C. rapæ*, which he is positive he captured by sweeping in Headley Lane, Surrey, on August 6th, 1910.

Ceuthorrhynchus rapæ appears to have been first taken in this country by the late Mr. Samuel Stevens, who included it under the name "*Nedyus syritis*" (= *Ceuthorrhynchus syrites*, Germ.) in a list of beetles taken by him near Hammersmith, which he contributed to the first volume of Newman's "Entomologist" (1842). The insect was also wrongly referred to the *C. inaffectatus* of Schönherr* before its real identity was finally settled. In the "sixties" and "seventies" the metropolitan collectors of that period were in the habit of taking it in various parts of the London district, but although Dr. Power on one occasion took 19 specimens, I do not gather that it was ever really a common species. As far as I can ascertain there has been no record of its capture now for a considerable number of years, so that its re-occurrence is a matter of some little interest.

Whether *C. rapæ* survives in the only other British locality given for it by Fowler outside the London district, namely, Portsmouth, where it is recorded as having been taken by the late Mr. Moncreaff, would seem to be very doubtful, as Mr. Pool informed me some time ago that most of Mr. Moncreaff's collecting grounds had long since been destroyed. Mr. West, who, as is well-known,

*This appears to have been either a complete myth or a "nomen nudum." The name, however, is included in G. R. Waterhouse's British Catalogue of 1858, and his Pocket Catalogue of 1861, but in such a way as to show that he was doubtful about it. There is a *C. inaffectatus* of Gyllenhal in the European List of 1906, but from its position it would apparently be not at all closely related to the *C. rapæ* of the same author.—F. B. J.

collected and captured so many good insects in what are now the south-eastern suburbs of London, informs me that he had only met with one example of *C. rapae* previously; this was at Lee, where Drs. Power and Sharp also found it. At Tottenham it was taken by Messrs. Pelerin, E. C. Rye, F. Smith, S. Stevens, C. O., E. A. and F. Waterhouse, and Janson. Dr. Power's series, still extant in his collection now at South Kensington, is in excellent preservation.—F. B. JENNINGS, 152, Silver Street, Upper Edmonton, N.: November 15th, 1912.

Notes on the food-plants of certain Russian species of Sesia.—I recently received from Mr. Hermann Rangnow, Junr., of Berlin, a small collection of *Sesias*, which he secured in the neighbourhood of Sarepta, S. E. Russia. Several of the examples have been bred from larvae Mr. Rangnow found, and it seems worth while to record the food plants of four species which do not appear to have been bred before. The insects in question were *Sesia chalcidiformis*, bred from the dead roots of a species of *Artemisia*; *Sesia cirgisa* (cf. Seitz, vol. 2, p. 408, 1912) bred from a root of *Statice gmelini*; a large series of *Sesia allantiformis* reared from the roots of *Phlomis pungens*; and one *Sesia astatifomis*, bred from a root of *Rhindera tetraspis*.—N. C. ROTHSCHILD, Arundel House, Kensington Palace Gardens, London, W.: January, 1912.

Platyteleis roeselii, Hagen, &c., on the Lincolnshire Coast.—Orthopterists will remember that so long ago as 1888 Mr. H. Wallis Kew recorded having taken specimens of *Platyteleis roeselii* at Trusthorpe, on the Lincolnshire coast. For many years I have had two of these specimens in my collection, and which there was never any doubt Mr. Wallis Kew took at Trusthorpe, but as Dr. Malcolm Barr omits the locality in his "Orthoptera of Central and Western Europe," I decided this year to investigate the district myself. Accordingly, I went to Sutton-on-Sea, which is about one and a quarter miles from Trusthorpe, on August 27th, and stayed there until September 9th. During that period I took thirty-six specimens of *Platyteleis roeselii*, many of them very fine ones, at Trusthorpe, and should probably have got many more had not the weather, from an entomological point of view, been about as bad as it could be. My visit commenced the day after the perhaps unparalleled disastrous floods in Norfolk and Lincolnshire owing to the long continued torrential rains, and although during my stay there was comparatively little rain, the ground for some days was in many places a veritable swamp, and the wind day after day blew such violent gales from the north and east, with the temperature bitterly cold, that collecting was most unprofitable and uncomfortable work. *P. roeselii* seemed exceedingly local, being almost confined apparently to a stretch of the sandhills of about a hundred yards long by ten or twelve yards wide, on the land side; and although I carefully examined many other places to all appearance exactly similar, I could find no trace of it elsewhere. It occurred among the long rank grasses, from the base to ten or a dozen yards up the steep side of the sandhills. The published descriptions of the species give the colour of the characteristic circular broad border on the side flaps as "yellowish-white," "yellowish," or "bright yellow," whereas in every one of my specimens, it was

bright grass green, and the mark was most conspicuous as soon as the insect was seen at all. In many specimens there was a good deal of green about the femora, &c., although in others these parts were brown. It is indeed in the living insect far more distinct from *P. brachyptera* than the descriptions would indicate. I understand that the insect, although hitherto so very rare in Britain, has this year been taken in several localities on our south-east coast, but never in any other nearly so far north as Trusthorpe. The only other Orthoptera noticed, apart from *Forficula auricularia*, were *Stenobothrus elegans*, which abounded on the sandhills wherever I went, and *S. bicolor* which was comparatively rare. The only Odonata seen were *Sympetrum striolatum*, which was plentiful when a gleam of sunshine would allow it to fly, and *Ischnura elegans*. Of Neuroptera only *Panorpa communis* occurred, and notwithstanding the large quantity of water, but few species of Trichoptera were observed. One interesting species turned up in *Grammotaulius nitidus*, an insect I have only seen in our eastern or south-eastern counties, but the others were such ordinary species as *Limnophilus affinis*, abundant; *L. flavicornis* and *Glyptotælius pellucidus*, common; *Stenophylax permistus* and *Colpotaulius incisus*. The weather was not sufficiently tempting to encourage work for Lepidoptera. I sugared on three evenings, posts close to the sandhills, but very few moths came, and no specially sandhill species. *Agrotis saucia*, not uncommon, was as good as anything seen; the only two *Agrotis nigricans* were of the almost black Lancashire coast form; and the fine *Gonoptera libatrix* were, I think, darker than any I have taken in other localities. Belated *Nonagria elymi* were still to be found sitting on the sandhill grasses. Of larvæ, *Arctia fuliginosa* was plentiful, and there were still a considerable number of *Euchelia jacobææ* on the ragwort, *Bombyx rubi*, *Odonestis potatoria*, *Hadena pisi*, &c.—GEO. T. PORRITT, Elm Lea, Dalton, Huddersfield: November 2nd, 1912.

Norellia spinigera, Ztt., in Perthshire.—In his paper on the British species of the genus *Norellia* (Ent. Mo. Mag., 1900, p. 199), Colonel Yerbury refers to *spinigera*, Ztt., as requiring confirmation as a British insect; it being represented in the late Mr. Verrall's collection by a single ♂ from the Wilson Saunders collection, presumably without data. I have seen no notice of the capture of the species in the intervening twelve years, so it may be of interest to record its occurrence in this district. I have a ♂ and ♀ taken June 27th, 1908, and a ♀ on June 25th of this year. The ♀♀ agree with Zetterstedt's description, but they have the wings very distinctly darkened on the front margin towards the apex; this is only faintly shown in the ♂. At first I thought this discrepancy of importance, as the dark cloud on the wing is given by Zetterstedt, Becker, and others, as a character of the closely allied *liturata*, Mg. Becker, however (Berl. Ent. Zeitschr. xxxix, p. 128 [1894]), apparently places little value on the character.

My specimens have the abdomen shining black with very fine white hairs on all the disc and sides. The frons is wider than in *liturata* (which I also possess from this district); and the dorso-central bristles are fewer in number: *liturata* has four distinct pairs of these bristles; *spinigera* has but three pairs, there being only one pair in front of the suture.—A. E. J. CARTER, Blairgowrie, Perthshire: October 5th, 1912.

The following additional localities for *Norellia spinigera* may be noted here: Nethy Bridge (Inverness), July 28th, 1904; taken by Col. Verbury. New Forest (Hants), June, 1903; taken by Dr. Sharp. Barton Mills (Suffolk), May 31st, 1911, and the Monnow Valley (Herefordshire), August 8th, 1910; taken by myself.—J. E. C.

What is the true host of Nirmus interruptus, Piaget?—In describing this species, found originally on a museum specimen of *Phalacrocorax carbo*, Piaget (Les Pédiculines, p. 173) draws attention to its close affinities with *N. farrus*, N., whose usual hosts are waders of the genera *Totanus*, *Vanellus*, *Egialitis*, &c. Five years later, in the "Supplement" to the "Essai" (1885), p. 21, Piaget again records *interruptus*, this time from *Totanus glottis*. This record is appended to the description of a new species, *Nirmus incertus*, obtained from the same bird. The author points out that *incertus*, though found on a Wader, is evidently away from its true host, which must, from the structure of the parasite, be a bird of prey. He goes on to remark that *Nirmus interruptus* on *Totanus glottis* is equally inexplicable. Apparently, then, Piaget considered both *N. incertus* and *N. interruptus* to be stragglers on the Greenshank, and takes the Cormorant to be the real host of the second parasite. The writer has in his collection one or two examples of what he takes to be *N. interruptus*. The host on which they occurred was a *Totanus canescens* (— *glottis*), shot on the east coast of Scotland. *N. interruptus* seems to be very closely related to *farrus*, and the Greenshank is probably a true host. Its nearest congener is apparently the form got on *Totanus calidris*. One would like to know whether this parasite is as closely attached to *Phalacrocorax carbo* and *P. subvirostris*. The writer will be glad to receive *Nirmus* for examination from *Tringa*, *Totanus*, *Vanellus*, &c.—JAMES WATERSTON, The Manse, Ollaberry, Shetland.—December 5th, 1912.

Variation in the genal comb of Typhloceras poppei, Wagn.—When introducing this peculiar insect to the notice of British Entomologists (Ent. Rec. and Journ. of Var., Vol. XV, No. 8, p. 196, pl. ix, 1903), Mr. Rothschild remarked that instead of the normal four, one female showed five spines on one side of the head. Up to the time of writing Mr. Rothschild had received 10 examples of the insect. As the number of genal spines is an important systematic character, and as *poppei* seems to be unusually variable in this respect, the following note of the teeth in the genal combs of a small series of this flea (from Shetland), may be worthy of record. Of 38 examined 31 were normal, while 4 ♀♀ and 3 ♂♂ were aberrant. Two ♀♀ showed right and left respectively 3 and 4 spines. Two had arrangement 4 : 3. In the ♂♂ one found 5 : 4; 3 : 5; 4 : 3. Where 5 spines occur in these examples, the extra one is placed behind the normal 4th; where a spine is wanting it is the normal 1st, counting from the palpus backwards in each instance.—JAMES WATERSTON.

The new Keepership of Entomology at the British Museum.—Entomologists will be pleased to hear that the Principal Trustees of the British Museum have at last appointed a Keeper for the Department of Entomology, the vast collections

of insects stored there having hitherto been under the care of the Keeper of Zoology. At the beginning of the new financial year, therefore, there will be a special Department of Entomology under its own Keeper, and Mr. C. J. Gahan, who has actually been in charge of the section for upwards of two years, has been selected for the newly created post. He was appointed an Assistant in the Department of Zoology in 1886.—EDS.

Obituaries.

William Forsell Kirby, who passed away after a short illness on November 20th last, as briefly intimated in our December number, was interred at Chiswick Cemetery on the 26th, several representative Entomologists being present at the funeral service.

The eldest son of Mr. Samuel Kirby, a banker of Leicester, he was born in that city on January 14th, 1844. He was educated by private tutors, and at an early age displayed an unusual taste for reading; at the suggestion of his mother he began making a collection of butterflies and moths, thus laying the foundation of his subsequent brilliant reputation as an Entomologist. As early as 1856 we find him contributing to the "Entomologist's Weekly Intelligencer," and in the same year he issued a "List of British Lepidoptera"; in 1862 his earliest book, the very useful little "Manual of European Butterflies" was published, being the first English work of its kind, later on (1878—82) followed by a more comprehensive popular work on the European *Macro-Lepidoptera*, which has more than once been re-issued.

In 1867 Mr. Kirby, who had in the previous year married Fraulein J. M. Kappel, daughter of J. W. Kappel of Hilden, near Düsseldorf, accepted the post of curator in the Museum of the Royal Dublin Society (afterwards the National Museum of Science and Art), and resided in Dublin until his transfer, on the death of Mr. Frederick Smith in 1879, to the Zoological Department of the British Museum. It was during this period that he published in 1871 (with Supplement, 1877), his well-known "Synonymic Catalogue of Diurnal *Lepidoptera*," this being probably his best and most useful piece of Entomological work, and even now of the utmost value to all students of these insects. Other catalogues of the same nature compiled by him are those of the *Tenthredinidæ* and *Siricidæ* in the British Museum (1883); *Odonata* (1890); *Lepidoptera Heterocera*; *Sphingæ* and *Bombycæ* (1892), unfortunately left incomplete for lack of sufficient support; and *Orthoptera* (3 vols.) completed only about two years ago. Among other well-known and valuable works on our science by Mr. Kirby, the sumptuously illustrated "Rhopalocera Exotica" in association with Mr. Henley Grose-Smith (1887—97); "Elementary Text-Book of Entomology" (1885, new edition 1892); the very useful little "Handbook of the Order *Lepidoptera*" in Allen's "Naturalist's Library" (5 vols., 1894—1897); and "Marvels of Ant-Life" (1898) may be specially recalled to mind. From 1869 to 1884 he also contributed the annual reports to the Zoological Record, at first on the *Lepidoptera* only, and latterly on the greater part of the Insecta.

Hitherto we have alluded only to Mr. Kirby's work as an Entomologist, but he was a man of versatile talent and wide interests, and of altogether exceptional ability as a linguist. His acquirements in this respect comprised practically all the modern European languages, and particularly those of the North; and in this connection his *magnum opus*, the translation into English of the great Finnish epic, the "Kalevala," commenced in 1904, may be here referred to. His intimate acquaintance with Oriental languages also enabled him to furnish valuable bibliographical and other notes to Sir R. Burton's famous translation of the "Arabian Nights." Besides general Natural History and Botany, his published writings include such subjects as Evolution, Mysticism, and Folk-lore, and he was also the author of several poetical works of much merit, of which the "Hero of Esthonia," which appeared in 1895, is the best known.

Up to 1909, when he retired from the Natural History Museum on account of age, Mr. Kirby was a familiar figure in the "Insect Room," where his quiet courtesy and readiness to impart information, and to take any amount of trouble in clearing up difficulties, will long be remembered by all who had the privilege of meeting him. One was perhaps most impressed by his extraordinary knowledge of the literature of Entomology, and in this respect he was certainly without a rival in his lifetime. He was one of the oldest Fellows of the Entomological Society of London, having been elected in 1861, and for five years (1881-5) was one of its Secretaries; he joined the Linnean Society in 1890, and was a member of many other scientific and literary bodies, at home and abroad.

His wife, who was his faithful and valued associate in all his varied work, predeceased him in 1903; and to his only son, Dr. W. Egmont Kirby, himself the author of several well-known Entomological works, and to whom we are indebted for a large part of the material of this notice, we tender our sincere sympathy.

Peter Cameron—The death of this energetic Hymenopterist took place at New Mills, Derbyshire, on December 1st, at the age of 65. Although chiefly known as a prolific describer of new genera and species from every part of the globe, he was also a keen and industrious student of the order *Hymenoptera*. Personally known to few, if any, of the workers in his chosen field, there can be no serious student of *Hymenoptera* now living who has not had occasion at some time or other to refer to his papers. Cameron entered a firm of Turkey Red dyers in Glasgow as accountant some 40 years ago. The introduction of aniline dyes seriously affected the trade, so that he migrated to Manchester, where he secured employment in a firm of calico printers. Ill-health and a strike were responsible for his loss of this position, and little was heard of his movements for some years, until he was compelled, being in great distress, to appeal to one who has been his staunch friend and supporter throughout. By this means he became the recipient of a grant from the Royal Society, which enabled him to lodge with a labouring man at New Mills, whither he had now removed. It can thus be understood that a fight against poverty, in conjunction with ill-health, rendered the pursuit of systematic entomology doubly hard, and when criticism, from which no active writer can hope to escape, is levelled at Cameron, allowance

should be made for the conditions under which much of his work was done. Inability to consult the rich collections at South Kensington, as well as an almost entire ignorance of the doings of other workers in the same field cannot but have had a prejudicial effect, especially on his later writings. There can be no doubt that his best work as a systematist was done in the earlier years of his study of the order, since between the years 1882—1900 his two most important works, viz.: "A Monograph of the British Phytophagous Hymenoptera" and "Hymenoptera, Vols. I and II," of the *Biologia Centrali-Americana*, made their appearance. For the first mentioned of these two works, which was published in four volumes by the Ray Society (1882—1892), British Hymenopterists owe him a debt of gratitude. Previous to its appearance the literature dealing with these insects was very much scattered and no attempt had been made at its collation into systematic form, and though alterations have since become necessary to fit in with modern ideas of classification, nevertheless as a basis upon which to build it has proved invaluable. His two volumes for the *Biologia Centrali-Americana* covered the whole field of *Hymenoptera*, with the exception of the ants, social and solitary wasps, and bees. A later series of papers, entitled "Hymenoptera Orientalia," were devoted to the description of the fine collection of Indian *Hymenoptera* formed by Mr. G. A. J. Rothney, now in the Oxford University Museum. His own collection of British Phytophagous *Hymenoptera*, upon which the monograph was based, in addition to a large number of his exotic types, is in the Natural History Museum. Papers from his pen appeared up to within a few weeks of his death, one of the last being devoted to the collections from the Belgian Congo contained in the Congo Museum, Tervueren. At various times he worked out collections for many museums abroad, including the Sarawak Museum; the George Town Museum, British Guiana; and various institutions in South Africa. The *Vespidæ*, *Fossores*, and *Chrysididæ* of Sjöstedt's Kilimandjaro—Meru Expedition, belonging to the Stockholm Museum, were also described by him.—G. M. W.

Edouard Brabant.—We are sorry to announce the death of Mr. E. Brabant, of Cambrai (Nord), France, who died at his native place on November 29th last, in his 64th year. For 50 years he had studied and collected butterflies, and every other branch of natural history interested him. He described several new species of *Lepidoptera* from French Guinea. In 1893 he was elected a Fellow of the Entomological Society of London, and doubtless was personally known to some of our British Lepidopterists.

Societies.

THE SOUTH LONDON ENTOMOLOGICAL AND NATURAL HISTORY SOCIETY:
Thursday, Oct. 10th, 1912.—MR. A. E. TONGE, F.E.S., President, in the Chair.

Mr. Lucas exhibited specimens and detailed drawings of the species of British earwigs to illustrate his paper, with living examples of the very local *Labidura riparia* from Christchurch. Mr. Tonge, a very dark marked example of *Acidalia ornata* from Reigate. Mr. Sheldon, a long series of *Colias hecla* from N. Lapland, with examples of other European *Colias* species for comparison. Mr. Adkin, specimens of *Nola albivalis* bred from larvæ that had

hybernated in confinement. Mr. Newman, a long series of *Agriades coridon*, including several ab. *semisyngrapha* from Royston, and showing in the ♀s much variation in the ground-colour of both upper and under surfaces, and 3rd generation specimens of *Ennomos quercinaria*, all with the apex of the forewings dark; 25 per cent. of the 2nd generation had been melanic, of a dark chocolate colour. Mr. Lucas read a paper on "Earwigs that breed in Britain," and illustrated his notes with a large number of lantern slides.—HY. J. TURNER, *Hon. Secretary.*

Thursday, October 24th, 1912.—The President in the Chair.

The Secretary exhibited four specimens of *Abraaxas grossulariata* ab. *variegata*, presented to the Society's cabinet by Mr. G. T. Porritt. Mr. Ashdown, a collection of butterflies made during his holiday in Switzerland in June and July. Mr. Colthrup, a series of very fine photographs of *Lepidoptera* at rest, and of famous entomological localities. Mr. Newman, the one *Colias edusa*, and four var. *helice* he had bred this year from a captured var. *helice*, some *Pyrameis atalanta* with smoky-red bands, and a fine series of autumn-bred hybrids, *S. ocellatus-populi*, showing much variability. These last had not been forced. Mr. Tonge, a long series of *Tephrosia bistortata*, second brood, bred from a ♂ from Tilgate Forest captured in the spring. Mr. Kaye, an uncommon Pyralid, *Aglossa cuprealis*, captured in his house at Surbiton. Mr. Edwards, the exotic Papilio, *P. caecius*, from S. America, and *P. helleri* and *P. andraemon* from Mexico. Mr. I. Gibb, a living example of *Polygonia c-album*. Mr. Adkin, short series of *Eupithecia innotata* and *E. fraxinata* and initiated a discussion on the specific stability of these as two separate species. Mr. Grosvenor, two drawers of *Pieris napi*, showing the geographical variation occurring in the British Isles. Mr. Sheldon, all the species of the genus *Erebia* known to occur in Scandinavia, and which he had taken in his trips there during 1911 and 1912. Mr. Step read his Report on the Fungus Foray in Oxshott on October 30th.

Thursday, November 14th, 1912.—The President in the Chair.

Mr. H. W. Martin and Mr. Ronald Marshall, of Bexley, were elected Members.

Mr. Newman exhibited twigs of willows extensively attacked by Tits for the larvae of beetles and the mites in the nodules caused by the last; long and variable series of *Polia chi* from Sheffield, mostly dark; and several series of *Melitaea aurinia*, including a very variable series bred at Birmingham and a very uniform series bred at Bexley, both series originating from the same localities. Mr. Sheldon, series of the Brenthids taken by him in Lapland this year, viz.: *B. frigga*, *B. freija*, *B. polaris*, and *B. pales* var. *lapponica*, with series of *Oeneis jutta* and *Oe. norma*, pointing out the extreme variability of the last named. Mr. F. H. Grosvenor, a long series of *B. perla* from Deal, where it occurred in abundance in late August. Mr. Tonge, the same species and a short series of *B. muralis* from the same place, including an ab. *impar* and a specimen as small as *B. perla*. Mr. Bacot, a curious mimetic Acridian from Portuguese W. Africa, which rested on the charred stumps of vegetation burnt annually and showed very perfect protective resemblance. Mr. Gardner, long and varied series of British *Lepidoptera* including *Boarmia repandata* from

N. Devon, with *v. conversaria* and many intermediates; *Hypsipetes sordidata* from Forres, probably bilberry forms, many being very extreme: *Larentia didymata* from many localities indicative of local races; and *Melanippe fluctuata*, including varied London forms and aberrations, with dark Scotch and Shetland forms. Mr. H. Main, the galls of *Biorhiza aptera* on the rootlets of the oak, some cut open to show the workings, the larvæ and the parasitic larvæ. Mr. W. J. Kaye, a fine set of the species of butterflies forming the principal Müllerian Association in Costa Rica, including 14 species of *Ithomiinæ*, 3 species of *Heliconiinæ*, 1 *Pierinæ*, 1 *Eresia*, and a new species of *Castnia*. He also showed a smaller similar mimetic group from Caracas, Venezuela. Mr. Sheldon the series of *Eupithecia innotata* and *E. fraxinata* referred to by him at the previous meeting. Lantern slides were exhibited by Dr Chapman of the delegates to the International Congress; Mr. Tonge, ova of *Lepidoptera* in situ; Mr. Main, life-histories of the Snake-fly, *Raphidia*, the Alder-fly and the jumping Saw-fly, *Phyllotoma*; and Mr. Dennis, galls caused by Aphids and Mites.—
 H. J. TURNER, Hon. Secretary.

ENTOMOLOGICAL SOCIETY OF LONDON: *Wednesday, October 16th, 1912.*—
 The Rev. F. D. MORICE, M.A., President, in the Chair.

The President stated that in pursuance of a suggestion approved by the Council, he had written to most of the surviving ex-Presidents of the Society for their portraits, and had already received several. Thanks were voted to the donors.

The following were elected Fellows of the Society:—Mrs. Ellen M. Waterfield, The Hospital, Port Sudan; Messrs. Patrick Alfred Buxton, M.B.O.U., Fairhill, Tonbridge, and Trinity College, Cambridge; Alfred Noakes, The Hill, Witley, Surrey; Norman Denbigh Riley, 94, Drakefield Road, Upper Tooting, S.W., and British Museum (Natural History), S. Kensington, S.W.; and Henry S. Wallace, 17, Kingsley Place, Heaton-on-Tyne.

Mr. E. B. Ashby exhibited a case of *Rhopalocera* from the French, Swiss, and Italian Alps and from Britain. Mr. C. B. Williams, a specimen of an unascertained species of the *Protura*. This order of primitive insects is chiefly remarkable for the absence of antennæ; they use their front pair of legs not as locomotive but as tactile organs, holding them out in front of the head when walking, as if to take the place of the missing antennæ. Various other instances of similar adaptation were mentioned. Mr. W. J. Lucas, a specimen of *Somatochlora alpestris* from Porsanger Fjord, east of North Cape, and a specimen of *Æschna cærulea* (= *borealis*), from the same locality. They were captured by Mr. W. G. Sheldon. Professor Poulton brought forward a note on behalf of the Rev. K. St. Aubyn Rogers, tending to show that occasional migration, due to excessive drought, is sometimes a cause of the spread of butterflies into new localities. He also brought forward a suggestion received from Mr. C. F. M. Swynnerton as to one of the causes which may have operated in the special development of mimicry in forest areas. It is that flying insects are often exceedingly difficult to recognise in forest as against veld. It is by no means easy to at once decide on the coloration of an insect seen flying in a blaze of light against a deep shadow or *vice versa*: also they so frequently disappear behind foliage after having been in view for a few seconds only.

Under those circumstances a mere trick of flight or the smallest splash of colour in common had often caused him to take the insect for something that is otherwise utterly unlike it, and such a hesitation would usually cost a bird the insect. He further drew attention to a letter he had received nearly two years ago from Mr. G. F. Leigh, describing the breeding of *E. dryope* and drawing the inference that the species was distinct from *hiarbas*. Professor Poulton, on behalf of Dr. R. C. L. Perkins, a male of *Prosopis nubilosa*, Ckll. (*Prosopidæ*), and of a species of *Halictus* (*Andrenidæ*), captured by him in the Cairns district of North Queensland (July, 1904). Dr. Perkins had pointed out to the speaker the extremely interesting manner in which the resemblance between these insects had been brought about, the hard glistening yellow mark on the black scutellum and post-scutellum of the *Prosopis*, and that on its lateral prothoracic tubercles being mimicked by a yellow pubescence occupying the same positions in the *Halictus*. This had previously been noted by Meyrick, probably in the ♀ of the same species. The Rev. G. Wheeler, two specimens of a new *Argynnis*, discovered in June last by Mr. Harold Powell, F.E.S., at Lambessa in Algeria, Mons. Oberthür named it *auresiana*. Dr. W. A. Lamborn, cocoons formed by wild larvæ of *Norasuma kolga* under leaves. They gave a better idea than those formed in captivity as to the mimicry of Braconid cocoons by the formation of little bosses of yellow silk. Mr. Donisthorpe, (1) a small incipient colony of *Camponotus ligniperdus* taken at Yvorne, Switzerland, October 8th, 1912. (2) Specimens of a Proctotrupid new to science, *Loxotropa donisthorpei*, Kieffer, taken in a nest of *Lasius flavus* at Blackgang Chine, Isle of Wight, September 9th, 1912. (3) A specimen of *Camponotus abdominalis* var. *atriceps*, Smdt., an American species, captured alive in his room on his return from Weybridge, September 6th, 1912, probably coming from the hotel at Weybridge, as he was told of the capture of other specimens there on his next visit. Commander Walker observed that one of the Australian species of *Camponotus* occurred constantly in houses, and was familiarly known as the "sugar ant." Mr. L. W. Newman, (1) a long and varied series of the Hybrid *Smerinthus ocellatus* ♂ × *Amorpha populi* ♀, bred September, 1912, out-of-doors, from pairing obtained June, 1912, the larvæ pupating in July and early August. (2) Living specimens of the hybrid *Zonosoma pendularia* ♂ × *omicronaria* ♀ (*annulata*). The specimens showed characters of both species well, and vary somewhat in the quantity of pink coloration. (3) A living ♀ specimen of *Metrocampa margaritaria*, taken at rest in Bexley Woods, October 14th, 1912, which points to a second emergence of this species. (4) A ♀ specimen of *S. ocellatus* bred out-of-doors, on September 14th, from larva which pupated in June, 1912. Mr. K. G. Blair, larvæ of two allied species of Malacoderm *Coleoptera* from Borneo, brought by Mr. J. C. Moulton. The species to which these larvæ belong are not yet known, although probably belonging to the family *Lycidæ*. Mr. H. M. Edelsten, specimens of *Nonagria dissoluta* and var. *arundineta* from East Kent, bred during August, 1912, 75 per cent. from this locality being *dissoluta*.

The following papers were read:—"Notes sur quelques espèces des *Lucanides* dans les collections du British Museum et de l'Université de Oxford," par M. Henri Boileau, F.E.S. "Synoposematic resemblance between Acreine larvæ," by G. D. H. Carpenter, B.A., M.B., F.E.S.

Scale of Charges for Advertisements.

Whole Page.....£3. Half Page.....£1 11s. 6d. Quarter Page.....17s.

Lowest charge, 7s. up to 5 lines; 1s. per line afterwards.

Repeated or continuous Advertisements per contract.

There is no charge for Lists of Duplicates and Desiderata.

All payments and applications for the above should be made to

R. W. LLOYD, I. 5, Albany, Piccadilly, W.

NOW READY,

THE ENTOMOLOGIST'S MONTHLY MAGAZINE, Vol. XXIII, New Series (Vol. XLVIII), strongly bound in Cloth. Price 7/-.

Covers for binding, 1/- each.

London: GURNEY and JACKSON, Paternoster Row. E.C.

THE THREE COLOURED PLATES illustrating the articles on
"SOME INTERESTING BRITISH INSECTS,"

with the accompanying text (issued in the Ent. Mo. Mag. for September, 1909, and January and September, 1910) are now issued in a separate wrapper, price 2s.

APPLY TO THE PUBLISHERS.

WATKINS & DONCASTER, Naturalists,

Keep in stock all Articles for Entomologists, Ornithologists, Botanists, &c.: Umbrella Net, 7/-; Folding Cane or Wire, 3/6, 4/-, 4/6; Plain Ring Net, 1/3, 2/-, 3/-; Pocket Boxes, 6d., 9d., 1/-, 1/6; Store Boxes, with Camphor Cells, 2/6, 3/6, 4/-, 5/-, 6/-; Zinc Pocket Boxes, 9d., 1/-, 1/6, 2/- Setting Boards, from 5d. to 1/10; Complete set of 14 boards, 10/6; Breeding Cages, 2/6, 4/-, 5/-, 7/6; Sugaring Tins, 1/6, 2/-; Sugaring Mixture, ready for use, 1/9 per tin; Setting Houses, 9/6, 11/6, 14/-; Glass Topped and Glass Bottomed Boxes, from 1/- per doz.; Zinc Killing Boxes, 9d., 1/- Coleoptera Collecting Bottles, 1/6, 1/8; Collecting Box, containing 26 tubes (very useful for Coleopterists, Microscopists, &c.), 4/6; Brass Chloroform Bottle, 2/6.

Improved Pocket Pupa-digger in leather sheath (strongly recommended), 1/9; Steel Forceps, 1/6 to 3/- per pair; Pocket Lens, from 1/6 to 8/6.

Taxidermists' Companion, containing most necessary implements for skinning, 10/6; Scalpels, with ebony handles, 1/3; Fine Pointed Scissors, 2/- per pair; Brass Blow-pipes, 4d., 6d.; Egg Drills, 2d., 3d.; ditto, best quality, 9d. each; Botanical Vasculum, 1/6, 2/9, 3/6, 4/6; Label List of British Macro-Lepidoptera, with Latin and English Names, 1/6; List of British Lepidoptera (every species numbered), 1/-; or on one side for Labels, 2/-.

SILVER PINS FOR COLLECTORS OF MICRO-LEPIDOPTERA, &c.,

as well as minute insects of all other families.

We stock various sizes and lengths of these Silver Pins, which have certain advantages over the entomological pins usually employed.

For instance, insects liable to become greasy and verdigrisy, like Sesiidæ, are best pinned on Silver pins, which will last much longer than the ordinary pins (whether enamelled black, or gilt, or silvered).

We shall be pleased to send pattern cards on application.

A large stock of British, European, and Exotic Lepidoptera, Coleoptera, and Birds' Eggs.

ENTOMOLOGICAL PINS.

The "DIXON" LAMP NET (invaluable for taking Moths off street lamps without climbing the lamp posts), 3s. 6d.

SHOW ROOM FOR CABINETS, &c.

36, STRAND, LONDON, W.C., ENGLAND.

Birds and Mammals, &c., Preserved & Mounted by first-class workmen.

Our New Price List (100 pp.) sent post free to any address on application.

CONTENTS.

PAGE

Editorial	1
Description of a new species of <i>Bledius</i> .— <i>D. Sharp, M.A., F.R.S.</i>	1
Coleoptera, &c., in Bromeliads.— <i>G. C. Champion, F.Z.S.</i>	2
<i>Homalota (Liogluta) aquatilis</i> , Thoms. (? = <i>sericans</i> , Rey), a species of Coleoptera new to Britain.— <i>P. de la Garde, R.N., F.E.S.</i>	7
Apterous females of certain Lepidoptera.— <i>T. A. Chapman, M.D., F.Z.S.</i>	8
✓ The races of <i>Andrena rosæ</i> , Panz.— <i>R. C. L. Perkins, M.A., D.Sc., F.E.S.</i>	10
<i>Hilara albocingulata</i> , sp. n.— <i>John H. Wood, M.B.</i>	13
Note on the capture of <i>Bledius gulielmi</i> , Sharp.— <i>W. E. Sharp, F.E.S.</i>	14
<i>Agabus abbreviatus</i> , F., &c., at Soham.— <i>Hereward C. Dollman, F.E.S.</i>	14
✓ A note on <i>Ceuthorrhynchus rapæ</i> , Gyll.— <i>F. B. Jennings, F.E.S.</i>	15
Notes on the food-plants of certain Russian species of <i>Sesia</i> .— <i>Hon. N. C. Rothschild, M.A., F.L.S.</i>	16
<i>Platycleis rœselii</i> , Hagen, &c., on the Lincolnshire coast.— <i>G. T. Porritt, F.L.S.</i>	16
<i>Norellia spinigera</i> , Ztt., in Perthshire.— <i>A. E. J. Carter</i>	17
What is the true host of <i>Nirmus interruptus</i> , Piaget?— <i>Rev. J. Waterston, B.Sc.</i>	18
Variation in the genal comb of <i>Typhloceras poppei</i> , Wagn.— <i>Id.</i>	18
✓ The new Keepership of Entomology at the British Museum.— <i>Eds.</i>	18
OBITUARIES.—William Forsell Kirby, F.L.S.	19
Peter Cameron	20
Edouard Brabant	21
SOCIETIES.—South London Entomological Society	21
Entomological Society of London	23

LANCASHIRE AND CHESHIRE ENTOMOLOGICAL SOCIETY.—Meetings the third Monday in each Month, October to April. *Hon. Sec.*, W.M. MANSBRIDGE, 4, Norwich Road, Wavertree, Liverpool.

ENTOMOLOGISCHE MITTEILUNGEN, Published by the Verein zur Förderung des Deutschen Entomologischen Museum. Monthly Entomological paper; official edition of the Deutsches Entomologisches Museum, whose large Library is at the disposal of all Subscribers at most liberal terms. Gratis to each number continuation of the Library's Catalogue. Terms: 7s. (m. 7) a year; 3s. 6d. (m. 3/50) half a year.

Address: Deutsches Entomologisches Museum, Berlin-Dahlem, Gosslesstr. 20.

DR. STAUDINGER & BANG-HAAS, BLASEWITZ-DRESDEN, in their new Price List, No. LVI for 1913, offer more than 19,000 species of well-named LEPIDOPTERA, set or in papers, from all parts of the world, in finest condition; 1600 kinds of PREPARED LARVÆ, &c.; we sell no more living pupæ. Separate Price Lists for COLEOPTERA (29,000 species); HYMENOPTERA (3600 species), DIPTERA (2900), HEMIPTERA (2500), ORTHOPTERA (1200), NEUROPTERA (630), BIOLOGICAL OBJECTS (300).

PRICES LOW. DISCOUNT FOR CASH ORDERS.

Second Series, No. 278.] FEBRUARY, 1913. [PRICE 6d. NET
[No. 585.]

THE
ENTOMOLOGIST'S
MONTHLY MAGAZINE.

EDITED BY

G. C. CHAMPION, F.Z.S. J. E. COLLIN, F.E.S.

W. W. FOWLER, D.Sc., M.A., F.L.S.

R. W. LLOYD, F.E.S. G. T. PORRITT, F.L.S.

J. J. WALKER, M.A., R.N., F.L.S.

SECOND SERIES—VOL. XXIV.

[VOL. XLIX.]

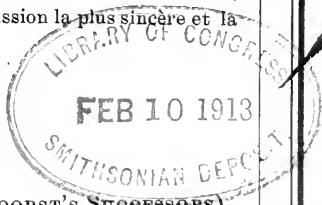
“J’engage donc tous à éviter dans leurs écrits toute personnalité,
toute allusion dépassant les limites de la discussion la plus sincère et la
plus courtoise.”—*Laboulbène*.

LONDON :

GURNEY & JACKSON (MR. VAN VOORST'S SUCCESSORS),
33, PATERNOSTER ROW, E.C.

SOLD IN GERMANY BY FRIEDLÄNDER UND SOHN, BERLIN.

NAPIER, PRINTER, SEYMOUR STREET, EUSTON SQUARE.



REDUCED PRICES FOR BACK VOLUMES.

FIRST SERIES.

This can only be obtained in complete Volumes (bound or unbound).

A limited number of sets, from Vol. x to Vol. xxv can still be obtained at £2 15s. per set net (in parts), or of five consecutive Vols. at £1 per set net (if bound, 1s. per Vol. extra).

Certain of the Vols. i to ix can be had separately at 10s. each.

SECOND SERIES.

Vols. i to xv. are now offered at £3 per set net (in parts), or £1 2s. 6d. for five consecutive Vols. (if bound, 1/- per Vol. extra).

Apply to the Publishers.

NOTE.—Subscriptions for 1913 (6s. per annum, post free) are now due, and should be paid to R. W. LLOYD, I. 5, Albany, Piccadilly, London, W.

It would be a great convenience to the Editors in keeping the accounts if these were paid promptly, as having to send reminders entails a considerable amount of extra work.

The Coloured Plates issued in September, 1909, January and September, 1910, and September, 1911, having been so much appreciated by our readers, a fifth (devoted to *Dermaptera*) was given with the October, 1911, number. The Editors would be greatly obliged if the Subscribers to this Magazine would use their best endeavours to bring it to the notice of their entomological friends, and induce them to subscribe also.

THE CANADIAN ENTOMOLOGIST.

A MONTHLY MAGAZINE DEVOTED TO THE STUDY OF SCIENTIFIC ENTOMOLOGY.

Volume 45 is now in course of publication. Back volumes can be supplied. It is the oldest established Magazine of the kind in America, and has a world-wide circulation. Subscription, \$1 per annum, which includes a copy of the Annual Report of the Entomological Society of Ontario to the Legislature. Editor, Dr. E. M. Walker, Biological Department, University of Toronto, Toronto, Canada.

Address: Entomological Society of Ontario, Guelph, Canada.

ENTOMOLOGICAL NEWS.

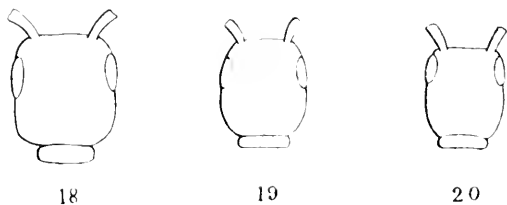
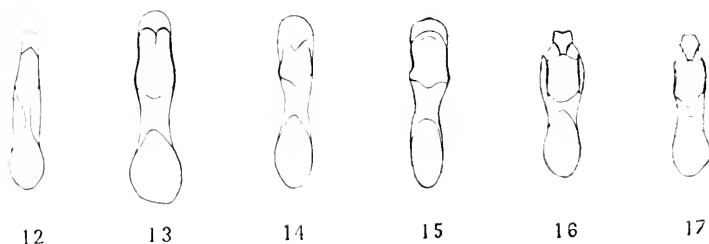
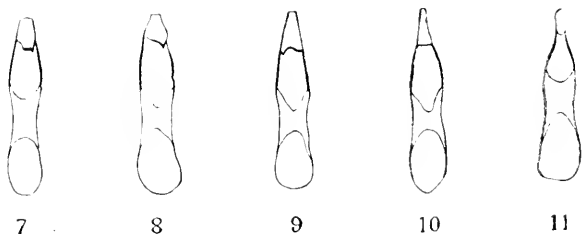
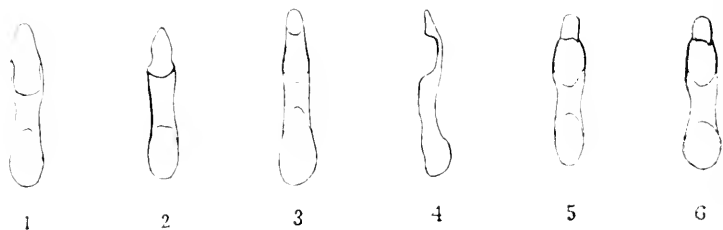
A forty-eight page illustrated magazine, issued monthly, except in August and September, devoted to the study of INSECT LIFE. It contains a resumé of the proceedings of a number of Entomological Societies, and also articles by the leading Entomologists in the United States and Canada. Valuable information for the beginner, the economic entomologist, and the systemist. **TWO DOLLARS a year in advance.** Single copies, 25 cents. Address—

ENTOMOLOGICAL NEWS,

The Academy of Natural Sciences,

1900 RACE STREET, PHILADELPHIA, PA.





EXPLANATION OF PLATE.

- | | |
|--|---------------------------------------|
| 1. Aedeagus of <i>G. primigenius</i> . | 11. Aedeagus of <i>G. trossulus</i> . |
| 2. " " <i>G. pennatus</i> . | 12. " " <i>G. stipes</i> . |
| 3. " " <i>G. cyphonotus</i> . | 13. " " <i>G. bishopi</i> . |
| 4. " " " side view. | 14. " " <i>G. suffragani</i> . |
| 5. " " <i>G. nigrutilus</i> | 15. " " <i>G. sacerdotalis</i> . |
| 6. " " <i>G. velox</i> . | 16. " " <i>G. appendiculatus</i> . |
| 7. " " <i>G. subnigrutilus</i> . | 17. " " <i>G. toxotes</i> . |
| 8. " " <i>G. lutro</i> . | 18. Head of <i>G. nigrutilus</i> ♂. |
| 9. " " <i>G. tornus</i> | 19. " <i>G. appendiculatus</i> ♂. |
| 10. " " <i>G. keysianus</i> . | 20. " <i>G. sacerdotalis</i> ♂. |

SOME NEW SPECIES OF *GABRIUS*.

BY NORMAN H. JOY, M.E.C.S., F.E.S.

PLATE I.

Some months ago Herr Edmund Reitter sent me for examination about 600 specimens of the Coleopterous genus *Gabrius* from various parts of Eastern Europe, chiefly from the Caucasus Mountains and their neighbourhood, and Austria. I found it necessary to dissect out the ædeagus in nearly all the males. Fortunately, in every species but *G. stipes*, which can be easily identified without dissection, the male may be recognised by a slight emargination of the hind margin of the under plate of the last segment of the hind-body; and a triangular groove leading from it on the under-surface of the segment. It can often be seen whether this is present or absent without removing the insect from the card. The results of this examination have been the discovery of seven new species, and evidence of an extensive range in the case of some of those described by Dr. Sharp. I have also examined a few specimens belonging to Mr. Champion and Dr. Cameron, mostly from Spain and the Mediterranean area. One of Mr. Champion's proves to be new, and has the most primitive form of ædeagus in the genus. In all the following new forms the colour probably varies somewhat, and is of little help in the identification of the species; it is therefore not generally given in the description. The head is black, the thorax black or pitchy, the elytra pitchy or reddish-brown, the hind body black, with the extreme apex yellowish red. The colour of the base of the antennæ and legs is more important. The antennæ are black, with the base yellow in some species. The legs are reddish-yellow, the middle and hind tibiæ being dark in certain species. The elytra are longer than the thorax, except in *G. tornus*. There appears to be no specific distinction in the punctuation. I have thought it best to compare each species in form and size to one of those already known, rather than to give a detailed description and exact measurements of each.

G. PRIMIGENIUS, sp. nov.

Resembles *G. keysianus*; base of antennæ and legs dark; head in ♂ distinctly longer than broad; ædeagus blunt at apex, which is slightly thickened.

Hab.: N. W. SPAIN, Pontevedra. One ♂.

G. CYPHONOTUS, sp. nov.

Much like *G. pennatus*; base of antennæ clear yellow; ♂ with head slightly elongate; ædeagus with the apical piece not sharply defined as in *G. nigritulus*.

Hab.: Caucasus and the borders of the Caspian Sea; Daghestan, Lenkoran, etc. Many specimens.

G. SUBNIGRITULUS, sp. nov.

Of size and general appearance of *G. velox*; antennal joints 1, 2, and 11, yellowish; middle and hind tibiae slightly fuscous; ♂ with head very slightly longer than broad; aedeagus narrower and more regular in outline than in *G. nigritulus*, with apex abruptly truncate.

Hab.: CAUCASUS. Several specimens.

G. LATRO, sp. nov.

Of a lighter colour than usual; thorax pitchy red, elytra and hinder margins of segments of hind-body reddish; head in ♂ very slightly longer than broad; aedeagus much more asymmetrical than in *G. nigritulus*, and more narrowed at the apex than in *G. subnigritulus*.

Hab.: CAUCASUS, Lenkoran. Three ♂♂, one ♀.

G. TORNUS, sp. nov.

Resembles *G. trossulus* in having the elytra not longer than thorax and a very broad rectangular head in ♂; entirely black, base of antennae pitchy, legs yellow; aedeagus somewhat as in *G. keysianus*, but broader and more robust.

Hab.: CAUCASUS, Helenendorf. One ♂.

G. SUFFRAGANI, sp. nov.

Resembles *G. bishopi* in general appearance; base of antennae dark; ♂ with head elongate and rather narrow; aedeagus with the apical portion much larger than in *G. bishopi*.

Hab.: DALMATIA. Three ♂♂, two ♀♀.

G. SACERDOTALIS, sp. nov.

Resembles *G. bishopi*, but with the head in ♂ more elongate and narrower, being distinctly narrower than thorax; base of antennae and legs clear reddish yellow; aedeagus much broader than in *G. bishopi* and without the central keel.

Hab.: CAUCASUS, Swanetia. Two ♂♂.

G. TOXOTES, sp. nov.

Very like *G. appendiculatus*; base of antennae and tibiae dark; ♂ with head slightly elongate and somewhat rounded behind eyes; aedeagus narrower and more parallel-sided than in *G. appendiculatus*.

Hab.: DALMATIA. 1 ♂.

The following are, I think, new records:—*G. nigritulus*: Austria, Besked Mts. and Vienna; Dalmatia; Spain, several localities; Malta; Algeria. *G. stipes*: Daghestan; Caucasus. *G. pennatus*: Austria, Paskau; Dalmatia; Germany. *G. appendiculatus*: Austria, Paskau; Silesia; Bohemia. *G. trossulus*: Austria, Besked Mts.

Bradfield, Berks:
December, 1912.

NOTES ON A SMALL COLLECTION OF *LANGURIINÆ*
FROM BORNEO AND THE MALAY PENINSULA, WITH DESCRIPTIONS
OF TWO NEW SPECIES.

BY THE REV. W. W. FOWLER, D.Sc., M.A., F.L.S.

I had occasion recently to ask the Curator of the University Museum of Zoology, Cambridge, Mr. Hugh Scott, for the loan of Crotch's types of *Languriinæ*; these he most kindly forwarded, and at the same time asked me if I would look over and determine some specimens taken in Borneo by the late Mr. R. Shelford. These are seventy-two in number. Sixty-three of them must be referred to the common *Tetralanguria elongata*, Fab., some four or five belonging to the var. *pyramidata*, MacL., and one or two having the elytra violaceous. There is a single specimen of a *Doubledaya* (from the Malay Peninsula) without antennæ, which is probably a form of *D. viator*, White, and two specimens each of two other species which appear to be new. One of these is remarkable for its small head and very prominent eyes and the short very convex prothorax. It may be a type of a new genus, but I prefer to place it for the present under *Cenolanguria*.

CENOLANGURIA OCLATA, sp. n.

Subcuneiformis, pernitida, capite prothoraceque rufis, elytris cyaneis, corpore subtus, antennis pedibusque nigris; capite parvo, oculis magnis, prominentibus, sat fortiter granulatis, antennis clavâ sat latâ, depressâ, 4-articulatâ; prothoracæ latitudinem longiori, convexo, lateribus fortiter rotundatis, ad basim contractis, fere impunctato; elytris distincte sed haud fortiter punctato-striatis, interstitiis fere glabris; lineis coxalibus brevibus, divergentibus, ad coxas fere applicatis; femoribus leviter incrassatis.

Subcuneiform, very shining, front parts red, elytra cyaneous, antennæ black; head small, with very large prominent eyes, which are moderately coarsely granulate; antennæ rather long, with the last four joints forming a broad depressed club, the eighth joint being smaller than the three following, and the last narrower than the two preceding, the seventh joint is also somewhat thickened; prothorax transverse, subglobose, strongly rounded at the sides, slightly narrowed at base, very smooth, almost without punctuation; elytra with distinct but not strong punctured striae, interstices with very fine sculpture, gradually narrowed from base to apex, apices simple; legs black, tarsal joints about equal in length; underside black, shining; coxal lines short, divaricate, lying close to the coxæ. Length 8-10 mm.

Two specimens, labelled Borneo and Sarawak (Shelford).

ANADASTUS SHELFORDI, sp. n.

Subparallelus, nitidus, angustior, capite prothoraceque rufis, illo triangulari, oculis sat parvis, leviter granulatis, antennis clavâ sat latâ,

5-articulatâ, piceis, ad basim piceo-rufescentibus; prothorace subquadrato, lateribus fere parallelis, diffuse et hand profunde punctato, ad basim depresso; scutello rufo; clytris cyaneis, sat fortiter punctato-striatis; pedibus nigris coxis et femoribus ad basim rufo-piceis; corpore subtus rufescenti; lineis coxalibus sat longis, parallelis, postice sensim divergentibus.

A subparallel, shining, and rather narrow species, with the front parts and the whole underside red, or with the centre of the latter more or less pitchy red; antennæ with a broad club, the seventh joint also being dilated and triangular, although much smaller than the eighth; the prothorax is almost square, with the sides gradually and only slightly narrowed to base, the disc moderately convex and sparingly furnished with diffuse punctures, and the base depressed and with a short and very distinct broad impressed stria on each side; scutellum red; elytra cyaneous, with distinct and fairly regular rows of punctures, apices jointly truncate; legs black, except bases of femora which are pitchy; coxæ pitchy-red; coxal lines long, parallel, slightly divergent at apex. Length 7 mm.

Two specimens labelled "Batu Song Mount and Apoh River, Hose Coll., Borneo."

This species comes somewhat near to *Languria nitidior*, Crotch, from Penang, but the prothorax is quite differently shaped, and it may further be distinguished by the dark legs (in *nitidior* these are mostly red), and the darker colour of the duller elytra, and also by the smaller size of the seventh joint of the antennæ.

Earley Vicarage, Reading:
January 10th, 1913.

A CONTRIBUTION TOWARDS THE LIFE-HISTORY OF
BERYTUS CLAVIPES, F.

BY E. A. BUTLER, B.A., B.Sc., F.E.S.

On May 25th in the present year, I had the good fortune to find three ♂♂ and four ♀♀ of the Hemipteron *Berytus clavipes*, F., at the roots of grass on a wayside bank at Royston, Herts. The ♀♀ were very gravid, and as this species is one of the rarest of our British *Berytidae*, having been recorded hitherto from six counties only, I was very anxious to secure some eggs. I accordingly enclosed the ♀♀ in a box with some grass stems and leaves, and added one ♂. This immediately paired with the smallest of the ♀♀, and they remained coupled for three days. Although the insects were found amongst the roots of the grass, there were, of course, many other plants mingled with this, and I could not be sure that the grass was really their food-

plant. I was, therefore, pleased to see that some of them occasionally applied the tip of the rostrum to the grass leaves and apparently fed upon their juices. On May 28th the first eggs were laid, and others followed at intervals during the first week in June, till I had a batch of something over two dozen. They were attached to the grass leaves by a little adhesive secretion at the middle of one side.

When first laid the eggs are pale yellowish, but later they become honey yellow, and finally almost brown. The surface is shining. The egg is of a long cylindrical shape, slightly tapering posteriorly, and furnished anteriorly with a circle of half-a-dozen minute button-shaped prominences, each with a depression in the centre, and probably micropylar in function. When the egg is attached to its support, the whole of the visible surface is found to be longitudinally deeply sulcate; the furrows are few in number and the ridges between them are convex. The furrows and ridges are continued up to the circle of prominences, but not beyond them. The egg is barely $1\frac{1}{4}$ mm. in length.

Apparently the eggs were kept a little too dry, and several therefore failed to hatch, although the fully-formed embryos could be seen within. Two died in the act of emergence, being unable to set their long legs quite free, and two eggs proved infertile. The rest hatched out successfully. I had expected that, in hatching, the integument of the small area within the circle of micropylar points would be pushed off as a cap, as this method occurs very frequently amongst the *Hemiptera*. But such did not turn out to be the case. The egg-shell merely split longitudinally at the anterior end and the embryo pushed its way out through the opening, but without casting off any part of the shell.

The first eggs hatched on June 19th, thus giving a period of three weeks for the duration of the egg condition. The larvæ in their first instar differ markedly in several respects from the adult, and are furnished with certain provisional structures which entirely disappear at the first ecdysis. The newly-hatched bug has a small narrow cylindrical body and very long legs and antennæ. The fore parts are almost colourless except for a dark greyish streak on each side. The abdomen is pale green with black tubercles on the dorsal surface, from each of which proceeds a long, colourless, stoutish hair, ending in a brilliant crystal globule. The black spots are arranged so that there are four on each segment, the two anterior ones being closer together than the posterior, so that they form a regular pattern down the body. The rest of the dorsal surface is furnished with similar hairs, which do not, however, proceed from black tubercles. The eyes are bright

red and have but a few large facets. The legs and antennæ are almost colourless with a slightly dusky skin, and are covered with hairs similar to those on the body. The club of the antennæ and the claws are black. The rostrum is four-jointed, colourless, and with a black tip. The ventral surface is destitute of the hairs which give such a striking appearance to the rest of the body. The area between the antennæ is at first almost flat, and there is very little indication of the frontal process which is so marked a feature in the adult, in which it is longer and more pointed than in any other British species; but it becomes clearly visible before the end of this instar. The length of the body at disclosure is hardly 1 mm.; but the insect grows rapidly till it reaches a length of $2\frac{1}{2}$ mm. before the first ecdysis takes place. The movements and attitudes of the young insect are similar to those of the adult, the body being raised considerably and balanced on the legs as on springs. The above-mentioned apparatus of globe-tipped hairs and black tubercles is discarded at the first change of skin, and the insect remains henceforward destitute of them. Whatever may be their function, it is confined to the first week of the insect's life.

On June 27th I noticed the first cast skin, and this gives some 7 or 8 days for the first instar. The larva was now over 3 mm. long, or more than three times its original length, which seems an extraordinary amount of growth with only a single moult. In its second instar the larva is very pale green, with a central white line running from one end of the body to the other, and with the lateral margins broadly whitish; this colour becomes distinctly white in the three thoracic segments. As already mentioned, the black spots and hairs have disappeared, only a few small hairs being left at the extremity of the abdomen. A thin dark line proceeds on each side from the red eye to the end of the thoracic segments, just inside the white border. The underside is white and the legs pale testaceous with a black ring before the end of each femur. The antennæ have the second joint dark at the base and apex and the last joint black. The frontal process is much more distinct.

The second ecdysis was observed on July 6th, leaving an interval of about nine days for the second instar. No change takes place in the appearance of the larva after this moult, except that the frontal prominence becomes still more marked. The colours also are more distinct; there is a white central line, dark green lines bordering this on each side, and yellowish-green lateral border. In this third instar the insect was $4\frac{1}{2}$ mm. long.

The third ecdysis took place on July 12th, so that the third instar lasted about six days. An important alteration in the appearance is now seen; the wing-pads appear, and the pronotum is strongly margined and carinated in the middle, so that it assumes something of the shape which is characteristic of the adult *Berytidae*. The wing-pads are short, covering only two abdominal segments, and the frontal process is strong, but still blunt. The white central line is marked with a greenish spot at the passage from each segment to the next. During this instar the insect reached the length of 5 mm.

The fourth ecdysis took place, to my surprise, on July 15th, only three days after the preceding one. The insect after this moult was $5\frac{1}{2}$ mm. long and more ochreous in colour. In this instar the wing-pads are longer, lanceolate, and covering nearly three abdominal segments. The central keel of the pronotum is continued right through the scutellum, and forwards along the head into the frontal process, which is now entirely white. The white colour is continued round it in front on to the under side, as a distinct margin, and the enclosed area is brownish green.

The young bug was now in its fifth, and probably last, larval instar, and I had every hope of rearing it to maturity. But for some reason or other I failed to do this, and it died on July 25th, having been ten days in its last instar. Two others reached the same stage and then, after a still longer delay in this instar, unfortunately succumbed, one on September 3rd and the other on September 7th. These last two had entered their last instar on August 1st and August 10th respectively. As I was spending August in Snowdonia, I had to take these two with me, and possibly the abnormally cold and cheerless weather we had during that month, accompanied as it was by incessant rain, may have proved too much for their constitution, and their little lives came to an end after they had lived with me between nine and ten weeks. The only other reason I can think of for the failure of these insects to complete their metamorphosis, is that a change of diet in the last instar may perhaps be necessary for that purpose, and possibly even the substitution of an animal for a vegetable one.

Throughout their life I kept them well supplied with ordinary lawn grass, and they often liked to get down to the dry and brown parts of it near the roots, where they would remain for a long time immovable. They were frequently seen to plunge the rostrum into the green parts of the grass, and sometimes they kept it inserted for

hours at a stretch. As the rostrum is comparatively short and the legs inordinately long, the attitude in feeding is peculiar; the body is tipped forward with the front legs rather straddling and the hind ones placed nearly parallel to one another, supporting the upturned abdomen. In rest, the attitude is very graceful; the body is neatly balanced on the symmetrically disposed legs, and the antennæ carried with the first two joints directed upwards and backwards and the others then bent forward upon them, so that the black club, which is unquestionably the most sensitive part, is farthest forward; its position is sometimes just over the head, or again, when the insect is apparently more alert, somewhat in advance of it.

56, Cecile Park,

Cronch End, N.:

November 2nd, 1912.

Codiosoma spadix, Herbst, in *New Zealand*.—In Part 2 of my "Notes on *Cossonidæ*" [antea, XLV, p. 122 (1900)], the occurrence of *Codiosoma* (*Phleophagus*) *spadix*, Herbst, at Fremantle, W. Australia, was recorded. I may now add that the insect has also been taken on the coast of New Zealand, and described by Major Broun as a new genus and species, under the name *Pselactus punctatus*, from specimens captured on the underside of logs embedded in sea sand at New Plymouth. Amongst some *Coleoptera* recently sent by him to the British Museum for determination were the following: *Habrocerus capillareicornis*, *Cercyon analis*, and *Plinus lectus*.—G. C. CHAMPION, Horsell, Woking: December 31st, 1912.

Note on the larva of Scirtes.—Since the publication of my notes on the *Coleoptera*, &c., found in Bromeliads, I have come across a description and figures of the larva and pupa of the Indian *S. grandis*, Motsch., by D. Nowrojee [Mem. Dept. Agric. India, II, No. 9, pp. 189, 190, pl. xxvi (April, 1912)]. As allusion was made in my paper to the larva of a Costa Rican *Scirtes*, it seems worth while reproducing here the description of that of the Indian *S. grandis*.* "Elongate, flattened dorso-ventrally, slightly convex above, measuring when full grown about 8 mm. in length and 2½ mm. in breadth. Head more or less flattened, more than twice as broad as long and partly retracted within the prothorax; mouth parts well developed; labrum large, semi-circular, with the anterior margin concave; mandibles short, stout, triangular, curved outwardly, sinuous along the inner margin, with apex finely pointed; eyes small, inconspicuous; maxillæ well developed, with a broad inner lobe and a short 4-jointed palpus; antennæ very long and slender, reaching to apex of 5th abdominal segment, setaceous, first two joints comparatively long and followed by a great many

* So far as I am aware, the larva of neither of the European species has been described.

minute joints, gradually narrowing towards tip; pro-, meso-, and metathorax broad, with sides rounded, the body becoming gradually narrowed behind the metathorax; last abdominal segment small, truncate at apex; three pairs of legs present, each ending in a single long claw. Colour dark brown to blackish above, dirty white below, except sides and apical end which are fuscous; legs pale brown." The larvæ remain clinging to the sides of the drains, particularly at the corners where it is dark and shady. They run quickly up and down the sides of the drains at the bottom, but they are much lighter than water and cannot remain under the surface without clinging to some support, and when forced to let go their hold, they rise quickly to the surface. Occasionally they float placidly on their backs. Respiration is ærial, the larva taking in air through the tip of its body; it runs up the sides of the drains and when close to the surface turns upside down, exposing the tip of the body to the air; when going below the surface it carries a bubble of air attached to its hinder end. When under water the larva protrudes from the distal end of the body a number of processes; they are slender finger-shaped, thin-walled sacs, pale white in colour; their function is not clear, probably they are connected with the process of respiration. The larvæ are carnivorous, feeding on small insects. When about to pupate the larva leaves the water and buries itself in the mud, where it makes a small hole in which it pupates. They have been observed in the drains around the college buildings at Pusa from the beginning of the hot weather to the commencement of the cold season. The larva and pupa of various other aquatic *Coleoptera* are described and figured by Mr. Nowrojee in the same publication, viz., *Eunectes sticticus*, *Hyphydrus renardi*, *Hypophorus aper*, *Hydrophilus* sp., *Helochaes* sp., *Sternolophus unicolor*, and *Dineutes unidentatus*.—G. C. CHAMPION: December, 1912.

Acythopeus (Baridius) aterrimus, C. Waterh., in the orchid-house at Kew.—Some time ago my son found an interesting weevil in the flower of a Venezuelan orchid, *Catasetum splendens*, at Kew Gardens. The insect proves to be a male of *Baridius aterrimus*, C. Waterh. [Ent. Mo. Mag., X, pp. 226, 227 (1874)], described from examples sent by Mr. Jamie from Singapore, where it was said to be destructive to *Phalaenopsis* and other orchids. In the British Museum there are also other examples of it, found in conservatories at Torquay, Tunbridge Wells, and Oxford, the one from Torquay being labelled as found on *Dendrobium*. The species can quite well be placed in *Acythopeus*, Pascoe, for the present; but it may be stated that the five eastern species referred by Pascoe to his genus have the femora unarmed, whereas in *B. aterrimus* they are toothed. Mr. Waterhouse apparently overlooked the sharp tooth on the inner edge of the intermediate tibiae in the male, visible in one of his types; the rostrum, too, is rugose in this sex to the tip. Mr. Froggatt, some years ago, examined one of the Singapore specimens of *B. aterrimus* and pronounced it to be *B. orchivora*, Blackb.; but a comparison of the types shows this is not really the case, though the two forms are very closely allied. *Dendrobium* and *Phalaenopsis* are eastern genera of orchids, *Catasetum* is American. *B. orchivora* has doubtless been introduced into Australia.—G. C. CHAMPION: January, 1913.

Note on Bledius secerdendus, Joy, &c.—Amongst the species mentioned by M. Bondroit in his "Notes sur quelques Staphylinidae Paléarctiques" [Ann. Soc. Ent. Belg., LVI, pp. 450—452 (January 4th, 1913)], there are several of interest to British Coleopterists. *Bledius fuscipes*, Rye, is recorded from Holland; *B. occidentalis*, Bondr., is stated to occur in Great Britain—this insect is, I believe, the insect known to us under the name of *B. crassicollis*, Lacord.; *B. secerdendus*, Joy (1911), is said to be identical with *B. subniger*, Schueid. (1898), the type of which, from Borkum, has been examined by M. Bondroit; *Lathrobium ripicola*, Czwal., recently introduced into our list by Mr. Newbery, is confirmed as British; *L. letzaeri*, Gerh., is recorded from Great Britain, on the authority of specimens in Mr. Donisthorpe's collection—this insect is presumably one of the *L. geminum*, Gr.-group.—G. C. CHAMPION: *January 16th, 1913.*

Note on the life-history of Enicmus fungicola, Thoms.—On April 25th this year (1912), I found a number of *Enicmus fungicola*, Thoms. (*vide* Ent. Mo. Mag., 1907, p. 103), in powdery fungus on an old ash tree at Nethy Bridge, Invernesshire. These I placed in a glass tube, together with a small quantity of the fungus, and on coming to examine them some days later, discovered that, besides the beetles, there were, in the fungus, a number of minute eggs. I replaced these in the tube amongst the fungus, and having laid it on my desk did not pay any further attention to it for some time, until one day in May I noticed that the tube contained a number of larvæ instead of eggs. No particular care was taken of these except to give them a little air now and again, and to put a few drops of water into the fungus to try to keep it moist, which, however, had rather a tendency to cake it and to cause mould.

On going south about the middle of June, I took the tube with me, and although I regret I cannot state the exact period of pupation, the perfect beetles emerged on the 22nd of June, and proved to be seven further examples of *Enicmus fungicola*. So these beetles, originally from the Highlands, reached the imago state in Hampshire after many journeyings, having completed their entire metamorphosis in a small glass tube half full of the fungus in which they were discovered.—JAMES E. BLACK, Nethercroft, Peebles, N.B.: *November 29th, 1912.*

Re Pterostichus anthracinus—a belated correction.—In Fowler's "British Coleoptera," Vol. I, p. 65, the remark occurs, concerning the species now in question, "Dr. Sharp took a variety with the apices of the elytra simple." The specimen alluded to bears in my collection the label "var. *elytris apice simp.*" In this individual it is true that the elytral apices are simple, but the statement that it is a variety is a mistake; the explanation, of course, being that the specimen is a male, it being well known that in this species the male has unarmed apices to the elytra, while the female has them spinose. I must apologise to Canon Fowler for having misled him, but I think it is desirable that the error should be corrected. So far as I know a variety of the kind this was supposed to be does not occur.—D. SHARP, Brockenhurst: *Dec. 28th, 1912.*

Lepidoptera in Surrey in 1912.—Although my brother, R. J. Champion, and I have had but little time to spare for collecting and breeding during the past year, we have succeeded in obtaining notes on a few species which may be of interest.

RHOPALOCERA.—Only *Polyommatus phleas*, ab. *radiata*, Tutt., August 13th, Chobham, and *Leucophasia sinapis*, July 27th, Chiddingfold, need be mentioned.

BOMBYCES and NOCTUÆ.—We have often noticed a considerable number and variety of wings broken off the larger *Lepidoptera* floating in the canal at Woking, especially in the spring. These wings are usually still perfectly covered with scales, and often all four of a particular moth float close together; it seems to us that this destruction must be due to bats. To illustrate the variety of species represented, the following, all found on one occasion in a stretch of about 100 yards, will serve:—*Lophopteryx carmelita* (four specimens), *Notodonta chaonia* (three), *N. dodonæa* (one), *Tæniocampa stabilis*, *T. gothica*, *T. gracilis*, and lastly *Demas coryli*, of which we have taken but one example (on a street lamp near by) in this district.

Ino statice, which we have not previously seen in the Woking district, was tolerably abundant in damp hay fields early in July. *Heliothis dipsacea* was found flying swiftly over the heaths at Chobham on July 21st, and a long chase with no other weapon than a pill-box resulted in the capture of two ♀ ♀. On a later occasion several were netted and plenty of larvæ procured, both from ova and by sweeping. *Hydrelia unca* we found at Chobham, very locally but not rarely, at the end of May and early in June, and the larvæ could be obtained in numbers at the beginning of August by sweeping on the same spot.

GEOMETRÆ.—We have seen very little of note among the Geometers—*Hypsipetes ruberata*, in a street lamp near Brookwood, May 5th; *Melanippe galiata*, at light, Woking, May 9th, and bred June 4th; *Lobophora sexalisata*, on a willow trunk, Guildford, May 29th; and *Hyria auroraria*, several beaten out of bushes in the daytime in the middle of July near Woking (ova were obtained and we now have the young hibernating larvæ). Larvæ of *Emmelesia unifasciata* were found commonly on fruiting plants of *Bartsia odontites* early in October near Effingham.

CRAMBI and PTEROPHORI.—Two species of the former and one of the latter call for mention: **Rhodophaea formosa*, a single specimen beaten out of a mixed hedge at Woking, July 7th; *Homæosoma sinuella*, Woking, July 17th; and **Leioptilus lienigianus*, disturbed in the daytime, together with numerous *Ephippiphora fenella* and *Dicrorampha simpliciana*, from bushy plants of *Artemisia vulgaris*.

TORTRICES.—The following may be recorded:—*Clepsis rusticana* and *Phoxopteryx biarcuana*, both not uncommon near Brookwood in the middle of May, and the latter occurring again two months later in the same and other localities; *P. derasana*, common at Guildford in May; *Phlæodes demarniana*, Woking, May 24th; *Coccyx cosmophorana*, not uncommon, together with a smaller number of *C. coniferana*, among the pines, Woking, May 14th and later;

Retinia turionana, bred in numbers from larvæ and pupæ found in the leading shoots of young pine trees, beginning of May; *Catoptria juliana*, Woking, July 7; **Choreutes myllerana*, larvæ, pupæ, and imagines abundant on *Scutellaria galericulata*, Woking, July 17th; *Eupercilia subroseana*, one example on Mickleham Downs, July 7th; and **E. alismana*, bred from larvæ, and the imagines seen in large numbers at Woking, in May.

Finally, mention may be made of the breeding of the common *Cnephasia politana* (the date of emergence being December 15th), from larvæ found in spun-up flowers of *Gentiana pneumonanthe*, whilst we were engaged in an unsuccessful search for larvæ of *Adkinia graphodactyla*, at Chobham; young *Nemophila russula* larvæ were seen feeding on the same plant.

The species marked * are not recorded in Mr. H. Goss's list for Surrey in the Victoria History (1902), nor have they, as far as we know, been definitely added to the list since that year.—H. G. CHAMPION, New College, Oxford: December, 1912.

Zygæna filipendulæ, ab. *hippocrepidis*, at Streatley, Berks.—It may be worth recording this supposed hybrid between *Zygæna loniceræ* and *Z. filipendulæ* from Streatley, Berks. Unfortunately, it was not recognised at the time, so further examples of the Burnets seen were not taken.—H. G. CHAMPION: Dec., 1912.

A suggestion for securing certain Liotheids (Mallophaga).—Most collectors of this order must have experienced difficulties at times in obtaining material of the *Liotheida* owing to the activity displayed by these insects. The rush of the large *Ancistrona gigas*, P., among the plumage of a Fulmar is not readily forgotten, while even *Physostomum* with its stiff unwieldy abdomen, moves with unexpected speed among the roots of its host's feathers. Often indeed, *Physostomum* escapes notice entirely during a preliminary examination of a newly shot bird. The parasite seems to glide aside as the plumage parts, and its presence is discovered only on picking the feathers off one by one. But it is with the commoner genera like *Menopon* and *Colpocephalum*, that most trouble occurs. From hosts of the genus *Corvus* these genera frequently swarm on to the hot fingers of the operator in such numbers as to be a nuisance. As a rule, however, by working with the sleeves well tucked up, one may stop the parasites before they effect a lodging on one's person. If they do escape, it is well to remember that the inconvenience will be temporary, as *Mallophaga* seem invariably to die on man. After one of our March gales (1912), some boys brought the writer a young moribund Heron (*Ardea cinerea*). On this bird, *Colpocephalum importunum*, N., occurred in numbers. This is an extremely active form, and so troublesome from its attempts to run up one's sleeves, that one wonders whether Nitzsch bestowed the name on account of the habit. To check the insect's advances, it was found sufficient to smear a band of vaseline round the arm, taking care to clear the feathers. *C. importunum* would not pass this barrier. One simply then ran one's fingers through the Heron's plumage and picked off from time to time the insects gathered before the band.—JAMES WATERSTON, The Manse, Ollaberry, Shetland: December, 1912.

On the humming of Chironomidae.—In the "Entomologist's Monthly Magazine" of November, 1912, is an interesting communication by Mr. Claude Morley on "The Cause of Humming in the Air." After attributing the sound to certain *Chironomidae*, Mr. Morley draws attention to the fact that his present observation is only the second reference to the production of sound by insects of this family. Perhaps the following instance may be of interest as a third record:—

Colombo is plagued at certain seasons by dense swarms of so-called "lake-flies," which issue at night-fall from the margins of the shallow lake that spreads its many arms through the residential quarters of the town. These flies are Chironomids of a species that has been described recently by Kieffer, under the name of *Chironomus ceylanicus*. Bungalows situated on the leeward side of the water are rendered almost uninhabitable during the fly season, when the insects swarm into the lighted rooms, blackening the walls upon which they settle and making themselves generally objectionable. In the morning they may be swept up literally by the bushel.

I happened to be bicycling one evening along a road that impinged—at one point—upon an arm of the lake. On approaching this spot I became aware of a gradually increasing and insistent noise that I supposed to be emanating from some powerful machinery in rapid motion, and I was wondering what factory could be in activity at that time and place, when I suddenly was involved in a dense fog of flying insects. I was instantly smothered in flies which filled my eyes, ears and nose, almost blinding and suffocating me. I had to dismount hurriedly and grope my way through the living crowd until the road fortunately took a sharp turn away from the water and I found myself in a clearer atmosphere.

On this particular evening the air was comparatively still, and what little breeze there may have been was blocked by a high wall on the opposite side of the road. Consequently, the flies that were rising in clouds from the herbage where they had been resting during the day, together with the swarms that had freshly emerged from the water, were unable to disperse themselves as rapidly as in the more open parts, and had become densely packed in the confined space. The noise which, at the time, I supposed to be produced by the vibration of the myriad wings, was most extraordinary. I now understand that it is more probably attributable to actual stridulation. This is confirmed by the fact that a single *Chironomus* if, as often happens, it blunders into one's ear, makes itself audibly perceptible by a shrill note resembling that of certain mosquitoes.—E. ERNEST GREEN, Peradeniya, Ceylon: November 25th, 1912.

[I find the following note in my diary for January 25th, 1904, when calling at Colombo on the homeward voyage from Australia:—"In passing the shore of the extensive fresh-water lagoon at the back of Colombo shortly after sunset, I was greatly struck with the enormous number of small harmless gnats on the wing. They could be seen quite a long way off, in dense swarms looking like columns of smoke or dust on the road, and on entering one of these swarms the air was filled with the sharp hum of myriads of wings."—J.J.W.]

"*The Review of Applied Entomology.*"—The Committee of the Imperial Bureau of Entomology announce that they have decided to issue from January, 1913, a monthly journal to be entitled "The Review of Applied Entomology," in which an attempt will be made to give a prompt and concise summary of the current literature from all parts of the world which has a bearing on noxious or useful insects. Each issue of the "Review" will be divided into two parts, viz., Series A, "Insects injurious to Agriculture and Commerce"; and Series B, "Insects which disseminate disease." The publishers are Dulau & Co., Ltd., 37, Soho Square, London, W.—EDS.

Obituary.

Thomas Boyd, whose death at the advanced age of 82 years, took place on February 5th last at his residence at South Norwood, was, with the exception of Lord Avebury, happily still with us, the senior Fellow of the Entomological Society of London, he having been elected as long ago as 1852, as a Life Member. In his earlier years he was well known as a keen and successful Lepidopterist, and he became intimately associated with Mr. Stainton and other leading workers during that strenuous and successful period of our science covered by the "fifties" of the last century. Between 1853 and 1858 Mr. Boyd was so fortunate as to discover and to add to our list no fewer than eleven species of *Micro-Lepidoptera*, five of these, described by Mr. Stainton and himself, being new to science. A large number of notes from his pen are embodied in the Entomological journals, &c., of that time, mostly in the "Weekly Intelligencer," to which he contributed (vol. ix, p. 149) a notable article in support of the then vehemently opposed evolutionary theories of Charles Darwin. His collections of *Lepidoptera*, including the types of his new species, passed into the hands of his cousin, the late W. C. Boyd, about thirty years ago.

The late W. R. Jeffrey.—With reference to the obituary notice of the late Mr. W. R. Jeffrey (*Ent. Mo. Mag.*, December, 1912) his son, Mr. J. F. Jeffrey, writes to say that at one time his father did make a good collection of *Lepidoptera*, which was recently sold at Stevens' Salerooms.—G. T. P.

Societies.

YORKSHIRE NATURALISTS' UNION, ENTOMOLOGICAL SECTION.

THE ANNUAL MEETING of the Entomological Section of the Yorkshire Naturalists' Union was held at the Leeds Institute, Leeds, on October 19th last. — Dr. H. H. CORBETT, President of the Section, in the Chair.

The report on *Coleoptera* was read by Mr. E. G. Bayford, F.E.S., who remarked upon the ready response the Coleopterists of the County had made to his request for notes on their experiences of the year's work. Although there was a consensus of opinion that the exceptionally wet season had resulted in an appreciable scarcity of insects, the result of the year's work was very satisfactory.

The following twenty species had not previously been recorded in the County, one of them, *Chaetocnema conducta*, Motsch., being an addition to the British list. A pair of this were taken by Mr. E. C. Horrell while sweeping in Forge Valley near Scarborough. Nine other species were added by the same worker from the Scarborough district. These were *Medon pocofer*, Peyr., *Oxytelus insecatus*, Gr., *Atomaria basalis*, Er., *Zeugophora subspinosa*, F., *Phyllotreta cruciferae*, Goeze, *P. vittula*, Redt., *Apion bohemani*, Th., *Phytobius canaliculatus*, Fahr., and *Nanophyes lythri*, F. This last species had also been met with in plenty at Hatfield by Dr. Corbett, whose other additions from the Doncaster district were *Helochares punctatus*, Sharp, *Anisosticta 19-punctata*, L., *Silvanus unidentatus*, Ol. From the Cleveland district Mr. M. L. Thompson, F.E.S., added *Philonthus nigrita*, Nordm., and *Longitarsus suturalis*, Marsh. From the westerly portion of the East Riding Dr. Fordham contributed the following species new to the County: *Cryptobium glaberrimum*, Herbst, and *Eriirhinus bimaculatus*, F., and from the same Riding Messrs. T. Staniforth, B.A., and G. B. Walsh, B.A., made the interesting addition of *Helops pallidus*, Curt., which they had found in plenty at Spurn. One specimen of *Nausibius dentatus*, Marsh., had been taken at Barnsley by Mr. E. G. Bayford. Reference was also made to the capture of a single specimen of *Carpophilus obsoletus*, Er., at Edlington by Mr. W. E. Sharp. In addition to these a list of 34 species which had not previously been met with in the particular Riding in which they had been taken this year was read. *Carabus monilis*, F., was reported to have been extraordinarily abundant in the Bradford district, this phenomenon having been observed but twice before during the last twenty years. All the species named were on exhibit, as also a number of others, including *Dytiscus circumcinctus*, Ahr., previously known only from Askham Bog, taken at Buswith by Dr. Fordham. *Aphodius luridus*, an entirely black specimen met with in the Doncaster district by Dr. Corbett, and an imperfect specimen of *Blaps mortisaga*, found amongst Egyptian wheat in Barnsley and given to Mr. Bayford. The report on *Hymenoptera* and *Diptera*, read by Dr. W. D. Roebuck, F.L.S., recorded as the sole note on the latter order the occurrence of *Bombylius major* and *Criorrhina floccosa* at Keighley, observed by Mr. Rosse Butterfield, who for the *Hymenoptera* had also sent in a list of 14 Ichneumonids, a few of which are new to the list, as is also *Polyclistus mansuetor*, Gr., taken in Leeds by Mr. Walter Withell. The report expressed the general opinion that the season had not been a favourable one except in April and May. An important feature in the year's work had been the occurrence of *Nemeritis canescens* in a Barnsley flour mill, where it had been taken by Mr. E. G. Bayford. The species had been identified by Mr. Claude Morley, F.E.S., who stated that it had not previously been recorded from the British Isles, its native origin being S. Europe and Asia Minor. Mr. B. Morley read the report on *Lepidoptera*, the most interesting items of which were the capture of five *Acronycta alni* near Wakefield; *Xanthia aurago*, not uncommonly among sycamore at Skelmanthorpe, Huddersfield; and numerous fine varieties of *Abraxas grossulariata* at Huddersfield. The exhibits included a display of varieties of *Hybernia defoliaria* and *H. aurantiaria*, which by previous circular invitation had been made a special feature of the exhibition. The case of these two insects exhibited by Mr. B. Morley was exceptionally fine,

and included a series of the var. *fusca* of *H. aurantivaria*, which so far has only been recorded from South-West Yorkshire; and a short series of a new form of the same species in which all the wings were uniformly pale yellow. Of this form quite a representative number had been secured in the Skelmanthorpe district. Messrs. A. Whitaker and H. Dyson also had fine exhibits of these two species. *Abraxas grossulariata* also made a good show, Mr. G. T. Porritt exhibiting a selection of the varieties he had bred from wild Huddersfield larvæ, including *nigra*, and exceptionally fine forms of *nigrosarsata*. Mr. Barraclough, vars. *varleyata*, *nigrosarsata*, *lacticolor*, *hazeldighensis*, and *fulvripicata* from the Bradford district. Mr. J. W. Boulton, var. *nigrosarsata* from Hull. Mr. J. W. Carter showed a series of *Chelonia plantaginis* from Fountain Fell, near Malham, including a form in which the usual red of the abdomen was replaced by yellow, of which he had two specimens; also a peculiar *Pieris brassicæ* from Bradford, having the underside thickly irrorated with black scales. Mr. Barraclough, a black *Polia chi* from Bradford, and Mr. Dyson, varieties of the same species from Skelmanthorpe. Mr. W. Hewett recorded the occurrence of *Colias edusa* at York, and exhibited fine varieties of *Smerinthus tilie*. Dr. Corbett, Dr. W. J. Fordham, and Mr. E. G. Bayford showed the *Coleoptera*, and Mr. W. D. Roebuck the *Hymenoptera* and *Diptera* alluded to in the Reports. Two papers were read: "On some Characteristics of Spiders," by Mr. W. Falconer; and "Some Problems for Coleopterists," by Dr. H. H. Corbett, on both of which a good deal of discussion ensued.—G. T. PORRITT.

THE SOUTH LONDON ENTOMOLOGICAL AND NATURAL HISTORY SOCIETY.
ANNUAL POCKET-BOX EXHIBITION, *Thursday, Nov. 28th, 1912.*—MR. A. E. TONGE,
F.E.S., President, in the Chair.

Mr. C. N. Freeman, of Sanderstead, was elected a member.

Mr. A. Tonge exhibited species taken and bred by him during the season, including *Heliothis marginata*, *Agrotis cinerea*, *Oncocera aheneella*, *Nolodonta phœbe* (*dictæa*), etc., from Reigate; *Polia chi* from Winslow, Bucks.; *Leucania albipuncta*, *Noctua stigmaticea*, *Bryophila muralis* var. *impar*, from Deal, etc. Mr. B. H. Smith, thirty specimens of *Phryxus livornica*, taken at light in Cornwall, in May. Mr. R. Adkin, long and varied series of *Anthrocera lonicere*, *A. trifolii*, and *A. filipendule*, all three species varying from normal deep red, through pale red, orange to yellow by small gradations. Mr. A. Sieb, the two very rare Coleophorids obtained by him this year, *Coleophora trigeminella* and *C. agranmetta*, the latter from E. Heathly, Sussex. Mr. E. P. Sharp, an extensive series of the Sussex forms of *Dianthæcia carpophaga*, and dark and red forms of *Nonagria edelsteini*. Capt. Cardew, an almost obsolete underside of *Celastrina argiolus* near ab. *argyphontes*, from Oxshott. Mr. T. H. L. Grosvenor, a very long series of *Cronomypha typhon*, from Witherslack, Cumberland, and Scotland; he also showed *Agriades coridon* ab. *semisyngropha*, ab. *inequalis*, ab. *aurantia* and ab. *tithonus*, *P. rapæ* from Aberdeen, with females varying from pale yellow to buff; underside aberrations of *Aphantopus hyperanthus*, *Cronomypha pamphilus*, and *Aricia medon* and a *Triphæna pronuba*, with pale lemon yellow hind wings. Rev. J. E. Tarbat, a series of *Crambus fascicellus*

from Norfolk. Mrs. Hemming, two broods of *Colias edusa*, bred from ova laid by females captured on May 31st and July 21st respectively; there was but little variation in brood 1, while the males of brood 2 showed a diminishing amount of spotting on the hind wings, and the females had considerable suppression of the forewing marginal spotting. Mrs. Hemming also showed aberrations of *Pieris napi*, a melanic *Anthrocerca trifolii*, a dusky fringed *Agriades thetis*, a green-tipped ♂ *Euchloe cardamines*, a ♀ *C. edusa* right side ab. *helice*, &c. Mr. L. W. Newman, a long bred series of hybrid *A. ocellatus-populi*, examples of other hybrids previously shown, extremely large bred *C. edusa*, a melanic example of *Cosmia trapezina* from Bexley, and a yellow *Polygonia c-album*; also paintings of aberrations recently bred by him. Mr. H. J. Turner, series of *Bryophila muralis*, from Freshwater and Dawlish, the former light green and grey in ground, the latter dark and intense in colour and marking; two specimens were smaller than *B. perla*. Mr. A. E. Gibbs, a drawer of the brilliant S. American genus *Catagramma* and its allies. Mr. W. J. Lucas, a number of species of Neuroptera, most remarkable for their strikingly exaggerated form of wing, including *Nemoptera bipennis* from Gibraltar, *N. coa* from Corinth, *Lertha barbara*, from Algeria, etc. Dr. T. A. Chapman, a series of *Agriades thersites* with *A. escheri*, *Polyommatus icarus*, etc., for comparison; and he called attention to the overlapping of the flowering time of *Ulex europæus* and *Ulex nanus*. Mr. Wells, an unusually large specimen of *Apatura iris*, and a *P. c-album* with much reduced costal blotches and dark suffused hind wing. Mr. R. Baumann, melanic specimens of *Acidalia virgularia* bred from a captured melanic female, and a long series *Hydriomena furcata (sordidata)* from Forres, showing banded, vinous and very dark forms. Mr. J. A. Simes, a long and varied series of *Melitæa didyma* from Europe and N. Africa, including the small pale form ab. *persea* from Greece, and the huge S. Italian form, and a beautiful radiated aberration. The Rev. Alfred Stiff, a series of *Epiaephele tithonus*, with extra ocelli well developed; *Aphantopus hyperanthus* with large and richly coloured ocelli; a *Celastrina argiolus*, the size of *Cupido minimus*; *Pyrameis atalanta*, with the fore-wing bands broken, one with light vermilion bands, and one with partially yellow bands on the hind wings. Mr. A. G. Scorer, an *Eugonia polychloros*, with three heavy spots on the inner margin of the fore-wing; a *Xanthorhoe sociata*, with the band reduced to a couple of spots; a *Boarmia repandata*, with the white band bordered with a blackish brown belt; and a *Triphæna comes (orbona)*, with the black sub-marginal band of the hind-wings broken into irregular rays. Mr. G. T. Porritt, series of two fine forms of *A. grossulariata*, one of the var. *hazeleighensis* group, but with the orange band very broad and the outer margins broadly white; the other a heavily marked form with very broad bands on the hind wings. Mr. W. J. Kaye, species of the genus *Heliconius*, with aberrations of each species, showing melanism in both fore and hind wings, including *H. numata*, *H. ismenius*, *H. thelxiope*, *H. alithes*, *H. melpomene*, *H. erato*, *H. doris*, etc. The Rev. G. Wheeler, five examples of the hybrid *Agriades polonus*, from Assisi, *Agriades thetis*, ab. *punctifera*, from Africa, ab. *cælestis* from S.W. France, ab. *urania* from Dorking, and undersides of *Dryas paphia*, including ab. *dives*, a new form from Algeria, etc. Mr. J. Platt Barrett, *Polyommatus icarus* taken 1911 and 1912, to show that those of the

former date were much more brightly marked than those of the latter year. Mr. W. J. Ashdown, a xanthic aberration of *Epinephele jurtina*, a very variable series of *Calymnia trapezina*, and a very fine range of variation in *Strenia clathrata*. Mr. Stallman, *Aricia medon* from Margate, showing some white round the discal spots; a female *Colias edusa*, with only traces of spots in the marginal bands; a *Cosmotriche potatoria*, with a semi-circular sinus in the hind wing, bred from a Wicken cocoon; and a *Hypocrita jacobææ*, with some of the red markings yellowish. Dr. G. L. Robertson, a dark banded *C. trapezina*, three confluent forms of *Anthroceræ trifolii*, blue females of *Agriades thetis*, the two last from near Dorking; bred specimens of *A. meliloti* from the N. Forest; *Cymatophora octogesima* from a fence in Dulwich, etc. The Rev. G. H. Raynor, two new forms of *A. grossulariata*: (1) a dark and radiated form of ab. *lacticolor*, and (2) an orange coloured form of ab. *flavipalliatæ*. Mr. Stanley Edwards, examples of the groups of the genus *Papilio* from the Ethiopian region, including *P. antimachus*, *P. zalmoxis*, *P. ridleyanus*, *P. cynorta*, *P. hesperus*, *P. leonidas*, *P. demoleus*, *P. menestheus*, *P. policeses*, *P. fulleri*, *P. latreillanus*, *P. nireus*, *P. colonna*, and *P. phorcæus*. Mr. B. H. Crabtree, a very long series of *A. grossulariata*, most of the aberrations known and described by Rev. G. Raynor; a long series of *A. sylvata (ulmata)* including many smoky forms; two *Nemeophila plantaginis*, with the black markings absent, the ground colour being pale ochreous yellow; and five aberrations of *Eustroma reticulata* (see Entom., XLV, pl. I). Mr. H. W. Andrews, a collection of predaceous Diptera illustrating the work of Prof. Poulton, including British species of the *Asilidæ*, the *Empidæ*, the *Dolichopodidæ*, the Cordylurid *Scatophaga stercoraria*, and the Anthomyid *Conosia tigrina*. Mr. M. E. Moseley, mounts illustrating the various stages in the metamorphoses of *Sialis lutaria*, *Ephemera danica*, *Brachycentrus subnubilus*, and *Dictyoptera microcephala*.—H. J. TURNER, Hon. Secretary.

LANCASHIRE AND CHESHIRE ENTOMOLOGICAL SOCIETY: Meeting held at the Royal Institution, Colquhoun Street, Liverpool, Monday, October 21st, 1912.—Mr. WM. WEBSTER, Vice-President, in the Chair. This being the opening Meeting of the Session was devoted to exhibits of the past season's work.

Mr. F. N. Pierce showed a box of *Lepidoptera* from Silverdale, Lanes., which included *Nemeobius lucina*, *Argynnis euphrosyne* and *Euclidia ni*. From Tansor, Huntingdonshire, *Schrenobius mucronellus*, *S. forcicellus*, *Acentropus niveus*, *Hydrocampa nympharata*, *H. stagnata*, and *Paraponyx stratiotata*; also *Scopula ferrugalis* from Oxfordshire. Mr. L. West exhibited his recently published work, "The Natural Trout Fly and its Imitations," containing a fine series of coloured illustrations of the flies used by the angler for trout, together with a set of the artificial flies inserted on special pages. Mr. B. H. Crabtree, two drawers containing his very fine series of variations of *Abraax grossulariata*, including many striking forms. Mr. R. Tait, Jun., a long bred series of *Agrotis ashworthii* with vars. *substriata* and *virgata*, very fine set of *A. agathina*, including var. *rosea*, and a melanic form of *Boarmia repandata* from N. Wales; *Leucophasia sinapis*, *Colias edusa*, *Ligdia adustata*, *Bapta temerata*, *Melanippe galata*, from S. Devon; *Tephrosia luridata* from Wyre Forest, and

Nyssia zonaria from Conway. Mr. W. A. Tyerman, the following species from Ainsdale, viz.:—*Procris statice*, *Neuria reticulata*, *Dianthæcia nano*, *Plusia festuæ*, *Phibalapteryx lignata*, and *Eupithecia satyrata* var. *callunaria*. Mr. W. Mansbridge, *Micro-lepidoptera* collected in Lancashire and Cheshire during the past season, viz.:—a long bred series of *Tortrix costana* and melanic and intermediate variations, a long bred series of *Phycis fusca*, series of *Micropteryx unimaculella*, *Coleophora fuscadinetta*, and *C. lutipennella*; *Ornix betule*, *Lithocolletis quercifoliella*, and *L. cramerella* from Delamere; *Panactia leuwenhækella* and *Pyrausta purpuralis* from Grange, the last being very brightly coloured. Mr. Prince, a bred series of *Cidaria reticulata* from Windermere, *Nemophila plantaginis* var. *hospita* from the Lake District, and many coast species.

Monday, November 18th, 1912.—Dr. P. F. TINNE, Vice-President, in the Chair.

Mr. F. C. Burne and Miss Dorith Ida Burne, of New Brighton, were elected Members of the Society.

Mr. Wm. Mansbridge read a paper entitled "Moorland Collecting," which dealt with the *Lepidoptera* to be found on the high moorlands of Lancashire and Yorkshire. A discussion ensued in which many of the members took part.

Exhibits were as follows:—Mr. W. A. Tyerman, a beautiful series of *Epunda nigra* bred from Devonshire ova. Mr. F. N. Pierce, a short series of *Mellinia ocellaris* from the Thames valley. Dr. P. F. Tinne, a small collection of *Sphingidæ* from British Guiana.—WM. MANSBRIDGE, *Hon. Secretary*.

ENTOMOLOGICAL SOCIETY OF LONDON: Wednesday November 6th, 1912.—The Rev. F. D. MORICE, M.A., President, in the Chair.

On the nomination of the Council, Dr. Emile Frey-Gessner, La Roseraie, Genève, Switzerland, was elected to the Honorary Fellowship rendered vacant by the death of Prof. Ganglbauer.

Messrs. G. C. Bodkin, Govt. Entomologist, George Town, British Guiana; C. Talbot Bowring, Acting Commissioner of Customs, Wenchow, China; Frederick Lionel Davis, J.P., M.R.C.S. (Eng.), L.R.C.P. (Lond.), Belize, British Honduras; Dr. John Dewitz, Devant-les-Ponts, Metz, Lorraine; Howard Mountjoy Hallett, 13, Earl Road, Penarth, Glamorgan; A. D. Imms, D.Sc., B.A., F.L.S., Forest Zoologist to the Govt. of India, Forest Research Institute, Dehra Dun, U.P., India; Nigel K. Jardine, 2, Castle Street, Ashford, Kent; Harold H. King, Govt. Entomologist, Gordon College, Khartoum, Sudan; Jal Phirozshah Mullan, M.A., Asst. Professor of Biology, St. Xavier's College, Chunan Kiln Road, Grant Road, Bombay, India; Edward J. Paterson, Fairholme, Crowborough; W. Rait-Smith, 86, Gladstone Street, Abertillery, Monmouthshire; and Dr. Adalbert Seitz, 59, Bismarck-strasse, Darmstadt, Germany, were elected Fellows of the Society.

The Rev. G. Wheeler exhibited on behalf of the Rev. F. E. Lowe, a series of *Brenthis pales* taken in the Heuthal, Bernina Pass, on June 24th, 27th, and

28th, 1912. Some were of the var. *isis*, and some of the ♀♀ of the ab. *napea*, but the most remarkable were very pronounced examples of the ab. *suffusa*, Wh., both ♂ and ♀, some of the latter being almost completely black. Also on behalf of Mr. R. M. Prideaux, a series of unusually blue ♀♀ of *Polyommatus icarus*, taken in the spring of this year in the Westerham district. Mr. L. W. Newman, a long and remarkably constant series of *M. aurinia*, bred from two batches of ova laid by North Cornwall ♀♀; also, on behalf of Mr. G. B. Oliver, a picked and varied series bred by the latter, also from North Cornwall larvae. Both series were bred this year. Mr. W. A. Lamborn, two larvae and two bred imagines with corresponding pupa-cases of the Lycaenid butterfly *Euliphyra mirifica*, Hall. The larvae were found in a nest of the ant *Ecophylla smaragdina*, var. *longinoda*. Prof. Poulton read a letter from Peradeniya, Ceylon, from Mr. E. E. Green, and exhibited the enclosed small cocoons of *Epicephala chalybacia*, Meyr. The curious little bubble-shaped structures along the dorsum of the cocoon may perhaps be produced in the same way as the bodies on the cocoons of *Deilemera antinorii*. Mr. J. A. de Gaye, who was present as a visitor, showed examples of the West African Agaristid moth, *Messaga montevronis*, Butler, and the Hesperiid, *Pyrrhocalcia iphis*, Drury, which are respectively model and mimic, captured by him on the same day at the same plant. Mr. Donisthorpe, a specimen of *Thorictus foreli*, var. *bonnoirci*, Wasm., a small beetle, fastened on to the antenna of an ant, *Myrmecocystus bicolor*, F.; also a specimen of the Culicid, *Harpagomyia splendens*, Meig., with the ant, *Cremastogaster difformis*, Smith, from Batavia, where Jacobson had observed the fly being fed by the ant. Mr. H. M. Edelman, a living Buprestid larva (species uncertain) which had been found in Messrs. Allen and Hambury's works at Ware, in roots of sandalwood. Dr. F. A. Dickey made some remarks on the Pierine genus, *Pinaeopteryx*, illustrating them by exhibiting male and female specimens of most of the species, side by side with which were shown drawings made to scale of the plumules characteristic of each form. Mr. A. Bacot, an Acridiine Orthopteron, from the Benguela Plateau, which bore a very perfect resemblance to the scorched grass stems, on one of which it was resting; also specimens of the Dipteron, *Glossina palpalis*, var. *wellmani*, Austen, from Catumbella River. Mr. Eltringham, two specimens of an unusually large Lasiocampid larva which had been presented to the Hope Department by Mr. C. A. Foster, who took them in Sierra Leone. Prof. Poulton suggested that the larvae might perhaps be *Gonometa subfascia*, Walk., or *G. regia*, Auriv. The following papers were read: "On new species of Fossorial Hymenoptera from S. Africa, chiefly *Elidiinae*." By Rowland E. Turner, F.E.S. "On the Life-History of *Pseudacraea eurytus hobleyi*, Neave." By G. H. D. Carpenter, B.A., B.M., B.Ch., F.E.S. "On some Luminous *Coleoptera* from Ceylon." By E. Ernest Green, F.E.S.

Wednesday, November 20th, 1912.—The President in the Chair.

The following were elected Fellows of the Society: Miss Margery H. Briggs, B.Sc., 7, Winterstoke Gardens, Mill Hill, N.W.; Messrs. Edward Ballard, Zombo, Nyassaland; George Trevor Lyle, Bank House, Brockenhurst;

Rev. J. W. Metcalfe, The Vicarage, Ottery St. Mary; Kurt, Baron Rosen, Zoologische Staatssammlung, Munich.

The Council nominated the following Fellows as Officers and Council for the Session 1913-1914: *President*: George T. Bethune-Baker, F.L.S., F.Z.S.; *Treasurer*: Albert Hugh Jones; *Secretaries*: Commander J. J. Walker, M.A., R.N., F.L.S., and the Rev. George Wheeler, M.A., F.Z.S.; *Librarian*: George Charles Champion, A.L.S., F.Z.S.; *Other Members of the Council*: Robert Adkin, James E. Collin, John Hartley Durrant, Stanley Edwards, F.L.S., F.Z.S., Harry Eltringham, M.A., F.Z.S., A. E. Gibbs, F.L.S., F.R.H.S., Rev. F. D. Morice, M.A., Gilbert W. Nicholson, M.A., M.D., Hon. Nathaniel Charles Rothschild, M.A., F.L.S., F.Z.S., W. E. Sharp, J. R. le B. Tomlin, M.A., Colbran J. Wainwright.

Mr. W. A. Lamborn exhibited (1) a small company of the Nymphaline butterfly, *Euphadra ravola*, Hew., which he had bred in August last from larvae found together under one leaf near Oni Camp, Lagos; also a single bred *Euphadra themis*, Hübn., and stated though this butterfly looks almost exactly the same as *E. ravola*, yet the larva was quite different in colour, and it fed on a different food-plant. (2) Two bred families of the Pierine butterfly, *Leuceroia argia*, Fabr., with the ♀ parent in each case. The ♀ parent of the first family was yellow without any orange flush at the base of the fore-wing. This family contained nine females, five of which were yellow and four white, and all these females exhibited an orange flush. In the second family the female parent again was yellow without orange flush. There were only two female offspring, one of which resembled the parent exactly, whereas the other, a white variation, showed the orange flush. Mr. E. C. Bedwell, specimens of *Lasio-somus enervis*, H.S., one of the rarest of the British *Lygæidæ*. Mr. O. E. Janson, specimens of a remarkable Mantid ootheca from Delegea Bay. Mr. E. C. Joy, two aberrant specimens of *C. edusa*, bred from Folkestone in October last. Dr. K. Jordan, two nests of *Eucheira socialis* recently received from Western Mexico. The caterpillars of this Pierine butterfly live gregariously in an opaque nest of silk. The following papers were read: "Notes on Various Central American *Coleoptera*, with Descriptions of New Genera and Species," by G. C. Champion, A.L.S., F.Z.S., F.E.S. "The Butterflies of the White Nile, a Study in Geographical Distribution," by G. B. Longstaff, M.A., M.D., F.E.S. A considerable discussion took place on the subject of Dr. Longstaff's paper.

A LIST OF BUTTERFLIES COLLECTED DURING THE LAST TEN YEARS IN BRITISH EAST AFRICA.

BY THE REV. K. ST. AUBYN ROGERS, F.E.S.

The knowledge of the butterfly fauna of Tropical Africa has been extending with great rapidity during the last few years. Many papers have been published on collections made in the country, so that I have not found it possible to collate the results of the numerous naturalists who have collected there.

However, I have had the opportunity to make collections over a considerable part of the Protectorate, and it may be of some interest to publish the results.

The area in which this collection was made is bounded on the east by the coast, and on the west by the Rift Valley,

The following list can make no claim to be complete, as there remain many districts in which I have not collected at all, and others in which I have collected but little, but I have thought it best only to record those species which I have myself met with.

For the identification of the numerous species I am deeply indebted to the kindness of Prof. E. B. Poulton, and those who work with him in the Hope Department of the Oxford University Museum, especially Dr. F. A. Dixey, Mr. H. H. Druce, and Mr. H. Eltringham. There still remain a few species which have not yet been identified, or which may be new.

The whole of the species, with the possible exception of some of the most common, are represented in the Hope Department, where they may be studied.

- 1.—*Danaïda chrysippus*, L. Abundant everywhere, the form *dorippus*, Klug, being far more abundant than the type form. This species generally prefers open country, but at the end of the dry season it may be found in forests.
- 2.—*Danaïda limniace*, Cram. Generally common in forest country, and sometimes very abundant.
- 3.—*Melinda formosa*, Godm. Taita, Taveta, Nairobi, North Kikuyu. Not uncommon.
- 4.—*Amauris niarivus*, f. *dominicanus*, Trim. A forest species often very common. It has a slow floating flight like that of most *Danaïdæ*.
- 5.—*Amauris ochlea*, Boisdu. Though generally haunting forest, this species is not so confined to it as *A. dominicanus*. Coast district, Taita, Taveta.
- 6.—*Amauris albimaculata*, Butl. Taita, Nairobi, North Kikuyu. Generally abundant. I have no doubt that *A. echeria* also occurs, but it is not distinguishable on the wing, and all my specimens have been *A. albimaculata*.
- 7.—*Melanitis leda*, L. Abundant everywhere.
- 8.—*Gnophodes parmeno*, f. *diversa*, Butl. Taveta, Nairobi. Generally found in dense forest. Not common.
- 9.—*Mycalopsis dentata*, E. M. Sharpe. North or South Kikuyu, Kenia Forest. Not uncommon.
- 10.—*Mycalopsis kenia*, Rogenb. Nairobi Forest. Sometimes common.

- 11.—*Mycalesis safitza*, Hew. Ubiquitous.
- 12.—*Hnentesia perspicua*, Trim. Common and widely distributed.
- 13.—*Physcæneura leda*, Gorst. Coast district. Taita. Common.
- 14.—*Neocænura duplex*, Butl. Taita, Taveta. Not uncommon.
- 15.—*Neocænura gregorii*, Butl. Taita. Ukambani. South Kikuyu. Common.
- 16.—*Ypthima asterope*, Klug. Common and widely distributed. The eye spots on the underside vary a good deal in number.
- 17.—*Ypthima itonia*, Hew. North and South Kikuyu. Not uncommon.
- 18.—*Pardopsis punctatissima*, Boisd. Common and widely distributed, especially in the Coast district. It frequents forest as well as open country.
- 19.—*Acræa rabbaixæ*, Ward. The Coast district. Fairly common in forest and woodlands.
- 20.—*Acræa zonata*, Hew. The Coast hills. This is a forest insect and flies somewhat higher than most of its congeners. It is rather rare.
- 21.—*Acræa cura*, Smith. The Coast hills. Also a forest insect with a lofty flight, by no means easy to capture, as it has a tantalising habit of floating about out of reach of the net. It is a rare species.
- 22.—*Acræa cerasa*, Hew. South Kikuyu. This species frequents forest, and sometimes swarms in that near Nairobi.
- 23.—*Acræa quirina*, Fabr. Not common on the Coast hills.
- 24.—*Acræa baxteri*, E. M. Sharpe. Aberdare Mountains. Also one specimen high up on the Dabida Hills in the Taita country.
- 25.—*Acræa insignis*, Dist. Widely distributed and not uncommon. The black on the hind-wings is very variable in extent, and in the specimens from the Coast hills is generally much reduced.
- 26.—*Acræa neobule*, Doubl. and Hew. Common and widely distributed. There is a large, pale form found in the forests on the Coast hills.
- 27.—*Acræa satis*, Ward. Found only in the Coast district, generally in forest country. It is not generally common.
- 28.—*Acræa asboloplintha*, *f. rubescens*, Trim. North Kikuyu and slopes of Mount Kenia; the type form being found to the west of the Rift valley. The females of the *rubescens* form are generally white, and not red like the type form.
- 29.—*Acræa zetes acaræ*, Hew. Generally common.
- 30.—*Acræa anemosa*, Hew. Generally common.
- 31.—*Acræa pseudolycia astrigera*, Butl. Ukambani. This species is generally fairly common where it occurs, but its range is much more restricted than that of the two preceding species.
- 32.—*Acræa areca*, Mab. Generally distributed and fairly common.
- 33.—*Acræa perenna*, Doubl. and Hew. Taita. I have only obtained a single specimen, but it may have been passed over.

- 34.—*Acræa chilo*, Godm. Coast district. Taita, Taveta. The species is often common. The female was long known as *A. crystallina*, which is not surprising, as both wings are quite transparent, and the spots are obsolete in the fore wings and much reduced in the hind wings.
- 35.—*Acræa arrita*, Hew. Taita, Taveta, Ukambani, Kikuyu. Generally common. Most specimens are of the form *pudorina*.
- 36.—*Acræa equatorialis*, Neave. Coast district, Taita. Not uncommon. This form has recently been separated from the type by Mr. Eltringham under the name of *anæmia*.
- 37.—*Acræa pudorella*, Auriv. Taita, Taveta. Apparently not common.
- 38.—*Acræa caldarena*, Hew. Rabai. This species does not seem by any means common. The examples taken are not typical lacking as they do the pronounced black tip to the fore-wings.
- 39.—*Acræa bresia*, Godm. Generally distributed. This species is particularly abundant in Taita, where the form *regalis* also is of frequent occurrence.
- 40.—*Acræa oncea*, Hopff. Widely distributed and often common.
- 41.—*Acræa cecilia*, Fabr. Not uncommon in Ukambani and probably occurs elsewhere.
- 42.—*Acræa natalica*, Boisd. Generally abundant.
- 43.—*Acræa lerpsichore*, L. Ubiquitous. I once found a pupa all golden on a yellow leaf. Each day when the sun was hot it raised itself so as to lie along the underside of the leaf. Was this due to the heat of the sun?
- 44.—*Acræa excelsior*, Sharpe. I have only taken this at considerable elevations on the Aberdare Mountains up to 11,000 ft.
- 45.—*Acræa acerata*, Hew. Taita, Kikuyu. All my specimens of this common species seem to be of the form *tenella*.
- 46.—*Acræa bonasia alicia*, Sharpe. Ukambani, Kikuyu, Kenia. Often exceedingly abundant. I once counted 460 on one small tree.
- 47.—*Acræa urui*, Smith. Kikuyu, Kenia. Not uncommon. It is not possible to distinguish this from the preceding on the wing.
- 48.—*Acræa cubira*, Hopff. This is a common species everywhere except in the coast district. It is very variable.
- 49.—*Acræa pharsalus*, Ward. Taita, North Kikuyu. Generally rather uncommon.
- 50.—*Acræa cncedon*, L. Ubiquitous. The *daira* form seems to be the most numerous, but all forms occur.
- 51.—*Acræa aubyni*, Eltr. Coast district. This species does not seem common. It flies rather higher than most of its congeners but not rapidly.
- 52.—*Acræa johnstoni*, Godm. Taita, Taveta, Kikuyu, Kenia. A most protean species which seems to have been modified in mimicry of several species of *Danaïde* and *Planema*.

Scale of Charges for Advertisements.

Whole Page.....£3. Half Page.....£1 11s. 6d. Quarter Page.....17s.

Lowest charge, 7s. up to 5 lines; 1s. per line afterwards.

Repeated or continuous Advertisements per contract.

There is no charge for Lists of Duplicates and Desiderata.

All payments and applications for the above should be made to

R. W. LLOYD, I. 5, Albany, Piccadilly, W.

NOW READY,

THE ENTOMOLOGIST'S MONTHLY MAGAZINE, Vol. XXIII, New Series (Vol. XLVIII), strongly bound in Cloth. Price 7/-.

Covers for binding, 1/- each.

London: GURNEY and JACKSON, Paternoster Row. E.C.

THE THREE COLOURED PLATES illustrating the articles on

"SOME INTERESTING BRITISH INSECTS,"

with the accompanying text (issued in the Ent. Mo. Mag. for September, 1909, and January and September, 1910) are now issued in a separate wrapper, price 2s.

APPLY TO THE PUBLISHERS.

WATKINS & DONCASTER, Naturalists,

Keep in stock all Articles for Entomologists, Ornithologists, Botanists, &c.: Umbrella Net, 7/-; Folding Cane or Wire, 3/6, 4/-, 4/6; Plain Ring Net, 1/3, 2/-, 3/-; Pocket Boxes, 6d., 9d., 1/-, 1/6; Store Boxes, with Camphor Cells, 2/6, 3/6, 4/-, 5/-, 6/-; Zinc Pocket Boxes, 9d., 1/-, 1/6, 2/- Setting Boards, from 5d. to 1/10; Complete set of 14 boards, 10/6; Breeding Cages, 2/6, 4/-, 5/-, 7/6; Sugaring Tins, 1/6, 2/-; Sugaring Mixture, ready for use, 1/9 per tin; Setting Houses, 9/6, 11/6, 14/-; Glass Topped and Glass Bottomed Boxes, from 1/- per doz.; Zinc Killing Boxes, 9d., 1/- Coleoptera Collecting Bottles, 1/6, 1/8; Collecting Box, containing 26 tubes (very useful for Coleopterists, Microscopists, &c.), 4/6; Brass Chloroform Bottle, 2/6.

Improved Pocket Pupa-digger in leather sheath (strongly recommended), 1/9; Steel Forceps, 1/6 to 3/- per pair; Pocket Lens, from 1/6 to 8/6.

Taxidermists' Companion, containing most necessary implements for skinning, 10/6; Scalpels, with ebony handles, 1/3; Fine Pointed Scissors, 2/- per pair; Brass Blow-pipes, 4d., 6d.; Egg Drills, 2d., 3d.; ditto, best quality, 9d. each; Botanical Vascuum, 1/6, 2/9, 3/6, 4/6; Label List of British Macro-Lepidoptera, with Latin and English Names, 1/6; List of British Lepidoptera (every species numbered), 1/-; or on one side for Labels, 2/-.

SILVER PINS FOR COLLECTORS OF MICRO-LEPIDOPTERA, &c.,

as well as minute insects of all other families.

We stock various sizes and lengths of these Silver Pins, which have certain advantages over the entomological pins usually employed.

For instance, insects liable to become greasy and verdigrisy, like Sesiidæ, are best pinned on Silver pins, which will last much longer than the ordinary pins (whether enamelled black, or gilt, or silvered).

We shall be pleased to send pattern cards on application.

A large stock of British, European, and Exotic Lepidoptera, Coleoptera, and Birds' Eggs.

ENTOMOLOGICAL PINS.

The "DIXON" LAMP NET (invaluable for taking Moths off street lamps without climbing the lamp posts), 3s. 6d.

SHOW ROOM FOR CABINETS, &c.

36, STRAND, LONDON, W.C., ENGLAND.

Birds and Mammals, &c., Preserved & Mounted by first-class workmen.

Our New Price List (100 pp.) sent post free to any address on application.

CONTENTS.

PAGE

Some new species of <i>Gabrius</i> (with Plate).— <i>Norman H. Joy, M.R.C.S., F.E.S.</i>	25
Notes on a small collection of Languriinæ from Borneo and the Malay Peninsula, with descriptions of two new species.— <i>Rev. W. W. Fowler, D.Sc., M.A., F.L.S.</i>	27
A contribution towards the life-history of <i>Berytus clavipes</i> , F.— <i>E. A. Butler, B.A., B.Sc., F.E.S.</i>	28
<i>Codiosoma spadix</i> , Herbst, in New Zealand.— <i>G. C. Champion, F.Z.S.</i>	32
Note on the larva of <i>Scirtes</i> .— <i>Id.</i>	32
<i>Acythopeus (Baridius) aterrimus</i> , C. Waterh., in the orchid-house at Kew.— <i>Id.</i>	33
Note on <i>Bledius scerendendus</i> , Joy, &c.— <i>Id.</i>	34
Note on the life-history of <i>Enicmus fungicola</i> , Thoms.— <i>James E. Black, F.E.S.</i>	34
<i>Re Pterostichus anthracinus</i> —a belated correction.— <i>D. Sharp, M.A., F.R.S.</i>	34
Lepidoptera in Surrey in 1912.— <i>H. G. Champion</i>	35
<i>Zygæna filipendulæ</i> , ab. <i>hippocrepididis</i> , at Streatley, Berks.— <i>Id.</i>	36
A suggestion for securing certain Liotheids (<i>Mallophaga</i>).— <i>Rev. James Waterston, B.D.</i>	36
On the humming of Chironomidæ.— <i>E. Ernest Green, F.E.S.</i>	37
“The Review of Applied Entomology.”— <i>Eds.</i>	38
OBITUARIES.—Thomas Boyd	38
The late W. R. Jeffrey	38
SOCIETIES.—Yorkshire Naturalists' Union, Entomological Section	38
South London Entomological Society	40
Lancashire and Cheshire Entomological Society	42
Entomological Society of London	43
A list of butterflies collected during the last ten years in British East Africa.— <i>Rev. K. St. Aubyn Rogers, F.E.S.</i>	45

LANCASHIRE AND CHESHIRE ENTOMOLOGICAL SOCIETY.—Meetings the third Monday in each Month, October to April. *Hon. Sec.*, WM. MANSBRIDGE, 4, Norwich Road, Wavertree, Liverpool.

ENTOMOLOGISCHE MITTEILUNGEN, Published by the Verein zur Förderung des Deutschen Entomologischen Museum. Monthly Entomological paper; official edition of the Deutsches Entomologisches Museum, whose large Library is at the disposal of all Subscribers at most liberal terms. Gratis to each number continuation of the Library's Catalogue. Terms: 7s. (m. 7) a year; 3s. 6d. (m. 3·50) half a year.

Address: Deutsches Entomologisches Museum, Berlin-Dahlem, Gosslesstr. 20.

DR. STAUDINGER & BANG-HAAS, BLASEWITZ-DRESDEN, in their new Price List, No. LVI for 1913, offer more than 19,000 species of well-named LEPIDOPTERA, set or in papers, from all parts of the world, in finest condition; 1600 kinds of PREPARED LARVÆ, &c.; we sell no more living pupæ. Separate Price Lists for COLEOPTERA (29,000 species); HYMENOPTERA (3600 species), DIPTERA (2900), HEMIPTERA (2500), ORTHOPTERA (1200), NEUROPTERA (630), BIOLOGICAL OBJECTS (300).

PRICES LOW. DISCOUNT FOR CASH ORDERS.

Second Series, No. 279.]
[No. 586.]

MARCH, 1913.

[PRICE 6d. NET

THE
ENTOMOLOGIST'S
MONTHLY MAGAZINE.

EDITED BY

G. C. CHAMPION, F.Z.S. J. E. COLLIN, F.E.S.

W. W. FOWLER, D.Sc., M.A., F.L.S.

R. W. LLOYD, F.E.S. G. T. PORRITT, F.L.S.

J. J. WALKER, M.A., R.N., F.L.S.

SECOND SERIES—VOL. XXIV.

[VOL. XLIX.]

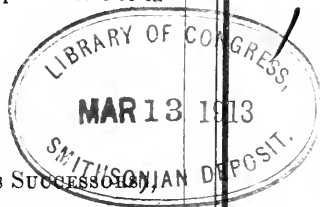
“J'engage donc tous à éviter dans leurs écrits toute personnalité, toute allusion dépassant les limites de la discussion la plus sincère et la plus courtoise.”—*Laboulbène*.

LONDON:

GURNEY & JACKSON (MR. VAN VOORST'S SUCCESSORS),
33, PATERNOSTER ROW, E.C.

SOLD IN GERMANY BY FRIEDLÄNDER UND SOHN, BERLIN.

NAPIER, PRINTER, SEYMOUR STREET, EUSTON SQUARE.



REDUCED PRICES FOR BACK VOLUMES.

FIRST SERIES.

This can only be obtained in complete Volumes (bound or unbound).

A limited number of sets, from Vol. x to Vol. xxv can still be obtained at £2 15s. per set net (in parts), or of five consecutive Vols. at £1 per set net (if bound, 1s. per Vol. extra).

Certain of the Vols. i to ix can be had separately at 10s. each.

SECOND SERIES.

Vols. i to xv. are now offered at £3 per set net (in parts), or £1 2s. 6d. for five consecutive Vols. (if bound, 1/- per Vol. extra).

Apply to the Publishers.

NOTE.—Subscriptions for 1913 (6s. per annum, post free) are now due, and should be paid to R. W. LLOYD, I. 5, Albany, Piccadilly, London, W.

It would be a great convenience to the Editors in keeping the accounts if these were paid promptly, as having to send reminders entails a considerable amount of extra work.

The Coloured Plates issued in September, 1909, January and September, 1910, and September, 1911, having been so much appreciated by our readers, a fifth (devoted to *Dermaptera*) was given with the October, 1911, number. The Editors would be greatly obliged if the Subscribers to this Magazine would use their best endeavours to bring it to the notice of their entomological friends, and induce them to subscribe also.

THE CANADIAN ENTOMOLOGIST.

A MONTHLY MAGAZINE DEVOTED TO THE STUDY OF SCIENTIFIC ENTOMOLOGY.

Volume 45 is now in course of publication. Back volumes can be supplied. It is the oldest established Magazine of the kind in America, and has a world-wide circulation. Subscription, \$1 per annum, which includes a copy of the Annual Report of the Entomological Society of Ontario to the Legislature. Editor, Dr. E. M. Walker, Biological Department, University of Toronto, Toronto, Canada.

Address: Entomological Society of Ontario, Guelph, Canada.

ENTOMOLOGICAL NEWS.

A forty-eight page illustrated magazine, issued monthly, except in August and September, devoted to the study of INSECT LIFE. It contains a resumé of the proceedings of a number of Entomological Societies, and also articles by the leading Entomologists in the United States and Canada. Valuable information for the beginner, the economic entomologist, and the systemist. TWO DOLLARS a year in advance. Single copies, 25 cents. Address—

ENTOMOLOGICAL NEWS,

The Academy of Natural Sciences,

1900 RACE STREET, PHILADELPHIA, PA.

- 53.—*Acræa lycoa fallax*, Rogenh. North Kikuyu, Kenia. This species cannot be distinguished on the wing from the commonest form of the preceding.
- 54.—*Acræa esebria*, Hew. Coast district, Taita, Taveta. Not uncommon.
- 55.—*Acræa ansorgei*, Gr. Smith. A single specimen from Limoru which has all the pale areas creamy white.
- 56.—*Planema quadricolor*, Rogenh. N. Kikuyu, Kenia. Generally rather rare, but I once saw several in Kenia Forest.
- 57.—*Planema montana*, Butl. Coast district, Taita, Taveta. Not uncommon.
- 58.—*Lachnoptera ayresi*, Trim. Coast district, Taveta, Nairobi. Not generally common, but males are sometimes abundant in Nairobi Forest.
- 59.—*Atella columbina*, Cram. The Coast district. It is so extremely like the next following species that it is often passed over and will probably be found elsewhere.
- 60.—*Atella phalantha*, Drury. Ubiquitous.
- 61.—*Brenthis hanningtoni*, Elwes. Very abundant on Kenia and Aberdare Mountains above 6,000 ft. It is the commonest butterfly in the bamboo jungle.
- 62.—*Hypanartia hippomene*, Hübn. Taita, South Kikuyu, North Kikuyu. Common above 5,000 ft.
- 63.—*Hypanartia schæneia*, Trim. South Kikuyu, North Kikuyu. Much less common than the preceding.
- 64.—*Pyrameis abyssinica*, Feld. South Kikuyu and North Kikuyu. Common.
- 65.—*Pyrameis cardui*, Linn. Ubiquitous.
- 66.—*Precis orithyia madagascariensis*, Guen. Common everywhere. Frequents open paths.
- 67.—*Precis clelia*, Cram. Ubiquitous.
- 68.—*Precis hierta cebrene*, Trim. Generally common, especially in dry places.
- 69.—*Precis westermanni*, Westw. South and North Kikuyu. Common. This species is more addicted to woodlands than the foregoing.
- 70.—*Precis sesamus*, Trim. North and South Kikuyu, Ukambani, above 4,000 ft. The wet form is generally prevalent except from June to September, but both may be seen flying together not unfrequently.
- 71.—*Precis antilope*, Feisth. Coast hills, Taita, Taveta. The dry form seems more prevalent than the wet form.
- 72.—*Precis aurorina*, Butl. Taita, North and South Kikuyu. Fairly common.
- 73.—*Precis archesia*, Cram. Common in North Kikuyu. The dry form is very rare.
- 74.—*Precis limnoria*, Klug. Rare in the Coast district, but common in Taita and Taveta. It also occurs in Ukambani. This form is probably conspecific with the preceding.
- 75.—*Precis elgiva*, Hew. Coast district, Taita, Taveta, North and South Kikuyu. Common.

- 76.—*Precis natalica*, Felder. Common and widely distributed.
- 77.—*Precis slygia*, Auriv. I have only met with this at Kijabe.
- 78.—*Catacroptera cloanthæ*, Cram. Widely distributed.
- 79.—*Salamis nebulosa*, Trim. Coast district, Taita, Taveta. Common.
- 80.—*Salamis parchassus*, Drury. Widely distributed. Common.
- 81.—*Salamis cacta*, Fabr. Coast hills, Taita. This species is by no means common in E. Africa.
- 82.—*Hypolimnas misippus*, Linn. Ubiquitous and abundant. Breeding experiments indicate that the type form and the *inaria* form bear a Mendelian relationship, the type form being dominant. The two forms are equally common.
- 83.—*Euralia deceptor*, Trim. This species is often quite common in the coast district. I have not met with it elsewhere.
- 84.—*Euralia dubius*, Pal. de Beauv. The form *wahlbergi*, Wallengr., is not uncommon in the Coast district and is also found in Taita, Taveta, and Ukambani. The form *nima*, Trim., is also found in Taita and Ukambani, but I have never seen it in the Coast district where its model (*Amauris albimaculata*) is absent. The two forms, though very different in appearance, have been proved by breeding to belong to one species.
- 85.—*Euralia usambara*, Ward. This fine species is only found in the Coast district and that but rarely.
- 86.—*Eurytela hiarbas*, Drury. With the exception of the Coast district this species is common everywhere where there is any bush.
- 87.—*Eurytela dryope*, Cram. Ubiquitous.
- 88.—*Neptidopsis ophione*, Cram. Generally common.
- 89.—*Neptidopsis fulgurata*, Boisd. By no means uncommon in the Coast district, where it to some extent replaces the preceding species.
- 90.—*Byblia ithyia*, Drury. Abundant everywhere on grass lands.
- 91.—*Crenis morantii*, Trim. North Kikuyu. Not common.
- 92.—*Crenis boisducali*, Wallengr. North Kikuyu. The most common of the genus.
- 93.—*Crenis natalensis*, Boisd. Coast hills, Kikuyu. Not common.
- 94.—*Cyrestis camillus*, Fabr. Though widely distributed this species is not generally common.
- 95.—*Neptis saclava*, Boisd. Generally abundant.
- 96.—*Neptis agatha*, Stoll. The most abundant of the genus. It varies considerably in size.
- 97.—*Neptis seeldrayersi*, Auriv. Coast district. Taveta. It is not easy to distinguish between this species and large specimens of the preceding, and it is liable to be overlooked.
- 98.—*Neptis trigonophora*, Butl. Coast district. Nairobi. This species also resembles *N. agatha* on the wing. It is much less common.

- 99.—*Neptis goochi*, Trim.—Coast district. Taveta. This species seems to intergrade towards *N. melicerta*. All these species of *Neptis* are very similar on the wing and have the same habits, so that it is easy to pass over the less common forms.
- 100.—*Neptis incongrua*, Butl. The tops of the higher Taita hills, Kinangop. Not uncommon. This species resembles *Eurytela hiarbas* when on the wing and the flight is very similar. On one occasion the two species were netted together as they circled round each other, and it was only after capture that they could be differentiated.
- 101.—*Neptis woodwardi*, Sharpe. North Kikuyu and Kinangop. Not generally common.
- 102.—*Pseudacræa lucretia expansa*, Butl. Coast district. Nairobi. Generally fairly abundant.
- 103.—*Pseudacræa trimeni*, Butl. Common in the Coast hills, but distinctly uncommon at Taveta.
- 104.—*Pseudacræa rogersi*, Trim. The types were taken at Shinba and Rabai. No other specimens have been met with. It is probably a local form of the W. Africa *Ps. eurytus*, Linn.
- 105.—*Aterica galenc*, Brown. The Coast hills. A common species in forest country.
- 106.—*Hamanumida dædalus*, Fabr. Generally distributed and often common. Usually found in more or less open country.
- 107.—*Euphædra cleus*, Drury. The Coast hills. This species seems rare and is only found in forests.
- 108.—*Euphædra neophron*, Hopff. The Coast hills. Taita, Taveta. This beautiful species is abundant and is not so confined to forest as most of the group. I have often seen it in my garden at Rabai.
- 109.—*Euryphene senegalensis*, Herr.-Schæff. The Coast district, Taveta. I have found this insect common in the Coast district. It is more particularly addicted to coco-nut plantations and gardens, and is seldom found in the real forest.
- 110.—*Euryphene chriemhilda*, Staud. The Coast hills. By no means uncommon in natural forest. It is hardly ever found flying with the preceding species.
- 111.—*Euryphura achlys*, Hopff. The Coast hills. This is also a forest species, and is often seen with *Euryphene chriemhilda*. It often frequents the gateways of native villages when these are in forest country.
- 112.—*Euptera kinugnana*, Smith. I have received one specimen of this rare species from Shimba, near Mombasa.
- 113.—*Harma* (n. sp.?) One female on the top of the Dabida hills in Taita.
- 114.—*Euxanthe wakefieldi*, Ward. Coast district. Taita, Taveta. By no means uncommon in woodlands.

- 115.—*Euxanthe tiberius*, Smith. Coast hills. This species is never common and is extremely local. It is found only in dense forest. It is a magnificent insect. It generally settles on saplings under the shade of large trees, and its flight is rather slow as a rule.
- 116.—*Charaxes brutus*, Cram. Generally distributed.
- 117.—*Charaxes castor*, Cram. Coast district. Taita, Taveta. Not uncommon. The larva feeds on *Azelia camuensis*, which is known to the Swahilis as Bambakofi. The head has four divergent horns and is green, with the horns tipped with red, the outer ones with a yellow stripe on the outside. The body is green with a yellow spiracular stripe and is covered with small yellow tubercles. It has a round greenish-yellow spot with a black centre on the seventh segment, and a similar more irregular spot on the ninth segment, the latter being sometimes obsolete. The pupa is bluish-green with white markings. The egg is spherical with the top slightly concave; it is yellow with a dark brown ring round the top.
- 118.—*Charaxes saturnus*, Butl. Coast district. Taita, Taveta. Not uncommon in some years. The larva is similar to that of *Ch. castor*, but has a smoother appearance, and the large dorsal spots have the centre bluish-green instead of black. The pupa has the white markings much less developed.
- 119.—*Charaxes hansali*, Feld. Taita. Ukambani. I have only taken a few of this rare species.
- 120.—*Charaxes pollux*, Cram. Taita. N Kikuyu. Not uncommon. The larva is green with a small round rufous spot on the back of the seventh segment, and the tips of the horns are bluish.
- 121.—*Charaxes tavetensis*, Rothschild and Jordan. I have only obtained a single specimen of this rare form which was reared from a larva found at Jilore on the same kind of tree as that of *Ch. castor*. The larva is green with an indistinct triangular mark on the seventh segment, the apex pointing towards the tail. The pupa is dark green with broad bright yellow spots and bands.
- 122.—*Charaxes boueti lasti*, Smith. I have only taken this species in the Coast district, where I have found it fairly common. It is not quite so active as most species of the genus, and females are not so scarce as in some species, e.g., *Ch. etheocles*.
- 123.—*Charaxes azota*, Hew. Coast hills. Taveta. This fine species is rather uncommon. The larva is of the usual *Charaxes* shape. The colour is green, the head being bordered with brown. It has an orange spiracular stripe, the tubercles being more orange and the green of the body has a somewhat mottled appearance which changes before pupation into dull yellow, with a row of large lateral ill-defined brown spots. The dorsal spot on the seventh segment is large and triangular with the apex pointing backward. It is orange brown. The pupa is pinkish with chocolate brown markings.

- 124.—*Charaxes baumanni*, Rogenh. Taita, Taveta. Not generally common.
- 125.—*Charaxes etheocles*, Cram. Taita, Taveta. The males are fairly common, but the females are rare. At Taveta, where it frequented stunted trees growing on the top of a low hill, I obtained a good many. The only female form which I have taken is that known as *kiriki*.
- 126.—*Charaxes guderiana*, Duv. The Coast district. Generally found in forest where it flies high, and is not easily taken.
- 127.—*Charaxes ethalion*, Boisd. Coast hills. Taita, Taveta. The males are less common than those of *Ch. etheocles*, but not rare.
- 128.—*Charaxes violetta*, Smith. Coast district. Taveta. This species appears to be rather rare.
- 129.—*Charaxes cithæron*, Feld. Generally distributed and not uncommon in forest country. The females are found as commonly as the males. In common with all species of the genus they are not easy to capture.
- 130.—*Charaxes bohémami*, Feld. The Coast district. I have only secured two males of this species. This must be near the Northern limit of its range.
- 131.—*Charaxes pylhodoris*, Hew. The Coast hills. I have only found it in forest country.
- 132.—*Charaxes jahluca*, Trim.—The Coast hills. Taita, Taveta. Not generally common.
- 133.—*Charaxes candiope*, Godart. Generally distributed and commoner than most species of the genus.
- 134.—*Charaxes varanes*, Cram. Generally common.
- 135.—*Charaxes zoolina*, Doubl. and Hew. Widely distributed. Both the *zoolina* and the *manthes* forms occur. The former was particularly abundant in Taita and Taveta in 1905.
- 136.—*Charaxes cupaie*, Drury. A single specimen at about 6000 ft. on the S.W. of Kenia. It seems very rare to the East of the Rift Valley.
- 137.—*Libythea laius*, Butl. The Coast district. This species is very uncertain in its appearance, and sometimes is not seen for years. I have already recorded its capture on migration.
- 138.—*Alæna picata*, Sharpe. Coast hills. I have found the species rare. The female is like a small *Neptis*, and the male bears a general resemblance to a small *Acraea*.
- 139.—*Telipna rogersi*, Druce. Coast hills. A very local butterfly, sometimes fairly common where it is found.
- 140.—*Pentila amenaida*, Hew. The Coast district. This common species is very variable, and the number and size of the black spots is very inconstant.
- 141.—*Pentila peucetia*, Hew. Coast hills, Taita, Ukambani. I have taken this in some numbers. It is always found in woodlands.

(To be continued.)

BRADYCELLUS DISTINCTUS, DEJ., IN ENGLAND.

BY D. SHARP, M.A., F.R.S.

Last year Dr. Joy pointed out (Ent. Mo. Mag., p. 257) that the specimens supposed to be *Bradycellus distinctus* in our collections are not that species, but a new one, which he named *B. sharpi*.

I have now the pleasure of recording the occurrence of the true *B. distinctus*, Dej., near Bournemouth, where I met with three specimens last summer. It is a very easily distinguished species, having a great deal of punctuation on the thorax, and well-marked hind angles of that part; it has no pore on the third interstice of the wing-case and has ample wings. It is the largest of our species, slightly exceeding *B. sharpi* in this respect.

Brockenhurst:

February 18th, 1913.

LARVÆ OF CYPHONIDÆ (COLEOPT.) IN BROMELIACEÆ.

BY FREDERICK KNAB.

In the January number of the Entomologist's Monthly Magazine (page 2), Mr. Champion discusses the Cyphonid larvæ occurring in water held by the leaf-bases of *Bromeliaceæ*.* On two visits to the American Tropics the writer investigated *Bromeliaceæ* in quest of mosquito larvæ. It soon became evident that, besides the Culicid larvæ, which were almost invariably present, the Bromeliads harboured a rich insect fauna. This is made up of three elements: those living directly upon the plant itself (as certain boring Lepidopterous and Coleopterous larvæ), those living among the plant-rubbish lodged between the leaves, and finally the aquatic forms living in the water at the leaf-bases. Among the aquatic forms the characteristic larvæ of *Cyphonidæ*, with their long and slender multi-annulate antennæ, were conspicuous objects. Cyphonid larvæ were found to be frequent also in the water in holes of trees, such as are the habitat of certain mosquito larvæ.

In my earlier collecting in eastern North America (Massachusetts), larvæ of *Cyphonidæ* were long familiar to me. They occurred frequently in woodland pools with abundant plant *débris*, and later, when I began to investigate mosquitoes, they also turned up in water in holes of trees, and finally, in wooded situations, in rain-barrels. The larvæ in the tree-holes and rain-barrels were often larger than any

* The Costa Rican *Scirtes* mentioned by me, and its larva, has been described by M. Picado under the name *S. championi*. (Cf. Bull. Soc. Zool. France, xxxvii, pp. 315-319 (Jan. 31st, 1913).—G. C. C.

I found in ground-pools and they appeared to differ in other respects, so that I gained the impression that they belonged to other species and possibly to other genera. They seemed to be of very slow growth and none were reared.

Are the larvæ in tree-holes distinct from those in ground-pools, and those in Bromeliads distinct from the ones in the tree-holes? I believe that at least those inhabiting the Bromeliads are distinct, but, in the absence of exact knowledge of the generic and specific characters of Cyphonid larvæ, rearings alone can settle this question. My belief, in the meantime, gains some support from the fact that the *Diptera* breeding in the Bromeliads have been found to be, almost without exception, confined to this habitat.

Should the Bromeliadiculous *Cyphonidæ* prove distinct, specifically or generically, a description of one of these forms, which appears to have been lost sight of, becomes important. The insect was reared from Bromeliads by Friedenreich in the province of Santa Catharina, Brazil. His account of it appeared in 1883, and he described the form as a new aberrant genus of *Halticinæ*, *Pentameria bromeliarum*, evidently having been misled as to its systematic position by the saltatorial hind legs.*

The description of the beetle and of its larva leaves no room for doubt that Friedenreich had before him one of the saltatory *Cyphonidæ*.

U. S. Bureau of Entomology,
Washington, D.C.:

February, 1913.

COLEOPTERA IN ORCHIDS.

BY G. C. CHAMPION, F.Z.S.

In the February No. of this Magazine (*ante*, p. 33) the capture of a weevil, *Acythopeus aterrimus*, in the orchid house at Kew, &c., was recorded. Two other orchid beetles have now come under my notice. One of them, a *Mordellistena*, has recently been sent in some numbers to the British Museum, by Prof. R. Newstead, of Liverpool, and Prof. R. S. MacDougall, of Edinburgh, for identification. These specimens were all obtained from a species of *Cattleya*, a genus of orchids peculiar to the warmer parts of America. Mr. Newstead's examples are labelled as having been bred from leaves of a *Cattleya*, December, 1912, from an orchid house at Groombridge, near Tunbridge

* Friedenreich, C. W. *Pentameria bromeliarum*, eine pentamere Halticidæ. Ent. Zeitung, Stettin, Vol. xlv, pp. 140-144. 1883.

Wells; those forwarded by Mr. MacDougall, also bred from a *Cattleya*, are believed to have been imported in Venezuelan plants. A description of the beetle is appended below, and the last-named entomologist informs me that he intends shortly to describe and figure its larva and pupa.

The other insect mentioned is the pupa of a Longicorn found in a freshly imported plant of *Dendrobium wardianum* in Dr. Godman's orchid-house at Horsham. This beetle can be safely identified as *Diaxenes dendrobii*, Gahan, a species known to attack the pseudo-bulbs of *Dendrobium nobile*, an orchid inhabiting Burma and India.

MORDELLISTENA CATTLEYANA, n. sp.

Moderately elongate, narrow, shining, closely minutely punctate, finely pubescent; testaceous, the elytra with two transverse fuscous fasciae (one before the middle, the other towards the apex, the anterior one sometimes interrupted at the suture), the eyes, and the minute spines at the apex of the posterior tibia, and of each posterior tarsal joint, as well as those forming the oblique ridges, black; the wings smoky black in their outer half (as seen folded). Antennae slender, joints 3 and 4 short, together not longer than 5; 5—10 elongate, shorter in ♀, equal, 11 slightly longer than 10; terminal joint of the maxillary palpi elongate-triangular, similar in the two sexes, moderately stout, first joint of the posterior tarsi with two, and the second joint with one, and the posterior tibiae with three, oblique rows of minute spines, the first row on the tibiae extending nearly across their outer face; pygidium very long and slender; penis-sheath of ♂ drawn out into a narrow point at tip. Length (excluding pygid.) 2—2 $\frac{1}{10}$ mm. (♂ ♀)

Hab.: ? VENEZUELA (*Mus. Brit.*).

The above description has been drawn up from twelve specimens, one of which (a ♂) is mounted in Canada-balsam. *M. cattleyana* is easily recognizable by its testaceous general coloration, the fusco-bifasciate elytra, the blackish wings, the very short third and fourth joints of the antennae, and the number and position of the oblique ridge-like rows of minute black spines on the posterior tibiae and tarsi. The Mexican *M. xanthopyga* and *M. annulipyga*, both figured by me in the "Biol. Centr.-Am.," in 1891, are allied forms. The anterior tibiae are not elongated in the male, and the sexual differences are slight.

Horsell, Woking:

February, 1913.

THREE NEW SPECIES OF *ATHETA*.

BY NORMAN H. JOY, M.R.C.S., F.E.S.

Most students of the genus *Atheta* must have been puzzled over the apparent variability of *A. melanocera*, Th. (*volans*, Scrib.), and have suspected that more than one species was really included under this name. I have now examined the ♂ genitalia of a large number of specimens of this species, and have found four distinct forms of ædeagus. There is little doubt as to which of these species the name *melanocera* applies. In Thomson's original description the legs are described as being fusco-testaceous in colour with darker posterior femora, and in only one of the species are the legs so coloured. To save confusion I still regard *halophila*, Th., and *volans*, Scrib., as synonyms of *melanocera*, and describe the other three forms as new to science. The ♂ of all four species may be recognised from the ♀ by the broader and more rounded under plate of the sixth free segment of the hind body, the upper plate in both sexes being simply rounded. In the ♂ of *A. elongatula*, Grav., the under plate projects further beyond the upper plate, the hind margin of which is slightly sinuate in the middle in both sexes. The ædeagus in the four species under review is a comparatively large organ. In *A. elongatula* the ♂ genitalia are of an entirely different structure, the median lobe being very small. As will be seen from the following descriptions there are external characters which will help in the identification of the species. These are generally only comparative differences, but they are distinct enough, at any rate in fresh examples. Very old specimens become much faded so that the colour of the legs cannot be relied upon. There appears to be no difference in punctuation or the shape of the antennæ. I have thought it best to give a rather detailed description of *A. melanocera*, so that the comparative differences in the other species will be more comprehensible.

A. MELANOCERA, Th.

Black, elytra sometimes pitchy brown, apex of sixth free segment of hind body sometimes yellowish, antennæ black, first two joints pitchy, legs fuscous yellow, femora slightly darker; fore-parts rather dull, finely but distinctly shagreened; head much narrower than elytra; antennæ with fourth and fifth joints elongate, penultimate joints quadrate or slightly transverse; thorax slightly narrower than elytra, rather strongly transverse, broadest close to anterior angles and very slightly contracted behind; elytra $1\frac{1}{3}$ times longer than thorax; basal segments of hind body rather closely, apical segments diffusely, punctured; median lobe of ædeagus with two right-angled bends and pointed at the apex (Fig. 1). Length 3—3.5 mm.

Not common in the south of England, but very common in Scotland. This species may be recognised from its allies by its smaller head and darker legs.

A. TOMLINI, sp. nov.

Smaller and lighter in colour than *A. melanocera*, first joint of antennæ and legs light yellow; head larger than in *melanocera*; thorax rather strongly transverse, slightly narrower than clytra, and slightly contracted behind; median lobe of aedeagus with a single bend, the terminal portion long and not thickened towards apex (Fig. 2). Length 2.4—2.8 mm.

Common in the south of England.

A. MALLEUS, sp. nov.

Very like *A. tomlini*, but on the average larger; thorax slightly narrower in proportion to clytra, and slightly less contracted behind than in *A. tomlini* and *A. melanocera*; median lobe of aedeagus with a single bend, the terminal portion short and distinctly dilated at the apex (Fig. 3). Length 2.6—3.2 mm.

England and Ireland, probably common. In fresh specimens the legs appear to be of not quite such a light yellow as in *A. tomlini*.

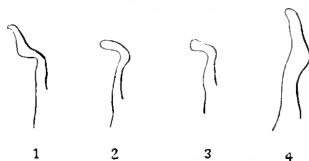
A. OBTUSANGULA, sp. nov.

As a rule rather lighter than *A. melanocera*; head larger; thorax only slightly transverse and more contracted behind; legs clear yellow; median lobe of aedeagus only slightly bent and larger and broader than in any of its allies (Fig. 4). Length 3—3.5 mm.

This species is extremely like *A. elongatula*. Apart from the characters of the sixth free segment of the hind body it may be distinguished from the latter by its slightly narrower head, and by having the thorax a little more contracted behind. All the four members of this group differ from *A. elongatula* by having the antennæ distinctly less thickened towards the apex and the penultimate joints more contracted towards the base of each, a character given by Fowler (Col. Brit. Islands, Vol. II, p. 78) under *A. volans*.

South of England, rare.

I must thank Messrs. Champion, Donisthorpe and Tomlin for kindly allowing me to dissect many specimens in their collections.



- | | |
|----|---|
| 1. | Apical portion of median lobe of aedeagus in <i>Atheta melanocera</i> . |
| 2. | " " " " " " <i>tomlini</i> . |
| 3. | " " " " " " <i>malleus</i> . |
| 4. | " " " " " " <i>obtusangula</i> . |

Bradfield, Berks :

January, 1913.

THE WINGLESS GEOMETER.

BY JOHN H. WOOD, M.B.

It is a remarkable circumstance when we come to think of it that all the winter Geometers, without exception, have wingless females; but it is almost equally so that in so large a Division as the *Geometrina* there is not, so far as I know,* a single British species that hibernates in the perfect state. When we turn to the other great Divisions, we find that in most of them there are hibernators. Even among our small number of *Rhopalocera* there are several that do so; quite a number in the *Noctuina*, and the same also in the "Micros," both *Tortricina* and *Tinea*. There must then be something peculiar either in the constitution or the structure of the Geometer to account for the fact that none of them hibernate. This something I think we can find in the structure of the wing. These organs are very large for the size of the insect; they are also by comparison very weak and flimsy, and they are, besides, disposed at rest in a very open and exposed manner. On the other hand, in two of the great Divisions mentioned above, the structure of the wing is stronger, the size less ample, and at rest they are carried close to the body. In the other great Division, the *Rhopalocera*, the wings, though ample, are reduced to half their size by meeting over the back when the insect is at rest, and at the same time in this position each supports and strengthens the other. Hence these insects can creep into small chinks and cavities, or shelter among leaves and rubbish without risk to the wings, organs of such importance when the awakening season arrives. But the case is very different with the Geometers. Small chinks and crannies are not available for them with their ample wings, whilst should they seek shelter among dry leaves or rubbish, these tender organs would get sadly frayed and tattered.

The same difficulty, to a large extent, must meet the winter Geometer. Its wings are an incumbrance and an impediment. There are no leaves under which the insect can take shelter, and the tree trunks, common resting places in the summer, deprived of their leafy covering become in a rainy time watercourses, collecting on all sides the streams running down from the boughs. And so it has come about, in the interest of the species, that the female who has to live considerably longer than the male, and never goes in search of him, but he of her, loses her wings, whilst her mate retains them in full perfection. Probably all of us who have given any thought to the matter have come to much the same conclusion.

* Except *Triphosa dubitata*, *Cidarvis miata*, and *C. psittacata*.—J. J. W.

But the question arises: How has this been brought about? Now there is a well known law that when an organ is not used, in time it degenerates and is eventually lost. And just as there are amongst ourselves the restless, roving individuals—the great mass in these days of the race, and the quiet stays-at-home, so is it much the same in the insect world. There are the active species that love getting on the wing, and there are the sedentary stays-at-home which never stir far from the spot where they saw the light. And here, I may observe in passing, that this latter quality or instinct is, I believe, one of the chief causes of the rarity or localness of those insects which the collector delights to go in search of.

Let me give the most striking instance that I know of, of this stay-at-home habit. Many years ago the late Mr. Machin captured in the London district a few specimens of *Coleophora inulæ*, an insect which had never before been taken in this country. Although he visited the spot in subsequent years, he never again succeeded in meeting with it, and the insect remained unrecorded, until I turned it up here in Herefordshire. I found it occupying a corner, scarcely larger than the table I am writing at, of a small drained pond. Here I continued to find it for upwards of 14 or 15 years, and might be doing so still, had not the pond been once more dammed up for the exigencies of hop washing. Outside this tiny locality I never succeeded in finding it, although the food plant, *Inula dysenterica*, is very common in the district, and even grew in plenty within 50 yards of the insect's home. We must therefore recognise the stay-at-home instinct as a very potent feature in some insects.

Sometimes it seems forced upon them by the conditions under which they live. And for an example let me turn to the *Diptera*. In the *Phoridae*, a family I have given some attention to lately, are certain species (unfortunately we do not appear to have any of them in this country) which inhabit ants' and white ants' nests. The males are scarcely known, and the only one that is has functional wings; but the females have lost theirs, either completely or nearly so. In the narrow passages of the ant's nest wings could not be used, and as the nests are usually of a very permanent nature, the female insect, with lodging for herself and food for her offspring all round her, is under no temptation to leave and fly abroad in search of other quarters. A still more interesting instance, because it shows the steps of the process, is given by the new species *Philygria semialata*, described and illustrated by Mr. Collin in the January number of the

"Entomologist," from examples captured by Mr. J. Collins outside sand-martin's nests. Here the process has not advanced very far. The wings are reduced and their venation simplified, more so in the female than in the male, so that her power of flight must be very poor; and probably after impregnation she creeps back into the martin's burrow. Again, a male *Limosina* has recently been found in an ant's nest with wings so short as to be practically functionless. The larvæ of this genus are scavengers, and live in and on any kind of refuse or decaying organic matter. *Elachyptera brevipennis* is another Dipteron in which the wings are greatly reduced in both sexes and quite unfitted for flight. Its life history is not known, but I have only met with it by sweeping the dense beds of *Carex paludosa*. These beds never change from year to year, and many of them must be able to boast of an antiquity reaching back into a dim past. In conditions like these the stay-at-home instinct has full scope for acting, and has been, I would suggest, the primary cause in producing the degeneration of the wings in the male and female alike.

But to return to the apterous Geometer. The starting point in her case I believe to be this stay-at-home instinct and an utter indisposition to use her wings under any circumstances. Nor would this be in any way prejudicial to the welfare of her family. These insects are all of them tree-feeders. And trees live to a great age, so that one of them would afford a home almost as permanent as the ants' nest is for the Phorid, and at the same time provide a supply of food as abundant and as ready to hand as that supplied to the Dipteron. Probably in those early days before the wings had begun to degenerate, and the difficulties of finding shelter were great, the species were rare instead of being as at present the bane of the horticulturist. In the same way I would attribute the loss of wings in the Psychids and other *Lepidoptera* to a great and natural indisposition to fly, which in their case as in the Geometers would not be counterbalanced but rather enhanced by the food conditions.

My argument then is, that the wingless condition, wherever it shows itself, is owing to an overpowering dislike on the part of the insect to use its wings, no matter what may be the provocation.

Tarrington, Ledbury :

February 1st, 1913.

ON AN OVERLOOKED NEW SPECIES OF *HALICTUS* IN BRITAIN.

BY R. C. L. PERKINS, D.Sc., M.A., F.Z.S.

As long ago as 1886 I was aware of the fact that we had two forms standing under the name of *H. quadrinotatus*, Kirby, these forms differing slightly in superficial characters. Both were sent at that time to Edward Saunders, but he did not attribute any importance to the characters exhibited. Recently, on my return to England, I again observed both forms in company at Dawlish, and felt satisfied that we had to deal with two distinct species, and the examination of the male genitalia proves this opinion to have been correct.

In general appearance and structure the two species are practically identical so far as I can see, excepting that in the one the nervure bordering the stigma beneath is conspicuously dark, in the other pallid and nearly concolorous with the stigma itself. Kirby's few type specimens contain both forms under the same number, and his description would practically apply to either, but on account of the slightly more pallid neuration of the form with the pale stigmatic vein I am inclined to take this as *quadrinotatus*, Kirby. His remark on the neuration is: "*nervis costali interiori nigro excepto testaceis.*" For the form with the lower margin of the stigma dark I should propose the name *H. decipiens*.

H. decipiens, sp. nov.

Stigma in both sexes with dark lower margin.

♂ with the lacinia of the genital armature overhung by a dense clothing of long hairs.

♀ with the apical margin of the first abdominal segment generally less densely and evenly punctured.

H. quadrinotatus, Kirby.

Stigma in both sexes concolorous or nearly so throughout.

♂ with the lacinia of the genital armature with a fringe, and not concealed beneath long hairs, the apical portion of the stipites glabrous.

♀ with the apical margin of the first abdominal segment very densely punctured, contrasting strongly with the discal puncturation.

The figure of the genital armature in Saunders' "Synopsis" was, no doubt, taken from the species here considered as true *H. 4-notatus*, Kirby. Apart from their length and density, the hairs of the armature of *H. decipiens* under high powers of the microscope are of remarkable structure. In fig. 1 the magnification used was not sufficient to show the minute structure of the hairs. Owing to the strong curvature downwards of the apical portion of the armature the appearance of the

parts changes considerably in slightly different aspects, and with the magnification used it was not possible for all the hairy covering in *H. decipiens* to be in focus at the same time. In fig. 1 (*H. decipiens*) and in fig. 2 (*H. A-notatus*) the lacinia and apex of the left stipes are shown in similar dorsal position. In order to see the lacinia of *H. decipiens* clearly beneath the dense hairs the armature was mounted in balsam.



Both these species are widely distributed in England and perhaps equally common. Mr. A. H. Hamm has, I think, found them equally common at Oxford, and they occur together in Devonshire and in Norfolk and Suffolk. Mr. Hamm extracted the genital armature in many Oxford specimens, and as might have been expected the distinctive characters show no variation, and are quite the same as in my examples from Dawlish.

Park Hill House, Paignton:
January 28th, 1913.

An introduced West African Longicorn, Cordylomera suturalis, Chev.—Mr. G. E. Frisby, of Gravesend, recently brought me for identification a specimen of this handsome species, found by a cabinet-maker in a piece of so-called mahogany on which he was working. *Cordylomera suturalis* is a narrow, elongate, black insect, with the suture of the elytra of a rich purple colour and the rest of their surface brilliant metallic green. Mr. Gahan informs me that this is not the first time he has seen an introduced example of this West African Longicorn, of which there is a good series in the British Museum.—G. C. CHAMPION, Horsell, Woking: February 13th, 1913.

Apterous or semi-apterous females of certain Lepidoptera.—Neither Mr. Hudson nor Dr. Chapman, in their interesting papers on this subject (*Ent. Mo. Mag.*, November and December, 1912, and January, 1913) appear to have any suspicion that the method of distribution of these insects is largely by conveyance of the females by the males when paired. But that such is the case I have for very many years had little doubt. When one finds isolated bushes in the middle of a common, fifty or a hundred or more yards away from the nearest tree in the bordering wood (I have several such spots in my mind as I write),

which I think in my experience are at the end of May and beginning of June, as full, or even more full of larvae of the *Hybernia*s, *Cheimatobias*, &c., as any of the trees in the wood, it seems impossible that they could have got there in any other way. It certainly could not have been done by scent, as larvae from the trees in the wood would not pupate many yards from where they had fed, and if there were any scent at all for the moth on emergence, it would clearly be much stronger from the many near trees than from the isolated bush in the distance. I admit that I have no remembrance of ever having captured on the wing a male carrying an apterous or semi-apterous female, but it is comparatively rarely that the *Hyberniidæ* and allied moths are captured on the wing at all at night, it being so much easier to collect them with the aid of a lamp as they sit on the trees and bushes after dark. But we have all seen *Pieridæ* flying paired for long distances, and the smaller butterflies on shorter flights among their food-plants. I think, too, that I have often seen day-flying Geometers, such as *Pidonia atomaria*, flying in the same way; and to net *Coleoptera*, *Neuroptera*, *Hymenoptera*, and *Diptera* paired are common occurrences. On such flights evidently the wings of only one of the specimens are used, and granting that they may usually be those of the female, there is no reason to suppose that in cases where the females are apterous the males would not use their wings with equal facility. The only British species of apterous females I remember which would probably be too heavy for their males to carry are the *Orgyias*, and they, along with the species of *Psyche*, we know do not even leave their cocoons to deposit their eggs; but the males of all the species of *Hybernia*, *Anisopteryx*, *Cheimatobia*, *Phigalia*, *Nyssia*, *Lemnatophila*, *Exapatæ*, *Diurna*, &c., with their ample wings, would have no difficulty when paired in carrying their females for considerable distances, and leaving them on young or new trees on fresh ground.—GEO. T. PORRITT, Elm Lea, Dalton, Huddersfield: *February 5th*, 1913.

A note on the emergence of Phlorodes crenana, Hb.—As this species seems to be rare everywhere in the United Kingdom it may be worth while to record the breeding of two specimens on August 20th and 23rd, 1912, from larvae collected in June on willow near Elterwater, Westmorland. Barrett ("Lep. British Islands," vol. XI, p. 100) gives March and April as dates, and says that "abroad there are said to be later emergences in July, August, and September." As last season was certainly not a fine or warm one, I think it probable the insect is also regularly double-brooded in England. I may add the specimens were submitted to Mr. A. C. Vine for identification.—JAS. W. CORDER, 1, Ashbrook Terrace, Sunderland: *January 21st*, 1913.

Wasp attacking Peacock butterfly.—With reference to Mr. Croft's note on p. 13 (not p. 111 as in Index) of last year's volume of this Magazine, it may be worth recording that on October 13th I saw a specimen of *Vanessa io* flopping about helplessly on the lawn. Thinking it might have been seized by a spider I hastened to catch it. As I did so a wasp detached itself and flew away. The butterfly also flew away apparently uninjured.—F. JENKINSON, Cambridge: *January 17th*, 1913.

Opomyza lineatopunctata, v. Ros., at Crowborough.—In previous years I have taken a few odd specimens of this neat little insect, but I could never discover how to get more. Last summer I was more successful. On seven evenings between July 20th and August 9th I secured fifty specimens. All were taken after 7 o'clock by sweeping among a grass which Mr. C. E. Moss, Curator of the Herbarium at Cambridge, determined from a poor specimen as *Molinia cærulea* (probably) var. *major*. *Pipunculus maculatus* occurred at the same time, and a few specimens of *Scellus notatus*. There is no reason to suppose that they might not have been caught even later than 7.45, but it then became too dark to see them. Their appearance and movements in the net are very peculiar. They crawl up very deliberately after most other insects have run or flown away. In this respect they are quite unlike *O. germinationis* and *O. florum*, which are at least moderately active. The outline, when the wings are folded, is very narrow, and there is a certain darkening about the thorax and the tips of the wings, which gives the insect (in the dim light) rather the appearance of an attenuated dumb-bell. I should add that most of my specimens proved to be females; so that it would be advisable to look out for the insect somewhat earlier in the season.—F. JENKINSON: *January 17th, 1913.*

Hæmatopota italica, Mg., in Cornwall.—As little is known regarding the distribution of *H. italica* in the British Isles, its occurrence in Cornwall appears worthy of notice, more particularly as these captures extend the range of the species far to the westward of all previous records. Two female specimens were taken in Sheviock Wood close down to the tidal waters of the River Lynher, on September 4th and 9th, of this year; the only other *Hæmatopota* met with this year near Sheviock was a single female of *H. pluvialis* caught on September 13th, on the shoulder of a cart-horse drawing a load of road metal along the road between Craffhole and St. Germans.—J. W. YERBURY, Army and Navy Club, Pall Mall: *February 13th, 1913.*

Reviews.

“PSYLLIDARUM CATALOGUS,” by DR. G. AULMANN: pp. 92. Berlin: W. Junk. 1913.

Dr. Aulmann's Catalogue of the Psyllidæ (= Psyllina, Edwards, and Chermidæ, Kirkaldy), an obscure and little studied section of the Hemiptera-Homoptera, will be welcomed by all Entomologists interested in the family. The food-plants, &c., moreover, are given, as was done in Kirkaldy's Catalogue of the Cimiciniæ (1909), this information greatly increasing the value of such lists. For the whole world 478 species of Psyllidæ (137 of which belong to *Psylla* and 120 to *Trioza*) are enumerated, under six sub-families, four of which are represented in Britain. The known forms are nearly all from the Palæarctic or Nearctic regions, and it is evident that a great deal remains to be done amongst the tropical Psyllids. To judge from the long list of references under some of the common European forms, such as *Livia juncorum*, Latr., there is an extensive literature on some of them. Oshanin (1912) gives 250 species as Palæarctic and Edwards (1896) 50 as British.

"BRITISH BUTTERFLIES," by A. M. STEWART ("Peeps at Nature" series). With 16 plates, 8 coloured. London: Adam and Charles Black. 1912.

"HOW TO USE THE MICROSCOPE: A GUIDE FOR THE NOVICE." By the Rev. CHAS. A. HALL. With 20 plates. London: A. and C. Black. 1912.

The outstanding feature of the first-named little book is the excellence of the illustrations, especially when the low price at which it is issued is taken into account. Practically every British butterfly (including the immigrant *Anosia archippus*) is figured on seven plates by the three-colour process on a slightly reduced scale direct from the insects themselves; a life-like group of the transformations of *Vanessa urtica* appears on the cover, and a selected series of undersides is shown in two half-tone plates. We have no hesitation in saying that in point of clearness and brilliancy these coloured figures are the best of the kind that we have seen, and species so difficult to deal with adequately by this process as the "Blues" (in particular *Agriades corydon*), and even that crucial test of colour-work *Gonepteryx rhamni*, are here presented with life-like fidelity. The only figures to which exception may be taken are those of *Apatura iris* and *Limenitis sibylla*, in both of which the red block is rather too much in evidence. The notes on each species are brief, but well and clearly written, as are also the hints on the capture and preservation of butterflies and their larvæ; while those on "home-made" apparatus will be found useful by many. Altogether the book may be strongly recommended to the incipient Lepidopterist as a very useful introduction to the knowledge of our native butterflies.

The second work, though not so directly concerned with our science, is equally well written and got up, and the excellent half-tone plates include several well-known entomological objects for the microscope.

Societies.

LANCASHIRE AND CHESHIRE ENTOMOLOGICAL SOCIETY: The Annual Meeting of the Society was held at the Royal Institution, Colquhoun Street, Liverpool, on Monday, December 16th, 1913.—Dr. P. F. TINNE, Vice-President, in the Chair.

Mr. Charles Percy Rimmer, Liverpool, was elected a Member of the Society.

The following Members were elected Officers and Council of the Society for 1913:—*President*: F. N. Pierce, F.E.S.; *Vice-Presidents*: R. Wilding, Wm. Webster, Hugh Main, B.Sc., F.E.S.; *Treasurer*: J. Cotton; *Librarian*: F. N. Pierce; *Hon. Secretary*: Wm. Mansbridge, F.E.S.; *Council*: C. B. Williams, R. T. Cassall, F.E.S., L. West, H. S. Leigh, F.E.S., A. E. Gibbs, F.L.S., F.E.S., A. W. Boyd, M.A., F.E.S., C. E. Stott, P. F. Tinne, M.A.

The Vice-Presidential address by Mr. Claude Morley, F.E.S., entitled "Ichneumonids," was read, and a vote of thanks to the author was unanimously carried. The following exhibits were made, viz.:—Mr. F. N. Pierce, *Dianthocia latea*, *D. barrettii*, and *D. argillacea*; Mr. Rimmer, a small collection of *Macro-an?* *Micro-Lepidoptera*, including *Polyommatus phleas* var. *schmidlii*, a specimen from Anglesey, and a specimen of *Amphipyra pyramidea* from Carnarvon.—Wm. MANSBRIDGE, *Hon. Secretary*.

THE SOUTH LONDON ENTOMOLOGICAL AND NATURAL HISTORY SOCIETY :
 Thursday, December 12th, 1912.—Mr. A. E. TONGE, F.E.S., President, in the Chair.

Mr. Ashdown exhibited a collection of over 100 species of attractive *Coleoptera* obtained by him in Switzerland in June and July, 1911 and 1912, including *Cerambyx cerdo*, *C. scopoli*, *Saperda scalaris*, *Trichius fasciatus*, etc. Mr. Tonge, very dark *Noctua xanthographa* from Deal at sugar, and a bred series of *Cirrhia citrugo* from Dorking. Mr. South, for Rev. W. Claxton, a series of *Tortrix pronubana* bred from Bournemouth, among which was a specimen identical with the *ambustana* of Hübner, the only one of the form reared; and a form of *Olethreutes ochroleucana* from near Romford with the apical third of fore-wing greyish, enclosing dusky cloud-like markings almost parallel with the termen. Mr. Kaye, three Syntomid moths, *Oreynia calcarata* from Caracas, mimicking a wasp; *O. tarsalis* from British Guiana, mimicking a fossorial wasp; and *Trichura cerberus* ♂ with long anal projection, mimicking a ♀ Ichneumon with long ovipositor; the resemblances were most pronounced. Mr. Grosvenor, series of *Melitæa aurinia* from more than a dozen British localities to show the geographical variation. Mr. Hy. J. Turner, a series of undersides of *Argynnis adippe* to show the variation obtainable on the continent, including ab. *elcodora*, var. *chlorodippe*, var. *elcodippe* (the last two Spanish), ab. *bajuarica*, ab. *ornatissima*, var. *norwegica*, etc. Mr. Newman, very varied forms of *Agrotis cursoria* from Shetland. Mr. Main, larvæ of *Clythra quadripunctata* in their cases of excrement, taken by Mr. Donisthorpe from a nest of the ant *Formica rufa*.—HY. J. TURNER, *Hon. Secretary*.

Thursday, January 9th, 1913.—The President in the Chair.

Mr. F. H. Stallman, of Dulwich, was elected a Member.

Mr. R. Adkin exhibited three specimens of *Papilio machaon* reared from Norfolk larvæ, having the whole of the lunules on the outer margin of the hind wings more or less strongly orange. Mr. Newman, a living ♀ *Selenia bilunaria* bred out-of-doors on January 9th.; the first of the brood emerged on Dec. 20th. Mr. Rayward, the working of *Egeria andrenæformis* in *Viburnum*, and a similar working in elder, which had all the characteristics of that of *Æ. andrenæformis*. Mr. Tonge, several species of butterflies from Redlands, California. Mr. Gahan read a paper on "Mimicry in Coleoptera," and illustrated it with a large number of particularly mimetic species.

Thursday, January 23rd, 1913.—ANNUAL MEETING. The President in the Chair.

The Reports of the Council and Officers for the past year were read and adopted, and the President read the Annual Address, in which after discussing the affairs of the Society and reviewing the Entomological happenings for the year, he summarised his own work in the study of the ova and early stages of the *Lepidoptera*. The following is a list of the Officers and Council elected to serve for the ensuing year: *President*: A. E. Tonge, F.E.S.; *Vice-Presidents*: W. J. Kaye, F.E.S. and B. H. Smith, B.A., F.E.S.; *Treasurer*: T. W. Hall, F.E.S.; *Librarian*: A. W. Dods; *Curator*: W. West; *Hon. Secretaries*: Stanley

Edwards, F.L.S. and H. J. Turner, F.E.S.; *Council*: R. Adkin, F.E.S., C. W. Colthrup, T. W. Cowham, A. E. Gibbs, F.L.S., A. Russell, F.E.S., W. G. Sheldon, F.E.S., and A. Sich, F.E.S. Votes of thanks were passed to the President and other Officers.

SPECIAL MEETING.—It was unanimously agreed to appoint an Editor of Proceedings as an additional Officer, and to increase the number of the Council from seven to nine. The new rules to take effect as from January 1st, 1913.

ORDINARY MEETING.—Mr. Buckstone exhibited several short series of bred *Phragmatobia fuliginosa*, representing second and third broods from Aberdeen, first brood from Horsley, and second brood from Wendover. Mr. Bacot, an enlarged photograph of an Indian flea, reputed to be one of the carriers of plague. Mr. Dunster, specimens of *Dicycla oo*, *Mellinia ocellaris*, and *Miselia oxyacanthæ* from Winchmore Hill.—H. J. TURNER, *Hon. Secretary*.

ENTOMOLOGICAL SOCIETY OF LONDON: *Wednesday, December 4th, 1912.*—The Rev. F. D. MORICE, M.A., President, in the Chair.

Mr. C. A. Foster, Worcestershire Regiment, Beechwood, Ifley, Oxford, was elected a Fellow of the Society.

The President announced the death of Mr. W. F. Kirby, formerly Honorary Secretary of the Society.

Mr. Waterhouse exhibited a diagram of the ootheca of a *Mantis* and read notes upon it. Mr. W. J. Kaye, a number of butterflies with one moth belonging to the principal Müllerian Association as found in Costa Rica. A number of specimens, both set and unset, of the principal Müllerian group from Caracas, Venezuela, were also shown, to exhibit the far closer resemblance of the undersides than the uppersides. From Santos, S.E. Brazil, were shown the principal members of the synaposematic group to call attention to a member of the group that had not been previously mentioned. The species was *Pericopis isse*, a Hypsid moth. Dr. G. B. Longstaff, a small box of Chrysidids, and started an interesting discussion on the means by which the metallic coloration was produced. Mr. G. T. Porritt, a series of *Platycoleis roselii* taken by himself at Trusthorpe, on the Lincolnshire coast, this year. Mr. W. A. Lamborn supplemented his previous account of two families of bred *Leuceronia argia* by referring to a short series of females taken at Oni between April 1st, 1910, and January 25th, 1911, a period including a whole wet season and a part of two dry seasons. Mr. J. A. Simes, a short series of *P. apollo* from the Government of Viatka, with a series from the Alps of Dauphiny and Switzerland for comparison. Prof. Poulton said that at his desire, Miss Fountaine had kindly prepared an account of the extremely interesting family of *Papilio dardanus*, reared by her in 1909—the only Natal family at present known in which *cenca* is other than the most numerous of all the forms. Prof. Poulton exhibited a ♂ specimen of *Planema arenaria*, taken by Dr. G. D. H. Carpenter on Bugalla, one of the Sesse Islands. *Pl. arenaria* had been shown by Dr. Karl Jordan to be a pale eastern geographical race of the fulvous *Pl. consanguinea* of the tropical

west coast. Prof. Poulton also exhibited thirty-seven examples of *C. phlæas*, captured on the same bank at Cerne Abbas, Dorset, in the hot August of 1911 and in the cold August of 1912, by Dr. R. C. L. Perkins. Eight out of the fourteen males captured in 1911 were much darker than any of the eight males captured in 1912. The copper tint of the eight 1912 females was more brilliantly lustrous than in the seven 1911 females. Mr. T. H. L. Grosvenor, a series of *Polyommatus icarus* females, principally from various localities on the North Downs, arranged according to the year and emergence to which they belonged. The Rev. G. Wheeler, on behalf of Mr. R. M. Pridcaux, some aberrational forms of *Rumicia phlæas*, and three ♀ "Blues," consisting of one very dark specimen of *Agriades corydon* and two of *A. thetis*, one being of the ab. *urania*, Gerh., and the other having the forewings dark and the hindwings symmetrically of a pale fawn colour; also the specimens of *Agriades thetis* ab. *urania*, Gerh., to which he had referred at a former meeting. All were taken between Gomshall and Dorking, and were first-brood specimens of this year. Also a series of blue ♀♀, most of them entirely blue, taken this spring at Notgrove in the Cotswolds, and for comparison the bluest ♀ he had taken there previously, in which the blue scaling was less than the least blue of this spring's captures. Dr. F. A. Dixey, specimens of *Teracolus ephyia*, Klug, and some allied forms, together with drawings of their respective scent-scales. The following papers were read: "On some new and little-known Bornean *Lycenidæ*, with a revision of the Thecline genus *Thamala*, Moore." By J. C. Moulton, F.L.S., Curator of the Sarawak Museum. "Descriptions of South American Micro-Lepidoptera." By E. Meyrick, B.A., F.R.S. "Synoptic Table of the British species of *Alcuonota* and *Atheta*, Th." By Malcolm Cameron, M.B., R.N. "Comparative Notes on *Chilades galba*, Lea, and *C. phiala*, Gr.-Gr." By G. T. Bethune-Baker, F.L.S., F.Z.S. "Notes on the Specific Distinction of certain species in the *orbitulus* and *pheretiades* section of the Genus *Plebeius*." By G. T. Bethune-Baker, F.L.S., F.Z.S. Mr. Bethune-Baker exhibited the species referred to in the latter paper, and mentioned the conclusions to which he had come as to their specific value or otherwise.

Wednesday, January 15th, 1913.—ANNUAL MEETING. The President in the Chair.

Mr. J. E. Collin, one of the Auditors, read the Treasurer's Balance Sheet for 1912, showing a balance of £16 18s. 9d. On the proposal of the Rev. F. E. Lowe, seconded by Mr. H. Main, it was unanimously adopted.

The Rev. George Wheeler, one of the Secretaries, then read the Report of the Council. Mr. A. Bacot proposed that the Council's Report be adopted. This was seconded by Dr. T. A. Chapman, and carried unanimously.

The President then said that he would put the Council's nominees for Officers and Council for the ensuing session to the meeting, and asked for a show of hands. They were then declared elected unanimously.

The President, the Rev. F. D. Morice, then delivered an Address, at the close of which Mr. C. J. Gahan proposed a vote of thanks to him for his

services as President and for his Address, at the same time asking for its publication as a part of the Proceedings of the Society. This was seconded by Mr. C. Fenn and carried unanimously.

The President having replied with a few words of thanks, Mr. G. Meade-Waldo proposed, and Prof. Selwyn Image seconded, a vote of thanks to the Officers of the Society for their work during the past year, which was also carried unanimously.

The Treasurer and both the Secretaries returned thanks; the former referring to the generosity with which Dr. Chapman had for years contributed towards the expense of the plates published in the Transactions.

A CONTRIBUTION TO A KNOWLEDGE OF THE BRITISH
NOTIOPHILI.

BY JAMES EDWARDS, F.E.S.

The most convenient index-characters which I have been able to find for the British species of *Notiophilus* are contained in the following table:—

- 1 (12). Second interstice distinctly narrower than the next three together.
- 2 (9). Tibiæ black.
- 3 (6). Elytra with one umbilicate puncture near the apex, in a line with the third and fourth striae and adjoining the raised part of the eighth interstice on its inner side.
- 4 (5). Elytral striae more strongly punctured. Upper-side usually bronze; pale markings at the apex of the elytra very obscure, visible only by transmitted light; pronotum transverse, considerably narrowed behind, the hinder half of the sides nearly equalling the front half in curvature; male with the front tarsi sub-terete, but little compressed above, and the last joint of the labial palpi (in the widest aspect) narrow elliptic, obliquely truncate, about four times as long as its distal edge *aquaticus*, Linn.
- 5 (4). Elytral striae more finely punctured. Upper-side (in the type specimen) blackish-bronze; elytra with a conspicuous oblong red-yellow patch on the outer side of the front half of the apical slope, bounded outwardly by the eighth interstice and continued as a stripe to the apex; pronotum sub-quadrate, but little narrowed behind, the sides in their hinder half nearly straight; front tarsi in the male compressed above, sub-carinate. Length 5.1 mm.
blacki (Sharp M.S.)
- 6 (3). Elytra with two umbilicate punctures near the apex in a line with the third and fourth striae, one next the inner edge of the raised part of the eighth interstice, and the other in a slight but evident depression about half-way down the apical slope.

- 7 (8). Upper-side usually bronze-black; elytra with an obscure suffused oval yellow-brown patch on the outer side of the front half of the apical slope, bounded outwardly by the eighth interstice and continued as a broad piceous stripe to the apex; the striae fine and feeble, the second failing at or before the commencement of the apical slope, the third and fourth barely reaching the foremost umbilicate puncture; frontal keels unequal and not straight, the outer ones usually furcate at one or both ends. Length 4.5 mm.
strigifrons, Baudi.
- 8 (7). Upper-side bronze; pale markings at the apex of elytra very obscure, only visible by transmitted light, striae moderate, the second continued well over the apical slope, sometimes nearly to the apex, the third and fourth usually reaching the foremost umbilicate puncture; frontal keels equal and straight, furcation of the outer ones exceptional; male with the last joint of the labial palpi (in the widest aspect) obliquely truncate, less than three times as long as its distal edge, the lower side straight, the upper edge curved and much longer than the lower; and the first joint of the middle tarsi well clothed with special hairs. Length 5 mm.
pusillus, Wat.
- 9 (2). Tibiæ red-yellow, becoming dusky towards the base and apex.
- 10 (11). Elytral striae coarse, very evidently evanescent towards the apex, the outer interstices smooth; middle lobe of the ædeagus a little constricted just below the apex, the latter (when the organ is viewed with its convex surface uppermost) with a distinct notch a little to the right of the middle, the right-hand angle rounded off, the left-hand angle produced into a blunt recurved point, the convex surface uneven and coarsely longitudinally rugose; male with the last joint of the labial palpi (in the widest aspect) distinctly narrowed towards the apex, about three times as long as its oblique distal edge.....*palustris*, Duft.
- 11 (10). Elytral striae finer, only slightly evanescent towards the apex, the outer interstices finely shagreened; middle lobe of the ædeagus a little contracted just below the apex, the latter (when the organ is viewed with its convex surface uppermost) evenly curved, the right-hand angle with two or three small sharp recurved teeth, the left-hand angle produced into a blunt recurved point, the convex surface comparatively smooth; male with the last joint of the labial palpi (in the widest aspect) not narrowed towards the apex, about two-and-a-half times as long as its oblique distal edge*hypocrita*, Spaeth.
- 12 (1). Second interstice at least as wide as the next three together.
- 13 (18). Elytra pale at the apex.
- 14 (17). Fourth interstice, near its half-length, twice as wide as the fifth.

- 15 (16). Striæ coarse, the first interstice smooth, the fourth with two umbilicate punctures before the apical third*A-punctatus*, Dej.
- 16 (15). Striæ fine, the first interstice finely shagreened, the fourth with only one umbilicate puncture before the apical third.
substriatus, Wat.
- 17 (14). Fourth interstice, near its half-length, sub-equal in width to the fifth; striæ coarse, the outer interstices very narrow, very finely shagreened near the base only.....*biguttatus*, Fab.
- 18 (13). Elytra unicolorous; tibiae entirely red-yellow, femora somewhat darker.....*rufipes*, Curt.

N. aquaticus, Linn., is the commonest of the black-legged group, and calls for no special remark.

N. blacki (Sharp, M.S.) is the "peculiar form of *Notiophilus*" referred to by Mr. Black (Ent. Mo. Mag., XLVIII, p. 185). The specimen in question was labelled by Reitter, "*bigeminus*, Th. (*longipennis*, Chd.)=*pusillus*, var.;" but this is evidently an error, because the insect has one and not two umbilicate punctures near the apex of the elytra. The pale marking on the elytra, which forms so conspicuous a feature of Mr. Black's specimen, appears to be a character common to all our black-legged species, though in many cases it cannot be distinctly seen unless the elytron is raised. Three examples only of *N. blacki* have hitherto been recorded, two from Peebles and one from Sutherlandshire. It is doubtful whether this is to be regarded as a distinct species, or as a mountain form of *aquaticus*; but the point may, perhaps, be certainly determined when male specimens are available for dissection.

N. strigifrons, Baudi. This is what has been known as the Scottish mountain form of *aquaticus*; it is recorded from Braemar and Aviemore, and I have seen it from Pitlochry, ex coll. Joy, and from Newtownmore, ex coll. Black. The application of the name *strigifrons* to our insect is not unimpeachable. In the original description the author, comparing *strigifrons* with *aquaticus*, says "elytra ejusdem structuræ"; but on the other hand we learn from Mr. Champion's note (Ent. Mo. Mag., XLV, p. 12) that a specimen of what Capt. Deville regards as Baudi's species resembles our Scottish insect in having two umbilicate punctures near the apex of the elytra, and only differs in having the striæ more distinct posteriorly. Inasmuch as I see no reason to believe that in the offspring of any pair of *pusillus* some will resemble their parents and the remainder *strigifrons*, I do not treat the latter as a form of *pusillus*. The

Scale of Charges for Advertisements.

Whole Page.....£3. Half Page ... £1 11s. 3d. Quarter Page.....17s.

Lowest charge, 7s. up to 5 lines; 1s. per line afterwards.

Repeated or continuous Advertisements per contract.

There is no charge for Lists of Duplicates and Desiderata.

All payments and applications for the above should be made to

R. W. LLOYD, I. 5, Albany, Piccadilly, W.

NOW READY,

THE ENTOMOLOGIST'S MONTHLY MAGAZINE, Vol. XXIII, New Series (Vol. XLVIII), strongly bound in Cloth. Price 7/-.

Covers for binding, 1/- each.

London: GURNEY and JACKSON, Paternoster Row. E.C.

THE THREE COLOURED PLATES illustrating the articles on
"SOME INTERESTING BRITISH INSECTS,"

with the accompanying text (issued in the Ent. Mo. Mag. for September, 1909, and January and September, 1910) are now issued in a separate wrapper, price 2s.

APPLY TO THE PUBLISHERS.

WATKINS & DONCASTER, Naturalists,

Keep in stock all Articles for Entomologists, Ornithologists, Botanists, &c.: Umbrella Net, 7/-; Folding Cane or Wire, 3/6, 4/-, 4/6; Plain Ring Net, 1/3, 2/-, 3/-; Pocket Boxes, 6d., 9d., 1/-, 1/6; Store Boxes, with Camphor Cells, 2/6, 3/6, 4/-, 5/-, 6/-; Zinc Pocket Boxes, 9d., 1/-, 1/6, 2/- Setting Boards, from 5d. to 1/10; Complete set of 14 boards, 10/6; Breeding Cages, 2/6, 4/-, 5/-, 7/6; Sugaring Tins, 1/6, 2/-; Sugaring Mixture, ready for use, 1/9 per tin; Setting Houses, 9/6, 11/6, 14/-; Glass Topped and Glass Bottomed Boxes, from 1/- per doz.; Zinc Killing Boxes, 9d., 1/-; Coleoptera Collecting Bottles, 1/6, 1/8; Collecting Box, containing 26 tubes (very useful for Coleopterists, Microscopists, &c.), 4/6; Brass Chloroform Bottle, 2/6.

Improved Pocket Pupa-digger in leather sheath (strongly recommended), 1/9; Steel Forceps, 1/6 to 3/- per pair; Pocket Lens, from 1/6 to 8/6.

Taxidermists' Companion, containing most necessary implements for skinning, 10/6; Scalpels, with ebony handles, 1/3; Fine Pointed Scissors, 2/- per pair; Brass Blow-pipes, 4d., 6d.; Egg Drills, 2d., 3d.; ditto, best quality, 9d. each; Botanical Vasculum, 1/6, 2/9, 3/6, 4/6; Label List of British Macro-Lepidoptera, with Latin and English Names, 1/6; List of British Lepidoptera (every species numbered), 1/-; or on one side for Labels, 2/-.

SILVER PINS FOR COLLECTORS OF MICRO-LEPIDOPTERA, &c.,

as well as minute insects of all other families.

We stock various sizes and lengths of these Silver Pins, which have certain advantages over the entomological pins usually employed.

For instance, insects liable to become greasy and verdigrisy, like Sesiidæ, are best pinned on Silver pins, which will last much longer than the ordinary pins (whether enamelled black, or gilt, or silvered).

We shall be pleased to send pattern cards on application.

A large stock of British, European, and Exotic Lepidoptera, Coleoptera, and Birds' Eggs.

ENTOMOLOGICAL PINS.

The "DIXON" LAMP NET (invaluable for taking Moths off street lamps without climbing the lamp posts), 3s. 6d.

SHOW ROOM FOR CABINETS, &c.

36, STRAND, LONDON, W.C., ENGLAND.

Birds and Mammals, &c., Preserved & Mounted by first-class workmen.

Our New Price List (100 pp.) sent post free to any address on application.

CONTENTS.

PAGE

A list of butterflies collected during the last ten years in British East Africa (continued).— <i>Rev. K. St. Aubyn Rogers, F.E.S.</i>	49
<i>Bradycellus distinctus</i> , Dej., in England.— <i>D. Sharp, M.A., F.R.S.</i>	54
Larvæ of Cyphonidæ (Coleopt.) in Bromeliacæ.— <i>Frederick Knab</i>	54
Coleoptera in Orchids.— <i>G. C. Champion, F.Z.S.</i>	55
Three new species of Atheta.— <i>Norman H. Joy, M.R.C.S., F.E.S.</i>	57
The Wingless Geometer.— <i>John H. Wood, M.B.</i>	59
On an overlooked new species of <i>Haliectus</i> in Britain.— <i>R. C. L. Perkins, D.Sc., M.A., F.Z.S.</i>	62
An introduced West African Longicorn, <i>Cordylomera suturalis</i> , Chev.— <i>G. C. Champion, F.Z.S.</i>	63
Apterous or semi-apterous females of certain Lepidoptera.— <i>G. T. Porritt, F.L.S.</i>	63
A note on the emergence of <i>Phlæodes crenana</i> , Hb.— <i>J. W. Corder</i>	64
Wasp attacking Peacock butterfly.— <i>F. Jenkinson, F.Z.S.</i>	64
<i>Opomyza lineatopunctata</i> , v. Ros., at Crowborough.— <i>Id.</i>	65
<i>Hæmatopota italica</i> , Mg., in Cornwall.— <i>Col. J. W. Yerbury, R.A., F.Z.S.</i>	65
REVIEWS.—“ <i>Psyllidarum Catalogus</i> ,” by Dr. G. Aulmann	65
“ <i>British Butterflies</i> ,” by A. M. Stewart	66
“ <i>How to use the Microscope; a guide for the Novice</i> ,” by the Rev. Chas. A. Hall.....	66
SOCIETIES—Lancashire and Cheshire Entomological Society	66
South London Entomological Society	67
Entomological Society of London	68
A contribution to a knowledge of the British Notiophili.— <i>James Edwards, F.E.S.</i>	70

LANCASHIRE AND CHESHIRE ENTOMOLOGICAL SOCIETY.—Meetings the third Monday in each Month, October to April. *Hon. Sec.*, WM. MANSBRIDGE, 4, Norwich Road, Wavertree, Liverpool.

ENTOMOLOGISCHE MITTEILUNGEN, Published by the Verein zur Förderung des Deutschen Entomologischen Museum. Monthly Entomological paper; official edition of the Deutsches Entomologisches Museum, whose large Library is at the disposal of all Subscribers at most liberal terms. Gratis to each number continuation of the Library's Catalogue. Terms: 7s. (m. 7) a year; 3s. 6d. (m. 3'50) half a year.

Address: Deutsches Entomologisches Museum, Berlin-Dahlem, Gosslesstr. 20.

DR. STAUDINGER & BANG-HAAS, BLASEWITZ-DRESDEN, in their new Price List, No. LVI for 1913, offer more than 19,000 species of well-named LEPIDOPTERA, set or in papers, from all parts of the world, in finest condition; 1600 kinds of PREPARED LARVÆ, &c.; we sell no more living pupæ. Separate Price Lists for COLEOPTERA (29,000 species); HYMENOPTERA (3600 species), DIPTERA (2900), HEMIPTERA (2500), ORTHOPTERA (1200), NEUROPTERA (630), BIOLOGICAL OBJECTS (300).

PRICES LOW. DISCOUNT FOR CASH ORDERS.

Second Series, No. 280.]
[No. 587.]

APRIL, 1913.

[PRICE 6d. NET

THE
ENTOMOLOGIST'S
MONTHLY MAGAZINE.

EDITED BY

G. C. CHAMPION, F.Z.S. J. E. COLLIN, F.E.S.

W. W. FOWLER, D.Sc., M.A., F.L.S.

R. W. LLOYD, F.E.S. G. T. PORRITT, F.L.S.

J. J. WALKER, M.A., R.N., F.L.S.

SECOND SERIES—VOL. XXIV.

[VOL. XLIX.]

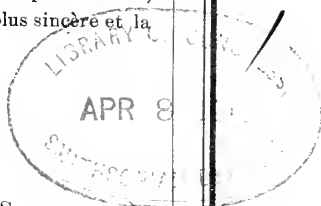
“J'engage donc tous à éviter dans leurs écrits toute personnalité, toute allusion dépassant les limites de la discussion la plus sincère et la plus courtoise.”—*Laboulbène*.

LONDON:

GURNEY & JACKSON (MR. VAN VOORST'S SUCCESSORS),
33, PATERNOSTER ROW, E.C.

SOLD IN GERMANY BY FRIEDLÄNDER UND SOHN, BERLIN.

NAPIER, PRINTER, SEYMOUR STREET, EUSTON SQUARE.



REDUCED PRICES FOR BACK VOLUMES.

FIRST SERIES.

This can only be obtained in complete Volumes (bound or unbound).

A limited number of sets, from Vol. x to Vol. xxv can still be obtained at £2 15s. per set net (in parts), or of five consecutive Vols. at £1 per set net (if bound, 1s. per Vol. extra).

Certain of the Vols. i to ix can be had separately at 10s. each.

SECOND SERIES.

Vols. i to xv. are now offered at £3 per set net (in parts), or £1 2s. 6d. for five consecutive Vols. (if bound, 1/- per Vol. extra).

Apply to the Publishers.

NOTE.—Subscriptions for 1913 (6s. per annum, post free) are now due, and should be paid to R. W. LLOYD, I. 5, Albany, Piccadilly, London, W.

It would be a great convenience to the Editors in keeping the accounts if these were paid promptly, as having to send reminders entails a considerable amount of extra work.

The Coloured Plates issued in September, 1909, January and September, 1910, and September, 1911, having been so much appreciated by our readers, a fifth (devoted to *Dermaptera*) was given with the October, 1911, number. The Editors would be greatly obliged if the Subscribers to this Magazine would use their best endeavours to bring it to the notice of their entomological friends, and induce them to subscribe also.

THE CANADIAN ENTOMOLOGIST.

A MONTHLY MAGAZINE DEVOTED TO THE STUDY OF SCIENTIFIC ENTOMOLOGY.

Volume 45 is now in course of publication. Back volumes can be supplied. It is the oldest established Magazine of the kind in America, and has a world-wide circulation. Subscription, \$1 per annum, which includes a copy of the Annual Report of the Entomological Society of Ontario to the Legislature. Editor, Dr. E. M. Walker, Biological Department, University of Toronto, Toronto, Canada.

Address: Entomological Society of Ontario, Guelph, Canada.

CITY OF LONDON ENTOMOLOGICAL AND NATURAL HISTORY SOCIETY, London Institution, Finsbury Circus, London, E.C.—The First and Third Tuesdays in the month at 7.30 p.m., except in July and August. April 1st: Notes on Dragonflies, Mr. H. M. EDELSTEN, F.E.S. April 15th: Exhibition and Discussion, *Bupalus piniaria*; opened by Dr. E. A. COCKAYNE, M.A., F.E.S. May 6th: Notes on *Thera variata* and *T. obeliscata*, Mr. L. B. PROUT, F.E.S. Visitors are cordially invited to attend with exhibits.—V. ERIC SHAW, Hon. Sec.

Authors are requested to send their communications to either

J. J. WALKER, Aorangi, Lonsdale Road, Summertown, Oxford; or
G. C. CHAMPION, Horsell, Woking.

Those relating to Diptera, to

J. E. COLLIN, Sussex Lodge, Newmarket.

few specimens which I have seen are bronze-black in colour, but Mr. Champion writes me that he has a clear bronzy specimen.

N. pusillus, Wat. Notwithstanding that the locality of the single specimen on which G. R. Waterhouse based his description (Ent. Mag., I, p. 207, Jan. 1838) is unknown and the insect itself cannot now be found, the fact remains that we have in this country an insect which satisfies the salient points of his definition. Such a thing appears to have been long known on the continent. I took two specimens at Arminghall near Norwich on May 7th, 1876, and another at Weybourne, Norfolk, on August 26th, 1909. I have also seen one, ex coll. Joy, from Dalwhinnie. If Thomson's description of his *N. bigeminus* is to be strictly interpreted, his insect can scarcely be the same as our *pusillus*, because he says of *bigeminus*: "metatarso intermediorum neque dilatato neque subtus spongioso." From the form of *N. palustris* with entirely dark tibiæ, this species is easily distinguished by its more straight-sided and comparatively longer elytra, as well as by the different shape of the last joint of the labial palpi in the male.

N. palustris, Duft. In the series standing under this name in most British collections there will probably be found some specimens with the elytral striæ finer and longer than the others, and really belonging to the next species. Messrs. Johnson and Halbert (Proc. Roy. Irish Acad. XXXI, Clare Island Survey, Part 28, 1912), record a form of *N. palustris* with dark tibiæ from Achill Island. I have seen this specimen, which, except for its generally darker colour and entirely piceous tibiæ, is quite normal *palustris*.

N. hypocrita, Spaeth. In the Cat. Col. Eur. this species is credited to Putzeys who, indeed, used that name, but his description contains no mention of the points which were subsequently regarded by Spaeth (Verh. zool.-bot. Ges. Wien, XLIX, pp. 513-517) as diagnostic of the species. *N. hypocrita* has been recorded from Bradfield, Wellington College, Lundy Island, Garvie, Ross, Braemar, Woking, Sheppey, and Hayling Island. I have seen it in coll. Thouless from Devonshire and Lowestoft, and have taken it myself at Colesborne. In a specimen sent to Dr. Joy by Capt. Deville, the striæ are considerably finer than in any of my specimens, and almost as evanescent towards the apex as in *palustris*. By the kindness of Mr. Halbert I have been able to examine some Irish specimens of this species which merit special mention. Four are from the summit of Slieve Donard (2790 feet), one from Salt Lake Mountain, Donegal (about 1500 feet),

and one from Achill Island; they differ from the prevalent form of *hypocrita* in being a little smaller, more parallel-sided, and more convex in appearance; the hinder angles of the pronotum are more pronounced, the striæ on the basal third of the elytra are more coarsely punctured with narrower and more convex interstices, and the shagreening of the outer interstices is much less evident. If it be desired to distinguish this form by name, that of ab. *hibernicus* would be appropriate. I have seen typical *hypocrita* from Croagh Patrick, and Mr. Halbert mentions one in the Haliday collection from the top of Carratuohull, Co. Kerry.

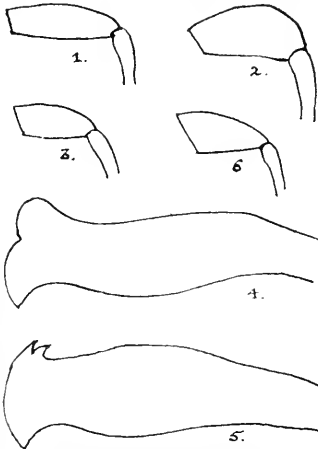
N. 4-punctatus, Dej. The real *4-punctatus*, as I understand it from foreign descriptions, and find it exemplified in specimens taken at Shirley, Surrey, by Mr. W. West, is not *biguttatus* with an extra umbilicate puncture on the fourth interstice of one or both elytra; but a distinct species, more nearly related to *substriatus* than to any other of our species. The fourth interstice is flat or even a little concave, about twice as wide as either the third or fifth, and its surface-sculpture is as evident as it is in *substriatus*; in *biguttatus* the fourth interstice is convex, not evidently wider than those on either side of it, the shagreening is extremely fine and usually confined to the basal half; and this whether there be two or three umbilicate punctures on the disk of the elytra: I have never seen a specimen with four.

N. substriatus, Wat. This very distinct species is common in Norfolk. I found it particularly abundant in flood-refuse there recently; but I have not taken it in Gloucestershire nor am I acquainted with any record of its occurrence in that county.

N. biguttatus, Fab. Specimens having one or more supernumerary umbilicate punctures on the disk of the elytra occur somewhat rarely, and to this fact is probably due the assumption that *4-punctatus* and *biguttatus* are conspecific. A specimen from Lydford in coll. de la Garde has the outer interstices shagreened quite to the apex. As a rule the pale apex to the elytra is very distinct, but I have one female taken at Colesborne with a considerable number of the normal form, in which the pale colour is only just perceptible on the outer side of the commencement of the apical slope, a circumstance which gives the insect a very distinct facies. This form I call ab. *inornatus*; similar specimens from the Gesäusealpen, Steiermark, are mentioned by Spaeth (*l.c.* p. 523).

N. rufipes, Curt. This species is easily recognised by its pale legs (the anterior and intermediate femora are rufo-piceous, becoming

paler at the apex) and the concolourous, strongly alutaceous apex of the elytra. It is usually regarded as rare in this country, but at Colesborne it is common in woods and hedge-bottoms.



1. *N. aquaticus* ♂, last joint of labial palpus.
2. *N. pusillus*, ♂, " " " " "
3. *N. palustris*, ♂, " " " " "
4. " " ♂, middle lobe of aedeagus.
5. *N. hypocrita* ♂, " " " "
6. " " ♂, last joint of labial palpus.

Colesborne, Cheltenham :
December 31st, 1912.

DESCRIPTION OF A NEW SPECIES OF *HALIPLUS*.

BY D. SHARP, M.A., F.R.S.

HALIPLUS BROWNEI, *sp. nov.*

Breviter ovalis, testaceus, elytris lineis nigris tenuibus ante medium postque medium subinterruptis. Long. $2\frac{5}{8}$ mm.

Mas, Tarsis intermediis bene dilatatis, articulo basali ad apicem abrupte crassiore.

Fem., Minus nitida, tarsis haud dilatatis.

This species is extremely similar in coloration to *H. fluvialis*, but it is of shorter form—*fluvialis* being fully 3 mm. long—and is readily distinguished by this character and by the peculiar middle feet of the male.

The latter character brings the species nearer to *H. nomax*, Browne; in which, however, the form is narrower, the elytra consequently straighter at the sides, and the black lines are entire and very strongly marked, and the profile of the male middle tarsus is a little broader, and the bending of the apical portion of its basal joint slightly less abrupt. In September, 1868, I met with this species at Stony Stratford in the River Ouse. It was found in company with *H. fluvialis*, both species being plentiful. The two have since then been mixed in my collection.

I have much pleasure in naming the species in honour of my friend Mr. Frank Balfour-Browne, who has recently discovered *H. nomax*. The genus *Haliphus* is a very difficult one. In addition to the species registered by Mr. Edwards (Ent. Mo. Mag., January, 1911) we have also, I believe, *H. multimaculatus*, Wehncke, in this country. It is only like *H. heydeni*, but is remarkably rotund and very acuminate behind; it is considerably larger than *heydeni*, and has the inner two or three series of punctures remarkably large. At present I have seen only a single specimen, a female found here last spring.

Brockenhurst:

March 15th, 1913.

DESCRIPTION OF A NEW SPECIES OF *QUEDIUS* FROM THE
NEW FOREST, HANTS.

BY NORMAN H. JOY, M.R.C.S., F.E.S.

On August 16th last year I spent a few hours at Brockenhurst collecting with Dr. Sharp, and captured a *Quedius*, coloured much like *Q. cruentus*, Ol., in an old owl's nest. On setting it I thought it looked strange to me, so I expressed the ædeagus, but did not again examine the specimen until a short time ago. I then noticed that it differed from *Q. cruentus* in several particulars, and that the ædeagus was quite characteristic. Dr. Sharp informs me that he has known of this form as distinct from *Q. cruentus* for nearly 30 years. He however wished me to describe it if I proved it to be distinct from the allies of *Q. cruentus*. This I have satisfactorily done and propose to call it

Q. SUBAPICALIS, *sp. nov.*

Much resembles *Q. cruentus*, but smaller and narrower; the elytra are very diffusely punctured, distinctly more so than in *Q. cruentus*. The hind margins of the 5th and 6th (free) segments of the hind body are only narrowly yellow, whereas in *Q. cruentus* the hind margins of the 3rd and 4th segments are narrowly, the 5th broadly, yellow, the 6th being almost entirely so, except occasionally in var. *virens*, Rottbg. The accessory lobe of the ædeagus is dilated towards the apex, in *Q. cruentus* it is parallel-sided throughout.

Dr. Sharp tells me he has taken the species very rarely at Brockenhurst, close to where I took my specimen.

The ædeagus differs from that of any of the species of the group with black elytra. The Continental authorities have very much confused this group by regarding certain species with black elytra as

varieties of nearly allied forms with red elytra, and in fact it was his knowledge of the existence of this confusion that prevented Dr. Sharp from describing the species he has so long been acquainted with. As would be expected from their different habitats, in most cases dissection of the aedeagus in all these forms proves them to be distinct.

Bradfield:

January 3rd, 1913.

TWO NEW BRITISH SPECIES OF *ATHETA*.

BY NORMAN H. JOY, M.R.C.S., F.E.S.

ATHETA *MAGNICEPS*, J. Sahlb.

Subparallel, very finely punctured; head black, thorax pitchy brown, elytra brown or yellowish brown, hind body black with apex yellowish, antennae fuscous with base yellow, legs yellow; head large, nearly as broad as thorax; antennae slightly thickened towards apex, 4th and 5th joints subquadrate, penultimate joints moderately transverse; thorax slightly narrower than elytra, moderately transverse, distinctly contracted behind; elytra together quadrate or slightly transverse; hind body with basal segments closely and apical segments very diffusely punctured; ♂ with under plate of 6th free segment of hind body rounded and scarcely projecting beyond the upper plate; ♀ with the under plate bluntly angled in the centre, and with the hind margin set with fine hairs. Length, 2.2—2.5 mm.

I took several specimens of this insect in flood rubbish from the River Truim at Dalwhinnie, Inverness-shire, in October, 1909, and again in 1910, and for long regarded it as an undescribed form. Herr Sahlberg has, however, identified the species for me and sent me one of his specimens for comparison. He reports that it is a rare insect in Finland. Although the 6th free segment of the hind body in both sexes resembles these parts in *A. melanocera* and its close allies, *A. magniceps* could hardly be mistaken for any of these, the head being much larger, and the ♂ genitalia are entirely different. In general appearance it is much like *A. debilis*, but is on the average smaller; the antennae are darker in colour, the penultimate joints are less strongly transverse, and joints 4–10 are of a different shape. In *A. debilis* these joints have the cone-shaped portion at the apex exceptionally large* (Fig. 1). In *A. magniceps* the joints are normal in shape (Fig. 2). *A. debilis* has the under plate of the 6th free segment of the hind body in the ♂ very broad and projecting some

* This form of antennal joint occurs in *A. deformis*, *A. fangiocera*, and its allies, and some other species of the genus.

distance beyond the upper plate, and in the ♀ the margin of the under plate is fringed with a close set row of short bristles of equal length.

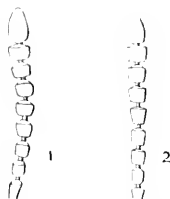


Fig. 1.—Antenna of *Atheta debilis*.

Fig. 2.—Antenna of *Atheta magniceps*.

ATHETA TERMINALIS, Grav.

Related to *A. elongatula* and its allies, but differing from them all in having the last joint of the antennæ larger and longer, being twice as long as the tenth, and the antennæ are more thickened towards the apex, the penultimate joints being distinctly transverse. The thorax is often reddish brown, the elytra reddish yellow, and the antennæ pitchy red with the base yellow. It resembles *A. gyllenhali* in having the elytra together about as long as broad, but it is smaller, and the elytra are more strongly punctured. The last ventral segment of the hind body in the ♂ does not project as much as in *A. elongatula*. Length, 2.5—3.2 mm.

One specimen in Mr. Champion's collection from Gosport, Hants. *A. tricolor*, Steph. is given as a synonym of this species in the last European catalogue, but it seems more than doubtful that this is correct.

Bradfield, Berks :

January, 1913.

DESCRIPTION OF A NEW SPECIES OF *ATHETA* (*MICRODOTA*).

BY MALCOLM CAMERON, M.B., R.N., F.E.S.

ATHETA (*MICRODOTA*) *DODEROI*, n. sp.

Black, shining; head, thorax and elytra distinctly shagreened, distinctly but superficially and sparingly punctured. Elytra transverse, not longer than the thorax. Antennæ and legs testaceous. Length, 1.6—1.8 mm.

Very closely allied to *A. vegra*, from which it is distinguished by its shorter elytra, which do not exceed the thorax in length, the more distinct shagreening and puncturation of the fore parts, which are less shining, the black colour, and the ♂ characters.

Head broad, a little narrower than thorax, distinctly shagreened, puncturation rather large, superficial and sparing; pubescence slight. Palpi yellow.

Antennæ testaceous, 1st and 2nd joints of equal length, 3rd distinctly shorter than 2nd, 4th transverse in ♀, as long as broad in ♂, 5th to 10th transverse, gradually increasing in breadth, 11th about as long as the two preceding together. Thorax transverse, about a third broader than long, as broad in front as behind, the sides slightly and evenly rounded, furnished with two or three fine setæ; disc sometimes with a fine channel; puncturation superficial and scattered, distinctly shagreened, sparingly pubescent. Elytra transverse, a little broader than the thorax, and of the same length, not sinuated at the postero-external angles, puncturation superficial and scattered, distinctly shagreened, slightly pubescent. Abdomen black, shining, very sparingly and finely punctured and pubescent. Middle and posterior tibiae without setæ.

♂ 6th ventral plate considerably produced, not narrowed, truncate at extremity with angles rounded, and with about a dozen moderately long and fine setæ at the margin. ♀ 6th ventral plate scarcely produced, gently rounded and distinctly emarginate in middle of posterior margin, and furnished with rather short setæ.

I have taken this species at Algeçiras and Gibraltar under stones with ants, and have seen others from Sardinia belonging to M. Agostino Dodero.

H. M. S. "Formidable,"

Chatham:

February 12th, 1913.

THE WINGLESS GEOMETER.

BY GEO. T. PORRITT, F.L.S.

I fear I cannot endorse the conclusion of Dr. J. H. Wood as to the cause of the winglessness of some of the winter Geometers. It seems to me, indeed, that Dr. Wood has first formed his theory and then tried to make his supposed facts support it, instead of first getting at facts and then forming a theory from them. Dr. Wood commences his paper by stating that "all the winter Geometers without exception have wingless females." I consider that *Himera pennaria* in its structure and habits, both as larva and imago, is as much a winter moth as are any of the *Hybernidae*; almost equally so is *Oporabia dilutata*. These have at least as much a winter flight as have *Nyssia zomaria* and *N. lapponaria*, which species indeed are contemporaneous as imagines with several winged Geometers. A good deal is assumed in Dr. Wood's next statement that among the Geometers there is not "a single British species that hibernates in the perfect state." Surely Dr. Wood must have forgotten (or more likely overlooked) that the three species mentioned by Commander Walker in his editorial footnote habitually

hibernate in the perfect state, the biggest of them, *Scotosia dubitata*, to my own knowledge in large numbers. The wings of winter Geometers Dr. Wood tells us "would be an encumbrance and impediment because, there being no leaves on the trees, they would not be able to find shelter, small chinks and crannies not being available for them with their ample wings," &c. As the males certainly seem to find no inconvenience from this cause, why should the females? But there *are* leaves in winter, any quantity of them, right on until spring, not on the trees, but dead and dry on the ground, many of them large stiff fronds of ferns, &c., and they afford shelter for the winter moths just as satisfactorily as do the living leaves on the trees in summer, and the wings do not get any more frayed or tattered. As an instance, during the past autumn *Hybernia defoliaria* and *H. aurantiaria* were very abundant in this district, and one afternoon over fifty females of these two species were counted on the trunk of a single tree. The males were not on the trunks, but under the dead leaves and fern fronds on the ground, where numbers were detected by the tip of the wing extending beyond the margin of the leaf. Probably the males seen in this way, numerous as they were, formed only a tithe of those which were entirely covered by the leaves. And for hibernating species, when bats can find holes and crevices in trees in woods big enough for them to winter in, Geometers would have no difficulty in doing so. Moreover, when did the supposed laziness of these females, which Dr. Wood tells us has resulted in the loss of their wings, commence? If they always had it, why should we suppose that they ever had any wings at all. Dr. Wood's "most striking instance" of the stay-at-home habit of certain species is surely an unfortunate one for his theory, for if *Coleophora inula* has always been so sluggish why has *it* not lost its wings, not only in the female but in the male also? The fact is we have no strong evidence that these wingless females ever possessed wings at all. We believe they probably did, but the belief is entirely because it agrees with our theories, formed, and no doubt largely justified, in that our studies of analagous conditions in other branches of science strongly confirm it. But, so far as we know, the quite apterous females of Geometers have not possessed even the rudiments of wings, and in the semi-apterous species the abbreviated wings have not decreased in size one atom since the earliest time in which entomologists took any interest in *Lepidoptera*.

Dr. Wood further tells us that as trees live to a great age, one of them would afford a permanent home for these apterous moths, and would not be prejudicial to its welfare. Few will probably assent to

such a suggestion, as the condition would of course necessitate the continuous inbreeding of species, which we know Nature takes every precaution to prevent. It is as necessary for these winter Geometers to be distributed as it is for any of the summer species, and that they are distributed in various ways, but chiefly I think by the method I have suggested on p. 63 of the March number of this journal, there can be no doubt.

Elm Lea, Dalton, Huddersfield :
 March 6th, 1913.

APTEROUS FEMALES OF WINTER MOTHS.

BY T. A. CHAPMAN, M.D., F.Z.S.

Mr. Porritt is quite right when he says that I have no suspicion that the apterous ♀♀ of winter moths are carried by the ♂♂. There was however a time when I did entertain the suspicion. Mr. Porritt's statement that he thinks it well-founded makes it useful to review the position.

On two occasions many years ago, memory fails me as to probably others, I set myself to catch as many ♂♂ of *C. brumata* on the wing as I could, their abundance at the time suggesting such an investigation. I have no recollection how many ♂♂ I caught, but it was a very considerable number, certainly more than one, possibly several, hundreds. Amongst them was not one ♀. This emphasised my first and initial difficulty in adopting the suspicion, viz., that were it well-founded we should have, not a few doubtful, but plenty of well-verified observations of the fact. They are practically quite wanting.

Insects of various orders fly about when paired, especially, I think, *Diptera*. But with *Lepidoptera* the tendency and habit is to sit quietly. This does not prevent one often seeing them on the wing, but I believe always after being disturbed in some way. The amount of disturbance may be slight, so slight in the case of some butterflies that one often takes such flight as a usual habit. Such butterflies (I hazard guesses rather than facts here) are probably those that do not remain long paired, and, resting on herbage, are in some danger from grazing animals. Those butterflies that hide away when paired, such as the *Vanessas*, are not often seen paired at all. There is no scrap of evidence that I know of that such paired flight is towards the food-plant, and I do not think I have often seen such pairs attracted by flowers. The occurrence of the larvæ of these moths on comparatively

isolated trees is perhaps the point most difficult to explain without some such hypothesis. When we find a solitary tree or bush well colonised by the larvæ of these species, it is not necessary to assume as it might be in the case of winged species, and as possibly Mr. Porritt does, that their parents all arrived there from elsewhere during the previous winter. The fact probably is that a solitary ♀ of one species got there say ten years ago, of another species five years ago, and of a third say two years ago. From the dates of these arrivals the tree continued well colonised by the respective species.

I think it highly improbable that a ♂ *brumata* could carry a ♀ any distance, and if he could do so for some yards, how is he to find the isolated tree? Only by accident. Now the very active ♀♀ in their no doubt extensive wanderings, when they fail to find a tree or bush at once or near them, are at least as likely to find the isolated tree by accident. I picture these ♀♀ when they become active in search of a suitable tree or bush, having some instinct by which, either by scent, by the tendency to travel upwards, or in some other way, they are largely successful in finding the parent tree or an immediate neighbour; but the proportion that are unsuccessful in this matter must nevertheless be considerable and in actual numbers really great. These set off in all directions, and anyone who has seen the rate at which one of these moths can cover the ground, must feel fairly certain that no small number go at least as far as the solitary tree, and now and then one must actually come across it.

When Mr. Porritt says such isolated bushes are even more infested with larvæ than others, several explanations occur to one; but probably the most efficient, and at least the one that now interests us, is the one I have alluded to: that these larvæ are all descendants of an original arrival some years before, and there can be little doubt that year after year the instinct of the moths to find the nearest tree brings an undue proportion of them to the only tree available, not a few, however, failing to do so and going off in all directions, for the most part to perish, but now and then one will reach some isolated tree even more distant from the parent wood, hedge or orchard.

It is not important to our present discussion, but it may be noted that in various insects both individuals, when flying paired, use their wings. In butterflies the ♀ often carries the ♂. This appears to be usual in Satyrids and Meliteæ, whilst in Lycaenids, Pierids, and Argynnidæ, the ♂ is usually the porter.

Betula, Reigate:
March, 1913.

TWO SPECIES OF ACULEATE HYMENOPTERA NEW TO BRITAIN.

BY LIEUT.-COLONEL C. G. NURSE, F.E.S.

CRABRO KIESENWETTERI, Morawitz. In working out the Aculeates captured by myself during 1912, I found that I had obtained five specimens (2 ♂♂, 3 ♀♀) of a species of *Crabro*, belonging to the sub-genus *Rhopalum*, which appeared to be quite distinct from both *tibialis* (Fabr.) and *claripes* (Linn.), the only two members of the subgenus hitherto recorded from this country. As I had examples of both *C. tibialis* and *C. claripes*, I felt sure I had obtained an insect not hitherto recorded from Britain. I therefore sent the specimens to the Rev. F. D. Morice for his opinion. He confirmed my view that the insect was new to this country, and determined it as the species named by its discoverer, Kiesenwetter, as *nigrinus*, and also described by Wesmael as *gracilis*. As, however, both these names are pre-occupied by other insects of the same genus, Mr. Morice considers that the name next in order of priority, viz., *kiesenwetteri*, Morawitz, will have to stand. I have ascertained that the same view is held by Herr Kohl, who is at present engaged on a monograph of the genus *Crabro*, and I therefore now record it under that name. Mr. Morice informs me that it stands under this name in Schmiedeknecht's "Hymenoptera Mitteleuropas."

The specimens obtained by me were taken at Ampton, Suffolk, in June, 1912, and West Stow, Suffolk, in June and August, 1912. The following modification of the key on page 125 of Saunders' "Hymenoptera Aculeata" of the British Islands will enable the species to be recognised:—

- (3) 2. Clypeus produced and raised at the apex, face with a short spine between the antennæ
- (a) Apex of clypeus triangular, tegulae pale *tibialis*.
- (b) Apex of clypeus rather narrowly truncate, tegulae black.
..... *kiesenwetteri*.
- (2) 3. Clypeus and face simple *claripes*.

C. kiesenwetteri is about the same size as *C. claripes* (length 5-7 mm., exp. 8-10); the abdomen is entirely black in both sexes. The ♂ has the 4th joint of the antennæ widened at the apex, the 5th joint deeply incised; the scape, all the trochanters, the anterior tibiae and tarsi, the greater part of the intermediate tibiae and tarsi, and the base of the posterior tibiae, yellowish white. The ♀ has the antennæ simple, the scape and all the trochanters black, and the tibiae and tarsi much darker.

The locality where I obtained four out of five of the specimens here recorded is a swampy spot, on the bank of the River Lark, covered with reeds and rushes, and studded with old willows and alders. My collecting ground is only about 150 yards by 50 yards, and it is worthy of remark that I have in this limited space obtained three insects of different orders new to Britain, viz., the present species; *Nemoura dubitans*, Morton (*Neuroptera*); and *Chilosia globulipes*, Becker (*Diptera*).

POLISTES GALLICUS, Linn. Among a small collection of Aculeates, captured by Major R. B. Robertson, and sent to me for determination, I found two specimens, either females or workers, of this species, which has not, I believe, been previously recorded from Britain. *Polistes gallicus*, which is the only representative of the genus occurring in Europe, has a very wide distribution, extending over almost all Europe as far north as Sweden, and across Asia to China and Japan. I myself have taken it in Baluchistan and Kashmir. The specimens obtained by Major Robertson were taken at Chandler's Ford, Hants, in 1911. The fact that among quite a small collection he obtained two specimens of this species, appears to indicate that it is, in all probability, a resident in Hampshire. Had only one specimen been taken, I should have inclined to the opinion that, as such a conspicuous and well known insect had not been hitherto found in Britain, it might have been a casual immigrant, more especially as the summer of 1911 was an unusually hot one. I hope that Major Robertson, or other entomologists visiting South Hants, may succeed in taking more specimens, and proving that the insect is really resident in England.

The genus *Polistes* may be at once distinguished from all other Vespidae by the transversely striate propodeum, and the fusiform first abdominal segment.

Timworth Hall,

Bury St. Edmunds:

February 17th, 1913.

FOUR UNRECORDED BRITISH ANTHOMYIDÆ:

TWO OF THEM AT THE SAME TIME BEING NEW TO SCIENCE.

BY JOHN H. WOOD, M.B.

All four species were submitted to Herr Stein, who very kindly examined them for me. Two of them he returned as *Phaonia* (*Hyeto-*

desia) *magnicornis*, Ztt., and *Cænosiâ perpusilla*, Mg.; and the other two he considered to be new and undescribed species.

I will take the two former first, and give a rough description of each, so that anyone meeting with either may be able to identify his capture.

PHAONIA (HYETODESIA) MAGNICORNIS, ♂ ♀.

This has the thickly haired eyes and strongly feathered aristæ of a *Hyetodesia*; and the features most likely to arrest attention are the unusual width of the frons in the male and the size of the antennæ. It is a fairly robust species, about the size of *semipellucida*. The thorax is light grey, but looks much darker on account of four black stripes, the two central of which are closely approximated; post-sutural dorso-central bristles three in number. Abdomen grey with an indistinct central line and still more indistinct lateral spots, and with a pair of small ventral flaps in front of the hypopygium. The frons, unusually wide in the male, is black with pale margins, which bear along their whole length an open row of strong erect bristles; the antennæ are square ended, broad and reach to the mouth edge in the male, but are less characteristic in the female; palpi black. Wings nearly clear, cross-veins unclouded, and halteres yellow. All the tibiæ yellow, the other joints black, except the tips of the femora which are yellow like the tibiæ.

It appears to be widely distributed here, for my captures extend from Devereux Pool in my own neighbourhood to the banks of the Monnow in the extreme south-west of the county. It is, however, undoubtedly rare, only four males and one female having been taken. They have been met with in the early summer months (May and June) and again in August, which seems to point to its being double-brooded. All have been taken close to water or in marshy places.

CÆNOSIA PERPUSILLA, ♂ ♀.

A medium sized species, with a grey and distinctly spotted abdomen and yellow legs:—Thorax a rather muddy grey, unstriped, the shoulders paler. Abdomen grey with three pairs of round spots, very distinct in the male, less so in the female. Antennæ and palpi black. Legs wholly yellow in the male, but in the female the femora entirely black or with just their extreme tips yellow.

Pokorny places it in his genus or subgenus *Centriocera*, which he has created for this and some other half-dozen species. It is not, I believe, uncommon on the Black Mountain range in July. There I take it among heather, crowberry, and such like plants, on the broad exposed plateau of the summit.

PEGOMYIA DULCAMARÆ, sp. n. (♂ ♀).

This belongs to the group in which the abdomen is wholly grey, and to that portion of it having both antennæ and palpi black:—Thorax whitish grey,

three-striped, the stripes most distinct in male; three pairs of large acrostichal bristles unmingled with smaller ones in front of the suture, approximated and nearly half as large as the dorso-central; scutellum grey. Abdomen grey and unstriped, not recurved at the end in the male, and with two small flaps underneath. Eyes subcontiguous (σ), widely separated (?); frons rufous in both sexes, the margins white, face white; antennae wholly black or with the basal joints obscurely rufous; palpi black. Legs yellow; fore femora of male mainly black, only the under part towards the apex more or less extensively yellow, middle femora with a double row of long weak bristles on the inner side, crowded at the base, thinning out and past the middle vanishing; of female, fore femora mainly yellow, only the upper side black, middle femora without the above bristles; in male, fore tibiae with a preapical bristle and another about middle of outer side, middle tibiae with three on the inner side—one just below upper edge and two at a rather lower level, hind pair 3, 3, 2 on upper, outer, and under sides respectively, the two on under side close together and just below the middle; in female, fore tibiae as in male, middle tibiae with three bristles as in male and a fourth on outer side at junction of middle and lower thirds, in the single female before me bristles on hind tibiae very different on the two sides—on the left side 2, 2, 3 on the several aspects, on the right 2, 5, 1. Wings clear, the large cross-vein straight or nearly so, halteres yellow.

The great irregularity of the bristles of the hind tibiae in the female is remarkable, and if not due to the somewhat artificial conditions to which the insect was exposed, indicates that little value as a character can be given them in the case of this sex. In the row of five, the three extra bristles are only half the size of the two ordinary ones, and about as large as the single one on the lower side. In one of the males also the bristles of the middle tibia on the left hand are 1, 3, instead of 1, 2. Herr Stein's observation on the insect was "near allied to *interruptella*, Ztt." I am, however, unable to compare them, as I have never seen *interruptella*, nor have had access to a description of it.

I have at no time met with *dulcamarae* on the wing. My few specimens (three σ s, one ?) were obtained by breeding. For some years past I had been aware that the leaves of *Solanum dulcamara* were mined by a dipteran that made large white blotches in them. But it was a long time before I succeeded in finding out what the insect was; partly because the mines, which were very scarce, had been vacated before I found them, or because the larvæ turned out to be stung. However, in the autumn of 1911, I came upon a small plant by the edge of Devereux Pool on which were four full mines, and was fortunate in getting out the following April four perfect insects. The rearing presented no difficulties. The mines were placed in a shallow tin box and over them was laid a layer of fresh leaves to keep them from drying, and in amongst these the larvæ pupated comfortably. I

took care, however, to keep them sufficiently damp as spring came on. For the guidance of others I may add that I have never seen these mines on the strong bushy plants of the hedges, but only on young and straggling ones in wet situations.

CENOSIA STIGMATICA, sp. n. (♂).

"A new and very interesting *Cenosis*," was Herr Stein's remark in returning it. The conspicuousness of the outermost costal cell, which is dark grey—in strong contrast with the clearness of the rest of the wing—distinguishes it at once, so far as I know, from any other *Cenosis*.

It is a small species; one of my specimens being of the size of *injantula*, the other somewhat larger:—Thorax and abdomen dark grey, the former unstriped and with the shoulders rather paler, the latter with four pairs of somewhat elongated spots; hypopygium of the usual form, a pair of small flaps embracing the end of the style. Frons fully as broad as long, the centre occupied by the usual v-shaped black mark and the margins white: the face viewed from the front has the upper half of the eye margins white and the lower half black; antennæ black, ariste bare, palpi black. All the femora black, but yellow at extreme tip; tibiæ yellow though somewhat obscured by the rather strongly developed pubescence, the bristles very few in number, weak and hair-like; fore tibiæ with a preapical bristle and another on outer side at junction of middle and lower thirds, middle ones with one bristle only—on upper side just below the centre, hind pair with three—one on upper side near apex and two on outer side, namely, one above the middle and one in lower third. Wings clear, outermost costal cell conspicuously grey, calyptra moderately large with unequal scales, halteres yellow.

Besides the striking character of the clouded costal cell, almost equally important are the fewness of the tibial bristles and their weak hair-like nature. *C. stigmatica* is another of the rare things the Monnow produces. I swept two males on September 7th, 1910, from amongst a varied growth of mugwort, viper's bugloss, *Senecio*, butter-bur, and other plants on one of its sandy deposits. September unfortunately is a late date in a general way for this locality, and largely on this account I have neglected paying it another visit at the proper time, and therefore have no idea whether the insect is fairly common there or not.

I have only to add that, as it is to Mr. Collin that most of us, since Mr. Verrall's death, resort in our difficulties, I have placed one specimen at least of each of these four novelties in his collection.

Tarrington, Ledbury:

January, 1913.

A New Entomological Monthly Journal.—"Insector Inscitiæ Menstruus, a Monthly Journal of Entomology," is the title of a new American periodical started during the present year. It is conducted by Mr. Harrison G. Dyar, and is sold only by subscription, at the price of two dollars per annum, payable in advance. We are indebted to Mr. F. Knab for a copy of No. 2 of Vol. 1, which contains papers on *Diptera* and *Lepidoptera*, including descriptions of new species. The only other American journals of this kind that we are acquainted with are the "Canadian Entomologist," commenced in 1869, and the "Entomological News," commenced in 1890.—Eds.

Note on the Equisetum-eating larva of Bagous claudicans, Boh.—In the "Tijdschrift voor Entomologie," LV, pp. 208-216 (October, 1912), Dr. J. C. H. Meijere gives an account of the life-history of two insects living in Holland upon *Equisetum limosum* in their earlier stages—a saw-fly (*Dolerus palustris*, Kl.) and a Curculionid beetle (*Bagous claudicans*, Boh.), both of which are British. The larva of the *Dolerus* has been described by various authors, but that of the *Bagous* is not known to British Coleopterists. A short extract, therefore, from Dr. Meijere's paper will doubtless interest our readers:—

"To the best of my knowledge very few larvae feed on *Equisetum*—so far I only know of the saw-fly, *Dolerus palustris*, and the beetle, *Bagous claudicans*, whose larvae feed up inside the hollow stems. On May 30th, 1907, I examined some plants of *E. limosum* growing at Kortenhoef, and found a few oblong orange-red ova, mostly singly in each plant, rarely two in different internodes. The hole made by the ovipositor of the parent beetle is visible from outside. I had the eggs a month before the larvae hatched. These are legless and have a few scattered colourless hairs. In 1908 I found several larger larvae (measuring up to 4 mm.), mostly close to the apex of the stem, which then is always dead for a length of from 5-15 mm. The larvae eat up through the nodal diaphragms. None of these larvae were bred, but in 1911 I found more large larvae, which all pupated by June 8th, the whitish-yellow pupae lying free in the internode. On June 19th three beetles emerged. As far as the Dutch species of *Bagous* are concerned, the metamorphoses of *B. nodulosus* only are known, the larva of which has been found by Gadeau de Kerville in numbers on *Stratiotes aloides*." The larva and pupa of *B. claudicans* are described at length by Dr. Meijere and figured on Plate 9 of the work quoted. In the same paper the author notes that the Homopteron *Philaenus spumarius* does not spare *Equisetum*. *E. limosum*, it may be stated, is a common British plant growing in the mud at the edges of shallow ponds and ditches, often with *Carex*, *Phragmites*, *Menyanthes*, and *Glyceria*. *Grypidius equiseti* appears to be attached to *Equisetum arvense* and *palustre*.—G. C. CHAMPION, Horsell, Woking: March 17th, 1913.

Stenus oscillator, Rye, in Ireland.—Mr. E. Bullock recently sent me for examination various freshly-captured *Steni* from Killarney. Amongst the *S. bifoveolatus*, Gyll., there was a single specimen differing from the rest in having the marginal keel on segments 2-4 of the hind body wanting. This at once suggested the long sought for *S. oscillator*, Rye, which has remained unique since it was described in 1870, and on comparing the Killarney insect with the Brighton type in the British Museum, Mr. Bullock's specimen proved to be clearly refer-

able to the same species, merely differing from the type in having slightly longer elytra. It has been suggested that *S. oscillator* may be a hybrid between *S. latifrons* and *S. paganus*; but neither Rye nor any other Coleopterist appears to have observed the extraordinary close resemblance to *S. bifoveolatus*, with which it agrees in every respect except in the incompletely margined hindbody. The femora and tibiæ it is true are black in *S. oscillator*, but amongst my series of *S. bifoveolatus* there is one (a ♀) from Woking, with the legs similarly coloured. It is probable that the two examples of the former are of the female sex.—G. C. CHAMPION: *March*, 1913.

Coleophora agrammella, Wood, in *Sussex*.—In 1892 Dr. John H. Wood (Ent. Mo. Mag., Vol. XXVIII, p. 282, *et seq.*) brought forward a species, new to science, of the rush-feeding section of the genus *Coleophora*, to which he gave the name of *agrammella*. This insect he took in the neighbourhood of Ledbury, Herefordshire, and till last year, I believe, it has not occurred elsewhere. When on May 18th, 1912, my brother, H. Leonard Sich, took me to a deep lane leading to a wood in the Hailsham district, I disturbed a small pale Coleophorid from a rush plant. It was not *C. murinipennella* and the date appeared to be too early for *C. cæspitiella*, and thus the long sought for *C. agrammella* came to mind. We re-visited this lane on the same day at dusk and secured over a dozen specimens. We found them flying quietly, and frequently resting on the herbage. From the ringed antennæ, I felt sure of their identity, and a subsequent examination of the ventral plate of the 8th abdominal segment in the female, proved them to be *C. agrammella*. To make doubly sure, I forwarded a pair to Dr. Wood, who agreed as to their identity. Having now come across this species, I shall hope to find it in other localities.—ALFRED SICH, Corney House, Chiswick, W.: *March 5th*, 1913.

Phoxopteryx biarcuana: a correction.—My thanks are due to Mr. A. Thurnall for suggesting that I recorded *Phoxopteryx inornatana* erroneously as *P. biarcuana* in Ent. Mo. Mag., February, 1913, p. 35, and for confirming his suggestion by examining the specimens in question.—H. G. CHAMPION, New College, Oxford: *March 9th*, 1913.

Conveyance of a semi-apterous female moth by the male.—Concerning Mr. Porritt's remarks (Ent. Mo. Mag., March, 1913) on the conveyance of apterous and semi-apterous females by their males, it may be worth mention that while collecting in the evening of April 7th, 1909, in this district, a male *Hybernia marginaria* was disturbed out of a fence conveying an attached female flying high, and some little distance before capture. As the pair were disturbed into moving, this is of course only evidence that the male *can* carry a female if so disposed, but it would seem that Mr. Porritt's supposition as to the method of distribution of this and some other species in which the females are apterous or semi-apterous, is strengthened thereby.—RUPERT STENTON, St. Edwards, St. Mary Church, Torquay: *March 10th*, 1913.

Note on the distribution of Polygonia-c-album.—In view of the gradual disappearance of this butterfly, which was once fairly widespread in England

during the last half century, it may be of interest to note that it is still to be met with, here and there, over the whole of the Conway Vale in North Wales, *i.e.*, from Bettws-y-coed, some twenty miles up the river, to near the sea at Deganwy. It would seem to be absolutely native here, as there are no hop gardens in the district. I have only found the caterpillar feeding upon nettle (*Urtica dioica*) in this neighbourhood. Another locality where I have known it for many consecutive years is the Onny Valley in the south of Shropshire. Here it is fairly abundant, frequenting thistle heads, and the food plant is again, as far as my observation goes, nettle.—WILLOUGHBY GARDNER, Deganwy, North Wales: *March*, 1913.

Notes on British Aculeate Hymenoptera.—The following notes on some of the rare British Aculeates that have occurred here during the past two years may be of interest:—

1. *Heriades truncorum*.—Probably classed as extinct in Britain until “re-discovered” by Mr. E. B. Nevinson some three or four years ago. Last year I found it breeding at Byfleet in some numbers. Cobham is certainly only some five miles from here, but as Mr. Nevinson took steps for the preservation of this species it will be of interest to record the new locality, as it may be that the insect is widening its circle of existence in consequence of Mr. Nevinson’s efforts on its behalf.*
- 2.—*Macropis labiata*.—I have been fortunate enough to watch this rare insect in hundreds, collecting pollen from *Lysimachia vulgaris* within a few miles from its old haunts on the Woking Canal, where the late Ed. Saunders first showed it to me.
- 3.—*Prosopis genalis*—another great rarity. I recorded it from this district in 1911, and last year saw two or three specimens in my own garden. In addition to these, half-a dozen rare aculeates have occurred to me here during 1911-12 worthy of mention: *Sapyga 5-punctata* (commonly); *Pompilus approximatus*, 1 ♀; *Nomada roberjeoliana*; and *Crabro tibialis, gonager* (♀ ♀ only) and *pauxeri*.—C. H. MORTIMER, Royton House, Byfleet, Surrey: *February*, 1913.

Hedychridium coriaceum parasitic on Crabro albilabris.—In 1911 the Rev. F. D. Morice suggested the possibility of this to me, and as it coincided with one or two observations of my own, I, last year, kept careful watch on the burrows of *C. albilabris*. The result was entirely to confirm Mr. Morice’s suggestion. I took a good series of this, the most recently discovered of our British Chrysidids, in various localities, in every instance as the insect emerged from a burrow of the *Crabro*. I suspect that in the neighbourhood of its host it is anything but a rarity; but notwithstanding the brilliance of its colour, its minute size and rapid flight make it exceedingly hard to detect.—C. H. MORTIMER.

The host of Ornithopsylla laticia, Rothsch.—In a previous number of the Entomologists’ Monthly Magazine (II, Vol. XIX, pp. 231-233, 1908) I described a flea under the name of *Ornithopsylla laticia*.

* The Rev. F. D. Morice captured a specimen of *H. truncorum* at Weybridge on July 10th, 1909 [cf. Ent. Mo. Mag., xxxvi, pp. 203, 204].—Ers.

The insect in question had been discovered by Mr. Norman H. Joy in the Scilly Islands, and it was stated that the flea inhabited the nests of the puffin.

Mr. Joy now tells me that he found the flea in all the nests of the Manx Shearwater and the Stormy Petrel which he examined on the Scilly Islands last year, and he considers that it only wanders occasionally to those nests of puffins which are close to the burrows of the previously mentioned birds. Nests of the puffin examined on the Farne Islands did not yield this remarkable flea, a further proof of the correctness of Mr. Joy's contention that the flea is not a genuine parasite of the puffin.—N. CHARLES ROTHSCHILD, Arundel House, Kensington Palace Gardens, London: *February 22nd, 1913.*

The Society for the Promotion of Nature Reserves.—This Association, recently founded under the presidency of the Rt. Hon. W. J. Lowther, M.P., with a council whose names include those of a number of the best-known naturalists of the day, is one whose objects will surely appeal strongly to every reader of this Magazine. Briefly stated, these objects are to collect information as to areas of land in the United Kingdom which retain their primitive characteristics and contain rare and local species liable to extinction, and to devise means by which such areas may be acquired, and their fauna and flora secured for posterity, as far as may be in their original state. Such localities as these, owing to enclosure, drainage, building, above all to the ever-growing craze for golf, are daily becoming fewer, and some action such as that proposed by the Society, is urgently needed if our successors are to retain any reasonable share of the fauna and flora of our native land for future study. Much good work of this kind has already been done by private enterprise, and even small areas thus preserved in their natural state may be of the highest value. Such a "sanctuary" is the charming little "Ruskin Reserve," at Cothill, Berks, acquired in 1904 by the Ashmolean Natural History Society of Oxfordshire, which comprises in an extent of less than three acres of marsh and woodland a veritable museum of rare and interesting plants and insects. It may be added that no subscription is required from members, these being elected by invitation of the Executive Committee. The Society may be assured of our heartiest good wishes and support.—Eds.

Societies.

LANCASHIRE AND CHESHIRE ENTOMOLOGICAL SOCIETY: Meeting held at the Royal Institution, Colquhoun Street, Liverpool, on *Monday, January 20th, 1913.*—Mr. R. WILDING, Vice-President, in the Chair.

A paper by Mr. H. St. J. K. Donisthorpe, F.E.S., was read by the Hon. Secretary, the subject being "Some Associations between Ants of different Species." The paper fully described all that is known of these associations, and specially dealt with the relationship between species of *Formicoxenus*, *Anergates* and *Wheeleriella*. A vote of thanks to the author was carried unanimously, and a discussion, showing a general interest in the subject, ensued.

Exhibits were as follows: A box of *Micro-Lepidoptera* by Mr. A. W. Boyd, collected in Lancashire and Cheshire during 1912, recording many new localities for species already on our list. Mr. W. Mansbridge showed a buff-coloured male of *Arctia mendica* from Co. Cork.—WM MANSBRIDGE, *Hon. Secretary*.

THE SOUTH LONDON ENTOMOLOGICAL AND NATURAL HISTORY SOCIETY :
Thursday, February 13th, 1913.—Mr. A. E. TONGE, F.E.S., President, in the Chair.

Mr. B. R. Wixey, of Palmer's Green, N., was elected a Member.

It was announced that Mr. Step had been made Editor of Proceedings, and that Messrs. J. Platt Barrett and N. D. Riley were added to the Council in accord with the alterations in the bye-laws passed at the Special Meeting held on January 23rd.

Mr. Buckstone exhibited several aberrations of *Charaxes graminis*, including a remarkably uniform grey specimen, the markings being scarcely discernible. Mr. West, six species of the Coleopterous genus, *Ophonus* (*Harpalus* in part), with the aedeagus mounted by the side of the males, and remarked that the study of this organ had revolutionised the previous identification of the species. Mr. Andrews, a series of the Dipteron, *Hæmatobia irritans*, taken off the backs of bullocks near Milford Haven. It was stated that flies had frequently been observed clustered in dense rings around the horns of bullocks. Mr. K. G. Blair, a large living larva of a *Geotrupes* and compared it with that of *Melolontha*. Mr. A. E. Gibbs, a large number of *Syntomidæ* with their supposed models, taken by Dr. Davis of Belize, in British Honduras. Mr. Tonge, a fine bred series of *Epunda lichenea* from Eastbourne. Mr. Coote, bred *Papilio machaon*, in which the ground colour approached that of *ab. aurantiaca*. Mr. Frohawk, various aberrations of *Melitæa athalia*, *M. aurina*, and *M. cinxia*, including a fine melanic form of the first species, and some fine underside forms of the last named, together with drawings of an albino *Argynnis adippe*, an albino *Euchlœe cardamines*, &c. The rest of the evening was devoted to microscopical exhibits by Messrs. C. B. Williams, R. Adkin, F. Noad Clarke, — Ashdown, and W. West (Ashstead).

February 26th, 1913.—The President in the Chair.

There was an exhibition of lantern slides by Messrs. W. J. Lucas (various entomological spots in the New Forest and Surrey, &c.); C. W. Colthrup (*Lepidoptera* at rest, &c.); T. H. L. Grosvenor (views on Colley Hill, the variation in *Pieris napi*, *Brenthis selene*, *B. euphrosyne*, *Melitæa aurinia*, and species of *Anthroceræ*). Mr. A. E. Gibbs, butterflies collected in the Balkans in 1912, including *Pieris manni*, *P. ergane*, *Anthocharis belia*, *Pontia daplidice*, *Leptosia sinapis*, *Colias elusa* and *C. hyale*, and aberrant forms of each species. Mr. Colthrup, a specimen of *Fanessa io*, found hibernating in a room in Dulwich. Mr. Tonge, a specimen of *Sphinx ligustri*, in which the pink coloration was replaced by white. Mr. Turner, an aberration of *Melitæa didyma*, in which the black markings were, for the most part, of a pale slate colour, and various forms of the female of this species. Mr. Frohawk, a bred series of

Lampides baticus of unusually large size; the larvæ fed upon green peas. He also showed drawings of protective resting positions of various species of *Lepidoptera*. Mr. R. South, five generations of *Acidalia virgularia*, bred from ova laid by a ♀ captured at Bishop Auckland, August 7th, 1910.—HY. J. TURNER, *Hon. Secretary*.

ENTOMOLOGICAL SOCIETY OF LONDON: *Wednesday, February 5th, 1913.*—

MR. G. T. BETHUNE-BAKER, F.L.S., F.Z.S., President, in the Chair.

The President announced that he had nominated as Vice-Presidents for the ensuing session, the Rev. F. D. Morice, M.A., and Messrs. J. E. Collin and J. H. Durrant.

Mr. A. E. Gibbs exhibited a number of insects, principally Syntomid moths, from British Honduras. Mr. A. J. Richards, several very scarce *Coleoptera*, chiefly from Hindhead. Mr. Donisthorpe, ♂ ♂ and ♀ ♀ of *Formica fusca*, var. *picca*, Nyl., from the New Forest, and a ♀ from Belgium, and pointed out that it was standing in the British lists as *gagates*, Latr., which has not occurred in Britain. Mr. W. A. Lamborn, cocoons of *Deilemera antinorii*, Oberth., together with the moths that emerged from them. The cocoons themselves and the arrangement of the spheres upon them showed the resemblance to the cocoons of a Braconid parasite far more clearly than the more crowded examples that he had sent before. Also two cocoons of the Lymantriid moth, *Euproctis lanaria*, Holl. He had observed that, in the construction of the cocoon, the pupa itself was hidden in the lower part, close to the leaf upon which the structure was built, and that the larva spun upon this foundation a spherical, thin-walled structure which remained perfectly empty. Mr. J. A. de Gaye, 5 ♂ ♂ and 8 ♀ ♀ of *Gonometa subfascia*, Walker, from Lagos, S. Nigeria; the males were captured while they were trying to get into the breeding cage in which were two newly-hatched females. Prof. Poulton observed that Dr. Lamborn's previous experiences had made it almost certain that, in spite of the great difference in size and appearance, these insects were the ♂ and ♀ of the same species; Mr. de Gaye's experience had now placed the matter beyond doubt. Prof. Poulton exhibited a *leighi* female of *Papilio dardanus*, Brown, together with one *trophonius* — two members of a family bred by Mr. G. F. Leigh from a female parent of the latter form; also two further sets of synepigonic *Pseudocræus* of the *curytus*, L., group, bred by Dr. G. D. H. Carpenter, on Bugalla I., L. Victoria Nyanza. Mr. B. Harold Smith, thirty-five specimens of *Phryxus livornica*, taken at light in South Cornwall, during the last half of May, 1912. Mr. A. Bacot, a specimen of *A. virgularia*, having the right wings melanic, the left wings of normal grey coloration. Mr. L. B. Prout said that the specimen was no doubt a gynandromorph. Mr. N. D. Riley, on behalf of M. André Avinoff, a collection of *Rhopalocera*, made on a journey in the Western Himalayas. M. Avinoff, who was present as a visitor, gave an account of his expedition. The following paper was read: "*Trichogramma*, Westw., probably synonymous with *Pentarthron*, Riley (*Hymenoptera*)," by R. C. L. Perkins, M.A., D.Sc., F.Z.S.

A LIST OF BUTTERFLIES COLLECTED DURING THE LAST TEN
YEARS IN BRITISH EAST AFRICA.

BY THE REV. K. ST. AUBYN ROGERS, F.E.S.

(Continued from page 53).

- 142.—*Teriomima subpunctata*, Kirby. The Coast hills, Taveta. Not uncommon in forest country. Like almost all this group its flight is very feeble.
- 143.—*Teriomima hildegarda*, Kirby. Generally distributed. Another most variable species. I have taken specimens in which the forewings are almost entirely brown. Other specimens seem to come very near to *T. aslauga*, Trimen.
- 144.—*Teriomima micra*, Gr. Smith. This is only found in the Coast hills, where it is often common. It is also very variable and it is possible that the darker forms may prove to be distinct.
- 145.—*Deloneura ochraceus*, Neave. The Coast hills. My specimens are distinctly larger than the type from Kisumu, but otherwise they are very similar. It is not common.
- 146.—*Lachnocnema bibulus*, Fabr. Common everywhere.
- 147.—*Virachola antalus*, Hopff. Ubiquitous.
- 148.—*Virachola dariaves*, Hew. The Coast district. Not common.
- 149.—*Virachola dioctes*, Hew. One or two in the Coast district.
- 150.—*Virachola lorisona*, Hew. I have one or two of this also from the same localities as the preceding.
- 151.—*Virachola dinochares*, Gr. Smith. The Coast district. Not common.
- 152.—*Virachola cerulea*, Druce. I have only taken this in the Coast district, but it probably occurs elsewhere. The females seem commoner than the males and are fond of the blossoms of *Lantana*.
- 153.—*Myrina ficedula*, Trim. Widely distributed and not uncommon. It is usually to be found on wild fig trees on which the larva feeds.
- 154.—*Myrina dermaptera*, Wallgr. One specimen only from N. Kikuyu.
- 155.—*Hypolycaena philippus*, Fabr. Ubiquitous.
- 156.—*Hypolycaena pachalico*, Butl. The Coast district, Taita, Taveta. Not so universally distributed as the last, but common where it occurs.
- 157.—*Hypolycaena burtoni*, Hew. The Coast district. This is more confined to woodlands and flies higher than the two preceding species.
- 158.—*Stugeta barkeri*, Trim. Widely distributed, but not generally common.
- 159.—*Iolaua silas*, Westw. Coast district, Taita. This fine species is not uncommon. It frequents the scrub near the sea, but soon loses condition as the wind blows strongly most of the year.
- 160.—*Epamera mermis*, Druce. Coast district, Taita. Not uncommon in woodlands. It frequents woodlands and flies rather high.

- 161.—*Epamera sidus*, Trim. S. Kikuyu. Apparently rare.
- 162.—*Epamera diametra*, Karsch. Coast hills, Taita. By no means common and excessively active, so that its capture is difficult.
- 163.—*Epamera arborifera*, Butl. Aberdare Mountains. I have obtained two females only in poor condition.
- 164.—*Epamera mimosæ*, Trim. I obtained a pair at Maketao between Voi and Taveta. They are more heavily marked beneath than specimens from South Africa.
- 165.—*Aphniolans pallene*, Wallgr. Coast district, Taita. Not generally common. It is more abundant at Shimba than elsewhere.
- 166.—*Spindasis natalensis*, Doubl. and Hew. This is a common species in the Coast district.
- 167.—*Spindasis victorice*, Butl. Coast district. Not common.
- 168.—*Spindasis homeyeri*, Dewitz. Fairly common in the Coast district.
- 169.—*Spindasis tavetensis*, Lathy. I took this commonly at Taveta on the flowers of a Mimosa.
- 170.—*Axiocerses harpax*, Fabr. Common and widely distributed.
- 171.—*Axiocerses amanga*, Westw. Also common, but not quite so widely distributed as the last.
- 172.—*Axiocerses punicea*, Gr. Smith. Coast district. A very local insect, which is sometimes common where it occurs. It may always be recognised by the presence of two silver lines just above the inner margin of the forewings, underneath.
- 173.—*Choroselas pseudogeritis*, Trim. Coast hills, Taita. This seems uncommon, but it may have been overlooked.
- 174.—*Leptomyrina lara*, Linn. Taita, Ukambani. I have not found this common. My specimens are somewhat larger and darker than others I have seen.
- 175.—*Leptomyrina hirundo*, Wallgr. Coast district. Not uncommon.
- 176.—*Alocides taikosama*, Wallgr. Ukambani. Apparently not common.
- 177.—*Spalgis lemolea*, Druce. A single specimen from near Voi.
- 178.—*Lycænesthes amarah*, Guer. Common everywhere and often very abundant. It frequents more open country than most of the genus.
- 179.—*Lycænesthes hobleyi*, Neave. Two specimens from N. Kikuyu seem to belong to this species, though they are not so red underneath as the type.
- 180.—*Lycænesthes lemnos*, Hew. Coast hills, S. Kikuyu. Not uncommon.
- 181.—*Lycænesthes minima*, Trim. Coast hills. Not generally common, but I once found it very abundant.
- 182.—*Lycænesthes lunulata*, Trim. Coast district. Not usually common.
- 183.—*Lycænesthes otacilia*, Trim. I took this in some abundance at Taveta.

- 184.—*Lycænesthes princeps*, Butl. Taita, Taveta, N. Kikuyu. This does not seem to be common, but possibly it has been overlooked.
- 185.—*Lycænesthes lasti*, Smith and Kirby. Coast hills, Taveta. Not uncommon.
- 186.—*Lycænesthes definita*, Butl. Taita, Kikuyu. This species is often abundant.
- 187.—*Lycænesthes larydas*, Cram. Common generally.
- 188.—*Lycænesthes liodes*, Hew. Coast hills, Taveta. Apparently rare but probably it has been overlooked.
- 189.—*Lycænesthes indefinita*, Bothune-Baker. I believe this occurs freely at Nairobi in the forests.
- 190.—*Phylaria cytra*, Hew. One specimen in N. Kikuyu.
- 191.—*Uranothauma heritsia*, Hew. Taita, Kikuyu. The species is common.
- 192.—*Uranothauma cordatus*, Sharpe. Kikuyu. The males occur in some abundance in damp places, especially at Rijabe. I have not taken the female.
- 193.—*Uranothauma nubifer*, Trim. Taita, Kikuyu. Not so abundant as the preceding.
- 194.—*Uranothauma fulkensteini*, Duv. Taita, Taveta, Kikuyu. The most abundant of the genus. The females frequent flowers and the males often swarm on damp ground near rivers. The specimens in Kikuyu are larger and more flushed with purple.
- 195.—*Cacyreus lingeus*, Cram. Ubiquitous.
- 196.—*Cacyreus palemon*, Cram. Taita, Kikuyu. Common above 5,000 feet.
- 197.—*Castalius melæna*, Trim. Coast district, Taveta. Not uncommon.
- 198.—*Castalius gregorii*, Butl. Taveta, Kikuyu. This species does not seem common.
- 199.—*Castalius margaritaceus*, Sharpe. North and South Kikuyu. Common. I once found it in great abundance in Kenia forest.
- 200.—*Tarucus louisæ*, Sharpe. Taita, Taveta. This species does not appear to be common, but it is very inconspicuous and liable to be overlooked.
- 201.—*Tarucus telicanus*, Lang. Ubiquitous. I have found the larva feeding on the flowers of *Plumbago capensis* without any attendant ants.
- 202.—*Azanus sigillatus*, Butl.
- 203.—*Azanus moriqua*, Wallgr.
- 204.—*Azanus mirza*, Plotz.
- 205.—*Azanus jesous*, Guer.
- All these species occur commonly and may sometimes be found in large numbers on damp sand in river beds.
- 206.—*Nacaduba sichela*, Wallgr. Generally distributed, but not usually very common.
- 207.—*Polyommatus beticus*, Linn. Ubiquitous.

Scale of Charges for Advertisements.

Whole Page.....£3. Half Page.....£1 11s. 6d. Quarter Page.....17s.

Lowest charge, 7s. up to 5 lines; 1s. per line afterwards.

Repeated or continuous Advertisements per contract.

There is no charge for Lists of Duplicates and Desiderata.

All payments and applications for the above should be made to

R. W. LLOYD, I. 5, Albany, Piccadilly, W.

NOW READY,

THE ENTOMOLOGIST'S MONTHLY MAGAZINE, Vol. XXIII, New Series (Vol. XLVIII), strongly bound in Cloth. Price 7/-.

Covers for binding, 1/- each.

London: GURNEY and JACKSON, Paternoster Row. E.C.

THE THREE COLOURED PLATES illustrating the articles on
"SOME INTERESTING BRITISH INSECTS,"

with the accompanying text (issued in the Ent. Mo. Mag. for September, 1909, and January and September, 1910) are now issued in a separate wrapper, price 2s.

APPLY TO THE PUBLISHERS.

WATKINS & DONCASTER, Naturalists,

Keep in stock all Articles for Entomologists, Ornithologists, Botanists, &c.: Umbrella Net, 7/-; Folding Cane or Wire, 3/6, 4/-, 4/6; Plain Ring Net, 1/3, 2/-, 3/-; Pocket Boxes, 6d., 9d., 1/-, 1/6; Store Boxes, with Camphor Cells, 2/6, 3/6, 4/-, 5/-, 6/-; Zinc Pocket Boxes, 9d., 1/-, 1/6, 2/- Setting Boards, from 5d. to 1/10; Complete set of 14 boards, 10/6; Breeding Cages, 2/6, 4/-, 5/-, 7/6; Sugaring Tins. 1/6, 2/-; Sugaring Mixture, ready for use, 1/9 per tin; Setting Houses, 9/6, 11/6, 14/-; Glass Topped and Glass Bottomed Boxes, from 1/- per doz.; Zinc Killing Boxes, 9d., 1/- Coleoptera Collecting Bottles, 1/6, 1/8; Collecting Box, containing 26 tubes (very useful for Coleopterists, Microscopists, &c.), 4/6; Brass Chloroform Bottle, 2/6.

Improved Pocket Pupa-digger in leather sheath (strongly recommended), 1/9; Steel Forceps, 1/6 to 3/- per pair; Pocket Lens, from 1/6 to 8/6.

Taxidermists' Companion, containing most necessary implements for skinning, 10/6; Scalpels, with ebony handles, 1/3; Fine Pointed Scissors, 2/- per pair; Brass Blow-pipes, 4d., 6d.; Egg Drills, 2d., 3d.; ditto, best quality, 9d. each; Botanical Vasculum, 1/6, 2/9, 3/6, 4/6; Label List of British Macro-Lepidoptera, with Latin and English Names, 1/6; List of British Lepidoptera (every species numbered), 1/-; or on one side for Labels, 2/-.

SILVER PINS FOR COLLECTORS OF MICRO-LEPIDOPTERA, &c.,

as well as minute insects of all other families.

We stock various sizes and lengths of these Silver Pins, which have certain advantages over the entomological pins usually employed.

For instance, insects liable to become greasy and verdigrisy, like Sesiidae, are best pinned on Silver pins, which will last much longer than the ordinary pins (whether enamelled black, or gilt, or silvered).

We shall be pleased to send pattern cards on application.

A large stock of British, European, and Exotic Lepidoptera, Coleoptera, and Birds' Eggs.

ENTOMOLOGICAL PINS.

The "DIXON" LAMP NET (invaluable for taking Moths off street lamps without climbing the lamp posts), 3s. 6d.

SHOW ROOM FOR CABINETS, &c.

36, STRAND, LONDON, W.C., ENGLAND.

Birds and Mammals, &c., Preserved & Mounted by first-class workmen.

Our New Price List (100 pp.) sent post free to any address on application.

CONTENTS.

PAGE

A contribution to a knowledge of the British Notiophili (<i>concluded</i>).— <i>James Edwards, F.E.S.</i>	73
Description of a new species of Haliphus.— <i>D. Sharp, M.A., F.R.S.</i>	75
Description of a new species of Quedius from the New Forest, Hants.— <i>Norman H. Joy, M.R.C.S., F.E.S.</i>	76
Two New British species of Atheta.— <i>Id.</i>	77
Description of a new species of Atheta (<i>Microdota</i>).— <i>M. Cameron, M.B., R.N., F.E.S.</i>	78
The Wingless Geometer.— <i>Geo. T. Porritt, F.L.S.</i>	79
Apterous females of Winter Moths.— <i>T. A. Chapman, M.D., F.Z.S.</i>	81
Two species of Aculeate Hymenoptera new to Britain.— <i>Lieut.-Col. G. C. Nurse, F.E.S.</i>	83
Four unrecorded British Anthomyidæ; two of them at the same time being new to science.— <i>John H. Wood, M.B.</i>	84
A new Entomological Monthly Journal.— <i>Eds.</i>	88
Note on the Equisetum-eating larva of Bagous claudicans, Boh.— <i>G. C. Champion, F.Z.S.</i>	88
<i>Stenus oscillator</i> , Rye, in Ireland.— <i>Id.</i>	88
<i>Coleophora agrammella</i> , Wood, in Sussex.— <i>A. Sitch, F.E.S.</i>	89
<i>Phoxopteryx biarcuana</i> : a correction.— <i>H. G. Champion, B.A.</i>	89
Conveyance of a semi-apterous female moth by the male.— <i>Rupert Stenton, F.E.S.</i>	89
Note on the distribution of <i>Polygonia c-album</i> — <i>Willoughby Gardner, F.L.S.</i>	89
Notes on British Aculeate Hymenoptera.— <i>C. H. Mortimer, F.E.S.</i>	90
<i>Hedychridium coriaceum</i> parasitic on <i>Crabro albilabris</i> .— <i>Id.</i>	90
The host of <i>Ornithopsylla lætitiae</i> , Rothsch.— <i>Hon. N. Charles Rothschild, M.A., F.L.S.</i>	90
The Society for the Promotion of Nature Reserves.— <i>Eds.</i>	90
SOCIETIES—Lancashire and Cheshire Entomological Society	91
South London Entomological Society	92
Entomological Society of London	93
A list of butterflies collected during the last ten years in British East Africa (<i>continued</i>).— <i>Rev. K. St. Aubyn Rogers, F.E.S.</i>	94

LANCASHIRE AND CHESHIRE ENTOMOLOGICAL SOCIETY.—Meetings the third Monday in each Month, October to April. *Hon. Sec.*, WM. MANSBRIDGE, 4, Norwich Road, Wavertree, Liverpool.

ENTOMOLOGISCHE MITTEILUNGEN, Published by the Verein zur Forderung des Deutschen Entomologischen Museum. Monthly Entomological paper; official edition of the Deutsches Entomologisches Museum, whose large Library is at the disposal of all Subscribers at most liberal terms. Gratis to each number continuation of the Library's Catalogue. Terms: 7s. (m. 7) a year; 3s 6d. (m. 3-50) half a year.

Address: Deutsches Entomologisches Museum, Berlin-Dahlem, Gosslesstr, 20.

DR. STAUDINGER & BANG-HAAS, BLASEWITZ-DRESDEN, in their new Price List, No. LVI for 1913, offer more than 19,000 species of well-named LEPIDOPTERA, set or in papers, from all parts of the world, in finest condition; 1600 kinds of PREPARED LARVÆ, &c.; we sell no more living pupæ. Separate Price Lists for COLEOPTERA (29,000 species); HYMENOPTERA (3600 species), DIPTERA (2900), HEMIPTERA (2500), ORTHOPTERA (1200), NEUROPTERA (630), BIOLOGICAL OBJECTS (300).

PRICES LOW. DISCOUNT FOR CASH ORDERS.

Second Series, No. 281.]
[No. 588.]

MAY, 1913.

[PRICE 6d. NET

THE
ENTOMOLOGIST'S
MONTHLY MAGAZINE.

EDITED BY

G. C. CHAMPION, F.Z.S. J. E. COLLIN, F.E.S.

W. W. FOWLER, D.Sc., M.A., F.L.S.

R. W. LLOYD, F.E.S. G. T. PORRITT, F.L.S.

J. J. WALKER, M.A., R.N., F.L.S.

SECOND SERIES—VOL. XXIV.

[VOL. XLIX.]

“J'engage donc tous à éviter dans leurs écrits toute personnalité, toute allusion dépassant les limites de la discussion la plus sincère et la plus courtoise.”—*Laboulbène*.

LONDON :

GURNEY & JACKSON (MR. VAN VOORST'S SUCCESSORS),
33, PATERNOSTER ROW, E.C.

SOLD IN GERMANY BY FRIEDLÄNDER UND SOHN, BERLIN.

NAPIER, PRINTER, SEYMOUR STREET, EUSTON SQUARE.

MAY 10 1913

REDUCED PRICES FOR BACK VOLUMES.

FIRST SERIES.

This can only be obtained in complete Volumes (bound or unbound).

A limited number of sets, from Vol. x to Vol. xxv can still be obtained at £2 15s. per set net (in parts), or of five consecutive Vols. at £1 per set net (if bound, 1s. per Vol. extra).

Certain of the Vols. i to ix can be had separately at 10s. each.

SECOND SERIES.

Vols. i to xv. are now offered at £3 per set net (in parts), or £1 2s. 6d. for five consecutive Vols. (if bound, 1/- per Vol. extra).

Apply to the Publishers.

NOTE.—Subscriptions for 1913 (6s. per annum, post free) are now due, and should be paid to R. W. LLOYD, I. 5, Albany, Piccadilly, London, W.

It would be a great convenience to the Editors in keeping the accounts if these were paid promptly, as having to send reminders entails a considerable amount of extra work.

The Coloured Plates issued in September, 1909, January and September, 1910, and September, 1911, having been so much appreciated by our readers, a fifth (devoted to *Dermoptera*) was given with the October, 1911, number. The Editors would be greatly obliged if the Subscribers to this Magazine would use their best endeavours to bring it to the notice of their entomological friends, and induce them to subscribe also.

DIRECTLY FROM THE SOURCES!! ORNITH. ALEXANDR.E.
The King of all Ornithopteras and the largest of all butterflies in the world.

Fresh ex-larva, set or in paper-bags. Lowest price, according to dimensions and beauty.

ORNITH. LYDITS in the same conditions.

PIERRE HASTERT, Luxembourg Grund.

THE CANADIAN ENTOMOLOGIST.

A MONTHLY MAGAZINE DEVOTED TO THE STUDY OF SCIENTIFIC ENTOMOLOGY.

Volume 45 is now in course of publication. Back volumes can be supplied. It is the oldest established Magazine of the kind in America, and has a world-wide circulation. Subscription, \$1 per annum, which includes a copy of the Annual Report of the Entomological Society of Ontario to the Legislature. Editor, Dr. E. M. Walker, Biological Department, University of Toronto, Toronto, Canada.

Address: Entomological Society of Ontario, Guelph, Canada.

CITY OF LONDON ENTOMOLOGICAL AND NATURAL HISTORY SOCIETY, London Institution, Finsbury Circus, London, E.C.—The First and Third Tuesdays in the month at 7.30 p.m., except in July and August. April 1st: Notes on Dragonflies, Mr. H. M. EDELSTEN, F.E.S. April 15th: Exhibition and Discussion, *Bupalus piniaria*; opened by Dr. E. A. COCKAYNE, M.A., F.E.S. May 6th: Notes on *Thera variata* and *T. obeliscata*, Mr. L. B. PROUT, F.E.S. Visitors are cordially invited to attend with exhibits.—V. ERIC SHAW, Hon. Sec.

- 208.—*Cyclirius sharpie*, Butl. Kikuyu. Common on swampy ground above 7,000 feet.
- 209.—*Scolitantides crawshayi*, Butl. Kenia. Probably not uncommon.
- 210.—*Catochrysops malathana*, Boisd. Ubiquitous.
- 211.—*Catochrysops dolorosus*, Trim. Kikuyu. Very common near Nairobi. It is probably often overlooked.
- 212.—*Catochrysops osiris*, Hopff. Common generally.
- 213.—*Catochrysops burkeri*, Trim. Coast district. Not uncommon.
- 214.—*Catochrysops celæus*, Cram. One specimen from Kenia which is probably this species.
- 215.—*Catochrysops peculiaris*, Rogenh. Widely distributed but not generally common. I have met with it more frequently at Mombasa than elsewhere.
- 216.—*Chilades trochilus*, Meyer. Occurs everywhere.
- 217.—*Chilades mahallakoana*, Wallgr.—Two specimens from the Thika River on the Fort Hall Road.
- 218.—*Everes hippocrates*, Fabr. Coast district, Taita, Taveta. Not uncommon.
- 219.—*Everes micyclus*, Cram. Coast district. Rather a local species generally found near streams.
- 220.—*Cupidopsis cissus*, Godart. North and South Kikuyu. Not very common.
- 221.—*Cupidopsis jobates*, Hopff. Common generally, especially at Taveta.
- 222.—*Zizeeria gaika*, Trim. Ubiquitous.
- 223.—*Zizeeria lysimon*, Hübn. Ubiquitous.
- 224.—*Zizeeria lucida*, Trim. Common generally but not so abundant as the two preceding.
- 225.—*Zizeeria antanossa*, Mab. Generally distributed but apparently not common. It probably only wants looking for.
- 226.—*Zizeeria stellata*, Trim. Kikuyu. Fairly common at high elevations.
- 227.—*Chrysophanus abboti*, Holl. Ukambani, Kikuyu. Not uncommon. Except for its copper hind wings, this species resembles the British "Small Copper."
- 228.—*Leptosia medusa*, Cram. Common in forests.
- 229.—*Herpænia eriphea*, Godart. Common generally.
- 230.—*Mylothris agathina*, Cram. Ubiquitous.
- 231.—*Mylothris ruppelli*, Koch. Common except in the Coast district.
- 232.—*Mylothris rubricosta*, Mab. Kikuyu. Common especially in Papyrus swamps.
- 233.—*Mylothris narcissus*, Butl. Taita. Not uncommon.
- 234.—*Mylothris jacksoni*, Sharpe. Kikuyu. The amount of fuscous in the fore-wing is very variable. Specimens captured on the same day vary from

- a fore-wing completely fuscous except for the veins, to a fore-wing white with a fuscous border all round the wing. I somewhat doubt the validity of *Mylothris neumanni*.
- 235.—*Phrissura phorbe*, Butl. Common at Nairobi, and also occurs in the Coast hills.
- 236.—*Phrissura isokani*, Smith.—Coast district. Not common.
- 237.—*Phrissura lasti*, Smith. Coast district. By no means uncommon, chiefly in forest.
- 238.—*Glutophrissa epaphia*, Cram. Generally very common.
- 239.—*Belenois margaritacea*, Sharpe. Taita, Kikuyu. Above 4000 ft. Not very common generally, but I have taken it in some abundance in Taita during the hot weather. It is more confined to woodlands than most species of the genus.
- 240.—*Belenois gidica*, Godart. Common everywhere.
- 241.—*Belenois severina*, Cram. Ubiquitous.
- 242.—*Belenois mesentina*, Cram. Abundant everywhere.
- 243.—*Belenois zochalia*, Boisd. Generally distributed, except in the Coast district.
- 244.—*Belenois thysa*, Hopff. Generally common.
- 245.—*Pinacopteryx spilleri*, Stand. Coast district, Taita. Not uncommon.
- 246.—*Pinacopteryx pigea*, Boisd. Taita, North and South Kikuyu. The females of this species appear to be dimorphic and mimic *Mylothris agathina* and *M. narcissus*.
- 247.—*Pinacopteryx vidua*, Butler. Taita. Sometimes found commonly near the Voi River.
- 248.—*Pinacopteryx liliانا*, Gr. Smith. Coast district, Taita, Taveta, Ukambani. A common species, which is rather variable.
- 249.—*Synchlœ johnstoni*, Crowl. Taita, Ukambani, Kikuyu. Often abundant, especially at Nairobi.
- 250.—*Teracolus amatus*, Fabr. Generally common.
- 251.—*Teracolus phisidia rothschildi*, Sharpe. I have only taken this right on the sea coast, where it is often common.
- 252.—*Teracolus castalis*, Stand. Coast district, Taita, Taveta. Not uncommon, especially near the Voi River.
- 253.—*Teracolus aurigineus*, Butl. Taita, Taveta, Kikuyu. Generally common in dry places.
- 254.—*Teracolus vesta*, Reiche. This is also a common species of wide distribution.
- 255.—*Teracolus halimede*, Klug. Taita, Taveta. Common.
- 256.—*Teracolus protomedea*, Klug. Coast hills, Taita. I have not found this fine species common, but it is of more frequent occurrence in North Giryama than elsewhere.

- 257.—*Teracolus celimene*, Lucas. Taita, Taveta, Ukambani. I have not met with this commonly.
- 258.—*Teracolus eris*, Klug. This is another widely distributed species. It is not uncommon. Its flight is generally rapid.
- 259.—*Teracolus phleggyas*, Butl. Coast district, Taita, Taveta. This is a common species. Together with other species of this genus and also the common species of *Belenois*, it resorts to the same places for considerable periods to rest for the night. These places are generally exposed to the rays of the Western sun.
- 260.—*Teracolus buccus*, Butl. Taveta, Ukambani. This seems uncommon, but it is doubtful whether it is really distinct from the preceding.
- 261.—*Teracolus regina*, Trim. Coast district, Taita, Taveta. Rather irregular in its comparative abundance. I have found it commoner at Rabai than elsewhere.
- 262.—*Teracolus hetera*, Gerst. Coast hills, Taita, Taveta, South Kikuyu, Ukambani. Fairly common generally.
- 263.—*Teracolus puniceus*, Butl. Coast hills, Taita. Doubtfully distinct from the preceding. The yellow females, which are apt to occur sporadically in most species of the genus, seem to be of more frequent occurrence in these two species.
- 264.—*Teracolus elgonensis*, Sharpe. North and South Kikuyu. Sometimes found in some numbers. Its habits are very different from those of the genus generally as it frequents forest and flies rather high. All my captures differ from the type in almost totally wanting the broad black of the apex.
- 265.—*Teracolus callidia*, Smith. Taita, Taveta. Fairly common.
- 266.—*Teracolus eupompe*, Klug. Generally abundant.
- 267.—*Teracolus omphale*, Godart. Ubiquitous.
- 268.—*Teracolus दौरα*, Klug. Coast district, Taita, Taveta. This species is fairly common, but it may easily be overlooked from its resemblance to *T. omphale*. All my captures are of the wet phase.
- 269.—*Teracolus achine*, Cram. Ubiquitous.
- 270.—*Teracolus casta*, Gerst. Coast hills, Taita, Taveta. Not common at the Coast, but abundant at Taveta.
- 271.—*Teracolus antigone*, Boisd. Ubiquitous.
- 272.—*Teracolus evarne*, Klug. Ubiquitous.
- 273.—*Teracolus ineretus*, Butl. Generally abundant.
- 274.—*Eronia cleodora*, Hüb. Coast district, Taita, Taveta. A common species in woodlands and forest.
- 275.—*Eronia leda*, Boisd. This is found in the same districts as the preceding species.
- 276.—*Leuceronia argia*, Fabr. This is common in the woodlands of the coast belt, but I have seldom met with it elsewhere.

- 277.—*Leuceronia thalassina*, Boisd. Coast hills. Not common at Rabai, but I have met with it in some abundance in Giriama country.
- 278.—*Leuceronia huqueti*, Boisd. Common generally.
- 279.—*Catopsilia florella*, Fabr. Abundant everywhere.
- 280.—*Terias senegalensis*, Boisd. Abundant everywhere.
- 281.—*Terias regularis*, Butl. This seems common generally.
- 282.—*Terias brigitta*, Cram. Ubiquitous.
- 283.—*Colias electra*, Linn. Common above 4000 ft. The white female occurs freely.
- 284.—*Papilio nobilis*, Rogenh. South Kikuyu. Not uncommon. Generally flies high in forests.

(To be concluded).

PHILONTHUS SCOTICUS, SP. NOV.: A BEETLE NEW TO BRITAIN.

BY NORMAN H. JOY, M.R.C.S., F.E.S., AND J. R. LE B. TOMLIN, M.A., F.E.S.

Black, elytra with a slight brassy reflection, legs pitchy-yellow; head and thorax very closely and finely reticulate, rather dull; head subquadrate, a little narrower than thorax in ♂, the two punctures on forehead placed close together; antennæ with the penultimate joints rather strongly transverse; thorax slightly longer than broad, with a row of four punctures on each side; elytra diffusely, moderately strongly, and somewhat rugosely punctured; hind body finely and moderately closely punctured; first joint of hind tarsi about as long as last, distinctly shorter than the three following united; ♂ with the anterior tarsi not dilated, the hind margin of the sixth ventral segment of hind body slightly emarginate in centre. Length, 6.5—7 mm.

This species differs from all its allies* in the more transverse penultimate joints of the antennæ, in having the two punctures on the forehead placed more closely together, and in the peculiar rugose punctuation of the elytra. In *P. fimetarius* the frontal punctures are placed directly behind the insertion of the antennæ, in the other species they are somewhat closer together; but in *P. scoticus* the distance between them is less than half the distance between the insertion of the antennæ. The punctuation of the elytra is slightly closer than in *P. sordidus*, and not nearly so deep. The reticulation of the head and thorax closely resembles that in *P. fimetarius*. The ædeagus has the same general structure as in the *Gabrius nigritulus* group, and most resembles that of *G. primigenius*, but is much broader, the accessory lobe is as strongly bifid as in *G. nigritulus*. In contrast

* *P. ophaltes*, Grav., *P. nigricentris*, Thoms., *P. fimetarius*, Grav., *P. sordidus*, Grav., and *P. spernophilus*, Ganglb. We have not been able to examine *P. torbatius*, Ev., *P. diversipennis*, Bernh. and *P. scribae*, Fauv., which, however, differ considerably in colour and other details.

to this the accessory lobe in *P. jimetarius* is dilated and almost truncate at the apex, somewhat as in *G. trossulus*, where as in *P. sordidus* and *P. cephalotes* it is narrowed into a point at the apex as in the genus *Quedius*.

We took four specimens of this very distinct species in moss at the top of Creag Dhu (2581 feet), Kingussie, Inverness-shire, on September 18th, 1911.

April, 1913.

DESCRIPTION OF A NEW SPECIES OF *ACTOBIUS*.

BY D. SHARP, M.A., F.R.S.

ACTOBIUS YTENENSIS, *sp. n.*

Niger, antennis pedibusque piceis, illis articulis penultimis brevibus, transversis, articulo ultimo testaceo, tarsi tibiaramque basi et apice sordide flavis; capite thoraceque pernitidis, sat fortiter multipunctatis; elytris sat nitidis, subtilius dense punctatis, abdomine densissime punctato. Long. corp. 5 mm.

This is a very distinct little insect, allied to *A. signaticornis* but rather broader, and in shape more like a small *A. cinerascens*. The peculiar colour of the antennæ, which are pitchy-black with the terminal joint yellow, distinguishes it at once; the form of the antennæ is also different, they being shorter and a good deal thickened towards the apex, with the penultimate joints strongly transverse.

The anterior tarsi are much dilated in the male, the 4th joint being quite broad; and in this sex there is a broad shallow emargination of the hind-margin of the last entire segment of the abdomen. The aedeagus is highly interesting; it is nearest to that of *Gabrius*, with some points of approximation to *Philonthus*, and it seems to prove that the single long rod of the latter genus really corresponds with the two coalesced lateral lobes.

I first met with the species on May 5th, 1909, when I captured a female in moss beyond Beaulieu Road Station. Yesterday, while working for *Tachys parvulus* in quite another part of the New Forest, my daughter and I found three specimens. Ytene is said by Wise to be the Saxon name of the New Forest district.

Brockenhurst:

April 16th, 1913.

ON THE GENUS *CACODMUS*.

BY THE HON. N. CHARLES ROTHSCHILD, M.A., F.Z.S.

In a previous number of this Journal (*cf.* Ent. Mo. Mag., Vol. XLVIII, pp. 85—86, 1912) I described a new species of *Cacodmus*, and compared it with *C. villosus*. Since this article was published another new species has been described, and I have been able to examine further material of *C. villosus*.

These insects seem to be so extremely rare, and are of such great interest, both to specialists and to general entomologists, that a review of our present knowledge of the genus seems desirable.

The genus *Cacodmus* belongs to the sub-family *Cacodminæ*, one of the three divisions into which the various members of the *Clinocoridae*, or bed bugs, can be readily divided. All the known species of this genus are parasites of bats, and, so far, none have been recorded from the New World.

Dr. Jordan and myself (*cf.* Novit. Zoolog., Vol. XIX, pp. 352—356, 1912) have defined this sub-family as follows:—

Proboscis at most reaching in between the fore-coxæ. The large bristles dentate only at the tip, not on the convex side. Mesosternum subtriangular. Metasternum more or less lozenge-shaped or ovate, tapering forward, much longer than it is broad, about as wide as the mid-femur. Raised mesial portion of basal abdominal sternite narrowing anteriorly. Eighth abdominal segment of ♂ almost symmetrical.

While the characters of the genus are:—

Bristles long, most of the lateral ones of the pronotum longer than the first segment of the antennæ. Tibiæ without pseudo-joints. Second segment of proboscis longer than fourth.

In my previous paper I stated that I had only been able to examine three specimens of *C. villosus*, Stål, two of these being in the British and one in the Cambridge Museum; but through the kindness of Professor B. Yngve Sjoestedt I have seen Stål's type, which is conserved in the Stockholm Museum. Five examples, taken from *Vespertilio (Eptesicus) capensis* in South Africa, were received in Helsingfors by Dr. Reuter. It will therefore be noted that the type and seven other specimens of this rare insect are known. The Cambridge example, which is in bad condition, is probably not true *villosus*, but represents a closely allied but distinct insect.

The most recently described species is *C. indicus*, taken from a bat at Khandala, Bombay Presidency, India.

The three known species of *Cacodmus* can be identified as follows:—

A. Hind femur as long as hind tibia:—

1. *Cacodmus villosus*, Stal. S. Africa. ♂ ♀:—Very broad, particularly the ♂. Pronotum touching the eyes or nearly, its anterior angles much produced. Antennal segment 2 one-fifth or one-sixth longer than 3, and 3 slightly longer than 4. Penis of ♂ long, reaching to centre of segment 6.

B. Hind femur shorter than hind tibia:—

2. *C. ignotus*, Roth. Origin unknown. ♀:—Narrower than the previous species. Pronotum almost touching the eyes, its angles less produced than in *villosus*, but nevertheless reaching to centre of eyes. Antennal segment 2 almost half as long again as 3, and 3 slightly shorter than 4.
3. *C. indicus*, Roth. India. ♂ ♀:—Narrower than *ignotus*. Head exerted. Angles of pronotum distant from eyes, very little produced; explanate margin narrow. First tarsal segment with two thin bristles near apex, one short and one long. Penis of ♂ not reaching to centre of segment 7. Antennal segment 2 only one-eleventh longer than 3, 3 and 4 being of equal length.

Arundel House,

Kensington Palace Gardens, W.:

March 25th, 1913.

ASPIDIOTUS BAVARICUS, LDGR.: A SCALE-INSECT NEW TO THE
BRITISH LIST.

BY DR. LEONHARD LINDINGER.

In his excellent work on the *Coccidæ* of the British Isles,* Newstead gives *Calluna vulgaris* as the food-plant of *Aspidiotus ostreiformis*, and figures (Pl. V, fig. 6) the scale of an example on this plant. This scale differs considerably in shape and colour from that of the typical *A. ostreiformis*. In the beginning of 1912, I examined carefully an *Aspidiotus* living on *Calluna vulgaris* and *Erica tetralix* in Germany, Norway and Styria, and found that its scale agrees completely with that figured by Newstead, but that the insect is different from *A. ostreiformis*. It is a species new to science and has been described by me as *A. bavaricus* since I first found it in Bavaria.†

In my recently published book on European *Coccidæ*,‡ I was unable to include England unreservedly among the countries from which

* Newstead, Monograph of the *Coccidæ* of the British Isles. London, Vol. 1, p. 101.

† Lindinger, Zeitschrift für wissenschaftliche Insektenbiologie. Bd. VIII, 1912, p. 31.

‡ Idem, Die Schildläuse (*Coccidæ*) Europas, Nordafrikas und Vorderasiens, einschliesslich der Azoren, der Kanaren und Madeiras. Stuttgart, 1912, p. 89.

Aspidiotus bavaricus is known, as I could not get any material, and Newstead's reference is too short for the certain determination of the new species. A few weeks ago, however, I found several ♀♀ of *A. bavaricus* on *Calluna vulgaris* from Chester, and recently on the same plant from Aberdeen, Scotland, so that there is no longer any doubt of its occurrence in Britain.

Aspidiotus bavaricus is apparently a very old and well-established species. It is highly improbable that it could have been introduced into England from the continent with its food-plant, for no one would take the trouble to introduce a plant already present in such abundance; so the only conclusion possible is that both scale-insect and food-plant have been present in England ever since the separation of the latter from the mainland. Since that time *A. bavaricus* has not changed in the very least, for the examples from England differ in no way from those from Norway, Germany, the Riviera, or from those taken on *Erica arborea* in Corsica. In their habits only, is a slight difference recognisable between northern and southern examples, for in Mid and North Europe the insect is mostly to be found on the more or less subterranean parts of the stem of the food-plant, whilst in Corsica it takes full possession of the aerial stems.

Hamburg:

March 24th, 1913.

THIRTY ADDITIONS TO THE LIST OF BRITISH DIPTERA.

BY J. E. COLLIN, F.Z.S., F.E.S.

Amongst the numerous species of *Diptera* occurring in Britain but not yet included in the British List the following thirty may be recorded now with some degree of confidence.

EMPIDÆ.

1. *Cyrtoma intermedia*, Lundbk. This species which was described by Lundbeck in his "Diptera Danica, Part III," is not uncommon in Britain in various localities, from the New Forest (Hants) to Aviemore and Nethy Bridge (Inverness). The late Mr. Verrall had separated it under the M.S. name of *nigrescens*, but I have satisfied myself by correspondence with Mr. Lundbeck that our species is the same as his.

2. *Cyrtoma pilosa*, Lundbk. This is another Danish species which is comparatively common in Britain and which may be distinguished at once by the much longer pubescence on thorax or legs. It occurs from Sussex to Sutherland.

3. *Cyrtoma simplicipes*, Zett. Another widely distributed species of this genus easily recognised by its very slender hind tibiæ. It has occurred from Dorset to Aviemore and the Isle of Arran.

4. *Rhamphomyia obscura*, Zett. This is a moderately small brownish-black species (3 mm.) with practically uniserial dorso-central bristles and biserial acrostichal bristles on the thorax, best distinguished in the male by the curious downwards loop at the base of the wire-like penis, and in the female by the way in which the legs are ciliated, the middle femora bearing pennate bristles at the tip beneath, and the hind femora with a distinct pennate ciliation beneath. I have examined only a pair taken by Mr. J. J. F. X. King at Kilmun (Argyllshire), on June 16th, 1906.

5. *Rhamphomyia hirtula*, Zett. A pair of this species in the late Mr. Verrall's collection were taken at flowers by Mr. I. H. Burkill at Clova (Forfarshire) when making observations upon flowers and insects in that locality. It is a most interesting addition to our fauna because it has previously only been recorded from Greenland by Zetterstedt and Lundbeck. It is a hairy species, as its name implies, and somewhat allied to *junipennis*, Zett., but the upper lamellæ of the male genitalia are notched above, and the penis is thin and wire-like.

6. *Rhamphomyia tibialis*, Meig. Two males of this species were taken by Col. Yerbury at Aviemore (Inverness-shire) on May 21st, 1904. It is allied to *salcata*, Fall., but the male may be known by the little cluster of spines on the dorsal side toward the end of the side lamellæ; the female has the hind tibiæ broader than the femora and with a pennate fringe on the dorsal surface.

7. *Rhamphomyia nigripennis*, F. We possess in Britain both *R. nigripennis* and *umbripennis* as distinguished by Lundbeck (Dipt. Danica, III). The present species was labelled *umbripennis* in the Verrall collection, and *umbripennis* (of Lundbeck) was labelled *holosericeus*, Zett. (*nec* Mg.). It is not at all an uncommon species in numerous localities from Brockenhurst (Hants) to Spey Bridge (Inverness).

8. *Rhamphomyia hybrida*, Zett. The sexes of this species differ in colour, the male being a black, dark-winged insect resembling *cuticina*, Fall., but differing in the form of the genitalia, and in having a distinct bristle beneath the hind femora, while the female is yellowish, resembling *flava*, Fall., but the thorax is indistinctly striped and the basal joints of the antennæ are darker. It is possible this may be the *R. sciarina*, Fall., of the "List."

I have seen specimens from Nethy Bridge, Porthcawl, and near Abergavenny (Col. Yerbury) ; Orford and Comiston (Verrall) ; Padstow, (C. G. Lamb) ; and Orford and Aviemore (J. J. F. X. King), taken in July and August.

9. *Empis rufiventris*, Meig. A male of this species was taken by Col. C. G. Nurse at Timworth (Suffolk), on June 3rd, 1906, and several females were caught by the late Mr. Verrall and myself when on a visit to Wormsley Park (Oxon.) on July 7th, 1909; they resemble the females of *pennipes*, L., but the first joint of the front tarsi is not pennate above, and the hind tibiæ beneath are only pennate for half their length.

10. *Hilara quadrifaria*, Strobl. Under this name I am obliged to refer a species not uncommon in June at Wicken (Cambs.), while I have also taken it at Frinton-on-Sea (Essex), and near Padstow (Cornwall). It is allied to *cornicula* and *bivittata*, but the thorax is a duller, browner black, and the bristly hairs beneath the hind femora towards the tip are longer and more distinct.

11. *Hilara fulvibarba*, Strobl. This species was described by Strobl from specimens found on the Spanish coast; it has a brownish unstriped thorax with quadriserial acrostichal bristles, large reddish-yellow palpi clothed with yellow hairs and the pubescence on jowls, coxæ and sides of abdomen yellowish. It is not uncommon at Studland (Dorset) in May and June, and has been taken by Col. Yerbury at Porthcawl (Glamorgan) and by the late Mr. Verrall at Lyndhurst (Hants) and Aldeburgh (Suffolk). Another species of *Hilara*—*anglodanica*, Lundbeck—has been recently described (Vid. Medd. Foren., 1913, p. 325) and attention called to its occurrence in England by its describer.

12. *Synamphoteria pallida*, Lw. One specimen of this peculiar genus of *Empidæ* subf. *Heemerodrominæ* was taken some years ago by Dr. D. Sharp in the New Forest, and is now in the Zoological Museum at Cambridge. Through the kindness of Mr. C. G. Lamb, who had correctly identified the specimen, I have been able to examine it, and now, at his request, publish the record of its capture. It is a yellow species with distinct venation, resembling that of *Ardoptera irrorata*, but the subcostal vein is longer, the anal cell larger, and the wings clearer.

(To be continued).

THE IDENTITY OF *CULEX GENICULATUS*, OLIVIER.

BY F. W. EDWARDS, B.A., F.E.S.

(Published by permission of the Trustees of the British Museum.)

Culex geniculatus was described by Olivier in 1791 (Encycl. Méthod., vi, p. 134) in the following terms:—

“*Culex thorace cinereo nigro lineato, pedibus fuscis, geniculis albis.*”

“Il est de la grandeur du Cousin commun. Les antennes sont obscures. La trompe est noire, un peu plus longue que la moitié du corps. La tête est cendrée. Le corcelet est cendré, avec deux lignes longitudinales noirâtres, presque réunis, au milieu du dos, et une autre courte de chaque côté. L'abdomen est obscur, avec le bord des anneaux blanchâtre. Les pattes sont noirâtres avec la base des cuisses et le genou blancs. Les ailes sont transparentes avec les nervures et le bord intérieur ciliés.

“Il se trouve aux environs de Paris, dans les endroits humides.”

In 1827, Robineau-Desvoidy mentioned the species in his Essay on the *Culicidæ*; he had not met with it himself, but he translated Olivier's description into Latin. It is worth noting that he placed it next to *Culex lateralis*, Mg., of which he also gave a Latin diagnosis.

After this no mention of the species under Olivier's name occurs in Entomological literature until 1896, when Ficalbi dealt with it (Bull. Soc. Ent. Ital., xxviii, p. 292), including it with his *C. hortensis* in that division of the genus *Culex*, having the abdomen dorsally banded, the light band coming behind the dark on each segment. Why he placed it in this position is far from clear, but by so doing he apparently led Blanchard (Les Moustiques, 1905, p. 367) to sink *C. hortensis* as a synonym of *C. geniculatus*.

The object of the present note is to suggest that there is no connection between *C. geniculatus* and *C. hortensis*, but that *C. geniculatus* is really the species which was subsequently described by Meigen as *C. lateralis* (Syst. Besch. i, p. 5, 1818). It will be noticed that Olivier, in describing the abdomen, says it is “obscur, avec le bord [not le bord postérieur] des anneaux blanchâtre.” In this sentence the impression given is distinctly that the *lateral* rather than the *apical* portion of each segment is whitish, at least the words will easily bear this interpretation. Now there are but two North European gnats having an abdomen coloured thus, *Aedes cinereus* and *Ochlerotatus lateralis*. The former need not be considered as Olivier's description of the thorax of his insect will not apply to it. *O. lateralis*, however, answers perfectly to the description; specimens

in first-rate condition show very clearly the two long and two short black lines (of scales) on the thorax, the ground colour of the thoracic scaling being whitish-grey, and the head-scales of the same colour; the tips of the femora, too, are conspicuously white, even to the naked eye, while the basal half of the hind femora is more uniformly and evidently whitish in this species than in any other British gnat. Olivier's statement that his species is of the size of the common gnat is true of *O. lateralis*, though specimens are often found rather larger than *C. pipiens*. *C. hortensis*, however, is consistently and considerably smaller than the average *C. pipiens*; moreover, it seems to be a purely Mediterranean species, having been recorded only from Italy, Palestine, and Algeria.

The writer, therefore, considers that the evidence here brought forward in favour of the view suggested is fairly conclusive, and the following synonymy may be given for the species:—

OCHLEROTATUS GENICULATUS (Olivier).

Culex geniculatus, Olivier, Encycl. Méth., vi, p. 134 (1791).

Culex lateralis, Mg., Syst. Besch., i, p. 5 (1818).

Culex guttatus, Curt., Brit. Ent., 537 (1835).

Culex ornatus, Van der Wulp, Diptera Neerlandica, I, p. 237 (1877),
(*nec* Meigen).

Culex ornatus, Verrall, List Brit. Dipt., p. 13 (1901).

Culex albopunctatus, Rond., Bull. Soc. Ent. Ital., iv, p. 31 (1872).

Culicada lateralis, Theob., Mon. Cul., v, p. 310 (1910).

Ochlerotatus lateralis, Edw., Bull. Ent. Res., ii, p. 250 (1911),
and Entomologist, xlv, pp. 194 and 220 (1912).

Ochlerotatus ornatus, Edw., Bull. Ent. Res., iii, p. 21 (1912).

Haliplus brownianus, *nec* *H. browni*.—In my description of this species in last month's number of this Magazine (*antea*, p. 75), I intended to write the name "*brownianus*," but by a pardonable misunderstanding it was printed "*browni*." I selected the termination in accordance with the old convention that when a species is merely in honour of a person the termination should be "*anus*" or "*ana*." I did not know why the name I selected was changed, and under these circumstances I think the name of this insect should be *brownianus*, as the types are labelled in my collection. In the same communication I mentioned "*H. multimaculatus*" as another *Haliplus* that is probably a member of our British fauna. This was a *lapsus calami* for "*H. multipunctatus*." I recognised the error after I sent off the note, and intended to correct it when reading the proof, but I had no opportunity of doing this.—D. SHARP, Brockenhurst: April 11th, 1913.

Hydroporus bilineatus, Sturm, in England.—In 1903 the late Mr. Chitty introduced this name to our Catalogue, but in Canon Fowler's new volume Mr. Chitty's species is treated as being *H. hopffgarteni*, Gerh., and considered to be distinct from *H. bilineatus*, Sturm. In both these respects I believe Fowler is quite correct, and, if so, it would appear that the latter must be erased from our Catalogue. This, however, is not the case, as the specimens recorded from Sheppey by Fowler as *hopffgarteni* are the true *bilineatus*, Sturm. Commander Walker so determined them and sent me examples for verification and to be recorded. It is another of the numerous interesting discoveries for which we are indebted to this truly indefatigable entomologist. This species may be at once distinguished by the long very definite line of yellow colour on each wing-case, without reference to the more recondite characters of minute structural points. *H. hopffgarteni* is not noticed by Ganglbauer or by Reitter in the recent "Fauna Germanica."—D. SHARP: April 14th, 1913.

Supplementary note on Stenus oscillator, Rye.—Since my note on this insect was written, *antea*, pp. 88-89, I have searched for further material amongst my old duplicate *Steni*, and have come across various small *S. tarsalis*, with dark apices to the palpi and antennae, so like *S. oscillator* that it is more than probable that the latter will prove to be a small form of that variable species, the type having the elytra a little shorter than usual. Ganglbauer gives many synonyms for *S. tarsalis*, including *S. reconditus*, Casey, from N. America, and it is a much more variable species than many of us suppose, the selected series in the collection of the British Museum, as well as that in my own cabinet, giving but little idea of its actual range of variation. *S. bifoveolatus*, I find, can always be separated from *S. oscillator* and *S. tarsalis* (apart from the difference in the margining of the hind body) by the more slender tarsal claws, and the finer and sparser puncturing of the hind body. The Killarney insect recorded by me as *S. oscillator* cannot be separated from small *S. tarsalis*.—G. C. CHAMPION, Horsell, Woking: April 10th, 1913.

Melanophila on charred pines.—Apropos of the occurrence of *Melanophila acuminata*, de G., on charred pines near Woking and in the New Forest during recent years, the following extract from the April number of the "Entomological News," p. 169, on the habits of an allied North American form is of special interest:

Melanophila notata, Lap. and Gory. "Only one specimen in six years. Then on June 27th, 1911, took 38 at blazing pine stump as they flew to our clothes or rested on white ashes, or on some near-by wood. . . . June to August, 1912, took more at burning pine and learn that natives call them 'fire-bugs,' believing them to actually come from the fire, and to contain such heat as to burn the skin should they rest on it. The insect is probably drawn by the scent of burning pitch. As it alights on a black stump one would think its generic name fitting to that habit as well as to its own colour, yet it as readily seeks white ashes or a white shirt. Both forms of *notata* vary from 7 to 13 mm. in length."

The above statement is taken from a paper by Mr. A. H. Mancee, entitled "Observations on Buprestidae at Southern Pines, N. Carolina."—G. C. CHAMPION.

A hint for collecting beetles in hard wood.—Some time ago I had some portions of thick boughs of, I think, a plum tree sent to me from Mr. Chittenden, from Wisley, Surrey, containing *Xyleborus dispar* in some numbers, both males and females. The wood was quite sound and hard except for the borings, and I found it very difficult to get the beetles out without damaging them. Happening to have some benzine at hand (with a slight admixture of carbolic acid, but this I think is immaterial), I brushed some lightly with a camel's hair brush over the holes, and the insects came out in a regular procession. I have not had the opportunity of trying this on a tree trunk, as I hope to do, but it seems to me that it might have a very good result in obtaining such insects as *Trypodendron*, *Colydium*, etc. I know that Dr. Sharp found a small tree in the New Forest containing a number of the latter, and found great difficulty in getting them out, and I have myself found it very hard to secure *Trypodendron*. In many cases it may have the effect of making the beetles withdraw themselves more deeply into their borings, but it is worth trying, and I should be very glad to hear from any collectors who may make the trial if they meet with success.—W. W. FOWLER, Earley Vicarage, Reading: April 5th, 1913.

Note on a table of the British species of Helophorus appearing in this Magazine (Vol. XLIV, p. 218).—With regard to the table in question, Dr. Fowler [Coleopt. Brit. Isl., Vol. VI, p. 29, note (1913)] says: "Dr. Edwards' table is numbered at the sides and does not fit at the end; it should be 19 (34) and 20 (31) instead of 19 (31) and 20 (34)." The statement that it does not fit at the end is incorrect. The table reads:—

- 19 (31) The longitudinal furrow on the head widened in front.
 31 (19) The longitudinal furrow on the head not widened in front.
 * * * * *
 20 (34) Thorax widest before the middle.
 34 (20) Thorax widest in the middle.

Dr. Fowler says that it should read:—

- 19 (34) The longitudinal furrow on the head widened in front.
 34 (19) Thorax widened in the middle.
 * * * * *
 20 (31) Thorax widest before the middle.
 31 (20) The longitudinal furrow on the head not widened in front.

These alterations appear to have very little to recommend them.—J. EDWARDS, Colesborne, Cheltenham: April 11th, 1913.

A hitherto unrecorded occurrence of Carabus cancellatus, Ill., in Britain.—In an interleaved copy of Stephens' "Manual of British Coleoptera," once the property of the Rev. W. Tylden, of Stamford, near Hythe, a specimen of this rare *Carabus* is thus referred to: "A single example brought me from Sandgate: April,

1865—found by Mr. Daboulay in his father's garden." The Rev. W. Tylden, who was (judging from his notes) well acquainted with Dawson and Rye, and had frequent transactions with Brewer and Turner, was an occasional contributor to this magazine in its early years, the last note from him, bearing date April, 1873 (*Ent. Mo. Mag.*, IX, 290). The "Mr. Daboulay" referred to may possibly be the same as Du Boulay, after whom Mr. G. R. Waterhouse named *Articerus daboulayi* (*Ent. Mo. Mag.*, vol. I, p. 149). Is it possible to trace this specimen?—E. G. BAYFORD, 2, Rockingham Street, Barnsley: *April*, 1913.

The Entomology of an Opossum's nest.—So much good work has been done during the past two or three years in investigating the Coleopterous fauna of the nests of small mammals and birds, that the following extract from the *Adelaide* (Australia) *Observer* of March 8th last, will probably prove of interest to your readers:—

"AN OPOSSUM'S NEST.—In preparing opossums in as lifelike surroundings as possible for the new gallery, the Museum taxidermists found it desirable to procure a hollow limb, and obtained one near Adelaide. On sawing it off the limb was found to contain an opossum's nest, with the opossum (*Trichosurus vulpecula*, L.) at home in it. On further examination the nest was found to be swarming with insect life. Among these were noted thousands of larvæ of a small moth; thousands of *Acaridæ*, or mites, and *Psocidæ*, or book-lice; two kinds of tick, one a very peculiar sort; several interesting beetles, one of which is new to science; and hundreds of a bug in all its stages. This last-named insect smells exactly like the bed-bug, but when matured is winged. It appears, however, to have the same unpleasant habits, as most of the larvæ and some of the mature specimens appeared to be gorged with blood. Seven pupæ of two kinds of flies were obtained, and many unidentified larvæ of these latter two are very curious, and they probably belong to one of the lace-winged flies, of which some extremely beautiful species are known in South Australia. It is hoped, therefore, to rear some of the larvæ to the mature forms. Probably many opossum nests are known, and the haul obtained from the one examined has caused the Museum officers to desire to examine other nests; consequently the Director would be glad of information as to any nests within easy distance of Adelaide."—T. HUDSON BEARE, 10, Regent Terrace, Edinburgh: *April 14th*, 1913.

Andrena niveata, Friese, probably wrongly recorded as British.—In his paper "Die Bienenfauna von Westpreussen," Prof. J. D. Alfken records this species as an immigrant from the Steppes-region, and in a correspondence with me concerning the species of the *minutula* group, expressed his doubt as to the probability of its occurrence in Britain. He has also been kind enough to send me specimens of *A. schenckella*, Pérez (= *nana*, Schenck, Schmiedn. nec Kirby), which entirely agree with British specimens supposed to be *niveata*, taken by myself. One of these, sent to Saunders in 1899, was confirmed by him as belonging to *niveata*. It is therefore very doubtful whether *A. niveata* is a British species at all, as my specimens, taken in such different localities as Suffolk, Oxford and Devon are certainly to be referred to as *A. schenckella*.

It is almost certain that we have at least one other species of the *minutula*

group in this country, these small bees exhibiting considerable sexual and other variation, so that they are a difficult study. I should be very pleased to examine series of the various forms from different parts of the country, provided they have locality labels with the date of capture.—R. C. L. PERKINS, Park Hill House, Paignton, April 11th, 1913.

The Wingless Geometer.—In his criticism of my note in last month's Magazine, Mr. Porritt has, I think, misunderstood the gist of my remarks. The suggestion I threw out was, that as disuse leads to the loss or deterioration of an organ, so disuse must have been the cause that led to the wingless condition of certain insects, and that the cause of the disuse simply lay in a natural indisposition on the part of the insect to use its wings. That the notion is not a fanciful one, and that a sluggish disposition does exist, we have evidence every day in the lesser activity of one insect as compared with another, and by the greater sluggishness in a general way of the female over the male. But there are many degrees of it, and whenever it threatens to become excessive to the detriment of the species, natural selection steps in and wipes it out. On the other hand when no disability ensues, but rather the reverse, the sluggish habit gets more and more confirmed as one generation follows another, until by constant repetition it becomes absolute and the desire to fly is completely lost. Then, and only after a further lapse of time would degeneration begin to set in. How long that might be it is impossible to say, but surely much longer than the comparatively few years during which entomology has been studied, and which Mr. Porritt believes sufficient to bring about appreciable changes.*

The case of *Coleophora inula* was merely given as an instance in a very striking degree of this sluggish disposition, but it was not meant to illustrate the highest or absolute stage of it. Quite recently, and somewhere in the interval between the draining of the original pond and its subsequent refilling, the insect must have used its wings to reach the spot. Even had the locality not been destroyed, I believe it would at some future time have left of its own accord. Exceptional circumstances might be expected to arise, leading to an unusually large and vigorous brood, when under the excitement so commonly associated with crowds, either of men or animals, the whole colony would have taken wing and migrated.

Mr. Porritt's experience with the Hybernias was a most interesting one. I suppose that the weather was very favourable at the time and that there had been a great and simultaneous hatching out just when Mr. Porritt came across them. But it would have been still more interesting could he have told us the condition of things a day or two later, and whether the females were still on the tree trunks and the males at rest under the leaves. I should scarcely expect they were; but rather that, pairing having taken place, the females had moved up into the branches for better security, and the males, their function over, had for the most part perished. Besides, however suitable dead

* When during the past thirty to fifty years, we have seen altered external conditions for environment entirely change the colour—we might almost say from white to black—in so many species of *Lepidoptera*; it does not seem unreasonable that in a hundred years we should expect to be able to detect at least some fractional difference in the size of abbreviated wings, if a process of reduction were going on.—G. T. P.

leaves lying exposed on the open ground may be under favourable conditions for temporary shelter, I much doubt whether they are fitted for a more permanent refuge. As winter advances they get beaten flat by the rains, and most of the time are wet and uncomfortable underneath, however dry they may be on top.—JOHN H. WOOD, Tarrington, Hereford: *April*, 1913.

Echinophthirius phoca, Lucas, in *N. Marine, Shetland*.—On Dec. 20th, 1912, on a young common seal (*Phoca vitulina*), killed at the head of Ronas Voe by Mr. James Peterson, I discovered after much searching a small scattered colony of *E. phoca*. These lice were firmly attached to their host in the thicker fur across the shoulders. So deeply embedded were they that only the abdomen appeared when the coarse overlaying hairs had been pushed aside. *E. phoca* is a remarkably stout creature, holding most tenaciously to the surface of attachment. Like *Ixodes* it is best treated with oil before being pulled off, as in this way the legs, head, and rostrum escape mutilation.—JAMES WATERSTON, The Manse, Ollaberry, Shetland: *April* 11th, 1913.

Docophorus megalcephalus, Denny, in *Shetland*.—This interesting species, which has apparently never been recorded since its description (1842) from an immature individual taken on *Uria grylle*, has during the last three years occurred to the writer plentifully on its original host in various localities in Shetland. Dissection of the ♂ indicates affinity with *D. merguli*, Denny, rather than with *D. celedorus*, N. The name *megalcephalus* is happily chosen, and the broad head is even more remarkable in the immature stages than in the adult. Although Denny's description leaves something to be desired and the type is immature, there need be little hesitation in accepting the name he proposed for the *Docophorus* infesting *Uria grylle*. No other *Docophorus* occurs regularly on this host, and the type in S. Kensington which we have seen is sufficiently characteristic.—JAMES WATERSTON.

Review.

TRANSACTIONS OF THE CARLISLE NATURAL HISTORY SOCIETY, VOL. II. 1912.

This volume does the greatest credit to the Carlisle Natural History Society, for out of the eight papers contained in its 256 pages seven are directly connected with its local fauna and flora. To the entomologist it is of exceptional interest, as considerably the greater part of the volume is devoted to insects—55 pages to the *Coleoptera*, and 90 to the *Lepidoptera*. The former paper is by Mr. Frank H. Day, F.E.S., and is a continuation of the first part of the List of the *Coleoptera* of Cumberland which appeared in Vol. I. The other is by Mr. George B. Rutledge, F.E.S., and also forms Part II of the *Lepidoptera* of Cumberland, the first part having been devoted to the Butterflies. The present part includes the *Sphingidæ*, *Sesiidæ*, *Zygænidæ*, *Bombycidæ*, *Notodontidæ*, and *Noctuidæ*. Both lists have evidently been carefully compiled, although as might be expected the localities of, and the notes on, the *Lepidoptera* are much more voluminous than in the case of the *Coleoptera*. The printing and "get up" of the volume leave nothing to be desired.—G. T. P.

Societies.

LANCASHIRE AND CHESHIRE ENTOMOLOGICAL SOCIETY: Meeting held at the Royal Institution, Colquh Street, Liverpool, on *Monday, March 17th, 1913.*—Mr. F. N. PIERCE, President, in the Chair.

Professor Robert Newstead, F.R.S., M.Sc., of the Liverpool School of Tropical Medicine, delivered a lecture entitled "The Bionomics and Morphology of some Blood-sucking Flies." Mr. Newstead dealt in his usual lucid and thorough manner with the life cycle of representative species of the genus *Glossina*, or tsetse flies, which convey sleeping sickness to man and "ngana" to cattle, the species incriminated being *Glossina morsitans* and *G. palpalis*. The lecturer also described *Stomoxys calcitrans*, a world-wide species and a common stable fly in Great Britain, which is strongly suspected of being concerned in the transmission of trypanosomes. A very interesting life-history was that of *Simulium*, whose larvæ live in rapidly running shallow streams; and, lastly, the minute midge, *Phlebotomus papatasi* (fam. *Psychodidae*), found commonly on the Mediterranean littoral and elsewhere in subtropical and tropical countries, which carries the "three days" fever from sick to healthy persons, was described. Mr. Newstead, having visited many different parts of the world to investigate the life cycles of these insects, and having himself discovered many important facts concerning them, was able to give a vividness to his remarks that no mere book knowledge could have done. The lecture was illustrated by blackboard drawings and microscope preparations showing the structure and anatomical details of the insects mentioned above. Further exhibits by Mr. Newstead were two specimens of *Glossina severina*, Newst., a new species recently recognised from the Congo Free State, and a specimen of the very rare *G. fuscipleuris*, Austen, also a wasp, *Bembex forcipata*, that has only recently been found to store its larva cells with the tsetse fly; this exhibit comprised nine flies from a single cell together with the wasp. The University collection of bloodsucking flies was also on view, containing practically all the known species and many types. Mr. F. N. Pierce exhibited the genus *Acidalia* as at present arranged, and also as it falls into two distinct groups when classified according to the genitalia. Mr. C. E. Stott sent for exhibition a specimen of *Thyreocoris scaraboides*, a chalk-loving *Hemipteron* picked up on the shore at Blackpool.—WM. MANSBRIDGE, *Hon. Secretary.*

THE SOUTH LONDON ENTOMOLOGICAL AND NATURAL HISTORY SOCIETY: *Thursday, March 13th, 1913.*—Mr. A. E. TONGE, F.E.S., President, in the Chair.

Mr. A. E. Gibbs of St. Albans, Mr. Geo. Brooks and Mr. Gilbert Storey of the British Museum (Nat. Hist.) were elected Members.

Mr. Tonge exhibited living larvæ of *Epnuda lichenea* and of *Aplecta occulta*. Mr. Colthrup, some excellent photographs of well-known collecting localities and of the resting positions of various species of the genera *Tephrosia* and *Boarmia*, showing protective resemblance. Mr. C. B. Williams, larva of the snake-fly, *Rhaphidia notata*, which has occurred not uncommonly in pine stumps at Oxshott; it fed readily on *Aphides*. Mr. Platt Barrett, specimens of the true *Thera rariata* from the New Forest, where the larvæ occurred on spruce. Mr. Brooks, the larva of *Geotrupes stercorarius*, found under a rubbish heap. Mr. A. E. Gibbs,

the Satyrids and Hesperids taken by him in his trip to the Balkans in 1912, and contributed notes on the occurrence and variation of the various species. Mr. R. Adkin, a series of *Tinea pallescentella* and read a short paper on its history as a British species, and discussed his experience in rearing it.

Thursday, March 27th, 1913.—The President in the Chair.

Mr. B. H. Smith gave two specimens of *Phryxus livornica* to the Society's collection. Mr. R. Adkin exhibited several specimens of *Crymodes exulis* from Shetland and from Inverness-shire, to show the characteristics of the two races. Mr. Colthrup, a further series of his photographs of insects at rest. Mr. A. E. Gibbs, a number of Nymphalids, especially of the genera *Argynnis* and *Melitæa*, taken by him in the Balkans in the summer of 1912, including *Dryas pandora*, *Argynnis ulippe* ab. *cleodoxa*, *Issoria lathonia*, *B. hecate*, *Chrysophanus alciphron*, *Melitæa atrivia*, *M. athalia* var. *nehadiensis*, and ab. *navarina*, *Libythea celtis*, *Neptis lucilla*, *Polygonia egea*, etc. Mr. J. Platt Barrett, a number of species of Sicilian butterflies, including *Melanargia japygia*, *M. pherusa*, and var. *plesaura*, *M. galathea* and vars. *lucasi*, *provida*, and *syracusana*, and discussed other allied forms; he also showed a series of *Euchloë damone*. Mr. W. J. Kaye, the pupa of *Lycæna arion*, found by Mr. Percy Richards in 1905, in an ant's nest in a frail cocoon. Mr. F. W. Frohawk, a form of *Euchloë cardamines*, in which the discoidal spots of the forewings were considerably within the orange apical area.—HY. J. TURNER, *Hon. Secretary*.

ENTOMOLOGICAL SOCIETY OF LONDON: Wednesday, March 5th, 1913.—

Mr. G. T. BETHUNE-BAKER, F.L.S., F.Z.S., President, in the Chair.

The following were elected Fellows of the Society: Miss Blanche A. Coney, The Poplars, Pucklechurch, Glos.; Messrs. Lachlan Gibb, 38, Blackheath Park, Blackheath, S.E.; Gerald F. Hill, Govt. Entomologist, Northern Territory, South Australia, Port Darwin, N.T.S.A.; Lowell Mason, 22 and 23, Club Arcade, Durban, Natal.

It was announced that the Council had nominated Messrs. J. H. Durrant, L. B. Prout, and C. O. Waterhouse to act as the Representatives of the Society on the National Committee on Nomenclature. The Council also recommended the appointment of a permanent Nomenclature Committee for the Society itself, and suggested that it should consist of the three representatives of the Society on the National Committee, the British Representative on the International Committee, the Secretary of the Society, and two elected members; the Council also proposed the names of Mr. G. T. Bethune-Baker and Dr. K. Jordan as the elected members. No alternative was suggested, and the recommendations of the Council were unanimously adopted. The present Committee of the Society therefore consists of the following Fellows: Messrs. G. T. Bethune-Baker, J. H. Durrant, C. J. Gahan, Dr. K. Jordan, Messrs. L. B. Prout, C. O. Waterhouse, and the Rev. G. Wheeler.

The Hon. N. Charles Rothschild brought before the notice of the meeting the Society for the Promotion of Nature Reserves, and briefly outlined its objects.

Mr. J. E. Collin, on behalf of Lt.-Colonel C. G. Nurse, exhibited three

specimens of a peculiar insect which Mr. G. C. Champion had identified as a species of *Myodites*, a heteromorous Coleopteron, captured by Colonel Nurse at Quetta (India) in 1902. Mr. O. E. Janson, specimens of a curious form of Staphylinid beetle from South Brazil, apparently *Ecitonomorpha arachnoides*, Wassm. Mr. L. B. Prout, a series of *Larentia citrata*, L., from Iceland, and read explanatory notes. Dr. K. Jordan, a species of *Eurytoma*, an almond-feeding Chalcid, together with its living pupa, which he had received for identification from the Director of Agriculture in Cyprus, where the species does extensive damage in the almond plantations. Mr. R. Adkin, specimens of *Tinea pallescentella* that he had reared in January last from larvæ found feeding in a bale of hare's hair received from Brandon, Suffolk, in the previous November. Prof. Poulton, six examples of specimens belonging to various distasteful groups, exhibiting "disabling injuries."

Wednesday, March 19th, 1913. — The Rev. F. D. MORICE, M.A., Vice-President, and afterwards Mr. J. H. DURRANT, Vice-President, in the Chair.

Messrs. Thomas Alfred Coward, F.Z.S., Brentwood, Bowdon, Cheshire; Wm. H. Edwards, Natural History Dept., Birmingham Museum; Lewis Gough, Ph.D., Entomologist to the Govt. of Egypt, Dept. of Agriculture, Cairo; John Hewitt, B.A., Director of the Albany Museum, Grahamstown, South Africa; Carlos E. Porter, C.M.Z.S., Professor of Zoology, Agricultural Institute, Santiago, Chile; and Gilbert Storey, Entomological Research Commission, Natural History Museum, South Kensington, S.W., were elected Fellows of the Society.

Mr. C. B. Williams exhibited two larvæ of *Coniopteryx tineiformis*, eight of which were beaten from pines at Oxshott on the 16th inst. Mr. Donisthorpe, various species of ants of the genus *Eciton*, the "Wander Ants," and gave some account of their interesting habits. He remarked that a number of Myrmecophiles run with them on their wanderings. Mr. W. C. Crawley, a few ants collected during September, 1909, in Pennsylvania and Cleveland, Ohio, including *Polyergus lucidus* and *Formica rubicunda*, two of the slave-makers with their slaves; and some species collected with Dr. Forel in Switzerland, August, 1912. The Rev. F. D. Morice made the following exhibits by means of the Epidiascope: (1) Lantern-slides showing the pectinated antennæ of the ♂ in the saw-flies *Lophyrus pini*, L., and *Monoctenus juniperi*, L., the latter new to Britain and not yet recorded. It was taken pretty freely on juniper at Nethy Bridge in June, 1907, by Messrs. H. Scott and C. G. Lamb. (2) Lantern-slides showing paradoxical (secondary sexual) characters in the legs of numerous ♂ Aculeates (bees, wasps, and fossors). (3) Microphotos of the apex of the ♀ "terebra" in *Cimber lutca*, L., and *Cimber femorata*, L. (magnified 90 diameters). (4) Entomological Congress groups at Oxford and Tring (lantern-slides). During the course of this exhibit, Dr. Chapman, at Mr. Morice's request, explained the manner in which he had seen the wings of the ♀ *Odynerus spinipes* imprisoned between the tridentate middle femora and excavated middle tibiae of the ♂. Whilst the instrument was in use a most interesting demonstration of its powers was given by Mr. F. Bethell. A paper by Mr. H. Eltringham, M.A., F.L.S., "On the Scent-Apparatus of *Amauris niarius*, L.," was read by the author, the black-and-white drawings by which it was illustrated being thrown on the screen.—G. WHEELER, Hon. Sec.

NOTES ON LEPIDOPTERA FROM GIBRALTAR AND THE
SURROUNDING COUNTRY.BY CAPTAIN J. J. JACOBS, R.E. (RET^d), M. I. MECH. E., F.E.S.

The following field notes on the *Lepidoptera* and other insects, of which many species have previously been recorded from the district observed and collected by me during the time I was stationed at Gibraltar, from the end of 1909 until June, 1912, may I trust, be of some little assistance to future collectors and students of Natural History, who I feel sure will add still more to our knowledge of the insect fauna of the above-named region.

As Tangier (Marocco) is only 30 miles from Gibraltar, and is easily accessible three times a week by steamer, I have embodied my experience of that district in these notes. Flying visits were also made to Malaga and Granada, but only about 30 specimens in all were taken by me at both localities. At the latter place, however, Messrs. G. O. Sloper and A. H. Jones, whose acquaintance I had the pleasure of making in Gibraltar, met with a considerable number of *Rhopalocera*. My efforts were mostly confined to Gibraltar itself and the Spanish country to the north, as far as the summit of the Sierra Carbonera; to the north-west as far as the celebrated Cork Woods near Almoraima Station, and to the west as far as the Waterfalls beyond Algeciras; also occasionally to the south-west as far as Cape Spartel (Marocco), and on one occasion to Tarifa (Spain).

I found the Spanish people around Gibraltar very hospitable, the doors of their "Casas" were always open, and they were ever ready to render what assistance they could. The offer of "un muchacho" (a boy) to carry our bags, in the hot weather, was always acceptable to "Los caballeros de las mariposas y palomas" (the gentlemen of the butterflies and moths), as we were named by them.

As compared with Britain, collecting *Lepidoptera* in this region during one's spare time is, on the whole, much slower work than one would expect, but is full of surprises and interest. The quantity and variety of insects of other orders one sometimes sees, is amazing. The large conspicuous ant-lion, *Palpares libelluloides*, L., with wings marked like tortoise-shell, is often plentiful in the vicinity of corn fields. *Nemoptera bipennis*, Ill., like miniature aeroplanes, disport themselves over herbage in waste places. Bees and wasps, conspicuous amongst which are the large and beautiful *Scolia flavifrons*, Fab., and *S. videns*, Linn., are seen in great variety, and most flowering

plants are tenanted by myriads of brightly coloured beetles of various species during the spring and early summer months. The "Praying Mantis" (*Mantis religiosa*, L.) is a common insect on both sides of the Straits of Gibraltar. The female is capable of giving a very peevish nip with its powerful mandibles when picked up with the fingers. This is not to be wondered at when it is known that one of her duties in life is to kill and devour her husband on the very first day of their honeymoon. The ludicrous shape of her large body, with long thin neck, reminded my companion of the pictorial advertisement of a bottle of ale with arms and legs, when he saw one, for the first time, perched on the edge of his net.

Birds are apparently not very numerous individually, although there are many different species (*cf.* Col. Irby's "Ornithology of the Straits of Gibraltar.") The most conspicuous I have noticed are the hoopoe, the golden oriole, the blackbird, several eagles and hawks, an occasional heron flying overhead, and flocks of goldfinches, but I have been too intent on insect life to notice many of the birds that were probably not far away from my hunting grounds. Reptiles, especially lizards, swarm everywhere, which may account for the comparative scarcity of *Lepidoptera* and birds. Snakes are plentiful, but are mostly of harmless species. One snake, however, not unlike the British "slow-worm" in appearance, is poisonous. It is locally known as the "vibora" (viper) or asp. Among the noxious creatures are centipedes, scorpions, and tarantula spiders, but none of them appear to do much harm, because, I suppose, they are left severely alone. This is not so easy with the mosquitos: these bloodthirsty insects abound everywhere during the warm weather, but are not as troublesome in Gibraltar as formerly, owing to the vigorous measures taken by the sanitary authorities for their suppression. Frogs, of several species, also swarm; every stone, above water in a running brook or "arroyo," is the resting place of one or more of these amphibians, and their chorus of dismal croaking is sometimes the only sound heard for miles. A pretty green frog is often seen clinging to bushes or reeds in swampy places.

In Gibraltar there were two species of "geekos," one putty-coloured, the other a pretty shade of olive-green with darker markings, which shared with me the honours of collecting moths on the electric lamps. All along the Europa main road there was scarcely a lamp-post which had not its accompanying sentinel near the light. These reptiles are numerous in the district; one species is mainly pink in colour, and

the beautiful large green species, *Lacerta ocellata*, L., I have seen in the Cork Woods, quite two feet in length: the noise made by one of them, when rushing through the undergrowth, gives the impression of a much larger creature.

It is, I think, well known that Gibraltar is the only spot in Europe where monkeys, *Macacus inuus*, L., can be seen in a wild state. It is no uncommon thing to find one, or more, of these animals crossing your path when ascending the Rock. In the winter, when food is scarce on the upper Rock, they come down to the town to pick up what they can get. We have, on several occasions, been honoured by visits from them on our verandah, and even in my dressing-room, where they generally managed to purloin something portable, such as a shaving brush, etc. Experiments have been made, I understand, to introduce them into Spanish territory, near Gibraltar, but without success; they all die off soon after being taken over.

It is weirdly interesting when wandering amidst strange surroundings, with the rays of the hot southern sun pouring down, to suddenly come upon old British friends, in the shape of *Pyrameis atalanta*, L., *P. cardui*, L., *Pararge megera*, L., *Lycena bellargus*, Rott., *Plusia gamma*, L., *Aspilates ochrearia*, Rossi, *Acidalia ornata*, Scop., *Anaitis plagiata*, L., or *Eurygreon palealis*, Schiff., whilst such insects on the British list as *Pieris daphnice*, L., *Deilephila lirornica*, Esp., *D. celerio*, L., *Deiopeia pulchella*, L., *Sterrhia saccharia*, L., and *Margarodes unionalis*, Hb., of which one would be lucky to take a specimen in a lifetime at home, are here amongst the most plentiful of insects, and can nearly always be had for the netting.

Larva-hunting did not, as a rule, yield many specimens. An occasional *Lasiocampa trifolii*, Esp., was found on various bushes, and the conspicuous *Deilephila euphorbiæ*, L., on spurge. The handsome larva of *Saturnia pyri*, L., of which I obtained enough to breed a short series, was found on fruit trees. A brown variety of the larva of *Acherontia atropos*, L., produced a fine normal ♀ imago. On one occasion, whilst working the lower slopes of the Sierra Carbonera, a curious green flower-like object arrested my attention, which on closer examination, proved to be five larvæ of an Arctiid species ranged round the top of a stalk of coarse grass. They were attached by their claspers and prolegs only, the thoracic portion of each stood above the grass and was curved inwards in the form of a note of interrogation, each pointing towards the centre, and remaining perfectly still as if it were part of the plant. This was evidently a case of mimicry for

mutual protection. The larvæ were superficially rather like those of *A. eaja*, L., but with uniformly green hairs. Unfortunately they died in confinement before assuming the pupa stage. I diligently searched the vicinity for other specimens of the larva or of the imago, but without success.

It was my good fortune on one occasion (June 10th, 1911), in company with my friend, Lieut. G. M. Lovell, to witness a monster gathering of larvæ of the "Gipsy moth," *Oenieria dispar*, L. At the southern border of the Cork Woods, near San Roque, we came upon a tree standing apart, in the middle of three cross tracks. The tree girthed about 7 or 8 feet, and was completely covered, apparently several layers deep, with a moving mass composed of countless thousands of caterpillars, whilst for a distance of about 3 or 4 feet from the base the ground was carpeted with heaps of those that had fallen in the struggle for a foothold on the trunk. The surrounding trees were covered to a lesser extent, but it appeared marvellous to me how any of them could manage to make their loosely-netted cocoon in the chinks of the bark and pupate successfully, with so many of their fellows continually passing over and around them. Quantities of the larvæ fell on us from the branches overhead, and many of them evidently mistook the space between our collars and our necks for crevices in the bark of the trees, much to our discomfiture.

In company with *O. dispar*, and moving up the trunks for the same purpose, were a few larvæ of *Orygia trigolephras*, Bdv. Some of these I captured and successfully bred out, at home. It was interesting to note that the cocoon of the ♂ *O. trigolephras* is quite different from that of the ♀, the former being of looser construction and nearly transparent, whilst the latter is quite opaque, of tough texture, and with a neat little hole left in the *anal* end. I further noticed that the shapeless little bag of eggs which represents the ♀ moth, never leaves the cocoon from the date of her emergence until she dies of old age. She apparently never knows the taste of food, nor takes nourishment of any kind. Copulation takes place through the hole left in the cocoon, and in due course the ova are deposited therein, all around the anal part of her body, and in the space between it and the small hole in the cocoon, so that when the mass of ova is taken out for examination, it is roughly cup-shaped. The eggs are carefully packed with loose hairs from her body between each layer. I counted 60 eggs in the mass I examined. Apparently the young larvæ, when hatched, crawl through the hole in

CHANGE OF ADDRESS.

PHILIP HARWOOD, F.E.S., *from* 23, Northgate End, *to* 15, Rye Street, Bishop's Stortford.

LANCASHIRE AND CHESHIRE ENTOMOLOGICAL SOCIETY.—Meetings the third Monday in each Month, October to April. *Hon. Sec.*, W.M. MANSBRIDGE, 4, Norwich Road, Wavertree, Liverpool.

THE THREE COLOURED PLATES illustrating the articles on "SOME INTERESTING BRITISH INSECTS,"

with the accompanying text (issued in the *Ent. Mo. Mag.* for September, 1909, and January and September, 1910) are now issued in a separate wrapper, price 2s.

APPLY TO THE PUBLISHERS.

WATKINS & DONCASTER, Naturalists,

Keep in stock all Articles for Entomologists, Ornithologists, Botanists, &c.: Umbrella Net, 7/-; Folding Cane or Wire, 3/6, 4/-, 4/6; Plain Ring Net, 1/3, 2/-, 3/-; Pocket Boxes, 6d., 9d., 1/-, 1/6; Store Boxes, with Camphor Cells, 2/6, 3/6, 4/-, 5/-, 6/-; Zinc Pocket Boxes, 9d., 1/-, 1/6, 2/- Setting Boards, from 5d. to 1/10; Complete set of 14 boards, 10/6; Breeding Cages, 2/6, 4/-, 5/-, 7/6; Sugaring Tins, 1/6, 2/-; Sugaring Mixture, ready for use, 1/9 per tin; Setting Houses, 9/6, 11/6, 14/-; Glass Topped and Glass Bottomed Boxes, from 1/- per doz.; Zinc Killing Boxes, 9d., 1/-; Coleoptera Collecting Bottles, 1/6, 1/8; Collecting Box, containing 26 tubes (very useful for Coleopterists, Microscopists, &c.), 4/6; Brass Chloroform Bottle, 2/6.

Improved Pocket Pupa-digger in leather sheath (strongly recommended), 1/9; Steel Forceps, 1/6 to 3/- per pair; Pocket Lens, from 1/6 to 8/6.

Taxidermists' Companion, containing most necessary implements for skinning, 10/6; Scalpels, with ebony handles, 1/3; Fine Pointed Scissors, 2/- per pair; Brass Blow-pipes, 4d., 6d.; Egg Drills, 2d., 3d.; ditto, best quality, 9d. each; Botanical Vasculum, 1/6, 2/9, 3/6, 4/6; Label List of British Macro-Lepidoptera, with Latin and English Names, 1/6; List of British Lepidoptera (every species numbered), 1/-; or on one side for Labels, 2/-.

SILVER PINS FOR COLLECTORS OF MICRO-LEPIDOPTERA, &c., as well as minute insects of all other families.

We stock various sizes and lengths of these Silver Pins, which have certain advantages over the entomological pins usually employed.

For instance, insects liable to become greasy and verdigrisy, like Sesiidae, are best pinned on Silver pins, which will last much longer than the ordinary pins (whether enamelled black, or gilt, or silvered).

We shall be pleased to send pattern cards on application.

A large stock of British, European, and Exotic Lepidoptera, Coleoptera, and Birds' Eggs.

ENTOMOLOGICAL PINS.

The "DIXON" LAMP NET (invaluable for taking Moths off street lamps without climbing the lamp posts), 3s. 6d.

SHOW ROOM FOR CABINETS, &c.

36, STRAND, LONDON, W.C., ENGLAND.

Birds and Mammals, &c., Preserved & Mounted by first-class workmen.

Our New Price List (100 pp.) sent post free to any address on application.

CONTENTS.

	PAGE
A list of butterflies collected during the last ten years in British East Africa (continued).— <i>Rev. K. St. Aubyn Rogers, F.E.S.</i>	97
<i>Philonthus scoticus</i> , sp. nov. : a beetle new to Britain.— <i>N. H. Joy, M.R.C.S., F.E.S.</i> , and <i>J. R. le B. Tomlin, M.A., F.E.S.</i>	100
Description of a new species of <i>Actobius</i> .— <i>D. Sharp, M.A., F.R.S.</i>	101
On the genus <i>Cacodmus</i> .— <i>Hon. N. Charles Rothschild, M.A., F.L.S.</i>	102
<i>Aspidiotus bavaricus</i> , Ldgr. : a scale-insect new to the British list.— <i>Dr. Leon- hard Lindinger</i>	103
Thirty additions to the list of British Diptera.	104
The identity of <i>Culex geniculatus</i> , Olivier.— <i>F. W. Edwards, B.A., F.E.S.</i> ...	107
<i>Halipilus brownianus</i> , <i>nec H. browni</i> .— <i>D. Sharp, M.A., F.R.S.</i>	108
<i>Hydporus bilineatus</i> , Sturm, in England.— <i>Id.</i>	109
Supplementary note on <i>Stenus ocellator</i> , Rye.— <i>G. C. Champion, F.Z.S.</i>	109
<i>Melanophila</i> on charred pines.— <i>Id.</i>	109
A hint for collecting beetles in hard wood.— <i>Rev. W. W. Fowler, D.Sc., M.A., F.L.S.</i>	109
Note on a table of the British species of <i>Helophorus</i> appearing in this Maga- zine (Vol. XLIV, p. 218) — <i>James Edwards, F.E.S.</i>	110
A hitherto unrecorded occurrence of <i>Carabus cancellatus</i> , Ill., in Britain.— <i>E. G. Bayford, F.E.S.</i>	110
The Entomology of an opossum's nest.— <i>Prof. T. Hudson Beare, B.Sc., F.R.S.E., F.E.S.</i>	111
<i>Andrena niveata</i> , Friese, probably wrongly recorded as British.— <i>R. C. L. Perkins, D.Sc., F.E.S.</i>	111
The Wingless Geometer.— <i>John H. Wood, M.B.</i>	112
<i>Echinophthirius phocæ</i> , Lucas, in N. Mavine, Shetland.— <i>Rev. J. Waterston, B.D.</i>	113
<i>Docophorus megacephalus</i> , Denny, in Shetland.— <i>Id.</i>	113
REVIEW.—Transactions of the Carlisle Natural History Society, Vol. II. 1912.	113
SOCIETIES—Lancashire and Cheshire Entomological Society	114
South London Entomological Society	114
Entomological Society of London	115
Notes on Lepidoptera from Gibraltar and the surrounding country.— <i>Capt. J. J. Jacobs, R.E. (Retd.) M. I. Mech. E., F.E.S.</i>	117

ENTOMOLOGISCHE MITTHEILUNGEN, Published by the Verein zur Förderung des Deutschen Entomologischen Museum. Monthly Entomological paper; official edition of the Deutsches Entomologisches Museum, whose large Library is at the disposal of all Subscribers at most liberal terms. Gratis to each number continuation of the Library's Catalogue. Terms: 7s. (m. 7) a year; 3s. 6d. (m. 3-50) half a year.

Address: Deutsches Entomologisches Museum, Berlin-Dahlem, Gosslesstr, 20.

DR. STAUDINGER & BANG-HAAS, BLASEWITZ-DRESDEN, in their new Price List, No. LVI for 1913, offer more than 19,000 species of well-named LEPIDOPTERA, set or in papers, from all parts of the world, in finest condition; 1600 kinds of PREPARED LARVÆ, &c.; we sell no more living pupæ. Separate Price Lists for COLEOPTERA (29,000 species); HYMENOPTERA (3600 species), DIPTERA (2900), HEMIPTERA (2500), ORTHOPTERA (1200), NEUROPTERA (630), BIOLOGICAL OBJECTS (300).

PRICES LOW. DISCOUNT FOR CASH ORDERS.

Second Series, No. 282.]
[No. 589.]

JUNE, 1913.

[PRICE 6d. NET

THE
ENTOMOLOGIST'S
MONTHLY MAGAZINE.

EDITED BY

G. C. CHAMPION, F.Z.S. J. E. COLLIN, F.E.S.

W. W. FOWLER, D.Sc., M.A., F.L.S.

R. W. LLOYD, F.E.S. G. T. PORRITT, F.L.S.

J. J. WALKER, M.A., R.N., F.L.S.

SECOND SERIES—VOL. XXIV.

[VOL. XLIX.]

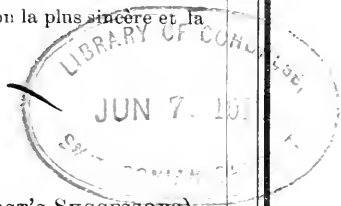
—◆—
"J'engage donc tous à éviter dans leurs écrits toute personnalité,
toute allusion dépassant les limites de la discussion la plus sincère et la
plus courtoise."—*Laboulbène*.

—◆—
LONDON:

GURNEY & JACKSON (MR. VAN VOORST'S SUCCESSORS),
33, PATERNOSTER ROW, E.C.

SOLD IN GERMANY BY FRIEDLÄNDER UND SOHN, BERLIN.

NAPIER, PRINTER, SEYMOUR STREET, EUSTON SQUARE.



REDUCED PRICES FOR BACK VOLUMES.

FIRST SERIES.

This can only be obtained in complete Volumes (bound or unbound).

A limited number of sets, from Vol. x to Vol. xxv can still be obtained at £2 15s. per set net (in parts), or of five consecutive Vols. at £1 per set net (if bound, 1s. per Vol. extra).

Certain of the Vols. i to ix can be had separately at 10s. each.

SECOND SERIES.

Vols. i to xv. are now offered at £3 per set net (in parts), or £1 2s. 6d. for five consecutive Vols. (if bound, 1/- per Vol. extra).

Apply to the Publishers.

NOTE.—Subscriptions for 1913 (6s. per annum, post free) are now due, and should be paid to R. W. LLOYD, I. 5, Albany, Piccadilly, London, W.

It would be a great convenience to the Editors in keeping the accounts if these were paid promptly, as having to send reminders entails a considerable amount of extra work.

The Coloured Plates issued in September, 1909, January and September, 1910, and September, 1911, having been so much appreciated by our readers, a fifth (devoted to *Dermaptera*) was given with the October, 1911, number. The Editors would be greatly obliged if the Subscribers to this Magazine would use their best endeavours to bring it to the notice of their entomological friends, and induce them to subscribe also.

DIRECTLY FROM THE SOURCES!! ORNITH. ALEXANDRÆ.
The King of all Ornithopteras and the largest of all butterflies in the world.

Fresh ex-larva, set or in paper-bags. Lowest price, according to dimensions and beauty.

ORNITH. LYDIUS in the same conditions.

PIERRE HASTERT, Luxembourg Grund.

THE CANADIAN ENTOMOLOGIST.

A MONTHLY MAGAZINE DEVOTED TO THE STUDY OF SCIENTIFIC ENTOMOLOGY.

Volume 45 is now in course of publication. Back volumes can be supplied. It is the oldest established Magazine of the kind in America, and has a world-wide circulation. Subscription, \$1 per annum, which includes a copy of the Annual Report of the Entomological Society of Ontario to the Legislature. Editor, Dr. E. M. Walker, Biological Department, University of Toronto, Toronto, Canada.

Address: Entomological Society of Ontario, Guelph, Canada.

CITY OF LONDON ENTOMOLOGICAL AND NATURAL HISTORY SOCIETY, London Institution, Finsbury Circus, London, E.C.—The First and Third Tuesdays in the month at 7.30 p.m., except in July and August. Visitors are cordially invited to attend with exhibits.—V. ERIC SHAW, Hon. Sec.

the cocoon to the outer world in search of food, but I had no opportunity of carrying my observations any further.

I searched *Retama* bushes in several localities for the beautiful larvæ of *Spintherops spectrum*, F., but without success; neither did I meet with the imago. The larvæ of *Plusia chalcites*, Esp., appeared regularly each season in small numbers on plants growing in pots on the verandah of my house, so that I was able to breed a series of this insect. A full-fed larva of *Sphinx convolvuli*, L., was picked up in our "patio," but it died before pupation. It was probably injured by falling from a high wall on which its food-plant grew (a species of *Convolvulus* locally known as "Morning Glory"), or it may have been dropped there by a blackbird, which had its nest in a palm tree close by.

It is interesting to note how, in some cases, *Lepidoptera* vary as regards comparative abundance in a district, in the course of 24 years; thus when my friend Commander J. J. Walker collected *Lepidoptera* in this region during 1886-9, he recorded in a paper which I found of the greatest assistance (Trans. Ent. Soc. Lond., 1890, pp. 361-391), that *Hesperia nostradamus*, F., was common in the district, and that *Abraxas pantaria*, L., was exceedingly abundant in Gibraltar. Now I do not think I am wrong in stating that both have disappeared from Gibraltar itself, or have become extremely rare, both there and in the adjoining district. After diligently searching for both these insects for two seasons, I met with the former in very small numbers near Tangier on September 11th, 1911, and have since seen two, and taken one specimen at the foot of the Sierra Carbonera. The latter insect (*A. pantaria*) I came upon quite by accident in the Cork Woods on August 5th, 1911, and after beating and searching among a number of ash trees around the spot where the first was taken, could knock out only 6 specimens, since when I have seen and taken only one specimen in Gibraltar, at light. *Melitæa aurinia*, Rott., var. *desfontainii*, Godt., is another species which has entirely disappeared from Gibraltar. I however, took *M. aurinia* var. *iberica*, Obth., on June 8th, 1912, just before leaving for England. Colonel F. J. Angell, A.D.O.S., had taken them in the same spot about the end of May. On the other hand some insects which apparently did not occur in Gibraltar, or were very rare there, are now found plentifully, but locally, such as *Euchloë tagis*, E., and *Hesperia actæon*, E., whilst *Acidalia imitaria*, Hüb., is to be taken, at light all over the Rock. It is difficult to understand the reason of these changes. In this interval, the

habits of some species have not altered in the least degree; thus *Satyrus jidia*, L., comes down in numbers from the upper slopes of the Rock at about 3 p.m., when the Europa main road is watered, just as it did 24 years ago, but apparently a month later in the season. Also *Euchlōe euphenoides*, Staud., although plentiful on the Spanish side of the Straits, has failed to establish itself on the African side, whilst its near relative, *E. eupheno*, L., keeps to the African side, never being seen in Spain. Many species, of course, are common to both sides of the Straits.

I would warn any intending collectors in this region, if they go to the vicinity of the Cork Woods during the spring time, or rutting season, to ascertain whether there are any stray "Toros bravos," or savage bulls, roaming at large; unless, indeed, they are armed with something more formidable than the stick of a butterfly net. Three companions and myself had a rather unpleasant experience there on April 21st, 1912. We came upon a clearing in the woods at one end, with three massive wild bulls suddenly confronting us at the other. We found out afterwards that these had escaped from the main herd of fighters, specially bred for the bull-ring, and had done some damage during the few days preceding our visit. These bulls, evidently thinking they had a better right to the woods than we had, and probably taking the waving about of our nets as a challenge, charged down upon us with heads lowered and tails erect. We, fortunately, were able to dodge them behind trees, owing to the fact, I am told, that these creatures close their eyes when charging, and we eventually got away safely after doing a record sprint over two hills and across country, so as to be well out of the sight of the long-horned brutes. Unfortunately, the trees thereabouts are unclimable, the trunks being too large to clasp, and the lower branches are cut off to improve the cork. Later in the day we had a similar experience with two more bulls of a so-called "domesticated" breed.

If you happen to go to Tangier during the Mohammedan month of "Ramadân," it is as well to be patient with the natives, for during this time they are compelled to abstain from food, drink, and smoking until the middle of the night, when eating, etc., takes the place of sleeping. This discipline makes them very surly and disobliging, and one is naturally likely to resent such behaviour by rough words or impatient gestures. The first time I stayed in Tangier was during "Ramadân," in September, 1910, when my friend Lieut. Lovell, A.S.C., and I went there to try for *Charaxes jasius*. Wanting some rotten figs for bait, we went to a fruit stall in the Sôk (Market) and asked

the Moor in charge in bad Spanish and worse Arabic for the rotten figs we wanted. He would persist in understanding that we condemned his figs as rotten ones and resented the accusation very strongly. The argument increased in force until the air was humming with strong language. What would have happened next I do not know, but fortunately at this juncture a resident English friend came upon the scene, explained matters, and all ended happily.

The Moors, although disliking Christians and Europeans generally, are very fond of, and respect, the English, and I have had very pleasant experiences in Northern Morocco in company with my friends, Lieut. Lovell and Señor Lorenzo Baglietto. We failed altogether to make the Moors understand the object of collecting insects; they could not see why a sane person should go to all the trouble of catching "Fartetose" (the phonetic spelling of the local Arabic for butterflies) which could not be made use of for *eating* purposes.

Of the various methods of obtaining specimens of the imago, such as netting on the wing, sugaring, beating herbage, examining flowers, ivy-hunting, and collecting at light, my experience in this region is that only the first and last-named hold out much chance of success. Ivy is very luxuriant in some localities, producing most promising-looking blooms, the very sight of which would, if such a thing were possible, excite envy in the breast of any British moth; but here it has very little attraction for insects of any kind, either by day or night. I have visited and examined it at all times, and except for an occasional *Agrotis saucia*, Hb., *A. segetum*, Schiff, or other common *Noctuæ*, have not seen anything on it worthy of note. Sugaring trees, rocks, and growing shrubs at various times in the year, both at Gibraltar and in the Cork Woods, has met with but little success. I have only taken three specimens of *Grammodes algira*, L., one *Catocala elocata*, E., in indifferent condition, a few *Bryophila muralis*, and one or two *Gracilipalpus ephialtes*, Hb., by this method in $2\frac{1}{2}$ years. The cause of failure, I think, is not so much that the sugar fails to attract, but is due to the presence of vast numbers of ants, sometimes woodlice, with an occasional huge centipede or a lizard. The ants attack the patches of sugar directly they are put on, and I think drive the well-disposed moths away; indeed, there would be no foothold near the sugar except on the backs of these swarming pirates. We tried to circumvent the ants by stretching lengths of strong fine twine between the trees from which we suspended rags steeped in sugar. This was pretty successful until the ants found their way up the trees and along the branches and cord to the bait.

As regards the means of getting about in this region, there are steamers several times a day across the Bay to and from Gibraltar and Algeiras, whence convenient trains run through the Cork Woods, with stations at San Roque, Almoraina, and Castellar. When you require to work the country around Campamento and the Sierra Carbonera, you can drive from Gibraltar, across the Neutral Ground, to the Spanish Boundary at Linea, after which the journey must be done on donkeys or on foot. We tried taking our horses out in districts where there was no other means of conveyance, but soon found it unworkable, one has to dismount so often, or lose the insects seen; and unless there is a "Fonda" handy at the end of the journey, it is difficult to know what to do with the animals. Then again, riding home with the captures is not conducive to keeping the specimens in good condition, as the movement causes them to flutter about in the boxes, so we found it better to leave our horses to be exercised at home and to do the journey on foot. At Tangier we hired Moorish donkeys, which were found very useful. Your bags are liable to be searched for contraband by the Spanish Customs officials at Algeiras and Linea, and by the French at Tangier.

Day-flying species may, as a rule, be successfully pursued during the greater part of the year, but the best months are from the end of February to the middle of July. The end of October and November is the time for *Charocampa celerio*, L., which comes to "Morning Glory" flowers as the sun is going down. The most productive months for collecting night-fliers at light, I have found to be September, October, and part of November.

In addition to a paper entitled "Two Months among the Butterflies in Southern Spain," by Albert H. Jones, F.E.S., which appeared in Entom. Record, Vol. xxiii, pp. 261-263 and 294-298 (1911), and the paper by Commander J. J. Walker before alluded to, I have recently seen another excellent paper by the same author (Ent. Mo. Mag., Vol. xxiv, pp. 175-184), also the Appendix to Col. Irby's "Ornithology of the Straits of Gibraltar," Edition II (1895), and find that out of the 320 species of *Lepidoptera* enumerated in this paper, apparently more than 160 have not previously been recorded from the district. These include a new aberration of *Acidalia eugeniata*, Mill., two *Noctue*, one or both of which may eventually prove to be new species (shown in list against numbers 1988 and 2010), a new *Crambus* (apparently), three exotic species, and a new Geometer (*Acidalia hispanaria*, Püng), taken at Granada, presumably by a German

collector, at about the same time as I met with it at Gibraltar. I am able also to give a few new localities, times of appearance, and varietal names, of certain species which have already been recorded.

I am indebted to Mr. J. H. Durrant and to Mr. L. B. Prout, also to Commander J. J. Walker, for kind assistance in identifying many of the more difficult species. My thanks are no less due to Sir G. F. Hampson, Bart., for facilities and kind assistance given at the Natural History Museum.

Eighteen species, chiefly *Rhopalocera* and *Zyggenidæ*, taken by Mr. G. O. Sloper at Granada, who kindly presented me with specimens at Gibraltar, are included in the list. During my stay in Gibraltar I also took about 180 species of insects of other Orders, spiders, &c.; lists of some of these appear at the end of this paper, through the kind assistance of several well-known entomologists.

(To be continued).

DESCRIPTION OF A NEW SPECIES OF *TACHYS*.

BY D. SHARP, M.A., F.R.S.

TACHYS (*TACHYURA*) *WALKERIANUS*, *sp. n.*

Nigerrimus, *pernitidus*, *antennis piceo-nigris* (*articulo basali plus minusve dilutiore*), *femoribus piceo-testaceis*, *tibiis tarsisque sordide testaceis*; *sut depressus*; *thorace fortiter transverso*; *elytris quinque-striatis*, *striis fortiter punctatis*. *Long. corp.* 2-2½ mm.

Allied to *T. parvulus*, but more robust, less depressed, with a broader, more transverse thorax, darker antennæ, palpi and legs, and with more deep and strongly punctured striation of the elytra. The two species are extremely easy to distinguish, and the characters of *T. walkerianus* are almost invariable in a large series of specimens, except that when immature the legs and base of the antennæ are a little lighter in colour.

I found three examples of this species here in the spring of last year and thought they would prove to be the rare *T. parvulus*; with my daughter to help me we have secured a very fine series this year, proving the insect to be quite distinct. I believe *Tachys parvulus* has been recorded as occurring in the New Forest, but I anticipate the specimens will prove to be *T. walkerianus*.

The insect is found in wet moss by the side of a little stream, in company with *Actobius ytenensis*, *Chætoconema arida*, and a nondescript *Homalota* allied to *H. exilis*. The larvæ of a large *Microdon* occurred in the same moss, no doubt in connection with *Myrmica* which was also abundant.

I have very great pleasure in naming this insect in honour of Commander J. J. Walker, M.A., to whom I, in common with many other entomologists, am indebted for much kind assistance, extending over a long period of years.

Brockenhurst :

April 30th, 1913.

TRACHYPHLEUS DIGITALIS, GYLL., AN ADDITION TO THE
BRITISH LIST OF COLEOPTERA.

BY E. A. NEWBERY.

Some time ago I sent a specimen of a *Trachyphleus* to Capt. Deville which I was unable to reconcile with any known British species. He was inclined to think that it was *T. digitalis*, Gyll., but this insect having hitherto been found only in Sweden, Russia and Sardinia, he desired to see other specimens before giving a more decided opinion. Owing to the kindness of Commander Walker and Mr. J. H. Keys, I was fortunately able to send him half a dozen more examples, and he has now no doubt of the correctness of his former determination.

T. digitalis comes in the group with special spines at apex of anterior tibiae, or produced and digitate at apex. This group includes five British species all easily separable from *T. digitalis* except *T. spinimanus*. Seidlitz (Fauna Transs., 1891, p. 653) gives the following characters to separate these two species:—

Outer teeth of the front tibiae placed higher than the inner; thorax less contracted at base than at apex; elytra distinctly longer than broad, obsolete striate, scantily furnished with scarcely clubbed bristles. Length 2–2.5 mm.

...*T. spinimanus*, Germ.

Outer tooth of the front tibiae not placed higher than the inner; thorax almost as strongly contracted at base as at apex; elytra very little longer than broad, distinctly striate, set with strongly clubbed scale-formed bristles. Length 2–2.5 mm.*T. digitalis*, Gyll.

These two species are very difficult to separate and are probably mixed in British collections. Herr Formánek (Bestim. Tab., LXI, 133, 1907) omits the character of the position of the tibial teeth given by Seidlitz, nor does it appear to be of any value. He agrees in the main with Seidlitz, and further states that "*T. digitalis* has the elytra very bluntly rounded at apex, and viewed from above appear almost quadrate." In the nine or ten specimens I have seen, the bristles are very scanty and extremely short, and the elytral striae and granulations of thorax are very seldom obscured by the crust which is almost always

present in *T. spinimanus*. The average size is also less than that of the latter species.

With the exception of a single example taken by Mr. E. W. Morse at Boston, Lines., all the specimens of *T. digitalis* that I have seen were taken on the right bank of the Medway by Commander Walker by grubbing at the roots of *Helianthemum* and *Lotus* on dry chalky banks, and occurring in company with several other species of the genus.

13, Oppidans Road, N.W. :
April 22nd, 1913.

A LIST OF BUTTERFLIES COLLECTED DURING THE LAST TEN
YEARS IN BRITISH EAST AFRICA (*concluded*.)

BY THE REV. K. ST. AUBYN ROGERS, F.E.S.

- 285.—*Papilio dardanus*, Brown.—I have found this everywhere except in North Kikuyu and Kenia. At Nairobi a great number of the female forms occur.
- 286.—*Papilio echerioides*, Trim. Taita, Taveta, Kikuyu. Not common usually. It is more plentiful at Nairobi than elsewhere.
- 287.—*Papilio jacksoni*, Sharpe. South Kikuyu. I have sometimes found this abundant at Kijabe.
- 288.—*Papilio constantinus*, Ward. Coast district, Taita, Taveta. By no means uncommon in forests, especially in the Coast hills.
- 289.—*Papilio mackinnoni*, Sharpe. Kikuyu. Common in forests.
- 290.—*Papilio phorcas*, Cram. Common in the forests of Kikuyu.
- 291.—*Papilio nireus*, Linn. Common generally in forests.
- 292.—*Papilio bromius*, Doubl. Taita, Kikuyu. Not uncommon in forests above 5000 ft. Like many other swallowtails it is partial to wet mud.
- 293.—*Papilio demodocus*, Esper. Ubiquitous.
- 294.—*Papilio ophidicephalus*, Oberth. Widely distributed in forests. Its flight is very lofty and irregular, so that its capture is always difficult.
- 295.—*Papilio angolanus*, Gæze. This is a common species generally.
- 296.—*Papilio philonoe*, Ward. Common in the Coast hills.
- 297.—*Papilio leonidas*, Fabr. Common generally.
- 298.—*Papilio antheus*, Cram. Coast hills, Taita. Often occurs in the Coast district in some abundance, especially at the beginning of the wet season.
- 299.—*Papilio policeses*, Cram. Widely distributed and not uncommon the country is suitable.

- 300.—*Papilio porthaon*, Hew. Not uncommon in the Coast district.
- 301.—*Papilio columna*, Ward. Coast hills, Taita. This is generally the commoner of the group in the Coast hills.
- 302.—*Papilio sisenna*, Mab. Coast hills. Not common. It looks like *P. columna* on the wing.
- 303.—*Papilio kirbyi*, Hew. Coast hills. This is also not a common species.
- 304.—*Sarangesa djelææ*, Wallgr. Taita, Nairobi, Ukambani. This seems to be a common species.
- 305.—*Sarangesa lugens*, Rogen. North and South Kikuyu. This is also common, but is found at greater elevations than the preceding.
- 306.—*Sarangesa motozi*, Wallgr. Generally common.
- 307.—*Sarangesa eliminata*, Holl. Taita, Taveta, Kikuyu. Very abundant at Taveta.
- 308.—*Celænorrhinus galenus*, Fabr. Coast district, Taita, Taveta. Not generally common.
- 309.—*Celænorrhinus bettini*, Butl. One specimen from Nairobi.
- 310.—*Tagiodes ftesus*, Fabr. A common species in the Coast district where there are any trees.
- 311.—*Eagris nottoana*, Wallgr. I have taken a few of this species at Rabai.
- 312.—*Eagris phyllophila*, Trim. Coast district. By no means common.
- 313.—*Eagris plicata*, Butl. Taita, Taveta, Kikuyu. This is usually common.
- 314.—*Eagris ochreana*, Lathy. Taita. Doubtfully distinct from the preceding.
- 315.—*Caprona pillana*, Wallgr. Coast district, Taveta. I have found this but rarely.
- 316.—*Caprona canopus*, Trim. This seems to occur nearly everywhere, but is not usually common.
- 317.—*Hesperia spio*, Linn.
- 318.—*Hesperia machakosa*, Butl.
- 319.—*Hesperia dromus*, Ploetz.
- These species resemble one another very closely and are not easy to differentiate. They occur fairly commonly in most places.
- 320.—*Hesperia sataspes*, Trim. Coast district. This is not very common.
- 321.—*Carcharodus elma*, Trim. Generally distributed and usually common.
- 322.—*Abantis tettensis*, Hopff. Taveta. I took this in some numbers when I was at Taveta.
- 323.—*Abantis paradisea*, Butl. Widely distributed, but I have never found it at all common.
- 324.—*Abantis venosa*, Trim. I captured a single specimen near Kaya Kauma in the Coast hills some years ago, but I have not met with it again.

- 325.—*Abantis levubu*, Wallgr. Taveta. Not uncommon. It bears some resemblance to *Belenois mesentina* when settled in its usual position with wings half raised, but its flight is much more rapid.
- 326.—*Acleros mackenii*, Trim. Taveta. Common.
- 327.—*Acleros placidus*, Ploetz. Common generally.
- 328.—*Acleros olaus*, Ploetz. One or two of my specimens from Rabai have been identified as belonging to this species.
- 329.—*Gorgyra johnstoni*, Butl.
- 330.—*Gorgyra minima*, Holl.

These two species are not uncommon in the Coast district.

- 331.—*Parosmodes morantii*, Trim. Coast district, Taveta. Not uncommon.
- 332.—*Parosmodes icteria*, Mab. Abundant in woods in the Coast district.
- 333.—*Parosmodes numa*, Druce. One specimen at Rabai.
- 334.—*Cyclopides metis*, Linn. Taita, Kikuyu. This is a very variable species and is fairly common.
- 335.—*Cyclopides quadrisignatus*, Butl. Kikuyu. Not uncommon.
- 336.—*Cyclopides midas*, Butl. Kikuyu. This also is not uncommon.
- 337.—*Cyclopides stellata*, Mab. Coast district. A common species.
- 338.—*Kedestes rogersi*, Druce. Taveta, Masongaleni. I have not met with this commonly.
- 339.—*Kedestes capenas*, Hew. Common in the Coast district.
- 340.—*Kedestes cullides*, Hew. I have received one specimen from Masongaleni.
- 341.—*Kedestes wallengreni*, Trim. Coast district. Ukambani. Not common.
- 342.—*Gegenes nostradamus*, Fabr. A specimen from Mombasa has been identified as belonging to this Palearctic species.
- 343.—*Gegenes letterstedti*, Wallgr. Taita, Kikuyu. This is generally abundant when it is found.
- 344.—*Padraona zeno*, Trim. Taita, Kikuyu. Another common species.
- 345.—*Chapra mathias*, Fabr. Ubiquitous.
- 346.—*Parnara detecta*, Trim. Coast district. Common.
- 347.—*Parnara micans*, Holl. Coast hills. Taita, N. Kikuyu. Not generally common.
- 348.—*Parnara subochracea*, Holl. Coast district. I believe this is not uncommon.
- 349.—*Baoris lugens*, Hopff. Common in the Coast district.
- 350.—*Baoris maranga*, Butl. Kikuyu. Very near the last species.
- 351.—*Baoris nyassæ*, Hew. Coast district. I have found this peculiar species with its *Acraea*-like underside distinctly rare.
- 352.—*Pardaleodes incertus*, Snellen. Coast district. By no means common.

- 353.—*Acromesis neander*, Ploetz. The Coast district. It is not very common usually, but I have more than once observed it migrating in very large numbers in April at the break of the rains.
- 354.—*Andronymus philander*, Hopfl. Coast district. This does not appear to be very common.
- 355.—*Cunides cylinda*, Hew. The Coast district. Distinctly crepuscular in its habits. It may often be seen during the day time resting on the walls of a house under the verandah, and when disturbed, it only flies a short way so that its capture is easy.
- 356.—*Orses telisignata*, Butl. Abundant in the bamboo jungle on Kinangop.
- 357.—*Ptoetzia cirymerica*, Hew. I have taken this in the Coast district, but not commonly. It is crepuscular or even nocturnal in its habits as it sometimes comes to light.
- 358.—*Zophopetes drysemiphila*, Trim. One specimen at Taveta.
- 359.—*Rhopalocampta libeon*, Druce. A few at Nairobi settled on damp mud in the forest.
- 360.—*Rhopalocampta anchises*, Gerst. Coast district. Not uncommon.
- 361.—*Rhopalocampta forestan*, Cram. Generally abundant.
- 362.—*Rhopalocampta pisistratus*, Fabr. Coast district. Taita, Taveta. Not uncommon.
- 363.—*Rhopalocampta keithlou*, Wallgr. Common in the evenings on low lying ground near the Coast. The larva is very conspicuous, and feeds perfectly exposed.
- 364.—*Rhopalocampta sejuncta*, Mab. The Coast district. Not uncommon.
- 365.—*Rhopalocampta chalybe*, Westw. I took two specimens of this beautiful species in the forests of Taveta.

January, 1913.

THIRTY ADDITIONS TO THE LIST OF BRITISH DIPTERA.

BY J. E. COLLIN, F.Z.S., F.E.S.

(Concluded from page 106).

13. *Tachydromia macula*, Zett. A shining black species with short (only slightly longer than broad) third antennal joint, frons shining black, and the disc of thorax uniformly clothed with hairs. Found by Col. Yerbury at the widely separated localities of Tarrington (Hereford), at end of May; Wormsley Park (Oxford), and Spey Bridge (Inverness), in July.

14. *Tachydromia thoracica*, Lundbk. This small shining black species has very short and indistinct bristles on the thorax, the dorsocentrals

being uniserial and the acrostichals biserial, while the antennæ are extensively yellow. It has been found by the late Mr. Verrall, Col. Yerbury and myself at Lyndhurst (Hants), Porthcawl (Glamorgan), Frinton-on-Sea (Essex), Orford (Suffolk), and Snailwell (Cambs.), in June and July.

DOLICHOPODIDÆ.

It may be as well to take this opportunity of placing on record the synonymy of *Dolichopus varitibia*, Lundbeck, and *Dolichopus laticola*, Verrall. In describing this latter species the late Mr. Verrall said, "Face almost descending to the level of the bottom of the eyes (and yet the species is apparently a *Dolichopus* rather than a *Hygroceleuthus*)" which unfortunately is somewhat misleading, for though the face of *laticola* is rather longer than in *picipes*, it is typically *Dolichopid*-like in the way in which the lower part slopes backwards between the eyes over the mouth, and quite different to the flat shield-like lower part of the face in a male *Hygroceleuthus*. I am sorry to say that this misled Mr. Lundbeck and caused him to re-describe *laticola* as *varitibia* in his "Diptera Danica," Part IV, 1912. I may add that Mr. Lundbeck has compared the type of *laticola* with his *varitibia*, and confirms the synonymy.

15. *Syntormon mikii*, Strobl. I found this very distinct species (which was described from a Spanish specimen) in a small boggy patch of ground near Trevone, Cornwall, when collecting in company with Mr. C. G. Lamb on June 12th, 1912. Its yellowish abdomen with dark dorsal stripe, and in the male its simple basal joint and dilated and darkened other joints to hind tarsi, and the two stout bristles beneath the middle femora, just before the middle, serve to distinguish it. Becker records its capture in Corsica, Greece, and Crete, so it appears to be another of the Mediterranean species found in Cornwall.

16. *Acropsilus niger*, Lw. This genus of *Dolichopodidæ* is new to the British fauna, and would run down by Verrall's "Tables" to the neighbourhood of *Micromorplus*; the face is narrow in the male but broader in the female, and bearing in that sex a few bristles on the somewhat convex lower part; the femora are without pre-apical bristles, and the basal joint of the hind tarsi much shorter than the next joint. *A. niger* is a little known mid-European species, and Mr. C. G. Lamb is to be congratulated upon finding a pair near Padstow (Cornwall) in June, 1912.

SYRPHIDÆ.

17. *Chilosia globulipes*, Becker. Col. C. G. Nurse caught a female of this species at West Stow (Suffolk) on April 28th, 1911, as mentioned on page 84, and another on the 23rd of last April, while I took one the next day. It resembles *præcox*, Zett., but the first joint of the front (as well as of the hind) tarsi is distinctly dilated, and there are distinct bands of long yellow pubescence (more or less interrupted at the middle) on the base of each abdominal segment. The male has not been recognised up to the present.

ANTHOMYIDÆ.

18. *Calliophrys exuta*, Kow. This species may be separated from *riparia*, Fall., by its uniformly brownish thorax (usually without stripes) its narrower antennæ, less projecting frons and mouth edge, and the fact that the central fillet to the frontal stripe is abbreviated and not silvery or whitish as in *riparia*. Apparently the dorso-central bristles behind the suture may be three or four in number. It has occurred in June and July at Dovedale, Windermere, Dawlish, and Mildenhall (G. H. Verrall), also at Loch Assynt and Barmouth (Col. Yerbury).

19. *Lispe consanguinea*, Lœw. Mr. C. G. Lamb found this interesting species near Padstow (Cornwall) in September, 1904. It is closely allied to the common *tentaculata*, De G., but in the male the basal joint of hind tarsi is longer, and the hind femora has no long bristly hairs about the middle beneath, while in the female the hind femora is also without the long bristle or bristles beneath of *tentaculata*.

20. *Deziopsis lacteipennis*, Zett. This genus of the *Ctenosiuzæ* may be distinguished by the slight narrowing of the face at the vibrissal angles, and the species are of a somewhat stout build, more resembling *Lispocephala*. Among the marram grass on the sandy shore north of Walton-on-Naze (Essex) in July last, Col. Yerbury and I found what Herr Stein considers to be a form or variety of *D. lacteipennis* with pale tibiæ.

Deziopsis litoralis, Zett., has been taken by Col. Yerbury at Porthcawl (Glamorgan), Studland (Dorset), Golspie (Sutherland), and the Culbin Sandhills (Nairn); while I have found it at Walton-on-Naze (Essex). The *Ctenosia pallicornis*, Zett., of the "List," introduced by Meade, may be a synonym, as Stein considers the two names to represent the same species. I therefore do not count it as an addition.

21. *Deriopsis rubricornis*, Zett. This little known species was found by Col. Yerbury at Porthcawl in June, 1903, and July, 1906. The face, frons, antennæ, and abdomen are more extensively pale coloured than in the most extreme form of *litoralis*, and the male genitalia very different. Herr Stein, who has seen some of the specimens, confirms the identification.

22. *Pegomyia ulmaria*, Rdi. This species has yellow palpi, the thoracal squamæ somewhat larger than the alar, the scutellum grey like the thorax and bare about the middle. I caught several in the shady part of the garden here in July, 1911, but it has also occurred in May and August.

23. *Pegomyia nigrisquama*, Stein, is one of the darkest species of the genus, having black palpi, darkened squamæ, and very dark legs, only the middle and hind tibiæ being slightly reddish. I have seen a single male taken by Mr. Harwood near Colchester in 1911.

BORBORIDÆ.

24. *Limosina cænosa*, Rond. When I was at the South Kensington Museum on February 7th, 1912, Mr. F. W. Edwards called my attention to a species of *Limosina* received from Mr. G. Lees of Oldham, Lancashire, who stated that they were "swarming in closets, causing great inconvenience to inhabitants" early in November, 1911. A critical examination revealed the fact that they represented, as Mr. Edwards suspected, a species distinct from *fontinalis*, and could be separated from that latter (which they resembled in having eight bristles round the scutellum and no incurved bristles on the thorax) by the much longer pubescence to the arista, the lurid red basal joints of the antennæ, and the difference in length between the penultimate and last costal segments being as 11 : 8 compared with 13 : 7 of *fontinalis*; in addition, the hypopygium of the male is more densely clothed with longer hairs than in *fontinalis*. I find that the late Mr. Verrall took a female in his brother's garden at Denmark Hill on February 28th, 1868, and a male at Plashett, near Lewes, on March 24th, 1868, and I caught a male in the garden here (Suffolk) on August 13th, 1897.

25. *Limosina pullula*, Zett. This small species has a reddish-yellow face and legs, the cubital vein slightly curved and ending long before wing tip, and the penultimate costal segment practically equal in length to the last; also the middle bristle of those incurved on front of frons is much more developed than the others near it. I find it at Chippenham Fen (Cambs.) in March and April.

SAPROMYZIDÆ.

26. *Sapromyza lutea*, Zett. This species resembles *rorida*, but the acrostichal bristles are distinctly placed in only two rows, and the thorax is dull and the arista not so pubescent, moreover it is smaller (3 mm.). Col. Yerbury caught a male at Nethy Bridge (Inverness), July 30th, 1911, and two females at Loch Assynt (Sutherland), June 2nd and 6th, 1911.

27. *Sapromyza quadrinotata*, Zett. The two pairs of spots on the abdomen, yellow palpi, acrostichal bristles in four rows, and small size ($2\frac{1}{2}$ mm.) will serve to distinguish this species, of which Col. Yerbury took a male at Lochinver (Sutherland) on July 7th, 1911.

Sapromyza apicalis, Lw. In this Magazine for 1910, p. 171, I stated that I had never seen a British specimen of this species, but on July 4th and 8th, 1912, I caught six males and three females at Frinton-on-Sea (Essex).

CHLOROPIDÆ.

28. *Diplozoa ruficeps*, Zett. The thorax of this little species is uniformly greyish black and unstriped (though the scutellum may show signs of yellowish red) and the vertical triangle also greyish black and very large. Col. Yerbury caught a male at Loch Assynt (Sutherland) on July 20th, 1911.

GEOMYZIDÆ.

29. *Aphaniosoma quadrinotatum*, Becker. The genus *Aphaniosoma* was founded by Becker in his work on Egyptian *Diptera* (1902), and is closely allied to *Chironomyia* (*Pelethophala* of the "List"), while *A. quadrinotatum* was described by Becker as a new species of *Pelethophila* from the Canary Isles (1904). In July of the present year (1912), Mr. C. G. Lamb sent me specimens which he had found in June on the flowers of *Matricaria* growing near Padstow (Cornwall), with the suggestion that they might belong to the genus *Aphaniosoma*. The species may be known by the four greyish stripes and five pairs of dorso-central bristles on its yellow thorax. Strobl has found it in Spain, but his specimens appear to have the general pubescence of the body of a whitish colour, while in British specimens it is dark.

30. *Aphaniosoma approximatum*, Becker. When I received the specimens of *A. quadrinotatum* from Mr. Lamb, I was collecting on the Essex coast at Walton-on-Naze, and found in the *Convolvulus* flowers on the cliffs a species of the same genus which turned out to be Becker's

type-species *approximatum*, the only difference being in the darker colour of the general pubescence of the body. It is a darker species than *quadrinotatum*, the disc of the thorax being uniformly grey with only one pair of strong dorso-central bristles near the grey scutellum.

Newmarket: April, 1913.

Note on Bembidium velox, Er.—This name stands in our catalogues as a variety of *B. lampros*, Hbst. In addition to the characters hitherto mentioned as distinctive, I find another one of some importance, namely that in *velox* the wings are fully developed, but are aborted in *lampros*. The form may not improbably prove distinct as a species. In the Beare-Domsthorpe catalogue, *celere*, Er., is given as a var. of *lampros*, but it appears to be a mere synonym. Reitter in "Fauna Germanica" gives a var. *cyaneotinctum*. This occurs here, but is a variety of *velox* not of *lampros*. According to my experience, both *velox* and *cyaneotinctum* are rare in Britain, but *lampros* very common.—D. SHARP, Brockenhurst: May 5th, 1913.

Note on Homalota cribriceps, Shp.—This insect, of which a single specimen (♀) is in the Power Collection, is the *Canonica puncticollis* of Kraatz, described in "Linnaea Entomologica," 1857, from Ceylon, as found in the nests of Termites; it is also found in Grenada, West Indies. Kraatz gives the characters of the ♂, but both he and Sharp have omitted to give those of the other sex in which the last dorsal abdominal plate is furnished at the posterior margin with six small teeth, two being close together to one another and also to the middle line on either side, and a third more externally on either side. In the British specimen this plate is much retracted and only the four central teeth can with difficulty be detected, so that it is easy to see how they were overlooked.—M. CAMERON, 7, Blessington Road, Lee, S.E.: April 19th, 1913.

Acalyptus rufipennis, Gyll., in Oxfordshire.—On March 27th last, while hunting for Coleoptera at that famous old locality the "peat-pits" at Weston-on-the-Green, Oxon., I turned a small weevil out of damp vegetable refuse, and bottled it as a *Tychius*; and it was not until its turn came to be set a few days later, that it was recognised as a fine fresh specimen of the long-lost *Acalyptus rufipennis*, Gyll. (*carpini*, Brit. Cat.). Naturally I wished to "follow up" this lucky find, but the persistently bad weather of April was all against working for the insect. I succeeded, however, in finding a few specimens under the same conditions and in the same spot as the first, in the moss and *débris* about the roots of one small willow-bush, from the catkins of which two or three more examples were beaten.

This pretty little weevil is apparently very local and rare with us, and has not been taken for many years past. Its discovery in Britain is due to the late Mr. Samuel Stevens, who met with it in some numbers on April 28th, 1851 (*cf. Zoologist*, 1851, p. 3186) by beating willow catkins in a small wood near

Fenny Stratford, Beds. (not Stony Stratford, Bucks., as quoted by Fowler, Col. Brit. Islands, V, p. 294), and the majority of the specimens extant in our collections are due to his liberality. It was subsequently taken by Mr. G. R. Crotch in 1864 in Burwell Fen; and Mr. E. A. Waterhouse informs me that about that time some specimens were received by Mr. E. C. Rye among a number of beetles taken at Wicken Fen by the Hon. T. de Grey (now Lord Walsingham). The Rev. H. S. Gorham kindly writes me that he took a single specimen in 1886 at Haileybury, Herts., probably on hornbeam; and this appears to have been the last occasion on which it has been found in our Islands previous to the present record.—JAMES J. WALKER, Oxford: *May 13th*, 1913.

The host of Claviger longicornis, Müll., in England.—Through the kindness of Mr. H. St. J. Donisthorpe, I am now able to state definitely that the ant with which this beetle is found in its Oxfordshire locality is *Lasius niger*, L. *C. longicornis* occurred again there singly to me on May 1st, and has since been taken by Mr. J. Collins.—JAMES J. WALKER: *May 13th*, 1913.

Bostrichus capucinus, L., in Cumberland.—I met with a number of specimens of this insect last July and August in an oak log, imported from Odessa in a roughly-hewn state, but with the whole of the bark removed. The beetles were captured as they emerged from their cleanly cut burrows in the hard perfectly sound wood. The holes were neatly circular, like those characteristic of *Anobium*, only larger. The beetles were most active towards evening, and during the brighter part of the day they were to be seen in the holes about an inch from the surface of the wood. A number of logs from the same source were piled together, but the beetles were only present in one of them. I believe it is many years since this species was found really wild in the British Isles. Quite possibly these may have originated from parents imported in some similar way to those which form the subject of the present note.—F. H. DAY, 26, Currock Terrace, Carlisle: *April 28th*, 1913.

Philonthus varius, Gyll., var. shetlandicus, Poppius.—This variety is described by B. Poppius in a paper published in "Öfversigt af Finska Vetenskaps-Societetens Förhandlingar," XLVII, 1904-1905, No. 18, which seems to have escaped the attention of British Coleopterists. The paper is entitled "Contributions to the knowledge of the Coleopterous Fauna of the Shetland and Orkney Islands," and deals with a collection of *Coleoptera* made in these islands by Prof. Dr. O. M. Reuter in 1876. I quote Poppius's description and remarks *verbatim*: "*Ph. varius*, Gyll., var. *shetlandicus*, n., differs from the known forms of this species by the uniform dark red colour of the wing-shells. Legs, as in the most forms of this species, pitchy-brown. Closely allied to var. *nitidicollis*, Boisd., the wing-shells, however, being still lighter. Owing to the fact that the five specimens collected all are quite similar and that no otherwise coloured specimens, as far as I am aware, are found on the Shetland Islands, seems it fully right to consider the form described above as a peculiar local variety." Four specimens are recorded from Lerwick (July 6th, 1876) and one specimen from Tingwall (July 7th, 1876). This form had previously been known to occur

in the Shetlands, as Dr. Sharp in his *Coleoptera of Scotland* (Scottish Naturalist, Vol. II, p. 350) remarked that he possessed a specimen from that locality in which the elytra were red instead of green, but he referred it to var. *nitidicollis*, Boisd. Messrs. Thos. Blackburn and C. E. Lilley in their "Notes on the Entomology of Shetland" (i.e., p. 349) record "*Philonthus varius* (red var. common)." It is not quite clear from their paper, however, whether the type form or only the variety occurred. Canon Fowler in his "Coleoptera of the British Islands" (Vol. II, p. 265) treated var. *nitidicollis*, Boisd., as synonymous with var. *bimaculatus*, Grav., and stated that "in this variety the elytra are entirely red, or dark only at the base; it is somewhat rare, but widely distributed: Cowley, near London, Portsmouth (without type form), York, &c.; it has occurred as far north as the Shetland Islands." The two forms, however, are not identical, as is indicated in the last European Catalogue, and Reitter, in "Die Käfer des Deutschen Reiches" (Fauna Germanica), separates them as follows:—

a. *bimaculatus*, Grav. Black, elytra shining bronze, with a large oval apical spot red.

b. *nitidicollis*, Boisd. Black, elytra red, the base, sides and suture more or less narrowly black, shining bronze.

Var. *shetlandicus* would therefore appear to be an extreme form distinguishable from either *bimaculatus* or *nitidicollis*. It remains for future investigators of the *Coleoptera* of Shetland to ascertain whether var. *shetlandicus* is the only form of the species occurring there. Owing to the confusion in synonymy it is difficult to gather from Fowler whether the form with the elytra entirely red has occurred on the mainland, but perhaps this note will be the means of eliciting information which may clear up the point.

Philonthus varius var. *shetlandicus*, Poppins, is included in the Addenda to the last European Catalogue.—A. FERGUSON, 22, Polworth Gardens, Glasgow, W.: April 22nd, 1913.

Wingless winter moths.—In my last note on this subject I carelessly omitted reference to a decisive circumstance. It is well known to economic entomologists that complete protection against the larvæ of these insects can be obtained for fruit trees by any effective device that prevents their stems being climbed by the ♀ moths. I have seen this knowledge satisfactorily used in some orchards in Herefordshire.—T. A. CHAPMAN, Reigate: April, 1913.

Hedychridium coriaceum and *Crabro albilabris*.—Noticing that in the last (April) number of Ent. Mo. Mag., my friend Mr. Mortimer credits me with the suggestion that *H. coriaceum*, Dhlb. is a parasite of *Crabro albilabris*, Pz., I think I ought to say that this suggestion is not my own, but was first made to me in a letter by Mr. G. Arnold, and afterwards published by him in Ent. Mo. Mag., January, 1908. Personally I can offer no evidence on the point; and it has always seemed to me strange that if *H. coriaceum* is really associated regularly with so extremely common a species as *C. albilabris*, it should not itself be more common than it appears to be. At any rate, if the association be a regular one, it is not to me, but to Mr. Arnold, that the credit of discovering it is due.

I see also that Mr. Mortimer speaks of *H. coriaceum* as the "most recently discovered" of our British Chrysidids. Two, however, at least of these are later additions to our list, viz., *Ellampus truncatus*, Dhlb. (Ent. Mo. Mag., May, 1900), and *H. rutilans*, Dhlb. (Ent. Mo. Mag., October, 1901). I recorded *H. coriaceum* in Ent. Mo. Mag., August, 1897.—F. D. MORICE, Woking: April, 1913.

Ortheziola vejdoskyi (fam. Coccidæ) in Scotland.—In an earlier number of this Magazine (August, 1911, p. 179) I recorded the first occurrence of *Ortheziola vejdoskyi*, Sulc., in this country, where it was taken at Porlock by Mr. Donisthorpe. It now appears that examples of this interesting species had been taken at a very much earlier date, though their identity was not recognised. I have just received from Mr. W. Evans the specimens in question, with a note to the effect that they were found in crevices of a log of wood in Haddingtonshire, Scotland, in November, 1905. Though this is only the second record of its occurrence in the British Isles, it is probable that the species is widely distributed here. Like its nearest relative, *Newsteadia floccosa*, *Ortheziola vejdoskyi* is of a retiring disposition and shuns the light of day, concealing itself in moss, in crevices of bark, or even below ground.—E. ERNEST GREEN, Mote Hall, Bearsted: May 3rd, 1913.

Reviews.

"THE COLEOPTERA OF THE BRITISH ISLANDS: a descriptive account of the families, genera, and species indigenous to Great Britain and Ireland; with notes as to localities, habitats, etc." By W. W. FOWLER, M.A., D.Sc., F.L.S., and HORACE ST. JOHN DONISTHORPE, F.Z.S. Vol. VI (Supplement). London: Lovell Reeve & Co., Ltd., 6, Henrietta Street, Covent Garden. 1913.

It is difficult to express adequately the debt which the now fairly numerous students and collectors of our native beetles owe to the enterprise and industry of the Rev. W. W. Fowler, whose "*Coleoptera of the British Islands*" appeared in five volumes between the years 1887 and 1891. This exhaustive work may well be said to mark a new era in the study of our *Coleoptera*, and such of us as are old enough to remember the toil of identifying our captures by the aid of such obsolete and inadequate works as Stephens's "Manual" (useful enough in its day) and the scattered literature on the order in English, are those who most fully realize the stimulus it has given to this branch of Entomology. Very largely as a result of this incentive to work, few months have passed without the announcement of the discovery of one or more species of *Coleoptera* new to our Islands in the pages of this Magazine and its contemporaries; and the critical work on the more obscure and difficult genera effected by such eminent Coleopterists as Dr. Sharp, Mr. N. H. Joy, and Mr. James Edwards (to name one or two only) has added to our list a large number of species new to science. All these records and descriptions have now been collated, amplified, and brought together in the first part of this "Supplementary volume"; a good many necessary corrections to the earlier volumes have been made, and the very considerable list of "Addenda" which has accumulated during the time

required to complete the plates of the illustrated edition, is sufficient testimony to the activity of our present workers. The second part of the volume is due to Mr. H. St. J. Donisthorpe, whose commendable industry and unrivalled experience in collecting in all parts of our Islands, has enabled him to compile, from the enormous mass of records of local and rare species in recent years, a list of "Additional Localities and Notes" extending to nearly 120 pages, which cannot fail to be appreciated by all active outdoor workers. To the same writer we owe an exceedingly valuable and interesting chapter on the subject he has made his own, the Myrmecophilous *Coleoptera* of Great Britain; this comprises an exhaustive list of our "ant's nest" known species and their hosts, and is illustrated by two excellent half-tone plates. Perhaps there are a few more misprints and other signs of undue haste in this volume than in its predecessors, and we notice many curiously erratic variations in the spelling of the place-names in the "List of Localities"; but on the whole the joint authors are to be congratulated on having accomplished a very useful and greatly needed piece of work.

"THE DICTIONARY OF ENTOMOLOGY," by NIGEL K. JARDINE, F.E.S. Published at 2, Castle Street, Ashford, Kent. London: West, Newman & Co., 54, Hatton Garden, E.C. 12mo, pp. viii, 259. 1913.

This neat and compact little volume is a praiseworthy effort on the part of the author to compile and explain, as far as possible, the very numerous technical and special terms used by the writers in our science from the time of Linné to the present day, and to give their derivations. On this latter point a great deal of labour and research has evidently been spent, the older European languages (including even Gaelic and Icelandic) as well as the classics having been laid under contribution. As regards the terms themselves, the explanations seem to us on the whole adequate and correct, though erring decidedly in some cases on the side of brevity; but the entomologist, as well as the linguist, will find much that is useful and interesting in the scientific terms, more than 3,000 in number, which have been brought together by the writer of this little book.

Society.

ENTOMOLOGICAL SOCIETY OF LONDON: *Wednesday, April 2nd, 1913.*—
Mr. G. T. BETHUNE-BAKER, F.L.S., F.Z.S., President, in the Chair.

Messrs. André Avinoff, Liteyny, 12, St. Petersburg; W. Bowater, Russell Road, Moseley, Birmingham; J. S. Carter, Warren Hill Cottage, Eastbourne; James Davidson, M.Sc., Imperial College of Science and Technology, South Kensington, S.W.; Arthur H. Foster, M.R.C.S., L.R.C.P. (Eng.), M.B.O.U., Sussex House, Hitchin; J. A. de Gaye, King's College, Lagos, South Nigeria; Oliver Hawkshaw, 3, Hill Street, Mayfair, W., and Millard, Liphook; and Ernest Edward Platt, 403, Essenwood Road, Durban, Natal, were elected Fellows of the Society.

The Rev. G. Wheeler explained that he had been mistaken in some of his observations on *Argynnis auresiana*, which he exhibited on October 16th, as he had lately heard from Mr. Powell. The name *auresiana* was given by Frühstorfer not by Oberthür, and a few specimens were already known before Mr. Powell discovered it in numbers at Lambessa as previously stated. It had also been figured by Turati. Mr. E. Ernest Green exhibited cards showing the transferred wing-scales of butterflies. Mr. Donisthorpe, a specimen of *Tetramorium caespitum*, L., ♂, from a colony found by Mr. Evans on the Bass Rock in Scotland, March 21st, 1913; the most northern records known in Britain were Denbigh in Wales, and Cambridgeshire and Suffolk in England. Mr. W. C. Crawley, numerous species, sub-species, etc., of ants from Egypt, which were taken at Helouan during December and January last. Dr. K. Jordan gave a short account of the ninth International Congress of Zoology at Monaco, with special reference to the question of Entomological Nomenclature, after which thanks were voted to the Society's Delegates for their work at the Congress, and to Dr. Jordan in particular for his interesting and satisfactory account of it. The following papers were read:—"On the classification of British *Crabronidæ* (*Hymenoptera*)," by R. C. L. Perkins, D.Sc., M.A., F.L.S. "Descriptions of new species of the Syrphid genus *Callicera* (*Diptera*)," by the late G. H. Verrall, F.E.S. Edited by J. E. Collin, F.E.S. "Neue Pyrgotinen aus dem British Museum in London," Von Friedrich Hendel, Wien.

HELP-NOTES TOWARDS THE DETERMINATION OF BRITISH
TENTHREDINIDÆ, &c. (31.)

BY THE REV. F. D. MORICE, M.A., F.E.S.

CIMBEX, OL. *LOPHYRUS*, LATR. *MONOCTENUS*, HTG.

In my last paper I commenced discussion of the British *Tenthredopsis* spp., but had to confess myself unable as yet to tabulate them. As I have hopes of gaining some new light on the subject from a work by Dr. Enslin which should appear in the course of this year, I think it best to postpone any further remarks on *Tenthredopsis*, and to "intercalate" here a paper dealing with two genera (*Cimber* and *Lophyrus*) which I was not prepared to discuss in their proper places, and also with a genus, closely allied to *Lophyrus* (viz., *Monoctenus*, Htg.) of whose existence in this country I only became aware this winter, and which is an interesting addition to the British List.

CIMBEX.

Although this genus contains very few European species, all of which embrace large and striking forms, separable (as might naturally be supposed on a first acquaintance with them) by strongly marked differences both of colour and structure, it is really a very

difficult one to deal with satisfactorily. Attempts have been made to establish specific distinctions on all sorts of characters—differences in colour; in the structure of the antennæ: the form and sculpture of the vertex, and the scutellum; etc., etc. But it seems now generally admitted that in every one of these points individuals vary to almost any extent; and that to be really certain of a “determination” in this genus, it is generally necessary to have evidence as to the food-plant to which the specimen in question was attached, or, if it be a ♀, to examine the “saw” and its appurtenances under fairly high powers of the compound microscope. Certain forms may indeed be named with some confidence by the colour alone. Yet there are other cases in which this criterion breaks down altogether, at any rate when we are dealing with the ♂♂. I may add that there is a good deal of discrepancy in the nomenclature adopted by various authors, certain old Linnean names (*lutea*, *femorata*, etc.) appearing in all their lists, but being applied to different forms. It is therefore with some hesitation that I offer the following tabulation of the species known to me as British, which after all are only three, and should be called (I believe) respectively, *femorata*, L., *connata*, Schrank, and *lutea*, L. A British ♂, given to me by Mr. McLachlan, was referred by Konow to a fourth species (*fugi*, Zadd.); but I have never felt satisfied with the determination, and Dr. Enslin (to whom I have lately submitted the insect) believes it to be only a var. of *femorata*. A very distinct species, *quadrimaculata*, Müll. (var. *humeralis*, Geoffr.) is reckoned as British by Cameron under the name *humeralis*. But it rests only on a supposed capture of Leach’s “near Salisbury,” and the record is in need of confirmation. Personally I suspect that, like other Leachian specimens, this is an Italian (or at least a Continental) intruder in our lists. If it is really British, it may at once be identified by its bright sulphur-yellow pronotum, and the interrupted fasciæ of the same colour on the upper surface of its abdomen.

TABLE OF BRITISH *CIMBEX*, SPP.

1. Wings with a broad fuscous apical margin, and a conspicuous fuscous streak running from the stigma over the bases of the radial and cubital areas into the 1st medial cell (= *cellula furcata*, Thoms.), half of which it occupies. Colour variable; may be almost entirely fuscous in both sexes, or more or less largely rufescent on the abdomen (var. *sylvarum*, F.), or with abdomen black and yellow (var. *varians*, Leach, and var. *pallida*, Steph.), or with abdomen almost entirely reddish-yellow (var. *griffini*, Leach). In all cases the abdomen is considerably more shining in the ♀♀ (and slightly so, I think, in the ♂♂ also) than in our other species. All the forms are attached to the Birch *femorata*, L.

Konow distinguished another willow-feeding species, *caprea*, K., from *lutea*, saying that it differed in having the scutellum deeply furrowed longitudinally (= "bituberculate"). I have a British ♀ with this character, but I find its saw, etc., absolutely identical with that of *lutea*; and Dr. Enslin tells me that he has no belief in the distinctness of Konow's species.

I have mentioned Konow's identification of a British ♂ as *fagi*, Zadd., and my doubts on the subject. *Fagi* is undoubtedly a good species, attached—as its name implies—to the Beech, and there seems no reason why it should not occur in this country as well as in Germany or Holland. If any reader of these Notes has taken, or should take, a *Cimbex* on Beech in this country, I should be truly grateful to receive information of the capture.

LOPHYRUS and MONOCTENUS.

Owing to the discovery of *Monoctenus* in this country, my "Table of Generic Characters" (Ent. Mo. Mag., Aug. 1903, p. 189) requires amendment. To the characters of *Lophyrus* should be added "Humeral area (= lanceolate cell) in forewing with a cross nervure. Antennæ of the ♂ pectinated on both sides: *i.e.*, each antenna has two separate rows of branches (these rows being placed neither in the same plane, nor in planes parallel to each other, but radiating apart diagonally." And to this diagnosis should be opposed the following: "Humeral area in forewing contracted. Antennæ of ♂ pectinated on one side only (*viz.*, exteriorly). *Monoctenus*, Htg."

Before proceeding to tabulate *Lophyrus* let us now finish with *Monoctenus*. The species of it which I have here to record as British is *juniperi*, L., a very singular looking little insect, especially in the ♂. It is black with yellow tibiae and tarsi, and—in the ♀—the sides of the abdomen more or less rufescent. It is much smaller than anything now called *Lophyrus*, though it was formerly placed in that genus (length about 5 mm. only, against 7 to 12 mm.). The single pecten of the ♂ antenna consists of about 20 branches. Near its apex the antenna curls inwards; so that the branches forming the pecten, which up to this point have been parallel one to another, begin to diverge in the apical direction, and look like the spokes of a wheel which has lost its rim.

I found quite a series of this insect (♂ ♂ and ♀ ♀) in the Cambridge University collection lately sent to me for re-arrangement. They were taken on juniper in Scotland (Nethy Bridge, &c.), June, 1907, by Messrs. H. Scott and C. G. Lamb. Many years ago Cameron recorded a larva, which he found on juniper, but failed to rear, as probably belonging to this species. The imago, however, does not

seem to have been ever found previously in these islands, though it is no rarity on the Continent, occurring *passim*—always on juniper—from Scandinavia to North Italy.

The British species of *Lophyrus* known to me by autopsy are the same as those recorded by Cameron, but certain changes in his nomenclature seem to be required. I have very little British "material" for dealing with this genus, which is much better represented in Scotland and the North than in my own neighbourhood (Surrey), where I have never met with any species except *pini*. I venture, however, to offer the following table for determination of the British species. The characters based on the number of pectinated joints in the ♂ antenna are given with some hesitation, for such multi-articulate structures are notoriously liable to vary. Still they hold in the specimens which I have examined, and I cannot at present find any more reliable characters to substitute for them.

All species of this group seem to be attached to conifers, and any European species is quite likely to occur in this country wherever its food-plant is abundant.

TABLE OF BRITISH *LOPHYRUS*, spp.

- | | | |
|----|---|--|
| 1. | Humeral area in hind wing (see Fig. 5 in Ent. Mo. Mag., 1903, p. 52) with long appendiculation; i.e., its apex is separated from the end of the 'areal nerve' by a distance approximately twice as great as the breadth of the cell itself! Punctuation of thorax (especially scutellum) comparatively strong and close | 2. |
| — | The appendiculation is short; i.e., its length is about equal to the breadth of the humeral cell. Thorax almost impunctate or, if punctured, only sparsely so | 9. |
| 2. | ♂♂ with antennæ conspicuously pectinated on both sides..... | 6. |
| — | ♀♀ with antennæ strongly serrated, but scarcely pectinated ... | 3. |
| 3. | Hind tibia with a paradoxically flattened dilated and leaf-like calcar ... | 4. |
| — | Calcaria of normal form (spine-like) | 5. |
| 4. | Face with a broad black transverse band reaching from eye to eye and including the ocelli (but not the clypeus genæ or tempora.) Ground colour of insect olivaceous-green with black markings. Breast largely black | <i>virens</i> , Kl., ♀. |
| — | Face and breast pale | <i>pallidus</i> , Kl., ♀.
(= <i>dorsatus</i> , C., nec. F.) |
| 5. | Length seldom less than 10 mm. Body dull yellow, with more or less of its upper surface especially (vertex—but not as a rule the tempora—most of the mesonotum, the scutellum generally, and four intermediate dorsal segments of the abdomen, etc.) conspicuously infuscated with black. Abdomen broadly oval, usually evidently wider than the thorax. Hind femora and apex of hind tibiæ black within..... | <i>pini</i> , L., ♀. |

Authors are requested to send their communications to either

J. J. WALKER, Aorangi, Lonsdale Road, Summertown, Oxford; or
G. C. CHAMPION, Horsell, Woking.

Those relating to Diptera, to

J. E. COLLIN, Sussex Lodge, Newmarket.

LANCASHIRE AND CHESHIRE ENTOMOLOGICAL SOCIETY.—Meetings the third Monday in each Month, October to April. *Hon. Sec.*, W. M. MANSBRIDGE, 4, Norwich Road, Wavertree, Liverpool.

THE THREE COLOURED PLATES illustrating the articles on
"SOME INTERESTING BRITISH INSECTS,"

with the accompanying text (issued in the *Ent. Mo. Mag.* for September, 1909, and January and September, 1910) are now issued in a separate wrapper, price 2s.

APPLY TO THE PUBLISHERS.

WATKINS & DONCASTER, Naturalists,

Keep in stock all Articles for Entomologists, Ornithologists, Botanists, &c.: Umbrella Net, 7/-; Folding Cane or Wire, 3/6, 4/-, 4/6; Plain Ring Net, 1/3, 2/-, 3/-; Pocket Boxes, 6d., 9d., 1/-, 1/6; Store Boxes, with Camphor Cells, 2/6, 3/6, 4/-, 5/-, 6/-; Zinc Pocket Boxes, 9d., 1/-, 1/6, 2/- Setting Boards, from 5d. to 1/10; Complete set of 14 boards, 10/6; Breeding Cages, 2/6, 4/-, 5/-, 7/6; Sugaring Tins, 1/6, 2/-; Sugaring Mixture, ready for use, 1/9 per tin; Setting Houses, 9/6, 11/6, 14/-; Glass Topped and Glass Bottomed Boxes, from 1/- per doz.; Zinc Killing Boxes, 9d., 1/-; Coleoptera Collecting Bottles, 1/6, 1/8; Collecting Box, containing 26 tubes (very useful for Coleopterists, Microscopists, &c.), 4/6; Brass Chloroform Bottle, 2/6.

Improved Pocket Pupa-digger in leather sheath (strongly recommended), 1/9; Steel Forceps, 1/6 to 3/- per pair; Pocket Lens, from 1/6 to 8/6.

Taxidermists' Companion, containing most necessary implements for skinning, 10/6; Scalpels, with ebony handles, 1/3; Fine Pointed Scissors, 2/- per pair; Brass Blow-pipes, 4d., 6d.; Egg Drills, 2d., 3d.; ditto, best quality, 9d. each; Botanical Vasculum, 1/6, 2/9, 3/6, 4/6; Label List of British Macro-Lepidoptera, with Latin and English Names, 1/6; List of British Lepidoptera (every species numbered), 1/-; or on one side for Labels, 2/-.

SILVER PINS FOR COLLECTORS OF MICRO-LEPIDOPTERA, &c.,
as well as minute insects of all other families.

We stock various sizes and lengths of these Silver Pins, which have certain advantages over the entomological pins usually employed.

For instance, insects liable to become greasy and verdigrisy, like Sesiidæ, are best pinned on Silver pins, which will last much longer than the ordinary pins (whether enamelled black, or gilt, or silvered).

We shall be pleased to send pattern cards on application.

A large stock of British, European, and Exotic Lepidoptera, Coleoptera, and Birds' Eggs.

ENTOMOLOGICAL PINS.

The "DIXON" LAMP NET (invaluable for taking Moths off street lamps without climbing the lamp posts), 3s. 6d.

SHOW ROOM FOR CABINETS, &c.

36, STRAND, LONDON, W.C., ENGLAND.

Birds and Mammals, &c., Preserved & Mounted by first-class workmen.

Our New Price List (100 pp.) sent post free to any address on application.

CONTENTS.

	PAGE
Notes on Lepidoptera from Gibraltar and the surrounding country (<i>continued</i>).— <i>Capt. J. J. Jacobs, R.E. (Retd.) M. I. Mech. E., F.E.S.</i>	121
Description of a new species of <i>Tachys</i> .— <i>D. Sharp, M.A., F.R.S.</i>	125
<i>Trachyphloeus digitalis</i> , Gyll., an addition to the British List of Coleoptera.— <i>E. A. Newbery</i>	126
A list of butterflies collected during the last ten years in British East Africa (<i>concluded</i>).— <i>Rev. K. St. Aubyn Rogers, F.E.S.</i>	127
Thirty additions to the list of British Diptera (<i>concluded</i>).— <i>J. E. Collin, F.E.S.</i>	130
Note on <i>Bembidium velox</i> , Er.— <i>D. Sharp, M.A., F.R.S.</i>	135
Note on <i>Homalota cribriceps</i> , Shp.— <i>M. Cameron, M.B., R.N., F.E.S.</i>	135
<i>Acalyptus rufipennis</i> , Gyll., in Oxfordshire.— <i>James J. Walker, M.A., R.N., F.L.S.</i>	135
The host of <i>Claviger longicornis</i> , Müll., in England.— <i>Id.</i>	136
<i>Bostriechus capucinus</i> , L., in Cumberland.— <i>F. H. Day, F.E.S.</i>	136
<i>Philonthus varius</i> , Gyll., var. <i>shetlandicus</i> , Poppius.— <i>A. Fergusson</i>	136
Wingless winter moths.— <i>T. A. Chapman, M.D., F.Z.S.</i>	137
<i>Hedychridium coriaceum</i> and <i>Crabro albilabris</i> .— <i>Rev. F. D. Morice, M.A., F.E.S.</i>	137
<i>Ortheziola vejdoskyi</i> (fam. <i>Coccidæ</i>) in Scotland.— <i>E. E. Green, F.E.S.</i>	138
REVIEWS.—“The Coleoptera of the British Islands,” Vol. VI (Supplement). By <i>W. W. Fowler, M.A., D.Sc., F.L.S.</i> , and <i>H. St. J. Donisthorpe, F.Z.S.</i>	138
“The Dictionary of Entomology.” By <i>Nigel K Jardine, F.E.S.</i>	139
SOCIETY.—Entomological Society of London	139
Help-Notes towards the determination of British Tenthredinidæ, &c. (31).— <i>Rev. F. D. Morice, M.A., F.E.S.</i>	140

I WANT: EGGS OF SATURNIA PAVONIA var. CARPINI. Please send offers to Mr. ARTHUR FRITZSCHE, NEUHAUSEN (Switzerland).

ENTOMOLOGISCHE MITTEILUNGEN, Published by the Verein zur Förderung des Deutschen Entomologischen Museum. Monthly Entomological paper; official edition of the Deutsches Entomologisches Museum, whose large Library is at the disposal of all Subscribers at most liberal terms. Gratis to each number continuation of the Library's Catalogue. Terms: 7s. (m. 7) a year; 3s. 6d. (m. 3-50) half a year.

Address: Deutsches Entomologisches Museum, Berlin-Dahlem, Gosslesstr, 20.

DR. STAUDINGER & BANG-HAAS, BLASEWITZ-DRESDEN, in their new Price List, No. LVI for 1913, offer more than 19,000 species of well-named LEPIDOPTERA, set or in papers, from all parts of the world, in finest condition; 1600 kinds of PREPARED LARVÆ, &c.; we sell no more living pupæ. Separate Price Lists for COLEOPTERA (29,000 species); HYMENOPTERA (3600 species), DIPTERA (2900), HEMIPTERA (2500), ORTHOPTERA (1200), NEUROPTERA (630), BIOLOGICAL OBJECTS (300).

PRICES LOW.

DISCOUNT FOR CASH ORDERS.

Second Series, No. 283.]
[No. 590.]

JULY, 1913.

[PRICE 6*d.* NET

THE
ENTOMOLOGIST'S
MONTHLY MAGAZINE.

EDITED BY

G. C. CHAMPION, F.Z.S. J. E. COLLIN, F.E.S.

W. W. FOWLER, D.Sc., M.A., F.L.S.

R. W. LLOYD, F.E.S. G. T. PORRITT, F.L.S.

J. J. WALKER, M.A., R.N., F.L.S.

SECOND SERIES—VOL. XXIV.

[VOL. XLIX.]

“J’engage donc tous à éviter dans leurs écrits toute personnalité, toute allusion dépassant les limites de la discussion la plus sincère et la plus courtoise.”—*Laboulbène.*

LONDON :

GURNEY & JACKSON (MR. VAN VOORST’S SUCCESSORS),
33, PATERNOSTER ROW, E.C.

SOLD IN GERMANY BY FRIEDLÄNDER UND SOHN, BERLIN.

NAPIER, PRINTER, SEYMOUR STREET, EUSTON SQUARE.

THE MACROLEPIDOPTERA of the WORLD :

A BOOK OF REFERENCE AND IDENTIFICATION,

BY

PROFESSOR ADALBERT SEITZ, PH. D.,

ASSISTED BY

AURIVILLIUS (Stockholm), BARTEL (Nürnberg), EIFFINGER (Frankfort a. M.), FRUHSTORFER (Geneva), GRÜNBERG (Berlin), HAENSCH (Berlin), JANET (Paris), JORDAN (Tring), MABILLE (Paris), PFITZNER (Sprottau), PROUT (London), RÖBER (Dresden), ROTHSCHILD (Tring), STANDFUSS (Zürich), SOUTH (London), STRAND (Berlin), WARREN (Tring), WEYMER (Elberfeld), and others.

DIVISION I.

PALÆARCTIC BUTTERFLIES AND MOTHS.

4 Vols. Royal 4to, not sold separately.

Recently completed :

Vol. 2, comprising : “ **BOMBYCES** and **SPHINGES.** ”

This volume contains 480 pages of letterpress, and 56 beautiful coloured plates, depicting 2,849 specimens.

Published in paper covers at £1 15s. net ; or in 2 vols. text and plates, half bound imitation leather, at £2 5s. net.

Previously published.

Vol. 1, comprising : “ **RHOPALOCERA.** ”

On 89 coloured plates, depicting 8,470 specimens. Royal 4to. Published in paper covers at £2 10s. net ; or in 2 vols. text and plates, half bound imitation leather, at £3 net ; or in superior blue half Levante Morocco Library binding, at £3 8s. net.

The following volumes are now in course of publication, and are to be completed before long : Vol. 3, **Noctuidæ** ; Vol. 4, **Geometridæ.**

DIVISION II.

EXOTIC BUTTERFLIES AND MOTHS.

160 parts now ready. To be completed in about 370 parts, containing over 700 coloured plates, representing over 27,000 figures.

Price per part, 1/6 net.

The following volumes are now in course of publication, and are expected to be completed by the end of 1913 :—

Vol. 5.—**Fauna Americana ; Rhopalocera ;**

Vol. 9.—**Fauna Indo-Australica ; Rhopalocera ; and**

Vol. 13.—**Fauna Africana ; Rhopalocera.**

Subscriptions invited. Full particulars and specimen plate may be obtained from any Bookseller in the United Kingdom and Colonies, or from the

SOLE AGENTS, WILLIAMS & NORGATE,

14, Henrietta Street, Covent Garden, London, W.C.

ALFRED KERNEN, Publisher, Poststr. 7, Stuttgart.

- Small and dark as compared with *pini*. Length only about 7 mm. Abdomen more cylindrical and not wider than the thorax. The ground colour is a paler yellow than in *pini*, but very little of it is visible above except on the pronotum and at the apex of the abdomen, the rest of the dorsal surface being almost immaculate black*frutetorum*, F., ♀.
(= *variegatus*, C., nec. Hartig)
6. Ventral surface of abdomen immaculate black*pini* ♂.
————— more or less rufescent.....7.
7. Femora, tibiæ, and tarsi almost uniformly white throughout. Hind wings not clouded towards apices. Antennæ with only 18 pectinated joints
pallidus ♂.
- Rufescence of abdomen beneath pale (inclining to yellow or orange rather than to true red!). Femora within and apices of tibiæ and tarsi more or less distinctly infuscated. Hind wings with a brownish clouding towards their apices. Antennæ normally (always??) with more than 18 pectinated joints.....8.
8. Pronotum and mouth parts yellow. Sides and ventral surface of abdomen very bright red (almost scarlet!). 20 pectinated antennal joints...
virens ♂.
- Mouth dusky; pronotum either entirely black or with a very narrow pale edge. Red on abdomen darker (according to Hartig.!) Only 19 pectinated antennal joints*frutetorum* ♂.
9. ♀ with head and great part of the body above rufescent: ♂ with unusually long antennæ which may have as many as 23 pectinated joints! Scutellum impunctate*sertifer*, Geoffr.
- ♀ with head and body black (not rufescent) above, ♂ with 18 pectinated joints (according to Thomson), and scutellum with large scattered punctures. Thomson adds that this species differs from all the others in having the "unguiculi" untoothed*pallipes*, Fall.

NOTES ON CERTAIN OF THE SPECIES.

Pallidus is called by Cameron "*dorsatus*, F.;" while Konow refers *dorsatus*, F., to *pallipes*, and proposes to sink the latter name accordingly. But Fabricius's original type-specimen of *Hylotoma* (*sic*) *dorsata* is now at South Kensington in the Banks Collection, and is certainly neither *pallidus* (having simple hind calcaria), nor *pallipes* (having the humeral area in the hind wing shortly appendiculated). I have examined the specimen carefully, and am certain it is nothing but *pini*.

Almost all authorities, following Klug, call *sertifer* by the name of *rufus*. It is no doubt the *Tenthredo pectinata rufa*, of Retz.; but that name cannot stand. It is not "binominal," and besides, Retzius had already described another *Tenthredo rufa*, which is a synonym of *amerinæ*, L. The ♀ described by Geoffroy in Fourcroy's Ent. Paris. as *T. sertifera* is undoubtedly the insect described by Klug, &c., as *rufus*; and Geoffroy's name being earlier, Cameron was right in adopting it. (But the form "sertifer" is preferable, I think, philologically, to "sertiferus," as Cameron writes it.)

The specimen—a ♀—representing “*variegatus*, Htg.,” at South Kensington agrees entirely with an insect given to me by Konow as “*frutetorum*.” Konow at one time believed *variegatus*, Htg., to be a distinct species, but ultimately came to the conclusion that it could not be separated from *frutetorum*, F. However this may be, Hartig’s description of his insect does not suit the specimen in the Cameron collection which bears its name (*e.g.*, the scutellum of the latter is immaculate, not “with two yellow spots”).

Virens occurs in the New Forest (Miss Chawner) and has also been sent to me by Mr. B. H. Harwood of Colchester. On the Continent it is a rare species (Dr. Enslin *in litt.*).

Sertifer appears to be not uncommon in the North of England. A number of rather small and dark specimens have reached me from Mr. Gillanders (Alnwick), and a much larger and brighter one was given to me by Mr. Donisthorpe from Hartlepool.

Pini is common in Surrey and Hants, and probably in all parts of Britain.

Of the remaining species (*pallidus*, *frutetorum*, *pallipes*) I have only seen Scottish examples.

(To be continued.)

ON *CICINDELA HYBRIDA*, L., AND *MARITIMA*, LATR.

BY JAMES EDWARDS, F.E.S.

I have recently attempted to investigate the distribution of our littoral species of *Cicindela*, an undertaking in which I have received a great deal of much-needed assistance from various correspondents, notably Mr. Donisthorpe, who unreservedly placed at my disposal his notes on the subject; but owing to the circumstance that the real distinguishing features of *C. hybrida* and *C. maritima* have not hitherto been adequately stated in our English text-books, it appears that no really sound conclusions can be reached unless the material on which the existing records are based can be re-examined. For a long time it was customary to separate these two species by reference to the median pale band on the elytra; a sinuous band being regarded as characteristic of *hybrida*, and an angulated one of *maritima*. This would be all very well if the majority of specimens conformed to one or other of the states figured in Col. Brit. Isl. I. t. I. f. 4, 5; but in practice these distinctions prove quite unreliable owing to the occurrence of intergrade specimens which, in this respect, are so exactly intermediate that they cannot consistently be placed with either; *e.g.*, specimens from Bournemouth given to me by the late Mr. Dossetor as *hybrida*, which prove to be *maritima*, and specimens of *hybrida* sent to me long ago by Mr. Reston.

I find that the following characters are sufficiently constant to admit of the firm determination of the two species as they occur in this country:—

Front of the head regularly longitudinally striate throughout, like a sheet of corrugated iron. Wings fusco-hyaline, the veins brown. Point of the middle lobe of the ædeagus forming a triangle of which the sides are twice as long as the base.....*hybrida*, L.

Front of the head regularly longitudinally striate at each side, but in the middle the striæ form a net-work, and there are a few deep setigerous punctures. Wings almost lacteo-hyaline, the veins, with the exception of those next the costa and the median, nearly concolourous. Point of the middle lobe of the ædeagus forming a triangle of which the sides are subequal in length to the base; a circumstance which, combined with the greater development of the flattened part of the sides, gives to the apex of the organ a considerable resemblance to the nib of a quill pen.....*maritima*, Latr.

We certainly have two well-marked forms of *C. hybrida* in this country: in the one the shoulders are much wider in proportion to the greatest width of the elytra, which therefore appear scarcely widened behind, and in which the outer edge of the median band spreads along the outer margin both in front and behind; this I have, without indication of locality, from Mr. Reston; in the other the shoulders are much narrower in proportion to the greatest width of the elytra, which therefore appear distinctly widened behind, and in which the outer edge of the median band is not widened next the outer margin; this was sent to me from Freshfield, near Southport, by the late Dr. Claster. Probably these two forms respectively represent the typical form and var. *riparia*, Latr., as understood by Continental writers; but I am not now in a position to say definitely whether this is so or not.

In the *Scottish Naturalist*, 1875, the late Rev. T. Blackburn, whom we may assume to have been well acquainted with the prevalent opinion at that time, indicated that *C. hybrida* occurred on the north coasts of England, and *C. maritima* on the south coasts; but the occurrence of both species in the same district was pointed out by Mr. W. E. Sharp (*Coleopt. Lancashire and Cheshire*, p. 16, 1908), who found specimens of undoubted *maritima* in the collection of Mr. W. West, which had been taken at Birkenhead by M. Ragonot about 1863; from which it is clear that although the *Cicindela* of the Lancashire and Cheshire sandhills is now-a-days thought to be, and most frequently is, *C. hybrida*, the range of the two species on the

west coast is very close, even if it does not actually overlap. Mr. J. F. Dutton has an example of *C. maritima* which was given to him, mixed with specimens of *C. hybrida*, by a collector named Davies, of Birkdale, who said that he only collected locally. With regard to the Norfolk coast it may fairly be said that the two species occur on the same ground. Mr. W. West and myself have both collected on that part of the sand-hills north of Great Yarmouth which is most accessible on foot from that town; we have each taken a specimen of *Cicindela* there; Mr. West's, taken in June, 1904, is *C. hybrida* and my own, taken on June 14th, 1883, is *C. maritima*. A most interesting specimen, if it could only be found, would be the one recorded under the name of *hybrida* by the late Prof. Harker, in Proc. Perth Soc. Nat. Sci. as from "Glenfarg (Tay)." Dr. Sharp writes me that Glenfarg is in the Forth district, a pass of the Ochils to Tay, and in no sense a maritime locality.

Marsham (Ent. Brit. 1802) does not include any littoral species of *Cicindela*, but Sowerby (Brit. Misc. No. 5. t. 18. April 8th, 1805) figured under the name of *C. hybrida* an insect of which two specimens were found by L. W. Dillwyn in May, 1803, on the Crumlyn Burrows, about three miles from Swansea. Judging from the shape of the median band of the elytra this was *C. maritima*. Haworth, writing in 1806 (Trans. Ent. Soc. Lond., I, 1812) said that the same insect had been taken on sandy ground near Yarmouth by W. J. Hooker (subsequently Sir W. J. Hooker of botanical fame) and the Rev. J. Burrell. The latter got a single specimen of what he calls *C. hybrida* on the sand-hills near Cley on April 24th, 1810. In 1824 Curtis (Brit. Ent. t. 1), under the name of *sylvicola*, Megerle, figured a *Cicindela*, which by the shape of the median band on the elytra, would be *C. hybrida*; the elytra in this figure are as green as those of *C. campestris*, and the author says that the specimen was taken in Epping Forest in June, 1820; it would be interesting to know whether *C. hybrida* occurs there now; although the latter is best known in this country as a littoral insect it is found, according to M. Bedel, at Fontainebleau. Stephens (Illus. Mand. I t. 1. f. 1. 1827) figures under the name of *riparia*, Megerle, a specimen of which he did not know the locality, and which might well be an ordinary purple-brown example of *hybrida*. Ganglbauer regards both these last-named figures as representing *C. hybrida*.

M. Bedel (Col. Bass. Seime, I, p. 4, 1881) calls attention to certain long white hairs across the back part of the head in *maritima* which are wanting in *hybrida*; these hairs, however, are so fragile in

appearance and few in number that they give one the impression that they would be very easily lost. Another distinction between *hybrida* and *maritima* lies in the comparative length of the hind tibiæ and their tarsi; in *hybrida* the hind tarsi are nearly as long as their tibiæ, and in *maritima* distinctly shorter. This difference is quite real, but not very easy to appreciate, except in a series of carded specimens. The variation of these two species in colour and band-form has been the subject of much investigation on the part of Continental entomologists, and I am particularly indebted to Dr. Sharp for calling my attention to a paper by Dr. von Lengerken (Berl. Ent. Zeitschr, LVII, pp. 19-26), in which the matter is dealt with very fully. The researches of Dr. von Lengerken lead him to arrange his material according to the following table:—

1. Wing-veins dark, not transparent.
 - a. Median band hooked, the descending branch short or nearly horizontal.
C. hybrida hybrida, L.
 - b. Median band formed as in *maritima* forma *pseudo-maritima*, Lengkn.
2. Wing-veins clear, transparent.
 - a. Median band hooked, bent at nearly a right angle...
C. hybrida maritima, Latr.
 - b. Median band formed as in *hybrida* forma *intermedia*, Lengerkn.

In our insects I find that the wing-characters employed by Dr. von Lengerken are correlated to the difference in the sculpture of the front part of the head, and the form of the ædeagus; but, whilst we have plenty of specimens in which the band-form is exactly intermediate between *hybrida* and *maritima*, I have not yet seen any example possessing the band-form which is regarded as distinctive of *hybrida*, and at the same time the characters which I have given above for *maritima*, or *vice versú*. For me, the most important specimens mentioned by Dr. von Lengerken are the two pairs of *maritima* and *hybrida* which he met with *in copulú*. It would have been most interesting to know whether the wing-characters were used as the basis of determination of these specimens, and whether *hybrida* male was paired with *maritima* female, or *vice versú*; but I learn from Dr. von Lengerken that these specimens cannot now be found.

Colesborne, Cheltenham :

April 7th, 1913.

ON A SECOND BRITISH SPECIES OF *CRYPTOBIUM*.

BY D. SHARP, M.A., F.R.S.

I find we have two species of *Cryptobium* in England, viz:—

(1) An insect with short elytra—shorter than the thorax—with vestigial wings which are smaller than the elytra. The male has a deep excision of the last ventral plate, and a slight emargination of the preceding segment; round this notch there is a slight, fine, black pubescence.

This species occurs generally throughout the country; it is the *C. fracticorne* of my collection, and presumably of other British collections. It occurs from Scotland to Brockenhurst, where it is not uncommon. It is in several respects a variable species.

(2) A rather larger insect, with elytra slightly longer and broader than the thorax, with fully developed, though short wings, which are twice as long as the elytra. The male has a very deep excision of the last ventral plate, and a well marked emargination of the preceding segment, and in front thereof a great deal of coarse, black pubescence.

This species has only been found in this country near Bournemouth by Mr. Ford and myself, Mr. Ford being its discoverer; and to him I am indebted for the opportunity of examining a small, but sufficient series. The elytra vary a little in length, but the two are distinct in this respect.

The Bournemouth insect is the *Cryptobium fracticorne* of Continental authors; the species we call in this country *C. fracticorne* being apparently the *C. fracticorne* var. *brevipenne* of Mulsant, Reitter, Ganglbauer, and others.

In addition to the confusion as to these two distinct species, their nomenclature presents serious difficulties. Paykull was the first who gave the trivial name of *fracticornis* (*Pæderus fracticornis*, Payk., Faun. Suec. iii, p. 430, 1800), and his description is certainly that of the longer-winged and larger form. But he previously described the same species in almost the same words as *Staphylinus glaberrimus* (Mon. Carab. Appendix, p. 136, 1790). In the "Fauna Suecica" he refers to his previous description, but gives no reason for the change of name he makes. At the same time he gives a reference to Herbst in Fuessly's "Archiv." This reference was, however, probably erroneous, as Erichson and the older authorities do not cite Herbst, but only Paykull. I conclude that the confusion will be most simply cleared up by calling the larger species *C. glaberrimum*, Payk., 1790, and the smaller one *C. brevipenne*, Muls., as mentioned below.

As regards No. 1, I have already said that I think we may consider it to be the *Cryptobium brevipenne* of Mulsant (Opusc. Ent. XII, p. 147). Subsequently Mulsant and Rey (Col. France, Pédériens, p. 8, 1878) treated the insect, Mulsant previously described as a species, as being merely a variety of *C. fracticorne*. They give no reason for so doing, and the only one I can suggest is that their *fracticorne* var. *jacquelinei* may be in some respects intermediate; but I may add that I am inclined to conclude from Boieldieu's description and figure, and from Mulsant and Rey's remarks on the subject, that this Mediterranean insect will prove to be a third distinct species of the genus. This, however, is merely conjecture. The only localities given for *brevipenne* in France are the mountains of Auvergne, Burgundy, and Provence. I may add that I am not certain that our British *brevipenne* are all one species.

Brockenhurst :

May 9th, 1913.

ON SOME ALLIES OF *HOMALOTA FUNGICOLA*.

BY D. SHARP, M.A., F.R.S.

As far back as the year 1869 I stated that we had more than one species confounded under *H. fungicola*. In the long interval I have made several fruitless attempts to satisfy myself as to this, and only last month was I able to obtain specimens that prove my old conviction to be well grounded. I am now sure that we have several species confused together, and the descriptions I here offer may be considered a preliminary to a complete analysis of the members of the group. In addition to the four species here diagnosed, a fifth name should be added to our catalogue, as Mulsant and Rey in the year 1873 described under the name of *H. fulvipennis* (Col. France, Aléochariens, p. 525), a new species founded on a female captured near London. I cannot identify their description with any form I have yet examined. Ganglbauer has fallen into the error of placing *H. fulvipennis*, Muls., as a synonym of *Atheta crassicornis*, which (as misunderstood by Fauvel and himself) is a mixture of various species. There is a description of a *Homalota fulvipennis* by Kolenati prior to that of Mulsant, so that it will not be a grave error if one of us should describe this species under some other name, but it is very desirable that we should recognise it.

HOMALOTA REPERTA, sp. n.

Nigra, elytris brunneis, antennarum basi palpisque sordide testaceis, pedibus flavis. Long. 4 mm.

Mas., abdomine segmento 7° dorsali truncato, margine incrassato, obsolete crenulato, utrinque denticulo perparum prominulo.

Fem., abdomine segmento 7° dorsali subtruncato, medio vix perspicue emarginato, angulis externis nullis; segmento ventrali medio sat profunde emarginato.

Closely allied to *H. fungicola* in general form and punctuation, slightly larger and rather more darkly coloured. The female is distinguished by the emarginate last ventral segment; and the male by some slight but unmistakable differences in the ædeagus, the median orifice being less exposed, while immediately above are two small, pointed, very hard processes slightly turned upwards, these acumina being very different in *H. fungicola*. I found a fine series of this species near Brockenhurst on May 22nd, in a hollow beech in which there had been a large crop of agarics, and I have since then met with it in another tree. It varies but little.

HOMALOTA INOPTATA, sp. n.

Nigra, elytris brunneis vel fusco-brunneis, antennarum basi palpisque nigro-testaceis, pedibus testaceis. Long. 4 mm.

Mas., abdomine segmento 7° dorsali truncato, margine incrassato, crenulato, utrinque denticulo perparum prominulo.

Fem., abdomine segmento 7° dorsali truncato, angulis externis discretis; segmento ventrali rotundato.

This species is extremely similar to *H. reperta*, but in the great majority of cases the two are readily distinguished by the darker palpi and base of the antennæ of *H. inoptata*. As there is some variation in this slight character, it is necessary in such specimens to examine the sexual characters. The females are very easy to distinguish by the shape of the seventh segment. In the male of *H. inoptata* the ædeagus is larger, with longer lateral lobes, and the orifice of the median lobe is larger so that it is easily detected; while the two small acumina above are indistinct and usually fall within the orifice, and then they may be supposed to be absent. The ædeagus is nearer to that of *H. fungicola*, but with good distinctions, and the two may be easily distinguished by the darker antennæ and palpi and the larger size of *H. inoptata*.

I procured a very fine series of this species, together with *H. reperta*; but no *H. fungicola* were present. I have satisfied myself by numerous dissections that *H. reperta* and *H. inoptata* are truly distinct in spite of their great general resemblance and intimate associat

HOMALOTA GYNANDRICA, sp. n.

Nigra, elytris fusco-brunneis, antennarum basi pulpisque fusco-testaceis, pedibus sordide testaceis. Long. $4\frac{1}{2}$ mm.

Mas., latet.

Fem., abdomine segmento 7^o dorsali truncato, lenissime emarginato utrinque denticulo acuto prominulo: segmento ventrali lenissime emarginato, fere rotundato.

This insect is extremely like large *H. inoptata*. I have only one female and do not know the male, yet I am sure that this is a distinct species. I supposed this example to be a male till I dissected it and found it to be undoubtedly a female; the spermatheca is unusually large and strongly chitinised. The external characters of punctuation, etc., are those which occur, with but little variation, in the *H. fungicola* group. One specimen: found in company with *H. reperta* and *H. inoptata*.

HOMALOTA SUBQUADRATA, sp. n.

Nigra, subdepressa, parum nitida, elytris nigro-fuscis, pedibus fusco-testaceis; prothorace parum transverso elytris multo angustiore; capite, thorace, elytris omnium subtilissime punctatis et pubescentibus; abdomine nitido, basi parce evidenter punctata. Long. vix 3 mm.

This is a very distinct species. I think it should come near the *H. fungicola* group, though I know of nothing very near it, and the narrow thorax and head are peculiar.

Antennæ black, moderately stout, a little thickened from the 2nd to the 10th joint, terminal joint rather short, blunt, penultimate joints only slightly transverse. Head a little narrower than the thorax, much narrower than the elytra. Thorax not strongly transverse, markedly narrower than the elytra, scarcely narrowed behind. Elytra a good deal longer than the thorax. Abdomen shining, the setosity much more marked than on the anterior parts, the punctuation scanty on the anterior segments, very scanty on the posterior. Legs yellow, with the femora much blackened.

The individual described is a female. It has the last dorsal plate slightly emarginate. This insect was found at Brockenhurst on May 22nd last. I believe it was in company with the others here described, but this is not certain, and it may possibly have come from a recently felled oak tree from which I took some specimens of *H. coriaria*.



Explanation of figures. Diagram of the 7th segment of the females:—On the left are the ventral plates, on the right the dorsal. 1 and 2, *H. reperta*; 3 and 4, *H. inoptata*; 5 and 6, *H. gynandrica*.

Brockenhurst: June 12th, 1913.

ON A NEW SPECIES OF *APION*.

BY E. A. NEWBERY.

APION SELOUSI, sp. nov.

Entirely black, except base of scape, scantily pubescent. Rostrum subulate, feebly curved, nearly smooth, slightly constricted at insertion of antennæ, strongly so at the base, with a well marked truncated triangular tooth on the under side between the bases of the antennæ. Antennæ black, with base of scape reddish, inserted at about the basal third of rostrum. Head shining, about as long as broad, striated between the eyes, and strongly punctured behind them, scarcely perceptibly granulate in the interspaces. Eyes oval, only moderately prominent. Thorax rather dull, longer than broad, narrowed from base to apex, strongly punctured, interspaces minutely granulate, with a central furrow reaching from the bisinuate base to near the apex, posterior angles blunt but rather projecting. Scutellum furrowed. Elytra rather dull, with base broader than that of thorax, striæ deeply punctured with flat interstices, which are about twice as broad as the striæ and finely shagreened. Legs black, pubescent, first joint of anterior tarsi much longer than second. Length, $2\frac{3}{4}$ mm.

This insect can be readily distinguished from any other in the group with subulate rostrum, by the strong constriction in front of the eyes, and the remarkable tooth between the bases of the antennæ. It has no resemblance to any British *Apion*. Capt. Deville, who has seen the insect, remarks that "it is near to *A. cerdo*, but differs from all European species in its group by its flat eyes. It is quite unknown to me."

I have named the insect after my friend, Dr. C. F. Selous, who took a single (σ ?) specimen by sweeping mixed herbage, near the edge of the cliff, at Barton-on-Sea, on October 18th, 1908.

13, Oppidans Road, N.W.:

May 9th, 1913.

DESCRIPTIONS OF THREE NEW *STAPHYLINIDS*.

BY NORMAN H. JOY, M.R.C.S., F.E.S.

ATHETA BRITTENI, sp. nov.

Depressed, parallel-sided, very finely punctured and pubescent; head and hind body, except apex, black, thorax pitchy or brown, elytra and apex of hind body yellowish, antennæ yellow, slightly darker towards apex, palpi and legs yellow; head a little narrower than thorax, suborbicular; antennæ with 4th and 5th joints quadrate or slightly transverse, penultimate joints strongly transverse; thorax about as broad as elytra, transverse, not much narrowed behind, with a shallow longitudinal channel in the middle, very finely shagreened

and punctured; elytra quadrate, about one-third longer than thorax; hind body diffusely punctured, 4th and 5th free segments almost impunctate; ♂ with ventral plate of 5th segment projecting some distance beyond the dorsal plate. L. 2.2 - 2.5 mm.

In colour, punctuation and general appearance, *A. brittini* much resembles *A. debilis*, Er., but is considerably smaller. The chief external difference lies in the shape of the thorax, which is not nearly so much contracted behind and has the sides very slightly and evenly rounded, instead of being almost sinuate in the middle as in *A. debilis*; the hind angles also are much less marked and more rounded. The ædeagus is of the same peculiar general form in the two species, the apical portion of the central lobe being acutely bent back on itself; the differences in this organ in the two species can be seen in the figures below. The same remarks with regard to the thorax apply to *A. magniceps*, Sahlb., but in this species the antennæ have the penultimate joints distinctly less transverse, and the ædeagus is entirely different.

A. brittini also somewhat closely resembles *A. deformis*, Kr., but the antennæ are much less thickened towards the apex, the colour is darker, the form is slightly narrower, the thorax is less strongly contracted behind, and the punctuation of the hind body slightly finer and more diffuse. From *A. scotica*, Elliman, to which it is also allied, it is distinguished by its much darker colour, more slender antennæ and longer elytra.

Mr. Britten sent me four specimens (including two dissected males) of this species which he had taken in flood rubbish at Langwathly, Cumberland, on May 5th, 1911, stating that they had been named *A. debilis* by two authorities, but that he doubted this identification. From the above description it will be seen that he was certainly right in his surmise, and as there does not appear to be any other species in the European catalogue which it can possibly be, I have much pleasure in naming it after its discoverer.

TROGOPHLÆUS HEMERINUS, sp. nov.

Somewhat dull, black, elytra pitchy, legs brown, knees and tarsi lighter; head scarcely narrower than elytra, eyes small, occupying slightly less than half the side of head, temples not swollen behind eyes; antennæ rather short, distinctly thickened towards apex, 3rd joint much shorter than 2nd, 4th to 10th strongly transverse; thorax scarcely narrower than elytra, slightly transverse, very finely and closely punctured and extremely finely pubescent, strongly narrowed behind, with a more or less distinct depression on disc; elytra about

one and one-third times longer than thorax, together slightly longer than broad, very finely and closely and somewhat rugosely punctured, with fine but rather distinct greyish-white pubescence; hind body somewhat dilated behind, very finely but not very closely punctured, with fine, close and conspicuous greyish-white pubescence; legs short and stout. L. 1.5—1.7 mm.

On account of the almost flat temples *T. hemerinus* would appear to belong to the subgenus *Troginus*, Muls., but it differs from all the other members of the subgenus, which Capt. Deville has most kindly lent me for examination, in having very much smaller and less prominent eyes. In general appearance and the punctuation of the elytra it most resembles *T. halophilus*, Kies., but the absence of enlarged temples will distinguish it from this species or any of its allies.

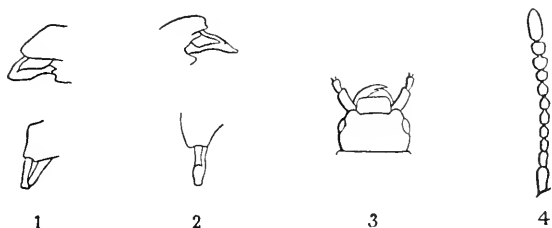
I found two specimens of this very distinct species which had been given to me some time ago by Mr. Day, among my series of *T. halophilus*, Kies. Mr. Day sends me the following note on its capture:—“I found the species rather commonly on July 3rd, 1907, at Anthorn-on-Solway, Cumberland, on the mudbanks of the estuary of the R. Wampool. It occurred in company with *Bledius atricapillus*, Germ.; in fact both species were dug out of the same burrows. What the connection was—whether intentional or merely casual—I was not able to determine, but from the size of the burrows the *Bledius* was obviously responsible for them. Possibly, as the day was dull and cold, the smaller insect was simply using the burrows for shelter.”

THINOBIVS LONGICORNIS, sp. nov.

Somewhat shining, black, elytra pitchy brown, legs piceous, tibiae lighter, tarsi yellow; head quadrate, parallel-sided, closely, very finely and somewhat rugosely punctured, temples slightly longer than diameter of eyes, hind angles well marked; antennae long, not much shorter than head, thorax and elytra together, slightly thickened towards apex, 3rd joint much smaller than 2nd, about 1½ times longer than broad, 4th–6th oblong, slightly longer than broad, 7th and 8th subglobose, 9th and 10th slightly transverse and larger than 8th, 11th very long, more than twice as long as 10th, parallel sided; thorax strongly transverse, scarcely broader, and more finely and closely punctured than head; elytra much longer than together broad, twice as long as and slightly broader than thorax, punctuation as on thorax, covered with very short and close greyish pubescence; hind body as finely but not so closely punctured as elytra, with rather long yellowish pubescence, last segment almost smooth and glabrous. L. 2 mm.

This species differs from all the other members of the genus in the structure of the antennae, the slightly elongate 5th and 6th joints and the very long last joint being characteristic.

I took two specimens on May 1st, 1913, in flood rubbish gathered from the River Truim at Dalwhinnie, Inverness-shire, at an elevation of 1,100 feet, and sent to me in a bag. It came from exactly the same spot at which I took *T. bicolor*, Joy, in 1910. *T. longipennis*, Heer, *Atheta eximia*, Shp., and *A. subtilissima*, Shp., were also present in the same rubbish.



1. Aedeagus of *Atheta debilis*.
2. Aedeagus of *Atheta brittani*.
3. Head of *Trogophloeus hemerinus*
4. Antenna of *Thinobius longicornis*.

Bradfield, Berks :

June 11th, 1913.

REMARKS ON SOME OF HEER'S TYPES IN THE BRITISH MUSEUM.

BY MALCOLM CAMERON, M.B., R.N., F.E.S.

Having recently examined some of the above types of the genus *Atheta* (*Homalota*) it may be of interest from the point of view of synonymy to record what they really are, as it will be obvious that Heer's names in some cases cannot stand. Each specimen (or group of specimens, for in some cases more than one individual is mounted on a card) bears a name-ticket, presumably in the writing of either Heer or Chevrolat, and some also bear labels written by Dr. Sharp merely copying the name and also marked "? type," so that it may be argued that the specimens are not types at all, Dr. Sharp being doubtful of their antecedents. Be this as it may, and in view of the fact that many of Heer's species have not since been recorded, and if they are not the real types the probability of them being in existence is very doubtful, I give the results of their examination, marking with an asterisk those species which bear a label "? type" in Dr. Sharp's handwriting. Heer's species are in the left hand column.

<i>Homalota pedicularis</i>	=	<i>Atheta laticollis</i> , Steph.
„ <i>hirtella</i> *	=	<i>Thamiaræa cinnamomea</i> , Gr. ♀
„ <i>fraeticornis</i>	=	<i>Atheta luteipes</i> , Er.
„ <i>carbonaria</i>	=	<i>Oxyptoda sericea</i> , Heer.
„ <i>pulla</i>	=	<i>Atheta oblita</i> , Er. ♂
„ <i>vaga</i>	=	<i>Atheta palustris</i> , Kies.
„ <i>morio</i>	=	<i>Atheta atramentaria</i> , Gyll.
„ <i>pubescens</i>	=	<i>Atheta nigrifula</i> , Gr.
„ <i>melanocephala</i> *	=	<i>Atheta nigrifula</i> , Gr.
„ <i>bicolor</i>	=	<i>Atheta laticollis</i> , Steph.
„ <i>cingulata</i>	=	<i>Atheta fungi</i> , Gr.
„ <i>indigena</i>	=	<i>Atheta oblita</i> , Er. ♀
„ <i>alpestris</i>	=	<i>Atheta palustris</i> , Kies.
„ <i>minutissima</i>	=	<i>Atheta inquinata</i> , Gr.
„ <i>fuscipes</i>	=	<i>Notothercta anceps</i> , Er.
„ <i>venustula</i>	=	<i>Sipalia circellaris</i> , Gr.
„ <i>longula</i> *	=	<i>Atheta amicuia</i> , Steph.
„ <i>indocilis</i> *	=	<i>Atheta exilis</i> , Er.
„ <i>tenuis</i> *	=	<i>Atheta soror</i> , Kr.
„ <i>nigriceps</i> *	=	<i>Atheta analis</i> , Gr.
„ <i>hæmorrhoidalis</i> *	=	<i>Atheta analis</i> , Gr.
„ <i>pertyi</i> *	=	<i>Atheta pertyi</i> (two examples, and <i>A. crassicornis</i> , F. (two examples).
<i>Semiris fusca</i> *	=	<i>Atheta luridipennis</i> , Mann. ♀ ♀

As far as the British List is concerned, *alpestris*, *fuscipes*, *longula*, and *indocilis*, must give way to *nitidiuscula*, Shp., *fimorum*, Bris., *thinobioides*, Kr., and *pallens*, Redt., respectively.

7, Blessington Road, Lee:

May 10th, 1913.

A NEW BRITISH SPECIES OF SCOPARIA.

BY EDWARD MEYRICK, B.A., F.R.S.

SCOPARIA VAFRA, n. sp.

♂ 15 mm. Head ochreous-whitish. Palpi 3, fuscous, white towards base beneath, apical edge whitish. Antennal ciliations 3. Thorax pale ochreous mixed with whitish, shoulders fuscous. Abdomen ochreous-whitish. Forewings short-triangular, costa anteriorly straight, posteriorly moderately arched, apex obtuse, termen oblique, slightly rounded, somewhat sinuate above middle; pale brownish-ochreous, with scattered blackish scales; basal area infuscated, with short slender blackish subcostal, median, and subdorsal dashes; first line broad, rather curved, whitish, followed by some blackish irroration; orbicular forming an irregular very elongate oval outlined with black, touching first line; clavi-form obsolete; discal spot X-shaped, black, upper arms longer but partially

interrupted, lower short and terminated by a small spot of white suffusion; some irregular whitish suffusion in disc between and beneath these spots, and towards costa in middle and at $\frac{2}{3}$; second line slender, white, indented at $\frac{1}{4}$ and $\frac{3}{4}$, curved outwards between these, thicker towards dorsum; an almost terminal fascia of white suffusion, followed by a terminal series of large blackish dots: cilia ochreous-whitish with two fuscous lines. Hindwings $1\frac{1}{2}$, without long hairs in cell, upper half of termen markedly sinuate; pale greyish-ochreous, paler towards base; cilia ochreous-whitish, with grey subbasal line.

One example, in good condition, without label, but included amongst a number of specimens of *Scoparia* sent to me for identification (with other insects) by Dr. H. Dobie of Chester, who informs me that it was taken some years ago in the neighbourhood of that city, probably at the electric light, at which the genus *Scoparia* was numerously represented. It is a very distinct and quite peculiar species, probably most allied to *alpina*, but very much shorter-winged, the forewings being little more than half as long in proportion to the breadth, with the termen more sinuate and oblique. The possibility arises of a foreign introduction, but I know no European or exotic species approaching it. From superficial appearance I judge it to be a frequenter of open ground (not tree-trunks), and think it should be looked for on sand-hills or dry hillsides.

Marlborough, Wilts :

June 4th. 1913.

SOME NOTES ON *PLATYPTILIA MIANTODACTYLA*.

BY THE HON. N. CHARLES ROTHSCHILD, M.A., F.L.S.

This interesting moth is fairly common at Puszta Peszér in Hungary, and, as I secured several examples last year, I submitted a male to my friend Dr. Chapman, who very kindly examined it for me. He says that the species is not a *Stenoptilia* (under which genus Staudinger and Rebel place it in their catalogue No. 1398) but is a true *Platyptilia*, very close to our English *pallidactyla*. Dr Chapman further points out that *miantodactyla* agrees with the other members of the genus *Platyptilia* in having the tip of the uncus sharp, but the uncus is more slender and prolonged than in *pallidactyla*.

P. miantodactyla frequents the rare and local *Achillea ochroleuca*, W.K., and can be disturbed from this plant during the day. Miss Wertheimstein found a pupa which duly emerged among some grass close to the roots of this plant, and I therefore have no hesitation in recording this rare species of Yarrow as the food plant of *P. mianto-*

dactyla, and moreover the distribution of the moth corresponds with that of the plant. Doubtless the larva of this Hungarian moth feeds in a manner similar to that of *pallidactyla*, and I hoped to find some this spring, but was unfortunately prevented from visiting the ground. It is to be hoped that some other entomologist may come across it.

Arundel House,
Kensington Palace Gardens, W. :
May, 1913.

The Druce collections of Lepidoptera.—The magnificent collection of Butterflies and Moths, with its hundreds of types, formed by the late Herbert Druce, Esq., has passed into the Joicey Collection, at "The Hill," Witley, Surrey, with the exception of the *Lycænidæ* and *Hesperiidæ*, which are retained by Hamilton H. Druce, Esq.*

Entomologists are cordially invited to use the Collection for naming and comparing.—J. J. JOICEY, Witley: June 19th, 1913.

Coleoptera in Kent.—A visit to Sheerness, during the last fortnight in May, enabled me once more to renew my acquaintance with a good many of the special Sheppey beetles, though several interesting species were unaccountably absent. At last I had the satisfaction of securing *Emus hirtus* in the locality kindly indicated to me by Dr. M. Cameron, R.N., but I was probably rather too early, as it was very scarce. A fine series of both sexes of *Malachius vulneratus* was taken by sweeping the flowers of *Armeria vulgaris* on a salt-marsh near Queenborough, and the same spot produced *Telephorus darwinianus* not rarely, as well as the *Longitarsus* recently described by Mr. H. Dollman (Ent. Record, 1912, p. 187) under the name of *L. plantago-maritimus*.

By sweeping on the chalk downs between Wye and the "Devil's Kneading-trough" (the well-known locality for *Pachetra leucophæa*) near the village of Brook, on May 28th, I took, mostly by single specimens, *Aleochara ruficornis*, *Pseudopsis sulcata*, *Neuraphes angulatus*, *Ephistemus globosus*, *Trachys pumila* (4), *Tetraloma ancora*, *Anisoxya fuscata*, *Liosomus pyrenæus* (†), *Gymnetron melanarius* (not rare), *Phytobius denticollis*, *Ceuthorrhynchus nasturtii* (on water-cress by the roadside near Brook), *C. nigrinus*, *euphorbiae*, &c., &c.

At the Blean Woods on May 30th, *Barypeithes duplicatus*, Keys, was found freely and in good condition among dead leaves, with *Epuræa parvula* and a single *Cænopsis fissirostris*. Faggots produced *Phlaeocharis subtilissima*, *Amphicyllis globus*, *Pogonochærus bidentatus*, *Trachodes hispidus*, *Acalles roboris*, &c., more or less commonly, and single specimens of *Euthia plicata*, Gyll. (at once distinguished from our other species of the genus by its much superior size), *Rhagonycha translucida*, *Tillus elongatus*, and *Liosomus pyrenæus*—the latter species several miles away from any chalk—turned up in the sweeping-net. My most interesting capture, however, was *Carpophilus seripustulatus*, found singly under a piece of sappy bark on a stump of spruce-fir. Curiously enough,

* Druce's first collection of butterflies, including that of Kaden, was acquired by Messrs. Godman and Salvin about 1880, and is incorporated with their collection, which is now in the British Museum.—EDS.

on this occasion I did not see a single specimen of the fine "ladybird" *Coccinella distincta*, usually to be found here in plenty on bushes near the nests of *Formica rufa*, though its usual companion, *Clythra quadripunctata*, was out quite freely.—JAMES J. WALKER, Oxford: June 17th, 1913.

Coleoptera in South Durham—During the summer of 1912 I paid a few visits to Billingham Marshes, near Stockton-on-Tees, in South Durham. These Marshes consist of one or two low-lying fields traversed by ditches, and ending on one side (near a railway line) in an area of very boggy ground, well grown over by willows and sallows with a luxuriant undergrowth, and some fine plants of the yellow flag (*Iris pseudacorus*). This was the portion chiefly worked, and I succeeded in obtaining the following interesting *Coleoptera*. On reference to Bold's "Catalogue of the Coleoptera of Northumberland and Durham" (1871-2), it will be seen that the species mentioned below are very local in these counties; a few of them are additions. These last I have marked with an asterisk. I wish to express my indebtedness to my friends Messrs. E. A. Newbery and W. E. Sharp, for their usual kindness in determining some critical specimens submitted to them.

Stenus carbonarius, Gyll., and *S. latifrons*, Er.: I met with a single specimen each of these *Steni*. With respect to *S. carbonarius*, Bold records the species doubtfully from Northumberland, and I was therefore pleased to meet with the insect; *S. latifrons* appears to be rare. **Meligethes difficilis*, Heer: a few examples on *Lamium album* in a lane near the marshes. **Telephorus thoracicus*, Ol.: a few specimens in the deepest part of the marshes in August. **Donacia affinis*, Kunze: a common species in the ditches in May and June. *Chrysomela orichalcia*, Müll., var. *hobsoni*, Steph.: I obtained this variety in a lane near the marshes; it is wholly of a bronze colour, and a little smaller than the type form. *Longitarsus suturellus*, Duft.: amongst normal specimens of this common *Longitarsus* I found one by the side of a ditch, almost entirely black. Messrs. Sharp and Tomlin have recorded a similar example received from Coatbridge, near Glasgow (Ent. Mo. Mag., 1912, p. 73), **Aphthona venustula*, Kutsch., a single specimen by the side of one of the ditches, in May. **Gymnetron pascuorum*, Gyll.: I swept this little weevil abundantly in June in one grassy spot somewhat drier than other parts of the marshes. **Anthonomus rosinae*, Des Goz.: a single specimen swept in a lane near the marshes, in June. This insect appears to be now considered only a variety of *A. ulmi*.—M. L. THOMPSON, 40, Gosford Street, Middlesbrough: June 4th, 1913.

Obituaries.

Philip le Hardy de la Garde, R.N., died on May 12th last, in the 45th year of his age, in his native city of Exeter, where his late father and grandfather had been distinguished surgeons, and was interred there on May 15th. Educated at Christ's Hospital, he began life as a clerk in Lloyd's Shipping Office, but at the age of 17 entered the Royal Navy as assistant clerk. He rose

to the rank of Paymaster, but unfortunately his health failed, and he was invalided in 1905. From his youth he had a liking for Natural History, and his early predilection was for the *Lepidoptera*. Service duties took him round the world, and he made use of the opportunities afforded, and collected various orders of insects, and in this way eventually gravitated almost solely to the *Coleoptera*, as has been the case with so many other entomologists who have finally selected that order as their special study. The *Hemiptera* were his second favourites. On leaving the Naval Hospital, convalescent but seriously shattered in health, he was fortunate in possessing the constant attention and untiring devotion of his mother. Together they spent their lives in various places in Devon, remaining in a district for a few weeks or months, and then removing elsewhere, as circumstances or desire dictated—good localities from the entomological point of view, being always an essential consideration. In the course of a year or so this nomadic life (coupled with the mental occupation and outdoor exercise, which his love of entomology impelled) effected a marked improvement in his health. Moreover, he eventually gained an extensive knowledge of the Devonshire Coleopterous Fauna, which there is little doubt would have resulted in the appearance of a new county list, as he had already drafted a skeleton plan with that object in view. He had much leisure at his disposal, and he devoted it to entomology, with most excellent results, as is testified by his numerous records of rare and local captures, and of new species in this Magazine. The most interesting examples in his foreign collections comprised in the *Diptera*, *Lepidoptera*, and *Neuroptera*, as well as of some of the *Coleoptera*, he presented to the British Museum. Quite recently he acquired the residue of the collections of *Coleoptera* made by the late T. V. Wollaston in the Atlantic Islands, comprising a vast number of specimens which had long been neglected, but he applied himself to their restoration with most gratifying results. The setting of the specimens in his own collection of British beetles is a model of neatness. He spared himself no pains in this respect, and no untidy example was allowed to pass muster. His death is a great loss to a large circle of correspondents, and there is little doubt but that, if his life had been prolonged, he would have done a great deal of valuable entomological work. He was of a courteous, gentle nature, and as a Coleopterist was generous to excess with his specimens. He was unmarried, but leaves a devoted mother to mourn his loss.—J. H. K.

Lord Avebury, F.R.S.—The Rt. Hon. Sir John Lubbock, first Baron Avebury, died at the ripe age of 79 years on May 28th, at Kingsgate Castle, near Ramsgate. In view of the numerous detailed and appreciative notices of this many-sided and accomplished man of science and affairs that have appeared since his decease, it is needful only in this place to refer to his life-long connection with our own branch of natural knowledge. As long ago as 1850 he was elected a Member of the Entomological Society of London, and at his death was by several years its senior Fellow. During his long association with the Society, besides frequently serving on its Council, and contributing many valuable papers to its publications, he twice occupied the Presidential Chair—the first time in 1866-7, when only 32 years of age, and again in 1879-80. Of

his many separate works dealing with various branches of Natural Science, three at least—"The Origin and Metamorphoses of Insects," "British Wild Flowers considered in their Relation to Insects," and "Ants, Bees, and Wasps" have long been familiar to all readers of this Magazine, and are unsurpassed in charm of style and detailed accuracy of observation—while his "Monograph of the *Collembola* and *Thysanura*" published by the Ray Society in 1873, is and will remain one of our Entomological classics. His interest in our science continued up to the last, and so recently as 1911 we find him contributing to the exhibitions of the last *Conversazione* of the Entomological Society. Finally, as the originator of the "Bank Holiday," his name will be for all time held in grateful remembrance by those Entomologists who are blessed with only a limited amount of leisure.

Societies.

LANCASHIRE AND CHESHIRE ENTOMOLOGICAL SOCIETY: Meeting held at the Royal Institution, Colquhoun Street, Liverpool, on *Monday, April 21st, 1913.*—Mr. F. N. PIERCE, F.E.S., President, in the Chair.

Messrs. Alan Cookson, Blundellsands, and Alfred Watts, Oxtou, were elected Members of the Society.

Mr. R. Wilding gave an address entitled "Notes on some rare and local *Coleoptera*," in the course of which he gave details of the haunts and habits of the following species, viz.:—*Miscodera arctica*, *Amara rufocincta*, *Bembidium 5-striatum*, *B. nigricorne*, *Cymindis vaporariorum*, *Perileptus areolatus*, *Ocypus fuscatus*, *Quedius auricomus*, *Pseudopsis sulcata*, *Heptaulacus villosus*, *Ægialia rufa*, *Ammæcius brevis*, *Anisotoma ciliaris*, *A. rugosa*, *Anthicus bimaculatus*, *Antherophagus silaceus*, and *Chrysomela cerealis*. Mr. Wilding exhibited series of all these species in illustration of his remarks. A discussion ensued on the bionomics of the less known species occurring on the sandhills from which it appeared that a good deal of research is still required, especially in connection with the larval habits. Mr. Alfred Watts, two specimens of *Heliaca tenebrata* captured by himself near Birkenhead. Mr. W. Mansbridge showed *Epinephele janira*, *Ino statices*, and *Lycæna icarus*, all very brightly coloured, from Co. Cork; also *Boarmia repandata* from Huddersfield. Mr. F. N. Pierce brought a box of *Micro-lepidoptera*, chiefly *Tortrices*, from various localities which he had obtained as material for working out the genitalia.—WM. MANSBRIDGE, *Hon. Secretary*.

THE SOUTH LONDON ENTOMOLOGICAL AND NATURAL HISTORY SOCIETY: *Thursday, April 10th, 1913.*—Mr. A. E. TONGE, F.E.S., President, in the Chair.

Mr. Buckstone exhibited living larvæ of *Scodiona fagaria (belgiaria)* from Oxshott. Mr. Newman, a remarkable aberration of a hybrid between *Ephyra annulata* ♂ and *E. pendularia* ♀ in which the outer half of all the wings was melanic. Mr. A. E. Gibbs read a paper entitled "Through the Balkans with a Camera," illustrating his remarks with a number of lantern slides of views and scenes in Bosnia and Herzegovina, where he made a collecting tour in 1912.

Thursday, April 24th, 1913.—The President in the Chair.

The evening was devoted to a special exhibition of specimens of orders other than *Lepidoptera*, and was a most successful meeting. Mr. W. West (Greenwich) placed on the tables 16 drawers of the Society's reference collections (British), viz.:—two of *Orthoptera* presented by Dr. Malcolm Burr, two of *Neuroptera* presented by Mr. W. J. Lucas and Mr. W. J. Ashdown, one of *Hymenoptera* and eleven of *Coleoptera*. Mr. West also exhibited twelve drawers of his own collection of British *Heteroptera*, *Homoptera*, and *Psyllina*. Mr. E. A. Newbery, a number of new and rare species of British *Coleoptera*, including *Apion sclousi*, *Trachypylæus digitalis*, *Lathrobium ripicola*, *Homalota aquatilis*, *Myrmecopora brevipes*, *Thinobius pallidus*, *Cartodere argus*, *Dermestes peruvianus*, *Bledius denticollis*, *B. filipes*, *B. secerdendus*, *Ceuthorrhynchus parvulus*, *Laccobius purpurascens*, *Orthochates insignis*, etc. Mr. Priske, varied forms of *Geotrupes mutator* from Hanwell. Mr. Ashdown, examples of *Hemiptera* and *Hymenoptera* taken in Switzerland, including *Cicadetta montana*, *Ælia acuminata*, *Harpactor iracundus*, *Mutilla europæa*, etc. Mr. Sheldon, two species of "fire-fly" met with on the continent. Mr. Hy. J. Turner, *Homoptera* from South America resembling *Lepidoptera* in form and marking, including the beautiful *Pæciloptera phalænoides*; *Heteroptera* of bizarre form and marking from Colombia, etc., including *Apiomerus hirtipes* with two curious processes ("flags") at the anal extremity of the abdomen; two large-bodied *Orthoptera* from the Transvaal used as food by the natives; and a box of large and conspicuous insects from the interior of Western Australia, *Aculeata*, *Diptera*, *Ichneumonidæ*, *Odonata*, etc. Mr. K. G. Blair, living scorpions, earwigs, and glowworms from Monaco, and gave his experiences in the United States of the "flashing" of the fire-flies and an account of the experiments there carried out with artificial "flashing." Mr. E. Step, the rare Dipteron *Oncodes gibbosus*, a little hump-backed "spider-fly," and gave an account of its life-history and habits, etc. Mr. Buckstone, insects of various orders from New South Wales. Mr. Main, two species of cockroach, and a large glowworm, etc. Mr. Ashby, *Hemiptera* and *Coleoptera* from Oyo, Southern Nigeria, and his collection of *Donacia*, *Chrysomela*, and *Cryptocephalus* (*Coleoptera*). Mr. Gibbs, a case containing specimens of the saw-flies, *Sirex noctilio* and *Sirex gigas*, and examples of the damage caused to fir timber by their larvæ. He also showed a case of the various groups of the sub-order *Hemiptera*, and gave notes on the two exhibits. Mr. H. Moore, two drawers of *Orthoptera*, one mainly European, the other large exotic leaf crickets; a box of *Xylocopidæ* from all the warmer parts of the world; a case of Lantern-flies (*Fulgoridæ*); foreign insects introduced to Deptford by shipping, such as *Blabera cubensis*, *Acheta bimaculata*, *Acridium ægyptium*, etc.; and a selection of *Orthoptera* and *Homoptera* to illustrate a note on "Singing Insects." Mr. Andrews, types of 63 species of *Diptera* taken in the months of March and April chiefly at willow blossom. Mr. Coxhead, specimens of plant galls and some very beautiful water-colour drawings of the same, and the gall-fly *Uromyces ficariæ* under the microscope. Mr. West (Ashted), four species of *Collembola* under the microscope. Mr. Edwards, large and conspicuous species of *Phasmidæ*, *Mantidæ*, *Gryllidæ*, and *Hymenoptera* chiefly from British North

Borneo, together with the remarkable Chelifer, *Thelyphonus lucanoides*, and the curious Arachnid *Actinacantha arcuata* and *Gasteracantha vittata*.—H. J. TURNER, *Hon. Secretary*.

ENTOMOLOGICAL SOCIETY OF LONDON: *Wednesday, May 7th, 1913.*—
Mr. G. T. BETHUNE-BAKER, F.L.S., F.Z.S., President, in the Chair.

Mr. Charles C. Best-Gardner, of Rookwood, Neath, Glamorgan, was elected a Fellow of the Society.

The President announced the death of Mr. Herbert Druce, F.L.S.

Commander J. J. Walker exhibited a series of *Acalyptus carpini*, Herbst, var. *rufipennis*, Gyll., a rare weevil which had not been met with in Britain for many years previously. Mr. N. Charles Rothschild, an example of *Tæniocampa gracilis* captured in April this year at Wood Walton Fen, Hunts. The specimen in question is white all over, without any markings whatever. Mr. Donisthorpe, a form of *Lasius affinis*, Schenck, an ant new to Britain, of which he had found a colony at Tenby in South Wales, on the sand hills, on April 24th this year. Mr. H. Eltringham, a number of the scales composing the anal tuft of the ♀ of *Cnethocampa pityocampa*, Schiff., remarkable as being the largest scales known in any Lepidopterous insect. Prof. Poulton, four males and six females of *Papilio polytes*, L., captured March 10th–October 10th, 1912, by Capt. R. A. Craig on Stonecutters' Island in Hongkong Harbour about one mile from the mainland. All the females were of the male-like form *cyrus*, Hübn. (= *panmon*, L.). He also read extracts from letters received from Dr. G. D. H. Carpenter, telling of his success in obtaining, for the first time, fertile ova from a *planemoides* female of *P. dardanus*. Prof. Poulton said that the following observation—entirely new to him—had been made by his son, Dr. E. P. Poulton of Guy's Hospital:—"When at Gössl, we were writing in the open air by a lake: a skipper flew up, and tried drinking up the dried ink with his proboscis, and to make matters easier, he extruded a drop of liquid from the end of his abdomen, and produced a small smudge by moving about his proboscis. He then sucked up the ink" (August 19th, 1912). Dr. E. P. Poulton believed that the species was *Hesperia lineæ*, L. Mr. J. C. F. Fryer exhibited a large series of the wings of Danaine and Eupleine butterflies from Ceylon, remains of these insects which had been observed by him to be eaten by birds, mainly by the so-called "Wood-Swallow," *Artamus fuscus*; also a few specimens of the same butterflies which had been killed by *Asilidæ*.

The following papers were read:—"On the British *Mycetophilidæ*," by F. W. Edwards, F.E.S. "*Culicidæ* from Papua," by Frank H. Taylor, F.E.S., Government Entomologist to the Australian Institute of Tropical Medicine. "Pupal Coloration in *Papilio polytes*," and "The larval habits of the Tineid moth *Melasina energea*, Meyr.," by J. C. F. Fryer, M.A., F.E.S.

NOTES ON THE BRITISH SPECIES OF THE
ANDRENA MINUTULA, K., GROUP, AND CORRECTION OF AN ERROR.

BY R. C. L. PERKINS, M.A., D.Sc., F.R.S.

Probably most students of our British bees have found the discrimination of these small species of *Andrena* a matter of difficulty, and this, I believe, is due partly to the large amount of variability that some of them exhibit, and partly to the fact that there are more than the three species, that are named in our lists. I have therefore drawn up a table of the various forms, indicating two as new to us, but not naming these. I have adopted this course because I have not been able to procure specimens of some of the described Continental species, and also because Herr Alfken, of Bremen, has for some time had in preparation a paper on the German species, which are more numerous than our own. At the same time, particular attention is needed as to the summer (July and August) forms of these bees, and the publication of these notes may lead to their receiving this attention. The tabular discrimination of the species here given will I believe enable all specimens, excepting possibly a few very aberrant ones, and those that are greatly altered by the attacks of *Stylopidæ*, to be distinguished.

♂ ♂.

- 1 (2). Face beneath the antennæ clothed with long dark or sooty hairs, often more or less mixed with pale ones.....*parvula*, K.

(In some examples the clypeus is entirely clothed with pale hairs, shorter than in typical specimens, but there are black hairs at the sides of the face and also some on the sides of the head behind the eyes. These may belong to an intermediate brood of *parvula-minutula*.)

- 2 (1). Face entirely clothed with pale hairs (in *minutula* sometimes with a few dark ones beneath the antennæ).
- 3 (10). 2nd and 3rd abdominal segments along the apical margins generally smooth and shining, at most with a very faint, obsolete surface-sculpture, never very dull and densely sculptured.
- 4 (5). Scutellum and mesonotum always very dull and sparsely punctured, the punctures very fine and feeble, sometimes impunctate or nearly so.....*sp. a.*
- 5 (4). Scutellum and mesonotum with distinct, though often sparse, punctures, the scutellum often more or less shining, though sometimes dull; if the scutellum is not more or less shining, the punctures are ordinarily large and deep.
- 6 (7). Face beneath the antennæ, in fresh examples, with pale yellowish hairs; the stigma generally brown or yellowish-brown in the

middle; 2nd abdominal segment rarely with distinct and numerous punctures amidst the rugulosity, sometimes impunctate (antennæ with wider flagellar joints than in *nana*) ..*minutula*, K.

(= *parvula*, summer gen.).

- 7 (6). Clypeus with dense white hairs in fresh examples; stigma generally yellow in the middle; 2nd abdominal segment always with numerous punctures, though these are finer and more remote in some examples of *nana* than in others.
- 8 (9). First and second abdominal segments not entirely smooth between the punctures, but (more or less) finely rugulose; antennæ longer, with many of the flagellar joints evidently less wide; genital armature largely pale*nana*, K.
- 9 (8). First and second abdominal segments very smooth and polished between the punctures over their whole surface; antennæ thick, with many very short and transverse flagellar joints; genital armature* nearly wholly dark*sp. β*.
- 10 (3). 2nd and 3rd abdominal segments along the apical depressed margins very dull and densely sculptured*spretæ*, Perez.

♀ ♀.

- 1 (4). 2nd and 3rd abdominal segments with dense surface rugulosity, impunctate, or nearly so; stigma generally brown or yellowish-brown in the middle.
- 2 (3). Mesonotum with moderately close puncturation, the punctures not extremely fine*parvula* + *minutula*.
(In the summer generation the anal fringe is generally yellowish; in the spring form generally to a large extent fuscous.)
- 3 (2). Mesonotum very dull, with very fine and more remote punctures (anal fringe always dark; stigma dark)*sp. a*.
- 4 (1). 2nd and 3rd abdominal segments with numerous shallow punctures amidst the rugulosity of the surface; stigma generally pale or yellow in the middle.
- 5 (6). Apical margins of 1st and 2nd segments smooth and shining, at most with faint or obsolete sculpture*nana*.
- 6 (5). Apical margins not polished, but with conspicuous surface-sculpture.
- 7 (8). Scutellum smooth, shining, finely and not very closely punctured; entire pubescent band of the 4th segment of the abdomen and the broken ones of the 2nd and 3rd segments very conspicuous, formed of dense white hairs.....*spretæ*.
- 8 (7). Scutellum closely and more strongly punctured, not polished; anterior area of propodeum very rugose all over (the rugosity not becoming feebler posteriorly as in *spretæ*), abdominal pubescent bands not more developed than in *nana*.....*sp. β*.

* Only one example was examined in this respect, and the character may not be constant.

The description of the puncturation, &c., is made as it appears under a very strong lens, but without the use of a compound microscope.

Some fourteen years ago I made a careful examination of the specimens in my collection, and sent a number of examples to my kind friend the late Edward Saunders, indicating the two forms, tabulated above as *sp. a* and *sp. β.*, as being distinct. Saunders agreed with me as to their distinctive appearance, but shortly afterwards I left England for six or seven years, and nothing further was done in the matter.

Recently, through the kindness of Mr. Hugh Scott, I have re-examined my old collection, now incorporated with the Walcott collection in the museum at Cambridge, as well as many other specimens taken in later years, and yet others from various localities collected by Col. C. G. Nurse and Mr. E. B. Nevinson. Mr. Albert Koebele, for many years my colleague in economic entomology, was good enough to collect many specimens for me in Baden during this Spring, so that I have been able to compare a large number of German examples with the British ones. In all, I have critically examined more than four hundred specimens.

It may be of interest to add some further notes on the different forms:—

A. parvula, in the male sex, is a very distinct species, by the dark hairs on the face. Some examples have quite evident abdominal puncturation, others none, and the sculpture of the thorax also varies. In some examples the hairs of the clypeus are shorter and pale, but black ones occupy the sides of the face near the eye-margins. In Germany the species is said to have three broods, and it is possible that these are of a brood intermediate between *parvula* and *minutula* proper. I have a very aberrant example with the puncturation of the abdomen like some *nana* and with yellow stigma, but the face clothed as in ordinary *parvula*. It was taken on May 25th, a very late date for the ♂ of this species. On the same day and at the same place (Bovey-Tracey) a ♀ with punctate abdomen was taken, but the stigma is less pale. A ♀ from Dawlish (May 1st) also has a punctate abdomen, and the stigma very pale like the Bovey ♂, the face with many black hairs at the sides, and the anal fringe pale. I do not feel sure that these examples are mere aberrations of *parvula*, and the ♀ ♀ are certainly not *nana*, in spite of the abdominal puncturation.

Authors are requested to send their communications to either

J. J. WALKER, Aorangi, Lonsdale Road, Summertown, Oxford; or
G. C. CHAMPION, Horsell, Woking.

Those relating to Diptera, to

J. E. COLLIN, Sussex Lodge, Newmarket.

LANCASHIRE AND CHESHIRE ENTOMOLOGICAL SOCIETY.—Meetings the third Monday in each Month, October to April. *Hon. Sec.*, W. M. MANSBRIDGE, 4, Norwich Road, Wavertree, Liverpool.

THE THREE COLOURED PLATES illustrating the articles on
"SOME INTERESTING BRITISH INSECTS,"

with the accompanying text (issued in the Ent. Mo. Mag. for September, 1909, and January and September, 1910) are now issued in a separate wrapper, price 2s.

APPLY TO THE PUBLISHERS.

WATKINS & DONCASTER, Naturalists,

Keep in stock all Articles for Entomologists, Ornithologists, Botanists, &c.: Umbrella Net, 7/-; Folding Cane or Wire, 3/6, 4/-, 4/6; Plain Ring Net, 1/3, 2/-, 3/-; Pocket Boxes, 6d., 9d., 1/-, 1/6; Store Boxes, with Camphor Cells, 2/6, 3/6, 4/-, 5/-, 6/-; Zinc Pocket Boxes, 9d., 1/-, 1/6, 2/- Setting Boards, from 5d. to 1/10; Complete set of 14 boards, 10/6; Breeding Cages, 2/6, 4/-, 5/-, 7/6; Sugaring Tins, 1/6, 2/-; Sugaring Mixture, ready for use, 1/9 per tin; Setting Houses, 9/6, 11/6, 14/-; Glass Topped and Glass Bottomed Boxes, from 1/- per doz.; Zinc Killing Boxes, 9d., 1/-; Coleoptera Collecting Bottles, 1/6, 1/8; Collecting Box, containing 26 tubes (very useful for Coleopterists, Microscopists, &c.), 4/6; Brass Chloroform Bottle, 2/6.

Improved Pocket Pupa-digger in leather sheath (strongly recommended), 1/9; Steel Forceps, 1/6 to 3/- per pair; Pocket Lens, from 1/6 to 8/6.

Taxidermists' Companion, containing most necessary implements for skinning, 10/6; Scalpels, with ebony handles, 1/3; Fine Pointed Scissors, 2/- per pair; Brass Blowpipes, 4d., 6d.; Egg Drills, 2d., 3d.; ditto, best quality, 9d. each; Botanical Vasculum, 1/6, 2/9, 3/6, 4/6; Label List of British Macro-Lepidoptera, with Latin and English Names, 1/6; List of British Lepidoptera (every species numbered), 1/-; or on one side for Labels, 2/-.

SILVER PINS FOR COLLECTORS OF MICRO-LEPIDOPTERA, &c.,

as well as minute insects of all other families.

We stock various sizes and lengths of these Silver Pins, which have certain advantages over the entomological pins usually employed.

For instance, insects liable to become greasy and verdigrisy, like Sesiidae, are best pinned on Silver pins, which will last much longer than the ordinary pins (whether enamelled black, or gilt, or silvered).

We shall be pleased to send pattern cards on application.

A large stock of British, European, and Exotic Lepidoptera, Coleoptera, and Birds' Eggs.

ENTOMOLOGICAL PINS.

THE "DIXON" LAMP NET (invaluable for taking Moths off street lamps without climbing the lamp posts), 3s. 6d.

SHOW ROOM FOR CABINETS, &c.

36, STRAND, LONDON, W.C., ENGLAND.

Birds and Mammals, &c., Preserved & Mounted by first-class workmen.

Our New Price List (100 pp.) sent post free to any address on application.

CONTENTS.

	PAGE
Help-Notes towards the determination of British Tenthredinidæ, &c. (31) (continued).— <i>Rev. F. D. Morice, M.A., F.E.S.</i>	145
On <i>Cicindela hybrida</i> , L., and <i>maritima</i> , Latr. — <i>James Edwards, F.E.S.</i>	146
On a second British species of <i>Cryptobium</i> .— <i>D. Sharp, M.A., F.R.S.</i>	150
On some allies of <i>Homalota fungicola</i> .— <i>Id.</i>	151
On a new species of <i>Apion</i> .— <i>E. A. Newbery</i>	154
Descriptions of three new Staphylinids.— <i>Norman H. Joy, M.R.C.S., F.E.S.</i>	154
Remarks on some of Heer's types in the British Museum.— <i>M. Cameron, M.B., R.N., F.E.S.</i>	157
A new British species of <i>Scoparia</i> .— <i>E. Megrick, B.A., F.R.S.</i>	158
Some Notes on <i>Platyptilia miantodauctyla</i> .— <i>Hon. N. Charles Rothschild, M.A., F.L.S.</i>	159
The Druce Collections of Lepidoptera.— <i>J. J. Joicey, F.E.S.</i>	160
Coleoptera in Kent.— <i>James J. Walker, M.A., R.N., F.L.S.</i>	160
Coleoptera in South Durham.— <i>M. L. Thompson, F.E.S.</i>	161
OBITUARIES— <i>Philip de la Garde, R.N., F.E.S.</i>	161
<i>Lord Avebury, F.R.S.</i>	162
SOCIETIES— <i>Lancashire and Cheshire Entomological Society</i>	163
<i>South London Entomological Society</i>	163
<i>Entomological Society of London</i>	165
Notes on the British species of the <i>Andrena minutula</i> , K., group, and correction of an error.— <i>R. C. L. Perkins, M.A., D.Sc., F.R.S.</i>	166

All Communications and Subscriptions during July and August should be addressed to Commander J. J. WALKER, R.N., "Aorangi," Lonsdale Road, Summertown, Oxford; or to Mr. G. C. CHAMPION, Horsell, Woking.

ENTOMOLOGISCHE MITTHEILUNGEN, Published by the Verein zur Förderung des Deutschen Entomologischen Museum. Monthly Entomological paper; official edition of the Deutsches Entomologisches Museum, whose large Library is at the disposal of all Subscribers at most liberal terms. Gratis to each number continuation of the Library's Catalogue. Terms: 7s. (m. 7) a year; 3s. 6d. (m. 3-50) half a year.

Address: Deutsches Entomologisches Museum, Berlin-Dahlem, Gosslesstr. 20.

DR. STAUDINGER & BANG-HAAS, BLASEWITZ-DRESDEN, in their new Price List, No. LVI for 1913, offer more than 19,000 species of well-named LEPIDOPTERA, set or in papers, from all parts of the world, in finest condition; 1600 kinds of PREPARED LARVÆ, &c.; we sell no more living pupæ. Separate Price Lists for COLEOPTERA (29,000 species); HYMENOPTERA (3600 species), DIPTERA (2900), HEMIPTERA (2500), ORTHOPTERA (1200), NEUROPTERA (630), BIOLOGICAL OBJECTS (300).

PRICES LOW. DISCOUNT FOR CASH ORDERS.

Second Series, No. 284.]
[No. 591.]

AUGUST, 1913.

[PRICE 1/6 NET

THE
ENTOMOLOGIST'S
MONTHLY MAGAZINE.

EDITED BY

G. C. CHAMPION, F.Z.S. J. E. COLLIN, F.E.S.

W. W. FOWLER, D.Sc., M.A., F.L.S.

R. W. LLOYD, F.E.S. G. T. PORRITT, F.L.S.

J. J. WALKER, M.A., R.N., F.L.S.

SECOND SERIES—VOL. XXIV.

[VOL. XLIX.]

“J’engage donc tous à éviter dans leurs écrits toute personnalité, toute allusion dépassant les limites de la discussion la plus sincère et la plus courtoise.”—*Laboulbène*.

LONDON :

GURNEY & JACKSON (MR. VAN VOORST'S SUCCESSORS),
33, PATERNOSTER ROW, E.C.

SOLD IN GERMANY BY FRIEDLÄNDER UND SOHN, BERLIN.

NAPIER, PRINTER, SEYMOUR STREET, EUSTON SQUARE.

The present No. includes Two Coloured Plates of British Insects, and the price will be 1/6 per Copy, but there will be no extra charge to Subscribers.

REDUCED PRICES FOR BACK VOLUMES.

FIRST SERIES.

This can only be obtained in complete Volumes (bound or unbound).

A limited number of sets, from Vol. x to Vol. xxv can still be obtained at £2 15s. per set net (in parts), or of five consecutive Vols. at £1 per set net (if bound, 1s. per Vol. extra).

Certain of the Vols. i to ix can be had separately at 10s. each.

SECOND SERIES.

Vols. i to xv. are now offered at £3 per set net (in parts), or £1 2s. 6d. for five consecutive Vols. (if bound, 1/- per Vol. extra).

Apply to the Publishers.

NOTE.—Subscriptions for 1913 (6s. per annum, post free) are now due, and should be paid to R. W. LLOYD, I. 5, Albany, Piccadilly, London, W.

It would be a great convenience to the Editors in keeping the accounts if these were paid promptly, as having to send reminders entails a considerable amount of extra work.

The Coloured Plates issued in September, 1909, January and September, 1910, and September, 1911, having been so much appreciated by our readers, a fifth (devoted to *Dermaptera*) was given with the October, 1911, number. The Editors would be greatly obliged if the Subscribers to this Magazine would use their best endeavours to bring it to the notice of their entomological friends, and induce them to subscribe also.

DIRECTLY FROM THE SOURCES!! ORNITH. ALEXANDRÆ.
The King of all Ornithopteras and the largest of all butterflies in the world.

Fresh ex-larva, set or in paper-bags. Lowest price, according to dimensions and beauty.

ORNITH. LYDIUS in the same conditions.

PIERRE HASTERT, Luxembourg Grund.

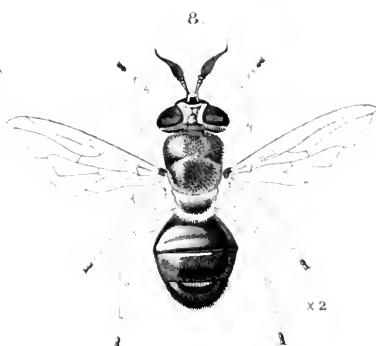
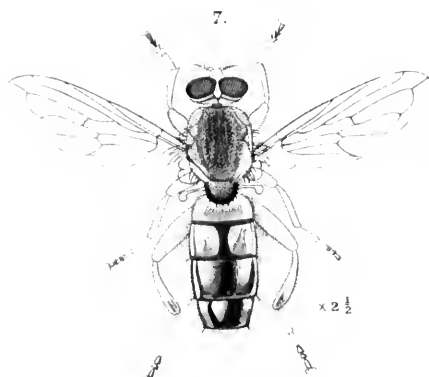
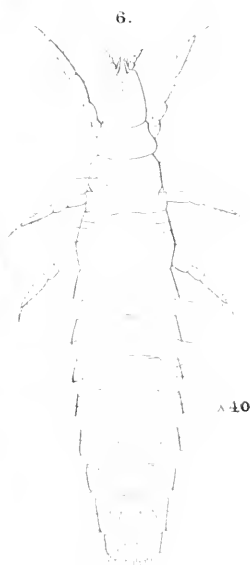
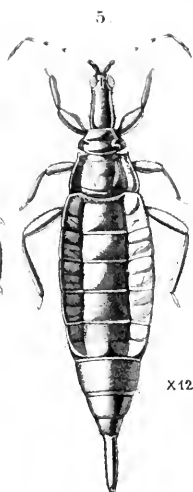
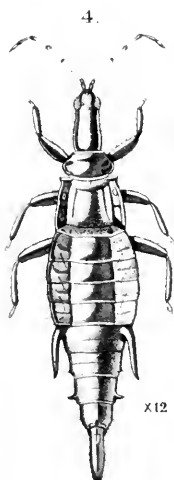
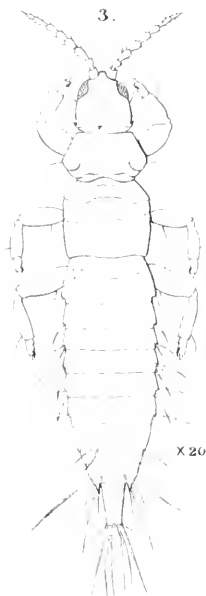
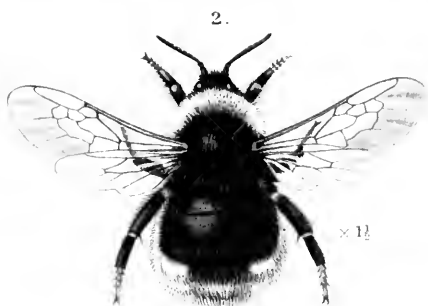
THE CANADIAN ENTOMOLOGIST.

A MONTHLY MAGAZINE DEVOTED TO THE STUDY OF SCIENTIFIC ENTOMOLOGY.

Volume 45 is now in course of publication. Back volumes can be supplied. It is the oldest established Magazine of the kind in America, and has a world-wide circulation. Subscription, \$1 per annum, which includes a copy of the Annual Report of the Entomological Society of Ontario to the Legislature. Editor, Dr. E. M. Walker, Biological Department, University of Toronto, Toronto, Canada.

Address: Entomological Society of Ontario, Guelph, Canada.

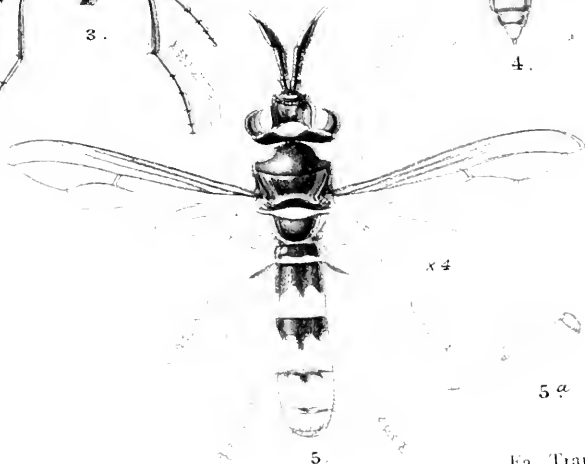
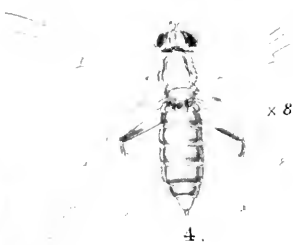
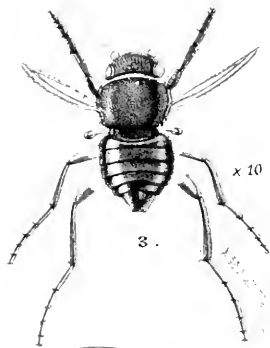
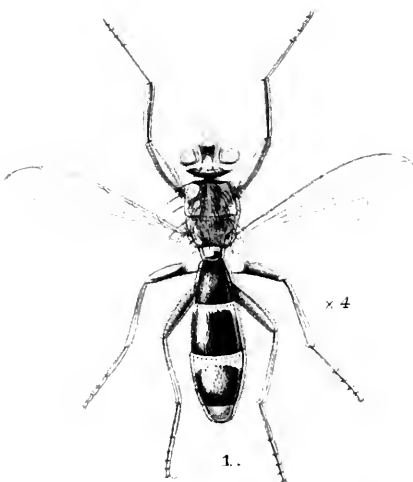
CITY OF LONDON ENTOMOLOGICAL AND NATURAL HISTORY SOCIETY, London Institution, Finsbury Circus, London, E.C.—The First and Third Tuesdays in the month at 7.30 p.m., except in July and August. Visitors are cordially invited to attend with exhibits.—V. ERIC SHAW, Hon. Sec.



H. Knight and E. Wilson, del.

Fa. Trap. Leiden, lith.

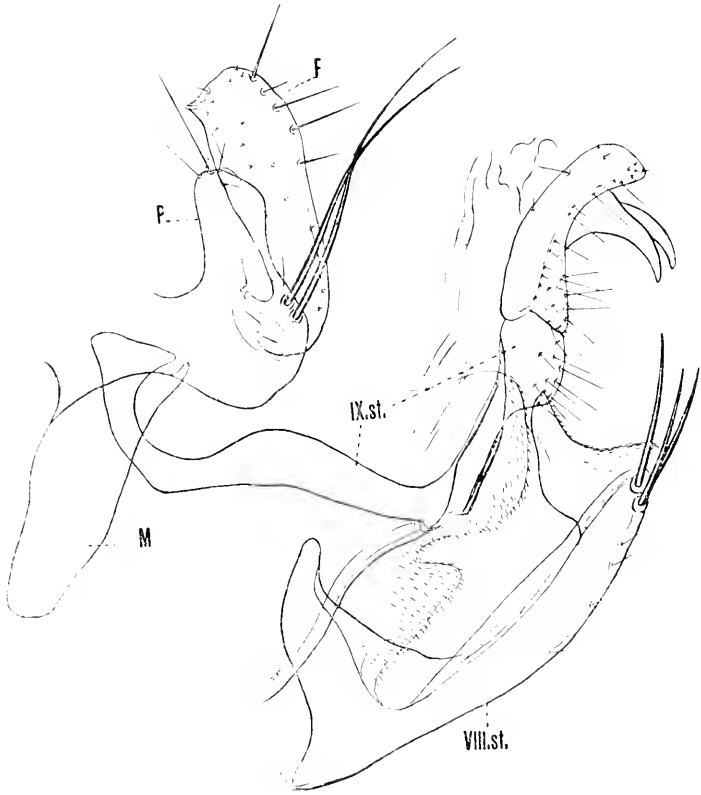




Edwin Wilson, del.

Fa. Trap, Leiden, lith.

SOME INTERESTING BRITISH INSECTS.



CERATOPHYLLUS BOREALIS, ROTHS.

Another form of the Spring examples of *parvula* ♀ has the scutellum polished and with very sparse deep punctures, the stigma dark, the abdomen densely sculptured, but without evident pucturation. Similar forms occur in the summer generation. I received from Baden females exactly like this British form, all taken singly on *Veronica* (April 30th, May 13th, April 28th) and others subsequently.

Andrena parvula is one of the earliest Spring bees; in a bleak locality in North Wilts. I noted it on daisies on March 20th, on one occasion (1886). This year the weather in Devonshire was very unfavourable, and my children brought in the first specimens of both sexes, quite fresh in condition, taken on flowers of *Brassica*, in the garden on April 14th. Subsequently, owing to unfavourable weather, the females had few opportunities for storing their cells, so that this sex was still out in perfectly fresh condition on May 13th, on *Bellis*, *Myosotis*, *Taraxacum*, *Veronica*, *Cratægus*, &c. A typical fresh ♂ was taken at Dawlish on May 1st, 1911, an exceptionally late date, and one on May 11th, on the highly-elevated land of Dartmoor, which is less surprising, since *Andrena apicata*, Sm., and its parasite, *Nomada borealis*, both March species on the coast, occurred with it. In very favourable seasons the summer generation (*minutula*) appears at the end of June, and in fact the two broods are exactly coincident with those of *A. gwynana*. But more usually the second brood is not noticed until July, and both sexes may be found freely in August. In the abnormal summer of 1888 the first ♂ *minutula* did not appear till August 7th, and fresh specimens of this sex occurred well into September, but in that season, owing to the unfavourable weather, *A. nigrozenea* was still out at the end of August, *A. xanthura* ♀ in September, and *Osmia ventralis*, Panz. (*leaiana*, Kirby), and *Megachile centuncularis*, in October.

A. sp. α. This form is in England of later appearance than *A. parvula*, for its normal time of emergence is the first half of May. Sometimes it is seen at the end of April, in fact its time of appearance almost exactly agrees with that of *A. nana*, the two being frequently found in company. I have recently examined a series of specimens taken from a colony unmixed with any of the allied species, and though the female is very similar to *parvula*, I have seen none which cannot be readily separated. In collections the ♀ is often placed under *minutula-parvula*, and the ♂ under *nana*, but there is no doubt of their distinctness. It is much attacked by *Stylops*, as is *nana*, whereas *parvula* is rarely parasitized. These bees are most partial to

Veronica, *Bellis*, and other small flowers, as well as *Umbelliferæ*, and many German examples were found on dandelions. This species cannot be an intermediate brood of *parrula-minutula*, for I received specimens taken in Baden on March 31st, when *parrula* ♂ was still in fresh condition, and this year in Devonshire it appeared at a time when the ♀ ♀ of *parrula* were still in perfect condition. I suspect that only in exceptional seasons or in special localities, a second brood is produced, but I took a perfectly fresh ♂ in August, 1886, at Sidmouth, which differs in no way from the Spring form. About the burrows of the isolated colony above mentioned, *Nomada flavoquttata* was taken, and this bee also affects *A. nana*, but I doubt whether it attacks *A. parvula*, since it never appears until the latter has been long on the wing. All the English examples I have seen have the anal fringe of the ♀ dark, but in very early (March) specimens from Germany, it is more yellow. It is possible that these are the descendants of a second generation, whereas in England, in most localities, only one brood (May—July) occurs.

A. nana is always readily distinguished from either of the preceding by its superficial appearance in the ♂, owing to the rather different pubescence, and especially the pure white hairs of the clypeus. The abdominal puncturation varies in amount and intensity, but is always very evident. The ♀ not only differs from them in the pubescence, but, in addition, the smooth, shining apical impressions of the abdominal segments and the yellow middle portion of the stigma are evident characters. It can always be told at a glance from the other species. It appears at the end of April or in the first half of May, according to the weather, and is partial to daisies and *Veronica chamaedrys*, and later the ♀ ♀ abound on white *Umbelliferæ*. I have seen no examples of a second brood in England. It is much attacked by *Stylops* and *Nomada flavoquttata*.

A. spreta, Pér., by a *lapsus calami* recorded by me (*antè*, p. III) as *A. schenkella*, Pér., is the *A. niceata*, Saund., *nec* Friese, and like *nana* is at once distinct from any of our other species by the combined characters of its pubescence and densely sculptured apices of the abdominal segments. It is less common than any of the preceding species and more local, though widely distributed. It is sometimes attacked by *Stylops*. It is found on the same flowers as *nana*, and often in company with it. I have found the ♂ in the first half of May, but it is more usually taken in June.

A. sp. β. This, I think, cannot be considered as a second brood

of *A. nana* owing to the difference in the antennæ of the ♂, and the sculptured apices of the abdominal segments in the ♀. The antennæ in the latter sex often have nearly the whole flagellum brightly ferruginous beneath, and also sometimes they are less conspicuously so in the ♂. I have seen fewer examples of this than of any of the other species. I took ♂♂ on *Umbelliferae* in August, about 14 years ago, near Mildenhall, and the ♀ in September, 1886, at Dawlish. Colonel Nurse has sent me for examination 3 ♂ and 3 ♀ from Eastbourne (August), and 1 ♂ (July), and 1 ♀ (August) from Timworth, Suffolk, and I have examined a few other specimens.

Park Hill House, Paignton :

June 1st, 1913.

SOME INTERESTING BRITISH INSECTS (V).*

BY F. W. L. SLADEN, F.E.S., R. S. BAGNALL, F.L.S., AND

J. E. COLLIN, F.E.S.

The two plates accompanying this article illustrate one species of *Hymenoptera*, two *Thysanoptera*, one *Proturon*, and seven *Diptera*.

PLATE II.

Figs. 1, 2.—*Psithyrus distinctus*, Perez (1 ♂, 2 ♀, × 1½). This is an interesting British bumble-bee because, so far as the writer knows, no description of it has been published in England, except that given recently in "The Humble-bee."† The insect was, however, well known to Edward Saunders in his later years, who regarded it as a variety of *P. vestalis* to which, indeed, it is closely related.

The males of the two forms differ in the quality and colour of their coats: in *distinctus* the hairs are less equal in length, and the yellow is paler and more extensive. They may also be easily separated by the structure of the antennæ: the 5th joint in *vestalis* is about as long as, but in *distinctus* much shorter than, the 3rd and the 4th joints taken together; in *vestalis* the flagellum is about 6 mm. long, in *distinctus* it is only about 5 mm. long.

The female of *distinctus* is somewhat smaller than normal-sized females of *vestalis*, and has the yellow band on the anterior part of the thorax and the yellow on the sides of the 3rd abdominal segment paler

* cf. (I) Ent. Mo. Mag., XLV, pp. 196, 197, pl. III (1909); (II) XLVI, pp. 1-3, pl. I (1910); (III) XLVII, pp. 203-206, pl. III (1911).

† "The Humble-bee," by F. W. L. Sladen, 1912 (London, Macmillan & Co., Ltd.), pages 219-113.

than in *vestalis*. The yellow thoracic band is never reduced by melanism as it often is in *vestalis*.

Ps. distinctus has been taken by the Rev. F. D. Morice at Rugby, and by myself at Colinton, near Edinburgh. The specimens figured were bred at Dover in a nest of *Bombus lucorum* from a female sent me by Mr. H. L. Orr from the neighbourhood of Belfast. *Ps. distinctus* is probably a fairly common insect in many places in the north of England, in Scotland, and the north of Ireland, and it is probably parasitic on *Bombus lucorum*, which it resembles in the quality and yellow tint of the coat. I have taken only one specimen, a giant male, at Dover. *Ps. vestalis*, on the other hand, is parasitic on *B. terrestris* and resembles the latter in the quality and yellow tint of the coat, and seems to be abundant in the south and east of England, and to disappear altogether in the north.—F. W. L. S.

Fig. 3.—*Trichothrips longisetis*, Bagnall ($\times 20$, drawn from the unique specimen [type] mounted in balsam).

The smallest British species of *Trichothrips*, which in the form of its mouth "cone" occupies with *T. cespitis*, Uzel, a main division of the genus that may ultimately be treated as distinct.

The single specimen was taken in moss, Gibside, Co. Durham. Another species allied to the polyporus-feeding *T. pedicularis*, viz., *T. propinquus*, Bagn., from the Derwent Valley, was described in the same paper.* Further examples of *T. propinquus* have been taken both in the Derwent Valley and in a wood near Edinburgh, occurring under *Corticium* growing on old beeches. It has not been found in *Polystictus versicolor*, which is the polyporus usually frequented by *T. pedicularius*.—R. S. B.

Figs. 4, 5.—*Megathrips nobilis*, Bagnall (4♂, 5♀, $\times 12$. Drawn from brachypterous carded specimens). This species was described in 1909 (Ent. Mo. Mag., XLV, pp. 130, 131) from brachypterous specimens of both sexes taken by Dr. Sharp in April and May, 1896, in dried sedge refuse, Wicken Fen, together with its larvæ, and also with larvæ and imagines of a recently recorded British species, *Cryptothrips dentipes*, Reut. The macropterous female of *M. nobilis* was taken in 1910 by Mr. Donisthorpe, whilst Mr. C. B. Williams, who is studying the group, last year found this species in the same habitat together with a distinct and interesting new *Euthrips* (*Anaphothrips*).

This year it has been sent me by Mr. C. J. C. Pool from the same locality.

* Trans. Nat. Hist. Soc. Nd. and Dhun. p. s. iii, pt. 3, December 1910.

M. nobilis shares with *M. bonannii*, Uzel, the honour of being the largest known European species of *Thrips*, and is recognized by the shape of the head, the shorter tube in the female, and the lateral processes of the 8th abdominal segment (absent in *M. bonannii*) in the male.

Another species of *Megathrips* (*M. lativentris*, Heeger) was taken by Dr. Randell Jackson in Delamere Forest in June, 1907.—R. S. B.

Fig. 6.—*Acerentomon affine*, Bagnall ($\times 40$, rough outline sketch).

This species, which is the largest I have seen, belongs to the family *Acerentomidae* of the recently diagnosed Order *Protura*, Silvestri (*Myrientomata*, Berlese), an Order of wingless insects without antennæ! It is closely allied to the type of the Order, *A. doderoi*, Silvestri, but Silvestri says that it cannot be referred to his species. I have therefore proposed the name *affine* for it. It occurs in large numbers (I have taken 400 examples) in Gibside, amongst frass under bark of beech, and is also found in the Wear Valley.

Members of this Order are really not uncommon in our Islands. I have collected a good deal of material from the North of England, the Forth area, and the neighbourhood of Dundee—comprising several specimens representing the two families and three genera diagnosed by Berlese—and hope to deal with the British species shortly.

For further data see my paper ["Some Primitive British Insects. I.—The Protura"] published in "Knowledge," XXXV, pp. 215, 216, in June, 1912.—R. S. B.

Fig. 7.—*Hammerschmidtia ferruginea*, Fallen. The first record of the occurrence of this species in Scotland appeared on p. 191 of this Magazine for 1912. It is a widely distributed, but distinctly rare, northern insect which has been found in Scandinavia and the mountains of Central Europe, and recorded by Loew as occurring in Manitoba (Canada), and by Williston from the Washington Territory (U.S.A.).—J. E. C.

Fig. 8.—*Callicera yerburyi*, Verrall. Since Colonel Yerbury took the original four specimens at Nethy Bridge (Inverness-shire) in 1904 (v. p. 229 of this Magazine for that year), a few more have fallen to his net in subsequent visits, but the carefully sought for male has so far eluded capture.—J. E. C.

PLATE III.

Fig. 1.—*Lophosia fasciata*, Meigen. This very distinct Tachinid

was first recorded as British by Mr. F. C. Adams in this Magazine for 1901, p. 212, from three specimens taken at Lyndhurst (Hants) on July 22nd—24th, and August 1st, 1901; while curiously enough on July 24th of the same year Col. Yerbury caught an example at Parknasilla (Ireland). Since then the species has been taken by the late Mr. Verrall and myself at Wormsley Park (Oxon) in August, 1907; another specimen being found at the same locality by Mr. C. J. Wainwright in August, 1912. It is distinctly rare even on the Continent.—J. E. C.

Fig. 2.—*Chironomus fascipennis*, Zetterstedt. This very little known and pretty species is an addition to the British List, and was found flying over a small piece of ornamental water in the late Mr. Verrall's garden at Newmarket, on August 31st, 1910, and again on August 28th, 1912. It is allied to *C. flexilis*, Wlk., but easily distinguished by the extensively clouded tip of the wing, the sharply defined blackened base of the anterior tibiæ, and the pale middle part of the hind tibiæ.—J. E. C.

Fig. 3.—*Platyphora lubbocki*, Verrall. This species was originally described in 1877 from a specimen bred by Lord Avebury (Sir John Lubbock) from an ant's nest. Since then I believe Mr. J. J. F. X. King has taken it in the New Forest, while the present figure was made from an example found by Dr. J. H. Wood in Herefordshire. A second species, *P. pyrenaica*, Becker, was quite recently (Wien. Ent. Zeit., 1912, p. 330) described from the Pyrenees under the generic name *Psalidesma*. It should be noted that in the figure the minute bristles on the second thick vein are made very much too conspicuous.—J. E. C.

Fig. 4.—*Anthomyza bifasciata*, Wood. This insect was described in the Ent. Mo. Mag. for February, 1911, p. 40, and this is the only record of its occurrence.—J. E. C.

Fig. 5.—*Conops (Brachyglossum) signata*, Wiedemann. The first and only record of this species as British is that of Mr. J. Collins, who found a pair on September 11th, 1910, in Tubney Wood, near Oxford, as recorded on p. 273 of this Magazine for that year. According to Rondani it is to be found near the nests of *Vespa vulgaris*.—J. E. C.

DESCRIPTION OF A NEW SPECIES OF *MUSICODERUS* (*STAPHYLINIDÆ*)
FROM JAMAICA.

BY MALCOLM CAMERON, M.B., R.N., F.E.S.

MUSICODERUS *NIGROCÆRULEUS*, n. sp.

Shining blue black, the extreme apices of the joints of the palpi and the claws testaceous. The first joint of the antennæ without spines. Length 7 to 8 mm.

From *M. gracilis*, Shp., *M. cephalotes*, Shp., and *M. convexus*, Bernh., it differs by its entirely blue black colour; from *M. spinicornis*, Champ., it is separable by its broader head, the absence of spines on the 1st joint of the antennæ of the male, the much closer puncturation of the elytra, and the smaller size.

Head large, transverse, as broad as the elytra in ♂, as broad as long and narrower than the elytra in ♀. Eyes large, not prominent, their diameter less than the length of the temples in ♂, as long as the temples in ♀. Temples slightly convergent posteriorly, the angles rounded; front with a median narrow impressed line; sides of the head and temples with large scattered setiferous punctures, the vertex smooth. Mandibles prominent, reddish. Palpi with apical extremities of the joints narrowly testaceous; 2nd joint of labial palpi a little longer than first. Antennæ black, 1st joint narrow at the base, gradually thicker towards apex, arcuate, as long as 2nd and 3rd together, and furnished with three or four fine setæ, but not spinose in either sex, 2nd shorter than 1st and 3rd, 4th a little longer than broad, 5th and 6th square, 7th to 10th distinctly transverse, 11th nearly as long as the two preceding together. Thorax about as long as broad in ♂, a little longer than broad in ♀; slightly dilated at the anterior angles, which are deflexed, distinctly narrowed to the posterior angles, which are effaced; disc with a row of five setiferous punctures on either side of the middle line and five or six irregularly disposed punctures on either side. Scutellum closely punctured. Elytra a little longer than the thorax, slightly longer than broad, moderately finely and not very closely punctured. Abdomen distinctly, but not very closely punctured at the bases of the anterior segments, still more sparingly punctate posteriorly. Tibiæ setose.

♂. Besides the differences already mentioned of the head and thorax, this sex has the whole of the under surface of the anterior and the basal half of the posterior femora strongly spinose. The last ventral plate of the abdomen is distinctly emarginate in the middle of the posterior margin.

Hab.: JAMAICA, Newcastle district, 3,000 feet above the sea level, in the axils of tree ferns.

Type in my Collection.

June, 1913.

ADDITIONAL LOCALITIES, &c., FOR VARIOUS COLEOPTERA
RECENTLY ADDED TO THE BRITISH LIST.

BY G. C. CHAMPION, F.Z.S.

Tuchys walkerianus, Sharp (*anteò*, p. 125).—During a recent visit to the New Forest Dr. Sharp was kind enough to introduce me to the habitat of this species, and a few additional examples were captured, on June 24th. The insects recorded under the name *T. parvulus* by Mr. Donisthorpe, from the New Forest, and by myself from Horsell, are *T. walkerianus*. Capt. Deville tells me that he has taken the latter at Chateauroux (Indre) and Fontainebleau, and I have it from Limoges. *T. parvulus* has been found by myself in many localities in Spain, &c., always on the sandy or shingly banks of running streams, whereas *T. walkerianus* occurs in *Sphagnum*, in or near woods.

Bradycellus sharpi, Joy (Ent. Mo. Mag., 1912, p. 257).—Capt. Deville (Bull. Soc. Ent. Fr., 1913, pp. 97 and 228) records this species from various localities in France: Yport (Seine-Inférieure), La Rosaie (Eure), Marly (Seine-et-Oise), and Normandy, and also states that it probably occurs in Holland and at Tangier.

Quedius talparum, Deville (Bull. Soc. Ent. Fr., 1910, p. 158).—Capt. Deville (*op. cit.*, 1913, p. 271) states that the mole's-nest species described by him under the name *Q. talparum* is synonymous with *Q. othiniensis*, Johansen (1907). This is the insect introduced into our list by Mr. Joy in 1906 under the name *Q. vexans*.

Actobius ytenensis, Sharp (*anteò*, p. 101).—This species also I have been able to see in life in the New Forest, thanks to Dr. Sharp. The following is an additional locality for it: Chobham, Surrey (three specimens from *Sphagnum*, taken by myself on March 30th, 1877. Mr. Joy, too, has, I believe, captured it in Berkshire.

Planestomus (Compsochilus) flavicollis, Fauv. (Ent. Mo. Mag., 1912, p. 162).—The insect from Caterham recorded by myself in 1875 (*op. cit.* XII, p. 39) as *C. palpalis* is *P. flavicollis*, Fauv. Dr. Sharp's specimen was taken in the New Forest.

Laccobius purpurascens, Newbery (Ent. Mo. Mag., 1908, p. 30).—Capt. Deville informs me that he has specimens of this insect from south-western France, from near Castres, on red sandstone, as at Teignmouth.

Henoticus germanicus, Reitter.—Capt. Deville (Bull. Soc. Ent. Fr., 1913, p. 79) notes that this species, recently recorded from Britain by Mr. Newbery (Ent. Mo. Mag., 1912, p. 286), has been taken by Dr. Everts in Holland in dried apricots. He suggests that the insect may have been imported from California. Allied forms are known from Mexico and Guatemala. *H. serratus*, Gyll., is apparently Holarctic in its distribution.

Trachyphloeus digitalis, Gyll. (*antea*, p. 126). — Mr. Newbery records this species from the Chatham district and Boston. It has also been taken at Streatley, Berks, by Mr. J. J. Walker in 1907. The insect was found near Chatham in numbers by myself, on April 28th, 1872, and in the following year by Mr. Walker in April and October. He has also met with it in recent years in the same locality. It may be added that *T. digitalis* is constantly smaller and narrower than *T. spinimanus*, and has shorter, more depressed, squamiform setæ on the elytra, whereas in *T. spinimanus* the setæ are longer and suberect, and nearly as conspicuous as in *T. alternans*. I can detect no difference in the striation of the elytra, when the surface incrustation is removed.

Horsell, Woking :

July 10th, 1913.

EMPIDÆ AND THEIR PREY IN RELATION TO COURTSHIP.

Communicated by Professor E. B. POULTON, D.Sc., M.A., F.R.S.

The following observations by Mr. A. H. Hamm, of the Hope Department, Oxford University Museum, will, we feel sure, be of special interest to our readers. The account is reprinted from Professor E. B. Poulton's Report on the Hope Department for the year 1912 in *The Oxford University Gazette* for June 4th, 1913, pp. 952-953 :—

“ No more interesting and valuable addition to the bionomic series has ever been made than the large collection by which Mr. A. H. Hamm, of the Hope Department, has thrown so much light upon the courtship of the Empid flies.

Results so surprising require abundant proof, and it will be admitted by any one who studies the series that the material both of *Empidæ* themselves and the insects captured or objects seized by them, is of immense extent and most carefully collected, embodying the results of a large number of original observations and most ingenious experiments. The whole of Mr. Hamm's researches were carried out in the neighbourhood of Oxford. The great labour of labelling and cataloguing was finished by Mr. Collins in time for exhibition at the Entomological Congress in August, 1912, where the collection was studied with keen attention and interest. The catalogue numbers—591 in 1908, 771 in 1909, 718 in 1910, and 969 in 1911, large as they are, give a very inadequate idea of the material ; for the catalogue is of mounts rather than specimens, of which many are

constantly carried on a single card. The collection includes many specimens captured and presented by Mr. Hamm's son, Mr. C. H. Hamm.

A part of the results has been already published in the 'Entomologist's Monthly Magazine' for 1908, p. 181, and 1909, pp. 132 and 157; but the most novel and interesting observations and conclusions—those obtained with the genus *Hilara*—are made known for the first time in the following brief account of Mr. Hamm's gift. The full and detailed account awaits publication until numbers of obscure and minute insects—Dipterous captors and prey chiefly Dipterous—have been satisfactorily worked out.

The collection has been classified by Mr. Hamm so as to illustrate his conclusions, the species being arranged in groups, each representing a definite evolutionary stage in the use of prey—first and lowest as food devoured by both sexes without relation to pairing, then as a gift provided by the male and devoured by the female during pairing, finally—as it were an ornament or plaything—no longer eaten by the female, but acting as a lure and a stimulus. In this last stage the prey is often replaced by some vegetable fragment which is quite unsuitable as food. The climax of this line of evolution is reached in an elaborate cocoon spun by the male around the prey and replacing the latter as an object of attraction. This replacement is self-evident in many examples studied by Mr. Hamm; for in these there was nothing but an empty cocoon, the prey having probably been lost during the process of construction.

There are strong reasons for the belief that the last stage has been reached through the second, and the second through the first, but this inference must not be extended further and made to apply to the species themselves.

I.—PREY DEVoured BY BOTH SEXES INDEPENDENTLY OF PAIRING.

A. *Tachydromia* (*Tachydrominæ*). Prey very nearly always Dipterous and often belonging to the genus *Tachydromia*, perhaps sometimes to the same species as the captor. The female *in copula* has very rarely been found with prey. 1908—ninety catalogued specimens (or mounts) of which 17 were captured by Mr. C. H. Hamm; 1909—eighty-six of which 2 were captured by Mr. C. H. Hamm; 1911—thirty.

B. *Hybos* (*Hybotinæ*). Prey generally Hymenopterous. 1908—eighty-four of which 26 were captured by Mr. C. H. Hamm; 1909—two; 1911—six.

C. *Empis trigramma*, *punctata* and *scutellata* (*Empinæ*). A little group of related species with habits very different from those of the rest of the genus so far as it has been studied. 1909—sixty-three.

II.—THE PREY PROVIDED BY THE MALE IS DEVoured OR SUCKED BY THE FEMALE DURING COPULATION.

A. *Pachymeria* (*Empinæ*). The prey always Dipterous. 1908—one hundred and ten; 1909—one hundred and seventy-eight.

B. *Rhamphomyia* (*Empinæ*). The prey nearly always Dipterous. 1909—three; 1910—two hundred and fifty; 1911—sixty-five.

C. *Empis* (*Empinæ*). Small species as yet undetermined. Prey nearly always minute *Diptera*, chiefly *Cecidomyia* and *Psychodes*. 1909—two; 1910—fifty-five; 1911—one hundred and three.

D. *Empis tessellata*. Prey very varied, but always Dipterous. 1908—two; 1909—two hundred and twenty-four; 1910—twelve; 1911—thirty-three.

E. *Empis opaca*. Prey like that of *tessellata*, but mainly of the genus *Bibio*. 1909—one hundred and sixty-eight; 1910—forty-six; 1911—forty.

F. *Empis livida*. Prey more varied than that of any other species of the genus, but still chiefly Dipterous. 1908—three hundred and five, of which 4 were collected by Mr. C. H. Hamm; 1909—forty-five; 1911—thirty-two.

III.—THE PREY OR OBJECT PROVIDED BY THE MALE IS NOT DEVoured BY THE FEMALE, BUT BECOMES, AS IT WERE, AN ORNAMENT OR PLAYTHING PROVIDING SOME INDISPENSABLE STIMULUS.

A. *Hilara* (*Empinæ*). Many species as yet undetermined. All the species fly over water, and the prey or other object is always picked up from its surface by the male *Hilara*. The males take floating insects of all kinds—sometimes specially *Diptera*, sometimes Aphids—scales off overhanging trees or other fragments of plants. Some of the species will accept almost any floating object, while others seem to restrict themselves to particular insects, such as *Aphidæ*. When the object is very heavy, the male, after seizing it, spins round with great velocity till the load rises on a cone of water, and is finally lifted from the apex. In Mr. Hamm's experiments, disabled *Diptera* of the genus *Chironomus*, &c., stamens of buttercups, and ray florets of daisies strewn on the water were soon taken by the males, and afterwards found in the possession of the females. Pairing invariably

occurs upon the wing, but numbers of specimens show that a sweep of the net through the swarm at first catches nothing but males carrying the objects that had been strewn on the water, while a later sweep catches pairs still carrying the same objects. The specimens illustrating this investigation are all carefully labelled with the hour and minute at which the different samples were secured.

Mr. Hamm's admirable experiments also enabled him to determine that the females carry the objects provided by the males; for although they are never retained when the pairs are captured, the white florets or the yellow stamens can be seen hanging from the lower *Hilara* of each flying pair, and the lower is invariably the female.

The climax is reached in the males of certain species of *Hilara* which envelope the prey or other minute object in a cocoon, varying greatly in complexity, but in the most extreme cases of striking beauty and regularity. The cocoon is spun upon the wing, so that the method of its construction cannot be followed. Captured individuals are often found to have extruded a viscid globule—probably the material out of which the cocoon is spun. There can be little doubt that in these extreme cases it is the cocoon itself which acts as a stimulus to the female, although the minute and almost invisible object usually enclosed in it, but sometimes dropped, is the stimulus which incites the male to spin. Cocoons that have been dropped, probably after pairing, are constantly picked up and used over again by other males.

These novel and surprising conclusions, obtained as the outcome of Mr. Hamm's energy, resource, and power of accurate observation, are illustrated and confirmed by an immense mass of mounted material, catalogued under 355 numbers in 1910, and no less than 660 in 1911."

TWO DIPTERA (*LIMNOBIIDÆ*) NEW TO BRITAIN.

BY A. E. J. CARTER.

1. *DICRANOMYIA RUFIVENTRIS*, Strobl.

This species is closely allied to *Dicranomyia morio*, Fabr. It was described as a variety of that species by Strobl in 1900 under the name of *var. rufiventris*, differing from typical *morio* in having the abdomen, genitalia, and legs "einfarbig rotgelb," and the wings not grey, but light brownish tinged with a very pale stigma.

A male in my collection, taken at Aberfoyle, Perthshire, on August 21st, 1906, has always been a puzzle. It runs down with

Schiner to *Limnobia pilipennis*, Egger, but the apical part of the wing is not distinctly hairy, and the apex of Sc 1 (end of the auxiliary vein) is placed almost above the base of Rs (second long vein), and not beyond it as in Egger's species. It was with interest, therefore, that I noticed Lundström's record (*Acta Soc. Fauna et Flora Fennica*, 29, No. 8, 1907) of a *Dicranomyia* from Finland as doubtful *pilipennis*. It was evident from Lundström's remarks that his specimens belonged to the same species as my insect, as the latter agreed with all the characters in which Lundström's species differed from *pilipennis*. In the recently published Part VIII of his valuable "Beitr. zur Kennt. der Dipt. Finlands" (op. cit. 36, No. 1, 1912) Lundström corrects his former record and identifies his insect with Strobl's short description of *Dicranomyia morio* var. *rufiventris*, stating, however, that it is not a variety, but a perfectly good species, quite distinct from *morio*. My specimen agrees with all that Lundström says, and a caustic potash preparation of the hypopygium accords with his Fig. 46 (Part VIII, Taf. 3). I take *D. morio* in this part of Perthshire, but so far have not come across *rufiventris*.

2. ACYPHONA AREOLATA, Siebke.

This is another interesting fly which had long baffled all my attempts at identification, and it was only recently while studying Wahlgrén's important paper on Zetterstedt's types of Nemocera (*Arkiv f. Zool.*, Bd. 2, No. 7) that I found the clue to what it is. A reference to "Insectorum Norvegicorum," Fasc. IV (1877), led me to consult that work, and I have no doubt that my insect is Siebke's *Erioptera areolata*. It answers very well to the description given, but I can see very little sign of the darkening of the tips of the femora or tibiæ. The whole insect is pale brownish yellow, darkened above on thorax and abdomen; the latter having the hind margins of the segments and the hypopygium yellow. The very small discal cell, "subcuneate" in form, is a characteristic feature.

The straight anal vein (A₂) places this species in Osten Sacken's genus *Acyphona*, as Wahlgrén points out, and our List will now contain two species in that genus.

I have one specimen only, a male caught at Musselburgh, Midlothian, on July 30th, 1906. The species is recorded by Lundström from two districts in Finland.

Blairgowrie, Perthshire:

June 19th, 1913.

DESCRIPTION OF THE MALE OF *CERATOPHYLLUS BOREALIS*,
ROTHS. (1906).

BY THE HON. N. CHARLES ROTHSCHILD, M.A., F.L.S.

PLATE IV.

In Ent. Mo. Mag. (2), XVIII, p. 11, I described a new species of flea as *Ceratophyllus borealis* from a single ♀ obtained by Mr. N. H. Joy on the Island of St. Kilda from the nest of a gannet.

The specimen remained unique until 1912, when the Rev. J. Waterston found a number of examples of this species in the Shetland Islands in a nest of *Anthus obscurus*, of which he kindly gave me some specimens of both sexes.

The ♂ being still undescribed, I submit a drawing of the genital organs which, as usual in *Siphonaptera*, offer easily recognisable distinctions from the allied species.

C. borealis comes near *C. columbæ* and *spinosus* in the armature of the ninth abdominal sternite of the ♂. The movable process (F) of the clasping organs bears five bristles in the apical half of the distal (= ventral) margin of which the upper one is somewhat thicker than the others, being, however, slightly shorter than the fourth from the top. The ninth sternite bears three very stout apical bristles on each side, one of them being usually distinctly longer than the others. The apical membranous lobe of this sternite is triangular.

As in the ♀, the hind femur bears a subventral row of four bristles on the inner surface, exclusive of the subapical bristle, and no subventral bristles on the outer side apart from the subapical one. In this *C. borealis* differs from *C. spinosus*, Wagn. (1903), which bears a much larger number of bristles on the hind femur.

Arundel House,

Kensington Palace Gardens, W.:

May 6th, 1913.

THE DENTATE MARGIN OF THE ABDOMEN IN *CHRYSIS*.

BY T. A. CHAPMAN, M.D., F.Z.S.

The President's address at the Entomological Society set me thinking on this matter. He did not discuss Chrysidids but, in the Aculeates, he told us that female secondary characters had relation to maternal duties and that any dorsal apical teeth spines are practically unknown in ♀♀ Aculeates.

Chrysidids are not Aculeates, and one may not reason from the latter with much certainty, not only because Chrysidids are not Aculeates, but because the female *Chrysis* has no duties towards her offspring beyond oviposition. It is further the case that the dentate margin in *Chrysis* is a specific and not a sexual character, *i.e.*, it is nearly identical in both sexes of the species that possess it. The dentate margin is not of a terminal segment. The segment carrying the teeth is the last visible one, but so, only the third visible segment of the abdomen, probably really the fourth.

Taking all these circumstances and some others into consideration, the theory of these spines that seems to me probable is, of course, very hypothetical, and can only claim acceptance in the absence of a better. In the Ent. Mo. Mag. of 1869 and 1870, I gave some notes on the habits of the Chrysidids parasitic on *Odynerus spinipes*. *Chrysis neglecta* substitutes her own egg for that of the wasp, laying it whilst the cell is still open and even before the tale of green grubs for subsistence of the larva is complete. *Chrysis bidentata* on the other hand does not lay her eggs until the wasp larva has spun its cocoon. No special effort is necessary therefore on the part of *neglecta* to reach the place where her egg is to be laid; *bidentata*, on the contrary, often has to burrow through some earthen stopping, and always to thrust her ovipositor through the wasp's cocoon. *Chrysis neglecta* is without terminal teeth, *bidentata* has this armature.

It would seem then, that in view of these two species at least, the terminal spines are correlated with the necessity of piercing a tough cocoon with the ovipositor.

This ovipositor is not a sting, but it is very sharp, and I was more than once pricked by it in handling the living insects; sharp as it is, however, considerable force must be necessary to pierce the cocoon, a portion of the process, doubtless, being widening the opening by pushing the silk aside as the ovipositor progresses, the threads so displaced returning afterwards to their position, as the opening, after the *Chrysis* retires, is practically closed. In making the opening, the whole work is done by a direct thrust, not by the alternate movements by which the *Tenthredo*'s cut their incisions or the ichneumons of the *Rhyssa* group penetrate solid wood. In making such a thrust not only is a fulcrum necessary, but even more important is some guidance in order that the thrust may be throughout in exactly the same line and direction. My idea is that the teeth of the margin do not provide a fulcrum, but by pressing down on to the wasp cocoon, make the end

of the abdomen fixed and steady, so that the thrust may be direct and true.

In pushing a slender object, like a needle, into any resisting mass, if it be held at a distance from the object, it is difficult to advance it so steadily that it does not bend and break; or if, unlike a needle, it is flexible enough not to break, it will double up and go no further. In either case the operation will succeed if the needle be held steadily, fairly close to the object to be pierced. In the case of the *Chrysis*, the short grip and the steadiness of the fulcrum is secured by the terminal teeth engaging the rough surface of the cocoon. The actual fulcrum, however, must be taken by the insect in some other way, either by its legs or by pressure against the wall of the burrow in which the cocoon is.

Chrysis ignita has a toothed margin, yet in the only cases in which I noted its ovipositing habits, it did so in the open cell. This would tell against my theory of the use of the teeth, but *ignita* is an abundant species, attacking a number of different hosts, and probably commands with this object different procedures in different cases, procedures that with other species of the genus are each confined to one species.

The dentate margin is not, however, a sexual but a specific character. This seemed to me at first a difficulty, but I think a secondary sexual character is often transferred to the opposite sex, and if not injurious when so transferred, may easily become a specific character. Darwin refers to a good many cases of secondary sexual characters being transferred to the opposite sex. There are really many such cases, which we do not usually recognise: In *Balaunus*, for instance; the female requires a long rostrum to reach the proper point at which to deposit her egg. The shorter, but still very long, rostrum of the male is, so far as I know, of no special use. A curious instance of what seems to be a transfer to the male of what is almost a primary sexual character, occurs in some Spingines. The cephalic margin of the 8th abdominal sternite is prolonged in a way that can hardly be anything but an echo of the female structure of this plate.

M. du Buysson (André's Hyménoptères, Vol. VI, p. 32) strongly asserts that *Chrysis* only eats the larva of *Odynerus* and not the provisions. He obviously never saw my paper (Ent. Mo. Mag., Vol. VI, p. 154), nor can he have made any observations on *Chrysis neglecta* with reasonable care, or he would not say it only eats the *Odynerus*

larva. I reared many larvæ of *C. neglecta* on "green grubs." I always found the eggs of the wasp had been damaged by the parent *Chrysis*. That the egg of the *Chrysis* should remain sound and undisturbed during the week during which the wasp larva is feeding up in the cell, and should not itself be eaten by the wasp, is absurd on the face of it. Yet he asserts this to be the universal method of oviposition with *Chrysid*s amongst *Odynerus*. He asserts only one of two methods of oviposition and only one method of feeding, and that the one that goes with the method of oviposition of which he seems to be ignorant.

My observations were made five-and-forty years ago, yet they can be repeated at any time by any one who will take the trouble to do so.

The discussion on "Winter Moths" reminds me of the hypothesis I made as to the plumose antennæ of *Pt. plumigera* and *Himera pennaria*, that these are reflections in the male insect of heightened activity of the antennæ of the female, rendered necessary by the weak odours (in winter) of the food plant she has to find to lay her eggs. Such antennæ are quite exceptional in the insects of the groups to which they belong, nor do they occur in winter moths whose females are apterous.

Betula, Reigate:

April, 1913.

MELANISM AND WET CLIMATES.

BY G. V. HUDSON, F.E.S.

In 1885 Lord Walsingham pointed out that the dark coloration of Alpine and Arctic *Lepidoptera* was probably due to the fact that a dark insect, would, on emergence from the pupa, rapidly absorb the heat and thus be ready to take wing, pair, and deposit its eggs much sooner than a white or pale coloured species. A dark coloration was thus shown to be highly advantageous to those species inhabiting high mountains or Arctic regions, where fitful hours of hot sunshine are followed by prolonged periods of extreme cold, and the opportunities for the propagation of the species thus very transient. Excellent instances of almost black coloration adapted to meet Alpine conditions are found in New Zealand, and are well exemplified by practically all the species included in the genera *Erebia*, *Orocrambus*, and *Tauroscopa*, most of which frequent elevations of from 4,000 to 6,000 feet above the sea level. Lord Walsingham's explanation has never, so far as I am aware, been seriously challenged, and is, I think, generally accepted amongst entomologists as correct. A less pronounced form of melanism

has, however, often been observed to be characteristic of *Lepidoptera* frequenting damp localities where there is an unusual number of wet and cloudy days, and this is observable in the case of insects found in the extreme south and on the west coast of the South Island of New Zealand, where the rainfall is notoriously heavy and frequent. Varieties from these localities are much more richly and deeply coloured than those from the drier Eastern and Northern portions of the Dominion; the colouring of the numerous forms which imitate moss and lichens being most vivid and beautiful in Western and Southern specimens.

A very simple explanation can, I think, be given to this form of melanism. After rain, the tree trunks are very much darker in colour than when dry, and the colouring of the mosses and lichens growing on the tree trunks is also much more vivid during wet weather than during periods of drought. A pale insect resting on a dark tree trunk is easily seen and captured by an insectivorous enemy, whilst a dark insect will escape detection. The same remarks apply to those species resembling vividly coloured mosses and lichens growing on the damp trees. It has been stated that melanism is very prevalent amongst *Lepidoptera* found in the vicinity of the large manufacturing towns in England, and I take it that this is due to the superior protection afforded to the insects by a dark coloration, when at rest on fences and tree trunks which have been more or less blackened through the presence of large quantities of coal smoke in the atmosphere.

Hence it appears to me that, through the direct influence of natural selection, melanism is eminently favourable to the survival of insects frequenting damp, cloudy, or smoky localities.

Hillview, Karori, Wellington,
New Zealand:

April 30th, 1913.

The British Cryptobia.—*Synonymical Note.*—In the notice of *Cryptobium* published last month (p. 150) there appears an error that was corrected in the proof, but remains in the published article (perhaps owing to some confusion due to the simultaneous absence of the two Coleopterous editors). It is stated that Paykull gives no reason for substituting the name *fracticorne* for that of the previous *glaberrimum*. He does, however, give a reason by saying that when examined with a lens the insect is not "*glaberrimum*." In Fowler's "Col. British Islands," II, p. 306, the name *glaberrimum* is used, Herbst being given as the author; but Fowler applies the name to the other species, not to the one called *fracticorne* by Paykull and the Continental authors. The confusion is very great, and I may therefore repeat that I suggest that the long-winged form be called *glaberrimum*, and our common form *brevipenne*.—D. SHARP, Broekenhurst: July 17th, 1913.

Carpophilus secpustulatus, F., etc., in Sherwood Forest.—At Edwinstowe on May 12th I was fortunate enough to take a specimen of *C. secpustulatus*, F., under the bark of a newly fallen oak branch; in the same situation *Pediacus dermestoides*, F., occurred plentifully. A few pupæ of *Superda scalaris*, L., were extracted from the wood of oak trees; *Enicmus rugosus*, Herbst, was taken rarely out of powdery fungi on oaks; *Batrissus venustus*, Reich., occurred in dry wood, and under the bark of a fallen oak I noticed the remains of *Agribus biguttatus*, F. Here in May, 1912, by beating birch trees, I took several specimens of the local and scarce *Magdalis carbonaria*, L.—E. W. MORSE, Leeds: June 22nd, 1913.

Edemera virescens, L., in Gloucestershire.—In June, 1905, I took a ♂ of this species at Newnham-on-Severn. I have not met with it since in that locality, and therefore was very pleased to take it at Symonds Yat early in June this year. It occurred rarely, by sweeping herbage in a restricted area well within the Gloucestershire boundary. Our other species, *E. nobilis*, Scop., and *lurida*, Marsh., are not uncommon in both localities.—E. W. MORSE.

Bruchus pectinicornis, L., in the New Forest.—A very fresh specimen of this insect was found by my daughter, by sweeping in a spot which is so remote and secluded as almost to preclude the idea of its being an introduced specimen. The date was June 15th, 1912. We have not, however, met with a second example.—D. SHARP, Brockenhurst: June 23rd, 1913.

Dyschirius angustatus, Putz., in Cumberland.—This species was originally found in the British Isles by the late T. J. Bold of Newcastle-on-Tyne, on the banks of the River Irthing, near Lanercost Abbey, Cumberland (not Northumberland, as stated by Fowler, Col. Brit. Isles, Vol. I, p. 23), and brought forward by Dawson (Geod. Brit. p. 31) as a novelty under the name of *jejunus*.

I have repeatedly looked for the species in this favourite district of Bold's, but hitherto unsuccessfully. During May and June of the present year I was fortunate enough to meet with it in quite a different part of Cumberland, viz.: on mudbanks on the Solway Estuary. It occurred rather freely in association with *Bledius atricapillus*, Germ. *D. politus*, Dej., and *salinus*, Schaum, were also abundant; *nitidus*, Dej., decidedly rare. Although only a few square yards of mudbank were worked, it was remarkable what a large number of beetles were present. The *Bledius* alone must have been represented by thousands. *Bembidium lunatum*, Duft., was common with others of the genus, including *velox*, Er., which I only take near the sea. *Tachypus pallipes*, Duft., is also worth recording.—F. H. DAY, 26, Curroek Terrace, Carlisle: July 3rd, 1913.

Pachycoleus rufescens, Sahlb., in the New Forest.—To Dr. Sharp's list of insects occurring in wet moss by the side of a little stream in the New Forest (*antea*, p. 125), the minute fragile Ceratocombid Hemipteron, *Pachycoleus rufescens*, may be added. While examining some of this wet moss in his company, on June 24th, we noticed amongst the common *Hebrus ruficeps*, Thoms.

(an insect usually found in such places), various much smaller, narrower, wholly red individuals, which at first sight appeared to be larvae of that species. These latter, however, when examined under a lens, proved to be fully winged and undoubtedly *Pachycolus*. *P. rufescens* was introduced by myself as British in 1908 (Ent. Mo. Mag., XLIV, p. 9), from specimens found at Dawlish by the late P. de la Garde, Mr. Keys soon after (*loc. cit.* p. 42) recording it from Loddiswell, both in S. Devon. Most of the examples captured by Dr. Sharp and myself were placed in a small tube for safety, and, as not rarely happens in such cases, the tube was subsequently lost! Two specimens, however, placed in a separate bottle, were secured. These are considerably smaller than all the others I have seen from S. Devon, but they appear to belong to the same species.—G. C. CHAMPION, Horsell, Woking: *July*, 1913.

Colias edusa in June.—It may interest your readers to hear that I have to-day seen three examples of *Colias edusa* on the wing. I was so surprised that I stopped to watch them, and one settled close to my feet. I always look out for them in August and generally see an isolated specimen, but have never seen so many together since on one occasion about 40 years ago, when I saw hundreds on the cliffs between Weymouth and Lulworth, in Dorsetshire, and caught many specimens of *C. edusa* var. *helice*, and *hyale*.—WM. A. CAREY, 36, Devonshire Road, Bexhill-on-Sea: *June 17th*, 1913.

Review.

“A CATALOGUE OF THE LEPIDOPTERA OF NORTHUMBERLAND, DURHAM, AND NEWCASTLE-ON-TYNE.” By JOHN E. ROBSON, F.E.S. Edited by JOHN GARDNER, F.E.S.

The concluding part of this Catalogue is before us. There has been considerable but unavoidable delay in its issue, owing to the death of Mr. J. E. Robson, and still more so an account of the long continued and much regretted illness of Mr. Eustace R. Bankes, who after Mr. Robson's death undertook to edit and see the part through the press. When Mr. Bankes felt compelled to request the Council of the Northumberland Society, under whose auspices all the Catalogue has been published, to relieve him of the task, he suggested that Mr. Gardner should be asked to take his place. That a more suitable selection could not have been made is evident by the satisfactory way in which the work has been finished. Mr. Bankes fortunately had made critical notes upon the whole of the manuscript whilst it was in his possession, and which no doubt has been an immense help to his successor. The part deals with the *Tineina* and *Pterophorina*, the latter group entirely by Mr. Gardner, as Mr. Robson had left no notes on them; whilst the concluding portion of the part consists of a short supplement containing the additional species and records made since the Catalogue was commenced, and so bringing the list up to present date. The entire Catalogue records 1,169 species for the area included, or 56.7 per cent. of the British

species, as against 66.9 per cent. recorded for the adjoining county of Yorkshire. Its compilation has evidently been most carefully done, and we have no doubt the Catalogue is as accurate as it could have been made. It reflects the greatest credit indeed on everybody concerned in its production. An excellent photograph of the late Mr. Robson forms an appropriate frontispiece to the work.—G. T. P.

Societies.

THE SOUTH LONDON ENTOMOLOGICAL AND NATURAL HISTORY SOCIETY: Thursday, June 12th, 1913.—Mr. A. E. TONGE, F.E.S., President, in the Chair.

Mr. R. Adkin exhibited tobacco leaves that were much infested by a beetle, which was afterwards identified as *Anobium panicum*. The tobacco came recently from Turkey. Mr. West (Greenwich), a series of the new Hemipteron, *Psylla albipes*, discovered by him on white-beam tree. Mr. Coxhead, blackthorn leaves with galls of the Dipteron, *Cecidomyia pruni*, from Shooter's Hill. Mr. Cowham, an aberration of *Abraxas grossulariata*, with the black markings on the forewings coalesced to a wide band suppressing the usual yellow markings. Mr. Sich, the egg shells of the white ova of *Dicranura vinula*, previously exhibited. Mr. Carr, the *Lepidoptera* taken by him in 1912. Mr. Edwards, species of the South American genus of butterflies, *Dynamine*. Mr. H. Moore, larvæ of the stag-beetle, *Lucanus cervus*, from Lewisham. Mr. Blenkarn, a series of *Bruchus pisi*, a Coleopteron found by Mr. Main in split-peas in a Woodford shop, and a pair of the rare *Pterostichus parumpunctatus* taken at Chopwell, Northumberland, in May, 1912. Several reports were made of the occurrence of *Colias edusa*, *Pyrameis atalanta*, and *P. cardui*.—H. J. TURNER, Hon. Secretary.

NOTES ON LEPIDOPTERA FROM GIBRALTAR AND THE SURROUNDING COUNTRY.

(Continued from p. 125).

BY CAPTAIN J. J. JACOBS, R.E. (RET^d), M. I. MECH. E., F.E.S.

The following list of *Lepidoptera* is arranged in accordance with the Staudinger-Rebel Catalogue (1901), giving the catalogue numbers for easy reference, and with brief notes against each species:—

MACRO-LEPIDOPTERA.

- 1.—*Papilio podalirius*, L. I observed var. *feisthamelii*, Dup., at Granada, on August 8th, 1910, and specimens were taken there in June, 1911; also seen in Cork Woods on July 29th, 1910. I took two very ragged specimens of var. *latteri*, Aust., at Tangier, on September 11th, 1911, and saw others during the next few days.

- 4.—*P. machaon*, L. Common throughout the region from February to October. Specimens bred from larvæ found on fennel at Gibraltar and Ronda.
- 11.—*Thuis rumina*, L. The first example of this beautiful species I observed and captured on February 11th (1910). It is not so abundant on the Rock as formerly, but is widely distributed throughout the district, and I have taken it in good condition as late as May 21st (1910).
- 45.—*Pieris brassicæ*, L. Common throughout the region during the whole year.
- 48.—*P. rapæ*, L. Also common all the year throughout the region.
- 57.—*P. daphidice*, L. This I have found to be more plentiful throughout the region than the two preceding. There appears to be three distinct broods during the year. The spring brood (var. *bellidice*, O.) occurs in the Cork Woods about the third week in February. The summer brood appears about the middle of April and remains good until the end of July: these are slightly larger, and have less green on the underside of hind wing than var. *bellidice*. The autumn brood appears during the first week in August and lasts until November: these are generally a good deal smaller, and the underside of the wings have much less, paler, and more yellowish-green than the summer brood. (Probably var. *raphani*, Esp.).
- 60.—*Euchlœa helemia*, Esp. Common throughout the region, and one of the earliest butterflies on the wing. I have observed it in the Alameda Gardens early in January, but my first capture in the season was February 22nd (1912). The ab. *glauca*, Hb., appears about the third week in April, and I have taken it in good condition at Tarifa, as late as June 12th (1911).
- 62.—*E. belia*, Cr. I took a fine specimen of this species at Tangier on March 24th, 1912, but it is apparently very rare in this region, except at Granada, where it occurred commonly in May, 1911. The var. *ausonia*, Hb., was common at Granada in the middle of June, 1911.
- 63.—*E. tagis*, Hb. I found this insect common on the Rock of Gibraltar, on March 3rd, 1912, at a spot where I had previously taken two specimens on April 16th, 1910, and several others between April 2nd and 30th, 1911. The locality is about 500 feet above sea-level, near the Jews' Cemetery, at the south end of the Rock. The species appears to be well established in this restricted locality. I have searched for, but have not met with it, in any other part of the region, but Mr. G. O. Sloper took 15 good specimens in the Cork Woods on April 8th, 1911.
- 69.—*E. cardamines*, L. I took two males of this species in the Cork Woods on April 7th, 1912, and one male on April 21st, 1912. This insect appears to be scarce in the district.
- 72.—*E. euphœo*, L. This species occurs only on the African side. On March 22nd, 1912, I met with it near Tangier, and on this and the two

following days secured a good series of males, but managed to capture only two females, which perhaps were not yet fully out. They seemed to enjoy fitting along a warm sunny bank, close to the ground. The locality is in the narrow lanes near the south bank of the Jews' River.

73. *E. euphenoides*, Stgr. Occurs only on the European side, where it is common throughout the district. I have taken it in the Cork Woods as early as February 25th (1911), and have seen it flying in good condition as late as May 26th (1910) at Algeciras. The females of this appear to be more numerous than those of the preceding species. On some fine days I have seen the sexes in about equal numbers.
- 74.—*Zegris eupheme*, Esp., var. *meridionalis*, Ld. Taken by Mr. G. O. Sloper at Granada in May, 1911.
- 81.—*Leptidia sinapis*, L. Found only in the Cork Woods, where I have taken it as early as February 24th (1911), and as late as August 16th (1911), in good condition. Successive broods occur during the summer. The ab. female *erysimi*, Bkh., is fairly common, and the var. *diniensis*, B., also occurs.
- 113.—*Colias edusa*, F. Common throughout the region during nearly the whole year, but apparently not so abundant as formerly. The ab. *helice*, Hübn., seen occasionally.
- 124.—*Gonepteryx rhamni*, L. Found by me only in open spaces in the Cork Woods, where it flies with *G. cleopatra*, L., in June and July. Larger and finer than British specimens.
- 125.—*G. cleopatra*, L. This conspicuous butterfly I found to be one of the most abundant throughout the whole region. Hibernated specimens are seen on the wing from the middle of February to the end of March, and always appear to be in good condition; it is very rarely that a ragged or worn specimen is found. The earliest date on which I have seen the new brood at Gibraltar is May 8th (1912). The female, which is difficult to distinguish from that of the preceding species, expands about $\frac{2}{3}$ of an inch more than the male.
- 127.—*Charaxes jasius*, L. The netting of this large, powerfully flying butterfly is very fine sport, but unfortunately it is difficult to obtain good specimens by this means; they are so wild in the net, that the most perfect example invariably spoils itself before it can be secured. The usual habit of this species is to fly round and settle on the topmost branches of fig trees, so that the only possible way to net them is to induce them to come lower by fixing tempting baits (generally rotten figs) within reach of the net. The imago occurs commonly at Mount Washington, Tangier, and appear to be in good condition in that locality from about September 7th to 14th. I have observed specimens in the Cork Woods (June 16th, 1912), and Gibraltar in July (1911). One ragged specimen taken in Gibraltar, close by the sea, near the Dockyard, on October 4th, 1911.

This species has been bred in England by Mr. G. O. Sloper, and by Mr. A. H. Jones, in his garden at Eltham.

- 152.—*Pyrameis atalanta*, L. Not common, but generally distributed throughout the region. Flies all the year round. Very small specimens are occasionally met with.
- 154.—*P. cardui*, L. Abundant everywhere during the summer, especially at Algeciras during the month of May.
- 161.—*Vanessa polychloros*, L. Not very common, and usually flies high up round trees. Hibernated specimens met with in the Cork Woods in February (1912). A fine fresh specimen taken at the Waterfalls, near Algeciras, on June 8th, 1912.
- 175.—*Melitaea aurinia*, Rott., var. *iberica*, Obth. After searching throughout the region, during my 2½ years collecting there, for examples of the genus *Melitaea*, I did not meet with any until I was packing up to leave the country. Col. Angell informed me he had taken a "Fritillary" at the Waterfalls, Algeciras, about a fortnight before, so I lost no time in going over. I found this species fairly plentiful, but worn, on June 8th, 1912. They appear to be closely restricted to their locality, for although I had worked near the spot during the past two seasons, I had not met with a single stray specimen.
- 180.—*M. phabe*, Knoch, var. *occitania*, Stgr. Taken at Granada by Mr. G. O. Sloper at the beginning of May, 1911.
- 190.—*M. dejone*, H.-G., var. *nevadensis*, Obth. Taken at Granada about a fortnight later than the preceding species.
- 240.—*Argynnis pandora*, Schiff. Taken at Tangier on September 22nd, 1910, and at the Cork Woods on July 1st, 1911, and June 16th, 1912. This species was very scarce in the localities I worked.
- 257.—*Melanargia ines*, Hfsg. Taken by Mr. Sloper at Granada in good condition, from May 6th to 24th, 1911.
- 258.—*M. syllius*, Hbst. As the previous species.
- 343.—*Satyrus briseis*, L. Taken by Mr. G. O. Sloper at Granada, who states they occur there very rarely (July 6th, 1911).
- 370.—*S. statilinus*, Hübn., var. *allionia*, F. Abundant in the Cork Woods during July and August, but not seen in Gibraltar.
- 372.—*S. fidia*, L. Common in Gibraltar from the middle of July until the end of August, but I have seen worn specimens on the Upper Rock late in September. The earliest dates of their appearance, during my stay, were July 14th, 1910, and July 15th, 1911. As they are so "wild" on the wing, it is difficult to obtain perfect specimens after the first week in August. They soon become slightly chipped.
- 385.—*Pararge aegeria*, L. Very abundant throughout the region during the greater part of the year. First taken in good condition on Jan. 15th, 1910 (Gibraltar). Always of the dark Southern form.
- 390.—*P. megæra*, L. Not so abundant as the last species, but very plentiful, and on the wing during the greater part of the year.

CHANGE OF ADDRESS.

AGOSTINO DODERO, *from* Sturla, Genova, *to* Via XX Settembre, 28—9, Casella Postale 1160, Genova, Italy.

EXCHANGE.

Emus hirtus (British) in exchange for *Velleius dilatatus*.—M. CAMERON, 7, Blessington Road, Lee, S.E.

LANCASHIRE AND CHESHIRE ENTOMOLOGICAL SOCIETY.—Meetings the third Monday in each Month, October to April. *Hon. Sec.*, W.M. MANSBRIDGE, 4, Norwich Road, Wavertree, Liverpool.

THE THREE COLOURED PLATES illustrating the articles on "SOME INTERESTING BRITISH INSECTS,"

with the accompanying text (issued in the *Ent. Mo. Mag.* for September, 1909, and January and September, 1910) are now issued in a separate wrapper, price 2s.

APPLY TO THE PUBLISHERS.

WATKINS & DONCASTER, Naturalists,

Keep in stock all Articles for Entomologists, Ornithologists, Botanists, &c.: Umbrella Net, 7/-; Folding Cane or Wire, 3/6, 4/-, 4/6; Plain Ring Net, 1/3, 2/-, 3/-; Pocket Boxes, 6d., 9d., 1/-, 1/6; Store Boxes, with Camphor Cells, 2/6, 3/6, 4/-, 5/-, 6/-; Zinc Pocket Boxes, 9d., 1/-, 1/6, 2/- Setting Boards, from 5d. to 1/10; Complete set of 14 boards, 10/6; Breeding Cages, 2/6, 4/-, 5/-, 7/6; Sugaring Tins, 1/6, 2/-; Sugaring Mixture, ready for use, 1/9 per tin; Setting Houses, 9/6, 11/6, 14/-; Glass Topped and Glass Bottomed Boxes, from 1/- per doz.; Zinc Killing Boxes, 9d., 1/-; Coleoptera Collecting Bottles, 1/6, 1/8; Collecting Box, containing 26 tubes (very useful for Coleopterists, Microscopists, &c.), 4/6; Brass Chloroform Bottle, 2/6.

Improved Pocket Pupa-digger in leather sheath (strongly recommended), 1/9; Steel Forceps, 1/6 to 3/- per pair; Pocket Lens, from 1/6 to 8/6.

Taxidermists' Companion, containing most necessary implements for skinning, 10/6; Scalpels, with ebony handles, 1/3; Fine Pointed Scissors, 2/- per pair; Brass Blow-pipes, 4d., 6d.; Egg Drills, 2d., 3d.; ditto, best quality, 9d. each; Botanical Vasculum, 1/6, 2/9, 3/6, 4/6; Label List of British Macro-Lepidoptera, with Latin and English Names, 1/6; List of British Lepidoptera (every species numbered), 1/-; or on one side for Labels, 2/-.

SILVER PINS FOR COLLECTORS OF MICRO-LEPIDOPTERA, &c., as well as minute insects of all other families.

We stock various sizes and lengths of these Silver Pins, which have certain advantages over the entomological pins usually employed.

For instance, insects liable to become greasy and verdigrisy, like Sesiidæ, are best pinned on Silver pins, which will last much longer than the ordinary pins (whether enamelled black, or gilt, or silvered).

We shall be pleased to send pattern cards on application.

A large stock of British, European, and Exotic Lepidoptera, Coleoptera, and Birds' Eggs.

ENTOMOLOGICAL PINS.

The "DIXON" LAMP NET (invaluable for taking Moths off street lamps without climbing the lamp posts), 3s. 6d.

SHOW ROOM FOR CABINETS, &c.

36, STRAND, LONDON, W.C., ENGLAND.

Birds and Mammals, &c., Preserved & Mounted by first-class workmen.

Our New Price List (100 pp.) sent post free to any address on application.

CONTENTS.

PAGE

Notes on the British species of the <i>Andrena minutula</i> , K., group, and correction of an error (<i>concluded</i>).— <i>R. C. L. Perkins, M.A., D.Sc., F.L.S.</i>	169
Some interesting British Insects (V) (with two coloured plates).— <i>F. W. L. Sladen, F.E.S., R. S. Bagnall, F.L.S., and J. E. Collin, F.E.S.</i>	171
Description of a new species of <i>Muscoderus</i> (Staphylinidæ) from Jamaica.— <i>M. Cameron, M.B., R.N., F.E.S.</i>	175
Additional localities, &c., for various Coleoptera recently added to the British List.— <i>G. C. Champion, F.Z.S.</i>	176
Empidæ and their prey in relation to courtship.— <i>Communicated by Prof. E. B. Poulton, D.Sc., M.A., F.R.S.</i>	177
Two Diptera (Limnobiidæ) new to Britain.— <i>A. E. J. Carter</i>	180
Description of the male of <i>Ceratophyllus borealis</i> , Roths. (1906) (with plate).— <i>Hon. N. Charles Rothschild, M.A., F.L.S.</i>	182
The dentate margin of the abdomen in <i>Chrysis</i> — <i>T. A. Chapman, M.D., F.Z.S.</i>	182
Melanism and wet climates.— <i>G. V. Hudson, F.E.S.</i>	185
The British Cryptobia.—Synonymical note.— <i>D. Sharp, M.A., F.R.S.</i>	186
<i>Carpophilus sexpustulatus</i> , F., &c., in Sherwood Forest.— <i>E. W. Morse</i>	187
<i>Ædemera virescens</i> , L., in Gloucestershire.— <i>Id.</i>	187
<i>Bruchus pectinicornis</i> , L., in the New Forest.— <i>D. Sharp, M.A., F.R.S.</i>	187
<i>Dyschirius angustatus</i> , Putz., in Cumberland.— <i>F. H. Day, F.E.S.</i>	187
<i>Pachycoleus rufescens</i> , Sahlb., in the New Forest.— <i>G. C. Champion, F.Z.S.</i>	187
<i>Colias edusa</i> in June.— <i>W. A. Carey</i>	188
REVIEW—"A Catalogue of the Lepidoptera of Northumberland, Durham, and Newcastle-on-Tyne," by John E. Robson, F.E.S. Edited by John Gardner, F.E.S.	188
SOCIETY.—South London Entomological Society	189
Notes on Lepidoptera from Gibraltar and the surrounding country (<i>continued</i>).— <i>Capt. J. J. Jacobs, R.E. (retd.), M.I.Mech.E., F.E.S.</i>	189

All Communications and Subscriptions during July and August should be addressed to Commander J. J. WALKER, R.N., "Aorangi," Lonsdale Road, Summertown, Oxford; or to Mr. G. C. CHAMPION, Horsell, Woking.

ENTOMOLOGISCHE MITTEILUNGEN, Published by the Verein zur Förderung des Deutschen Entomologischen Museum. Monthly Entomological paper; official edition of the Deutsches Entomologisches Museum, whose large Library is at the disposal of all Subscribers at most liberal terms. Gratis to each number continuation of the Library's Catalogue. Terms: 7s. (m. 7) a year; 3s. 6d. (m. 3'50) half a year.

Address: Deutsches Entomologisches Museum, Berlin-Dahlem, Gosslesstr. 20.

DR. STAUDINGER & BANG-HAAS, BLASEWITZ-DRESDEN, in their new Price List, No. LV1 for 1913, offer more than 19,000 species of well-named LEPIDOPTERA, set or in papers, from all parts of the world, in finest condition; 1600 kinds of PREPARED LARVÆ, &c.; we sell no more living pupæ. Separate Price Lists for COLEOPTERA (29,000 species); HYMENOPTERA (2600 species), DIPTERA (2900), HEMIPTERA (2500), ORTHOPTERA (1200), NEUROPTERA (630), BIOLOGICAL OBJECTS (300).

PRICES LOW. DISCOUNT FOR CASH ORDERS.

Second Series, No. 285.] SEPTEMBER, 1913. [PRICE 6d. NET
[No. 592.]

THE
ENTOMOLOGIST'S
MONTHLY MAGAZINE.

EDITED BY

G. C. CHAMPION, F.Z.S. J. E. COLLIN, F.E.S.

W. W. FOWLER, D.Sc., M.A., F.L.S.

R. W. LLOYD, F.E.S. G. T. PORRITT, F.L.S.

J. J. WALKER, M.A., R.N., F.L.S.

SECOND SERIES—VOL. XXIV.

[VOL. XLIX.]

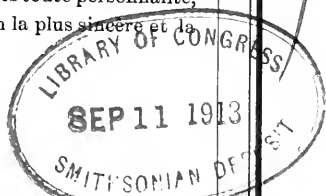
“J'engage donc tous à éviter dans leurs écrits toute personnalité, toute allusion dépassant les limites de la discussion la plus sincère et la plus courtoise.”—*Laboulbène*.

LONDON:

GURNEY & JACKSON (MR. VAN VOORST'S SUCCESSORS),
33, PATERNOSTER ROW, E.C.

SOLD IN GERMANY BY FRIEDLÄNDER UND SOHN, BERLIN.

NAPIER, PRINTER, SEYMOUR STREET, EUSTON SQUARE.



REDUCED PRICES FOR BACK VOLUMES.

FIRST SERIES.

This can only be obtained in complete Volumes (bound or unbound).

A limited number of sets, from Vol. x to Vol. xxv can still be obtained at £2 15s. per set net (in parts), or of five consecutive Vols. at £1 per set net (if bound, 1s. per Vol. extra).

Certain of the Vols. i to ix can be had separately at 10s. each.

SECOND SERIES.

Vols. i to xv. are now offered at £3 per set net (in parts), or £1 2s. 6d. for five consecutive Vols. (if bound, 1/- per Vol. extra).

Apply to the Publishers.

NOTE.—Subscriptions for 1913 (6s. per annum, post free) are now due, and should be paid to R. W. LLOYD, I. 5, Albany, Piccadilly, London, W.

It would be a great convenience to the Editors in keeping the accounts if these were paid promptly, as having to send reminders entails a considerable amount of extra work.

The Coloured Plates issued in September, 1909, January and September, 1910, and September, 1911, having been so much appreciated by our readers, a fifth (devoted to *Dermaptera*) was given with the October, 1911, number; two more were issued in the August, 1913, number.

THE CANADIAN ENTOMOLOGIST.

A MONTHLY MAGAZINE DEVOTED TO THE STUDY OF SCIENTIFIC ENTOMOLOGY.

Volume 45 is now in course of publication. Back volumes can be supplied. It is the oldest established Magazine of the kind in America, and has a world-wide circulation. Subscription, \$1 per annum, which includes a copy of the Annual Report of the Entomological Society of Ontario to the Legislature. Editor, Dr. E. M. Walker, Biological Department, University of Toronto, Toronto, Canada.

Address: Entomological Society of Ontario, Guelph, Canada.

CITY OF LONDON ENTOMOLOGICAL AND NATURAL HISTORY SOCIETY, London Institution, Finsbury Circus, London, E.C.—The First and Third Tuesdays in the month at 7.30 p.m., except in July and August. Visitors are cordially invited to attend with exhibits.—V. ERIC SHAW, Hon. Sec.

ENTOMOLOGICAL NEWS.

A forty-eight page illustrated magazine, issued monthly, except in August and September, devoted to the study of INSECT LIFE. It contains a resumé of the proceedings of a number of Entomological Societies, and also articles by the leading Entomologists in the United States and Canada. Valuable information for the beginner, the economic entomologist, and the systemist. **TWO DOLLARS a year in advance.** Single copies, 25 cents. Address—

ENTOMOLOGICAL NEWS,

The Academy of Natural Sciences.

1900 RACE STREET, PHILADELPHIA, PA.

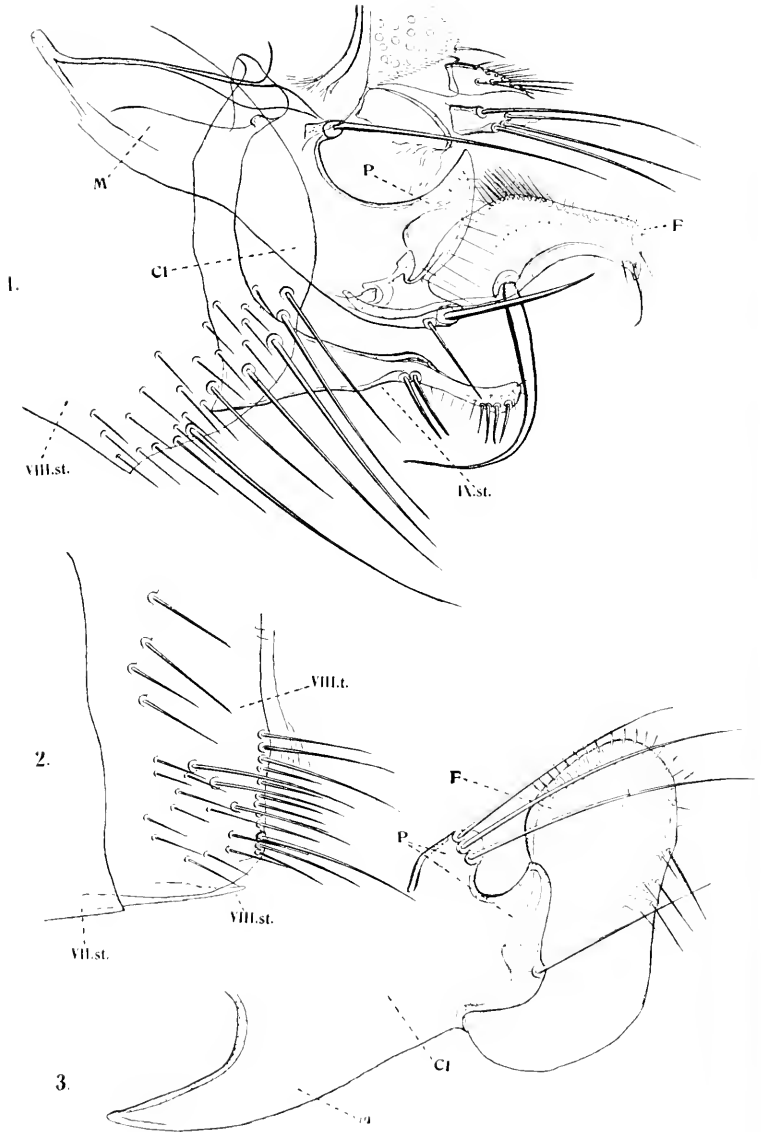


FIG. 1. LISTROPSYLLA CHELURA, ♂.

FIG. 2. LISTROPSYLLA CHELURA, ♀.

FIG. 3. CTENOPHTHALMUS CALCEATUS, ♂.

- 402.—*Epinephele jurtina*, L., var. *hispulla*, Hb. Exceedingly abundant everywhere from early in May to the end of August.
- 405.—*E. lycaon*, Rott., var. *intermedia*, Stgr. Taken by Mr. G. O. Sloper at Granada, in summer, 1911 (date not given).
- 423.—*E. ida*, Esp. Very abundant during the summer throughout the region. Earliest record (Gibraltar), May 17th, 1912. The females, which appear about a week after the males are well established, remain in good condition until the middle of September.
- 424.—*E. pasiphaë*, Esp. Not so common as the last species, nor does it last as long in good order. First taken April 21st, 1910, on the lower slopes of the Sierra Carbonera, and my latest record in the season is "San Roque, June 10th" (1911), when I took it in perfect condition.
- 434.—*Cænonympha arcanioides*, Pierr. Found only in Morocco. First taken at Tangier on September 8th, 1911; then at Cape Spartel four days later, and again at Tangier on March 22nd, 1912.
- 436.—*C. dorus*, Esp. Taken by Mr. G. O. Sloper, at Granada, in June, 1911.
- 440.—*C. pamphilus*, L. Rare. I took two specimens at Granada on Aug. 8th, 1910, and one at Tangier on March 24th, 1912.
- 457.—*Læosopis roboris*, Esp. Apparently rare. One fine specimen in perfect condition, taken at San Roque on June 11th, 1910, and one other at the Cork Woods on July 1st, 1911, where several specimens were seen at flowers of bramble.
- 460.—*Thecla spini*, Schiff. On the Rock of Gibraltar this species now seems to occur only at the "Mediterranean Stairs," on the east side, where it is not rare, in good condition, from the middle of May to the first week in June. I have not met with it elsewhere.
- 464.—*T. ilicis*, Esp., var. *æsculi*, Hb. Very abundant in the Cork Woods, at Algeciras, and San Roque, during the month of June.
- 476.—*Callophrys rubi*, L. Plentiful in the Cork Woods during the month of March; also taken at Tangier, where it does not appear to be so common, on March 23rd, 1912. Not met with on the Rock.
- 482.—*Zephyrus quercus*, L. Apparently rare in the district. One specimen taken at the Waterfalls, near Algeciras, on July 16th, 1910. Others were seen flying high around the trees.
- 495.—*Thestor ballus*, F. This strikingly marked little butterfly (the underside showing a curious combination of *C. rubi* and *C. phlæas*) is widely scattered throughout the region, in March and April, but nowhere very common, except near Campamento, where on one occasion I came upon both sexes in abundance at the beginning of May, 1910. Being late in the season, their bad condition saved them from capture for cabinet specimens.
- 512.—*Chrysophanus phlæas*, L. Very abundant throughout the region all the year round, and very variable in size and markings. The var. *eleus*, F., occurs in the summer.

- 529.—*Lampides boticicus*, L. Widely distributed throughout the region, from March to October, but apparently the finest specimens occur in May, when I have taken examples in Gibraltar measuring $1\frac{3}{8}$ " in expanse.
- 530.—*L. telicanus*, Lang. Abundant throughout the region from March to October. I have taken it in the Cork Woods as early as February 24th (1912).
- 543.—*Lycæna argus*, L., var. *hypochiona*, Rbr. Taken at Granada by Mr. G. O. Sloper (summer, 1911).
- 569.—*L. lysimon*, Hb. This little "Blue" seems to be rather uncertain in its appearance. I met with it first in a restricted locality in the Cork Woods near Almoraima, on July 2nd, 1910, and on this date and two days after, took a few examples in very fair condition, but apparently past their best; on the 29th of the same month they were quite worn and useless as specimens. The next season (1911) I visited the locality from the middle of June to the end of July, but no *L. lysimon* appeared. My surprise may be imagined when on August 16th (1911) I found it apparently a few days out, and very scarce, in a spot about 500 yards from the original locality, which I again visited, but found none. Both restricted localities were more or less boggy. On March 24th, 1912, I took a magnificent specimen near the Jews' River at Tangier. This species flies low, just above the grass, and quickly, so is difficult to capture. Judging from above dates, it is apparently double-brooded, or partially so.
- 573.—*L. baton*, Berg., var. *panoptes*, Hb. Taken at Granada by Mr. G. O. Sloper on May 6th, 1911.
- 589.—*L. astrarche*, Bgstr. Abundant everywhere, almost all the year round. It is very variable in size: the smallest I have, measuring $\frac{5}{8}$ " in expanse, I took at Granada on August 8th, 1910. The largest expands $1\frac{1}{8}$ ", taken at Cork Woods on May 23rd, 1911. The spots on upper sides of some female specimens very nearly coalesce, forming broad orange bands on each wing. On others some of the orange spots are obsolete.
- 604.—*L. icarus*, Rott. As abundant as the last species, and as a rule, frequents the same localities. I have taken the male as early as February 2nd (1910), at Gibraltar, and have seen it flying in November. The males are not so bright as those taken in England, but the females are brighter than English specimens; the orange spots on upper sides being more fully developed, but otherwise very similar to blue females I have taken at Sheerness and Queendown Warren, near Chatham.
- 610.—*L. hylas*, Esp., var. *nivescens*, Kef. Taken at Granada by Mr. G. O. Sloper (summer, 1911).
- 613.—*L. bellargus*, Rott. Apparently rare. Taken on the Sierra Carbonera on April 21st, 1910, April 6th, 1911, and two specimens on June 3rd, 1911. These correspond with English specimens taken at Queendown Warren, except there is a little more suffused blue at the base of the wings underneath.

- 614.—*L. corydon*, Hb., var. *albicans*, H.-S. This interesting variety taken by Mr. G. O. Sloper at Granada, in early summer, 1911. He states they were very plentiful in the locality where they occurred.
- 634.—*L. lorquini*, H.-S. Local. Taken at Granada by Mr. Sloper on June 11th, 1911.
- 639.—*L. melanops*, B. I took my first specimen at the lower slopes of the Sierra Carbonera, where it was flying with other "Blues," on April 21st, 1910. On April 6th, 1912, I found it fairly common flying along and across a small mountain stream which rose from near the summit of the Sierra Carbonera, and ran down over rough ground and boulders to the plain below, where the first specimen was taken the year before.
- 650.—*Cyaniris argiolus*, L. Common throughout the greater part of the district from January to October. I took my best specimens at Granada on August 8th, 1910.
- 661.—*Adopæa lineola*, O.—Taken at Granada on June 3rd, 1911, and at Campamento in June, 1912. Apparently not very common.
- 662.—*A. thaumas*, Hufn. Common throughout the region, except on the Rock, from the middle of May to the first week in July.
- 664.—*A. actæon*, Rott. This species is abundant throughout the Gibraltar district, including the Rock, where I have taken it at a place called "Poco Roco," high up above sea level (May 24th, 1910), but I have not seen it in Marocco. It flies from about the middle of May to the end of June.
- 680.—*Parnara nostrodamus*, F. I did not meet with this species until Sept. 11th, 1911 (although carefully searched for during two seasons), when I found it near Tangier, past its best, and secured six rather bad specimens. On May 27th, 1912, I saw two specimens, and captured one on some waste sandy ground near the foot of the Sierra Carbonera.
- 686.—*Carcharodus alceæ*, Esp. Common throughout the region almost all the year. My earliest record in the season is February 27th (1912).
- 687.—*C. althææ*, Hb. Very rare. Type form taken at Cork Woods on May 14th, 1910, and var. *bæticus*, Rbr., at Algeciras, on June 8th, 1912. Probably this has been passed over for the common *H. proto*, which it somewhat resembles.
- 688.—*Hesperia proto*, Esp. Two broods of this species during the year—in May and July. They remain on the wing until about the end of September. Common.
- 700.—*H. sao*, Hb., var. *therapne*, Rbr. Taken at Sierra Carbonera (earliest date, April 21st, 1910), at Algeciras, from May to July, and a specimen of what appears to be the type form, taken at Tangier on September 21st, 1910. Not seen on the Rock.
- 703.—*H. alveus*, Hb. Taken in the Cork Woods on July 4th, 1910, and at Algeciras on May 11th, 1912. Apparently local.
- 713.—*Thanaos tages*, L., var. *cervantes*, Grasl. Taken at Granada by Mr. G. O. Sloper, from June 3rd to 15th, 1911.

- 717.—*Acherontia atropos*, L.—Taken at rest in the day-time. Gibraltar, September 16th, 1911, and October 27th, 1911. A full-fed brown variety of the larva found on the Upper Rock, on November 1st, 1911, went to earth immediately and emerged on May 31st, 1912. The "Death's Head" marking on thorax brighter than in English specimens I have, otherwise similar.
- 735.—*Protoparce convolvuli*, L. Taken on October 2nd, 1911. Apparently rare.
- 749.—*Deilephila euphorbiæ*, L. Took larva on spurge at foot of the Sierra Carbonera, on May 28th, 1911. They pupated successfully and emerged on October 19th, 1911. Imago taken at light near Neutral ground on April 14th, 1912. The larvæ seen commonly in the district.
- 752.—*D. lineata*, F., var. *livornica*, Esp. This species was extraordinarily abundant at Gibraltar in 1911-12 coming to flowers of "Morning Glory" (*Convolvulus*) at the back of my house almost every evening from May 12th to end of July.
- 753.—*Cherocampa celerio*, L. The notes on the preceding species apply equally to this, except that my earliest record is October 21st (1911), and latest December 11th (1911).
- 768.—*Macroglossa stellatarum*, L. This is one of the most abundant moths in the region, both in the open and in houses, stables, etc., and is on the wing all the year round, except perhaps on dull days during the rainy season.
- 785.—*Dicranura vinula*, L. One specimen taken at rest on a telegraph pole at Algeciras (Town) Station, on May 20th, 1911.
- 888.—*Orgyia trigotephras*, B. Five males and five females bred from larvæ taken on June 10th, 1911. Two males emerged on June 28th, 1911. The remaining males and the females emerged the next day. For notes on the life-history of this species, see the introductory notes of this paper.
- 919.—*Porthesia similis*, Fuess. Bred in June, 1911, from larvæ taken at the Cork Woods. The imago taken at Algeciras on July 16th, 1910, and at Granada on August 8th, 1910. The black dots on fore-wings are very conspicuous, except on those taken at Granada, which are quite plain without a trace of dots.
- 929.—*Lymantria dispar*, L. Larvæ taken at the Cork Woods on June 10th, 1911 (see introductory notes to this paper), produced imagines from July 1st to 21st, 1911. This species is widely distributed throughout the Gibraltar district, somewhat locally, but in very great abundance where it occurs.
- 956.—*Malucosoma neustria*, L. This species swarmed at Gibraltar in the Alameda, on the evening of June 24th, 1911, attracted thither by the large electric arc lamps erected on high poles for illuminations in connection with the first Gibraltar fair. I have not found it a very common species in the district. The longitudinally blue-banded

larvæ occasionally met with in the Cork Woods, where the cocoons, which are not impregnated with the sulphury-looking powder as is the case in England, are sometimes found spun up in long grass.

- 976.—*Lasiocampa trifolii*, Esp. The larvæ of this species, which at first sight look so much like a grey variety of that of the common English "Oak Eggar" (*L. quercus*, L.), are often found on broom and other bushes. Imagines emerged on September 24th, 1910, and September 22nd, 1911. A fine male flying in the afternoon sunshine at Tangier was captured on September 10th, 1911.
- 1007.—*Taragama repanda*, Hb. A female taken on a shop window at Gibraltar on August 19th, 1910, and a fine fresh male on a lamp post at Gibraltar on October 18th, 1911.
- 1034.—*Saturnia pyri*, Schiff. The beautiful larva of this fine species was taken on fruit trees at Gibraltar on July 21st, 1911, fed up on apple leaves, duly pupated and emerged during May and June, 1912; one as early as April 4th. The imago, which appears to be rather common in the region, including Tangier, taken on the wing, and at rest, in April and May.
- 1102.—*Acronycta rumicis*, L. Imago not common. Two examples taken at rest on trunks of cork trees at Almoraima on July 1st, 1911.
- 1152.—*Agrotis pronuba*, L. Not common. Taken in my house at Gibraltar where it came to light on May 7th, 1910.
- 1185.—*A. c-nigrum*, L. Apparently rare. One specimen taken at Gibraltar at light on June 19th, 1911.
- 1344.—*A. spinifera*, Hb. Gibraltar, October, 1911. Not common.
- 1345.—*A. puta*, Hb. Very common at light in Gibraltar from February to April, and again from September to November. Apparently double-brooded and very variable.
- 1400.—*A. segetum*, Schiff. Not so common as last species, but still plentiful at light and, very occasionally, at ivy bloom in October.
- 1401.—*A. trux*, Hb. I took a fresh specimen of this species on the glass of the upper verandah at the Washington Hotel, Granada, where I was staying, on August 7th, 1910.
- 1402.—*A. saucia*, Hb. More plentiful than *A. segetum* and there is, apparently, more than one brood in the year. I have taken fresh specimens at Gibraltar, in March, May, and December. Both the reddish and the dark brown forms occur.
- 1405.—*A. crassa*, Hb. This variable species I found not uncommon at light in Gibraltar. It does not appear to last long however: my earliest record, September 20th (1911), and latest, October 11th (1910).
- 1401.—*A. obesa*, B. One specimen taken at Gibraltar on October 11th, 1910.
- 1425.—*Pachnobia (Episilia) faceta*, Fr. This species, which is very variable, is

- common at light in Gibraltar during the month of November, appearing early in the month, and lasting, in good condition, until nearly the end. I have, however, one specimen taken on June 9th (1911), and one dark specimen taken on December 15th (1911). It is recorded in former lists as *Orrhodia erythrocephala*, W.V., which it greatly resembles.
- 1435.—*Glottula pancratii*, Cyr. One specimen taken at light in Gibraltar on October 2nd, 1910. I had not the good fortune to meet with the larva, although I understand it is very common on the coast sand-hills.
- 1477.—*Mamestra trifolii*, Roth. One fine specimen taken in Gibraltar on August 15th, 1911.
- 1513.—*M. chrysozona* (*dysodea*, W.V.), Bkh. Taken on tree-trunks in Gibraltar in April and May, also in August. Not common.
- 1514.—*M. serena*, F. Gibraltar, on tree-trunks in May. Darker than British specimens. Rather scarce.
- 1553.—*Dianthœcia carpophaga*, Bkh., var. *capsophila*, Dup. One fine specimen taken in Gibraltar on April 25th, 1912.
- 1587.—*Bryophila receptricula*, Hb. Taken at light in Gibraltar. Middle of September (1911). Apparently rare.
- 1588.—*B. ravula*, Hb. Gibraltar. August and September. Not uncommon at light.
- 1592.—*B. algæ*, F.S.—Apparently rare. One taken at Gibraltar, September 24th, 1910.
- 1599.—*B. muralis*, Forst. Brightly marked examples of this type form taken at rest on tree-trunks and walls in Gibraltar during the months of August and September. The var. *par*, Hübn., and intermediate forms between this and the type were found in the same positions during July and August. Also taken at sugar and light. A not uncommon species.
- 1782.—*Antitype* (*Polia*) *dubia*, Dup. Taken at light in Gibraltar from September to November. Not uncommon.
- 1823.—*Dryobota saportæ*, Dup. Common at Gibraltar in October and November. Hibernated specimens met with in April.
- 1867.—*Brotolomia meticulousa*, L. I have met with only two examples of this common British species. One taken on curtains in house, October 11th, 1910; the other bred from a solitary larva picked up in my "patio," which emerged on March 5th, 1911.
- 1870.—*Mania maura*, L. One fine fresh example of this species netted in the day time as it flew from the edge of a shallow stream just behind Almoraima Station, in the Cork Woods. June 16th, 1912.
- 1925.—*Sesamia nonagrioides*, Lef. This *Leucania*-like species I found very scarce in Gibraltar at light in October (1910). I understand it is a common species in Algeria.

- 1947.—*Leucania (Cirphis) putrescens*, Hb. Very plentiful at light in Gibraltar, during September and October.
- 1954.—*L. l-album*, L. Rather scarce. Taken at light in Gibraltar with the preceding species.
- 1957.—*L. loreyi*, Dup. Found with the two preceding species.
- 1961.—*L. vitellina*, Hb. One specimen taken with the preceding species on October 5th, 1910.
- 1966.—*L. albipuncta*, F. A rather small race of this species occurred, rarely, at Gibraltar in May and August. Three examples taken at light.
- 1988.—(?) *Amphidrina agrotina*, Stgr. This is the nearest species that could be found in the British (Nat. Hist.) Museum. It was represented there by only one specimen from Port Sudán, Red Sea, which is smaller than my examples. I took five specimens in Gibraltar on the following dates: September 24th, 1910 (worn); September 25th, 1911 (good condition); March 7th, 1912 (good condition and larger); March 26th and April 12th, 1912. The last two, now in the Museum, about the same size as the first taken, but one rather worn.
- 1990.—*Caradrina (Athetis) exigua*, Hb. At light, Gibraltar, September and October, also May and June. My brightest specimen taken June 15th, 1912. Not rare.
- 2000.—*C. quadripunctata*, F. (*Athetis clavipalpis*, Scop.) This common British species is abundant in Gibraltar, at light, in October and March.
- 2010.—*Athetis* (?) *terrea*, Fr. (dark form.) This obscure and doubtful species I found fairly common in Gibraltar, at light, during the first three weeks in October.
- 2019.—*C. ambigua*, F. At light, Gibraltar in October and April. Not very common.
- 2039.—*Graecilipylus ephialtes*, Hb. This obscurely marked, but conspicuous, species seems to be out but a very short time in Gibraltar. I took it at light and sugar between the 19th and 28th August, 1911, but not plentifully. I did not see one specimen before or after these dates.
- 2186.—*Xylocampa arcola*, Esp. Taken at light in Gibraltar, November and February. They are darker and greyer than English specimens.
- 2250.—*Cucullia chamomillæ*, Schiff. One fine specimen taken at light in Gibraltar on February 5th, 1912.
- 2281.—*Eurhopia adulatrix*, Hb. Taken on my verandah, Gibraltar, at light on September 17th, 1911. Scarce.
- 2325.—*Heliothis peltigera*, Schiff. Common in May and June at Gibraltar, Algeciras, Sierra Carbonera, and Granada. Disturbed from grass in the daytime; also taken at light.
- 2327.—*H. armigera*, Hb. Gibraltar, September and October. Not common.
- 2378.—*Acontia lucida*, Hb., var. *albicollis*, F. Rare, taken at light in Gibraltar, May 12th, 1912.

- 2380.—*A. luctuosa*, Esp. Taken at Algeciras in May (1911), and at Tangier in September (1911).
- 2394.—*Thalpocharis (Eublemma) velox*, Hb. Three specimens taken at light in Gibraltar from September to November (1910). Apparently rare.
- 2396.—*T. lacernaria*, Hb. Taken at Granada on August 8th, 1910. This species is common, I understand, in some parts of Spain.
- 2428.—*T. ostrina*, Hb. I found this insect at Granada, Algeciras, Gibraltar, and Cork Woods, from May to October, but not commonly. Besides the type form, the abs. *carthami*, H.S., and *æstivolis*, Gn., also occur.
- 2429.—*T. parva*, Hb. Beaten out of old thistles in July and August at Gibraltar. Fairly common.
- 2431.—*T. paula*, Hb. Taken at the waterfalls near Algeciras on July 16th, 1910. Not common.
- 2437.—*T. pura*, Hb. Taken at Gibraltar in June and August (1911). Not common.
- 2557.—*Plusia chalcites*, Esp. Stray larvæ of this species were found in the summer of 1911, on plants growing in pots placed on the verandah of my house at Gibraltar. These duly pupated and produced imagines from August 11th (1911) to April 3rd (1912).
- 2562.—*P. gamma*, L. Specimens met with throughout the year in the greater part of the district, but not generally abundant. On one occasion (May 20th, 1911), however, I saw it in great profusion in an open locality to the west of Algeciras.
- 2571.—*P. ni*, Hb. One specimen taken at Gibraltar on April 13th, 1912.
- 2583.—*Metoptria monogramma*, Hb. I found this species very common at the back (East) of the Rock of Gibraltar, on a path high up, where its food-plant, *Psoralea bituminosa*, L., is plentiful. April and May. Although it flies by day it is not always easy to capture, owing to its habit of darting over the cliff, on the edge of which the path is situated. It occasionally comes to light, and I have taken it in the Cork Woods.
- 2644.—*Grammodes algira*, L. This strikingly marked and conspicuous moth, although scarce in the region, is widely distributed. It is easily disturbed from undergrowth by day and will come to sugar and light. In the year 1911 I took it in the Cork Woods by day on May 23rd, and at sugar on August 16th; on August 19th I also took it at sugar in Gibraltar. On September 12th two examples were kicked up at Cape Spartel (Marocco) but lost under boulders, after a long chase. The next day I took a fine specimen in the ante-room of my hotel at Tangier, and on September 23rd my last specimen was taken at light in my house at Gibraltar.
- 2670.—*Catocala elocata*, Esp. One specimen at sugar on September 29th, 1910. Gibraltar.

- 2671.—*C. oberthurii*, Aust. Taken near Algeciras, on August 30th, 1911, where a large number were seen darting in and out of holes in a stone wall at the foot of which a brook was running. They were difficult to get at, but two chipped specimens were secured. Also taken at Tangier on September 8th, 1911.
- 2685.—*C. conjuncta*, Esp. A specimen of this "crimson underwing" flew into a tree under which we were sheltering from the noonday sun in the Cork Woods on August 5th, 1911. It was secured and found to be rather badly chipped. There were numbers of *Catocala* about in the Cork Woods about this time, but it was not easy to get near them, owing to their shyness.
- 2713.—*C. conversa*, Esp. Taken at light near the Neutral ground, Gibraltar, August 7th, 1911.
- 2715.—*C. nymphagoga*, Esp. Taken at rest on cork tree trunks, July 1st, 1911. Almoraima.
- 2763.—*Nodaria nodosalis*, H.S. At light, Gibraltar, August 8th, 1911.
- 2797.—*Herminia crinalis*, Tr. Common in Gibraltar from April to June, and again in October.
- 2818.—*Hypena obsitalis*, Tr. Taken all the year round, mostly in houses, at Gibraltar.
- 2820.—*H. lividalis*, Hb. Taken at Gibraltar and Algeciras in waste places, during June, September, and October.
- 2861.—*Pseudoterpna coronillaria*, Hb. Occurs at Gibraltar, but not very commonly, in May, June, and July, and again in October.
- 2901.—*Eucrostis beryllaria*, Mn. Once taken at light, Gibraltar, September 26th, 1910.
- 2902.—*E. menadaria*, Th.-Mieg. Rare. Gibraltar, July 18th, 1911.
- 2907.—*Nemoria pulmentaria*, Gn. Occurs at Gibraltar in April and August, but not commonly.
- 2923.—*Acidalia nezata*, Hb. This tiny Geometer is common at Algeciras in March and April. Flies by day with the following species.
- 2927.—*A. vittaria*, Hb. Taken plentifully at Algeciras, Tangier, and Sierra Carbonera, in March, and at San Roque in June.
- 2934.—*A. ochrata*, Gn., var. *sicula*, Z. Common and flies by day at Algeciras, Cork Woods, Campamento, and San Roque during May and June.
- 2947.—*A. mediaria*, Hb. Apparently rare. Gibraltar at end of June (1910).
- 2954.—*A. subsaturata*, Gn. Also rare. Algeciras, May 25th, 1912.
- 2971b.—*A. alyssumata*, Mill. One specimen taken at Gibraltar on July 5th, 1911.
- 2978.—*A. cervantaria*, Mill., var. *depressaria*, Stgr. Gibraltar, May 1st, 1911. Apparently rare.
- 2980.—*A. camparia*, H.S. Taken at light in Gibraltar during September and October. Scarce.

2981. *A. sodaliaria*, H.S. Gibraltar, May 9th, 1912. Scarce.
- 2983.—*A. virgularia*, Hb. An abundant species throughout the greater part of the year, in the Gibraltar district. Taken also at Tangier in September.
- 3005.—*A. attenuaria*, Rbr. Rare. One specimen taken at light in Gibraltar on October 24th, 1910.
- 3010.—*A. obsoletaria*, Rbr. Taken in Gibraltar in July and August. Rather scarce.
- 3013.—*A. eugeniata*, Mill. Taken in Gibraltar, where it is double-brooded but never plentiful. The Spring brood appears at the end of March, the Autumn brood about the middle of October. Ab. *jacobsi*, Prout. Mr. Prout remarks "Among some fine large first-brood forms there are two or three of a striking aberration quite new to me. In these there is a distinct, moderately broad dark central band, recalling *A. degeneraria*. I propose for this form the name of ab. *jacobsi*, n. ab., in honour of the discoverer."
- 3014.—*A. helianthemata*, Mill. Gibraltar. Two examples at light on July 27th, 1910.
- 3020.—*A. herbariata*, F. Apparently double-brooded, but scarce. Gibraltar July and October (1910-1911).
- 3036.—*A. rubiginata*, Stgr. Two examples of this bright little *Acidalia* taken in the pine woods near San Roque on June 11th, 1910.
- 3043.—*A. degeneraria*, Hb. Taken at Gibraltar in May and June, 1911. Scarce.
- 3064.—*A. marginepunctata*, Göze. (*promutata*, Gn.) One of the most abundant Geometers on the Rock of Gibraltar, where it occurs chiefly in the autumn months.
- 3066.—*A. romanaria*, Mill. Taken at Gibraltar and Granada, where it occurs from August to November. Scarce.
- 3093.—*A. imitaria*, Hb. An abundant species in Gibraltar, occurring from March to October. Apparently double-brooded.
- 3095.—*A. ornata*, Thnbg., var. *decorata*, Bkh. One specimen at Granada (June, 1911).
- New—*A. hispanaria*, Püng. Taken at Gibraltar on July 31st, and August 4th, 1911. Mr Prout remarks: "A new species just being described from S. Spain, in Vol. IV. of Seitz's Macrolep. of the World."
- 3112.—*Ephyra pupillaria*, Hb. Cork Woods in June and August (1911-12). Not common.
- 3113.—*E. porata*, F. One specimen taken in Cork Woods, April 21st, 1912.
- 3124.—*Rodostrophia calabraria*, Z. This pretty pink-barred species taken on the lower slopes of the Sierra Carbonera on May 29th and June 3rd, 1911. It flies amongst grass during the day and is not uncommon.

- 3143.—*Sterrhra saccharia*, L. This species which is so rare in Britain, is abundant throughout the Gibraltar region during the summer and autumn months.
- 3220.—*Anaitis plagiata*, L.—Taken in March and June (1911) at San Roque and the Sierra Carbonera. Not common.
- 3230.—*Chesias rufata*, E. (*obliquata*, F.) One specimen on electric light lamp, Gibraltar, on February 22nd, 1912.
- 3344.—*Larentia fluctuata*, L. I have found this species, which is apparently double-brooded, fairly common in Gibraltar, from January to March, and again from October to December. The ab. *neapolisata*, Mill., occurs with the type form.
- 3378.—*L. fluvjata*, Hb. Taken at Gibraltar, in May (1912) and September (1911). Not common.
- 3406.—*L. ibericata*, Stgr. Occurs at same time and place as *L. fluctuata*.
- 3425.—*L. basochesiata*, Dup. Taken at Gibraltar during October and November (1910—11). Not common.
- 3511.—*Tephroclystis (Eupithecia) oblongata*, Thunbg. (*centaurcata*, W.V.). At light, Gibraltar, October 9th, 1911.
- 3556.—*T. linguata*, Mill. Gibraltar, May 5th, 1911. Apparently rare.
- 3597.—*T. scopariata*, Rbr. Gibraltar, June 2nd, 1911. Rare.
- 3648.—*T. dodoneata*, Gn. Gibraltar, April 21st, 1912. Rare.
- 3658.—*T. pumilata*, Hb. Common in Gibraltar at light, and apparently there are several broods during the year. I have taken it from March to November. The June brood is especially fine.
- 3672.—*Phibalapteryx scorteatu*, Stgr. A few examples taken at light in Gibraltar during October, 1910—11.
- 3699.—*Abraxas pantaria*, L. Very rare in Gibraltar during my stay there, but this insect may become plentiful at any time. A few examples taken amongst ash trees in the Cork Woods on August 5th, 1911. One at Gibraltar on September 25th, 1911.
- 3707.—*Stegania trimaculata*, Vill., ab. *cognataria*, Vill. One specimen beaten from a garden hedge at Mount Washington, Tangier, on September 8th, 1911.
- 3724.—*Metrocampa honoraria*, Schiff. One fine example of this "Thorn" taken in the Cork Woods on July 1st, 1911.
- 3751.—*Crocallis dardoinaria*, Donz. Taken in Gibraltar at light in October and November, 1910—11. Scarce.
- 3826.—*Biston strataria*, Hb. One fine specimen taken at light in Gibraltar on April 28th, 1911. It is brighter and more distinctly marked than the British specimens I possess.

3843.—*Hemerophita japygiaria*, Costa. This variable and local species is fairly common in Gibraltar, where there appears to be a continuous brood during the year. I have taken fresh specimens in February and during each month from June to December.

3914.—*Tephronia codetaria*, Obth. One example taken off a tree-trunk at the waterfalls near Algeciras on July 16th, 1910.

(To be continued).

DESCRIPTION OF A NEW SPECIES OF *EURYPHENE* FROM
WEST AFRICA.

BY G. C. DUDGEON, F.E.S.

The insects described here belong to the *Euphadra*-like section of the genus, but are distinct from any of the described forms. They correspond with *E. barombina*, Staud., in having the apex of the forewing with a white spot in both sexes, and in the cell of the same wing being crossed by two blue or greenish bars, but they differ in having a distinct sub-apical ochreous bar across interspaces 4, 5, and 6 in both sexes, and in the inner area of the forewing and disc of the hindwing being steel-blue or greenish, the last with a whitish or yellowish patch in the middle of interspaces 4—6. The underside of the hindwing bears a sub-quadrate whitish patch in the middle of interspace 7, which marking is not present in *E. barombina*.

EURYPHENE ASHANTINA, *sp. n.*

♂. Forewing black, more or less sprinkled with blue or greenish scales below the costa; cell crossed by two blue or greenish-blue bars followed by an indistinct blue or purplish one beyond the discocellulars; a subapical well-defined ochreous bar from vein 7 nearly reaching vein 4, widening below the middle of interspace 5 and bearing a black spot upon it below vein 5; a sub-triangular steel-blue or greenish patch having one side extending along the inner margin from one quarter distance from the base to about 3 mm. from the outer margin, and the apex reaching to vein 5 where it is suffused into the subapical ochreous bar; the bases of all the interspaces black; indistinct blackish marks on the blue or greenish area between the veins—an oval one in interspace 3 and strigiform ones in 2 and 6; a suffused blackish border to the outer margin about 3 mm. in width and a quadrate white apical spot. Hindwing with the base and outer margin black, the latter about 3 mm. in width and inwardly suffused with indigo-blue, broadest towards the apex; disc of wing steel-blue or greenish with a whitish or ochreous patch in interspaces 3—6 crossed by blue or greenish lines of scales between the veins; cell with two round black spots in the middle, the upper the larger, and a divided black mark on the upper part of the discocellulars.

♀. Forewing with the apex produced, hindwing somewhat quadrate in

outline. Forewing with the blue bars in the cell indistinct; subapical dark ochreous band extending from vein 7 to near the middle of interspace 2, angled outwardly at vein 5 and bearing blackish streaks upon it between the veins in the middle of interspaces 3 and 4; triangular patch on the middle of the inner margin blue, or greenish-blue, reaching to middle of interspace 2, and leaving a larger black area at the bases of the interspaces and a broader black outer marginal band than in the male. Hindwing blue, or greenish-blue, with a broad black or indigo marginal band; a large pale blue or pale yellow patch upon the disc beyond the cell from vein 3 to above vein 7; two rounded black spots in the middle of the cell and a divided black mark on the discocellulars. Underside of both sexes greenish, suffused with dusky scales on the outer areas; the subapical and discal areas appearing as ochreous suffusions; cell of the forewing with a subbasal dark spot followed by two black ring marks placed one above the other, and an irregularly shaped ring spot on the discocellulars; hindwing with two dark ring spots in the middle of the cell and a divided dark mark on the discocellulars.

Both sexes may have the colour scales on the upper side steely-blue or greenish, but when the latter is found, it is never of the yellow or golden green tint of the allied species.

Expanse: ♂, 74 mm. ♀, 90 mm.

Habitat: Ashanti; Gold Coast. The types are in coll. Dudgeon, but co-types are being presented to the British Museum collection.

"Honeyden,"

North Cray, Kent: ~

July 29th, 1913.

ON SEMI-APTEROUS FEMALES IN *LEPIDOPTERA*.

BY G. V. HUDSON, F.E.S.

I have to thank the readers of the Entomologist's Monthly Magazine for the kindly interest they have taken in my paper on the above subject, and desire now to offer a few supplementary remarks on the subsequent communications which have appeared.

Dr. Chapman's explanation is in agreement with mine in that both affirm that the apterous or semi-apterous condition of the female has been acquired to keep the female on its food-plant, or in the case of the Psychids, *Orgyias*, *Aretiids*, &c., on its cocoon. The latter explanation, which is wholly due to Dr. Chapman, is, I think, a true one, and really assists my theory, as it is precisely those species which deposit their eggs on the cocoon which do not appear in winter (*Metacrias*, *Æceticus*, *Orophora*, *Scoriodyta*, &c., in New Zealand, and *Orgyia*, &c., in England). The remaining semi-apterous female

Geometers and Tineids, enumerated by me, nearly all appear during cold periods, and, according to my theory, would be liable to perish from cold before depositing their eggs if they were able to leave the food-plant for a lengthened period. Dr. Chapman contends that a female benumbed with cold would not be able to deposit its eggs. This has not, so far as I am aware, been proved at present, but it is known that females moribund from other causes can deposit their eggs, and this is often demonstrated by the behaviour of half dead female insects on the setting board. Dr. Chapman considers that the low temperatures ruling in winter prevent, to a great extent, the emanation of the characteristic odours of plants, and that if winged the females would be unable to find the food-plant. I consider that the wingless condition has been acquired to keep the female on the food-plant, otherwise she might stray away and perish with cold before laying her eggs. This is the essential difference between our two explanations, and future experiment and investigation must determine which is correct.

Mr. Porritt's remarks as to the conveyance through the air of apterous or semi-apterous females by their males are interesting, but unfortunately are not supported by sufficient facts; the balance of evidence, as cited by Dr. Chapman, being in the reverse direction. As already pointed out in my paper, it is I think fairly evident that the disabilities these insects labour under as regards means of dispersal are largely neutralized by the fact that they all feed on very common and widely distributed food-plants, and it is therefore quite conceivable that the needful distribution may be sufficiently effected by the insects crawling from tree to tree, either as larvæ, during the summer months, or as perfect females during mild periods in winter.

I cannot in any way follow Dr. J. H. Wood's views in regard to wingless Geometers. In New Zealand, several species of Geometers with fully developed wings appear during the winter months, and occasionally may be observed resting on tree trunks. The cold here is fairly severe, a temperature of 40 degrees Fahrenheit with drenching rain and hail driven by a fierce southerly gale being often experienced during the months of May, June, July, and August. Yet winter Geometers with ample and flimsy wings occur during those months, and our single species of *Hybernia* with its semi-apterous female is a great rarity in most parts of New Zealand, although some of the semi-apterous female Tineids are common during July and August. I have observed the following species of winged Geometers in fair

numbers during May and June, and occasionally in July and August: *Chloroclystis dryas*, *C. indicataria*, *Venusia verriculata*, *Xanthorhoe rosearia* (common), *X. lucidata*, *Selidosema dejectaria*, *S. feuerata*, *Declana floccosa* (common), *Epirranthis alectoraria*, *E. hemipteraria*, and *Drepanodes muriferata*. It may I think be safely assumed that, with the exception of *C. dryas*, *X. lucidata*, and *X. rosearia*, which are winter species proper, all these insects hibernate in the imago state

“Hillview,” Karori, Wellington,
New Zealand:

June 10th, 1913.

A NEW *LISTROPSYLLA* AND THE ♂ OF *CTENOPHTHALMUS*
CALCEATUS, WATERST. (1912), BOTH FROM SOUTH AFRICA.

(PLATE V.)

BY THE HON. N. CHARLES ROTHSCHILD, M.A., F.L.S.

The Rev. James Waterston has requested me to publish descriptions of the two species of flea referred to above, which he received from the Rev. R. Godfrey. The type specimen of the new species Mr. Waterston has kindly allowed me to retain.

1. *LISTROPSYLLA CHELURA*, *spec. nov.* (Pl. V, figs. 1 and 2.)

♂ ♀. Near *L. dolosus*, Roths. (1907), from British East Africa and Uganda. The pronotum, however, bears only two rows of bristles, the comb contains 20 spines, the first mid-tarsal segment is half as long again as the second, and the modified abdominal segments also are different.

The mesonotum has fewer bristles on the sides between the base and the first row; the mesopleura bear from 11 to 16 bristles and the metepimerum from 15 to 20. The 7th abdominal sternite has from 9 to 12 bristles in the ♂ most of which are small, and 34 in the ♀.

MODIFIED SEGMENTS—♂. The eighth sternite (Pl. V, fig. 1, viii, st.) has far more bristles than in *L. dolosus*, there being a sub-apical row of four or five or six very long ones, and in between and proximally to that row about 20 smaller bristles. The clasper and ninth sternite agree in the general outline with those of *L. dolosus*, but are much broader, and their structure is very different in the detail. The clasper somewhat resembles a boot with the sole and heel directed distad and the toes upwards. The sole bears a row of thin bristles and the heel one large bristle accompanied by a smaller one. The movable process F. (pl. V, fig. 1 F) is curved as in *L. dolosus*, but broader, and the large bristle placed at its ventral margin is much longer and thicker. The ninth sternite (IX.st.) is particularly characterised by the horizontal arm bearing beyond the centre, where it is feebly elbowed, two very strong bristles,

which are about one-seventh shorter than the diameter of the broadest portion of process F. ♀. The eighth tergite (Pl. V, fig. 2) has a row of four bristles from the stigma downwards, and bears on the widened ventral portion 14 lateral bristles, and 12 or 13 apical marginal ones. The ninth sternite has only two or three small bristles on the sides. The head of the *receptaculum seminis* is almost exactly spherical.

Two ♂♂ from Pirie, King William's Town, South Africa, off *Arvicanthis pumilio*, and one ♀ from the same locality off *Mysorex tenuis*, all three specimens sent by the Rev. R. Godfrey. Type in my collection.

2. CTENOPHTHALMUS CALCEATUS, WATERST. (1912).

♀ *Ctenophthalmus calceatus*, Waterston, Ent. Mo. Mag. (2) xxiii, p. 27 text, fig. (1912) (Pirie, S. Africa).

A close ally of *Ct. ansorgei*, Roths. (1907), from Angola, but the modified abdominal segments are different.

In the ♂ the eighth sternite is very broad at the apex; the clasper (Pl. V, fig. 3, Cl.) is produced into two lobes (P) of which the upper one bears three long bristles. The lower lobe resembles a boot with the sole directed distad and the toes upwards, there being one long bristle at the "heel." The movable process (F) is very broad, and, at the apex, very strongly rounded, the apex being more obtuse in one of the two specimens before me than in the other. The process bears the usual row of short, stout, pointed bristles at the apical edge, and has six slender bristles, three long and three short, above the centre of the distal (= ventral) margin. The ninth sternite is so obscured in the two examples that the outline of the ventral arm cannot be made out distinctly. The segment appears to resemble that of *Ct. ansorgei*.

Two ♂♂ from Pirie, King William's Town, July 24th, 1912, off *Arvicanthis pumilio*, sent by the Rev. R. Godfrey. Mr. Waterston has kindly given me one of the specimens for my collection.

EXPLANATION OF PLATE V.

Fig 1. *Listropsylla chelura* ♂, clasping organs; VIII st. and IX st. = 8th and 9th sternite, Cl. = clasper, M = manubrium, P = process of clasper, F = movable process.

Fig. 2. *Listropsylla chelura* ♀, abdominal segments VII and VIII.

Fig. 3. *Ctenophthalmus calceatus* ♂, clasping organs.

Arundel House,
Kensington Palace Gardens, London :
June, 1913.

SEXUAL DIMORPHISM IN A SPECIES OF *SCIARA*.

BY F. W. EDWARDS, B.A., F.E.S.

(Published by permission of the Trustees of the British Museum.)

At the end of February of the present year, I received a number of Sciarid larvæ which had been found by Miss F. Collins in her garden at Clapham, near Worthing, Sussex. The larvæ were practically full grown when received; they were about 8 mm. long, yellowish in colour, and with a double row of oval lemon-yellow granules along the dorsal surface arranged in groups of six on each of the last six or seven abdominal segments. The larvæ pupated soon afterwards, and spent nearly three weeks in the pupal state, at the end of which time I was fortunate enough to hatch out some flies, 4 ♂ and 8 ♀. It was at once noticeable that all the males were small spidery creatures with reduced wings and quite incapable of flight, but as there was a possibility that out of so small a number, all the males might have happened to be cripples, I decided to wait until further evidence was forthcoming before deciding that this was a peculiar case of sexual dimorphism.

The additional evidence was available much sooner than was to be expected, for to my great surprise and pleasure, Mr. W. L. Distant brought me a lot of exactly similar larvæ on April 23rd. These were dug up by Mr. Distant in his garden at Norwood, where they were feeding in immense numbers on decaying woody roots; Mr. Distant told me that he could easily have collected a gallon of them! These larvæ again were practically full grown. Before pupating they formed into a procession and explored the boundaries of their tin, but finding themselves unable to migrate, or perhaps thinking they had done so, they all pupated in a mass, forming themselves a common covering of silk and minute particles of rotten wood. After a fortnight spent in the pupal stage, the flies emerged about May 20th, to the number of about 50 ♂ and 150 ♀. As was the case with the original specimens from Sussex, the males were all much smaller than the females and with reduced wings; moreover, the wings were not only reduced in size, but the neuration was degraded in an almost constant manner. The males were absolutely incapable of flight; the females, though they could fly when compelled to do so by being dropped, never attempted of their own accord to use their wings, the disinclination probably being due to the size and weight of the abdomen. The wings of the male, in life, were about two-thirds as long, those of the female about the same length, as the abdomen; after death the

male abdomen shrivels somewhat. It may be mentioned that the eggs appear to be laid in long strings; some females were found dead with strings of 20—30 bright yellow eggs protruding from the abdomen. The male and female pupæ can readily be distinguished by their size and also by the length of their wing cases; these are much shorter (relative to the length of the leg-cases) in the male than in the female.

Although this is a remarkable instance of sexual dimorphism, owing to the reduction of the wings occurring in the male and not the female sex, it is not the only one on record in the genus *Sciara*. Lundbeck describes a species (*S. biformis*) from Greenland, in which the male is smaller than the female and has the wings abbreviated, but in *S. biformis* the neuration is not so degraded as in the present species. Kieffer describes a more normal case of dimorphism in *S. membranigera*, in which the male has normal wings, and the female has them rudimentary, without any distinct venation. In other genera of the Sciaridæ (*Epidapus*, *Bradysia*, *Peyerimhoffia*) various forms of reduction of the wings occur. One of the most interesting cases is that of *Peyerimhoffia (Epidapus) scabiei*, Hopkins, in which the female is destitute of wings and halteres, while there are two forms of the male, one with abbreviated and the other with normal wings.

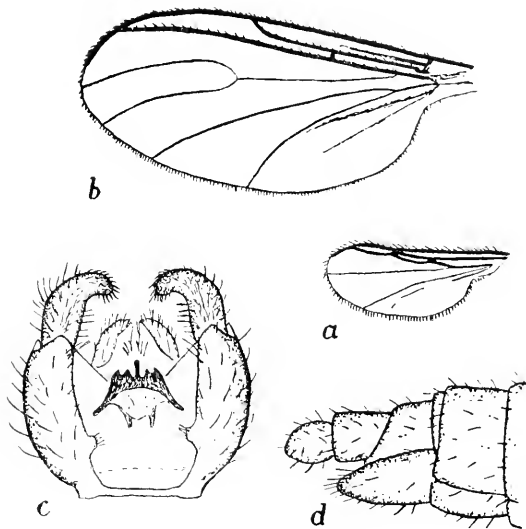
I have with some reluctance come to the conclusion that our species is undescribed. Both by Winnertz' monograph and Grzegorzek's table (Berl. ent. Zeitschr., 1884, p. 49) it would appear to lie nearest to *S. virgultorum*, Winn., but that species has lighter legs, and moreover its male, which has been subsequently described by Strobl (Wien. ent. Zeit., XIX, p. 96), has normal wings. *S. biformis*, Lundb., differs in several details of coloration; the male has different venation, and the female has hyaline wings. The present species belongs to *Sciara* in the restricted sense: it has three-jointed palpi, face not produced, eyes slightly hairy, simple claws and typical venation in the female. I therefore describe the species as follows:—

SCIARA SEMIALATA, sp. nov. Body, ♂, length 1·8–2 mm.; ♀, 3·0–3·3 mm.; wing length, ♂, 1·4 mm.; ♀, 3·0 mm. Division II, A. 1. B. b of Winnertz.

Whole insect black, except for the base of the halteres, and (in life) the sides and incisures of the abdomen, which are yellowish; and the front femora and coxæ, which are dark brown. The thorax is distinctly, but not conspicuously, shining. The wings, especially in the female, are smoky black, darker towards the anterior margin; in the male a little shorter than the short, thick abdomen; in the female as long as the more elongated abdomen. Venation as in the figures: in the female R¹ ends very slightly but constantly before the base of the fork of the media; the "cross-vein" may be exactly in the

middle of the first longitudinal (R^1), or very slightly beyond it, and in very rare instances the base of the upper branch of the media is defective; in the male the media is invariably simple, and R_s always touches the apex of R^1 ; the cubitus may be entirely simple or may have the lower branch more or less present, but never complete. The antennæ in the female are slightly shorter, in the male a little longer, than the head and thorax together.

Type in the British Museum, from Norwood, Surrey (*W. L. Distant*); paratypes in the British Museum, the Cambridge Museum, and in Mr. J. E. Collin's collection.



SCIARA SEMIALATA, sp. n.

- (a) wing of δ , $\times 18$; (b) wing of ♀ , $\times 18$; (c) hypopygium of δ from beneath, $\times 66$;
(d) apex of ♀ abdomen from the side, $\times 66$.

British Museum (Natural History):

July, 1913.

Note on the Chrysomela sanguinolenta and marginalis of British collections.—My friend Dr. Bergroth has just called my attention to a paper by Mr. Tor Helliesen on *Chrysomela sanguinolenta*, L., and its allies, written in Esperanto and published in the "Aarshefte" of the Stavanger Museum for 1911 (issued in 1912), pp. 1-16, pls. i-iii. This paper affects the names or synonymy of our two British forms, and an extract from it will interest Coleopterists. The four species recognised are: 1, *sanguinolenta*, L., Thoms. (*nec* Küster, Weise); 2, *gypsophilæ*, Küst. (with vars *gaubili*, Lnc., and *lucidicollis*, Küst.); 3, *küsteri*, n.n. (= *sanguinolenta*, Küst., Weise); 4, *crassicornis*, n. sp. No. 1 is the insect known to us under the name *marginalis*, Duft. (*distinguenda*, Steph.); Nos. 2, 3 do not, I believe, occur in Britain; No. 4, *crassicornis*, is the *C. sanguinolenta*

of our collections. The distribution of the last-mentioned insect is given as S.W. Norway, Orkneys, and Shetland, on sea-coast and on mountains, in zone of *Armeria maritima*. Figures of the elytral sculpture, marginal stripe (in colour), and genitalia are given in each case, and specimens of each species, determined by the author, are to be seen in the British Museum. This is the first entomological paper I have seen in Esperanto, and it is perhaps a question whether such descriptions should be recognised!—G. C. CHAMPION, Horsell, Woking: August 19th, 1913.

Omalium cæsum, Grav., and its supposed variety, *tricolor*, Muls. et Rey.—In his "Supplement" to the "British Coleoptera," p. 83, Canon Fowler definitely decides that the form of *Omalium* we have long known as *O. nigriceps*, Kies., but which is really the var. *tricolor*, Muls. et Rey, of *O. cæsum*, Grav., must be regarded as a variety of *O. cæsum*, and in this he follows the latest European Catalogue. Taking into account the colour alone of these two forms, I was not at all inclined to agree to this opinion. The colour in *O. tricolor* appears to be quite constant, and I have never seen a specimen with intermediate colouring. Nor could it be regarded as a light form of *O. cæsum*, as the head is black in both, with this, I think, very important distinction, viz.: in *O. tricolor* the ocelli are red; also the colour in other members of the genus is very slightly variable. On critically examining my series of the two forms, I was somewhat surprised to find a quite marked and constant distinction in the punctuation of the elytra, that of *O. cæsum* being considerably finer and closer than in its ally. This character, combined with the colour distinction, seemed to me to settle the matter, but I thought it best to dissect out the male genitalia in each case, and, as I hoped, found two very distinct organs. The central lobe of the ædeagus in *O. cæsum* is parallel-sided, and abruptly conical near the apex, which ends in a very sharp point. If viewed from the side, the apex has very much the appearance of the side view of the ædeagus in *Gabrieus cyphonotus*, Joy (*ante*, pl. I, fig. 4). In *O. tricolor* the central lobe is gradually narrowed from the base towards the tip, which is somewhat blunt; in side view only the extreme tip is very slightly reflexed.—NORMAN H. JOY, Bradfield: August 11th, 1913.

Some Coleoptera from Sutherland.—A short trip to Sutherland during July, although not resulting in the capture of any rarities has so considerably extended the known range of several species of *Coleoptera* that I think the result should be recorded. July 11th was spent on the banks of the River Shin, where many nests of *Formica rufa* were seen. The next day, after a short examination of the shores of Loch Shin, was chiefly spent in travelling to Tongue on the north coast. I had intended stopping at Altnahara to explore the fine mountain Ben Clibreck (3150 ft.), but found the hotel full. An excursion up Ben Loyal (2500 ft.) on July 13th produced remarkably few beetles, *Anthophagus alpinus*, Pk., and *Lesteva sharpi*, Rye, being the only mountain forms seen. Unfortunately the next day, spent at Altnahara, was wet, and the mountain could not be attempted, but a few beetles were taken in

flood rubbish. Again mountain and northern forms were quite uncommon. In the following short list only those species are included which are not recorded by Fowler as occurring generally in Scotland, or only from localities considerably further south.

Helophorus porculus, Bedel (L. Shin and Altnahara); *Oxyptoda hæmorrhœa*, Sahlb., and *Notothecta flavipes*, Gr., from nests of *Formica rufa*, R. Shin; *Microglossa nidicola*, Fairm. (R. Shin; Sand Martins were common considerably further north); *Atheta magniceps*, Sahlb. (L. Shin); *A. deformis*, Kr. (Altnahara); *A. divisa*, Märk. (R. Shin); *Conosoma littoreum*, L. (R. Shin); *Quedius puncticollis*, Th (R. Shin); *Stenus carbonarius*, Gyll. (L. Shin); *Omalius grandiloqua*, Luze (R. Shin), *O. heeri*, Heer (R. Shin); *Acrulia inflata*, Gyll. (R. Shin); *Agathidium seminulum*, L. (R. Shin; this is possibly a new record for Scotland, as I believe the early records of this species refer to *A. badium*, Er.); *A. atrum*, Pk. (Altnahara); *Enicmus histrio*, Joy and Tomlin (L. Shin); *Micropeplus porcatu*s, Pk. (R. Shin); *Serica brunnea*, L. (Altnahara); *Malthodes flavoguttatus*, Kies. (Altnahara); *Clythra quadripunctata*, L. (R. Shin).—
NORMAN H. JOY.

The food-plant of Ceuthorrhynchus querceti, Gyll.—The food-plant of the above insect has been stated, somewhat doubtfully, as *Raphanus raphanistrum*, Linn. I found it, with the larva, at Stalham, Norfolk, this July, on *Nasturtium palustre*, De Cand., which is undoubtedly its food plant, although it may possibly feed on *Raphanus* also, but this plant was not to be found here. The weather during July was very cold at the Broads, which may account for the scarcity of beetles. With the exception of a few *Silis ruficollis*, *Telephorus thoracicus* and *Cercus bipustulatus*, nothing else occurred worth bottling.—
E. A. NEWBERY, 13, Oppidans Road, N.W.: August 8th, 1913.

Re-occurrence of Rabocerus bishopi, Sharp, in Scotland.—I was fortunate enough a few days ago to beat a small series of this species out of dead branches of birch, at the spot near Grantown, where it was first taken by Dr. Sharp and Mr. Bishop in 1909. I searched in vain for the insect in 1910, 1911, and 1912, but could never find any birch boughs in suitable condition. At the same time I secured a single specimen of *Magdalis carbonaria*, L.—T. HUDSON BEARE, Malvern, Nethy Bridge, N.B.: August 7th, 1913.

Colias edusa, &c., in Kent.—Immigrant specimens of *Colias edusa* have been reported in June from many places in the South of England, and even from localities a long way inland; thus my friend Mr. G. Claridge Druce, F.L.S., tells me that he saw one on the roadside between Ardley and Brackley, actually on the border line of Oxfordshire and Bucks. An August brood of this interesting butterfly was therefore to have been expected, and it is satisfactory to find that the cool and gloomy weather so prevalent during the last two months has not prevented its appearing in considerable numbers. In the Isle of Sheppey lucerne and clover are not grown as much as was formerly the case,

and much of what there is has already been mown down; but since the 16th of this month I have met with *C. edusa* all over the Island, every little patch of lucerne in bloom holding one or more specimens, and in some of them it may be called quite common, while sporadic examples turn up on the cliffs and elsewhere. Even on cool dull days the butterfly may be "walked up," often from the bare ground or stubble fields adjoining the lucerne, and when thus disturbed is as wild and difficult to secure as in the brightest sunshine. Females as yet are rare, only about half-a-dozen having been seen, and so far *C. hyale* has not been observed. Travelling yesterday to Ramsgate, I saw a good many specimens of *C. edusa* on the railway banks beyond Whitstable. Of other butterflies, fresh specimens of *Pyrameis cardui* and *atalanta* are now appearing, but are still few and far between; while *Vanessa urticae*, which has been phenomenally scarce this year in the Oxford district, appears to be equally so here. *Eremobia ochroleuca* is still to be found at rest on the knapweed flowers as of old, but is now mostly the worse for wear.—JAMES J. WALKER, Sheerness: August 21st, 1913.

Pyrameis atalanta in North Mainie (Shetland).—On June 13th and on two subsequent days, a fine example of the "Red Admiral" (*Pyrameis atalanta*) frequented the Manse garden at Ollaberry. On the 13th the insect was under close observation for nearly two hours, and struck me by its fresh appearance. This seems notable in a specimen which must surely have been but a casual immigrant. Since coming here in 1910, the only butterflies the writer has seen have belonged to the Vanessid group. *Pyrameis cardui* occurred at Ollaberry, 25.vii.11 (Ent. Mo. Mag. p. 217, 1911), and one or two examples were noticed in the following year at about the same time. During the same summer (July, 1912) *Aglois (Vanessa) urticae* came under our notice once near Girsta, by the wayside, some ten miles north of Lerwick.—JAMES WATERSTON, The Manse, Ollaberry, Shetland: August, 1913.

Note on two species of the genus Lophyrus.—In his notes on this genus, the Rev. F. D. Morice mentions *L. virens* as received from me. These were bred from two larvæ taken by my brother in Berkshire, and are the only specimens I possess. It has not, to my knowledge, occurred in Essex. Last season I reared both sexes of *L. sertifer* from larvæ found near Colchester (found May 26th, emerged in September), and a single ♂ of the same species was taken by my father many years ago.—BERNARD S. HARWOOD, 62, Station Road, Colchester.

Dufourea halictula (Nyl.) at Byfleet, Surrey.—The first and, up to the present, the only capture of this Aculeate in Britain (a single ♀ taken by Mr. Silverlock from a Woking sandpit), was recorded by the late Ed. Saunders in the Ent. Mo. Mag. of January, 1910. In June last I found a ♂ of this species among some miscellaneous captures, and afterwards met with this sex in increasing profusion for some days, usually at rest on stones or low growing plants. Within a week the ♀ ♀ appeared in equal abundance. As Mr. Saunders has stated with reference to *rufaris* our only other *Dufourea*, which still remains one of the great rarities among British bees—that nothing is known of

its habits, and as the remark probably applies equally to *halictula*, it may be well to record that the ? ? were constructing their burrows between stones chiefly on a hard sandy pathway, less frequently in an adjoining sandy moss-covered bank, and provisioning them with pollen collected from *Jasione montana*. The insect is extraordinarily Halictiform and might easily be passed over for *H. minutissimus* (which species, however, looks considerably blacker than *halictula* owing to the much more profuse grey pubescence of the latter), and I am inclined to think that it will prove less rare than has been thought now that its food plant is known. Mr Saunders mentions that he recognised *D. vulgaris* by its curious "wriggling" flight; that of *halictula* (and its method of entering a flower), however, appears to me to coincide exactly with that of any of the smaller *Halicti*. H. Frieze (Die Bienen Europa's) states that he has observed *D. halictula* on "Dolden," i.e., Umbellifers.—C. H. MORTIMER, Royton Chase, Byfleet: July 16th, 1913.

Societies.

THE SOUTH LONDON ENTOMOLOGICAL AND NATURAL HISTORY SOCIETY: Thursday, June 26th, 1913.—Mr. A. E. TONGE, President, in the Chair.

Mr. Main exhibited pupa and living larva of *Parnassius apollo* and the larva of the Tiger beetle, *Cicindela sylvatica*, from near Meiringen, Switzerland. Mr. Coxhead, galls on leaves of beech, and coloured drawings of the same; they were of the Cecidomyid, *Mikiola fagi*. Mr. A. E. Gibbs, a series of *Euchloë cardamines* from near Messina, Sicily, and pointed out that they were small compared with average British specimens and were known as *ab. turritis*, in which the apical blotch is not extended beyond the discal spot. Mr. Main said that *Phyllotoma aceris*, the jumping saw-fly, was now common in many places in the larval state. Messrs. Sich, Adkin, Edwards, Barrett, and Dr. Chapman made remarks on the season.

Thursday, July 10th. The President in the Chair.

Mr. Main, a species of tick from a tortoise of Maroccan origin, the males were small and blackish in colour, while the female was many times larger and of a delicate pale slate colour; also cases of the Psychid, *Acanthopsyche opacella*. Mr. Adkin, series of *Celastrina argiolus* (a) reared in July and August, 1912, and (b) reared in April and May, 1913, from the same lot of larvæ from Eynsford; (c) reared from Eastbourne larvæ in April and May, 1913. The two spring series were much alike and the females had much less of the heavy bordering of the summer emergence. Mr. Edwards, several species of *Papilio* of the *P. ægeus* group from the Australian region, including the rare *P. gambrius*. Mr. Blair, a nest of the wasp *Polistes gallica* from Meiringen, with the living female. Mr. Turner, for Mr. Carr, a bred *Cerostoma scabrella*. Mr. Barrett and others remarked on the comparative sizes of the captures of other seasons with the present. Some members considered that imagines were smaller this year, while others thought that they were quite up to the average size.—HY. J. TURNER, Hon. Secretary.

ENTOMOLOGICAL SOCIETY OF LONDON: *Wednesday, June 4th, 1913.*—
MR. G. T. BETHUNE-BAKER, F.L.S., F.Z.S., President, in the Chair.

The President announced that His Majesty the King had been graciously pleased to become Patron of the Society. The question of seeking the addition of "Royal" to the title of the Society was postponed to the October Meeting.

The death of Lord Avebury, the oldest Fellow of the Society, was announced, and also that of Mr. Philip de la Garde.

Captain F. Sitwell, Wooler, Northumberland, was elected a Fellow.

Mr. C. O. Waterhouse exhibited a blue variety of the ♀ of *Rhynchites encovirens*, a form very rare in this sex. Dr. F. A. Dixey a ♂ and ♀ of *Talochila unimaculata*, Rüb., with a pair of *T. stigmatica*, Stgr., for comparison. Mr. Donisthorpe, a fine series of *Claviger longicornis*, Müll., with its proper host *Lasius mixtus*, together with the common *C. testaceus*, with its principal host *L. flavus*, for comparison, as well as three species of *Acari* taken at the same time. Mr. W. C. Crawley, ♂ and ♀ ♀s of *Anergates atratulus*, Sch., taken for the first time in Britain in July, 1912. Prof. Poulton called attention to the resemblance in the parts of the underside exposed during rest between many species of *Melitæa* and certain Palaearctic *Hesperidiæ*, and exhibited specimens illustrating this fact sent by M. Avinoff from the Trans-alai Mountains. Also a ♀ of the Asilid *Heligmoneura brunnipes*, F., and the Onco did *Physegaster maculatus*, Macq., sent by Dr. Seitz from Algeria. Also, on behalf of Dr. Seitz, the Fossorial model *Pepsis sapphirus*, Pal. de Beauv., and two of its mimics the Reduviid bug *Spiniger ater*, Lep. et Serv., and the Locustid *Scaphura nigra*, Thunb., var. *vigorsi*, Kirby. Mr. F. Fryer, a light specimen of *Tæniocampa gracilis*. Comm. Walker, on behalf of Dr. Perkins, a specimen of *Thalpocharis ostrina*, taken at Paignton on June 1st, apparently freshly emerged. Dr. G. D. H. Carpenter, a synepigonic series of *Papilio dardanus* from a parent of the *planemoides* form. The President, a single batch of *Ucastrina argiolus*, some of which had emerged as the autumn form last year, and the rest as the spring form this spring. Dr. Jordan, several insects which had been found dead at Buenos Ayres, the proboscis in each case being caught in the flowers of *Araujia albans*. Also, on behalf of Dr. Seitz, the stridulating apparatus of a Chinese Noctuid chrysalis part of which is on the pupa and part in the cocoon. Dr. G. B. Longstaff, a simple apparatus for turning over several butterflies at once to display the two sides alternately. Also a small bee with a Coleopterous larva partly on and partly within its abdomen.

The following papers were read: "On the relationship between certain West African Insects, especially Ants, Lepidoptera and Homoptera," by W. A. Lamborn, M.R.C.S., L.R.C.P., F.E.S., with an Appendix containing descriptions of New Species, by G. T. Bethune-Baker, Pres. Ent. Soc., W. L. Distant, J. Hartley Durrant, and Prof. A. Newstead, F.R.S. "Supplementary notes on new or little known forms of *Acræa*," by H. Eltringham, M.A., F.Z.S., with a description of a new form of *Acræa encedon*, by Prof. E. B. Poulton, D.Sc., F.R.S.
—GEO. WHEELER, *Hon. Sec.*

Scale of Charges for Advertisements.

Whole Page.....£3. Half Page.....£1 11s. 3d. Quarter Page.....17s.

Lowest charge, 7s. up to 5 lines: 1s. per line afterwards.

Repeated or continuous Advertisements per contract.

There is no charge for Lists of Duplicates and Desiderata.

All payments and applications for the above should be made to

R. W. LLOYD, I. 5, Albany, Piccadilly, W.

NOW READY,

THE ENTOMOLOGIST'S MONTHLY MAGAZINE, Vol. XXIII, New Series (Vol. XLVIII), strongly bound in Cloth. Price 7/-.

Covers for binding, 1/- each.

London: GURNEY and JACKSON, Paternoster Row. E.C.

LANCASHIRE AND CHESHIRE ENTOMOLOGICAL SOCIETY.—Meetings the third Monday in each Month, October to April. *Hon. Sec.*, W.M. MANSBRIDGE, 4, Norwich Road, Wavertree, Liverpool.

WATKINS & DONCASTER, Naturalists,

Keep in stock all Articles for Entomologists, Ornithologists, Botanists, &c.: Umbrella Net, 7/-; Folding Cane or Wire, 3/6, 4/-, 4/6; Plain Ring Net, 1/3, 2/-, 3/-; Pocket Boxes, 6d., 9d., 1/-, 1/6; Store Boxes, with Camphor Cells, 2/6, 3/6, 4/-, 5/-, 6/-; Zinc Pocket Boxes, 9d., 1/-, 1/6, 2/- Setting Boards, from 5d. to 1/10; Complete set of 14 boards, 10/6; Breeding Cages, 2/6, 4/-, 5/-, 7/6; Sugaring Tins, 1/6, 2/-; Sugaring Mixture, ready for use, 1/9 per tin; Setting Houses, 9/6, 11/6, 14/-; Glass Topped and Glass Bottomed Boxes, from 1/- per doz.; Zinc Killing Boxes, 9d., 1/-; Coleoptera Collecting Bottles, 1/6, 1/8; Collecting Box, containing 26 tubes (very useful for Coleopterists, Microscopists, &c.), 4/6; Brass Chloroform Bottle, 2/6.

Improved Pocket Pupa-digger in leather sheath (strongly recommended), 1/9; Steel Forceps, 1/6 to 3/- per pair; Pocket Lens, from 1/6 to 8/6.

Taxidermists' Companion, containing most necessary implements for skinning, 10/6; Scalpels, with ebony handles, 1/3; Fine Pointed Scissors, 2/- per pair; Brass Blow-pipes, 4d., 6d.; Egg Drills, 2d., 3d.; ditto, best quality, 9d. each; Botanical Vasculum, 1/6, 2/9, 3/6, 4/6; Label List of British Macro-Lepidoptera, with Latin and English Names, 1/6; List of British Lepidoptera (every species numbered), 1/-; or on one side for Labels, 2/-.

SILVER PINS FOR COLLECTORS OF MICRO-LEPIDOPTERA, &c.,

as well as minute insects of all other families.

We stock various sizes and lengths of these Silver Pins, which have certain advantages over the entomological pins usually employed.

For instance, insects liable to become greasy and verdigrisy, like Sesiidæ, are best pinned on Silver pins, which will last much longer than the ordinary pins (whether enamelled black, or gilt, or silvered).

We shall be pleased to send pattern cards on application.

A large stock of British, European, and Exotic Lepidoptera, Coleoptera, and Birds' Eggs.

ENTOMOLOGICAL PINS.

The "DIXON" LAMP NET (invaluable for taking Moths off street lamps without climbing the lamp posts), 3s. 6d.

SHOW ROOM FOR CABINETS, &c.

36, STRAND, LONDON, W.C., ENGLAND.

Birds and Mammals, &c., Preserved & Mounted by first-class workmen.

Our New Price List (100 pp.) sent post free to any address on application.

CONTENTS.

PAGE

Notes on Lepidoptera from Gibraltar and the surrounding country (<i>continued</i>). — <i>Capt. J. J. Jacobs, R.E. (retd.), M.I.Mech.E., F.E.S.</i>	193
Description of a new species of Euryphene from West Africa.— <i>G. C. Dudgeon, F.E.S.</i>	204
On semi-apterous females in Lepidoptera.— <i>G. V. Hudson, F.E.S.</i>	205
A new <i>Listropsylla</i> and the ♂ of <i>Ctenophthalmus calcatus</i> , Waterst. (1912), both from South Africa (with plate).— <i>Hon. N. Charles Rothschild, M.A., F.L.S.</i>	207
Sexual dimorphism in a species of <i>Sciara</i> .— <i>F. W. Edwards, B.A., F.E.S.</i> ...	209
Note on the <i>Chrysomela sanguinolenta</i> and <i>marginalis</i> of British collections.— <i>G. C. Champion, F.Z.S.</i>	211
<i>Omalius cæsum</i> , Grav., and its supposed variety <i>tricolor</i> , Muls. et Rey.— <i>Norman H. Joy, M.R.C.S., F.E.S.</i>	212
Some Coleoptera from Sutherland.— <i>Id.</i>	212
The food-plant of <i>Ceuthorrhynchus quereeti</i> , Gyll.— <i>E. A. Newbery</i>	213
Re-occurrence of <i>Rabocerus bishopi</i> , Sharp, in Scotland.— <i>Prof. T. Hudson Beare, B.Sc., F.R.S.E., F.E.S.</i>	213
<i>Colias edusa</i> , &c., in Kent.— <i>James J. Walker, M.A., R.N., F.E.S.</i>	213
<i>Pyrameis atalanta</i> in North Mavine (Shetland).— <i>Rev. James Waterston, B.D.</i>	214
Note on two species of the genus <i>Lophyrus</i> .— <i>Bernard S. Harwood</i>	214
— <i>Dufourea haliectula</i> (Nyl.) at Byfleet, Surrey.— <i>C. H. Mortimer, F.E.S.</i>	215
SOCIETIES.—South London Entomological Society	215
Entomological Society of London	216

THE THREE COLOURED PLATES illustrating the articles on
“ SOME INTERESTING BRITISH INSECTS, ”

with the accompanying text (issued in the Ent. Mo. Mag. for September, 1909, and January and September, 1910) are issued in a separate wrapper, price 2s.

APPLY TO THE PUBLISHERS.

ENTOMOLOGISCHE MITTEILUNGEN, Published by the Verein zur Förderung des Deutschen Entomologischen Museum. Monthly Entomological paper; official edition of the Deutsches Entomologisches Museum, whose large Library is at the disposal of all Subscribers at most liberal terms. Gratis to each number continuation of the Library's Catalogue. Terms: 7s. (m. 7) a year; 3s. 6d. (m. 3:50) half a year.

Address: Deutsches Entomologisches Museum, Berlin-Dahlem, Gosslesstr. 20.

DR. STAUDINGER & BANG-HAAS, BLASEWITZ-DRESDEN, in their new Price List, No. LVI for 1913, offer more than 19,000 species of well-named LEPIDOPTERA, set or in papers, from all parts of the world, in finest condition; 1600 kinds of PREPARED LARVÆ, &c.; we sell no more living pupæ. Separate Price Lists for COLEOPTERA (29,000 species); HYMENOPTERA (3000 species), DIPTERA (2900), HEMIPTERA (2500), ORTHOPTERA (1200), NEUROPTERA (630), BIOLOGICAL OBJECTS (300).

PRICES LOW. DISCOUNT FOR CASH ORDERS.

Second Series, No. 286.]
[No. 593.]

OCTOBER, 1913.

[PRICE 6d. NET

THE
ENTOMOLOGIST'S
MONTHLY MAGAZINE.

EDITED BY

G. C. CHAMPION, F.Z.S. J. E. COLLIN, F.E.S.

W. W. FOWLER, D.Sc., M.A., F.L.S.

R. W. LLOYD, F.E.S. G. T. PORRITT, F.L.S.

J. J. WALKER, M.A., R.N., F.L.S.

SECOND SERIES—VOL. XXIV.

[VOL. XLIX.]

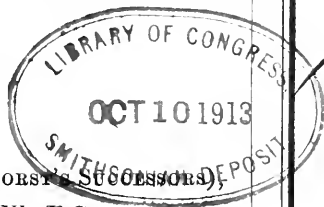
“J'engage donc tous à éviter dans leurs écrits toute personnalité, toute allusion dépassant les limites de la discussion la plus sincère et la plus courtoise.”—*Laboulbène*.

LONDON:

GURNEY & JACKSON (MR. VAN VOORSTEDEN & SONS, SUCCESSORS),
33, PATERNOSTER ROW, E.C.

SOLD IN GERMANY BY FRIEDLÄNDER UND SOHN, BERLIN.

NAPIER, PRINTER, SEYMOUR STREET, EUSTON SQUARE.



REDUCED PRICES FOR BACK VOLUMES.

FIRST SERIES.

This can only be obtained in complete Volumes (bound or unbound).

A limited number of sets, from Vol. x to Vol. xxv can still be obtained at £2 15s. per set net (in parts), or of five consecutive Vols. at £1 per set net (if bound, 1s. per Vol. extra).

Certain of the Vols. i to ix can be had separately at 10s. each.

SECOND SERIES.

Vols. i to xv. are now offered at £3 per set net (in parts), or £1 2s. 6d. for five consecutive Vols. (if bound, 1/- per Vol. extra).

Apply to the Publishers.

NOTE.—Subscriptions for 1913 (6s. per annum, post free) are now due, and should be paid to R. W. LLOYD, I. 5, Albany, Piccadilly, London, W.

It would be a great convenience to the Editors in keeping the accounts if these were paid promptly, as having to send reminders entails a considerable amount of extra work.

The Coloured Plates issued in September, 1909, January and September, 1910, and September, 1911, having been so much appreciated by our readers, a fifth (devoted to *Dermoptera*) was given with the October, 1911, number; two more were issued in the August, 1913, number.

THE CANADIAN ENTOMOLOGIST.

A MONTHLY MAGAZINE DEVOTED TO THE STUDY OF SCIENTIFIC ENTOMOLOGY.

Volume 45 is now in course of publication. Back volumes can be supplied. It is the oldest established Magazine of the kind in America, and has a world-wide circulation. Subscription, \$1 per annum, which includes a copy of the Annual Report of the Entomological Society of Ontario to the Legislature. Editor, Dr. E. M. Walker, Biological Department, University of Toronto, Toronto, Canada.

Address: Entomological Society of Ontario, Guelph, Canada.

LANCASHIRE AND CHESHIRE ENTOMOLOGICAL SOCIETY.—Meetings the third Monday in each Month, October to April. *Hon. Sec.*, WM. MANSBRIDGE, 4, Norwich Road, Wavertree, Liverpool.

CITY OF LONDON ENTOMOLOGICAL AND NATURAL HISTORY SOCIETY, London Institution, Finsbury Circus, London, E.C.—The First and Third Tuesdays in the month at 7.30 p.m., except in July and August. Visitors are cordially invited to attend with exhibits.—V. ERIC SHAW, *Hon. Sec.*

ENTOMOLOGICAL NEWS.

A forty-eight page illustrated magazine, issued monthly, except in August and September, devoted to the study of INSECT LIFE. It contains a resumé of the proceedings of a number of Entomological Societies, and also articles by the leading Entomologists in the United States and Canada. Valuable information for the beginner, the economic entomologist, and the systemist. TWO DOLLARS a year in advance. Single copies, 25 cents. Address—

ENTOMOLOGICAL NEWS,

The Academy of Natural Sciences.

1900 RACE STREET, PHILADELPHIA, PA.

ON THE BRITISH SPECIES OF *BYTHINUS*, LEACH.

BY JAMES EDWARDS, F.E.S.

B. PUNCTICOLLIS, Denny = *VALIDUS*, Aubé.

The *Arcopagus puncticollis* of Denny was a *Bythinus* with strongly punctured thorax, and, in one sex, incrassate femora; so much is clear from the works of Denny and Curtis and five contemporary specimens, of which two are males, in the Norwich Museum, where Denny's collection went in 1825. Denny thought that the specimens with incrassate femora were females, but we now know that they are males. Aubé (Psel. Mon., p. 41, t. 87, fig. 4, 1833) has *B. puncticollis*, Denny, which he characterises by its strongly punctured thorax, the first antennal joint cylindrical, and the femora in one sex incrassate. On the same page he describes his *B. chevrolati*, which he distinguishes from *puncticollis*, Denny, mainly by reason that the first antennal joint is obtusely produced within, and his figure (op. cit. t. 87, fig. 3a) bears this out: he gives *Arcopagus puncticollis*, Curt. (Brit. Ent., No. 422), as a synonym; but in arriving at this conclusion he may have been influenced by the figure of the basal joint of the male antenna given on Curtis's plate; the latter, however, is intended to, and does fairly well, represent that part in *B. bulbifer*, whilst the coloured figure is a recognisable picture of the male of Denny's *puncticollis*. In his "Revision de la famille des Pselaphiens" (Ann. Soc. Ent. Fr., 1844, p. 129), Aubé makes his *B. chevrolati*, which according to the original description has incrassate femora in one sex, a synonym of his *B. puncticollis*, which latter he distinguishes from his *B. validus* by having the femora simple in both sexes. From this point the *B. puncticollis* of continental authors, of which the definition has been amplified, has clearly been *B. chevrolati*, Aubé, and not *puncticollis*, Denny, the latter insect being known to them as *B. validus*, Aubé. Dr. Fowler in treating of *B. validus* (Coleopt. Brit. Isl. III, p. 90) says the latter is evidently the *puncticollis* of Denny, but he does not explain why he uses Aubé's name in preference to that given by Denny, which has a priority of nearly twenty years. The *B. puncticollis* of continental authors (for which the name *chevrolati*, Aubé, is available), is a species with strongly punctured thorax and simple femora in both sexes, and the male has the first joint of the antennæ widened towards the apex, just before which on the inner side there is a short cylindrical truncate projection (peg) similar to that found on the second joint of the male antenna in *B. curtisii*, a small sharp tooth on the inner side of the front tibiæ, and the inner side of the hind tibiæ for rather less than the distal half is

excavated, a circumstance which gives rise to the appearance of an angular projection a little beyond the middle. Dr. Fowler's account of *B. puncticollis* is based on the assumption that *puncticollis*, Auctt., has really occurred in Britain; an assumption which he is now inclined to regard as without foundation. It may be noted in passing that Reichenbach's figure 7 (Mon. Psel., t. I, 1816) which purports to represent *clavicornis*, Panz., and is quoted under that name by Aubé (Psel. Mon., p. 40, 1833), but not, so far as I can see, by subsequent writers, is a very fair representation of the male of *B. puncticollis*, Denny.

Ganglbauer (Käfer von Mitteleuropa, II, p. 815) speaks of dimorphism in the males of several species, one form having the legs like the female, and the other having the femora strongly incrassate. *B. puncticollis* is our only species in which this state of things may be expected to occur. I have not so far seen any example in which simple femora were correlated with the exact form of the last joint of the palpi proper to the male; and, on the whole, I consider that it will be well not to assume the existence of dimorphism in the male of this species until the presence of a membrum virile in specimens having simple femora has been demonstrated.

B. BURRELLII, Denny.

In this species and the next the antennal characters proper to the male are in some cases ill-developed or wanting; I have taken at different times, on the same ground with typical males, a series of four examples in which the second joint of the antennæ exhibits a complete gradation from a crescent in which the distal end is a little smaller than the proximal, to a state in which the only modification consists of a slight production of the inner basal angle. It has been customary to regard as males only those specimens which have the second joint of the antennæ evidently modified; but I am of opinion that all the specimens which have the last joint of the palpi very tumid, subtriangular, not longer than wide, with a large rounded prominence at the middle of the inner edge, are of that sex, because I have extracted from such a specimen taken at Alvanley by Mr. Dutton in which the second joint of the antennæ is not modified at all, an organ which, from previous experience and the excellent figures given by Messrs. Sharp and Muir (Trans. Ent. Soc. Lond., 1912, t. LXXVII, figs. 230, 230a), I have no hesitation in regarding as an aedeagus. The insect which, from experience in the field, I take to be the female of *B. burrellii* has the last joint of the palpi similar in shape to that of *B. bulbifer*, from which, as well as *B. distinctus*, it is easily distinguished by the strongly transverse joints 3-8 of the antennæ.

B. *DISTINCTUS*, Chaudoir = *SECURIGER*, Denny, *nec* Reich.

So long ago as 1882 Reitter (Naturg. Ins. Deutschl. III, 2, p. 82), pointed out that *B. securiger*, Denny, was really *B. distinctus*, Chaud., and not the same as *B. securiger*, Reich.; but although he says that the latter is found in England, native specimens do not appear to be in our collections. Mr. Champion has been good enough to lend me a male and female of continental *securiger*, true to definition; but he has no British example of the species, nor can I hear of any. In the male of our insect, *B. distinctus*, the second joint of the antennæ is sub-quadrate, produced inwardly into a knife-like edge, the inner basal angle rounded off, the inner apical angle acute but little produced; the last joint of the palpi is very plump, in the widest aspect oblong, oblique at the base, broadly rounded at the apex, about twice as long as wide, with a rounded prominence near the apical third on the upper side; the antennal joints 3-8 are moniliform; there is no apical spur to the hind tibiæ, and the elytra have a well-developed humeral prominence; in the female the last joint of the palpi is about twice as long as wide, oblique at the base, the sides gradually converging to the narrow apex, the inner straight, the outer a little curved; the antennal joints 3-8 are moniliform and the second is sub-equal in length to the inner edge of the first. Of eleven males which I have examined, five have the second joint of the antennæ typical, though varying somewhat, and six have it quite simple.

In the male of the real *B. securiger*, Reich., the second joint of the male antennæ is distinctly longer than wide, produced inwardly into a knife-like edge which is considerably longer than the outer edge, and the distal edge is oblique, so that the inner apical angle forms a broad triangular projection, the inner basal angle acute but scarcely produced; the last joint of the palpi is very plump, in the widest aspect elongate-triangular, oblique at the base, about twice as long as wide, with a rounded prominence near the apical third of the upper side; the antennal joints 3-8 are rectangular and transverse; the hind tibiæ have a fine apical spur, and there is no marked humeral prominence to the elytra: in the female the last joint of the palpi is oblong, oblique at the base, broadly rounded at the apex, more than twice as long as wide; the antennal joints 3-8 are rectangular and transverse, and the second joint is rather shorter than the inner edge of the first.

Dr. Joy has found *B. distinctus* in mole's nests and by evening sweeping at Bradfield and elsewhere. Mr. J. F. Dutton sends me a male with simple antennæ taken by himself at Alvauley, Cheshire; and

I have seen ex coll. Champion, a specimen from Amberley, Sussex, and one from Caterham, Surrey, the latter long ago determined by Reitter as *B. distinctus*. Amberley and Caterham are given in Coleopt. Brit. Isl. III, p. 92, as localities for *B. burrellii*, but it is probable that Mr. Champion's specimens just mentioned formed the basis for these records.

B. CURTISII, Denny.

This species may be easily recognised in either sex by the elongate last joint of the palpi.

B. BULBIFER, Reich.

This, the commonest of our species, calls for no special remark.

B. CLAVICORNIS, Panz.

Denny (Mon. Psel., p. 28, t. V. f. 4) described and figured under the name of *Arcopagus glabricollis*, a *Bythinus* of which the more important features were the smooth thorax and the production in one sex of the inner apical angle of the first joint of the antennæ. He thought that this was the same as *glabricollis*, Reichenbach (Mon. Psel., p. 43, t. 1, f. 8, 1816). I find that Reichenbach's description and figure do not afford the means of identifying any species in particular; but Reitter (Naturg. Ins. Deutschl. III, 2, p. 73), in the course of what is by far the best account of *B. clavicornis* with which I am acquainted, puts *glabricollis*, Reich., as a synonym of that species, and adds that it occurs in England. Schaum stated (Zoologist, 1847) that Denny's *Arcopagus glabricollis* was only the female of *B. bulbifer*. This opinion, though adopted by E. C. Rye (Ent. Ann., 1870, p. 117), and apparently by subsequent writers also, is evidently an error, because Denny's insect had the inner apical angle of the first antennal joint produced into a small sharp tooth, a feature which certainly does not occur in the female of *B. bulbifer*. For more than thirty years I have had in my collection a *Bythinus* which came to me from the collection of Denny's colleague, Wigham, labelled *glabricollis*; I have now dissolved the glue away from this and find that it is a female and differs from that sex of *B. bulbifer* in having the first joint of the antennæ less than twice as long as wide. I should not, however, regard anything less than the production of an undoubted male as conclusive evidence of the occurrence of *B. clavicornis* in this country. *B. clavicornis* might easily be passed over as *B. bulbifer*, but the absence of a large protuberance on the inner side of the first joint of the male antennæ in the former is quite characteristic.

Ganglbauer (t. c. p. 826) puts *B. inflatipes*, Reitt., as a variety of *clavicornis*, Panz.; but he discloses no better reason for this than the fact that both were once taken in company.

B. GLABRATUS, Rye.

I am not in a position to add anything to the published accounts of this species.*

From the following table the well-known characters of the male antennæ are, for the most part, intentionally omitted.

- 1 (16). Elytra distinctly punctured.
- 2 (3). Thorax distinctly punctured... .. *puncticollis*, Denny.
- 3 (2). Thorax very feebly punctured or impunctate.
- 4 (7). Last joint of palpi with a rounded prominence on the inner side.
- 5 (6). Last joint of palpi sub-triangular, not longer than wide, with a large rounded prominence at the middle of the inner side...
burrellii, Denny, ♂.
- 6 (5). Last joint of palpi oblong-ovate, twice as long as wide, with a rounded prominence at the apical third of the inner side...
distinctus, Chaud., ♂.
- 7 (4). Last joint of palpi without any rounded prominence.
- 8 (9). Last joint of palpi three times as long as wide, elongate-triangular, base oblique *curtisii*, Denny.
- 9 (8). Last joint of palpi twice as long as wide.
- 10 (13). Occiput coarsely punctured. Antennæ with joints 3 and 4 similar.
- 11 (12). Length 1.4-1.5 mm. Antennæ with joints 3-8 moniliform...
distinctus, Chaud., ♀.
- 12 (11). Length 1.2-1.3 mm. Antennæ with joints 3-8 very transverse...
burrellii, Denny, ♀.
- 13 (10). Occiput nearly or quite impunctate. Antennæ with joints 3 and 4 dissimilar; 3 longer than wide, narrowed to the base, 4-8 moniliform.
- 14 (15). ♂.—First joint of antennæ with the inner apical angle produced into a short erect tooth, immediately beneath which is a large sub-oval prominence reaching almost to the base of the joint: second joint produced on the inner side and bearing throughout its length a narrow projecting strip, which at the base forms a right-angle and is produced a little beyond the apex of the joint to form a tooth.
♀.—First joint of antennæ quite twice as long as wide...
bullifer, Reich.

* In L'Abeille, XXXI, pp. 153-156, 1909, there is a paper by Capt. Deville on the synonymy of *B. glabratus*, based on an examination of specimens captured by the late A. J. Chitty.—G. C. C.

- 15 (14). ♂.—First joint of antennæ nearly cylindrical, simple on the inner side, the inner apical angle a little produced: second joint as in *bulbifer*.
 ♀.—First joint of antennæ not twice as long as wide...
clavicornis, Panz.
- 16 (1). Elytra nearly or quite impunctate *glabratus*, Rye.

Colesborne, Cheltenham :

September 4th, 1913.

TRIBOLIUM CASTANEUM, HERBST = *FERRUGINEUM*, AUCT. (nec FAB.)

BY K. G. BLAIR, F.E.S.

(Published by permission of the Trustees of the British Museum).

In the Ann. and Mag. Nat. Hist. (6) XVII, pp. 230-231, Mr. C. O. Waterhouse published a re-description of the type of "*Tenebrio ferrugineus*, Fab.," still preserved in the British Museum, drawing attention to the fact that it belongs to the family *Cucujidæ*, and that the insect known in our collections as "*Tribolium ferrugineum*, F.," which had been wrongly identified, "will have to bear a different specific name." Mr. Champion followed (Ent. Mo. Mag., 1896, p. 82) by disputing this conclusion. While admitting that the original description of *Tenebrio ferrugineus* by Fabricius (Spec. Ins. I, 1781, p. 324) certainly did not refer to our insect, he contends that the *Tenebrio ferrugineus* of the "Mantissa Insectorum," I, 1787, p. 212, or the *Trogosita ferruginea* of the "Entomologia Systematica," I, 1792, p. 116, may quite well refer to our species, and says that in these works "no reference whatever is made to the original description in the Species Insectorum." He continues: "It is perfectly evident that he (Fabricius) confused more than one species under the name *ferrugineus*, and till the contrary is proved the name *ferrugineus* (1787) can be retained for the *Tribolium*." Gebien, in Junk's "Coleopterorum Catalogus," 1911, accepts Champion's view, and cites the insect as *T. ferrugineum*, F., Mant. Ins. I, 1787, p. 212. But this *Tenebrio ferrugineus* (1787) is an absolute homonym of *Tenebrio ferrugineus* (1781), and consequently, even if differing in meaning from its previous usage, is invalid. We have no evidence, however, that a different meaning is intended. Though Mr. Champion says that in the two later descriptions no reference whatever is made to the original description, this is hardly correct. As regards the "Mantissa," no reference is

made to the Species Insectorum, and a different origin is indicated by "Habitat et Halæ Saxonum Dom. Hybner." So far, though in any case a homonym, this *Tenebrio ferrugineus* may be intended to mean a different insect from the *Tenebrio ferrugineus* of the Species Insectorum. The description of *Trogosita ferruginea*, Ent. Syst. I, 1792, quite disposes of this possibility, for here it is definitely synonymised with the *Tenebrio ferrugineus* of the "Mantissa," and Fabricius continues: "Habitat in Africa æquinoctiali Mus. Dom. Banks, in Americæ Insulis Dr. Pflug," the words in italics being obviously quoted from the Species Insectorum, 1781. It is perfectly clear, therefore, that Fabricius supposed that he was dealing with one and the same species in these three instances. Furthermore, this conclusion is borne out by Sherborn's "Index Animalium," which quotes *Trogosita ferruginea* (1792) as synonymous with *Tenebrio ferrugineus* (1781), and in the "Epitome Entomologiæ Fabricianæ," by Bergsträsser, p. 18, where *Trogosita ferruginea* is the only one that appears. From these facts then, it is evident that the name *ferrugineum*, F., as applied to the *Tribolium*, can have no *locus standi* whatever.

That *Dermestes navalis*, Fab., Syst. Ent., 1775, p. 56, cannot refer to this insect, has been sufficiently demonstrated by Champion, *loc. cit.*, yet the name *navale*, Herbst, Käf. IV, 1792, still appears in Junk's Catalogue as a synonym of "*ferrugineum*, F., 1787," though this reference is nothing more than a quotation, and translation, of the description of Fabricius.

In Käf. VII, 1797, p. 282, t. 112, f. 13, however, Herbst gives a description of our insect, together with a sufficiently recognisable figure, as *Colydium castaneum*; the name *castaneum*, Herbst, therefore remains in possession of the field as the specific name of this *Tribolium*.

It may be noted that the genus *Tribolium* (1825) was made by Macleay for the reception of *Colydium castaneum*, Herbst, and though *Trogosita ferruginea*, Fab. (Syst. Eleuth. I, 1801), is cited amongst its synonyms, this is merely a reference to *Trogosita ferruginea* (Ent. Syst., 1792), and Macleay was evidently doubtful of the correctness of the synonymy.

Neither Mr. Waterhouse nor Mr. Champion seems willing to assign to any genus the true *ferrugineus*, F., but rather than let it continue longer without any generic appellation I propose for it the name *Tribolioides*, which may be characterised as follows:—

TRIBOLIODES, n. gen.

Head rather small, depressed, strongly constricted into a neck behind; anterior margin broad, sinuate, meeting the lateral margin almost at right angles; clypeal suture distinct, meeting the sides a little behind the anterior angles; eyes large, round, and prominent, subentire; antennæ 11-jointed, gradually thickened from the base to the last joint, 3rd joint slightly longer than the 4th, and 4th than the 5th, joints 5-10 subequal, about as long as broad, last joint elongate ovate, subacuminate, as long as the two preceding together; *prothorax* depressed, subquadrate, sharply and completely margined, posterior margin very fine; anterior angles rounded, posterior angles acute and prominent; *elytra* depressed on the disc, base slightly emarginate, with the humeri prominent but rounded; suture and three rounded costæ on each elytron raised; *legs* rather slender, tarsi apparently 4-jointed, the penultimate joint produced beneath.

Type, *Tenebrio ferrugineus*, Fab.—Hab., Tropical Africa.

Mr. Waterhouse omits to give the length of the specimen, which is 5 mm., as against 3-4 mm. for *castaneum*, Herbst.

Tribolioides may be placed tentatively near *Xenoscelis*, Woll., as suggested by Waterhouse, though the alliance is by no means close. The head resembles that of the Tenebrionid genus *Mesotretis*, Bates, though narrower, more depressed, and strongly constricted to form a neck behind, and the eyes are much larger in proportion, being separated by a space scarcely double the width of one of them. The lamellate production beneath of the penultimate tarsal joint is very peculiar. It is to be hoped that additional examples of the insect may be found amongst collections of *Coleoptera* from tropical Africa.

To Mr. J. Hartley Durrant I must express my indebtedness for the aid he has rendered in the preparation of these notes. Recognising that the name "*ferruginea*, Fab." could not logically be applied to this species, Mr. Durrant asked me to determine definitely the correct name of this insect for use in his recent publications in regard to the Army Biscuit Enquiry.

September, 18th, 1913.

NEW SPECIES OF
COLEOPTERA ALLIED TO *XANTHOLINUS OCHRACEUS*, GYLL.

BY NORMAN H. JOY, M.R.C.S., F.E.S.

It is quite evident that under the name *Xantholinus ochraceus*, Gyll., we have confounded two very distinct species. One of these has the last joint of the maxillary palpi small and conical, and the thorax with about 12 punctures in the dorsal series, whereas in the other the

last joint of the maxillary palpi is large and narrower towards the base, and the thorax has about 8 punctures in the dorsal series. It will be noticed that Ganglbauer describes the first-mentioned insect (Die Käfer von Mitteleuropa, Vol. II, p. 480) under the name *angustatus*, Steph., and Fowler the latter under the name *ochraceus*, Gyll. (Coleoptera Brit. Islands, Vol. II, p. 287). Stephens' description of *X. angustatus* might apply to many species of the genus, and Mr. E. A. Waterhouse, who kindly examined for me the specimens in Stephens' collection, tells me that all but one are *X. linearis*, Ol. Gyllenhal's description of *X. ochraceus* does not help us much, as he evidently had the two species before him, the thoracic dorsal series being recorded as consisting of from 8-12 punctures. On the whole I think it best to keep to Gyllenhal's name, discarding Stephens' on the ground that the description is inadequate, and the "types" of no help. It would seem that the name *ochraceus* must be applied to the species with 8 punctures in the dorsal thoracic series, as this is the first number mentioned. For the other species I propose the name *substrigosus*. Besides these two, I have taken several specimens of another form from flood-rubbish gathered in Scotland. This is very closely allied to *X. ochraceus*, but I think it may be regarded as a good species. In all three forms the colour is the same, the antennæ varying a good deal in this respect, being sometimes entirely reddish or pitchy-red, or with the first joint black. As in other species of *Xantholinus* the head varies somewhat in shape, being in some specimens parallel-sided, in others narrowed in front. The ædeagus in this group is of peculiar structure, looking in dried specimens like a large pear-shaped deflated bladder, the central lobe being often difficult to see.

It is necessary to mention the following characters in *X. ochraceus*:

On the head there are two short grooves starting from the front margin close to the insertion of the antennæ and converging somewhat behind, and slight traces of another groove on each side parallel to these starting from the upper and front segment of the eyes. The vertex of the head, and the space between the inner grooves, is irregularly punctured with large and small punctures; the sides of the head are strongly and closely punctured, the space between the punctures is quite smooth and shining, except close to the hind angles, where it is very finely cross-strigose. The last joint of the maxillary palpi is longer and slightly narrower than the penultimate, and is broadest at about the junction of the basal and middle thirds; the thorax has from 7 to 9 punctures in the dorsal series, there being generally a broad gap in them about the middle, the disc is extremely finely and diffusely punctured; the lateral lobes of the ædeagus are large, triangular and thick.

X. SUBSTRIGOSUS, sp. nov.

In colour and general appearance resembling *X. ochraceus*; head very finely cross-strigose throughout, not punctured on the vertex or between the inner frontal furrows, punctures at the side much more diffuse than in *X. ochraceus*, inner frontal furrows deeper and outer ones well marked; last joint of maxillary palpi about as long, and one-half as broad, as penultimate, broadest at base; thorax finely cross-strigose in front, smooth behind, dorsal series consisting of 11-13 close-set punctures; the lateral lobes of the aedeagus are represented on each side by a narrow curved filamentary process. Length 5-6 mm.

I have seen four specimens in Mr. Tomlin's collection labelled "Peckham," and one in Mr. Waterhouse's, but it is probably much more widely distributed.

X. SCOTICUS, sp. nov.

Very like *X. ochraceus*, but narrower and more linear; head and thorax finely and very closely cross-strigose; sides of head more finely and less closely punctured than in *X. ochraceus*. Length 6-8 mm.

About twelve specimens taken from flood-rubbish at Struy, Strathglass, Inverness, and one at Altnahara, Sutherland. The sculpture of the head and thorax is finer and much closer than in *X. substrigosus*. In life the beetle looks very like *X. linearis*.

Bradfield, Berks:

September 7th, 1913.

ON *APION SELOUSI*, NEWB., AND OTHER SPECIES OF *APION*.

BY E. A. NEWBERRY.

The note on *Apion selousi* (Ent. Mo. Mag., XLIX, 154) has led to some interesting correspondence with Herr Hans Wagner of the Berlin Entomological Museum. He has been studying the *Apionides* of the world for many years, and having now seen the type of the above insect, he is of opinion that it cannot be regarded as a species, but is an anomalous ("monstreuse") ♀ of *A. subulatum*, Kirby, influenced by mechanical conditions in the pupal state. He considers the tooth between the bases of the antennæ as the most clear proof of this, since he has never met with any other *Apion* with a similarly formed rostrum. He refers to *A. linderi*, Wenck., which he considers a similarly anomalous form of *A. æstivum*, Germ., as an analagous case (Ent. Mitt. Band, I, p. 112). On the other hand, it may be remarked that the insect is perfectly symmetrical, and that I have

never met with a case of anomaly in which an entirely new organ has been formed. Dr. Selous intends, I believe, to present the specimen to the Natural History Museum, since it is an interesting insect from any point of view.

Apion breviatum, Desbr. This insect is regarded by Herr Wagner as an anomalous form of *A. pomonæ*, Fab. It may readily be separated by its minute size (length, 2–2½ mm.) and comparatively cylindrical thorax, which has the base almost straight. Herr Wagner refers a ♀ specimen taken by me at Deal, to this insect. The two specimens standing in the Power collection as *A. opeticum*, Bach, must be referred to this also, and Mr. E. A. Butler has several examples.

Apion medianum, Thoms., is the small form of *A. curtirostre*, Germ. (= *humile*, Germ.), in which the rostrum is shorter and thicker and the elytra more inflated behind in both sexes than in what we must regard as the type-form. It is quite common.

13, Oppidans Road, N.W.:

Sept. 11th, 1913.

ON TWO SPECIES OF *HAPLOTHRIPS* NEW TO THE
BRITISH FAUNA.

BY RICHARD S. BAGNALL, F.L.S., F.E.S.

(*Hope Department of Zoology, University Museum, Oxford*).

I am very pleased to be able to bring the following distinct and interesting species of *Haplothrips* forward as British, both from the neighbourhood of Oxford:—

HAPLOTHRIPS JUNCORUM, *sp. n.*

♀. Length, 2·1—2·35 mm.

Comes nearest to *H. aculeatus*.

Colour very deep brownish black: antennæ and legs as in *H. aculeatus*.

Head about 1·55 times as long as the prothorax and 1·35 as long as broad; slightly narrowed posteriorly. Antennæ only 1·35 times as long as the head. Posterior ocelli widely separated, practically touching inner margins of eyes; anterior ocellus forwardly directed. Postocular bristles weak. Mouth-cone blunt, reaching half-way across the prosternum. Prothorax 1·85 times as broad at hind angles as long. Wings clear, except for a slight touch of brown at extreme base; hind margin of fore-wing with 9—12 cilia (in one case only 7) duplicated near apex.

Abdomen long, not, or only very slightly, broader than prothorax. Tube 0·9 the length of the prothorax, and 0·6 the length of the head. Apical bristles long and slender, as long as tube and almost colourless, except near tube where they are greyish. In *H. aculeatus* the apical bristles are wholly greyish-brown.

[The following table will help to show the distinguishing characters of the two species at a glance:—

Wings clear. Tube 0·6 the length of the head and only a little more than twice as long as broad at base :

1. Size smaller (length, 1·4—1·6 mm.). Head only slightly longer than broad; antennæ more than 1·5 times as long as the head. Fore-wings with 5—6 duplicated bristles...*H. aculeatus* (Fabr.).
2. Size larger (length, 2·1—2·35 mm.). Head 1·35 times as long as broad; antennæ only 1·35 times as long as the head. Fore-wings with 9—12 duplicated bristles.....*H. juncorum*, sp. n.]

The larva is red, with the head and antennæ, the prothoracic plates, the legs, the basal half of the 8th abdominal segment and segments 9 and 10 grey-brown, though not conspicuously so.

Hab.: Near Yarnton (Oxon.). Not uncommon in all stages on *Juncus* sp., June, 1913.

TYPE: In coll. Bagnall, University Museum, Oxford.

HAPLOTHRIPS DISTINGUENDUS (Uzel).

Monographie der Ordnung Thysanoptera, 1895, p. 239.

This species comes near to *H. statices*, and is sharply distinguished by having the 3rd antennal joint and the basal third of joints 4, 5, and 6 yellow.

The head is shorter, 1·1 times as long as broad, the wings are clear, and the tube about 0·75 the length of the head. In my specimen the 1st antennal joint is grey, and lighter than the second, whilst the tube is distinctly darker than the rest of the body, and the fore-tibiæ are yellow broadly shaded with grey at inner and outer margins. The hind margin of the fore-wing has 14 duplicated cilia near apex. My specimen is 2·2 mm. long, *i.e.*, distinctly larger than Uzel's type.

Hab.: Weston-on-the-Green (Oxon.), one example (♀) by beating sedge-stacks, August, 1913.

The minor differences noted above make it inadvisable to refer the species to *H. distinguendus* with certainty. A series of specimens would enable one to settle the point, and I am hopeful of meeting with it again. Sedge is evidently not its true pabulum.

September 6th, 1913.

Nemosoma elongatum L., in the Oxford district.—On July 13th last I found a strong colony of *Hylesinus vittatus*, F., in an elm rail forming part of a fence at Water Eaton, Oxon. On mentioning this to Commander Walker, he suggested I should look for its Coleopterous parasite *Nemosoma elongatum*. This induced me to visit the place again shortly afterwards, when I took a few pupæ out of the bark which I thought could only belong to that species—judging from the size and elongate cylindrical shape. These I brought home and on August 5th had the satisfaction of breeding the *Nemosoma*. I have since found other elm rails tenanted by *Hylesinus*, and taken the parasite in three of its stages, viz., larva, pupa, and imago. The larva is, I find, quite well known. Canon Fowler (Coleopt. Brit. Isl. III, p. 268) gives two references, to one of which, in Westwood's "Modern Classification of Insects," I, 146, fig. 12, 2, I have access. I venture to describe the larva as it appears to me. The larva is translucent, pale with a decided pinkish tinge, cylindrical in shape and about 7 millimetres in length, with head and first segment brown and chitinous; all the segments have scattered, long, pale yellow hairs; on the anal segment are two spines on each side, curved or hooked backwards, the space between them brown. Prof. Westwood simply refers to the caudal appendages as "two spines," whereas in fact they are curved upwards and backwards. The pupa is of the same pinkish colour as the larva, the only noticeable change as it matures being in the eyes, which become black; the beetle when it first emerges being very pale, especially the elytra which are almost opaque whitish, the dark spot near apex showing very distinctly; it gradually assumes the red tinge of maturity and is about a week in attaining its full colour. It is, of course, very satisfactory to breed this rare and curious beetle, but the pupæ are very delicate and easily damaged. The better plan is to leave them alone wherever they are found until about the middle of September, when most of the beetles will be found fully matured. The *Nemosoma* remains in the burrows of the *Hylesinus* for some time after emergence from the pupa. With it I found quite a number of partly consumed *Hylesinus*, which convinces me that it preys on its host in its various stages.—J. COLLINS, 74, Islip Road, Sunnymede, Oxford: September 11th, 1913.

Pairing of different species of Coccinellidæ.—A day or two ago in my garden here, I noticed two "ladybirds" in cop. on a rose-bush, the ♂ being *Coccinella 10-punctata*, with black spots on a reddish ground, and the ♀ a typical red *Adalia bipunctata*.—J. R. LE B. TOMLIN, Lakefoot, Hamilton Road, Reading: July 31st, 1913.

Cicindela martina, Dej., on the coast of Kent.—On August 20th I observed this "tiger-beetle" in considerable numbers on the wide sandy foreshore at Shingle Haven Coast-guard Station, about two miles north-east of Sandwich and six miles north of Deal. As usual it was exceedingly active and difficult to approach, and for want of time and a suitable net I was able to capture only a very few specimens. In neither Canon Fowler's "British Coleoptera," nor in the recent paper by Mr. J. Edwards in this Magazine (*ante*, pp. 146-149) is any

reference made to the occurrence of this *Cicindela* on the Kentish coast, and the only record I can find from this locality is in Stephens's "Manual," p. 5, where it is notified as from "sandy coasts: Deal to Ramsgate, Kent." On mentioning my capture of *C. maritima* to Dr. G. W. Nicholson, he informed me that six or seven years ago, when he first commenced collecting beetles, he found this species not rarely on the coast to the north of Sandwich—probably on exactly the same ground as that on which I met with it.—JAMES J. WALKER, Oxford: September 12th, 1913.

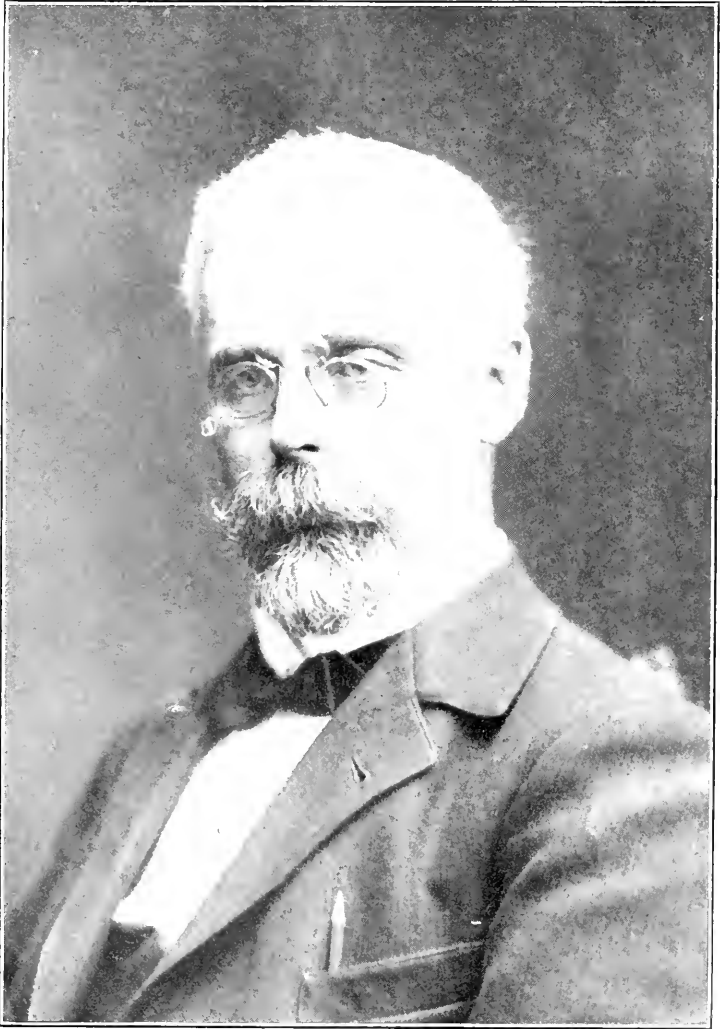
Gnorimus nobilis, *§c.*, at Colchester.—Towards the end of June I had the pleasure of taking a nice series of *Gnorimus nobilis*; they were all found in old apple trees in a garden near here, together with their larvæ. From the same trees I obtained *Dorcus parallelipedus* (3 or 4), *Tillus elongatus* (2), and *Eryx ater*.—BERNARD S. HARWOOD, 62, Station Rd., Colchester: Sept. 17th, 1913.

Cerceris 5-fasciata preying on *Strophosomus faber*.—Late in July we found a colony of *Cerceris 5-fasciata* and observed that each ♀ was carrying a specimen of *Strophosomus faber* in its mandibles, evidently as food for the next generation. Careful watch for upwards of an hour showed that no other species was taken, every capture proving to be *S. faber*, of which, curiously enough, only a solitary specimen had occurred to us previously.—BERNARD S. HARWOOD,

Agraylea pallidula, McLach., added to the British fauna.—This species described and illustrated in detail by McLachlan in "Fedtschenko's Travels in Turkestan" (1875), and also in his "Revision and Synopsis of the Trichoptera of the European Fauna" (1880), and further reported on in the "First Additional Supplement" to the latter work (1884), has up to the present time been recorded very sparingly from Turkestan, Hungary, Riva, and Zurich. But Mr. Martin E. Mosely, well known in connection with Anglers' Flies, captured a single ♂ in Berkshire, at Shefford on the Lambourne, on the last day of August.—A. E. EATON, Richmond Villa, Northam, N. Devon, R.S.O.: September 4th, 1913.

Obituary.

Odo Morannat Reuter died on September 2nd, aged 63 years, in Abo, his native town. At the age of 17 he began his University studies at the Philosophical faculty of Helsingfors, and took the degree of Phil. Doc. in 1876. From 1877—1916 he held an appointment as an academical lecturer in Zoology at the Helsingfors University, when he retired. In the seventies he visited Scotland and made extensive collections of all Orders of Insects, particularly in the Orkney and Shetland Islands. In the eighties he studied at several museums in Germany and Austria. His first entomological contribution appeared in 1870, and since that time he has published about 500 papers, chiefly in the "Acta" and "Oefversigt" of the Finnish Society of Sciences, most of them dealing with



DANIEL NYBLUS, photo.

D. M. Hewitt



Hemiptera. His most important works are *Hemiptera Gymnocerata Europæ* (5 Vols. in 4to, 1878—1896), *Monographia Anthocoridarum* (1884), *Revisio synonymica Heteropterorum palæarcticorum* (1888), and *Beiträge zur Phylogenie und Systematik der Miriden* (1910). He was a foreign Member of the German K. Leopoldinisch-Carolinische Akademie der Naturforscher, and an Honorary Member of the Entomological Societies of Belgium and London.

Most of Reuter's time was devoted to the study of the difficult family *Miridæ* (*Capsidæ*), so rich in genera and species, and in this family he was the leading authority. His re-modelling of the Mirid system will for a long time to come remain the solid foundation upon which all serious Hemipterists have to base their future studies in this family, and Reuter's works on the *Miridæ* are alone sufficient to ensure him a permanent place among the foremost systematic entomologists. He also recently proposed a new system of the whole sub-order *Heteroptera*, which has been generally adopted with slight modifications. His monograph of the *Anthocoridae* and of the genus *Oncocephalus* give ample evidence of his keen eye for minute, but constant, up to that time overlooked characters. He is also the author of several papers on the *Collembola*, *Thysanoptera*, and *Neuroptera* of Finland, and he did much to popularize his favourite science. Some of his Swedish books on the biology of insects have been translated into German. Reuter was possessed of an extraordinary working power. For the last five years he was almost unable to walk and totally blind, but this influenced his energy in no way. The entomological journals were read to him, and the valuable papers published in his name during this period were dictated to his secretary. When the writer of these lines saw him in June this year, he appeared to be almost broken down, and he knew that his days were numbered. Nevertheless he worked restlessly all the summer at an extensive paper on myrmecominetic *Hemiptera*, for which he had obtained material from almost all living students of ants. This work can, I think, be finished by another hand. He was a gifted poet, and besides a great epic poem, "Karin Mansdotter's Saga," he published four volumes of lyric songs. His poetry shows his impressible mind and enthusiastic love of Nature, and many of his poems and the novels in his book "Astray," evince his profound sympathy for the poor, fallen, and miserable he had met in life. He was a winning and warm-hearted man, loyal in friendship, and a genial and witty companion in the days of his health. His blindness and other sufferings he bore with great patience, and in one of his last poems he wrote resignedly:—

"The Power wise that took the light from me,
Well knew that I had seen enough indeed. . . ."

Now he has passed the gates beyond which he hoped there would be no darkness more.—E. B.

Societies.

THE SOUTH LONDON ENTOMOLOGICAL AND NATURAL HISTORY SOCIETY:
Thursday, July 24th, 1913.—MR. A. E. TONGE, President, in the Chair.

Mr. Edwards exhibited a pair of the Erycinid *Stalactis evelina*, from the Lower Amazons. Mr. Adkin, *Borkhausenia pseudospretella* bred from hare's hair. Mr. West, a series of the Coleopteron *Anobium paniceum*, found destroying tobacco leaves by Mr. Adkin. Mr. Curwen, some 15 examples of *Polyommatus icarus* from near Dorking, showing much variation in the spotting and coalescence of the spots on the under surface. Mr. Hugh Main, parasites of the larva of *Orgyia antiqua* and the larva of the large water-beetle, *Hydrous piceus*. Mr. Ashdown, the larva of *Hyles euphorbiae* from Switzerland. Mr. Barrett read a note on the migration of Butterflies, *Aporia crataegi* and *Pieris brassicae*, in Sicily. Mr. Sich, the cocoon of *Nepticula riminella*.

Thursday, August 14th, 1913.—The President in the Chair.

Mr. Adkin exhibited a series of *Spilosoma urticae* reared from larvae taken at Eastbourne in the autumn, 1912. Mr. Edwards, varied examples of the African *Hamannula daedalus*, pointing out the extreme response of the underside markings to the environment; and the pupa of *Tipula oleracea*, the common "daddy-long-legs." Mr. Barrett, Sicilian and Swiss *Satyra hermione*, the former the larger, *Rayvardia telicenus* and *Lompides balticus* from Sicily, and the pupae of *Nonagra sparganii* and *N. typhae in situ*, head upwards in the former, downward in the latter. Mr. Dennis, the parasitical plant, *Orobanche major*, from Earl's Colne, and a gall on plantain caused by *Tortrix iceterana*. Mr. Curwen said that *Colias edusa* was common at Mickleham on August 10th, and specimens of *Nisoniades tages* were also obtained on the same date.

Thursday, August 28th, 1913.—Mr. B. H. SMITH, B.A., Vice-President, in the Chair.

Mr. Main exhibited the living imago of an ant-lion which he had bred from a larva obtained in Switzerland in June last. It was a female, and while held would feed on flies presented to it. Mr. West, the Orthopteron *Thamnotrizon cinereus* and *Forficula auricularia* v. *forcipata* from Dartford, and on behalf of Mr. Carr, the rare Coleopteron, *Trichius fasciatus*, from mid-Wales. Mr. Adkin, a specimen of *Agrotis exclamationis* from Lewisham, in which the reniform and orbicular stigmata were united. Mr. Dunster, *Colias edusa* from Lyme Regis, *P. atalanta*, *P. cardui*, and *V. io* from Crewkerne, with *Epione apiciaria*, *Mesoleuca ocellata*, &c., from the same locality. Mr. Curwen, series of *Polyommatus escheri* and *Lycena zephyrus* v. *lycidas* from Switzerland. Mr. Carr, ova of *Bourmia gemmaria* deposited in a box among ova of one of the "thorns." Mr. Turner, specimens of the Coleopteron *Cetonia aurata* from Cortina, a *Cassida* bred from larvae feeding on a *Salvia* near König See, Bavaria, and a nest of a wasp taken from a wall on the road leading from Cortina to Pieve di Cadore. Mr. Sich reported the occurrence of a Tineid, *Tineola biselliella*, in some numbers in the Indian rat-snake's den at the Zoological Gardens. Mr. Step read a communication describing the deliberate cutting of holes by wasps (*Vespa germanica*) through tennis netting which had impeded the direct road to their nest in his garden.—H. J. TURNER, Hon. Secretary.

NOTES ON LEPIDOPTERA FROM GIBRALTAR AND THE
SURROUNDING COUNTRY.

BY CAPTAIN J. J. JACOBS, R.E. (RET^D), M. I. MECH. E., F.E.S.

(Continued from p. 204).

- 3951—*Gnophos mucidaria*, Hb. The notes against *H. japygiaria* apply equally to this species, except that this is the more plentiful.
- 3956.—*G. asperaria*, Hb. Two fine examples of this species taken in the Cork Woods on February 24th, 1912.
- 3983.—*Anthometra plumularia*, B. Taken in June (1911) near the border of the Cork Woods, at San Roque. Fairly common.
- 3998.—*Eurranthis pennigeraria*, Hb., var. *chrysitaria*, H.G. Taken at Granada by Mr. G. O. Sloper, on May 7th, 1911.
- 3999.—*E. plumistaria*, Vill. Met with near the "Queen of Spain's Chair" at the summit of the Sierra Carbonera on April 6th, 1912, when a few specimens were taken. A gale was blowing at the time, which knocked the males about amongst the bushes, so that not one perfect specimen was secured. Two perfect females, however, were taken from bushes where they were drying their wings after emergence from the pupae.
- 4009.—*Thamnonoma semicanaria*, Frr. This species is common throughout the Gibraltar district in March and April. Easily disturbed from low herbage during the day time.
- 4023.—*Phasiane petraria*, Hb. Disturbed from bracken during the day. Cork Woods. March to May. Not very common.
- 4028.—*P. partitaria*, Hb. Gibraltar, in September and October (1910). Rather scarce.
- 4053.—*Econista agaritharia*, Dardoin. One specimen taken at electric light on the Europa main road, Gibraltar. It was flying very late at night on November 8th, 1911. Mr. Prout remarks: "A scarce and variable species, but always recognisable by the fore-leg and the neuriation."
- 4077.—*Aspilates ochrearia*, Rossi. Generally distributed throughout the Gibraltar district, but not very common. It is found amongst grass and at light from February to April, and again in the autumn. Very large specimens are met with occasionally.
- EXOT.—*Celania taniata*, Snell. This little exotic Nolid taken at light in Gibraltar on September 27th, 1910.
- 4112.—*Nola cristatula*, Hb. Gibraltar, May, 1911—12. Scarce.
- 4132.—*Nycteola falsalis*, H.-S. Taken in October (1911) at Gibraltar; not common.
- 4203.—*Arctia villica*, L.—I did not meet with this species until March, 1912. From about the middle of that month until May it occurred commonly on the Rock of Gibraltar. The specimens are larger and finer than

those taken in England, the hind-wings are brighter yellow, and some of the cream-colored spots on the fore-wings are nearly always confluent.

- 4220.—*A. latreillei*, Godt. A pair of this scarce little "Tiger-moth" was taken on a grassy bank by the side of the railway through the Cork Woods, by Mr. Littledale of Gibraltar, in May, 1911. The female duly deposited her eggs and the resulting larvæ were reared until half grown, when they were unfortunately lost through an accident with the box in which they were confined. The pair, which are in good condition, were afterwards handed over to me. This species has been recorded in former lists as *A. casta*, Esp.
- 4238.—*Euprepia pudica*, Esp. This somewhat "*Caja*"-like species was fairly common at light in Gibraltar during the month of September, 1911.
- 4251.—*Coscinia cribrum*, L., var. *candida*, Cyr. One of the commonest insects at light in Gibraltar in April and May, and again from August to October. Also taken in daytime on the Sierra Carbonera on April 21st, 1910. It varies considerably in size.
- 4255.—*Hipocrita jacobææ*, L. Common in some open localities in the Cork Woods in June and July. Larger and finer than English specimens.
- 4257.—*Deiopeia pulchella*, L. I have heard of this insect being abundant near the Cork Woods, and at Algeciras, but have not been fortunate enough to find it in anything like profusion. It was not uncommon at light in Gibraltar during September and October, 1910-11, and among herbage at Algeciras in May, 1912. I secured some very fine specimens.
- 4273.—*Apaidia mesogona*, Godt. One specimen taken at Tangier on September 22nd, 1910.
- 4301.—*Lithosia caniola*, Hb. Apparently double-brooded, but scarce. Occurs at Gibraltar in May and October.
- Exot.—*Ilema apicalis*, Wlk. I took a female example of this bright little exotic "Footman" at Tangier on September 22nd, 1910. Apparently the nearest locality from which it has previously been recorded is Sierra Leone.
- 4328.—*Zygæna sarpedon*, Hb. Taken by Mr. G. O. Sloper at Granada in June, 1910.
- 4351.—*Z. stæchadis*, Bkh. I came upon this local species at a marshy place in the Cork Woods on July 1st, 1911, when it was past its best condition, but I managed to secure two or three good specimens.
- 4359.—*Z. lavandulæ*, Esp. Taken at Granada by G. O. Sloper in June, 1910-11.
- 4383.—*Z. hilaris*, O. One specimen taken at Gibraltar in June, 1910.
- 4386.—*Z. bœtica*, Rbr. This "Burnet" is very abundant in Gibraltar, especially in and near the Alameda Gardens. The first brood was well out on May 10th (1910). The second brood, which emerges in August, is smaller and paler. I have taken specimens in good condition as late as November.

- 4389.—*Z. occitanica*, Vill. Taken at Gramada by Mr. G. O. Sloper in June, 1910-11. Apparently the abs. *albicans*, Stgr., and *disjuncta*, Spul., occur there as well as the type form. Some pupæ which Mr. Sloper brought me produced the ab. *albicans* on July 4th and 5th, 1910.
- 4463.—*Hyalina albida*, Esp., var. *plumosella*, Brd. Occurred by the side of "Engineer Road," Gibraltar, in April, 1911. I took specimens on the 23rd and 30th of that month.
- 4573.—*Sesia ichneumoniformis*, S.V. Met with on one occasion at Gibraltar near "Charles V.'s Wall," just above the Europa Road, on August 13th, 1910, where it was flying in the sunshine with a Hymenopteron (*Polistes gallicus*, L.), which it somewhat resembles on the wing.
- 4596.—*S. colpiformis*, Stgr. Taken at the Sierra Carbonera on June 25th, 1910.
- 4600.—*S. ramburi*, Stgr. Not scarce on the lower slopes of the Sierra Carbonera early in June, 1911.
- 4622.—*S. doryliformis*, O. One specimen near San Roque on June 10th, 1911.
- 4627.—*S. chrysidiformis*, Esp. Taken at Cork Woods on July 2nd and 4th, 1910.
- 4705.—*Stygia australis*, Latr. On a very hot day (June 25th, 1910) at the lower slopes of the Sierra Carbonera, where there is no shelter from the blazing sun, I took one specimen of this uncommon-looking moth, which appears like a curious red beetle when flying. Search was made for other examples, but without success.
- 4718.—*Zeuzera pyrina*, L. One male specimen was taken at Europa Main Road, Gibraltar, clinging to a lamp-post. August 2nd, 1911.

MICRO-LEPIDOPTERA.

- 2.—*Corcyra cephalonica*, Stt. Gibraltar, July and August, 1911. Not common.
- 12.—*Lamoria jordanis*, Rag. One specimen at Gibraltar on September 6th, 1910.
- NEW.—*Crambus*, sp. Near *paludellus*, Hb. Two examples taken at Gibraltar on September 26th and October 8th, 1910.
- 53.—*C. genivoleus*, Hw. Common at light in Gibraltar during October (1910-11).
- 109.—*C. craterellus*, Scop. Taken at the Cork Woods, Sierra Carbonera, and Algeciras from April to July, but not common.
- 129.—*C. caudiellus*, H.-S. One specimen taken in the Cork Woods on July 4th, 1910.
- 165.—*Ancylolomia tentaculella*, Hb. Taken at Gibraltar on Sept. 8th, 1910.
- 219.—*Emalheudes punctella*, Tr. At Algeciras in May and July (1910-12). Not common.
- 232.—*Homæosoma sinuella*, F. Cork Woods and Algeciras, August (1910-11). Not common.

- 253.—*Plodia interpunctella*, Hb. Gibraltar, June and September (1910). Not very common.
- 401.—*Oxybia transversella*, Dup. Gibraltar, July 11th, 1911. Scarce.
- 423.—*Pempelia ardosiella*, Rag. One specimen at light, Gibraltar, October 9th, 1911.
- 468.—*Zophodia convolutella*, Hb. Gibraltar, August 25th, 1911. Scarce.
- 510.—*Etiella zinckenella*, Tr. Not uncommon at Gibraltar from June to August (1911).
- 516.—*E. cantenerella*, Dup. Amongst grass in Gibraltar in August (1910-11). Scarce.
- 645.—*Salebria semirubella*, Scop. Taken at Algeciras in July and August (1910). Not common.
- 766.—*Myelois cribrella*, Hb. Cork Woods and Algeciras in May and June, 1910-12. Not very plentiful.
- 787.—*M. ceratoniv*, Z. Gibraltar, June to August, 1910-11. Fairly common.
- 808.—*Endotricha flammeatis*, Schiff. Granada, Algeciras, and Gibraltar in August and September. Not plentiful.
- 825.—*Aglossa pinguinalis*, L. Taken at the Sierra Carbonera on June 3rd, 1911, and in Gibraltar at light during October, 1911. Not very common.
- 831.—*A. cuprealis*, Hb. From August to October at Granada and Gibraltar (1910). Not common.
- 835.—*Pyralis obsoletalis*, Mann. One specimen at light in Gibraltar on August 19th, 1911.
- 836.—*P. farinalis*, L. Fairly common at Gibraltar and Tangier from June to November (1910-11).
- 901.—*Cledeobia connectalis*, Hb. The males are very plentiful on the grassy lower slopes of the Sierra Carbonera and the open grassy country beyond Algeciras in May and June (1910-12). The females are not often met with.
- 903.—*C. augustalis*, Schiff.—Two specimens taken in the Cork Woods on August 16th, 1911.
- EXOT.—*Nymphula stagnalis*, Zell. One example of this little exotic moth, in excellent condition, was taken at light in Gibraltar on October 27th, 1911.
- 927.—*Duponchelia forcalis*, Z. Gibraltar, at light on October 6th, 1910. Apparently scarce.
- 930.—*Stenia brugnicralis*, Dup. I found this species one of the commonest moths at light at Gibraltar in May and June, and again from August to October, 1910-12. I have also taken it by day in the semi-dark tunnels at the back of the Rock.

- 931.—*S. punctalis*, Schiff. Found only in one spot on the Rock of Gibraltar, near the Mediterranean Stairs, in May, 1911-12. Not common.
971. *Scoparia lineola*, Curt. Taken at rest on tree-trunks and walls in spring and autumn at Gibraltar. Not rare. This was recorded previously as *S. angustca*, Steph.
- 987.—*Ereta ornatalis*, Dup. Not uncommon in Gibraltar and Algeciras from August to October (1910-11).
- 998.—*Glyphodes unionalis*, Hb. This species, which occurs in Britain as a great rarity, is one of the most plentiful *Pyrales* at light in Gibraltar from August to November. It is also occasionally taken there in February and during the summer months.
- 1003.—*Hellula undalis*, F. Taken at light in Gibraltar on October 11th, 1911. Not common.
- 1029.—*Evergestis politalis*, Schiff. One specimen at the Cork Woods on May 23rd, 1911.
- 1039.—*Nomophila noctuella*, Schiff. As plentiful throughout the Gibraltar district in May and October as it is in England and some other countries.
- 1042.—*Phlyctænodes palcalis*, Schiff. Another species which occurs in Britain, but I did not find it as plentiful here as in the Isle of Sheppey some years ago. Taken sparingly at Algeciras during May and June (1910-12).
- 1058.—*P. nudalis*, Hb. Common in the Gibraltar district during the summer and autumn months (1910-11).
- 1072.—*Antigastra catalaunalis*, Dup. Gibraltar at light in October and November (1911); not common.
- 1073.—*Mecyna polygonalis*, Hb. Taken at Tangier only, in September, 1910, and March, 1912. The specimens of the spring brood are larger and finer than those taken in the autumn. Not very common.
- 1115.—*Metasia supbandalis*, Hb. A bright male example taken at Granada on August 8th, 1910. Females, past their best condition, taken at Gibraltar in June and August (1911).
- 1151.—*Pionea ferrugalis*, Hb. Common throughout the Gibraltar district almost all the year round. A unicolorous example taken on June 26th, 1911.
- 1160.—*P. verbascalis*, Schiff. Taken at Algeciras on May 11th, 1912. Scarce.
- 1167.—*P. numeralis*, Hb. A generally common species at light in Gibraltar during the autumn months.
- 1197.—*Pyrausta incoloralis*, Guen. Two examples taken in Gibraltar, October 9th and 11th, 1911.
- 1218.—*P. nubilalis*, Hb. One specimen taken at Algeciras (waterfalls) on July 16th, 1910.
- 1221.—*P. asinalis*, Hb. Common in Gibraltar from March to October (1910-11).
- 1242.—*P. sanguinalis*, L. Examples taken in Gibraltar and Algeciras in May, July and August (1910-12). Scarce.

- 1251.—*P. purpuratis*, L. A not uncommon species throughout the Gibraltar district during the summer months. They have more yellow on the hind wings than British examples.
- 1291.—*Noctuella floralis*, Hb. Found in the same localities as the preceding species, but not quite so common, and are flying later in the season, good specimens having been taken in August (1910-11).
- 1303.—*N. isatidalis*, Dup. One example of this rare moth taken at Gibraltar on October 21st, 1911.
- 1313.—*Oxyptilus tristis*, Z. Gibraltar, April 23rd, 1911. Scarce.
- 1314.—*O. distans*, Z. This "Plume-Moth" occurs at Gibraltar and Algeciras from June to August, but not commonly.
- 1365.—*Alucita tetradactyla*, L. Rare. Taken at light in Gibraltar during autumn months.
- 1383.—*Pterophorus lithodactylus*, Tr. Taken at Gibraltar in March and June (1911). Not common.
- 1387.—*P. monodactylus*, L. One fine example of this common British "Plume-Moth" taken at Gibraltar on October 28th, 1910.
- 1405.—*Stenoptilia zophodactyla*, Dup. Gibraltar, one example on November 7th, 1910, and one on November 8th, 1911.
- 1420.—*Agdistis frankenix*, Z. Were it not for the black dots on the tightly rolled forewings, this "Plume-Moth" might be mistaken for its near British relative *A. benctii*, Curt., which is found so commonly on some of the salt marshes of Kent. Occasionally taken in Gibraltar, near the sea shore, in June and November.
1432. *Orneodes desmodactyla*, Z. Taken at light in Gibraltar from January to June (1910-12). Not common.
- 1455.—*Acalia variegana*, Schiff. Algeciras, on June 23rd, 1911. Scarce.
- 1500.—*Dichelia hyperana*, Mill. Gibraltar, on November 21st, 1910. Also scarce.
- 1528.—*Cacæcia unifasciana*, Dup. Gibraltar, June 3rd, 1910. One specimen.
- 1573.—*Tortrix pronubana*, Hb. Algeciras and Gibraltar, from March to June. Not uncommon.
- 1608.—*Cnephasia longana*, Hw., var. *insolatana*, H.-S. Two examples, disturbed from grass at Tarifa on June 12th, 1911.
- 1622.—*C. walthomiana*, L. A well marked example of this *Tortrix* taken at Gibraltar on May 21st, 1910.
- 1638.—*Cheimatophila tortricella*, Hb. Cork Woods on February 25th, 1911. Not common.
- 1649.—*Lozopera mauritanica*, Wlsm. Two examples taken at Gibraltar on April 20th, 1912.
- 1686.—*Conchylis simoniana*, Stgr. Taken at the Cork Woods on February 24th, 1912. Scarce.

- 1829.—*Phtheochroa rugosana*, Hb. One example at light in Gibraltar on October 20th, 1910.
- 1968.—*Crocidosema plebejana*, Z. Gibraltar, at light on August 2nd, 1911. Scarce.
- 2017.—*Bactra lanceolata*, Hb. Cork Woods on July 2nd, 1910. Not common.
- 2137.—*Epiblema thapsiana*, Z. Taken at light in Gibraltar in June and August (1911-12). Not very common.
- 2257.—*Carpocapsa pomonella*, L. One example in Gibraltar on April 13th, 1910.
- 2926.—*Rhinosisia formosella*, Hb. San Roque, on June 10th, 1911. Apparently scarce.
- 3015.—*Pterolonche pulverulenta*, Z. Taken in Gibraltar in August, 1911. Not very common.
- 3019.—*Epilola stigma*, Stgr. Taken with the preceding. Scarce.
- 3117.—*Pleurota ericella*, Dup. One example of this peculiar little moth taken in Gibraltar on June 26th, 1911.
- 3143.—*Psecadia bipunctella*, F. A well marked fresh specimen taken at light on my verandah on October 9th, 1911. No other examples seen.
- 3201.—*Depressaria scopariella*, Hein. Gibraltar, in June and August (1911). Not very common.
- 3233.—*D. applana*, F. One example at Gibraltar on November 1st, 1910.
- 3280.—*D. heracliana*, DeGeer. Two examples of this common British species taken at light in Gibraltar, in November and January (1911-12).
- 3326a.—*Lecithocera luticornella*, Z., var. *pallicornella*, Stgr. One example at light, Gibraltar, October 5th, 1911.
- 3860.—*Coleophora?* *dianthi*, H.-S. Gibraltar, May 10th, 1910. One example only.
- 4205.—*Lithocolletis adenocarpi*, Stgr. Cork Woods on March 28th, 1910. Not plentiful.
- 4464.—*Atychia cassandrella*, Stgr. Gibraltar, July 15th, 1910. One example.
- 4584.—*Tinea pellionella*, L. Taken at Gibraltar on September 30th, 1910. Not common.
- 4598.—*T. chrysopterella*, H.-S. This bright little moth occurs in the Gibraltar district not uncommonly in May and June (1910).
- 4622.—*Tineola crassicornella*, Z. Taken at the Cork Woods in May, 1910. Apparently uncommon.
- 4693.—*Nemotois latreillellus*, F. This brightly marked little "Long-horn," recalling the British *Adela degeerella*, L., which is so common in our English woods in early summer, is not scarce at San Roque and Algeciras in May and June (1910-11).

About 90 species of *Coleoptera* and *Hemiptera* were taken, but they have not yet been fully worked out, and as these Orders have

been extensively dealt with in the following excellent papers, it is not considered necessary to give lists of them here.

1. "An Entomological Winter Campaign in Spain and North Africa," by G. Dieck; a translation of which appears in the "Entomologist," Vol. XXI, pp. 38-43, and 75-81 (1888).
2. Papers on the "*Coleoptera* of the Region," by G. C. Champion; in Trans. Ent. Soc., 1891, pp. 375-402; and 1898, pp. 65-104.
3. A paper on the *Hemiptera-Heteroptera*, by Edward Saunders; in Ent. Mo. Mag., Vol. XXIX, pp. 98-102.

The following lists of some of the *Aculeate-Hymenoptera* (36 species), *Diptera* (24 species), and *Neuroptera*, &c. (30 species) taken, have not apparently been previously recorded from the region.

ACULEATE HYMENOPTERA.

(Identified by the Rev. F. D. Morice, M.A.)

Dasylabris (Mutilla) maura var. *arenaria*, F. ♂; *Elis senilis*, F. ♀; *Salix rubellus*, Eversm. ♀; *Sceliphron spirifex*, L. ♂; *Philanthus triangulum*, F. ♀; *Bembex mediterranea*, Handl. ♂ and ♀; *Vespa crabro*, L. ♀; *Polistes gallicus*, L. ♀ and ♂; *Eumenes corretatus*, L., var. *pomiformis*, ♂; *Odynerus (Lionotus) erenatus*, Lep. ♀; *Halictus scabiosæ*, Rossi ♂; *Anthophora acervorum*, L., var. *nigrofulva*. ♀; *A. quadrifasciata*, Vill. ♀; *A. albigena*, Lep. ♀; *A. garrula*, Rossi ♀; *A. dispar*, Lep. ♀; *Eucera notata*, Lep. ♀; *Anthidium manicatum*, L. ♂; *A. sticticum*, Lep. ♂ and ♀; *Osmia aurulenta*, Pz. ♂; *O. morawitzi*, Per. ♂; *Chalicodoma muraria*, F., var. *bætica*. ♀; *Xylocopa violacea*, L. ♀; *Mclecta armata*, Pz. ♀; *Crocisa ramosa*, Lep. ♀; *Bombus terrestris*, L. ♀; *Apis mellifica*, L. ♀.

Other species of *Aculeate Hymenoptera* from the region are dealt with in a paper by Edward Saunders published in Ent. Mo. Mag., Vol. XXVI, pp. 201-205 and 289-291.

DIPTERA.

(Identified by E. E. Austen, Nat. Hist. Museum).

TABANIDÆ: *Pangonia*, sp.; *Pangonia*, sp.; *Chrysops cæcutiens*, Linn.; *Tabanus macularis*, Fabr.; *Tabanus*, sp.

BOMBYLIDÆ: *Villa paniscus*, Rossi; *Anthrax*, sp.; *Lomatia sabæa*, Fabr.; *Amictus variegatus*, Meig; *Bombylius punctatus*, Fabr.; *B.* sp.? *cruciatus*, Fabr.

EMPIDÆ: *Empis tessellata*, Fabr.

ASILIDÆ: *Selidopogon diadema*, Fabr.; *Asilus barbarus*, Linn.; *Asilus*, sp.

SYRPHIDÆ: *Catabomba albomaculata*, Macq.; *Sphærophoria scripta*, Linn. *Eristalistenax*, Linn.; *Myiatropa florea*, Linn.; *Cerioides respiformis*, Latr.

TACHINIDÆ: *Eutachina*, sp.

MUSCIDÆ: *Gastrophilus bengulensis*, Macq.

EXOTIC LEPIDOPTERA.

W. F. H. ROSENBERG, 57, Haverstock Hill, London, N.W.,
England,

Begs to announce the publication of a new Price List (No. 18), containing over 8000 species from all parts of the world. This Catalogue contains a large number of rarities and recently-described species at very moderate prices. Collections illustrating *Mimicry* and *Mimetic Combinations*, *Type Collections*, and *Lepidoptera in papers*, at specially reduced rates. An instructive series of *Preparations of Neuration*.

Authors' names are given throughout.

This List will be mailed free on application, as will Lists of any of the following:—

Birdskins (over 5000 species); Birds' Eggs (1100 species); Mammals (over 300 species); Reptiles, Batrachians, and Fishes (over 400 species).

Please state which lists are required, and give name of this periodical.

Localities guaranteed. All specimens sent on approval.

Desiderata.—Live pupæ of *Cucullia chamomillæ*. State cash price or exchange wanted.—HON. N. CHARLES ROTHSCHILD, Arundel House, Kensington Palace Gardens, London, W.

WATKINS & DONCASTER, Naturalists,

Keep in stock all Articles for Entomologists, Ornithologists, Botanists, &c.: Umbrella Net, 7/-; Folding Cane or Wire, 3/6, 4/-, 4/6; Plain Ring Net, 1/3, 2/-, 3/-; Pocket Boxes, 6d., 9d., 1/-, 1/6; Store Boxes, with Camphor Cells, 2/6, 3/6, 4/-, 5/-, 6/-; Zinc Pocket Boxes, 9d., 1/-, 1/6, 2/- Setting Boards, from 5d. to 1/10; Complete set of 14 boards, 10/6; Breeding Cages, 2/6, 4/-, 5/-, 7/6; Sugaring Tins, 1/6, 2/-; Sugaring Mixture, ready for use, 1/9 per tin; Setting Houses, 9/6, 11/6, 14/-; Glass Topped and Glass Bottomed Boxes, from 1/- per doz.; Zinc Killing Boxes, 9d., 1/-; Coleoptera Collecting Bottles, 1/6, 1/8; Collecting Box, containing 26 tubes (very useful for Coleopterists, Microscopists, &c.), 4/6; Brass Chloroform Bottle, 2/6.

Improved Pocket Pupa-digger in leather sheath (strongly recommended), 1/9; Steel Forceps, 1/6 to 3/- per pair; Pocket Lens, from 1/6 to 8/6.

Taxidermists' Companion, containing most necessary implements for skinning, 10/6; Scalpels, with ebony handles, 1/3; Fine Pointed Scissors, 2/- per pair; Brass Blow-pipes, 4d., 6d.; Egg Drills, 2d., 3d.; ditto, best quality, 9d. each; Botanical Vasculum, 1/6, 2/9, 3/6, 4/6; Label List of British Macro-Lepidoptera, with Latin and English Names, 1/6; List of British Lepidoptera (every species numbered), 1/-; or on one side for Labels, 2/-.

SILVER PINS FOR COLLECTORS OF MICRO-LEPIDOPTERA, &c.,

as well as minute insects of all other families.

We stock various sizes and lengths of these Silver Pins, which have certain advantages over the entomological pins usually employed.

For instance, insects liable to become greasy and verdigrisy, like Sesiidæ, are best pinned on Silver pins, which will last much longer than the ordinary pins (whether enamelled black, or gilt, or silvered).

We shall be pleased to send pattern cards on application.

A large stock of British, European, and Exotic Lepidoptera, Coleoptera, and Birds' Eggs.

ENTOMOLOGICAL PINS.

The "DIXON" LAMP NET (invaluable for taking Moths off street lamps without climbing the lamp posts), 3s. 6d.

SHOW ROOM FOR CABINETS, &c.

36, STRAND, LONDON, W.C., ENGLAND.

Birds and Mammals, &c., Preserved & Mounted by first-class workmen.

Our New Price List (100 pp.) sent post free to any address on application.

CONTENTS.

PAGE

On the British species of <i>Bythinus</i> , Leach.— <i>James Edwards, F.E.S.</i>	217
<i>Tribolium castaneum</i> , Herbst = <i>ferrugineum</i> , Auct. (<i>nee</i> Fab.)— <i>K. G. Blair, F.E.S.</i>	222
New species of Coleoptera allied to <i>Xantholinus ochraceus</i> , Gyll.— <i>Norman H. Joy, M.R.C.S., F.E.S.</i>	224
On <i>Apion selousi</i> , Newb., and other species of <i>Apion</i> — <i>E. A. Newbery</i>	226
On two species of Haplithrips new to the British Fauna— <i>R. S. Bagnall, F.L.S., F.E.S.</i>	227
<i>Nemosoma elongatum</i> , L., in the Oxford district.— <i>J. Collins</i>	229
Pairing of different species of Coccinellidæ.— <i>J. R. le B. Tomlin, M.A., F.E.S.</i>	229
<i>Cicindela maritima</i> , Dej., on the coast of Kent.— <i>J. J. Walker, M.A., R.N., F.E.S.</i>	229
<i>Gnorimus nobilis</i> , &c., at Colchester.— <i>Bernard S. Harwood</i>	230
<i>Cerceris 5-fasciata</i> preying on <i>Strophosomus faber</i> .— <i>Id.</i>	230
<i>Agraylea pallidula</i> , McLach., added to the British Fauna.— <i>Rev. A. E. Eaton, M.A., F.L.S.</i>	230
OBITUARY.—Prof. Odo Morannal Reuter, Hon. F.E.S. (<i>with Portrait</i>)	230
SOCIETIES.—South London Entomological Society	231
Notes on Lepidoptera from Gibraltar and the surrounding country (<i>continued</i>). — <i>Capt. J. J. Jacobs, R.E. (retd.), M.I.Mech.E., F.E.S.</i>	233

THE THREE COLOURED PLATES illustrating the articles on
“ SOME INTERESTING BRITISH INSECTS,”

with the accompanying text (issued in the Ent. Mo. Mag. for September, 1909, and January and September, 1910) are issued in a separate wrapper, price 2s.

APPLY TO THE PUBLISHERS.

ENTOMOLOGISCHE MITTEILUNGEN, Published by the Verein zur Förderung des Deutschen Entomologischen Museum. Monthly Entomological paper; official edition of the Deutsches Entomologisches Museum, whose large Library is at the disposal of all Subscribers at most liberal terms. Gratis to each number continuation of the Library's Catalogue. Terms: 7s. (m. 7) a year; 3s. 6d. (m. 3.50) half a year.

Address: Deutsches Entomologisches Museum, Berlin-Dahlem, Gosslesstr., 20.

DR. STAUDINGER & BANG-HAAS, BLASEWITZ-DRESDEN, in their new Price List, No. LVI for 1913, offer more than 19,000 species of well-named LEPIDOPTERA, set or in papers, from all parts of the world, in finest condition; 1600 kinds of PREPARED LARVÆ, &c.; we sell no more living pupæ. Separate Price Lists for COLEOPTERA (29,000 species); HYMENOPTERA (3600 species), DIPTERA (2900), HEMIPTERA (2500), ORTHOPTERA (1200), NEUROPTERA (630), BIOLOGICAL OBJECTS (300).

PRICES LOW. DISCOUNT FOR CASH ORDERS.

Second Series, No. 287.] NOVEMBER, 1913. [PRICE 6*d.* NET
[No. 594.]

THE
ENTOMOLOGIST'S
MONTHLY MAGAZINE.

EDITED BY

G. C. CHAMPION, F.Z.S. J. E. COLLIN, F.E.S.

W. W. FOWLER, D.Sc., M.A., F.L.S.

R. W. LLOYD, F.E.S. G. T. PORRITT, F.L.S.

J. J. WALKER, M.A., R.N., F.L.S.

SECOND SERIES—VOL. XXIV.

[VOL. XLIX.]

“J'engage donc tous à éviter dans leurs écrits toute personnalité, toute allusion dépassant les limites de la discussion la plus sincère et la plus courtoise.”—*Laboulbène.*

LONDON:

GURNEY & JACKSON (MR. VAN VOORST'S SUCCESSORS),
33, PATERNOSTER ROW, E.C.

SOLD IN GERMANY BY FRIEDLÄNDER UND SOHN, BERLIN.

REDUCED PRICES FOR BACK VOLUMES.

FIRST SERIES.

This can only be obtained in complete Volumes (bound or unbound)

A limited number of sets, from Vol. x to Vol. xxv can still be obtained at £2 15s. per set net (in parts), or of five consecutive Vols. at £1 per set net (if bound, 1s. per Vol. extra).

Certain of the Vols. i to ix can be had separately at 10s. each.

SECOND SERIES.

Vols. i to xv. are now offered at £3 per set net (in parts), or £1 2s. 6d. for five consecutive Vols. (if bound, 1/- per Vol. extra).

Apply to the Publishers.

NOTE.—Subscriptions for 1913 (6s. per annum, post free) are now due, and should be paid to R. W. LLOYD, I. 5, Albany, Piccadilly, London, W.

It would be a great convenience to the Editors in keeping the accounts if these were paid promptly, as having to send reminders entails a considerable amount of extra work.

The Coloured Plates issued in September, 1909, January and September, 1910, and September, 1911, having been so much appreciated by our readers, a fifth (devoted to *Dermaptera*) was given with the October, 1911, number; two more were issued in the August, 1913, number.

EXOTIC LEPIDOPTERA.

W. F. H. ROSENBERG, 57, Haverstock Hill, London, N.W.,
England,

Begs to announce the publication of a new Price List (No. 18), containing over 8000 species from all parts of the world. This Catalogue contains a large number of rarities and recently-described species at very moderate prices. Collections illustrating *Mimicry* and *Mimetic Combinations*, *Type Collections*, and *Lepidoptera in papers*, at specially reduced rates. An instructive series of *Preparations of Neuration*.

Authors' names are given throughout.

This List will be mailed free on application, as will Lists of any of the following:—

Birdskins (over 5000 species); Birds' Eggs (1100 species); Mammals (over 300 species); Reptiles, Batrachians, and Fishes (over 400 species).

Please state which lists are required, and give name of this periodical.

Localities guaranteed. All specimens sent on approval.

CITY OF LONDON ENTOMOLOGICAL AND NATURAL HISTORY SOCIETY, London Institution, Finsbury Circus, London, E.C.—The First and Third Tuesdays in the month at 7.30 p.m., except in July and August. Visitors are cordially invited to attend with exhibits.—V. ERIC SHAW, Hon. Sec.

ENTOMOLOGICAL NEWS.

A forty-eight page illustrated magazine, issued monthly, except in August and September, devoted to the study of INSECT LIFE. It contains a resumé of the proceedings of a number of Entomological Societies, and also articles by the leading Entomologists in the United States and Canada. Valuable information for the beginner, the economic entomologist, and the systemist. TWO DOLLARS a year in advance. Single copies, 25 cents. Address—

ENTOMOLOGICAL NEWS,

The Academy of Natural Sciences,

1900 RACE STREET, PHILADELPHIA, PA.

NEUROPTERA, &c.

(Identified by W. J. Lucas, B.A.)

NEUROPTERA *Palpares libelluloïdes*, Linn.; *Nemoptera bipennis*, Illiger.ODONATA: *Sympetrum sanguineum*, Müller; *Onychogomphus uncatius*, Charp., ♂; *Anax imperator*, Leach, ♂; *Æschna mixta*, Latr., ♂; *Calopteryx hamorrhoidalis*, Van der Lind, ♀; *Lestes viridis*, Van der Lind.ORTHOPTERA: *Labiidura riparia*, Pallas; *Mantis religiosa*, Linn.; *Iris oratoria*, Linn.; *Acerida nasuta*, Fab.; *Pachytylus danicus*, Linn. (= *cinerascens*, Fab.); *Ædipoda cærulescens*, Linn.; *O. fuscocincta*, Lucas.

(The other species taken have not yet been identified).

Amongst the *Arachnida*, *Myriopoda*, &c. taken, is a new species of spider, which Mr. Stanley Hirst, of the Nat. Hist. Museum, proposes to describe shortly under the name of *Calpeus jacobsi*.It is certain that the above lists represent but a small fraction of the various insects which would be found in this region, if each Order were as systematically worked as the *Lepidoptera* have been.As an Appendix I give a list of *Lepidoptera* previously recorded, mostly by Commander J. J. Walker, but which have *not* been met with by me, thus bringing into a concise and up-to-date form our present knowledge of the Insect fauna of this interesting region.

APPENDIX.

Colias hyale, Godt.—Granada, May, 1911. A. H. Jones.*Vanessa urticae*, Esp.—Granada. A. H. Jones.*Pieris napi*, L.—Cork Woods. L. P. Irby.*Thestor mauritanicus*, Lucas.—Tangier, March, 1887-9. J. J. W.*Lycæna theophrastus*, F.—Esmir, July, 1888. J. J. W.*Melitæa phœbe*, Kn., var. *ætheria*, Hübn., Cork Woods, April—May. J. J. W.*Argynnis latona*, E. - Campamento, June, 1887. J. J. W.*Anosia plecippus*, L.—Gibraltar, October, 1886. Lient. Bolton, R.A., recorded. J. J. W.*Pararge mæra*, L., var. *adraste*, Hübn.—Malaga, April, 1888, and Granada, 1911. J. J. W. and A. H. Jones.*Hesperia zelleri*, Lederer.—Marocco, Sept.—Oct. 1887-8. J. J. W.*Pterogon proserpina*, Pall.—Campamento. *Larvæ*, June 1888. J. J. W.*Sciapteron tabaniforme*, Rott.—Gibraltar, July, 1887. J. J. W.*Paranthene tineiformis*, E.—San Roque, June. J. J. W.*Nola cicatricalis*, Treitschke.—Gibraltar, October. J. J. W.*Phragmatobia fuliginosa*, L.—Esmir. J. J. W.*Orgyia josephinæ*, Oberth.—Esmir. J. J. W.*Oeneria atlantica*, Ramb.—Gibraltar, July, 1887. J. J. W.*Cossus ligniperda*, L.—*Larvæ*, Campamento. J. J. W.

- Saturnia carpini*, L.—Cork Woods. March. J. J. W.
Pygæra bucephala, L.—San Roque, March, 1888. J. J. W.
Cerura bifida, L.—Gibraltar, August. J. J. W.
Raphia hybris, Hübn.—Gibraltar, August, 1887. J. J. W.
Acronycta psi, L.—Tangier, April, 1887. J. J. W.
Tapinostola muscolosa, L.—San Roque, May. J. J. W.
Pachnobia rubricosa, W. V.—Campamento, May, 1888. J. J. W.
Agrotis dahlîi, Hübn.—Gibraltar, November, 1887. J. J. W.
A. leucogaster, Freyer.—Tetuan, February, 1887. J. J. W.
A. ypsilon, Rott.—Gibraltar, October. J. J. W.
Trigonophora flammea, E.—Gibraltar, November, 1887. J. J. W.
Eriopus latreillei, Dup.—Gibraltar, October, 1887. J. J. W.
Calocampa vetusta, Hübn.—Gibraltar, October, 1887. J. J. W.
Calophasia platyptera, E.—Tangier, September, 1887. J. J. W.
Cleophana antirrhini, Hübn.—San Roque, May, 1887. J. J. W.
C. yanii, Dup.—Cork Woods, May, 1887. J. J. W.
Cucullia verbasci, L.—Gibraltar district, April. J. J. W.
Heliopsis incarnata, Fr.—Cork Woods and Algeciras, May-July, 1887—8.
 J. J. W.
Catocala dilecta, Hübn.—Algeciras, July, 1888. J. J. W.
C. promissa, W. V.—Algeciras, June, 1888. J. J. W.
Cerocala scapulosa, Bdv.—Cork Woods, April and May. J. J. W.
Ophiusa bifasciata, Petagna.—Tangier, September, 1888. J. J. W.
Pseudophia lunaris, W. V.—Cork Woods, April, 1888. J. J. W.
P. tirrhwa, Cr.—Gibraltar, Hüb., 1887. J. J. W.
Spinthrops spectrum, F.—Sierra Carbonera, June, 1887. J. J. W.
Emmilia trabecalis, Scop.—Campamento, August, 1887. J. J. W.
Prothymia conicephala, Staud.—San Roque, July, 1887. J. J. W.
Eugonia quercaria, Hübn.—Cork Woods, June, 1887. J. J. W.
Pseudosestra obtusaria, Walk.—San Roque, March, 1888. J. J. W.
Ligia opacaria, Hübn.—Cork Woods, October, 1887. J. J. W.
Terpmomicta dilectaria, Hübn.—Tangier, September, 1887. J. J. W.
Selidosema plumaria, W. V.—Campamento, summer and autumn. J. J. W.
Thamnonoma gesticularia, Hübn.—Cork Woods, May and June. J. J. W.
Fidonia fumula, Esp.—Granada, May, 1911. Jones.
Gnophos respersaria, Hübn.—Cork Woods and Gibraltar, June. J. J. W.
Boarmia rhomboidaria, W. V.—Algeciras, June, 1888. J. J. W.
Pachyencmia hippocastanaria, Hübn.—Cork Woods, May. J. J. W.
Nemoria herbaria, Hübn.—Gibraltar, October, 1888. J. J. W.
Acidalia perocharia, Rossl.—Campamento, June. J. J. W.
A. elongaria, Ramb.—Campamento, May, 1887. J. J. W.
A. circuitaria, Hübn.—Benzus Bay, June, 1887. J. J. W.
A. ostrinaria, Hübn.—Cork Woods, June. J. J. W.
A. emutaria, Hübn.—Esmir, November, 1888. J. J. W.
Sterryha consecraria, Ramb.—Gibraltar, October, 1888. J. J. W.
Chesias griseata, W. V.—Gibraltar, May, 1887. J. J. W.

Ortholitha peribolata, Hübn.—Cork Woods, October, 1887. J. J. W.

Laurentia bilineata, L.—Cork Woods, July. J. J. W.

Stemmatophora gadesialis, Ragonot.—San Roque, July, 1887. J. J. W.

Asopa glaucinalis, L.—Gibraltar, October, 1887. J. J. W.

“La Casa,”

99, Bensham Manor, Thornton Heath:

June, 1913.

THE LIFE-HISTORY OF A NEW FAMILY (*MICROMALTHIDÆ*)
OF BEETLES.

BY HERBERT S. BARBER.

Mr. H. S. Barber's account of the life-history of the single known species of this family of Malacoderm *Coleoptera* [Proc. Biol. Soc. Wash., XXVI, pp. 185–190 (Aug., 1913)] is so interesting that we take the opportunity of reproducing a portion of his paper. The family *Micromalthidæ* is nearly related to *Lymexylonidæ*, and is at present monotypic, being based upon *Micromalthus debilis*, Lec., from North America, an insect having the general facies of *Hydnocera* of the family *Cleridæ*.—EDS.

“During an attempt, still progressing, to secure by breeding all of the stages in the paedogenetic beetle, *Micromalthus debilis*, Lec., certain astonishing facts have become evident which make the life-history of this beetle the most remarkable in the *Coleoptera*, if not one of the most remarkable in the whole class *Insecta*. Although still far from complete the publication of the life-history, as now known or foreseen, may cause students investigating other life-histories to look for hitherto unsuspected features in their problems, which if not really looked for, would pass unnoticed.”

Micromalthus presents perhaps the most plastic larval forms yet known, combined with a practically fixed adult form of wide distribution. No close relatives are known, and it seems remarkable that specimens from Michigan, Kentucky, and Virginia should exhibit no tendency towards local variation in a species apparently of such feeble powers of migration. It combines in its life-cycle—eggs by two methods of reproduction, seven or eight forms of larvæ, adults through two distinct lines of larvæ, oviparous paedogenesis and viviparous paedogenesis. The species appears to present a beautiful case of sex-determination, and this also seems to be an effective barrier against inbreeding; for males and females of the same brood appear unable to issue simultaneously on account of the interpolated larval stages of the former

The breeding of the specimens is not difficult, except when too frequently disturbed. The larvæ do not appear well able to re-adjust their surroundings

after the gallery is opened, and the adherence of the skin to any smooth surface like glass has prevented their being kept in thin sections between microscope slides. Chips of wood kept in plaster cells have given best results, but the life-history must be pieced together out of disjointed observations and occasional thorough examinations of breeding material of known origin.

Beginning with the young larva born by the paedogenetic mother larva, we have a minute white larva principally conspicuous by its long, slender legs of the Carabid type—i.e., coxa, trochanter, femur, tibia, *tarsus* and *two claws*. The remains of the mother are usually consumed by some of her young, after which all crawl away. This stage is to the species a minor migratory form, securing dispersal into new parts of the log in which the colony is living. After crawling out of the mother's cell the young wander for a time, then start burrowing into the wood again, feed a little, and after a week or so moult into the second form which is legless and much resembles a Cerambycid larva, but for its odd but inconspicuous anal armature. A second or perhaps a third moult must occur in this form to allow for growth of head. The larva bores through the wood, packing its gallery tightly behind it with dust for some months, the body appearing dark coloured from the food in the alimentary tract. During the latter part of this growth the eggs in the ovaries of what will be the paedogenetic form become plainly evident as large obliquely placed, oval, white bodies on each side of the distended and dark colored alimentary tract. When full fed it reverses its position in the gallery, makes a cell and begins to "aestivate." Gradually the body becomes white until no food is left in the alimentary tract. It then either, very rarely, pupates, or usually, moults, disclosing the paedogenetic form. After a period of about two weeks the young numbering from three or four, to thirty or forty, but usually about ten in number are born, tail first, and begin the new generation. Certain individuals of the paedogenetic form, however, do not develop embryos, and of these many die apparently barren, but others void, through the vulva, instead of several migratory or "Caraboid" young, a single large, soft, oval egg which adheres to the side of the mother and hatches in eight or ten days into a first stage larva utterly unlike the previous forms, and which much resemble a weevil larva in appearance. This larva puts its head into the vulva of its mother and feeds on the contents of her body, growing rapidly and looking like the larva of a Hymenopterous parasite. When full-fed it changes into another form of larva having short, stumpy, three-jointed legs, and later pupates. It now appears that only male imagoes develop out of this metrophagous larva from the uni-oviparous paedogenetic form, and that only female imagoes develop direct from pupae out of the Cerambycoid larva.

According to common knowledge it is expected that the female after mating will lay eggs (few in number and of large size as in other paedogenetic species) which will hatch into first stage larvae (probably different from either of the other first stage larvae that have been mentioned), and that these will moult into feeding larvae that may or may not be the feeding larvae preceding the paedogenetic form.

It is believed that males only are developed from the mother-devouring Curculioid larva hatching from the single egg of the oviparous paedogenetic form, and that the amount of animal food taken by the young Caraboid larvæ in feeding after birth upon the body of their viviparous paedogenetic mother may govern the development of females or the oviparous paedogenetic form instead of viviparous paedogenetic individuals. Other factors, however, must of course play important parts, and it is quite possible that a change of the wood to a dryer, warmer condition may force a majority of the developing brood of feeding larvæ out as females.

The provision against inbreeding, before alluded to as the series of interpolated larval stages of the male should be better explained. The Cerambicoid larva, to produce a female, simply changes to pupa and issues very shortly as adult ♀; while one that will produce a male must become in sequence:—uni-oviparous paedogenetic form,—egg,—Curculioid 1st larva,—metrophagous larva,—short-legged prepupa,—pupa, and adult ♂. By this time all of his sisters will have lived their short lives and died.

A detailed account of one of the most significant series of observations, in which the progeny of one paedogenetic mother developed to reproduce by all three methods above shown, may put the matter in a clearer light to the reader.

A colony of larvæ was found in a pine log at Natural Bridge, Ky., in September, 1912, by Mr. T. E. Snyder, who gave some fragments of wood containing Cerambicoid larvæ to the writer on January 3rd, 1913. These were placed in a plaster cell, and on February 8th the colony was found to be maturing into paedogenetic individuals. From these latter a number of isolations were made, and one large community cell was started of the progeny found in the cell of a paedogenetic mother whose shrunken body had probably been consumed by the young, as has since been almost proven to be the rule. These twenty-one, first-stage, legged larvæ were placed in a plaster cell in a tin box and supplied with food in the form of fragments of decaying wood from an oak stump, in which the writer had failed to find evidence of this species. In an hour the larvæ had all disappeared, but later one was found dead with the fungus disease (?) that causes these larvæ to turn pink, die, and then throw out fine radiating white filaments for nearly a millimeter in all directions. Some others probably died early. After two months some of the chips were broken up, and larvæ of about 3 mm. in length were found. Luckily, on July 1st, almost five months after starting the breeding cell, the contents were carefully examined. Sixteen of the original twenty-one were found in the following conditions:—

Seven were full-fed larvæ, in two of which the paedogenetic form could be seen ready to moult.

Four were in the paedogenetic stage, but did not display embryos within body, and subsequently died (apparently barren).

Two were represented only by the cells in which the paedogenetic form had developed, given birth to young and been consumed by them; six young being in one cell and seven young in the other.

Two paedogenetic individuals had each laid an egg which was adhering to the side of the body.

One had transformed to the pupa of the adult ♀.

The cells of the pupa and one of the oviparous paedogenetic individuals were less than 3 mm. apart, and in wood of the same character of decay, which fact would appear opposed to the idea of food differences controlling development, unless early in their history.

Of the above, some were preserved, some died; the young were placed in new cells with pulverized wood to try to raise them. The pupa transformed to an adult female which lived about five days and died unmated. One of the two paedogenetic individuals, with attached egg, rubbed the egg free, and the latter was lost in the wood debris. Next day the other specimen had two adhering bodies—one egg and one young Curculioid larva, the latter being in the position on the mother in which her first egg had been. The new egg may have been the one lost by the other reproductive individual, or may have been a second egg laid by the one who carried it. At any rate, the first larva had the advantage, and the next day the rival egg had disappeared (supposed to have been eaten); the larva had its head in the vulva of the mother and was growing rapidly, feeding on the contents of her body, but later, when full-fed, became a victim of mould, and died."

COLEOPTERA IN CAMBRIDGESHIRE AND HUNTINGDONSHIRE.

BY H. FORTESCUE FRYER, F.E.S.

The following list of *Coleoptera* taken in Cambridgeshire and Huntingdonshire does not purport to be a complete County List, but it may perhaps be of assistance to some worker who at a future time, by an exhaustive search through the records contained in various publications, may compile such a catalogue.

I am aware that a communication of this kind is lacking in general interest, but it seemed inadvisable that the results of nearly ten years systematic collecting should be lost: more especially as the districts Chatteris and Holwoods, which are contiguous and occupy an area of some 30 square miles, have been regularly and more or less thoroughly worked, and, excluding the *Trichopterygidæ*, it is very seldom that a fresh species comes under notice.

The species enumerated are those I and my son, J. C. F. Fryer, have taken during the years 1905—1913; in some few cases the record of a species goes back to 1879—1882; when these records have not been confirmed during the period first mentioned, the words "old record" have been added. In cases where only one specimen of a

species has occurred, although there is no reason to doubt the correctness of the record, it has been thought advisable to note the fact.

It has not been considered necessary to indicate the relative scarcity or the reverse of a species, as many which are taken infrequently are probably plentiful in their own particular, though it may be restricted, locality; or their occurrence is dependent on the distribution of their food-plant; or again they must be sought for in a special manner, *e.g.*, wood-borers and root-feeding species.

The determination of many of the more critical species, and in some cases of entire genera, has been confirmed by experts, while that of the remainder is, I believe, to be depended on, as also are the localities. On the other hand, in a list like this, errors are not impossible and in such cases will be subject to correction.

I am much indebted to Dr. D. Sharp, Messrs. Balfour-Browne, W. Bevins, E. G. Elliman, J. H. Keys, and J. R. le B. Tomlin for their kindness in examining difficult species and genera, and to the Hon. Chas. Rothschild, who since he has acquired it, has kindly allowed us to continue collecting in Wood Walton Fen.

NOTES ON LOCALITIES.

CAMBRIDGESHIRE.

CHATTERIS. The locality Chatteris consists of a very varied collecting ground, and calls for special notice. It contains (1) Cultivated fen, *e.g.*, Chatteris Acre Fen, fields divided by ditches filled with reeds, *Carex*, *Juncus*, and various water-plants; (2) Uncultivated fen, *e.g.*, Chatteris Turf Fen, S.; (3) Strong land having one small portion fairly well-wooded with old oaks and maples. These varied conditions account for the large number of species the locality contains.

HOLWOODS. Cultivated fen, the forest trees only willows and poplars.

CHIPPENHAM and **WICKEN** are well known and need no comment.

WIMBLINGTON FIRELOTS and **HORSEWAY** are two pieces of uncultivated fen with a more restricted Flora than Chippenham and Wicken.

MEPAL and **EARITH** lie on the banks of the Ouse, a tidal river; the insects recorded from these localities are almost entirely from flood rubbish, some of which comes down from the county of Huntingdon.

DODDINGTON is an old oak wood of limited extent, the only wood among the Cambridgeshire localities.

BABRAHAM, **CHERRYHINTON**, **FLEAM DYKE**, and **NEWMARKET** lie on the chalk.

MADINGLEY is partly chalk and partly strong land.

ARRINGTON and MELBOURN are ordinary strong land.

CAMBRIDGE is well known and needs no comment.

The tidal river before mentioned runs for some five or six miles on the edge of the Chatteris and Holwoods district, a fact which may account for the record of a few species whose occurrence inland would otherwise be unlikely.

HUNTINGDONSHIRE.

WARBOYS is an oak wood very similar in character to Monks Wood, with which in former times it may have been in connection.

WOOD WALTON is a Huntingdonshire fen, of which Holme Fen is the type.

ALCONBURY, COLNE DROVE, KIMBOLTON and OLD HERST are ordinary Huntingdonshire strong land.

ST. NEOTS, HEMINGFORD, and ST. IVES lie on the banks of the Ouse and consist of similar land.

* Denotes the occurrence of one specimen only.

CARABIDÆ.

Carabus nemoralis, Müll.—Holwoods; *granulatus*, L.—Chatteris, Warboys; *monilis*, F.—Chatteris. *Notiophilus biguttatus*, F.—generally distributed; *substriatus*, Wat.—Chatteris, Wood Walton; *aquaticus*, L.—Holwoods; *rufipes*, Curt.*—Holwoods, one specimen; *palustris*, Duftt.—Doddington, Mepal, Holwoods, Warboys. *Leistus fulvibarbis*, Dej.—Chatteris; *ferrugineus*, L.—generally distributed; *rufescens*, F.—Chatteris. *Elaphrus riparius*, L.—old record, Chatteris. *Loricera pilicornis*, F.—Chatteris; *Clivina fossor*, L.—Mepal. *Dyschirius globosus*, Hbst.—Mepal, Wood Walton. *Badister unipustulatus*, F.—Chatteris Acre Fen; *bipustulatus*, F.—Chatteris, Holwoods, Warboys; *sodalis*, Duftt.—Wood Walton. *Oodes helopioides*, F.—Wood Walton. *Acupalpus exiguus*, Dej.—Wood Walton, Wimblington; *meridianus*, L.—Chatteris, Holwoods; *consputus*, Duftt., Chippenham. *Bradycellus placidus*, Gyll.—Wimblington, Wood Walton; *verbasci*, Duftt.—Chatteris; *harpalinus*, Dej.—Chatteris. *Harpalus rupicola*, Stm.—Chatteris; *puncticollis*, Pk.—Chatteris; *rufibarbis*, F.—Chatteris, Chippenham; *ruficornis*, F., and *æneus*, F.—generally distributed; *latus*, L.—Chatteris, Mepal; *tardus*, Panz.—Holwoods, Chatteris. *Stomis pumicatus*, Pz.—Chatteris, Warboys. *Pterostichus cupreus*, L.—generally distributed; *versicolor*, Stm.—Chatteris; *madidus*, F.—Chatteris, Warboys; *vulgaris*, L.—Chatteris, Holwoods; *anthracinus*, Ill.—Mepal, Wood Walton; *nigrita*, F.—Mepal; *gracilis*, Dej.—Chatteris, Horseway; *minor*, Gyll.—Chatteris, Holwoods, Madingley, Warboys; *strenuus*, Pz.—Chatteris, Mepal, Holwoods, Wood Walton; *diligens*, Stm.—Chatteris, Wimblington, Madingley, Wood Walton; *picimanus*, Duftt.—Chatteris, Mepal; *inæqualis*, Marsh.—Warboys; *vernalis*, Pz.—Chatteris, Mepal; *striola*, F.—Warboys *Amaria apricaria*, Pk.—Chatteris, Warboys; *aulica*, Pz.—Chatteris; *ruforincta*, Dej.—Chatteris, Wood Walton; *bifrons*, Gyll. (*livida*, F.)—Chatteris, Horseway; *ovata*, F.—generally distributed; *similata*, Gyll.—Holwoods, Chatteris; *acuminata*, Pk.—Chatteris, old record; *tibialis*, Pk.*—Chatteris; *familiaris*, Duftt.—

generally distributed; *lucida*, Dufts.—Chatteris; *trivialis*, Gyll.—Chatteris, Holwoods, Mepal; *communis*, Pz.—Chatteris, Holwoods, Mepal, Warboys; *plebeia*, Gyll.—Chatteris, old record. *Calathus cisteloides*, Pz.—Chatteris; *flavipes*, Fourc.—Holwoods, Warboys; *melanocephalus*, L.—generally distributed. *Anchomenus dorsalis*, Müll.—generally distributed; *oblongus*, F.—Chatteris, Wood Walton; *livens*, Gyll.—Holwoods, Doddington; *parumpunctatus*, F.—Chatteris; *viduus*, Pz.—Chatteris, Mepal, Wood Walton; *micans*, Nic.*—Chatteris; *fuliginosus*, Pz.—Chatteris, Holwoods, Wood Walton; *puellus*, Dej.—Horseway. *Bembidium obtusum*, Stm.—Chatteris, Doddington, Madingley. *guttula*, F.—Chatteris, Mepal, Wood Walton; *mannerheimi*, Sahlb. Chatteris; *biguttatum*, F.—Chatteris, Mepal, Holwoods; *riparium*, Ol.*—Mepal; *æneum*, Germ.—Chatteris, Mepal, Holwoods; *fumigatum*, Dufts.*—Wood Walton; *assimile*, Gyll.—Wood Walton; *gilcipes*, Stm.—Chatteris, Mepal; *lucrosus*, Hbst.—Chatteris, Holwoods, Warboys; *nigricorne*, Gyll.—Chatteris; *nitidulum*, Marsh.—Warboys; *4-maculatum*, L.—Chatteris; *flammulatum*, Clairv.—Chatteris. *Tachypus flavipes*, L.*—Chatteris Acre Fen. *Trechus micros*, Hbst.—Mepal; *minutus*, F.—generally distributed; *obtusus*, Er.—Chatteris Acre Fen. *Demetrius monostigma*, Sam. (*unipunctatus*, Germ.)—Wood Walton; *atricapillus*, L.—generally distributed. *Dromius linearis*, Ol.—generally distributed; *meridionalis*, Dej.—Chatteris; *agilis*, F.—Chatteris; *4-maculatus*, L.—generally distributed; *4-notatus*, Pz.—Chatteris; *melanocephalus*, Dej.—generally distributed. *Blechnus maurus*, Stm.—generally distributed. *Metabletus truceatellus*, L.—Chatteris, Holwoods; *obscuroguttatus*, Dufts.—Chatteris. *Brachinus crepitans*, L.—Warboys.

HALIPLIDÆ.

Haliplus obliquus, F.—Chatteris Turf Fen, Holwoods, Horseway; *immaculatus*.*—Holwoods; *flavicollis*, Stm.—Holwoods, Horseway; *variegatus*, Stm.—Horseway; *ruficollis*, De G.—Holwoods, Wimblington..

DYTISCIDÆ.

Noterus sparsus, Marsh.—Chatteris; *clavicornis*, De G.—Horseway. *Laccophilus interruptus*, Pz.—Chatteris Acre Fen, Turf Fen, Wimblington; *obscurus*, Pz.—Chatteris Acre Fen. *Hyphydrus ovatus*, L.—Holwoods. *Colymbus versicolor*, Schall.*—Chatteris; *inæqualis*, F.—Holwoods, Horseway. *Deronectes assimilis*, Pk.—Holwoods; *depressus*, F.—Chatteris Turf Fen; *12-pustulatus*, F.*—Wimblington. *Hydroporus pictus*, F.—Holwoods, Acre Fen; *granularis*, L.*—Holwoods; *lepidus*, Ol.*—Horseway; *halensis*, F.—Holwoods, Wimblington, Warboys; *dorsalis*, F.—Holwoods, Chatteris; *lineatus*, F.—Holwoods, Horseway; *tristis*, Pk.—Chatteris Acre Fen; *angustatus*, Stm.—Chatteris Acre Fen, Horseway; *palustris*, L.—Holwoods, Chatteris Acre Fen, Horseway; *incognitus*, Shp.*—Chatteris Acre Fen; *erythrocephalus*, L.—Holwoods; *memnonius*, Nic.—Chatteris; *nigrita*, F.—Chatteris; *planus*, F.—Holwoods, Acre Fen; *lituratus*, F.*—Chatteris Acre Fen; *obsoletus*, Aub.—Chatteris, old record. *Agabus paludosus*, F.—Holwoods; *uliginosus*, L.—Wimblington; *unguicularis*, Th.—Chatteris, Acre Fen; *dilymus*, Ol.—Holwoods; *nebulosus*, Forst.—Chatteris Turf Fen, Mepal; *femorialis*, Pk.—Wimblington; *abbreviatus*, F.—Chatteris, Holwoods; *sturni*, Gyll.—Chatteris,

Holwoods; *chalconotus*, Pz.—Mepal, Wimblington; *bipustulatus*, L., and var. *solieri*, Aub.—Chatteris, Mepal, Holwoods. *Hybius fuliginosus*, F.—Chatteris, Holwoods; *ater*, De G.—Chatteris, Holwoods; *obscurus*, Marsh.—Chatteris, Holwoods, Wimblington; *guttiger*, Gyll.—Chippenham; *ænescens*, Th.—Holwoods. *Copelatus agilis*, F.—Holwoods, Chatteris. *Rhantus grapii*, Gyll.—Chatteris, Wimblington; *exoletus*, Forst.—Wimblington, *Colymbetes fuscus*, L.—Chatteris, Holwoods, Wimblington. *Dytiscus punctulatus*, F., *marginalis*, L., and *circumcinctus*, Ahr.—Chatteris, Holwoods; *dimidiatus*, Berg.—Chatteris, Wicken; *Hydaticus transversalis*, Berg., and *seminiger*, De G.—Wimblington.

HYDROPHILIDÆ.

Hydrobius fuscipes, L.—Chatteris, Holwoods, *Philhydrustestaceus*, L., and *maritimus*, Th.—Chatteris, Horseway; *nigricans*, Zett.—Chatteris; *coarctatus*, Grsd.—Horseway. *Cymbiodyta ovalis*, Th.—Chatteris, Horseway; *Anacæna globulus*, Pk.—Chatteris; *limbata*, F.—Holwoods; *bipustulatus*, Steph.—Chatteris Aere Fen. *Helochares lividus*, Forst.—Holwoods; *punctatus*, Shp.—Horseway. *Laccobius sinuatus*, Mots.—Chatteris Turf Fen, Holwoods; *alutaceus*, Th.—Chatteris Aere Fen, Holwoods, Earith; *minutus*, L.—Chatteris, Mepal, Holwoods, Earith; *punctatus*, F.—Horseway, Holwoods, Earith; *ylencensis*, Shp.—Holwoods. *Berosus luridus*, L., and *affinis*, Brul.—Chatteris, Holwoods, Horseway, Mepal. *Limnebius papposus*, Muls.—Chatteris Turf Fen, Holwoods. *Helophorus rugosus*, Ol., and *nubilus*, F.—Chatteris, Holwoods; *aquaticus*, Th.—Chatteris, Mepal, Holwoods; *æneipennis*, Th.—Chatteris; *affinis*, Marsh.—Chatteris, Mepal, Holwoods, Horseway; *brevipalpis*, Bed.—Chatteris. *Hydrochus elongatus*, Schal.—Chatteris, Mepal, Holwoods; *carinatus*, Germ.—Horseway. *Ochthebius pygmæus*, F.—Chatteris. *Sphæridium scarabævoites*, L.—Holwoods; *bipustulatum*, F.—Chatteris, Aere Fen. *Cercyon hæmorrhous*, Gyll.—Chatteris; *hæmorrhoidalis*, F.—generally distributed; *obsoletus*, Gyll.—Chatteris; *flavipes*, F., and *lateralis*, Marsh.—Chatteris, Holwoods; *melanocephalus*, L.—Chatteris, Holwoods; *unipunctus*, L., and *quisquilius*, L.—Chatteris, Holwoods; *pygmæus*, Ill.—Chatteris; *analis*, Pk.—Chatteris; *tugubris*, Pk.—Chatteris, Holwoods; *minutus*, Pk.—Chatteris, Holwoods. *Megasternum boletophagum*, Marsh.—Chatteris. *Cryptopteurum atomarium*, Ol.—Chatteris, Doddington, Warboys.

(To be continued).

A NEW SCOPARIA FROM NEW ZEALAND.

BY G. V. HUDSON, F.E.S.

SCOPARIA GALACTALIS, n. sp.

The expansion of the wings is $\frac{7}{8}$ inch. The forewings are creamy-white with blackish-brown markings; there is a small basal patch on the costa and an irregular spot below it; the first line is strongly concave towards the base, very broad on the costa, with a faint brown shading towards the termen and dorsum;

there is an elongate mark on the costa near the middle; the second line is very distinct, slightly wavy, oblique, with a rounded projection towards the termen above the middle; there are four large pale brown spots on the terminal area, the two lower spots being confluent; the cilia are cream-coloured with a double series of brown bars. The hind-wings are greyish-ochraceous with faint lunule and terminal shading.

I discovered this species in January, 1906, amongst the large clumps of *Aspidium aculeatum* which constitute such a conspicuous feature in the Rouburn Valley at the head of Lake Wakatipu. It has recently been rediscovered by Mr. Philpott, who found it in some numbers on the Takitimu Mountains, Southland, at elevations between 2,000 and 3,000 feet above the sea-level. This makes the 88th distinct species of *Scoparia* known in New Zealand.

Hillview, Karori,
Wellington, New Zealand:
September 9th, 1913.

A NEW SPECIES OF *PSYLLOPSIS*, F. LOEW, FROM BRITAIN.

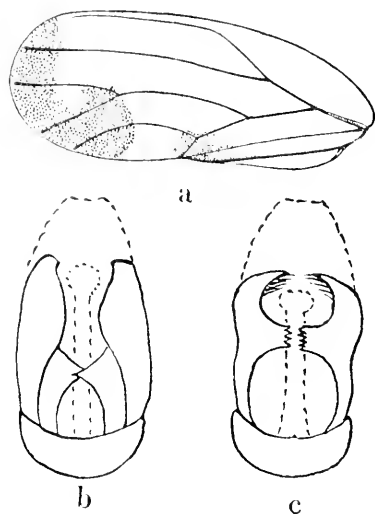
BY JAMES EDWARDS, F.E.S.

PSYLLOPSIS *DISTINGUENDA*, *sp. nov.*

Very similar to *P. fraxini*, L., but a little larger, the black band on the elytra broader, its inner edge regular and sharply defined. Forceps, in the lateral aspect, in the form of an irregular triangle attached by the apex, the free angles rounded and somewhat inflexed, their inner surface, as well as the space between them, roughened with black tubercles; on the middle of the inner side there is a wide submembranous wing which is subequal in width from the base to the middle, where it forms a large triangular tooth, and from thence upward it rapidly becomes lost in the substance of the organ.

I am indebted to Mr. Champion for the opportunity to describe this interesting insect; he took five examples on June 21st, 1913, in the New Forest, together with several *Metatropis rufescens*, by sweeping *Circæa lutetiana* and other low plants, but did not notice any ash trees in the immediate vicinity. The latter circumstance is noteworthy because there is reason to believe that all the species of *Psyllopsis* feed on some kind of ash: *Fraxinus excelsior* and other species of ash are the food-plants of *P. fraxini*, L., and *P. fraxinicola*, Foerst., the only species of which the early stages are at present known; *P. meliphila*, Loew, was found by Then at Lees, in Krain, on *Fraxinus*, and Reuter thought that his specimens of *P. discrepans*, Flor, from Ispois, near Abo, were found on *Fraxinus*.

In *P. fraxini* the forceps in the lateral aspect are in the form of an irregular triangle attached by the apex, the free angles are rounded and inflexed, on the inner side the front one has some long hairs and the hinder one a few black spinose teeth; on the basal half of the inner side near the middle there is a feeble simple ridge. *Psylloopsis meliphila* is an entirely pale species like *P. fraxinicola*; the forceps, in the lateral aspect, are about half as high as the genital plate, the hinder edge is feebly convex and the front edge is produced into a large rounded lobe: *P. discrepans* is a strongly marked insect closely resembling *P. fraxini* and *P. distinguenda*, but is readily known by the form of the forceps, which, in the lateral aspect, have the appearance of a parallelogram supported by a very short and thin stalk.



- a. *Psylloopsis distinguenda*, clytron.
 b. ditto cephalad aspect of male genital segment (diagrammatic).
 c. *Psylloopsis fraxini*, ditto

Colesborne, Cheltenham :

October 14th, 1913

A NOTE CONCERNING CERTAIN CASES OF STYLOPISATION.

BY THE REV. F. D. MORICE, M.A., F.E.S.

There seem to be so few definite records of "stylopisation" in Palæartic Fossorial *Hymenoptera*, or Palæartic Bees, belonging to other genera than *Audrena* and *Halictus*, that I think it may be worth while to enumerate a few cases which have come under my personal observation. Unfortunately I have only the very slightest acquaintance with the "characters," &c., of Strepsiptera, so that I can name neither the species nor even the genera of the parasites here to be recorded, but only of the victims which I have seen infested by them.

Commencing with the Fossors :—

(1) In Trans. Ent. Soc. Lond., 1911, p. 99, I have mentioned a stylopised ♀ of *Tachysphex maculicornis*, E. Saund., taken at Biskra by Mr. Eaton, and now in the S. Kensington Museum. I learnt afterwards from Mr. W. Dwight Pierce, author of a very important recent "Revision" of the Strepsiptera (*Smiths. Inst., Bull. 66*, Washington, 1909), that the genus *Tachysphex* had not been previously recorded among those liable to stylopisation.

(2) I have sent to Mr. Pierce a specimen, taken by myself, but where exactly I cannot at the moment remember, of *Stizus distinguendus*, Handl., ♀, infested by a Strepsipteron. There are a few records of stylopisation in the genus *Stizus*, but not, I believe, in this species, nor in the group of *Stizus* to which it belongs.

(3) I have now before me two stylopised ♂♂ of *Ammophila*—the one (a *Psammophila tydei*, Guill., the other (an *Ammophila* sensu stricto) *heydeni*, Dahlb. In both cases the Strepsipterous parasites are very large, and their presence produces a quite hideous disfigurement of the victim's abdomen. The *tydei* contains three of these creatures, two under the 4th abd. segment and one under the 5th. In the *heydeni* only one Strepsipteron is present, but it is sufficient to distort the appearance of its host in a really ghastly fashion!

The only Bees I can at present mention in this connection are :—

(1) A ♀ of *Panurgus cavannæ*, Grib., which I took at Jericho in April, 1899; and

(2) A ♂ of the same species which I found in the same place just ten years later (April 7th, 1909).

In both these cases the parasite is imbedded under the 4th abd. segment of the host. The ♂ has only one of them, the ♀ has two,

but in neither case is any considerable distortion of the abdomen to be noticed.

Mr. Pierce, whose work will in future be indispensable to any one interesting himself in this subject, gives a very full list of the previously recorded occurrence of Strepsipterous parasites in various groups of *Hymenoptera*, and also in insects belonging to other orders. Most of his records are of exotic or American (not Palaearctic) insects, but I extract from them such as refer to species of Bees and Fossors occurring in our own Region.

Of *Fossors* (Palaearctic spp.) he enumerates the following:—

- (1) *Paraspher albisectus*, Lep., and *ridnatus*, Christ.
- (2) *Sphex* (= *Ammophila*, Kirby and authors) *holosericea*, F., *sabulosa*, L., and *tydei*, Guill.
- (3) *Stizus* sp. ? (*Stizomorphus* group) and *peregrinus*, Sm. (*Bembecinus* group);

and of Palaearctic Bees, apart from *Halictus* and *Andrena* (besides *Biareolina neglecta*, which I cannot consider distinct generically from *Andrena*) the following:—

- (1) *Prosopis bipunctata*, F. (= *signata*, Pz.)—*gibba*, S. S. Saund. *rubicola*, S. S. Saund.—and *variegata* "Saunders" (*sic.* but Fabricius is the author of this species).
- (2) *Halictoides* sp. ? (Innsbruck).
- (3) *Meliturga* sp. ? (Hungary).

There can be little doubt that the above List will be largely increased if the subject be ever taken up seriously by European specialists.

Brunswick, Woking :

October 21st, 1913.

Insects caught by an Orchid.—While I was at Pont de l'Arche in Normandy this summer, I was greatly pleased at finding numerous examples of that great rarity in Britain, *Orchis hircina*, L. (the Lizard Orchis). On examining a specimen for botanical purposes, I found a species of *Halictus* (kindly determined for me by the Rev. F. D. Morice as *H. quadrinotatus*, Kirb.) firmly caught by the head by the sticky disc of the pollinia; it was quite unable to withdraw the latter and seemed already much exhausted by its efforts. On my pulling it out of the flower, of course the pollinia came with it. Further search resulted in the finding of a small black ant, *Tapinoma erraticum*, Latr. (also named by

Mr. Morice) caught in the same way, but already dead. This orchid is evidently intended to be visited by large and strong insects—the form of the landing-stage formed by the labellum also suggests this—and we have here an interesting illustration of the fate that may await unwelcome visitors to a highly specialised flower. Of course, in this case the plant is not in any way benefited by their retention and death, in fact the reverse is the case.—H. G. CHAMPION, New College, Oxford: *October 19th, 1913.*

The range of Phosphuga subrotundata, Steph.—It is many years since I ventured to express the belief that this beetle, which at that time was considered to be a varietal form of *Silpha (Phosphuga) atrata*, L., was in fact a perfectly distinct species. In Ireland, as all who have collected there know, *P. subrotundata* is a generally common species, and I have myself taken it from the Hill of Howth to Westport, and from Killarney to Dundalk. With other Coleopterists I had almost arrived at the conclusion that here at any rate we had an insect really peculiar to Ireland and to Man, and one that assumedly had arrived at specific differentiation within these Islands, and consequently since Pleistocene times.

I have, however, now been compelled to finally abandon this assumption. For some time I have possessed a specimen of *P. subrotundata* taken in Orkney, and I have just seen two more in the collection of Dr. W. J. Fordham of Bubwith, captured in Islay as recently as July last, all three specimens being as perfectly characteristic as any taken in Ireland.

Canon Fowler (Col. Brit. Isl., Vol. III, p. 53) quotes, but only to dismiss as probably erroneous, a record by Reitter of this *Silpha* from Scotland, and in the second part of the "Supplement" (Additional localities, &c.) the authors make themselves responsible for the statement that *S. subrotundata* "is confined to Ireland and the Isle of Man," but I have now little doubt but that the record of Reitter was quite authentic, and that the range of this beetle in reality closely approximates to that of *Carabus clathratus*, L. It still remains, however, apparently peculiar to these Islands, and a member of the "Celtic" element in our fauna—for to judge by its obtrusive habits (I have picked up half a dozen in traversing half a mile of road in Co. Clare) and general abundance wherever it is found, it seems improbable that it would have remained unnoticed had it really occurred elsewhere in northern Europe.—W. E. SHARP, Charterlea, Crowthorne, Berks: *October 18th, 1913.*

Coleoptera at Grange-over-Sands.—While waiting for a train at Grange in Morecambe Bay last June, I picked up a few beetles on mudbanks, among which two species are worth recording, viz.:—*Bledius atricapillus*, Germ., and *Polydrusus chrysomela*, Ol., as being apparently new to Lancashire, neither being mentioned in Mr. W. E. Sharp's Lancashire and Cheshire list published in 1908. I saw but one specimen of the weevil, but the *Bledius* was abundant.—F. H. DAY, Carlisle: *September 24th, 1913.*

On various Bledii recently added to the British List.—The following notes by M. Bondroit [Ann. Soc. Ent. Belg., LVII, pp. 297, 298 (Oct. 1913)] on certain *Bledii* recently added to our list by Dr. Sharp (Ent. Mo. Mag. 1911, 1913) will interest British Coleopterists:—*B. campi*, Bondr. (1907) = *B. terebrans*, Schiödte (1866). The latter name is rejected on account of Schiödte's description having been written in Danish! *B. defensus*, Fauv. (1870) = *B. guilielmi*, Sharp (1913). The type of the latter has been examined by M. Bondroit, but he does not state whether he has seen that of Fauvel. *B. lator*, Rey (1877) = *B. fracticornis*, Payk. M. Bondroit states that these two forms cannot be maintained as distinct. According to him the large dark examples generally have the hind angles of the prothorax more rounded than the smaller individuals with reddish elytra, but this character is said to be inconstant and of no specific value. *B. diota*, Schiödte (1866). M. Bondroit is of opinion that this insect is not synonymous with *B. hinnulus*, Er., as suggested by Dr. Sharp. He says that the latter may be known by its smaller size, more convex prothorax, longer elytra, &c. He gives as localities for *B. diota*, Denmark, Great Britain, France, Italy, Algeria, and Tunisia. *B. hinnulus* was from Russia.—G. C. CHAMPION, Horsell, Woking: October 11th, 1913.

Rhizophagus oblongocollis, Blatch and Horner: *synonymical note.*—In a paper on the synonymy of various species of *Rhizophagus*, M. A. Méquignon (Bull. Soc. Ent. Fr., 1913, p. 343) states that *R. oblongocollis*, Blatch and Horner [Ent. Mo. Mag., XXVIII, p. 303 (1892)], from England, = *R. simplex*, Reitter [Wien. ent. Zeit., III, p. 271 (1884)], the type of which was from Japan. The latter is now in the collection of M. Grouvelle in Paris.—G. C. CHAMPION.

Coleoptera from British Honduras.—My friend Mr. A. E. Gibbs, of St. Albans, has recently handed over to me for determination various interesting *Coleoptera* received from his correspondent Dr. F. C. Davis, of Belize. There is nothing new amongst these insects, nevertheless a number of the species have not been noticed from British Honduras in the "Biologia," and are therefore worth recording. The additions are marked with an asterisk.

CARABIDÆ: *Pasimachus rotundipennis*, Chev.*

LAMELLICORNIA: *Mecaspis (Antichira) lucida*, Oliv.; *Pelidnota punctulata*, Bates; *Anomala bimaculata*, Bl.*; *Dyscinelus levipunctatus*, Bates; *Gymnetis chevrolati*, G. and P.*; *Colinus pulverulentus*, Burm.; *Euphoria yucateca*, Bates*: all from Cayo.

PASSALIDÆ: *Ptychopis angulatus*, Perch.*

BUPRESTIDÆ: *Euchroma goliath*, Cast., Cayo; *Chariesthes auronotata*, Saund.

ELATERIDÆ: *Pyrophorus pellucens*, Esch.; *Chalcolepidius rugatus*, Cand.: both from Cayo.

TENEBRIONIDÆ: *Nantes chrysomeloides*, Champ., Cayo; *Strongylium auratum*, Cast., Castile.

CURCULIONIDÆ: *Hilipus circuliiferus*, Champ.; *Compsus* sp.?*

LONGICORNIA: *Lagochirus araneiformis*, L., Cayo; *Pleuromenus baccifer*, Bates*; *Distenia pilatei*, Chev.,* Cayo; *Trachyderes elegans*, Dup.*

These insects have been presented to the British Museum by Mr. Gibbs.—
G. C. CHAMPION.

Cordylomera suturalis, Chev. (introduced) in Yorkshire.—Apropos of Mr. Champion's note on this Longicorn beetle (Ent. Mo. Mag., March, 1913), I have recently seen two specimens of it in Middlesbrough Museum. They are both stated to have been imported in "mahogany" from West Africa, and one is shown *in situ* in a boring in the wood. This latter was found in a wood yard at Middlesbrough, and the other was taken in 1906 in a timber yard at North Ormesby.—W. M. J. FORDHAM, The Villa, Bubwith, Selby, Yorks.: October 16th, 1913.

Cryptorrhynchus lapathi, L., in Aberdeenshire.—So far as I am aware *C. lapathi* has never been recorded from the Aberdeen district. In March last I came across the frass of this beetle on some willows (*S. purpurea*) growing on the banks of the River Dee a few miles from Aberdeen. In April I obtained the weevil still head down in its pupating chamber. It was of a rosy pink colour. In August I secured a number of its larvæ, and in September I obtained both pupæ and imagines. Scheidter, writing in the "Naturwissenschaftliche Zeitschrift für Forst u. Landwirtschaft" for April, 1913, states that his researches show two types of generation, a one year and a two year generation. He also states that in higher altitudes and colder districts the weevil, pupated in August, remains throughout the winter in its pupal chamber.

My own observations agree with his. In this district the generation is a one year generation. Thus in March I have found the weevil still in its pupal chamber and again throughout August and September, and also now in October I have found it in its larval gallery.

That these examples collected in September and October are truly adult and only awaiting the advent of spring before issuing from their pupal chambers is shown by the fact that, if removed from them by splitting open their galleries, they will commence feeding on shoots of willow or other trees if supplied with them. I have examined a few of such weevils, and in the females the ovaries are still undeveloped.—JAMES W. MUNRO, 391, Great Western Road, Aberdeen, N.B.: October 10th, 1913.

Magdalis carbonaria, L., in Morayshire.—In a recent number of the "Ent. Mo. Mag.," Prof. T. Hudson Beare mentions *M. carbonaria* from Grantown.

In March of this year I had sent me for identification a number of the leading shoots of Scots Pine, which were being gnawed and tunnelled by a legless soft-bodied Coleopterous larva. This I considered might be *M. carbonaria*. In May the larvæ sent me pupated and so far confirmed my view, but they never

emerged. However, I secured fresh material and obtained a specimen of the weevil in August. My correspondent, Mr. Watt, Assistant Forester on Darnaway Estate, writes that a twelve year old plantation of Scots Pine, along the left bank of the Findhorn, has suffered from the attacks of this weevil, the broken leaders of the pines testifying to the damage done, which is considerable. Affected shoots show an irregular spiral gnawed in the tender bark, and finally the burrow in the heart of the twig. Except for the spiral groove the frass is very similar to that of *Myelophilus piniperda*.—JAMES W. MUNRO.

Rhagium bifasciatum, F., attacking birch, &c.—In April of this year I found the larva, pupa, and imago of *R. bifasciatum* living in decaying stumps of birch on the banks of the North Esk in Forfarshire. The trees had been destroyed by the fungus, *Polyporus betulinus*. Almost every stem of birch was infested, while a few scattered Scots Pine stems in the condition usually associated with the presence of *Rhagium* showed no signs of its presence. I have also found *R. bifasciatum* larva in birch in Perthshire. In the neighbourhood of Aberdeen this Longicorn beetle does considerable damage to paling posts which have not been creosoted or tarred. On a little frequented track in the neighbourhood of the suburbs of Cults and Bielside, the paling posts on either side of the road have been riddled by *R. bifasciatum*. Larch, pine, and spruce posts are equally affected. Posts which have been in use three or four years only are attacked; fresh or recently erected fences are untouched. In the same neighbourhood *Trypodendron lineatum* also occurs on paling posts and rails, which when split show its curious galleries.—JAMES W. MUNRO.

Rhabdophaga albipennis, Howard, in Aberdeenshire.—Two species of willow, *S. caprea* and *S. aurita*, in this district are the hosts of what I take to be the gall-midge, *R. albipennis*. Young twigs of these willows may show a slight swelling, so slight as to be almost unnoticeable, in the heart of which an orange Cecidomyid larva is found. The larva lies just under the cambial layer. Occasionally one finds twigs torn by tits, which evidently feed on the larva. So far I have not succeeded in hatching out the midge itself. Prof. Trail, of Aberdeen University, informs me that this gall has not been recorded for the district. It is not easily noticed although fairly common. During the past summer I collected numbers of them in the neighbourhood of Tharandt in Saxony. The gall and its enclosed larva accord in all respects with *R. albipennis*, Howard, Zoo-écidies, No. S. 32, page 138.—JAMES W. MUNRO.

A new British Nycteribiid.—I have received during the last few years some examples of *Listropoda blasii* (identified by Dr. Speiser) taken from Daubenton's Bat and Natterer's Bat. The specimens in question were taken at Henley-on-Thames, Teddington, Middlesex, Christchurch, and near Barnsley, Yorks.—N. CHARLES ROTHSCHILD, Arundel House, Kensington Palace Gardens, W.

Mesophylax impunctatus, &c., in Perthshire.—The occurrence of *Mesophylax impunctatus*, McLach., at Lawers, Loch Tay, Perthshire, may be worthy of mention. A fine fresh example (♂) settled on my wife's dress while she was resting on the shore of the Loch in the bright sunshine on July 26th. The members of the group to which this species belongs are essentially nocturnal in their flight, but like some other night-flying insects they seem at times to find their quarters uncomfortable in hot weather and take wing. A ♂ *Stenophylax stellatus*, another night-flying species, was taken the same day under exactly similar circumstances. I do not remember any record of the capture of *Mesophylax impunctatus* in Britain since my note in Ent. Mo. Mag., XL, pp. 52-53. The British localities are Dumfries-shire (1 ♂), Comiston (3 ♀ ♀), Perthshire (as above), and Unst in the Shetlands.—KENNETH J. MORTON, 13, Blackford Road, Edinburgh: October 1st, 1913.

Distribution of Agraylea pallidula, McLach.—With reference to Mr. Eaton's note (p. 230, *antea*) on the interesting capture in Berkshire of *Agraylea pallidula*, McLach., of which Mr. Mosely kindly told me, it may be well at once to supplement the somewhat incomplete account of its European distribution. In addition to the countries mentioned, it has been recorded from several localities in Germany, and it is also well known as a Finnish insect. As an unrecorded locality I may mention Lyons, from which I have a specimen taken by Mr. Eaton himself. An element of interest attaches to the fact that its occurrence in Finland was first established by the discovery of the larvæ and pupæ. In a locality in which *Agraylea multipunctata*, Curt., occurs, Silfvenius found larvæ and pupæ which differed from those of *A. multipunctata*. Some of the pupæ were submitted to me, and as they were nearly ripe for change, there was no difficulty in recognising them as belonging to *A. pallidula*. Silfvenius adds that younger pupæ can be determined from the larval exuvie remaining in the case, the head and thorax of the larva being marked differently from those of *A. multipunctata*. The cases of the two species are much alike. A description of the larva and pupa will be found in Acta Soc. pro Fauna et Flora Fennica, 26, No. 6, pp. 11-12 (1904).—KENNETH J. MORTON.

Cephenomyia rufibarbis in Inverness-shire.—Whilst collecting this summer with my friend Mr. J. E. Black, F.L.S., on Meal-na-Cuaich (3,000 feet), one of the highest hills in the neighbourhood of Dalwhinnie, on July 1st I took three specimens of *Cephenomyia rufibarbis*. As I have been led to believe that it is unusual to see this insect at all commonly on the wing, the record of its capture may be of interest. In 1900 Colonel Yerbury recorded it from the Western Cairngorms (Ent. Mo. Mag., ser. 2, Vol. XI, p. 56) [March, 1900], and the few observations I was able to make agree with his. On Cuaich, *C. rufibarbis* was flying fairly rapidly over the trees on the upper slopes of the hill (2,500-3,000 ft.). It was not noticed at rest, but on turning over a stone one flew from under it. Two others hovered round my head for some time before they were secured in the net. Altogether about ten specimens were seen. In flight they make a low droning noise.—H. B. JOHNSTON, Gonville and Caius College, Cambridge: October 11th, 1913.

Decticus verrucivorus, Linn., *Forficula lesnei*, Finot, and *Apterygida albipennis*, Meg., in East Kent.—From September 12th to 22nd last, I spent at Folkestone, in company with Mr. T. A. Lofthouse, of Middlesbrough. My own special object was to take the three Orthoptera: *Decticus verrucivorus*, *Apterygida albipennis*, and *Forficula lesnei*. The very first tap on low plants in the Folkestone Warren, the morning after our arrival, showed several *F. lesnei* in the umbrella, and we speedily found that the species was very abundant, the common *F. auricularia* being quite a rarity among them, though we afterwards found that the common species was equally abundant in the evenings on our sugared posts higher up in the Warren, a few *lesnei* occurring among them. In the afternoon of the same day (the 13th), thanks to Dr. Malcolm Burr, who kindly motored us over to Stonehall, near Dover, I was able to take both the other species, but unfortunately the *Decticus* was rare. *A. albipennis*, too, was not much in evidence that day, but on a visit to the same spot in the following week I found it in profusion by beating nettles over an umbrella about Stonehall Farm. Common grasshoppers were plentiful: *Stenobothrus viridulus*, *S. bicolor*, *S. parallelus*, all very variable, with *S. lineatus* now and again. *Olythoscelis cinereus* was chirping continually in the low bushes, both at Stonehall and in the Warren at Folkestone. Of Lepidoptera, *Colias edusa* was plentiful, as in so many other places this year (it reached Yorkshire); and *Lycæna adonis* was in good force, some fine underside varieties being taken by Mr. Lofthouse and other collectors who were working for them at the time. I confess, however, that for myself, I could not raise sufficient enthusiasm to examine hundreds of specimens for the sake of these vars.! Sugar was tried on three occasions only, twice in the Warren, and once near the Woods, but moths were not plentiful at it, and nothing of special note was taken.—GEO. T. PORRITT, Elm Lea, Dalton, Huddersfield: October 10th, 1913.

Review.

"REPORT AND TRANSACTIONS OF THE CARDIFF NATURALISTS' SOCIETY." Vol. XLV. 1912 Cardiff: printed for the Society by William Lewis, Duke Street. 1913.

The annual Report of this flourishing local Society, besides much matter of interest to Naturalists in general, contains (pp. 41-58) the first part of a list of the *Coleoptera* of Glamorgan (to the end of the *Philhydrida*) compiled by our esteemed correspondent Mr. J. R. le B. Toulmin, M.A., F.E.S., whose name is a guarantee of its accuracy and thoroughness. The records of Dillwyn, the Rev. A. C. F. Kuper, and other early Coleopterists, including those of the venerable Dr. Alfred Russel Wallace, who in his youth collected beetles in South Glamorgan, are herein collated with the extensive captures and records made by the compiler in more recent years, and the productiveness of this picturesque and varied county in this Order of Insects is fully shown in that part of the list which has so far appeared. Particulars of locality and habitat, &c., of the species dealt with are given in brief but sufficient detail, and it is of special

interest to note that the extremely local *Nebria complanata*, which is perhaps more abundant on the Glamorganshire coast than in any other part of our Islands, was described in 1792 under the name of *Carabus arenarius* (in ignorance of the prior description by Linné) by Fabricius from specimens sent to him by Sir Joseph Banks, who informed Dillwyn that these specimens were "collected by himself while walking along the shore from Swansea to Briton Ferry" where the beetle is to be found in abundance at the present day. It is a matter for some regret that this excellent local list appears in a publication that is issued only at yearly intervals. Under the heading of "Entomological Notes" (pp. 106-109), Mr. H. M. Hallet, F.E.S., records some interesting captures of *Hymenoptera Aculeata*, as well as several additions to the Glamorgan records of these insects.

Societies.

THE SOUTH LONDON ENTOMOLOGICAL AND NATURAL HISTORY SOCIETY:
Thursday, September 11th, 1913.—Mr. A. E. TONGE, President, in the Chair.

Mr. Ashdown exhibited the imago of *Hyles euphorbiæ* bred from a larva taken at Aigle, Switzerland. Mr. Turner, a larva of *Mamestra pisi* from New Cross, feeding on Michaelmas Daisy. Mr. Sheldon, a collection of *Heterocera* taken in the Arctic areas of Norway and Sweden in 1911-12. Of the 18 species shown, 10 are to be found in the British Fauna. Species like *Plusia hochenwarthii*, *Anthrocera exulans* v. *vanadis*, *Psodos coracina* (*trepidaria*), etc., found in the high Alps occurred there near sea level. Mr. West (Greenwich), examples of the wasps *Vespa germanica*, *V. sylvestris*, and *V. vulgaris* to show the specific characters. Mr. Curwen, a series of *Loweia alciphron* var. *gordius* from Iselbe showing much variation in intensity of ground colour, and a short series of *L. amphidamas* from Caux, near Montrenx. Mr. Step, specimens of *Vespa germanica* and *V. vulgaris* to show the difference in the appearance of the face. Mr. Carr, the large spider *Epeira quadrata* from Crockham Hill on heather, and reported *Asphalia diluta* common at sugar, *Noctua glareosa* common, and *Agrotis agathina* fairly common. Mr. Sieh reported *Carpocapsa pomonella* as abundant. Mr. Tonge reported larvæ of *Nonagria typhæ* at Deal to be extensively parasitized this season. Mr. Smith reported *Phryxus livornica* as occurring for the third year in succession at the Lizard, and also specimens of *Leucania vitellina*; *Agrotis lunigera* was taken in some numbers in the same locality.

Thursday, September 25th, 1913.—The President in the Chair.

Exhibition of lantern slides by Members as follows:—

Mr. C. B. Williams, an adult ♂ Embiid bred from a larva from Algeria. Mr. Main, details of the life-history of the larch sawfly, and gave an account of its habits at the different stages. Mr. Step, a photograph of *Epeira quadrata*, the spider taken by Mr. Carr at Crockham Hill. Mr. Lucas, specimens of the local grasshopper, *Gomphoceris rufus*, from Bookham Common, and a bred

female. Mr. C. B. Williams, a piece of bark showing the silky tunnels made by the Embiid larva, from Algeria. Mr. Newman, *Trypides coridon* from Herts, including ab. *semisygrapha*, and a ♀ specimen with asymmetrical wings, the smaller pair dusted with blue. Mr. Curwen, *Brenthis euphrosyne* from several localities, those from the higher Alps being mostly large and light in colour, instead of dark and small as usually stated. Mr. Moore, the aberration of *Rumicia phlaeus* captured during the recent field meeting at Worms Heath; the upper and underside of the forewings had much enlarged spots. — ab. *magnipuncta*, Tutt. Mr. West (Greenwich), a series of the Coleopteron, *Daene rufifrons*, taken from the fungus recently exhibited by Mr. Edwards, and a short series of *Cassida vittata*. Several members reported that *Colias edusa* had been seen in numbers at various places: Box Hill, Margate, Folkestone, &c., and that *C. hyale* had been taken. — HY. J. TURNER, *Hon. Secretary*.

ENTOMOLOGICAL SOCIETY OF LONDON: *Wednesday, October 1st, 1913.*—
Mr. G. T. BETHUNE-BAKER, F.L.S., F.Z.S., President, in the Chair.

Herr Wilhelm Junk, 61. Sachsische-strasse, Berlin, W. 15, was elected a Fellow of the Society.

Mr. H. F. Bartlett exhibited a specimen of *Haplothorax burchellii* found under a stone on the lower part of Flagstaff Hill, St. Helena, on March 25th, 1913. Mr. P. A. Buxton, larval and imaginal *Embiideæ* (sp. as yet undetermined) from various localities in Tunis and Algeria, and from the coast to south of the Atlas Mountains. Mr. E. E. Green, a Drilid (?) beetle from Ambalangoda, Ceylon, with remarkable elongate spatulate mandibular and maxillary palpi, Mr. W. J. Lucas, on behalf of Mr. G. T. Lyle, some silk wound from a Braconid cocoon, together with specimens of the cocoons themselves. Mr. C. B. Williams, specimens of the cocoons of the three British Coniopterygids. Dr. F. A. Dixey, several boxes of Lepidoptera in illustration of the geographical relations of Mimicry. Mr. W. J. Lucas, on behalf of Dr. Burr, specimens of *Diastrammena marmorata*, de Haan, a Stenopelmatid Locustid from Japan, which occurs alive in Relf's Nursery at St. Leonards. Mr. H. Rowland-Brown, an example of *Araschnia levana*, sent him by Mr. T. Butt Ekins of Penarth, who said that he had captured it at the end of May this year on the outskirts of the Forest of Dean. Comm. J. J. Walker, a ♀ *Colias edusa*, F., taken by himself in the Isle of Sheppey, August 21st, 1913, in which the margins of the hind-wings were almost entirely clear golden yellow. Also a specimen of an American Syntomid moth, a *Ceramidia* near *C. chloroplegia*, Druce, found alive in a fruiterer's shop in North Oxford, and evidently just emerged from the pupa. Also the following *Coleoptera*:—(1) A short series of the very rare Halticid beetle *Psylliodes cyanoptera*, Ill., taken in June, 1913, at Wood Walton Fen, Hunts, on *Sisymbrium sophia*, by Mr. W. Holland. (2) A specimen of *Coccinella 10-punctata*, L., var. *confluens*, Haw., taken in the Isle of Sheppey, June, 1912, and another very curious aberration of the same beetle with golden yellow spots. (3) The very rare ♂ of *Matthodes atomus*, Thoms., from Wytham Park, June 14th, 1913. (4) A monstrosity of *Halipplus confinis*, Steph., with three perfectly developed tarsi on

the right-hind leg, from Wood Walton Fen, Mr. Dadd, a collection of *Catocalida*. Mr. Durrant, in behalf of Mrs. W. C. Boyd, a series of specimens of British *Lepidoptera* of great historical interest, which she is presenting to the British Museum. Mr. H. O. Holford, a specimen of *Cænonympha pamphilus* of abnormally large size, and a ♀ of *Ematurga atomaria*, almost without markings. Mr. D. Pearson, a drawer of butterflies taken this summer in the Tyrol.

The following papers were read:—"Illustrations of Specific Differences in the Saws of Female Dolerids," by Rev. F. D. Morice, M.A., F.E.S. "Additions and Corrections to my List of the *Rhopalocera* of Trinidad (1904)," by W. J. Kaye, F.E.S. "On the Urticating Properties of *Porthesia similis*," by H. Eltringham, M.A., F.E.S. — GEO. WHEELER, *Hon. Secretary*.

ON A NEW SPECIES OF *MELANOTHRIPS* (THYSANOPTERA)
FROM TUNISIA.

BY RICHARD S. BAGNALL, F.L.S.

(*Hope Department of Zoology, University Museum, Oxford.*)

MELANOTHRIPS NIGRICORNIS, sp. n.

This species is so closely related to *M. fuscus* (Sulz.) that a separate description is unnecessary. It is of a deeper brownish-black colour and has the antennæ unicolorous in both sexes. The colour of the fore-wings is also slightly darker than in *fuscus* and is continued to the extreme base.

The antennæ are more slender and the basal two-thirds of the outer margin of the third joint is distinctly sinuate; joint 4 is distinctly longer than either 3 or 6 in the ♂ as well as in the ♀, and 8 is not so noticeably shorter than 7 or 9 as in *fuscus*.

The spines on head, prothorax, wing-veins and tibia, are darker, apparently stronger, and more noticeable than in *fuscus*, and the hind tibia in both sexes is without the outstanding hairs on the outer margin near base, seen in *fuscus*.

Type: Hope Collections, University Museum, Oxford.

Hab.: Both sexes taken by Mr. P. A. Buxton in the flowers of a *Convolvulus* (? *C. tricolor*) at Djebel Achkel, N.E. Tunisia, 27-iii-1913. I detected this form in a collection submitted by Mr. Buxton to Mr. C. B. Williams, who has kindly made preparations of both sexes and allowed me to describe the species.

The following is a table of the known living species:—

1. Fore-wings with two broad white cross-bands, antennal joints 2-4 light yellow...*M. ficalbii*, Buffa—Italy (Buffa),
England (R.S.B.)*

Fore-wings obscurely brown or yellowish-brown
without cross-bands..... 2

2. Antennæ darker and slightly more slender; joint 3
concolorous with others, basal two-thirds of outer
margin sinuate; joint 4 distinctly longer than 3
or 6 in both sexes, and 8 a little shorter than 7 or
9. Fore-wings unicolorous to extreme base. Hind
tibiæ without outstanding hairs on outer margin
near apex *M. nigricornis*, sp. nov.—Tunis.

Antennæ not so black; joint 3 yellow, outer margin
not incurved; joints 3, 4 and 6 in ♂ practically
subequal, and 8 in both sexes very noticeably
shorter than 7 or 9. Fore-wing lighter in colour
near extreme base. Hind tibiæ (in ♀ at least)
with two long outstanding hairs on the outer
margin near apex in addition to the usual short
spines *M. fuscus* (Sulz.)—Europe,
Tunis.

October 20th, 1913.

DESCRIPTIONS OF SOME NEW SPECIES OF BRITISH
THYSANOPTERA (TUBULIFERA).

BY RICHARD S. BAGNALL, F.L.S.

(Hope Department of Zoology, University Museum, Oxford.)

In the following notes I have pleasure in describing four new and interesting species of *Tubulifera*. Two of these fall into the genus *Hoplandrothrips*—a genus separated from *Phleothrips*, *s. str.*, by the presence in the male of two small teeth at the tip of the fore-femur within, and—usually—a similar tooth near the base of the fore-tibiæ within. Representatives are known from Europe, North America, and Africa.

HAPLOTHRIPS OBSCURIPENNIS, sp. n.

♀. Length, 1·4 to 1·6 mm.

Comes nearest to *H. juncorum*, Bagn., and *H. aculeatus* (Fabr.).

Colour very deep brownish-black, as in *juncorum*; fore-tibiæ yellowish, shaded with dark grey-brown basally and along the upper and lower margins; intermediate and hind tibiæ lighter at extreme tips; all tarsi yellowish. Antennæ with third joint yellowish, shaded with grey apically, 4 and 5 grey-brown with basal third at least, yellow, somewhat sharply defined; 6 to 8 darker grey-brown, the sixth with basal fourth yellowish.

Head about 1·6 times as long as the prothorax and 1·15 times as long as broad. Cheeks slightly arched. Postocular bristles long. Mouth-cone not

CHANGE OF ADDRESS.

JAMES H. KEYS, *from* Morwell, Freedom Villas, Lipson Road, Plymouth, to 7, Whimble Street, Plymouth.

Capt. J. J. JACOBS, R. E., F. E. S., *from* La Casa, Belsham Manor Road, Thornton Heath, Surrey, to "Framsden," Tring, Herts.

A. E. J. CARTER, *from* Royal Bank House, Blairgowrie, to The Retreat, Monifieth, Forfarshire.

THE CANADIAN ENTOMOLOGIST.

A MONTHLY MAGAZINE DEVOTED TO THE STUDY OF SCIENTIFIC ENTOMOLOGY.

Volume 45 is now in course of publication. Back volumes can be supplied. It is the oldest established Magazine of the kind in America, and has a world-wide circulation. Subscription, \$2 per annum, payable in advance, which includes a copy of the Annual Report of the Entomological Society of Ontario to the Legislature. Editor, Dr. E. M. Walker, Biological Department, University of Toronto, Toronto, Canada.

Address: Entomological Society of Ontario, Guelph, Canada.

LANCASHIRE AND CHESHIRE ENTOMOLOGICAL SOCIETY.—Meetings the third Monday in each Month, October to April. *Hon. Sec.*, WM. MANSBRIDGE, 4, Norwich Road, Wavertree, Liverpool.

WATKINS & DONCASTER, Naturalists,

Keep in stock all Articles for Entomologists, Ornithologists, Botanists, &c.: Umbrella Net, 7/-; Folding Cane or Wire, 3/6, 4/-, 4/6; Plain Ring Net, 1/3, 2/-, 3/-; Pocket Boxes, 6d., 9d., 1/-, 1/6; Store Boxes, with Camphor Cells, 2/6, 3/6, 4/-, 5/-, 6/-; Zinc Pocket Boxes, 9d., 1/-, 1/6, 2/- Setting Boards, from 5d. to 1/10; Complete set of 14 boards, 10/6; Breeding Cages, 2/6, 4/-, 5/-, 7/6; Sugaring Tins, 1/6, 2/-; Sugaring Mixture, ready for use, 1/9 per tin; Setting Houses, 9/6, 11/6, 14/-; Glass Topped and Glass Bottomed Boxes, from 1/- per doz.; Zinc Killing Boxes, 9d., 1/-; Coleoptera Collecting Bottles, 1/6, 1/8; Collecting Box, containing 26 tubes (very useful for Coleopterists, Microscopists, &c.), 4/6; Brass Chloroform Bottle, 2/6.

Improved Pocket Pupa-digger in leather sheath (strongly recommended), 1/9; Steel Forceps, 1/6 to 3/- per pair; Pocket Lens, from 1/6 to 8/6.

Taxidermists' Companion, containing most necessary implements for skinning, 10/6; Scalpels, with ebony handles, 1/3; Fine Pointed Scissors, 2/- per pair; Brass Blow-pipes, 4d., 6d.; Egg Drills, 2d., 3d.; ditto, best quality, 9d. each; Botanical Vasculum, 1/6, 2/9, 3/6, 4/6; Label List of British Macro-Lepidoptera, with Latin and English Names, 1/6; List of British Lepidoptera (every species numbered), 1/-; or on one side for Labels, 2/-.

SILVER PINS FOR COLLECTORS OF MICRO-LEPIDOPTERA, &c., as well as minute insects of all other families.

We stock various sizes and lengths of these Silver Pins, which have certain advantages over the entomological pins usually employed.

For instance, insects liable to become greasy and verdigrisy, like Sesiidæ, are best pinned on Silver pins, which will last much longer than the ordinary pins (whether enamelled black, or gilt, or silvered).

We shall be pleased to send pattern cards on application.

A large stock of British, European, and Exotic Lepidoptera, Coleoptera, and Birds' Eggs.

ENTOMOLOGICAL PINS.

The "DIXON" LAMP NET (invaluable for taking Moths off street lamps without climbing the lamp posts), 3s. 6d.

SHOW ROOM FOR CABINETS, &c.

36, STRAND, LONDON, W.C., ENGLAND.

Birds and Mammals, &c., Preserved & Mounted by first-class workmen.

Our New Price List (100 pp.) sent post free to any address on application.

CONTENTS.

PAGE

Notes on Lepidoptera from Gibraltar and the surrounding country (<i>concluded</i>). — <i>Capt. J. J. Jacobs, R.E. (retd.), M.I.Mech.E., F.E.S.</i>	241
The Life-History of a new Family (Micromalthidæ) of beetles.— <i>Herbert S. Barber</i>	243
Coleoptera in Cambridgeshire and Huntingdonshire.— <i>H. Fortescue Fryer, F.E.S.</i>	246
A new Scoparia from New Zealand.— <i>G. V. Hudson, F.E.S.</i>	250
A new species of Psyllopsis, F. Loew, from Britain.— <i>James Edwards, F.E.S.</i>	251
A note concerning certain cases of Stylopisation.— <i>Rev. F. D. Morice, M.A., F.E.S.</i>	253
Insects caught by an Orchid.— <i>H. G. Champion, B.A.</i>	254
The range of Phosphuga subrotundata, Steph.— <i>W. E. Sharp, F.E.S.</i>	255
Coleoptera at Grange-over-Sands — <i>F. H. Day, F.E.S.</i>	255
On various Bledii recently added to the British List.— <i>G. C. Champion, F.Z.S.</i>	256
Rhizophagus oblongocollis, Blatch and Horner: synonymical note.— <i>Id.</i>	256
Coleoptera from British Honduras. — <i>Id.</i>	256
Cordylomera suturalis, Chev. (introduced) in Yorkshire.— <i>W. J. Fordham</i> ...	257
Cryptorhynchus lapathi, L., in Aberdeenshire.— <i>James W. Munro, B.Sc.</i>	257
Magdalis carbonaria, L., in Morayshire.— <i>Id.</i>	257
Rhagium bifasciatum, F., attacking birch, &c.— <i>Id.</i>	258
Rhabdophaga albipennis, Houard, in Aberdeenshire.— <i>Id.</i>	258
A new British Nycteribiid.— <i>Hon. N. Charles Rothschild, M.A., F.L.S.</i>	258
Mesophylax impunctatus, &c, in Perthshire.— <i>Kenneth J. Morton, F.E.S.</i>	259
Distribution of Agraylea pallidula, McLach.— <i>Id.</i>	259
Cephenomyia rufibarbis in Inverness-shire.— <i>H. B. Johnston</i>	259
Decticus verrucivorus, Linn., Forficula lesnei, Finot, and Apterygida albipennis, Meg., in East Kent.— <i>Geo. T. Porritt, F.L.S.</i>	260
REVIEW—"Report and Transactions of the Cardiff Naturalists' Society," Vol. XLV, 1912.	260
SOCIETIES.—South London Entomological Society	261
Entomological Society of London	262
On a new species of Melanothrips (Thysanoptera) from Tunisia.— <i>R. S. Bagnall, F.L.S.</i>	263
Descriptions of some new species of British Thysanoptera (Tubulifera)— <i>Id.</i>	264

THE THREE COLOURED PLATES illustrating the articles on
"SOME INTERESTING BRITISH INSECTS,"

with the accompanying text (issued in the Ent. Mo. Mag. for September, 1909, and January and September, 1910) are issued in a separate wrapper, price 2s.

APPLY TO THE PUBLISHERS.

ENTOMOLOGISCHE MITTEILUNGEN, Published by the Verein zur Forderung des Deutschen Entomologischen Museum. Monthly Entomological paper; official edition of the Deutsches Entomologisches Museum, whose large Library is at the disposal of all Subscribers at most liberal terms. Gratis to each number continuation of the Library's Catalogue. Terms: 7s. (m. 7) a year; 3s. 6d. (m. 3-50) half a year.

Address: Deutsches Entomologisches Museum, Berlin-Dahlem, Gosslesstr. 20.

DR. STAUDINGER & BANG-HAAS, BLASEWITZ-DRESDEN, in their new Price List, No. LVI for 1913, offer more than 19,000 species of well-named LEPIDOPTERA, set or in papers, from all parts of the world, in finest condition; 1600 kinds of PREPARED LARVÆ, &c.; we sell no more living pupæ. Separate Price Lists for COLEOPTERA (29,000 species); HYMENOPTERA (3600 species), DIPTERA (2900), HEMIPTERA (2500), ORTHOPTERA (1200), NEUROPTERA (630), BIOLOGICAL OBJECTS (300).

PRICES LOW. DISCOUNT FOR CASH ORDERS.

Second Series, No. 288.]
[No. 595.]

DECEMBER, 1913. [PRICE 6d. NET

THE
ENTOMOLOGIST'S
MONTHLY MAGAZINE.

EDITED BY

G. C. CHAMPION, F.Z.S. J. E. COLLIN, F.E.S.

W. W. FOWLER, D.Sc., M.A., F.L.S.

R. W. LLOYD, F.E.S. G. T. PORRITT, F.L.S.

J. J. WALKER, M.A., R.N., F.L.S.

SECOND SERIES—VOL. XXIV.

[VOL. XLIX.]

“J’engage donc tous à éviter dans leurs écrits toute personnalité, toute allusion dépassant les limites de la discussion la plus sincère et la plus courtoise.”—*Laboulbène*.

LONDON:

GURNEY & JACKSON (MR. VAN VOORST'S SUCCESSORS),
33, PATERNOSTER ROW, E.C.

SOLD IN GERMANY BY FRIEDLÄNDER UND SOHN, BERLIN.

NAPIER, PRINTER, SEYMOUR STREET, EUSTON SQUARE.

REDUCED PRICES FOR BACK VOLUMES.

FIRST SERIES.

This can only be obtained in complete Volumes (bound or unbound)

A limited number of sets, from Vol. x to Vol. xxv can still be obtained at £2 15s. per set net (in parts), or of five consecutive Vols. at £1 per set net (if bound, 1s. per Vol. extra).

Certain of the Vols. i to ix can be had separately at 10s. each.

SECOND SERIES.

Vols. i to xv. are now offered at £3 per set net (in parts), or £1 2s. 6d. for five consecutive Vols. (if bound, 1/- per Vol. extra).

Apply to the Publishers.

NOTE.—Subscriptions for 1914 (6s. per annum, post free) are now due, and should be paid to R. W. LLOYD, I. 5, Albany, Piccadilly, London, W.

It would be a great convenience to the Editors in keeping the accounts if these were paid promptly, as having to send reminders entails a considerable amount of extra work.

The Coloured Plates issued in September, 1909, January and September, 1910, and September, 1911, having been so much appreciated by our readers, a fifth (devoted to *Dermaptera*) was given with the October, 1911, number; two more were issued in the August, 1913, number.

THE SOUTH LONDON ENTOMOLOGICAL AND NATURAL HISTORY SOCIETY, Hibernia Chambers, London Bridge. The Second & Fourth Thursdays in each month, at 8 p.m. The lantern will be at the disposal of Members for the exhibition of slides.

ENTOMOLOGICAL SOCIETY OF LONDON, 11, Chandos Street, Cavendish Square, W.—Wednesdays, December 3rd, 1913, January 21st (ANNUAL MEETING), February 4th, 1914.

The Chair will be taken at 8 o'clock in the evening precisely.

The Library is open daily from 9 a.m. to 6 p.m. (except on Saturdays, when it is closed at 2 p.m.), and until 10 p.m. on Meeting nights.

LANCASHIRE AND CHESHIRE ENTOMOLOGICAL SOCIETY.—Meetings the third Monday in each Month, October to April. *Hon. Sec.*, WM. MANSBRIDGE, 4, Norwich Road, Wavertree, Liverpool.

CITY OF LONDON ENTOMOLOGICAL AND NATURAL HISTORY SOCIETY, London Institution, Finsbury Circus, London, E.C.—The First and Third Tuesdays in the month at 7.30 p.m., except in July and August. Visitors are cordially invited to attend with exhibits.—V. ERIC SHAW, *Hon. Sec.*

ENTOMOLOGICAL NEWS.

A forty-eight page illustrated magazine, issued monthly, except in August and September, devoted to the study of INSECT LIFE. It contains a resumé of the proceedings of a number of Entomological Societies, and also articles by the leading Entomologists in the United States and Canada. Valuable information for the beginner, the economic entomologist, and the systemist. TWO DOLLARS a year in advance. Single copies, 25 cents. Address—

ENTOMOLOGICAL NEWS,

The Academy of Natural Sciences,
1900 RACE STREET, PHILADELPHIA, PA.

as long as broad at base, reaching half-way across prosternum; maxillary palpi long. Antennæ 1·6 times as long as the head; relative length of joints approximately:—8 : 15 : 16 : 16·5 : 16 : 15 : 14 : 11.

Prothorax strongly transverse, 2·25 times as broad across hind angles as long; prothoracic setæ long, especially the pair at posterior angles, pointed. Pterothorax slightly broader than prothorax, longer than broad. Wings light greyish-brown, cilia dark; fore-wing more markedly obscured from commencement of the marginal ciliation to beyond the middle; dark patch at base. Hind margin of fore-wing with 3-9 cilia duplicated near apex. Fore-tarsus with a minute tooth. Abdomen long, a little broader than the pterothorax. Tube about 0·6 times the length of head, twice as long as broad at base, gently narrowed apically with a slight and gradual constriction just before apex; apical bristles not quite as long as tube, dark basally but lighter apically. Lateral abdominal bristles yellow; moderately long, especially those on segments 7 to 9.

♂. Prothorax a little longer than in the ♀, and fore-legs slightly incrassate with each fore-tarsus furnished with a distinct tooth.

This species is separated from both *juncorum* and *aculeatus* by the coloration of the antennæ, the clouded fore-wings, the relatively longer prothoracic setæ, and the shorter and more transverse prothorax. From *juncorum* it further differs in its smaller size, the shorter head and relatively longer antennæ, and from *aculeatus* by its deeper coloration. Its habitat, too, is of a different character.

Type: In Hope Collections, University Museum, Oxford.

Hab.: Amongst dead branches, old pea and bean-sticks, &c. Several examples of both sexes at Hogley bog, near Cowley (Oxon); one ♀ at Balsall Common, Warwickshire, September, 1913. Also a single ♀ by general sweeping, near Enslow Bridge (Oxon), 21.ix.13. Both Mr. A. H. Hamm and Mr. Willoughby Ellis have assisted me in securing further examples after my discovery of the species.

HAPLOTHRIPS CEPHALOTES, *sp. n.*

Length about 1·2 mm.

General colour as in *H. aculeatus*, head deep blackish-brown; antennæ with 3rd joint yellowish-brown, and the 4th and 5th a lighter grey-brown (or yellowish-grey-brown) than the following; wings clear.

Head about 1·6 times as long as the prothorax, and 1·1 times as long as broad behind eyes. Cheeks gently rounded and converging strongly posteriorly, minutely spinose; vertex raised in form of hump with the anterior ocellus at apex, facing forwards. Eyes rather prominent, coarsely faceted; post-ocular bristles only moderately long. Posterior ocelli almost touching inner margins of eyes on a line drawn below their anterior third. Antennæ set below vertex, about 1·5 times as long as the head; joint 3 distinctly shorter than 4, and

narrower than 2, 4, and 5; 4 longer and broader than any of the others. Relative lengths of joints, approximately:—18:26:26:31:29:27:24:15. Mouth-cone not quite reaching across prosternum.

Prothorax about twice as broad as long, setæ almost as in *obscuripennis*. Fore tarsus slightly incrassate and armed with a short stout tooth in ♂. Tooth minute in ♀.

Tube about 0.65 times as long as the head, and nearly 2.5 times as long as broad at base; terminal bristles 1.2 times as long as the tube, dark. Lateral abdominal setæ as in *obscuripennis*; yellow.

In type of coloration this species closely resembles *H. aculeatus* though the head is usually noticeably darker than the rest of the body. It is sharply distinguished from *aculeatus* by its smaller size, the noticeably small 3rd and the broad 4th antennal joints, and the distinctly converging head. In the latter respect and in the small third antennal joint, as well as in its small size, *cephalotes* resembles the Japanese *H. oryzae* (Matsumura), from which it may be readily distinguished by the coloration of the antennæ, the smaller 2nd antennal joint, and the longer head compared to the length of the prothorax.*

Type: In Hope Collections, University Museum, Oxford.

Hab.: Several in sedge stacks, Weston-on-the-Green, August and September, 1913.

(*To be concluded*).

COLEOPTERA IN CAMBRIDGESHIRE AND HUNTINGDONSHIRE.

BY H. FORTESCUE FRYER, F.E.S.

(Continued from p. 250).

STAPHYLINIDÆ.

Aleochara fuscipes, F.—Holwoods, Warboys; *tristis*, Gr.*—Chatteris; *lanuginosa*, Gr.—Chatteris Acre Fen, Holwoods, Warboys; *villosa*, Mann., *succicola*, Th., and *nitida*, Gr.*—Chatteris. *Microglossa suturalis*, Sahlb., and *pulla*, Gyll.*—Chatteris; *nidicola*, Fairm.*—Holwoods; *gentilis*, Märk.—Chatteris, Holwoods. *Oxyptoda annularis*, Sahlb.*—Doddington. *Drusilla canaliculata*, F.—Mepal, Warboys. *Homalota gregaria*, Er.—Chatteris, Holwoods, Warboys; *hygrotopora*, Kr.—Chatteris; *volans*, Scriba, and *vicina*, Steph.—Chatteris; *graminicola*, Gr.—Chatteris, Holwoods, Earith; *debilis*, Er.—Chatteris; *circellaris*, Gr.—Holwoods (mole's nest); *analis*, Gr.—Chatteris; *depressa*, Gyll.—Chatteris, Warboys; *hepatica*, Er.—Chatteris; *aquatica*, Th.,* and *euryptera*, Steph.*—Holwoods; *trinotata*, Kr., and *triangulum*, Kr.—

* *H. cephalotes* also approaches *H. graminis*, Hood, from which it is at once separated by its size, coloration of antennæ, much shorter and more strongly transverse prothorax, and the long prothoracic setæ. The head, too, is more noticeably convergent posteriorly than in *graminis*.

Chatteris, Holwoods ; *fungicola*, Th., *nigricornis*, Th., *sericca*, Muls., *nigra*, Kr., *germana*, Shp., and *atramentaria*, Gyll.*—Chatteris ; *longicornis*, Gr., and *laticollis*, Steph.—Chatteris, Holwoods ; *fungi*, Gr.—Chatteris, Holwoods, Dodddington ; *orphana*, Er.*—Holwoods. *Gnypteta labilis*, Er.—Holwoods. *Falugria sulcata*, Pk.,* and *obscura*, Gr.*—Chatteris. *Eucephalus complicans*, Westw.—Dodddington. *Hypocyptus longicornis*, Pk.—Dodddington. *Conosoma littoreum*, L., and *pubescens*, Gr.—Chatteris. *Tachyporus obtusus*, L., and *solutus*, Er.—Chatteris ; *pallidus*, Shp.—Chatteris, Holwoods ; *chrysomelinus*, L.—Holwoods ; *humerosus*, Er.—Dodddington ; *tersus*, Er.—Holwoods ; *hypnorum*, F.—generally distributed ; *pusillus*, Gr.—Holwoods ; *brunneus*, F.—Chatteris, Holwoods. *Tachinus rufipes*, De G.—generally distributed ; *subterraneus*, L., and *laticollis*, Gr.—Chatteris. *Bolitobius lunulatus*, L.*—Chatteris ; *trinotatus*, Er.—Warboys ; *exoletus*, Er.—Chatteris. *Mycetoporus lepidus*, Gr.*—Chatteris ; *splendidus*, Gr.—Chatteris, Holwoods. *Heterothops prævia*, Er.—Chatteris ; *dissimilis*, Gr.—Chatteris, Holwoods ; *quadripunctula*, Gr.—Mepal, Dodddington. *Quedius microps*, Gr., and *ventralis*, Ahr.—Chatteris ; *mesomelinus*, Marsh.—Chatteris, Dodddington ; *talparum*, Deville—Chatteris, Holwoods, Wood Walton ; *brevicornis*, Th.—Chatteris ; *cruentus*, Ol.—Chatteris, Holwoods ; *cinctus*, Pk.—Chatteris, Holwoods, Dodddington ; *fuliginosus*, Gr.—Chatteris, Dodddington ; *tristis*, Gr.—Chatteris, Holwoods ; *molochinus*, Gr.—Chatteris ; *picipes*, Mann.—Chatteris, Dodddington ; *fumatus*, Steph.—Madingley ; *maurorufus*, Gr., and *obliteratus*, Er.—Chatteris, Dodddington, Warboys ; *scintillans*, Gr.—Chatteris ; *rufipes*, Gr.—Chatteris, Mepal, Holwoods ; *semiæneus*, Steph.—Chatteris, Dodddington ; *boops*, Gr.*—Holwoods. *Crcophilus maxillosus*, L.—Chatteris, Holwoods. *Leistotrophus murinus*, L.*—Chatteris. *Staphylinus stercorarius*, Ol.—Newmarket. *Ocypus olens*, Müll.—Chatteris, Holwoods ; *brunnipes*, F.—Wicken ; *cupreus*, Rossi, and *ater*, Gr.*—Chatteris ; *morio*, Gr.—Dodddington, Warboys ; *compressus*, Marsh.*—Dodddington. *Philonthus splendens*, F.—Chatteris, Holwoods ; *intermedius*, Boisd.—Chatteris ; *laminatus*, Creutz.—Holwoods, Warboys ; *æneus*, Ross.—Chatteris ; *proximus*, Kr.—Chatteris, Holwoods, Warboys ; *carbonarius*, Gyll.—Chatteris, Holwoods, Dodddington, Cambridge ; *decorus*, Gr.—Dodddington ; *politus*, F.—generally distributed ; *varius*, Gyll.—Chatteris, Dodddington ; *marginatus*, F.—Holwoods, Warboys ; *fimetiarius*, Gr.—Chatteris, Holwoods, Dodddington, Warboys ; *sordidus*, Gr.—generally distributed ; *fuscus*, Gr.—Chatteris, Holwoods ; *debilis*, Gr.*—Chatteris ; *sanguinolentus*, Gr.—Chatteris Acre Fen ; *cruentatus*, Gmel.—Chatteris ; *longicornis*, Steph.—Chatteris, Warboys ; *variants*, Pk.—Holwoods ; *ventralis*, Gr.*—Chatteris ; *fumarius*, Gr.*—Wood Walton. *Gabrieus trossulus*, Nordm.—Holwoods, Dodddington. *Xantholinus glabratus*, Gr.—Chatteris, Dodddington, Holwoods ; *punctulatus* Pk.—Chatteris, Mepal, Holwoods ; *ochraceus*, Gyll.—Chatteris, Holwoods ; *glaber*, Nordm.—Chatteris ; *tricolor*, F.*—Cambridge ; *linearis*, Ol.—Chatteris, Holwoods, Mepal, Dodddington ; *longiventris*, Heer—Chatteris, Holwoods. *Leptacinus batychnus*, Gyll.—Chatteris, Holwoods ; *linearis*, Gr.—Chatteris, Holwoods, Mepal. *Baptolinus alternans*, Gr.—Holwoods.* *Othius fulvipennis*, F.—Chatteris, Dodddington ; *læviusculus*, Steph.—Chatteris ; *melanoccephalus*, Gr.—Chatteris, Holwoods ; *myrmecophilus*, Kies.—Dodddington. *Lathrobium elongatum*, L.—Chatteris, Holwoods, Dodddington, Warboys ; *boreale*,

Hoch. - Chatteris; *fulvipennis*, Gr.—Chatteris, Warboys; *brunnipes*, F.—Chatteris, Doddington; *longatum*, Gr.—Mepal, Holwoods; *multipunctum*, Gr.*—Chatteris. *Achenium humile*, Nic.—Mepal, Holwoods. *Stilicis rufipes*, Germ.—Chatteris, Holwoods, Doddington, Warboys; *similis*, Er.*—Chatteris; *affinis*, Er.—Chatteris, Holwoods. *Medon propinquus*, Bris.—Chatteris, Holwoods; *melanocephalus*, F.—Chatteris, Holwoods, Warboys. *Sunius angustatus*, Pk.—Chatteris, Doddington; *Pederus littoralis*, Gr.—Chatteris; *riparius*, L.—Wood Walton. *Stenus bimaculatus*, Gyll.—Chatteris, Wood Walton; *junco*, F.*—Chatteris; *ater*, Mann.—Chatteris Aere Fen, Horseway, Warboys; *speculator*, Lac.—generally distributed; *providus*, Er.,* *hupthalmus*, Gr.,* *melanopus*, Marsh., *atratus*, Er.,* *pusillus*, Er., *evigatus*, Er.,* *decoloratus*, Er., *crassus*, Steph. var. *littoralis*, Th., and *argus*, Gr.—Chatteris; *brunnipes*, Steph.—Chatteris, Holwoods, Doddington; *ossium*, Steph.—Chatteris, Holwoods; *impressus*, Germ.—Doddington, Wood Walton; *pallipes*, Gr.—Doddington, Warboys; *flavipes*, Steph.—Arrington, Chippenham, Wood Walton; *pubescens*, Steph.—Chatteris, Holwoods, Horseway; *binotatus*, Ljungh—Chatteris Turf Fen, Holwoods, Wimblington; *bifoveolatus*, Gyll.—Chatteris, Holwoods; *picipes*, Steph.—Doddington; *foveicollis*, Kr.*—Chatteris; *vicinoides*, Gr.—Chatteris Aere Fen, St. Ives; *similis*, Hbst.—Chatteris, Holwoods; *larsalis*, Ljungh—Chatteris; *latifrons*, Er.—Chatteris, Holwoods. *Oxyporus rufus*, L.*—Melbourn. *Platystethus arenarius*, Fourc.,* *corantus*, Gr., *capito*, Heer,* and *nodifrons*, Sahlb.*—Chatteris. *Oxytelus rugosus*, F.—generally distributed; *insecatus*, Gr.,* and *sculptus*, Gr.—Chatteris; *laqueatus*, Marsh.—Chatteris, Cambridge; *piceus*, L., Holwoods, Mepal; *invictus*, Gr.—Chatteris; *sculpturatus*, Gr.—Chatteris, Holwoods; *complanatus*, Er.*—Chatteris; *tetracarinatus*, Block—Chatteris, Chippenham. *Haploderus exaltatus*, Gr.—Holwoods. *Coprophilus striatulus*, F.*—Chatteris. *Lestera sicula*, Er.—Wimblington. *Olophrum piceum*, Gyll.—Warboys. *Lathrinium atrocephalum*, Gyll.—Chatteris, Holwoods, Warboys; *unicolor*, Steph.—Chatteris, Doddington. *Homalium rivulare*, Pk.—generally distributed; *allardi*, Fairm.—Chatteris, Holwoods; *excavatum*, Steph.—Chatteris; *rufipes*, Fourc., *cile*, Er., *iopterum*, Steph., and *concinnum*, Marsh.—Chatteris, Holwoods. *Anthobium minutum*, F.—Chatteris, Wood Walton. *Proteinus ovalis*, Steph.—generally distributed; *macropterus*, Gyll.*—Chatteris. *Megarthus denticollis*, Beck,* *affinis*, Müll.,* and *depressus*, Pk.*—Chatteris. *Phlaobium clypeatum*, Müll.—Chatteris, Holwoods.

(To be continued).

THRYPTICUS NIGRICAUDA, A NEW SPECIES: AND NOTES ON A FEW OTHER DOLICHOPODIDÆ FROM HEREFORDSHIRE.

BY JOHN H. WOOD, M.B.

Thrypticus nigricauda, sp. n. It may be rather rash to introduce a new *Thrypticus*, but there are in this case so many good characters that I feel it quite safe to do so, and have named it after one of its chief characteristics, the large and black end piece of the male hypopygium. Six males and three females were taken at the deeper end of

Moccas Pool on July 22nd, 1912. At the time they were thought to be Verrall's *lætus*, on account of the dark colour of the thoracic bristles and the black hypopygium. But when Mr. Collin visited me early in last August, and we swept the true *lætus* at the opposite and shallower end of the pool, I was able to compare the two forms, and to see how thoroughly distinct they were. There is also, I learn, a damaged male in Verrall's collection, taken at Ormesby Broad (Norfolk), as far back as June 22nd, 1881, and which he had separated out as a distinct species, but had refrained from introducing, when dealing with *Thrypticus* in his last "Hundred New Species," from the scantiness of the material.

♂ ♀. Bright green. Dorsal and acrostichal bristles dusky (darker in some specimens than in others), the other thoracic bristles yellow. Face blue; arista very long (longer than in any *Thrypticus* I know), slender and pointed. Veins 3 and 4 parallel and not divergent at the margin; the part of vein 5 on the inner side of the X-vein distinctly longer than that on the outer side (in *lætus* the proportions are reversed). Legs black, the tibiæ browner and the knees yellow. The end piece or lamellæ of the hypopygium quite black, very large and distinctly longer than the joint of the stalk above it; ovipositor testaceous, paler at the base, very long and, inclusive of the bulb at base, as long as the last two abdominal segments. In *lætus* the end piece only of the hypopygium is dark brown, and considerably shorter than the joint above it; whilst the ovipositor is short and black, and not longer with its bulb than the last abdominal segment. The proportion between the joints of the hypopygial stalk is also different in the two species. Measured along the upper border they are of about equal length in *lætus*, but in *nigricauda* the basal joint is longer than the end one.

Argyra grata. This interesting species was met with again this year in its original locality at Mordiford. A male and two females were obtained on July 20th by sweeping the rocky bed of the little Penteloe stream, where it runs hidden away under thick overhanging bushes. It is the smallest of our British species, and is without a trace on thorax or abdomen of the beautiful silvery hue, the usual characteristic of the genus. Its chief distinction lies in the colouring of the abdomen, the sides of which on segments 2, 3, and 4 are in both sexes semi-transparent and yellow, segment 2 being almost wholly yellow, and 3 and 4 in gradually diminishing degrees.

Achaleus cinereus. The habitat for this little-known species is a bit of rough ground outside a small wet wood some two miles from where I live. Here I came across it for the first time on August 15th, 1912, when sweeping the dense patches, 3 or 4 ft. high, of the big *Carex*, *C. riparia*. From this date up to my last visit on October 19th,

I seldom went there without obtaining one or more of the insect, and this autumn it could again be taken in the locality. The sexes are much alike, except in their antennæ, those of the male being rather long and pointed, and largely yellow, those of the female quite black, short and oval. Previous captures seem invariably to have been associated with the common reed, but the plant is plainly not essential, and as a matter of fact it does not grow within miles of the Herefordshire locality. The idea, too, that *cinereus* emerges in the winter is not altogether right, rather it is an early autumnal species, holding on through the winter into the spring.

Campsicnemus marginatus. On September 15th, 1913, I took on the Monnow a female of this rare species, my three previous captures having been all males. *Marginatus* can be pretty easily recognised when turned out of the cyanide bottle by the darkened X-vein and darkened costal half, roughly speaking, of the wings. It is besides absolutely dull on frons and thorax, with the face brilliantly white and widely dilated in its lower half.

Porphyrops nasuta. Of this rare species I took a single male on the banks of the Wye at Fownhope, a few miles below Hereford, on August 18th, 1913.

Porphyrops fracta. Until the capture of the example recorded above, a male of this species had represented *nasuta* in my collection. It was taken on the Monnow as far back as July 13th, 1911. Like the Scotch specimens taken by Col. Yerbury, the cubital vein is neither bent nor broken. But a character that at once distinguishes it is the thick fringe of long black postocular hairs which come curling forward like whiskers and project some distance beyond the eyes.

Herefordshire is particularly rich in the genus *Porphyrops*. Besides the above, *spinicoxa* and *crassipes* are, of course, common, and of general distribution. *Nemorum* is widely distributed, and can hardly be called scarce; *micans* is equally distributed, but less frequently met with; *rivialis*, *riparia*, and *penicillata* are all to be taken on the shingly reaches of the Monnow, whilst *antennata* and *elegantula* seem confined to the muddy reedy pools of Moccas and the Leech Pool. *Antennata* has only been taken once, and that was at the Leech Pool by Col. Yerbury. *Elegantula* also occurs there, but is more common at Moccas, where at the shallow end of the pool it may often be swept throughout July and the early part of August.

Tarrington, Ledbury :
November 6th, 1913.

THE ODONATA, TRICHOPTERA, NEUROPTERA AND PLECOPTERA
OF WOOD WALTON FEN, HUNTINGDONSHIRE.

BY KENNETH J. MORTON, F.E.S.

Recently the Hon. N. Charles Rothschild very kindly gave me a large collection of *Odonata*, *Trichoptera*, and other Neuropteroid insects, numbering several hundreds, taken during the past season in Huntingdonshire on Wood Walton Fen, which is partly Mr. Rothschild's property. As it is very seldom that one has the opportunity of examining the results of the collecting of such insects in a restricted locality over a long period (extending from April 22nd to September 10th), and as in the present case the date of capture of each specimen has been carefully noted, it seems desirable to place these results on record.

Although no actual rarity is included, the collection may be regarded as giving a very good representation of the Neuropteroid fen fauna. It will be seen that dragon-flies form the bulk of the collection. They belong to 12 species and they comprise many teneral specimens, which have been freely taken along with the others of more mature age. The former, being less satisfactory for the cabinet, are usually avoided, and in the present case they add no little interest as they serve to show the continuous succession of fresh emergences which goes on over a considerable period in certain species. No attempt has been made to divide the teneral state into different grades, some of the specimens being in the limp state of the newly emerged imago, while others have attained a fairly firm condition. What appears to be a fairly good dividing point is to be found in the pterostigma and all specimens in which the mature coloration of that mark has not begun to show have been treated as teneral:—

The species are as follows:—

ODONATA.

Lestes sponsa, Hansemann.—1 ♂, 4 ♀ s.

June 30th, 1 ♀ (ten.). July 21st, 1 ♀ (ten.). July 26th, 1 ♂. July 28th
1 ♀ (ten.). August 5th, 1 ♀ (ten.).

Ichnura elegans, Vanderl.—44 ♂ s, 52 ♀ s.

May 28th, 2 ♂ (ten.); 4 ♀ (2 ten.). May 29th, 1 ♂ (ten.); 1 ♀ (ten.).
May 31st, 3 ♂ (2 ten.); 2 ♀. June 1st, 2 ♂ (ten.); 3 ♀ (2 ten.). June 2nd,
5 ♂ (4 ten.); 8 ♀ (6 ten.). June 3rd, 3 ♂ (1 ten.); 3 ♀ (2 ten.). June 4th,
1 ♂; 1 ♀ (ten.). June 5th, 2 ♂ (ten.); 4 ♀ (ten.). June 8th, 1 ♀. June
12th, 1 ♂ (ten.); 3 ♀ (ten.). June 13th, 2 ♂ (1 ten.). June 14th, 3 ♂ (2 ten.);
2 ♀ (ten.). June 15th, 1 ♂ (1 ten.). June 16th, 1 ♂; 2 ♀ (1 ten.). June 17th,

1 ♂ (1 ten.); 1 ♀ (ten.). June 18th, 3 ♀ (2 ten.). June 19th, 1 ♀ (ten.). June 21st, 4 ♂ (2 ten.); 3 ♀ (1 ten.). June 22nd, 2 ♂ (ten.); 1 ♀ (ten.). June 26th, 1 ♀ (ten.). June 27th, 1 ♂; 1 ♀. June 30th, 1 ♂ (ten.); 1 ♀ (ten.). July 2nd, 1 ♀. July 13th, 2 ♂ (ten.). July 14th, 1 ♀ (ten.). July 20th, 1 ♂ (ten.); 1 ♀. July 21st, 2 ♂; 2 ♀. July 26th, 1 ♂. July 28th, 1 ♂. August 9th, 1 ♂ (ten.); 1 ♀.

Enallagma cyathigerum, Charp.—5 ♂ s, 4 ♀ s.

June 18th, 1 ♂ (ten.). June 21st, 1 ♂ (ten.). June 26th, 1 ♂ (ten.). July 8th, 1 ♀ (ten.). July 12th, 1 ♀ (ten.). July 14th, 1 ♀ (ten.). July 21st, 1 ♂. July 26th, 1 ♀. August 7th, 1 ♂ (ten.).

Agrion pulchellum, Vanderl.—39 ♂ s, 38 ♀ s.

May 20th, 1 ♂ (ten.). May 25th, 1 ♀ (ten.). May 26th, 1 ♀ (ten.). May 27th, 3 ♀ (ten.). May 28th, 13 ♂ (8 ten.); 3 ♀ (1 ten.). May 29th, 1 ♂ (ten.); 3 ♀ (1 ten.). May 31st, 5 ♀ (2 ten.). June 1st, 2 ♀ (1 ten.). June 2nd, 2 ♂ (1 ten.); 2 ♀ (1 ten.). June 3rd, 7 ♂ (1 ten.); 3 ♀. June 4th, 1 ♂; 2 ♀ (ten.). June 5th, 1 ♂ (ten.); 1 ♀ (ten.). June 8th, 1 ♂. June 11th, 1 ♀ (ten.). June 12th, 2 ♂ (1 ten.); 1 ♀ (ten.). June 14th, 2 ♂ (1 ten.); 2 ♀ (1 ten.). June 17th, 1 ♂; 1 ♀. June 21st, 3 ♂; 1 ♀. June 22nd, 3 ♂; 3 ♀ (1 ten.). June 26th, 1 ♀. July 11th, 1 ♀. July 26th, 1 ♀. July 30th, 1 ♂.

Agrion puella, Linné. - 37 ♂ s, 30 ♀ s.

May 23rd, 1 ♂ (ten.). May 25th, 4 ♂ (3 ten.); 2 ♀. May 26th, 1 ♂; 1 ♀ (ten.). May 27th, 4 ♂ (3 ten.); 1 ♀ (ten.). May 28th, 7 ♂ (2 ten.); 9 ♀. May 29th, 3 ♂; 3 ♀. May 30th, 1 ♀. May 31st, 4 ♀. June 1st, 1 ♀ (ten.). June 2nd, 3 ♂ (1 ten.); 2 ♀. June 3rd, 8 ♂, 4 ♀. June 11th, 1 ♂. June 14th, 3 ♂. June 15th, 1 ♂. June 21st, 1 ♀; 1 ♂ data lost. June 22nd, 1 ♂.

Pyrrhosoma nymphula, Sulzer.—13 ♂ s, 17 ♀ s.

May 14th, 2 ♂; 4 ♀. May 15th, 1 ♂. May 22nd, 1 ♀. May 25th, 1 ♂; 2 ♀ (1 ten.). May 26th, 1 ♀ (ten.). May 27th, 1 ♂; 2 ♀ (1 ten.). May 28th, 1 ♂; 2 ♀. May 29th, 1 ♀. May 30th, 1 ♀. June 1st, 3 ♂; 1 ♀. June 2nd, 1 ♂; 1 ♀. June 3rd, 3 ♂. June 22nd, 1 ♀.

Brachytron hafniense, Müller.—16 ♂ s, 1 ♀.

May 27th, 1 ♂. May 29th, 3 ♂. May 30th, 1 ♂. June 1st, 1 ♂. June 2nd, 4 ♂; 1 ♀. June 3rd, 5 ♂. June 22nd, 1 ♂.

Æschna cyanea, Müller.—6 ♂ s, 10 ♀ s.

July 12th, 2 ♂ (1 ten.). July 13th, 1 ♀. July 26th, 1 ♀. August 1st, 1 ♀. August 6th, 1 ♀. August 16th, 1 ♀. August 17th, 1 ♂. August 19th, 2 ♂. August 20th, 3 ♀. August 31st, 1 ♀. September 3rd, 1 ♀. September 4th, 1 ♂.

Æschna grandis, Linné.—9 ♂ s, 3 ♀ s.

July 29th, 1 ♂. August 8th, 1 ♂. August 19th, 1 ♀. August 20th, 2 ♂, 1 ♀. August 23rd, 1 ♂. August 26th, 2 ♂. August 27th, 1 ♀. August 29th, 2 ♂.

Libellula quadrimaculata, Linné.—5 ♂s, 2 ♀s.

May 27th, 1 ♂ (ten.). June 3rd, 1 ♂. June 4th, 3 ♂ (ten.). June 15th, 1 ♀. June 17th, 1 ♀.

Sympetrum striolatum, Charp.—12 ♂s, 16 ♀s.

June 12th, 1 ♀ (ten.). June 29th, 2 ♀ (ten.). July 6th, 1 ♂ (ten.). July 9th, 1 ♀ (ten.). July 14th, 1 ♀ (ten.). July 23rd, 1 ♀ (ten.). July 25th, 1 ♀ (ten.). July 30th, 1 ♂ (ten.). August 1st, 2 ♂ (ten.). August 14th, 2 ♀ (1 ten.). August 20th, 1 ♀. August 27th, 2 ♂; 1 ♀. August 29th, 1 ♀. September 3rd, 1 ♂; 2 ♀. September 4th, 1 ♂. September 6th, 1 ♂. September 9th, 3 ♂. September 11th, 2 ♀.

Sympetrum sanguineum, Müller.—4 ♂s, 7 ♀s.

June 26th, 1 ♀ (ten.). June 30th, 1 ♂ (ten.). July 2nd, 1 ♂ (ten.). July 11th, 1 ♀ (ten.). July 28th, 4 ♀ (3 ten.). July 30th, 1 ♂ (1 ten.). August 28th, 1 ♂. August 29th, 1 ♀.

TRICHOPTERA.

Phryganea grandis, Linné, 1 ♂, June 2nd; 1 ♂, July 29th.

Agrypnia pagetana, Curt., 2 ♂, August 10th; 2 ♂, August 14th; 1 ♂, August 28th.

Colpotautius incisus, Curt., 1 ♂, August 30th.

Grammotaulius nitidus, Müller, 1 ♂, June 28th; 1 ♂, July 13th; 1 ♀, July 29th.

Grammotaulius atomarius, F., 1 ♂, May 20th; 1 ♀, May 29th; 1 ♀, June 19th.

Limnophilus flavicornis, F., 1 ♀, July 29th.

Limnophilus marmoratus, Curt., 1 ♂, August 26th.

Limnophilus affinis, Curt., 2 ♀, May 23rd; 1 ♀, May 27th; 1 ♂, June 18th; 1 ♀, July 7th; 1 ♂, August 28th.

Stenophylax permistus, McL., 1 ♂, September 10th.

Trienodes bicolor, Curt., 1 ♀, August 19th.

Æcetis ochracea, Curt., 1 ♀, August 22nd.

Æcetis lacustris, Pict., 1 ♂, August 3rd; 1 ♀, August 19th.

Polycentropus flavomaculatus, Pict., 1 ♀, August 30th.

Holocentropus stagnalis, Albarda, 2 ♀, May 2nd; 1 ♂, May 4th; 1 ♀, May 11th; 1 ♀, May 17th; 1 ♂, May 19th; 1 ♀, May 31st; 1 ♂, June 2nd.

Cyrnus flavidus, McL., 2 ♂, August 14th—22nd.

NEUROPTERA.

Sialis lutaria, Linné, 7 examples, April 22nd, 29th; May 2nd, 3rd, 10th, 27th; June 3rd.

Hemerobius lutescens, F., 2 ♀, May 24th, June 8th.

Hemerobius subnebulosus, Steph., 2 ♂, August 18th, 19th.

Chrysopa flava, Scop., 1, June 12th.

Chrysopa tenella, Schn., 1, July 13th.

Chrysopa vulgaris, Schn., 1, September 4th; 1, September 7th.

Chrysopa phyllochroma, Wasm., 1, June 30th.

Chrysopa perla, Linné, 3, May 24th; 1, May 26th; 1, June 2nd.

Panorpa communis, Linné, 1 ♂, May 20th.

PLECOPTERA.

Nemoura variegata, Oliv., 1 ♂, April 30th; 1 ♂, May 10th; 1 ♀, May 11th.

A few notes on some of the species may be added. It is difficult to explain the scanty number of *Lestes sponsa* and *Eallagma cyathigerum*. The *Lestes* is usually common where it occurs; *E. cyathigerum* is also rather common as a rule, although Ris points out (die schweizerischen Libellen, 1885), that where it occurs along with *I. elegans* and *Agrion puella* and *pulchellum* in Switzerland, it is decidedly not so common as the others.

Of *Ischnura elegans*, six of the females belong to the orange form. Pairs of this species were taken on June 16th and 27th.

In *Agrion pulchellum* there are three males with the second abdominal segment marked as in *puella*. Pairs occurred on June 2nd and 21st.

Agrion puella. The most noteworthy variation in the ♂ is represented by three examples in which the lateral lines of the marking on the 2nd abdominal segment are separated from the transverse line. A pair captured June 2nd.

Pyrrosoma nymphula. Pairs, June 1st and 2nd.

Brachytron hafniense. The comparatively short period of flight in this species is well known. It seems to last just about a month as a rule.

Æschna grandis. Ris (*op. cit.*, p. 34) remarks that the females of this species are decidedly more numerous than the males, but this does not appear to be the case universally; the males being represented in the present collection in the proportion of 3 to 1 female. On the other hand, in *Æ. cyanea*, the females are strongly in the majority.

The comparative absence of mature specimens of *Sympetrum sanguineum* may be due to its rather active and wary habits.

Reference to the *Odonata* of Huntingdonshire will be found in Ent. Mo. Mag., XXXIII, pp. 275-8 (Morton), and in sundry notes in the "Entomologist" for 1907 and the succeeding years, by Mr. F. W. Campion and Mr. Herbert Campion.

Edinburgh:

November 2nd, 1913.

Note on a recorded capture of Carabus cancellatus, Ill., in Britain.—Through the kindness of Prof. Poulton I am now enabled to answer the question asked at p. 110, *ante*. From the Trans. Ent. Soc. London for 1879, p. xlvi, I learned that the collection of the Rev. W. Tylden had been acquired for the Hope Collection at Oxford. I therefore wrote to the Hope Professor to ask if this particular specimen was still included. He very kindly replied informing me that it "is not to be found. The Tylden Collection is almost entirely of weevils. It is true that there were a very few *Carabidæ*, but we have not found the one you name among them."—E. G. BAYFORD, 2, Rockingham Street, Barnsley: November 10th, 1913.

Atheta hybrida, Sharp, in Scotland.—Seven specimens of this insect (four ♂♂ and three ♀♀) were taken by me at sap on a tree in Dalmeny Park on November 4th. As stated by Ganglbauer, the ♂ has a short median keel at the base of the 7th (5th visible) dorsal plate.—M. CAMERON, Royal Naval Hospital, South Queensferry: November 8th, 1913.

Chrysomela fastuosa, Scop., in Devon.—This interesting addition to the county list of *Coleoptera* was made by Alderman W. P. Hiern, Chairman of the Botanic Section, Devonshire Association, in the parish of High Bray, N. Devon, on September 13th. It occurred at an altitude of about 1,090 feet on *Galeopsis tetrahit*, L. Only one example was seen. The specimen was given to Mr. C. W. Bracken, B.A., F.E.S., who has very kindly passed it on to me.—JAMES H. KEYS, 7, Whimble Street, Plymouth: November 12th, 1913.

A recent record of Eudectus whitei, Sharp, from Ingleborough, Yorkshire.—Mr. E. W. Morse, (*The Naturalist*, 1913, p. 401) records the capture of a specimen of *E. whitei* on Ingleborough, on July 1st. It was found crawling beneath an overhanging ledge of rock during a heavy shower. The type of this species was figured in *Ent. Mo. Mag.*, 1910, plate IV, figs. 2, 2a, and it would be interesting to know whether the Yorkshire insect is in all respects similar to the Scottish one, *E. whitei* having been sunk as a variety of *E. giraudi*, Redt., in the last European Catalogue.—G. C. CHAMPION, Horsell, Woking: November 15th, 1913.

Thinobius longicornis, Joy: a correction.—I am indebted to Dr. E. Bergroth for pointing out to me that the name *longicornis* (*ante*, p. 156) has already been used by G. J. Sahlberg for a *Thinobius*. I therefore propose to give the name *T. macroceros* to my species. NORMAN H. JOY, Bradfield, Berks: November 10th, 1913.

Xantholinus substrigosus, Joy: a correction.—I hasten to correct a bad mistake I made in my article on *Xantholinus ochraceus* and its allies (*ante*, p. 224). Having my attention particularly drawn to the fine sculpturing in *X. scoticus*, I noticed the differences in this character in two other forms before me. I supposed that Coleopterists had not noticed the much more obvious

differences in the last joint of the maxillary palpi in these two forms,* and carefully described them, forgetting that it is on these differences that the genus *Leptacinus* is separated from *Xantholinus*! The species I described as *X. substrigosus* is therefore nothing more than *Leptacinus batycheus*, Gyll. *X. scoticus* I still regard as a good species. The very fine sculpturing on the thorax in the two genera *Philonthus* and *Quedius* is of great importance, and I believe always specific. For instance, in *Q. mesomelinus* the fine strigose lines pass straight across the middle of the thorax, whereas in *Q. nigrocervuleus* they are abruptly bent at the middle line. The very closely allied species of the subgenus *Raphirus* can be easily differentiated by a comparison of the fine sculpturing of the head and thorax. Of course it is possible that a character like this may be only varietal in another, even though fairly closely allied genus.—NORMAN H. JOY.

Vespa vulgaris in November.—Social wasps have been extremely abundant this year in Suffolk, and the mild weather of the autumn has caused them to continue working well into November. All through October they were to be observed on the ivy blossom, and, on November 1st, workers of *V. vulgaris* were constantly flying back and forth from their nest in an old willow stump in the garden here in numbers nearly, if not quite, as strong as in August. Smith mentions their hibernation in September. In the wasp plague year (1911) the last was noted here on October 28th.—CLAUDE MORLEY, Monks Soham House, Suffolk: November, 1913.

Obituaries.

Alfred Russel Wallace, O.M., D.C.L., F.R.S., the last survivor of the illustrious band of pre-eminent English Naturalists of the nineteenth century, passed away peacefully, after a brief illness, on the morning of November 6th, at the patriarchal age of nearly 91 years, he having been born at Usk, Monmouthshire, on January 8th, 1823. In this place we can refer only to his life-long connection with Entomological science. In 1845, when residing at Leicester, we find him actively engaged in collecting beetles in company with his afterwards famous colleague H. W. Bates, and in 1848 the two entomologists set out on their memorable expedition to the River Amazon. Wallace's adventures and observations in this wonderful region, and the sad disaster which befell him on the voyage home in 1852, involving the total loss by fire of his chief collections, are related in vivid and graphic manner in his earliest book "Travels on the Amazon and Rio Negro." Two years later commenced his sojourn of eight years (1854-1862) in the islands of the remote East, some of which he was probably the first Englishman to visit, as he was certainly the first European to live alone on the mainland of New Guinea. The outcome of his wanderings in this region was the addition to our knowledge of thousands of new and often splendid forms of insect life (his collections including no fewer than 109,700 specimens of insects alone), and the publication in 1869 of the "Malay Archipelago," with one possible exception the most fascinating

* The late Mr. P. de la Gardie pointed out to me the very marked differences in the palpi of *Ompoda licalipennis* and *O. vittata*, differences which I believe had been quite overlooked.

and suggestive book of Natural History travel that has ever been written. It was from Ternate, one of these islands, that he sent to Charles Darwin in 1838 the famous essay which led to the immediate publication of the "Origin of Species." On June 1st, 1863, soon after his return home, he was elected a Fellow of the Entomological Society by acclamation and without a formal ballot "as a slight recognition of the vast services rendered to Science by this distinguished Entomologist, Zoologist, and traveller." In 1871 and 1872 he occupied the Presidential chair of the Society, and his address at the close of his first year of office is a valuable contribution to the literature of Geographical Distribution; while in his great work, published in 1878, on this department of biological science—which may be regarded as his *magnum opus*—the distribution of certain groups of Insects throughout the world forms a leading feature. In the years immediately following his return from the East, a number of important papers from Mr. Wallace's pen on systematic and general Entomology, some of which have been reproduced in "Tropical Nature and other Essays," appeared in various scientific periodicals. It is not necessary here to do more than allude to his activities in other spheres of knowledge, and to the bestowal on him of almost every honour in the gift of Science, culminating in the Order of Merit conferred on him in 1908 by the late King Edward. Up to the very last his astonishing mental and physical powers were maintained, and it is only a few weeks ago that an important work, dealing with the social questions in which he took so deep an interest, was issued from the Press.—J. J. W.

Herbert Druce.—This well-known collector and describer of Exotic *Lepidoptera* died on April 11th last. He was born in London on July 14th, 1846, and was thus in his 67th year. From an early age he became interested in entomology, and soon took up the study of exotic *Lepidoptera*, confining himself for many years to the *Rhopalocera*, the *Heterocera* not attracting him till later. The "Proceedings of the Zoological Society of London," and the "Annals and Magazine of Natural History" over a long series of years, contain descriptions of a vast number of species from his pen; but Druce's principal work was Vols. I-III of the *Heterocera* of the "Biologia Centrali-Americana," commenced in 1893 and finished in 1900. He was elected a Fellow of the Entomological Society of London in 1867, of the Zoological in 1870, of the Linnean in 1872, serving as Vice-President of the Linnean in 1902-3, and of the Zoological in 1904-6, and served on the Council of the Entomological in 1885 and 1892. His last paper, perhaps, was a short one contributed to the "Entomologist's Monthly Magazine" in 1912. The first collection of *Rhopalocera* made by him was acquired by the editors of the "Biologia" about 1880, and is now in the British Museum. His second and much more extensive collection less the *Lyænidæ* and *Hesperiidæ* (which belonged to his son), has, since his death, passed into the hands of Capt. Joicey, of Godalming. It is not often, perhaps, that the love of entomology is inherited by the succeeding generation, but, fortunately this is the case with Druce, his son Hamilton H. Druce, F.L.S., being, if anything, a more devoted student of the subject than his father.

Dr. Arnold Pagenstecher.—By the death of Dr. Arnold Pagenstecher, of Wiesbaden, on June 11th last, Lepidopterology has lost a very prominent and many-sided worker. Born at Dillenburg in 1837, Pagenstecher early showed a love for the *Lepidoptera*, but it is during the last 30 years that his writings have made him a name throughout the entomological world. That he by no means neglected systematic entomology is evidenced by his revisions of the *Libytheidae* and *Callidulidae* (in "Das Thierreich" and elsewhere), and in these families he had amassed good collections, which are now in the Natural History Museum of Wiesbaden; but it was to faunistic work that he devoted most of his attention. The "Jahrbücher des Nassauischen Vereins für Naturkunde," which for many years he edited, contained almost every year some more or less important contribution from his pen, including a valuable series of articles on the *Lepidoptera* of the Malay Archipelago, which were also published separately. In addition, he worked out several African collections, Semon's from Australia, and even contributed to Roemer and Schaudinn's "Fauna Arctica," and on one occasion touched the fauna of the Antilles. This wideness of interest and love of hard work culminated in the publication of a very useful work—though of necessity largely compilation—"Die geographische Verbreitung der Schmetterlinge" (Jena, 1909).

In the medical profession also Dr. Pagenstecher had won distinction, particularly as an ear specialist, and numerous scientific institutions had conferred upon him honorary distinctions or membership.—L. B. P.

Dr. Auguste Puton.—This prolific writer on Palaearctic *Hemiptera* died on April 8th last, at Remiremont, France, after a brief illness. He was senior Honorary Member of the Société Entomologique de France, having joined that Society in 1856. For some years before his death he appears to have abandoned entomology, and ceased to correspond with his friends. His useful "Catalogue des Hémiptères (Hétéroptères, Cicadines et Psyllides)," the 4th edition of which was published in 1899, was in the hands of all students of the order.

Review.

The Transactions of the 2nd International Congress of Entomology (forming Vol. II of the Report of the Congress), Oxford, August, 1912, were issued on October 14th, 1913. They form a ponderous volume of 489 pages and thirty-two (III—XXXIV) uncoloured plates. The 38 papers, 21 of which are contributed by Fellows of the Entomological Society of London, cover a great variety of subjects, written in English, French, German or Spanish. The papers are as follows, arranged under authors alphabetically:—(1) R. S. Bagnall—A Synopsis of the Thysanopterous Family *Eolothripidae*; (2) H. A. Ballou—Some Entomological Problems in the West Indies; (3) J. F. van Bemmelen—On the Phylogenetic Significance of the Wing-Markings of *Rhopalocera*; (4) G. T. Bethune-Baker—Resolution of the Entomological Society of London; (5) E. L. Bouvier—Le Stade "Natant" ou "Puerulus" des Palinurides; (6)

M. Burr and K. Jordan—On *Arixenia*, Burr, a Suborder of *Dermaptera*; (7) P. P. Calvert—Progress in our Knowledge of the *Odonata* from 1895 to 1912; (8) G. H. Carpenter—The Presence of Maxillulae in Beetle Larvæ; (9) T. A. Chapman—Some Experiments on the Regeneration of the Legs of *Liparis dispar*, L.; (10) J. H. Comstock—The Silk of Spiders and its Uses; (11) W. C. Crowley and H. Donisthorpe—The Founding of Colonies by Queen Ants; (12) J. Dewitz—Die Physiologie der Schädlingsforehung; (13) F. A. Dixey—On the Scent-patches of the *Pierinae*; (14) L. Doncaster—Sex-limited Inheritance in Insects; (15) J. M. Dusmet—Sobre algunas Anomalias en las Alas de los Himenópteros; (16) S. A. Forbes—The Simulium-Pellagra Problem in Illinois; (17) E. E. Green—A Plea for the Centralization of Diagnostic Descriptions; (18) A. Handlirsch—Über einige Beziehungen zwischen Palaentologie, Geographischer Verbreitung und Phylogenie der Insekten; (19) W. Horn—Protest gegen die Zulassung von Ausnahmen vom Prioritätsgesetz; (20) Die Fortschritte des neuen Coleopterorum - Catalogus von Junk-Schenkling; (21) G. Horváth—Étude Morphologique sur la Construction de l'Élytre des Cicadides; (22) K. Jordan—On Viviparity in Polyetenidæ; (23) C. Kerremans—Les Variétés doivent-elles être nommées?; (24) H. J. Kolbe—Die Differenzierung der Zoogeographischen Elemente der Kontinente; (25) Sir J. N. Moore—Recent Work in Economic Entomology carried out in Western Australia; (26) R. P. Navás—Algunos Organos de las Alas de los Insectos; (27) E. Olivier—Nécessité de l'Emploi du Latin pour les Descriptions; (28) M. Pic—Le Mélanisme chez divers *Cryptocephalus* Paléarctiques; (29) L. B. Prout—On the Place of Figures in Descriptive Entomology; (30) K. St. A. Rogers—Mimicry in the two Sexes of the E. African Lycanid, *Alena picta*, Sharpe; (31) K. von Rosen—Die fossilen Termiten: eine kurze Zusammenfassung der bis jetzt bekannten Funde; (32) A. Seitz—On the Sense of Vision in Insects; (33) P. Speiser—Bemerkungen und Notizen zur Geographischen Verbreitung einiger blutsaugenden Insekten; (34) C. F. M. Swynnerton—Pellets ejected by Insect-eating Birds after a meal of Butterflies; (35) J. W. Taylor—Geographical Distribution and Dominance in relation to Evolution and Phylogeny; (36) F. V. Theobald—Notes on the Aphides of the cultivated Peas (*Pisum sativum* and *Lathyrus latifolius*) and the allied species of *Macrosiphum*; (37) G. Wheeler—Suggestions for securing Simplification and Permanency in Nomenclature; (38) W. M. Wheeler—Observations on the Central American Acacia Ants.

The entire Volume has been excellently edited by Dr. Karl Jordan and Mr. H. Eltringham, and the printing and general get-up leave nothing to be desired.

Societies.

ENTOMOLOGICAL SOCIETY OF LONDON: *Wednesday, October 15th, 1913.*—
Rev. F. D. MORICE, M.A., Vice-President, in the Chair.

The following gentlemen were elected Fellows of the Society: Messrs. Edward O. Armitage, Geelong, Victoria, Australia; F. W. Cragg, M.D., Capt. I.M.S., King Institute of Preventive Medicine, Saidapet, Madras; Walter

James Dow, The Cottage, Lynwood Avenue, Epsom; Leslie John William Newman, Dept. of Agriculture, Perth, W. Australia.

Mr. F. H. Gravely exhibited lantern slides illustrating the connection between asymmetry and geographical distribution in the Indo-Australian Passalids. Mr. F. Enoch, photographs of the ♂ and ♀ of a new Mymarid. Mr. Donisthorpe, specimens of the rare myrmecophilous Diptera, *Platyphora lubbocki*, Verrall, *Aenigmatius blattoides*, Meinert, and *Peyerimhoffia brachyptera*, Kieff. The Hon. N. C. Rothschild, specimens of *Zygana filipendulæ* from the Isle of Lismore, Scotland, and an example resembling them from Folkestone; also specimens of *Chrysophanus dispar*, var. *rutilus*, from Hungary and other localities. Mr. H. Rowland-Brown brought for exhibition examples of *Chrysophanus dispar*, var. *rutilus*, captured by him in the marshes of the Gironde below Bordeaux, to compare with the much larger form taken in Hungary by Mr. N. C. Rothschild; also a specimen of *Agritades coridon*, var. *syngrapha*, Kef., taken in the Chiltern Hills, being the first ever recorded therefrom, with several examples of this variety taken by him at Dompierre-sur-Mer; and other aberrations. Capt. E. B. Purefoy, a short series of *Gonepteryx cleopatra* which included two gynandromorphous specimens. Mr. L. W. Newman, four gynandromorphous specimens of *Smerinthus populi*, three with the left side ♀, and right side ♂, and one *vice versa*. Also four curious ♀ specimens of *A. coridon*, three having the right pairs of wings much smaller than the left and heavily dusted with blue scales, the left side being normal; also one specimen similar but *vice versa*. All were taken wild in Herts in 1913. Dr. G. W. Nicholson showed a specimen of *Pterostichus aterrimus*, Pk., from Cloverhill, Co. Cavan. Mr. E. E. Green, a transfer of a remarkable aberration of *Telchinia violæ*, Fab., taken by Mr. G. Halkett, in the district of Kurunegala, Ceylon; also *Jassidæ* from Ceylon, parasitised by an undetermined species of *Gonatopus*. The Rev. G. Wheeler, on behalf of Miss Macbride, a number of living specimens of the Longicorn beetle *Acanthocinus rutilus*, L., taken in a timber yard at Bow. Dr. Longstaff, on behalf of Mrs. Waterfield, a box of Sudanese Pierine Butterflies taken by her, and on which she contributed a series of interesting notes. Prof. Poulton, a set of four males and one female, and another of two males and one female, of *Melriorrhynchus semiflabellatus*, Thoms. Also the following insects bred by Mr. W. A. Lamborn from the nests of *Hymenoptera Aculeata*, at Moor Plantation, West Africa: 1 - a male *Megachile cineta* (September 17th), and the Cantharid beetle, *Zonitis eborina*, Fahr. (September 17th). 2 - *Odynerus* sp. inc. (September 17th): The species exists unnamed in the collection of the British Museum. 3 - A female *Mutilla floralis*, Klug: "This female Mutillid emerged July 26th, from a mud nest, probably that of *Sceliphron spirifex*, L., found July 14th." 4 - *Chrysis* (*Tetrachrysis*) sp. inc. (July 26th), *Chrysis* (*Tetrachrysis*) *lyncea*, F. (August 3rd), and *Sceliphron spirifex*, L., ♀ (July 31st). All three insects emerged at the recorded dates from "mud nest of *S. spirifex*, found in my store July 20th."—GEO. WHEELER, Hon. Secretary.

CHANGE OF ADDRESS.

H. BRITTEN, from Prospect House, Salkeld Dykes, Penrith, to 2, Hope Villas, Headington, Oxon.

DESIDERATA.

Scoparia alpina; *S. lineola*; *S. trunciolella*. State lowest terms or exchange wanted.—N. CHARLES ROTHSCHILD, Arundel House, Kensington Palace Gardens, London, W.

THE CANADIAN ENTOMOLOGIST.

A MONTHLY MAGAZINE DEVOTED TO THE STUDY OF SCIENTIFIC ENTOMOLOGY.

Volume 45 is now in course of publication. Back volumes can be supplied. It is the oldest established Magazine of the kind in America, and has a world-wide circulation. Subscription, \$2 per annum, payable in advance, which includes a copy of the Annual Report of the Entomological Society of Ontario to the Legislature. Editor, Dr. E. M. Walker, Biological Department, University of Toronto, Toronto, Canada.

Address: Entomological Society of Ontario, Guelph, Canada.

WATKINS & DONCASTER, Naturalists,

Keep in stock all Articles for Entomologists, Ornithologists, Botanists, &c.: Umbrella Net, 7/-; Folding Cane or Wire, 3/6, 4/-, 4/6; Plain Ring Net, 1/3, 2/-, 3/-; Pocket Boxes, 6d., 9d., 1/-, 1/6; Store Boxes, with Camphor Cells, 2/6, 3/6, 4/-, 5/-, 6/-; Zinc Pocket Boxes, 9d., 1/-, 1/6, 2/- Setting Boards, from 5d. to 1/10; Complete set of 14 boards, 10/6; Breeding Cages, 2/6, 4/-, 5/-, 7/6; Sugaring Tins, 1/6, 2/-; Sugaring Mixture, ready for use, 1/9 per tin; Setting Houses, 9/6, 11/6, 14/-; Glass Topped and Glass Bottomed Boxes, from 1/- per doz.; Zinc Killing Boxes, 9d., 1/-; Coleoptera Collecting Bottles, 1/6, 1/8; Collecting Box, containing 26 tubes (very useful for Coleopterists, Microscopists, &c.), 4/6; Brass Chloroform Bottle, 2/6.

Improved Pocket Pupa-digger in leather sheath (strongly recommended), 1/9; Steel Forceps, 1/6 to 3/- per pair; Pocket Lens, from 1/6 to 8/6.

Taxidermists' Companion, containing most necessary implements for skinning, 10/6; Scalpels, with ebony handles, 1/3; Fine Pointed Scissors, 2/- per pair; Brass Blow-pipes, 4d., 6d.; Egg Drills, 2d., 3d.; ditto, best quality, 9d. each; Botanical Vasculum, 1/6, 2/9, 3/6, 4/6; Label List of British Macro-Lepidoptera, with Latin and English Names, 1/6; List of British Lepidoptera (every species numbered), 1/-; or on one side for Labels, 2/-.

SILVER PINS FOR COLLECTORS OF MICRO-LEPIDOPTERA, &c.,

as well as minute insects of all other families.

We stock various sizes and lengths of these Silver Pins, which have certain advantages over the entomological pins usually employed.

For instance, insects liable to become greasy and verdigrisy, like Sesiidæ, are best pinned on Silver pins, which will last much longer than the ordinary pins (whether enamelled black, or gilt, or silvered).

We shall be pleased to send pattern cards on application.

À large stock of British, European, and Exotic Lepidoptera, Coleoptera, and Birds' Eggs.

ENTOMOLOGICAL PINS.

The "DIXON" LAMP NET (invaluable for taking Moths off street lamps without climbing the lamp posts), 3s. 6d.

SHOW ROOM FOR CABINETS, &c.

36, STRAND, LONDON, W.C., ENGLAND.

Birds and Mammals, &c., Preserved & Mounted by first-class workmen.

Our New Price List (100 pp.) sent post free to any address on application.

CONTENTS.

	PAGE
Descriptions of some new species of British Thysanoptera (Tubulifera) (<i>continued</i>).— <i>R. S. Bagnall, F.L.S.</i>	265
Coleoptera in Cambridgeshire and Huntingdonshire (<i>continued</i>).— <i>H. Fortescue Fryer, F.E.S.</i>	266
<i>Thrypticus nigricauda</i> , a new species; and a few other Dolichopodidae from Herefordshire.— <i>John H. Wood, M.B.</i>	268
The Odonata, Trichoptera, Neuroptera, and Plecoptera of Wood Walton Fen, Huntingdonshire.— <i>Kenneth J. Morton, F.E.S.</i>	271
Note on a recorded capture of <i>Carabus cancellatus</i> , Ill., in Britain.— <i>E. G. Bayford, F.E.S.</i>	275
<i>Atheta hybrida</i> , Sharp, in Scotland.— <i>M. Cameron, M.B., R.N., F.E.S.</i>	275
<i>Chrysomela fastuosa</i> , Scop., in Devon.— <i>J. H. Keys, F.E.S.</i>	275
A recent record of <i>Eudectus whitei</i> , Sharp, from Ingleborough, Yorkshire.— <i>G. C. Champion, F.Z.S.</i>	275
<i>Thinobius longicornis</i> , Joy: a correction	275
<i>Xantholinus substrigosus</i> , Joy: a correction	275
<i>Vespa vulgaris</i> in November.— <i>Claude Morley, F.Z.S.</i>	276
OBITUARIES.—Alfred Russel Wallace, O.M., D.C.L., F.R.S.	276
Herbert Druce, F.L.S.	277
Dr. Arnold Pagenstecher	278
Dr. Auguste Puton	278
REVIEW—Transactions of the 2nd International Congress of Entomology ...	278
SOCIETIES.—Entomological Society of London	279
TITLE-PAGE, INDEX, &c.	i—xvii

THE THREE COLOURED PLATES illustrating the articles on
“SOME INTERESTING BRITISH INSECTS,”

with the accompanying text (issued in the Ent. Mo. Mag. for September, 1909, and January and September, 1910) are issued in a separate wrapper, price 2s.

APPLY TO THE PUBLISHERS.

ENTOMOLOGISCHE MITTEILUNGEN, Published by the Verein zur Forderung des Deutschen Entomologischen Museum. Monthly Entomological paper; official edition of the Deutsches Entomologisches Museum, whose large Library is at the disposal of all Subscribers at most liberal terms. Gratis to each number continuation of the Library's Catalogue. Terms: 7s. (m. 7) a year; 3s 6d. (m. 3'50) half a year.

Address: Deutsches Entomologisches Museum, Berlin-Dahlem, Gosslesstr, 20.

DR. STAUDINGER & BANG-HAAS, BLASEWITZ-DRESDEN, in their new Price List, No. LVI for 1913, offer more than 19,000 species of well-named LEPIDOPTERA, set or in papers, from all parts of the world, in finest condition; 1600 kinds of PREPARED LARVÆ, &c.; we sell no more living pupæ. Separate Price Lists for COLEOPTERA (29,000 species); HYMENOPTERA (3600 species), DIPTERA (2900), HEMIPTERA (2500), ORTHOPTERA (1200), NEUROPTERA (630), BIOLOGICAL OBJECTS (300).

PRICES LOW. DISCOUNT FOR CASH ORDERS.

FELIX L. DAMES, F.E.S., Berlin-Lichterfelde, wishes to buy "Trans. Entom. Soc. London," 1912 and 1913. Offers of works and pamphlets on entomology always solicited. Second-hand catalogues sent on application. State class of insects on which literature is wanted.

NOW READY

Supplement (Vol. VI), 346 pp.

Small Paper Edition, 8 $\frac{3}{4}$ × 5 $\frac{1}{2}$, with Three Plates, Cloth, 18s net

*Large Paper Edition, 10 × 6 $\frac{3}{4}$, with 20 Coloured Plates of
over 250 Species, £2 8s net*

THE
COLEOPTERA
OF
THE BRITISH ISLANDS

*A DESCRIPTIVE ACCOUNT OF THE FAMILIES, GENERA AND
SPECIES INDIGENOUS TO GREAT BRITAIN AND IRELAND
WITH NOTES AS TO LOCALITIES, HABITATS, ETC.*

BY

W. W. FOWLER, M.A., D.Sc., F.L.S.

PRESIDENT OF THE ENTOMOLOGICAL SOCIETY OF LONDON 1901-2

AND

HORACE ST. JOHN DONISTHORPE, F.Z.S., F.E.S.

VICE-PRESIDENT OF THE ENTOMOLOGICAL SOCIETY OF LONDON 1911

VOL. VI (SUPPLEMENT)

INCLUDING A PAPER ON THE MYRMECOPHILOUS
COLEOPTERA OF GREAT BRITAIN

LONDON

L. REEVE AND CO.

6 HENRIETTA STREET, COVENT GARDEN

1913

AUTHOR'S PREFACE

TO THE SIXTH (SUPPLEMENTARY) VOLUME

The last volume of the "Coleoptera of the British Islands" was published in 1891. In the preface to the first volume I expressed a hope that the work might, at all events, prove of some help towards encouraging the study of our native Coleoptera. As far as I can gather, this hope has been, in a measure at least, realised, and to judge by the results, as embodied in this volume, it will be seen that a great deal of work has been done at the Order during the past twenty years. Moreover, that work is by no means exhausted. Almost every month new species are being recorded. The present volume was practically ready some months ago, except for the plates, and the large list of addenda that has accumulated during that period shows the interest that is being taken in our Coleoptera at the present time. Dr. Sharp is of opinion that our indigenous species will be found in the future to number at least 4000, and this makes it evident that there may be much left to discover.

When it appeared that there was need of a supplement to bring the work up to date, Mr. Donisthorpe, hearing of my intention to prepare one, kindly offered me the use of the list of localities, etc., which he had for some years compiled from various records. I therefore asked him if he would collaborate with me, and I am much indebted to him for his help. The first part of the work is, for the most part, mine, and I hold myself responsible for it; while Mr. Donisthorpe has provided the part relating to fresh localities, and the excellent paper on the British Myrmecophilous Coleoptera, and has also undertaken the arrangement of the plates.

W. W. FOWLER

January 10, 1913

PUBLISHERS' NOTE

"THE COLEOPTERA OF THE BRITISH ISLANDS" was originally published in five volumes between 1887 and 1891. It was intended to provide a short account of our indigenous Coleoptera, with some reference to their localities and habits, and, where possible, to their life history; subsequently it was increased in scope. The work is one of great importance and value to all Coleopterists, and a valuable addition to the present list of entomological works. The large paper edition of the first five volumes, containing 180 plates, carefully drawn and coloured, and representing upwards of 2300 species, is almost out of print.

The large paper edition of the present (sixth) volume, contains 20 coloured plates, with drawings of 255 species or varieties, making a total of over 2550 species represented in the entire work.

Attention is called to the list of other entomological works uniform with this series, printed on the back of this leaflet.

FORM FOR ORDER

FOR THE LARGE PAPER ILLUSTRATED EDITION

To Messrs. L. REEVE & Co., Publishers,
6 Henrietta Street, Covent Garden,

Please forward to me _____ cop _____
of the Large Paper Illustrated Edition of Vol. VI
of "THE COLEOPTERA OF THE BRITISH ISLANDS,"
at 48s net.

Name _____

Address _____

Date _____

FOR THE SMALL EDITION

To Messrs. L. REEVE & Co., Publishers,
6 Henrietta Street, Covent Garden,

Please forward to me _____ cop _____
of Vol. VI of "THE COLEOPTERA OF THE BRITISH
ISLANDS" at 18s.

*Also the previous five volumes, for which I enclose an
additional £4.

Name _____

Address _____

Date _____

**Strike out this if not required.*

EITHER OF THESE FORMS MAY BE HANDED TO YOUR
OWN BOOKSELLER IF YOU PREFER

UNIFORM WITH THIS WORK

A CATALOGUE OF THE BRITISH COLEOPTERA. By D. SHARP, M.A., F.R.S., and W. W. FOWLER, M.A. 1s 6d.

THE LEPIDOPTERA OF THE BRITISH ISLANDS. By CHARLES G. BARRETT, F.E.S. Complete in 11 volumes. Ordinary Edition £6 12s. Large Paper Edition, with 504 Coloured Plates, £33 15s. Alphabetical List of Species contained in the Work 1s 6d (Large Paper Edition 2s).

THE HYMENOPTERA ACULEATA OF THE BRITISH ISLANDS. By EDWARD SAUNDERS, F.L.S. Complete in 1 volume, with 3 Structural Plates, 16s. Large Paper Edition, with 51 Coloured Plates, £3 8s.

THE HEMIPTERA HETEROPTERA OF THE BRITISH ISLANDS. By EDWARD SAUNDERS, F.L.S. Complete in 1 volume, with a Structural Plate, 14s. Large Paper Edition, with 31 Coloured Plates, £2 8s.

THE HEMIPTERA HOMOPTERA OF THE BRITISH ISLANDS. By JAMES EDWARDS, F.E.S. Complete in 1 volume, with 2 Structural Plates, 12s. Large Paper Edition, with 28 Coloured Plates, £2 3s.

THE LARVAE OF THE BRITISH LEPIDOPTERA AND THEIR FOOD PLANTS. By OWEN S. WILSON. Large Paper Edition only, with 40 Coloured Plates, £3 3s.

THE BUTTERFLIES OF EUROPE. By HENRY CHARLES LANG, M.D., F.L.S. Complete in Two Volumes. Large Paper Edition only, with 82 Coloured Plates, £3 18s net.

COMPLETE CATALOGUE SENT POST FREE ON REQUEST

LONDON

L. REEVE AND CO.

6 HENRIETTA STREET, COVENT GARDEN

Nearly 300 Parts ready. 4to. With beautiful
Coloured Illustrations.

THE MACROLEPIDOPTERA OF THE WORLD

A BOOK OF REFERENCE AND IDENTIFICATION

Edited by ADALBERT SEITZ, Ph.D., etc.,

in collaboration with Dr C. AURIVILLIUS (*Stockholm*), H. FRUH-
STORFER (*Geneva*), Dr K. GRUENBERG (*Berlin*), R. HAENSCH
(*Berlin*), A. JANET (*Paris*), Dr K. JORDAN (*Tring*), L. B. PROUT
(*London*), Hon. L. W. ROTHSCHILD (*Tring*), W. WARREN (*Tring*),
Dr E. STRAND (*Berlin*), G. WEYMER (*Elberfeld*), and many other
contributors



*To be completed in about 16 Volumes or 465 Parts, 4to, containing about 1000
Coloured Plates depicting nearly 40,000 specimens, with letterpress giving all neces-
sary information in a concise form, care being taken to avoid all unnecessary details.*

Binding Cases will be issued for each volume.

THIS Work, the outcome of years of research and world-wide travel,
forms the most exhaustive treatise on Butterflies and Moths. The
illustrations are by a superior and very expensive colour-process, assuring
an accurate representation of each specimen, great care being exercised
that only standard works such as Hampson, Oberthür, and others should be
consulted when originals were unobtainable.

The names of the Scientists and Collectors who are collaborating with the
Editor are a sufficient guarantee for the accuracy of the work. The various
species are classified in accordance with Hampson's system, and the work
on each Group is entrusted to a particular author.

Thus the Editor has succeeded in producing a most reliable work of refer-
ence, appealing not only to cultured Entomologists, but to all interested in
the World's Macrolepidoptera.

The Work is divided into two Divisions, which may be purchased either complete or in parts as follows:—

Division I

PALÆARCTIC BUTTERFLIES & MOTHS

Parts 1 to 110 now ready. To be completed in 4 Volumes or about 120 Parts, containing 230 Coloured Plates, depicting about 12,000 Specimens, with letterpress. Price per part, 1s. net.

Binding Cases will be issued for each volume separately.

Neither Volumes nor Parts will be sold separately—orders can therefore only be accepted for the complete Division.

CONTENTS OF VOLUMES 1 TO 4.

- Vol. 1, comprising **Rhopalocera**. 379 pages letterpress and 89 coloured plates depicting 8470 specimens. Royal 4to. In paper covers, £2, 10s. net; or in 2 vols., Text and Plates, half-bound imitation leather, at £3 net; or in superior blue half Levant Morocco library binding at £3, 8s. net.
- Vol. 2, comprising **Sphinges and Bombyces**. 480 pages letterpress and 56 coloured plates depicting 2849 specimens. Royal 4to. In paper covers, £1, 15s. net; or in 2 vols., Text and Plates, half-bound imitation leather, at £2, 5s. net; or in superior blue half Levant Morocco library binding, one volume, at £2, 8s. net.
- Vol. 3, comprising **Noctuæ**. To be complete in about 28 parts (almost ready).
- Vol. 4, comprising **Geometræ**. To be complete in about 15 parts.

The last two volumes are now in course of publication, and the complete Division I. will, it is hoped, be ready early in 1914.

This Division includes the Butterflies and Moths of *Europe, Asia Minor, Northern Asia, and North Africa*.

In addition to the specimens mentioned in Dr Staudinger-Rebel's catalogue, there are many new ones from Thibet, Corea, and other Palæarctic countries only recently explored.

The acquisition of valuable new material has rendered it necessary to make the Division rather larger than was originally planned.

WILLIAMS & NORGATE, 14 HENRIETTA STREET, COVENT GARDEN, W.C.

SUBSCRIPTION FORM

To Mr _____, Bookseller,

or To

MESSRS WILLIAMS & NORGATE,
14 Henrietta Street, Covent Garden, London, W.C.

*Please enter my name as a subscriber to**

SEITZ, "BUTTERFLIES AND MOTHS."

.....cop..... *Division I. Fauna Palæarctica.* Complete in 4 Vols. or about
120 parts @ 1/0 net per part.

.....cop..... the same in volumes in half-bound imitation leather. Vol. I. £3,
net; Vol. II. £2, 5s. net; or in superior blue half Levant
Morocco, Vol. I. £3, 8s. net; Vol. II. £2, 8s. net; Vols. III.
and IV. when complete.

.....cop..... *Division II. Fauna Exotica.* Complete in 12 vols. or in about
370 parts @ 1/6 net per part.

The same in subdivisions:

.....cop..... **Fauna Americana.** Complete in 4 vols. or about 130 parts
@ 1/6 net per part.

.....cop..... **Fauna Indo-Australica.** Complete in 4 vols. or about 155
parts @ 1/6 net per part.

.....cop..... **Fauna Africana** Complete in 4 vols. or about 85 parts
@ 1/6 net per part.

.....cop..... **Group Rhopalocera.** Complete in 3 vols. or about 190 parts
@ 1/6 net per part.

.....cop..... **Group Sphinges and Bombyces.** Complete in 3 vols. or about
75 parts @ 1/6 net per part.

.....cop..... **Group Noctuæ.** Complete in 3 vols. or about 75 parts
@ 1/6 net per part.

.....cop..... **Group Geometræ.** Complete in 3 vols. or about 30 parts
@ 1/6 net per part.

.....cop..... **Binding-Covers** for vols. _____ when ready, in half-bound
imitation leather or in superior blue half Levant Morocco.

Name _____

Address _____

Date _____

* Please mark out what is not wanted.

Division II—continued

Group **Sphinges and Bombyces**, contained in Volumes 6, 10, and 14, will be complete in about 75 parts at 1s. 6d. net per part.

Group **Noctuæ**, contained in Volumes 7, 11, and 15, will be complete in about 75 parts at 1s. 6d. net per part.

Group **Geometræ**, contained in Volumes 8, 12, and 16, will be complete in about 30 parts at 1s. 6d. net per part.

The many and wonderful species from all parts of the Tropical world are here represented, besides many sub-species and varieties. A number of the identified Caterpillars of Exotic Lepidoptera are also figured.

It is anticipated that Division II. will be completed by 1915.

Further particulars and specimen plates are supplied on application by every bookseller, or by

WILLIAMS & NORGATE,

14 Henrietta Street, Covent Garden, London, W.C.

REVIEWS

The Entomologist's Record, *July-August 1913*.—" . . . To those entomologists who have not easy access to some large collection these plates are of the utmost use, not only for identification of species in hand, but to show all related species side by side, to illustrate the sum-total of a genus, and generally to broaden the views of the student.

" . . . This list of names ensures that, in the condensation of facts to form the letterpress, everything of prime importance for the object of the work should be inserted, and that it should be quite up-to-date as to the latest observations and results.

" . . . Every Natural History library of any pretence and all Lepidopterists should get these volumes on the Palearctic Fauna. Nothing so comprehensive and so well illustrated has ever been produced before. The low price is quite incommensurate with the amount of information."

For further Reviews, see page 6.

WILLIAMS & NORGATE, 14 HENRIETTA STREET, COVENT GARDEN, W.C.

Division II

EXOTIC BUTTERFLIES & MOTHS

Parts 1 to 179 now ready. To be complete in 12 Volumes or about 370 Parts, containing 700 Coloured Plates, representing about 28,000 figures. Price per part, Is. 6d. net.

Binding Cases will be issued for each Volume.

Orders can only be accepted for the complete division or for a complete Fauna or Group.

This part of the work contains the following territorial divisions :—

FAUNA AMERICANA. Parts 1 to 53 now ready. To be complete in 4 Volumes or about 130 Parts at 1s. 6d. net per part. Subscriptions are received for the complete Fauna only. Contents of volumes :—

Vol. 5. RHOPALOCERA. Complete in about 70 parts.

Vol. 6. SPHINGES AND BOMBYCES. Complete in about 25 parts.

Vol. 7. NOCTUÆ. Complete in about 25 parts.

Vol. 8. GEOMETRÆ. Complete in about 10 parts.

FAUNA INDO-AUSTRALICA. Parts 1 to 95 now ready. To be complete in 4 Volumes or about 155 Parts at 1s. 6d. net per part. Subscriptions are received for the complete Fauna only. Contents of volumes :—

Vol. 9. RHOPALOCERA. Complete in about 85 parts.

Vol. 10. SPHINGES AND BOMBYCES. Complete in about 30 parts.

Vol. 11. NOCTUÆ. Complete in about 30 parts.

Vol. 12. GEOMETRÆ. Complete in about 10 parts.

FAUNA AFRICANA. Parts 1 to 37 now ready. To be complete in 4 Volumes or about 85 parts at 1s. 6d. net per part. Subscriptions are received for the complete Fauna only. Contents of volumes :—

Vol. 13. RHOPALOCERA. Complete in about 35 parts.

Vol. 14. SPHINGES AND BOMBYCES. Complete in about 20 parts.

Vol. 15. NOCTUÆ. Complete in about 20 parts.

Vol. 16. GEOMETRÆ. Complete in about 10 parts.

The above Division of "Exotic Butterflies and Moths" may also be obtained in Groups according to families, and subscriptions for same are received as follows :—

Group **Rhopalocera**, contained in Volumes 5, 9, and 13, will be complete in about 190 parts at 1s. 6d. net per part.

WILLIAMS & NORGATE, 14 HENRIETTA STREET, COVENT GARDEN, W.C.

REVIEWS

The Entomologist, *December 1911*.—" . . . It is only justice to Dr Seitz and his numerous collaborators to emphasise the fact that they are providing much more than the 'illustrated catalogue' which was somewhat slightly spoken of when the work was first announced a few years ago. Brief descriptions of the earlier stages are included wherever these are known, and the dry descriptive matter is often enlivened by notes on the habits of the imago. Scientifically, too, the names of such contributors as Jordan, Aurivillius, and others are guarantee that we have work of real classificatory value, and their synopses and differentiations should be a real help to advanced students.

"The illustrations are for the most part good, and of practical use for the determination of species. We wish the enterprise continued success."

The Entomologist's Monthly Magazine, *November 1911*.—"The completion of the first volume, not only in the German, but also in the English edition, and the progress which is being made with various other sections of the work, afford good evidence that both editor and publisher, together with the many other collaborators, are taking their gigantic task in earnest, and that the present generation of Lepidopterists may look forward to the possession, at no very distant date, of what has never before been possible of attainment—a complete iconography of the known *Macrolepidoptera*, together with letterpress adequate for the determination of species, and often even further information as to their habits and the outlines of their life-history. We are now assured that all the principal families are in the hands of competent specialists, the preparation of those which are not already actually in progress well advanced, and material accessible for figuring from the richest collections.

"The general arrangement, indexing, etc., are good; the illustrations excellent, and marvels of cheapness; and the work is worthy of the support of all who are interested in the *Lepidoptera*, or desirous of the wider diffusion of knowledge concerning them."

The Entomologist's Record, *December 1911*. "Students of the Palearctic Butterflies must rejoice to have all the species and a very large percentage of the known forms illustrated, and well illustrated, within the covers of a single volume. It is the first time it has ever been done on such a scale.

"Various collaborators have undertaken the work in the different families and genera, and we get practically a short digest of the results arrived at, which in the case of the more recently thoroughly worked out groups is of very great use and interest.

"In conclusion, one must mention the name of Dr Jordan, the man who was responsible for the translation of the original German into English. Let us say at once that this is highly commendable, with far fewer slips than is usual in a translation of these dimensions. We offer our congratulations to Dr Seitz and his numerous helpers, and hope that we shall not have to wait so long for the other volumes to be completed."—W. J. K

MEETINGS OF SOCIETIES.

THE SOUTH LONDON ENTOMOLOGICAL AND NATURAL HISTORY SOCIETY, Hibernia Chambers, London Bridge. The Second & Fourth Thursdays in each month, at 8 p.m. The lantern will be at the disposal of Members for the exhibition of slides.

ENTOMOLOGICAL SOCIETY OF LONDON, 11, Chandos Street, Cavendish Square, W.—Wednesday February 5th, 1913.

The Chair will be taken at 8 o'clock in the evening precisely.

The Library is open daily from 9 a.m. to 6 p.m. (except on Saturdays, when it is closed at 2 p.m.), and until 10 p.m. on Meeting nights.

“NATURE,”

A WEEKLY ILLUSTRATED JOURNAL OF SCIENCE. PRICE, 6d.

“NATURE” contains Original Articles on all subjects coming within the domain of Science, contributed by the most eminent scientific writers of the day. It also contains Reviews of all recent scientific works; Correspondence Column, which form a medium of scientific discussion and of intercommunication among men of Science; Accounts of the leading Scientific Serials; Abstracts of the more valuable papers which appear in foreign journals; Reports of the Proceedings of the Principal Scientific Societies and Academies of the World; and Notes on all matters of current scientific interest.

SUBSCRIPTIONS		TO	“NATURE.”		
		<i>(To all places Abroad).</i>		£	s. d.
Yearly	1 8 0	Yearly	1 10 6		
Half-Yearly	0 14 6	Half-Yearly	0 15 6		
Quarterly	0 7 6	Quarterly	0 8 0		

Money Orders to be made payable to **MACMILLAN and CO., Ltd.**

Office: St. Martin's Street, London, W.C.

THE NATURALIST:

A MONTHLY ILLUSTRATED JOURNAL OF

NATURAL HISTORY FOR THE NORTH OF ENGLAND.

EDITED BY

T. SHEPPARD, F.G.S., and T. W. WOODHEAD, F.L.S.,
MUSEUM, HULL; TECHNICAL COLLEGE, HUDDERSFIELD

WITH THE ASSISTANCE AS REFEREES IN SPECIAL DEPARTMENTS OF

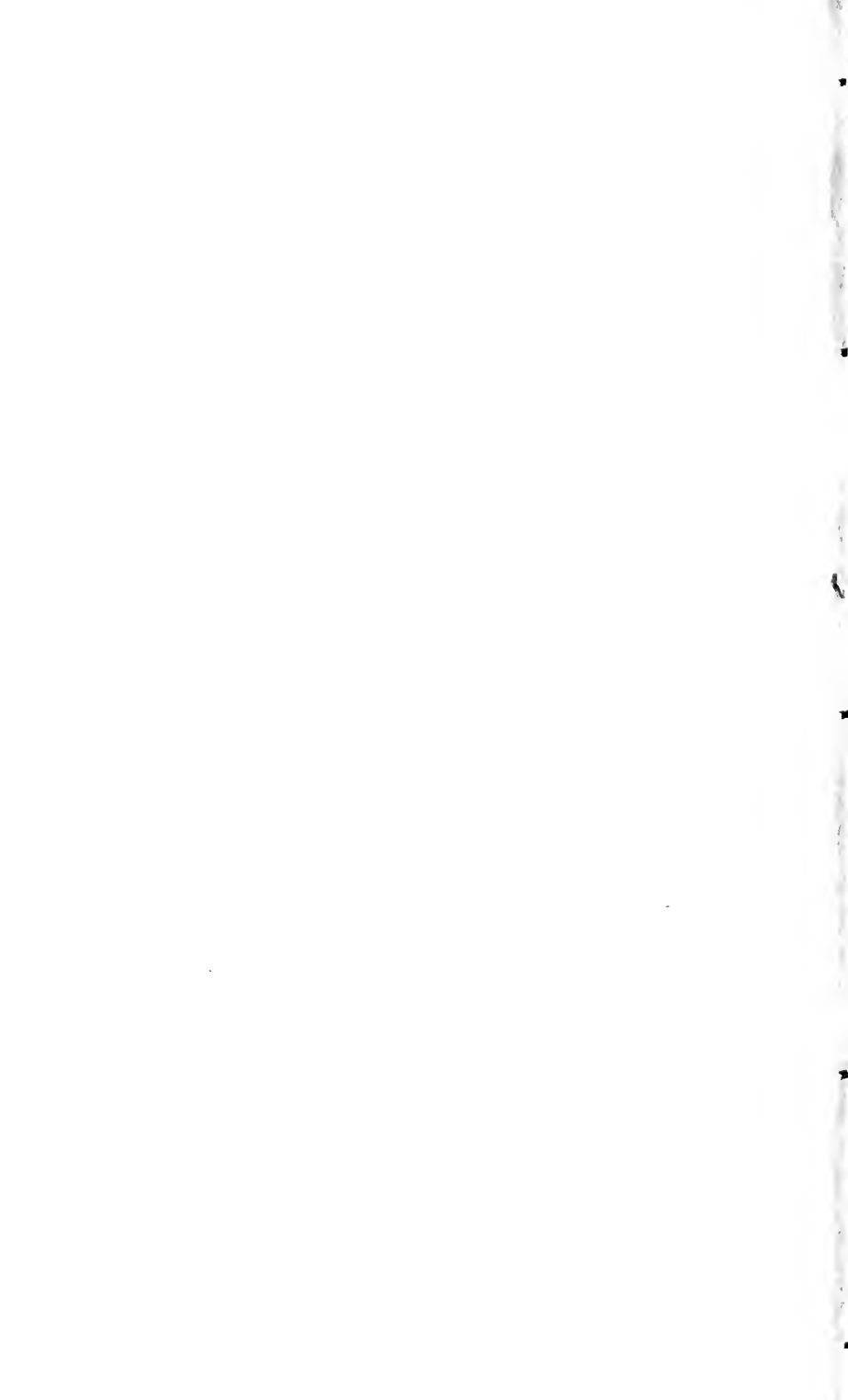
J. GILBERT BAKER, F.R.S., F.L.S. GEO. T. PORRITT, F.L.S., F.E.S.
PROF. PERCY F. KENDALL, F.G.S. JOHN W. TAYLOR.
T. H. NELSON, M.B.O.U. WILLIAM WEST, F.L.S.

This Journal is one of the oldest Scientific Periodicals in the British Isles, dating back to 1833, and is circulated widely amongst the principal Naturalists of the country.

LONDON: A. BROWN AND SONS, 5, FARRINGDON AVENUE, E.C.

PRICE, SIXPENCE NET. BY POST SEVENPENCE.

Annual Subscription, 6s. 6d., post free; through Booksellers, 6s. Net.



MEETINGS OF SOCIETIES.

THE SOUTH LONDON ENTOMOLOGICAL AND NATURAL HISTORY SOCIETY, Hibernia Chambers, London Bridge. The Second & Fourth Thursdays in each month, at 8 p.m. The lantern will be at the disposal of Members for the exhibition of slides.

ENTOMOLOGICAL SOCIETY OF LONDON, 11, Chandos Street, Cavendish Square, W.—Wednesdays, March 5th and 19th, April 2nd, May 7th, June 4th, October 1st and 15th, November 5th and 19th, December 3rd, 1913. January 21st (ANNUAL MEETING), February 4th, 1914.

The Chair will be taken at 8 o'clock in the evening precisely.

The Library is open daily from 9 a.m. to 6 p.m. (except on Saturdays, when it is closed at 2 p.m.), and until 10 p.m. on Meeting nights.

“NATURE,”

A WEEKLY ILLUSTRATED JOURNAL OF SCIENCE. PRICE, 6d.

“NATURE” contains Original Articles on all subjects coming within the domain of Science, contributed by the most eminent scientific writers of the day. It also contains Reviews of all recent scientific works; Correspondence Columns, which form a medium of scientific discussion and of intercommunication among men of Science; Accounts of the leading Scientific Serials; Abstracts of the more valuable papers which appear in foreign journals; Reports of the Proceedings of the Principal Scientific Societies and Academies of the World; and Notes on all matters of current scientific interest.

SUBSCRIPTIONS TO “NATURE.”

	£	s.	d.		(To all places Abroad.)	£	s.	d.
Yearly	1	8	0	Yearly	1	10	6	
Half-Yearly	0	14	6	Half-Yearly	0	15	6	
Quarterly	0	7	6	Quarterly	0	8	0	

Money Orders to be made payable to MACMILLAN and CO., Ltd.

Office: St. Martin's Street, London, W.C.

THE NATURALIST:

A MONTHLY ILLUSTRATED JOURNAL OF

NATURAL HISTORY FOR THE NORTH OF ENGLAND.

EDITED BY

T. SHEPPARD, F.G.S., and T. W. WOODHEAD, F.L.S.,
MUSEUM, HULL; TECHNICAL COLLEGE, HUDDERSFIELD

WITH THE ASSISTANCE AS REFEREES IN SPECIAL DEPARTMENTS OF

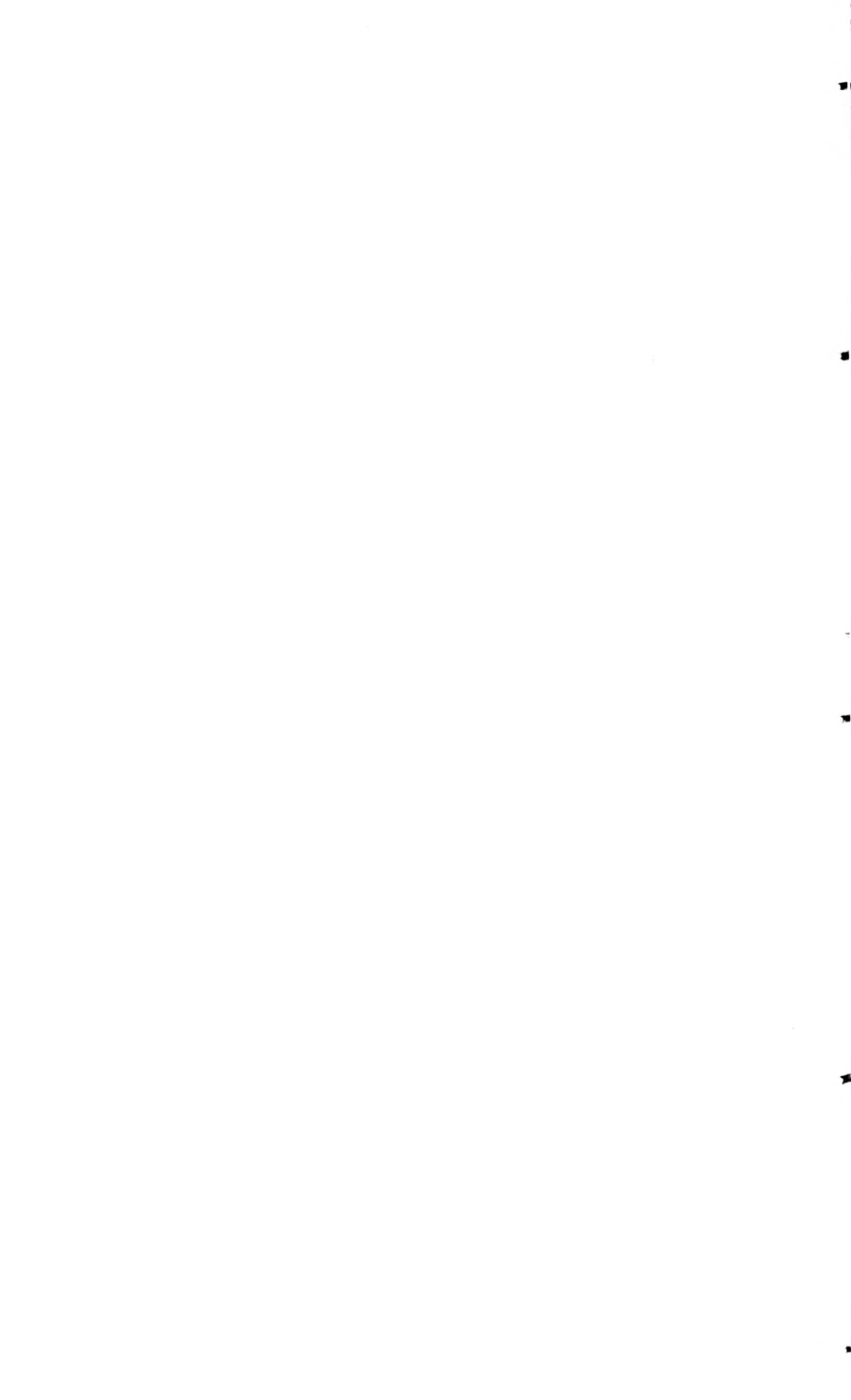
J. GILBERT BAKER, F.R.S., F.L.S. GEO. T. PORRITT, F.L.S., F.E.S.
PROF. PERCY F. KENDALL, F.G.S. JOHN W. TAYLOR.
T. H. NELSON, M.B.O.U. WILLIAM WEST, F.L.S.

This Journal is one of the oldest Scientific Periodicals in the British Isles, dating back to 1833, and is circulated widely amongst the principal Naturalists of the country.

LONDON: A. BROWN AND SONS, 5, FARRINGTON AVENUE, E.C.

PRICE, SIXPENCE NET. BY POST SEVENPENCE.

Annual Subscription, 6s. 6d., post free; through Booksellers, 6s. Net.



MEETINGS OF SOCIETIES.

THE SOUTH LONDON ENTOMOLOGICAL AND NATURAL HISTORY SOCIETY, Hibernia Chambers, London Bridge. The Second & Fourth Thursdays in each month, at 8 p.m. The lantern will be at the disposal of Members for the exhibition of slides.

ENTOMOLOGICAL SOCIETY OF LONDON, 11, Chandos Street, Cavendish Square, W.—Wednesdays, April 2nd, May 7th, June 4th, October 1st and 15th, November 5th and 19th, December 3rd, 1913. January 21st (ANNUAL MEETING), February 4th, 1914.

The Chair will be taken at 8 o'clock in the evening precisely.

The Library is open daily from 9 a.m. to 6 p.m. (except on Saturdays, when it is closed at 2 p.m.), and until 10 p.m. on Meeting nights.

“NATURE,”

A WEEKLY ILLUSTRATED JOURNAL OF SCIENCE. PRICE, 6d.

“NATURE” contains Original Articles on all subjects coming within the domain of Science, contributed by the most eminent scientific writers of the day. It also contains Reviews of all recent scientific works; Correspondence Columns, which form a medium of scientific discussion and of intercommunication among men of Science; Accounts of the leading Scientific Serials; Abstracts of the more valuable papers which appear in foreign journals; Reports of the Proceedings of the Principal Scientific Societies and Academies of the World; and Notes on all matters of current scientific interest.

SUBSCRIPTIONS TO “NATURE.”		
	£ s. d.	(To all places Abroad). £ s. d.
Yearly	1 8 0	1 10 6
Half-Yearly	0 14 6	0 15 6
Quarterly	0 7 6	0 8 0

Money Orders to be made payable to **MACMILLAN and CO., Ltd.**

Office: St. Martin's Street, London, W.C.

THE NATURALIST:

A MONTHLY ILLUSTRATED JOURNAL OF
NATURAL HISTORY FOR THE NORTH OF ENGLAND.

EDITED BY

T. SHEPPARD, F.G.S., and T. W. WOODHEAD, F.L.S.,
MUSEUM, HULL; TECHNICAL COLLEGE, HUDDERSFIELD

WITH THE ASSISTANCE AS REFEREES IN SPECIAL DEPARTMENTS OF

J. GILBERT BAKER, F.R.S., F.L.S. **GEO. T. PORRITT, F.L.S., F.E.S.**
PROF. PERCY F. KENDALL, F.G.S. **JOHN W. TAYLOR.**
T. H. NELSON, M.B.O.U. **WILLIAM WEST, F.L.S.**

This Journal is one of the oldest Scientific Periodicals in the British Isles, dating back to 1833, and is circulated widely amongst the principal Naturalists of the country.

LONDON: A. BROWN AND SONS, 5, FARRINGDON AVENUE, E.C.

PRICE, SIXPENCE NET. BY POST SEVENPENCE.

Annual Subscription, 6s. 6d., post free; through Booksellers, 6s. Net.



MEETINGS OF SOCIETIES.

THE SOUTH LONDON ENTOMOLOGICAL AND NATURAL HISTORY SOCIETY, Hibernia Chambers, London Bridge. The Second & Fourth Thursdays in each month, at 8 p.m. The lantern will be at the disposal of Members for the exhibition of slides.

ENTOMOLOGICAL SOCIETY OF LONDON, 11, Chandos Street, Cavendish Square, W.—Wednesdays, May 7th, June 4th, October 1st and 15th, November 5th and 19th, December 3rd, 1913. January 21st (ANNUAL MEETING), February 4th, 1914.

The Chair will be taken at 8 o'clock in the evening precisely.

The Library is open daily from 9 a.m. to 6 p.m. (except on Saturdays, when it is closed at 2 p.m.), and until 10 p.m. on Meeting nights.

“NATURE,”

A WEEKLY ILLUSTRATED JOURNAL OF SCIENCE. PRICE, 6d.

“NATURE” contains Original Articles on all subjects coming within the domain of Science, contributed by the most eminent scientific writers of the day. It also contains Reviews of all recent scientific works; Correspondence Columns, which form a medium of scientific discussion and of intercommunication among men of Science; Accounts of the leading Scientific Serials; Abstracts of the more valuable papers which appear in foreign journals; Reports of the Proceedings of the Principal Scientific Societies and Academies of the World; and Notes on all matters of current scientific interest.

SUBSCRIPTIONS		TO “NATURE.”	
	£ s. d.	(To all places Abroad).	£ s. d.
Yearly	1 8 0	Yearly	1 10 6
Half-Yearly	0 14 6	Half-Yearly	0 15 6
Quarterly	0 7 6	Quarterly	0 8 0

Money Orders to be made payable to MACMILLAN and CO., Ltd.

Office: St. Martin's Street, London, W.C.

THE NATURALIST:

A MONTHLY ILLUSTRATED JOURNAL OF

NATURAL HISTORY FOR THE NORTH OF ENGLAND.

EDITED BY

T. SHEPPARD, F.G.S., and T. W. WOODHEAD, F.L.S.,
MUSEUM, HULL; TECHNICAL COLLEGE, HUDDERSFIELD

WITH THE ASSISTANCE AS REFEREES IN SPECIAL DEPARTMENTS OF

J. GILBERT BAKER, F.R.S., F.L.S. GEO. T. PORRITT, F.L.S., F.E.S.
PROF. PERCY F. KENDALL, F.G.S. JOHN W. TAYLOR.
T. H. NELSON, M.B.O.U. WILLIAM WEST, F.L.S.

This Journal is one of the oldest Scientific Periodicals in the British Isles, dating back to 1833, and is circulated widely amongst the principal Naturalists of the country.

LONDON: A. BROWN AND SONS, 5, FARRINGTON AVENUE, E.C.

PRICE, SIXPENCE NET. BY POST SEVENPENCE.

Annual Subscription, 6s. 6d., post free; through Booksellers, 6s. Net.



MEETINGS OF SOCIETIES.

THE SOUTH LONDON ENTOMOLOGICAL AND NATURAL HISTORY SOCIETY, Hibernia Chambers, London Bridge. The Second & Fourth Thursdays in each month, at 8 p.m. The lantern will be at the disposal of Members for the exhibition of slides.

ENTOMOLOGICAL SOCIETY OF LONDON, 11, Chandos Street, Cavendish Square, W.—Wednesdays, January 15th (ANNUAL MEETING), February 5th, 1913.

The Chair will be taken at 8 o'clock in the evening precisely.

The Library is open daily from 9 a.m. to 6 p.m. (except on Saturdays, when it is closed at 2 p.m.), and until 10 p.m. on Meeting nights.

“NATURE,”

A WEEKLY ILLUSTRATED JOURNAL OF SCIENCE. PRICE, 6d.

“NATURE” contains Original Articles on all subjects coming within the domain of Science, contributed by the most eminent scientific writers of the day. It also contains Reviews of all recent scientific works; Correspondence Columns, which form a medium of scientific discussion and of intercommunication among men of Science; Accounts of the leading Scientific Serials; Abstracts of the more valuable papers which appear in foreign journals; Reports of the Proceedings of the Principal Scientific Societies and Academies of the World; and Notes on all matters of current scientific interest.

SUBSCRIPTIONS TO “NATURE.”

	£	s.	d.	(To all places Abroad).	£	s.	d.
Yearly	1	8	0	Yearly	1	10	6
Half-Yearly	0	14	6	Half-Yearly	0	15	6
Quarterly	0	7	6	Quarterly	0	8	0

Money Orders to be made payable to MACMILLAN and CO., Ltd.

Office: St. Martin's Street, London, W.C.

THE NATURALIST:

A MONTHLY ILLUSTRATED JOURNAL OF

NATURAL HISTORY FOR THE NORTH OF ENGLAND.

EDITED BY

T. SHEPPARD, F.G.S., and T. W. WOODHEAD, F.L.S.,

MUSEUM, HULL;

TECHNICAL COLLEGE, HUDDERSFIELD

WITH THE ASSISTANCE AS REFEREES IN SPECIAL DEPARTMENTS OF

J. GILBERT BAKER, F.R.S., F.L.S.

GEO. T. PORRITT, F.L.S., F.E.S.

PROF. PERCY F. KENDALL, F.G.S.

JOHN W. TAYLOR.

T. H. NELSON, M.B.O.U.

WILLIAM WEST, F.L.S.

This Journal is one of the oldest Scientific Periodicals in the British Isles, dating back to 1833, and is circulated widely amongst the principal Naturalists of the country.

LONDON: A. BROWN AND SONS, 5, FARRINGDON AVENUE, E.C.

PRICE, SIXPENCE NET. BY POST SEVENPENCE

Annual Subscription, 6s. 6d., post free; through Booksellers, 6s. Net



MEETINGS OF SOCIETIES.

THE SOUTH LONDON ENTOMOLOGICAL AND NATURAL HISTORY SOCIETY, Hibernia Chambers, London Bridge. The Second & Fourth Thursdays in each month, at 8 p.m. The lantern will be at the disposal of Members for the exhibition of slides.

ENTOMOLOGICAL SOCIETY OF LONDON, 11, Chandos Street, Cavendish Square, W.—Wednesdays, June 4th, October 1st and 15th, November 5th and 19th, December 3rd, 1913. January 21st (ANNUAL MEETING), February 4th, 1914.

The Chair will be taken at 8 o'clock in the evening precisely.

The Library is open daily from 9 a.m. to 6 p.m. (except on Saturdays, when it is closed at 2 p.m.), and until 10 p.m. on Meeting nights.

“NATURE,”

A WEEKLY ILLUSTRATED JOURNAL OF SCIENCE. PRICE, 6d.

“NATURE” contains Original Articles on all subjects coming within the domain of Science, contributed by the most eminent scientific writers of the day. It also contains Reviews of all recent scientific works; Correspondence Columns, which form a medium of scientific discussion and of intercommunication among men of Science; Accounts of the leading Scientific Serials; Abstracts of the more valuable papers which appear in foreign journals; Reports of the Proceedings of the Principal Scientific Societies and Academies of the World; and Notes on all matters of current scientific interest.

SUBSCRIPTIONS		TO “NATURE.”	
	£ s. d.	(To all places Abroad).	£ s. d.
Yearly	1 8 0	Yearly	1 10 6
Half-Yearly	0 14 6	Half-Yearly	0 15 6
Quarterly	0 7 8	Quarterly	0 8 0

Money Orders to be made payable to MACMILLAN and CO., Ltd.

Office: St. Martin's Street, London, W.C.

THE NATURALIST:

A MONTHLY ILLUSTRATED JOURNAL OF
NATURAL HISTORY FOR THE NORTH OF ENGLAND.

EDITED BY

T. SHEPPARD, F.G.S., and T. W. WOODHEAD, F.L.S.,
MUSEUM, HULL; TECHNICAL COLLEGE, HUDDERSFIELD

WITH THE ASSISTANCE AS REFEREES IN SPECIAL DEPARTMENTS OF

J. GILBERT BAKER, F.R.S., F.L.S. GEO. T. PORRITT, F.L.S., F.E.S.
PROF. PERCY F. KENDALL, F.G.S. JOHN W. TAYLOR.
T. H. NELSON, M.B.O.U. WILLIAM WEST, F.L.S.

This Journal is one of the oldest Scientific Periodicals in the British Isles, dating back to 1833, and is circulated widely amongst the principal Naturalists of the country.

LONDON: A. BROWN AND SONS, 5, FARRINGTON AVENUE, E.C.

PRICE, SIXPENCE NET. BY POST SEVENPENCE.

Annual Subscription, 6s. 6d., post free; through Booksellers, 6s. Net.







29, 1913

Magazine

SMITHSONIAN INSTITUTION LIBRARIES



3 9088 00908 2314