

keen and intelligent ornithologists it could not well be otherwise. Space forbids us from noticing this number in detail. It is lavishly illustrated with photographs showing both the localities visited and many nests and young birds, and one cannot fail to be a little envious of Australian ornithologists in having so many interesting species, nesting within comparatively easy reach of their large commercial centres. The haunts of the Blue Wren and of the Crimson Finch will perhaps appeal most to aviculturists. Those interested in the habits and life histories of Australian birds might do worse than subscribe to a journal so full of excellent articles and illustrations.

MULE AND HYBRID BIRDS.*

Last month we had the pleasure of noticing a book by Mr. Silver on the practical management of British Birds in captivity, and the book now before us follows practically the same lines in dealing with the much more intricate subject of mule and hybrid breeding. To the beginner, as well as to the experienced fancier who wishes to take up this branch of the subject, this book will prove a reliable and exhaustive *vade mecum*, and if the hints given are carefully carried out, success should be as nearly assured as it is possible to make it. Mr. Mannering has very wisely devoted his space entirely to the practical side of the matter, the hybrids themselves are not described, though those most frequently seen on the show bench are figured in the coloured and other plates.

In the case of a book full of good things, it becomes difficult to mention any special points, but those members who will remember the discussion which raged some years back on Cages *versus* Aviaries will be interested to note that for most crosses Mr. Mannering advocates the former as giving the greatest probability of success.

Those who are more interested in hybrids from the scientific side will find much food for thought in many of the author's notes. The breeding of light mules from sib-bred canaries still awaits a scientific interpretation, and the details and difficulties of sib-breeding, as given by a practical breeder, are well worth a study.

* MULE AND HYBRID BIRDS, by ROSSLYN MANNERING, 48pp., 4to., with five coloured plates and other illustrations. London: *The Feathered World*, 9, Arundel Street, Strand. Price 1/6; post free 1/8.

Lastly, a list is given at the end of the book of the known Hybrids that have been obtained. Although this list does not claim to be complete (and we notice several omissions) yet it forms a good basis on which a list may be formed, and being one of the first attempts to make a complete list is most valuable for reference.

Practical books, written by practical men, always contain useful information, and we heartily recommend it to all our readers, whether they breed hybrids or not, as it abounds in information valuable to all aviculturists.

FEATHERS AND FACTS.*

In spite of the diminution of many of the most beautiful birds in the world, the demand for the feathers still continues with unabated force. We do not for one moment believe that ladies wilfully aid in this destruction, but rather that from the dictates of fashion and from ignorance of the real state of affairs they continue to adorn themselves with some of the most beautiful of Nature's creations. In so doing they are exterminating Nature's works of art, and once destroyed these are gone beyond a possible hope of ever again existing. Were these facts more widely realized we feel sure that the trade in these plumes would cease to exist, and the little pamphlet before us, which has just been published by the Royal Society for the Protection of Birds not only puts the case and the results very clearly, but at the same time gives an answer to the feather traders, who are opposing tooth and nail an anti-plumage Bill now before Parliament.

The destruction done by collectors for the plume trade becomes especially dangerous to the existence of the species they hunt, because they are usually slaughtered during the nesting season, when the plumes of all birds are at their best, and also because at such times birds are tamer and many species collect in large breeding colonies, thus reducing the labour of getting the plumes to a minimum. The enormous destruction that is thus brought about is almost inconceivable, but the fact remains that in many parts of its range the Egret has ceased to exist, that on some of the islands of New Guinea no full-plumaged Paradise

* FEATHERS AND FACTS. Statement by the Royal Society for the Protection of Birds. 74 pp., 8vo. London: Roy. Soc. Prot. Birds, 23, Queen Anne's Gate, S.W. Price 6d.

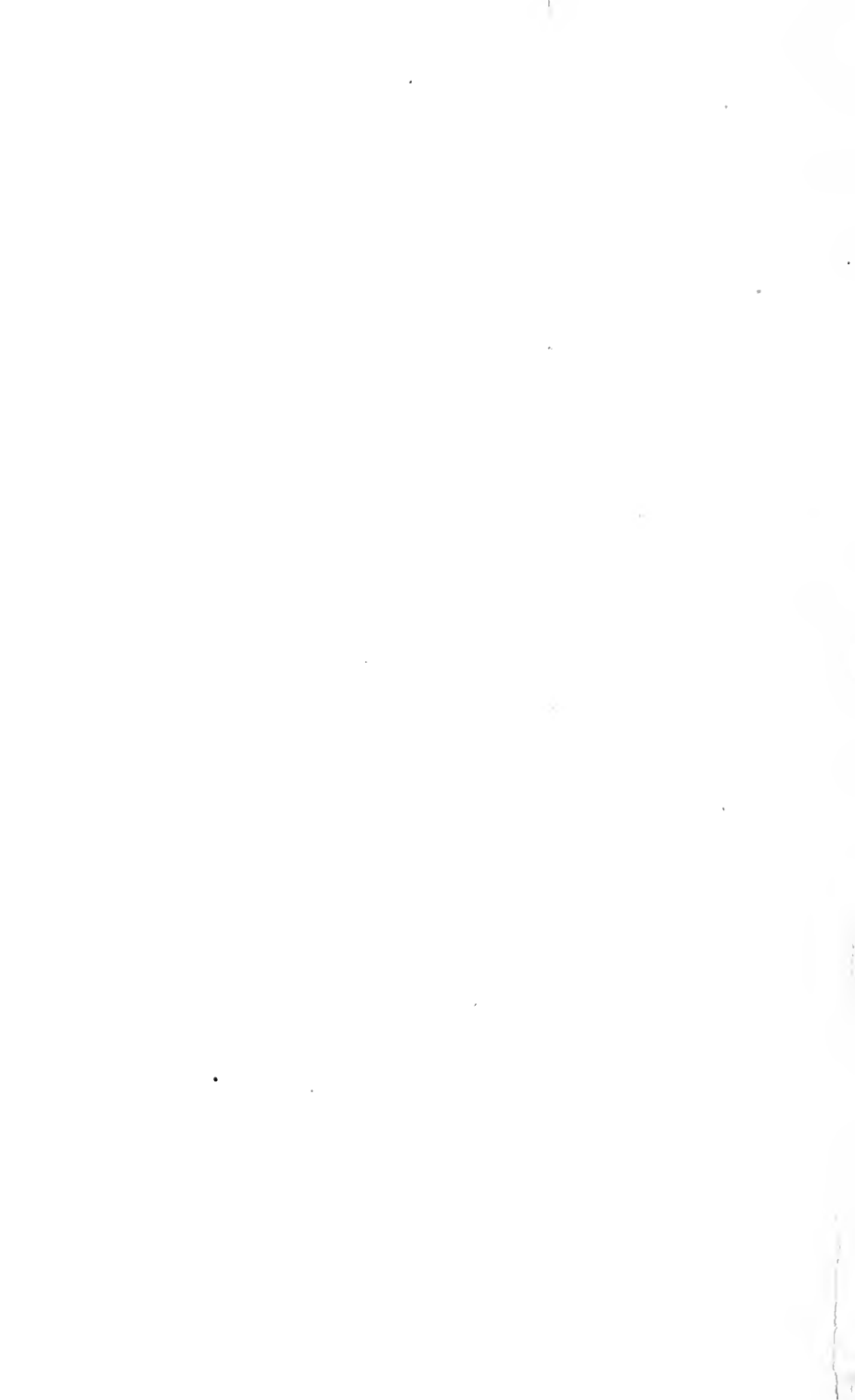
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THE
Avicultural Magazine,

BEING THE JOURNAL OF

THE AVICULTURAL SOCIETY

FOR THE STUDY OF

FOREIGN AND BRITISH BIRDS

IN FREEDOM AND CAPTIVITY.

EDITED BY

J. LEWIS BONHOTE, M.A., F.L.S., F.Z.S., M.B.O.U.

THIRD SERIES. VOL. II.

NOVEMBER 1910 TO OCTOBER, 1911.

London :

MESSRS. WEST, NEWMAN & Co.,

54, HATTON GARDEN, E.C.

—
1911.

ERRATA.

- p. 53, *for* Corythocola *read* Corythæola.
- p. 60 last line but one, *for* H. macgulluii *read* H. macqueeni.
- p. 64, line 32, *for* breast *read* breasts.
- p. 94, line 17, *for* 'black' *read* 'and more underneath than.'
- p. 103, line 28, *for* Starling *read* Starlings.
- p. 106, line 18, *for* assimilated *read* assimilated.
- p. 118, line 4, *for* nest *read* nesting.
- p. 120, line 29, *for* last year *read* in 1909.
- p. 121, plate, *for* caffer *read* cafer.
- p. 129, line 12, *for* frogs *read* fry.
- p. 140, bottom, *add* J. L. B.
- p. 237 and plate *for* Funarius *read* Furnarius.

102-62 read. Oct 17

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REPORT OF THE COUNCIL

FOR 1910-1911.



IN the Report of the Council for 1909-1910 two important changes in the administration of the Society were announced, namely, the acceptance of the Editorship of the Magazine by Mr. J. LEWIS BONHOTE and the appointment of Messrs. WEST, NEWMAN & Co. as its publishers. The success Mr. BONHOTE has achieved as Editor must be apparent to all readers of the Magazine; and the Council desires to take the opportunity, afforded by the close of the year, of expressing its appreciation of the benefit the Society has derived from the business-like methods of the new publishers.

The grateful thanks of the Council are again due to all those members who have kindly helped to keep the Magazine up to its high standard by generous donations to the Society's funds; and also to those who have so willingly responded to the Editor's appeal for articles and notes for publication. This appeal they wish to support by inviting contributions of articles, not only from those members who have in the past helped the Society in that way, but also from those who have hitherto refrained from writing their observations upon birds in captivity.

They also venture again to draw the attention of members to the need of adding to the membership of the Society, so that the Magazine may be still further improved, especially by an increase in the number of its coloured plates and text figures.

Finally, the thanks of the Council are due to Dr. A. G. BUTLER for kindly undertaking the Editorship of the present number of the Magazine during Mr. BONHOTE's absence.

Signed for the Council,

R. I. POCOCK,

Hon. Business Secretary.

ALPHABETICAL LIST OF CONTRIBUTORS.

—

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FOR THE STUDY OF
FOREIGN AND BRITISH BIRDS

IN FREEDOM AND IN CAPTIVITY.

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(Corrected to October 26th, 1910.)

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The date following the Member's name is the date of his election. "Orig. Mem." signifies that the Member joined the Society on its formation in October 1894. The asterisk denotes that the Member belonged to the U. K. Foreign Cage Bird Society, either at the time of the amalgamation or at some time before.

- AINLEY, JOHN WILLIAM; 16, Dalton Green, Dalton, Huddersfield. (June, 1895).
- ALDERSON, Miss R.; Park House, Worksop, Notts. (April, 1896).
- ALEXANDER, Mrs. WILLIAM; 14, West Thirty-Seventh Street, New York City. (June, 1906).
- ALSTON, GAVIN; Yondercroft, Darvel, Ayrshire. (June, 1900).
- AMSLER, Dr. MAURICE; 39, High Street, Eton, Windsor. (Dec., 1908).
- ANDREWS, FRANK F.; Zoological Society's Gardens, Regent's Park, N.W. (Jan., 1907).
- ANNINGSON, Mrs.; Walt-ham-Sal, Barton Road, Cambridge. (May, 1899).
- ARRIGHI, LOUIS J.; Hartison View, Watson Crescent, Edinburgh. (Nov., 1908).
- ARTHUR, CHARLES P.; Market Place, Melksham, Wilts. (Jan., 1895) *
- 10 ASTLEY, HUBERT DELAVAL, M.A., F.Z.S., M.B.O.U.; Benham-Valence, Speen, Newbury. (June, 1895) *
- ASTLEY, REGINALD B.; Acton Reynald, Shrewsbury. (July, 1902).
- ATHERLEY, Mrs.; Hampton Court, Leominster. (April, 1903).
- ATREWELL, HAROLD E.; "Cassia Grove," Halfway Tree, P.O., Kingston, Jamaica. (July, 1903).
- BAHR, PHILIP H., B.A., M.B.O.U.; Perrysfield House, Oxted, Surrey. (Nov., 1907).
- BAILY, W. SHORE; Boyers House, Westbury, Wilts. (Feb., 1910).
- BAIRD, Sir ALEXANDER, Bart.; Urie, Stonehaven, Kincardine, N.B. (Oct., 1904).
- BAKER, E. C. STUART, F.Z.S., M.B.O.U.; District Superintendent Dacca, E. Bengal, and of Police, Assam, India. (Feb., 1904).
- BAKER, JOHN C., M.B., B.A., M.B.O.U.; Ceely House, Aylesbury. (June, 1903).
- BALDELLI, La Contessa TOMMASI; 4, Via Silvio Pellico, Florence, Italy. (April, 1902).
- 20 BAMFORD, Miss E. C.; The Leys, Kimbolton Road, Bedford. (June, 1895; dormant).
- BAMFORD, WILLIAM; The Coppice, Werneth, Oldham. (March, 1904).

- BAMPFYLDE, The Hon. M^{rs}.; Court Hall, North Molton, N. Devon. (Oct., 1910).
- BARBER-STARKEY, F. W. G.; Aldenham Park, Bridgnorth, Shropshire. (June, 1906).
- BARCLAYWATSON, Miss F.; The Court House, Goring, Sussex. (July, 1902).
- BARLOW, ALFRED; Superintendent, Alexandra Park, Oldham. (April, 1908).
- BATHF, FRANK; 5, Montgomery Road, Sharrow, Sheffield. (April, 1903; dormant, 1904-5).
- BEARDALL, A. D.; 12, Middle Hill, Weekday Cross, Nottingham. (July, 1904).
- BEDFORD, The Duchess of, F.Z.S.; Woburn Abbey, Woburn, Beds.; and 15, Belgrave Square, S.W. (Feb., 1903).
- BEEBE, C. WILLIAM, Curator of Ornithology; New York Zoological Park, New York City. (July, 1903).
- 30 BELLEW, The Lord; Barmeath Castle, Dunleer, R. S. O., Ireland. (Nov., 1904).
- BENTLEY, DAVID; 80, St. Hubert's Street, Great Harwood, Blackburn. (July, 1895).
- BERESFORD-WEBB, G. M.; Norbryght, South Godstone, Surrey. (May, 1906).
- BERKELEY, The Rev. C. J. ROWLAND; Sibbertoft Vicarage, Market Harborough. (Nov., 1902).
- BERRIDGE, W. S., F.Z.S.; 24, Fortismere Avenue, Muswell Hill, N. (Dec., 1909).
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- BLAINE, G.; Whitedaile, Hambledon, Hants. (Oct., 1908).
- BLATHWAYT, A. P.; The Grange, Northwood, Middlesex. (Jan., 1895).
- BONHOTE, JOHN LEWIS, M.A., F.L.S., F.Z.S., M.B.O.U.; (*Editor*); Gadespring Lodge, Hemel Hempstead, Herts. (Dec., 1894).
- BONHOTE, Mrs.; 29, Bramham Gardens, S.W. (Sept., 1910).
- 40 BOOTH, H. B., M.B.O.U.; Rylhill, Ben Rhydding, Yorks. (March, 1906).
- BOOTHROYD, ALFRED E.; Lord Street, Southport. (Sept., 1901).
- BORTHWICK, ALEX.; Vereena, Canonbury Grove, Dulwich Hill, Sydney, N.S.W. (Feb., 1909).
- BOSCAWEN, The Hon. VERE DOUGLAS; 2, St. James's Square, S.W. (Nov., 1910).
- BOUGHTON-LEIGH, HENRY; Brownsover Hall, Rugby. (May, 1900).
- BOX, E. A. GRANVILLE; 76, Broomwood Road, Battersea, S.W. (Nov., 1907).
- BOYD, HAROLD; Barton House, Didsbury, Manchester. (March, 1902).
- BOYES, FREDERICK; Norwood, Beverley, Yorkshire. (Sept., 1907).
- BRADSHAW-ISHERWOOD, Mrs.; Maidstone Road, Headcorn. (June, 1902; dormant).
- BRAMPTON, Miss E.; 8, Chesterfield Gardens, Frognaal, Hampstead, N.W. (Feb., 1898).
- 50 BRIDGEMAN, Lieut. and Commr. The Hon. RICHARD, O.B., R.N., M.B.O.U.; Weston Park, Shifnal, Salop. *H.M.S. Bramble*, China Station. (Dec., 1904).

- BRIDGEMAN, Colonel, The Hon. FRANCIS C.; Neachley, Shifnal. (Oct., 1905).
- BROCKLEBANK, R. H. R.; 9th (Queen's Royal) Lancers, near Roscote, Heswell, Cheshire. (Jan., 1908).
- BROOK, E. J., Hoddam Castle, Ecclefechan, N.B. (August, 1905).
- BROWNING, WILLIAM H.; 18, West 54th Street, New York City. (March, 1906).
- BRUCE, Miss AUGUSTA; 42, Hill Street, Berkeley Square, W. (August, 1908).
- BURTON, WALTER; Moorefoot, East Sheen, Mortlake, S.W. (Dec., 1901).
- BUTLER, ARTHUR G., Ph.D., F.L.S., F.Z.S., M.B.O.U. (*Hon. Correspondence Secretary*); 124, Beckenham Road, Beckenham, Kent. (Orig. Mem.)*
- BUTLER, A. L., F.Z.S., M.B.O.U.; Superintendent of Game Preservation, Khartoum, Soudan. (Aug., 1906).
- BUTLER, ARTHUR LARCHIN, M. Aust. O. U.; Waimarie, Lower Sandy Bay, Hobart, Tasmania. (July, 1905).
- 60 BÜTTIKOFER, Dr. J., C.M.Z.S., M.B.O.U.; Director of the Zoological Gardens, Rotterdam, Holland. (Oct., 1907). (*Hon. Member*).
- BUXTON, E. HUGH; Fritton Hall, Great Yarmouth, Norfolk. (June, 1909).
- CALLEY, OLIVER J.; Figheldan Vicarage, near Salisbury. (Dec., 1908).
- CAMPBELL, The Hon. Ian M.; Beaconsfield, Bucks. (Dec., 1905).
- CAMPS, H. T. T., F.Z.S.; Linden House, Haddenham, Isle of Ely. (Orig. Mem.)*
- CAPERN, F.; Avenue House, Cotham Park, Bristol. (March, 1903).
- CARPENTER, The Hon. Mrs.; 22, Grosvenor Road, S.W. (Feb., 1898).
- CARRICK, GEORGE; 13, King's Terrace, Maryhill, Glasgow. (March, 1898).
- CASTELLAN, VICTOR E.; Hare Hall, Romford, Essex. (Orig. Mem.)
- CASTLE-SLOANE, C., F.Z.S.; Oat Hall, near Crawley, Sussex. (March, 1900).
- 70 CATTLE, C. F.; Thurston, Bury St. Edmunds. (Jan., 1905).
- CECIL, Lady WILLIAM; (Baroness Amherst of Hackney); Diddington Hall, Stoke Ferry, Norfolk, and 23, Queen's Gate Gardens, S.W.
- CHAMBA, H. H., Sir BHURI SINGH, K.C.S.I., Rajah of; Chamba, viâ Dullhousie, Punjab, India. (Jan., 1908).
- CHARRINGTON, Mrs. C.; Frensham Hill, Farnham, Surrey. (Jan., 1907).
- CHARRINGTON, Mrs. MOWBRAY; How Green, Hever, Edenbridge, Kent. (May, 1906).
- CHAWNER, Miss; Forest Bank, Lyndhurst, Hants. (July, 1899).
- CLITHEROW, Mrs. CLAUD TRACEY; 20, Park Square, Regent's Park, N.W. (June, 1903).
- COCKELL, NORMAN FORBES; 21, Camac Street, Calcutta, India. (Nov., 1905).
- CONNELL, Mrs. KNATCHBULL; The Orchard, Brockenhurst, Hants. (Nov., 1897).
- CONSTABLE, The Rev. W. J.; Uppingham School, Uppingham. (Sept. 1901; dormant 1905-6).

- 80 COOKSON, KENNETH, Oakwood, Wylam, R.S.O., Northumberland. (Nov., 1906).
- COOLEY, W. W.; Secretary to the Avicultural Society of California; 2119, Central Avenue, Alameda, Cal., U.S.A. (Feb., 1909).
- COOPER, JAMES; Cayton, Scarborough. (Orig. Mem.)
- COOPER, WILLIAM; Aislaby Hall, Pickering, Yorks. (March, 1907).
- CORBET, Lady; Acton Reynold, Shrewsbury. (Oct., 1905).
- CORY, REGINALD R.; Duffryn, near Cardiff. (August, 1905).
- CRANLEY, Viscountess; Beechworth, Hampstead, N.W. (July, 1910).
- CROFT, A. B.; The Clock House, Ashford, Middlesex. (May, 1907).
- CRONKSHAW, J.; 193, Manchester Road, Accrington. (Dec., 1894).
- CROSS, W. SIMPSON, F.Z.S.; 18, Earle Street, Liverpool. (Jan., 1908).
- 90 CUMMINGS, A.; 16, Promenade Villas, Cheltenham. (Dec., 1896).
- CUNINGHAM, MARTIN; Goffs Oak House, Cheshunt, Herts. (Oct., 1908).
- CURREY, Mrs.; The Pit House, Ewell, Surrey. (Feb., 1906).
- CUSHNY, CHARLES; The Bath Club, 34, Dover Street, Piccadilly, W. (June, 1906).
- DAVIES, CLAUDE G., M.B.O.U.; "D" Squadron, Cape Mounted Riflemen, Matiel, E. Griqualand, S. Africa. (July, 1909).
- DAWNAY, The Lady ADELAIDE; Brampton House, Northampton. (July, 1903).
- DELL, CHARLES; 12, High Street, Harlesden, N.W. (July, 1900).
- DENMAN, ARTHUR, M.A., F.Z.S., F.S.A.; 29, Cranley Gardens, South Kensington, S.W. (Sept., 1909).
- DENNIS, Mrs. H. E.; St. Leonard's Park, Horsham. (March, 1903).
- DENT, Mrs.; Luscombe Castle, Dawlish. (March, 1907; dormant).
- 100 DE TAINTEGNIÉS, La Baronne I.e Clément; Cleveland, Minehead, Somerset. (Feb., 1902).
- DEWAR, D., I.C.S.; c/o Messrs. Grindley & Co., 54, Parliament Street, S.W. (Sept., 1905).
- DEWING, Miss; Rougham House, Bury St. Edmunds. (Sept., 1906).
- DEWINTON, WILLIAM EDWARD, F.Z.S., M.B.O.U.; Orierton, Pembroke. (Aug., 1903).
- DOBIE, I. J.; Moorland House, Heswell, Cheshire. (August, 1909).
- DONALD, C. H.; c/o The Alliance Bank of Simla, Ltd., Simla, India. (March, 1906).
- DOUGLAS, Miss; Rose Mount, Pitlochry, N.B. (June, 1905).
- DOUGLAS, WILLIAM C., F.Z.S.; 9, Trebovir Road, Earl's Court, S.W. (Nov., 1900).
- DREWETT, FREDERICK DAWTREY, M.A., M.D., F.R.C.P., F.Z.S., M.B.O.U.; 14, Palace Gardens Terrace, Kensington, W. (May, 1903).
- DRUMMOND, HAY, Colonel, Seggieden, Perth, N.B. (July, 1907).
- 110 DRUMMOND, Miss; Mains of Megginch, Errol, N.B. (Feb., 1905).
- DUFF, The Lady GRANT; Earl Soham Grange, Framlingham, Suffolk. (Aug., 1905).
- DUNLEATH, The Lady; Ballywalter Park, Ballywalter, co. Down, Ireland. (August, 1897).

- DUTTON, The Hon. and Rev. Canon; Bibury, Fairford. (Orig. Mem.)
- EDWARDS, G.; 377, Coldharbour Lane, Brixton, S.W. (August, 1902).
- EDWARDS, STANLEY, B.A., F.Z.S.; c/o E. B. Trotter, Esq., 64, Victoria Street, Westminster, S.W. (Sept., 1906; dormant).
- EZRA, DAVID; 3, Kyd Street, Calcutta. (June, 1902).
- FANSHAWE, Capt. R. D.; Admiralty House, Portsmouth. (Aug., 1907).
- FARBOROUGH, PERCY W., F.Z.S.; Lower Edmonton. (June, 1896).*
- FARRAR, The Rev. C. D.; Mickelfield Vicarage, Leeds. (Jan., 1895).
- 120 FASEY, WILLIAM R.; The Oaks, Holly Bush Hill, Snaresbrook, N.H. (May, 1902).
- FETHERSTONHAUGH, The Hon. Mrs.; The Mill House, Wimbledon Common, S.W. (Sept., 1910).
- FIELD, GEORGE; Sorrento, Staplehurst, Kent. (March, 1900).
- FINN, FRANK, B.A., F.Z.S., M.B.O.U.; 36, St. George's Road, Regent's Park, London, N.W. (March, 1895).
- FLOWER, Captain STANLEY S., F.Z.S., M.B.O.U.; Director Egyptian Government Zoological Gardens; Ghizeli (Giza), Cairo. (Jan., 1903).
- FLOWER, Mrs. STANLEY; Longfield, Tring, Herts. (March, 1909).
- FOCKLEMANN, HERR AUGUST; Tier Park, Gross-Birstel, Hamburgli. (Nov., 1907).
- FOLLETT, The Lady JULIA; Woodside, Old Windsor. (Oct., 1903).
- FORTESCUE, Col. H.; Falmouth House, Newmarket. (Oct., 1908).
- FOSTER, WM. HILL; 164, Portland Street, Southport. (Jan., 1902).
- 130 FOTHERGILL, Major HENRY, J.P.; Copt Hall, Hawkhurst. (April, 1900).
- FOWLER, CHARLES; 26, Broad Street, Blaenavon. (Dec., 1894).
- FROST, WILFRED; 13, Westcroft Square, Ravenscourt Park, W. (July, 1908).
- GALLAND, CHARLES E.; Bradley House, Market Weighton, E. Yorks. (May, 1909).
- GALLOWAY, P. F. M.; Durban, Rectory Road, Caversham, Reading. (March, 1907).
- GIBBS, Mrs. H. MARTIN; Barrow Court, Flax Bourton, R.S.O., Somerset. (April, 1904).
- GIBBINS, WILLIAM B.; Ettington, near Stratford-on-Avon. (June, 1895).*
- GIFFORD, EDWARD W.; 3256, Briggs Avenue, Alameda, California, U.S.A. (April, 1908).
- GILBEY, Sir WALTER, F.Z.S.; Elsenham Hall, Elsenham, Essex. (Dec., 1907).
- GILES, HENRY M., M. Aust. O. U. (Orig. Mem.); Zoological Gardens, Perth, Western Australia. (June, 1903).
- 140 GILL, ARTHUR, M.R.C.V.S.; Veterinary Establishment, Bexley Heath, Kent. (Dec., 1899).
- GILROY, NORMAN, M.B.O.U.; 95, Claremont Road, Forest Gate, E. (July, 1906).
- GLADSTONE, Miss J.; The Lodge, Parkstone, Dorset. (July, 1905).

- GODDARD, H. E.; Rothsay, Thicket Road, Sutton, Surrey. (Feb., 1899).
- GODMAN, F. DUCANE, D.C.L., F.R.S., F.Z.S.; President of the British Ornithologists' Union; 45, Pont Street, S.W. (Oct., 1904).
(*Honorary Member*).
- GOODALL, A. A.; 35, Croxted Road, West Dulwich S.E. (Nov., 1909).
- GOODALL, J. M.; 52, Oxford Gardens, N. Kensington, London, W. (July, 1905).
- GOODCHILD, HERBERT, M.B.O.U.; 66, Gloucester Road, Regent's Park, N.W. (Oct., 1902).
- GOODFELLOW, WALTER, M.B.O.U.; Mont Fleuri, Southbourne Grove, Bournemouth. (June, 1897).
- GORTER, Madame; The Delta, Wahnier, Kent. (Nov., 1901).
- 150 GOW, J. BARNETT; 21, West Nile Street, Glasgow, and Ledcameroch, Bearsden, Glasgow. (Feb., 1906).
- GRABOWSKY, F., Director of the Zoological Gardens; Breslau, Germany. (June, 1905).
- GRAY, HENRY, M.R.C.V.S.; 23, Upper Phillimore Place, W. (June, 1906).
- GREGORY, Mrs.; Melville, Parkstone, Dorset. (Dec., 1901).
- GRIFFITHS, M. E.; Caizley House, Temple Road, Stowmarket. (May, 1902).
- GRISCOM, LUDLOW; 21, Washington Square North, New York City, U.S.A. (April, 1905).
- GRÖNVOLD, HENRIK; 26, Albert Bridge Road, Battersea Park, S.W. (Nov., 1902).
- GULFORD, Miss H.; 23, Lenton Avenue, The Park, Nottingham. (March, 1903).
- GULBENKIAN, C. S.; 38, Hyde Park Gardens, London, W. (Dec., 1908).
- GUNN, W. CECIL; The Red House, Bickley, Kent. (Jan., 1910).
- 160 GUNNING, Dr. J. W. B., F.Z.S., Director of the Transvaal Museum and Zoological Gardens; Pretoria, South Africa. (Sept., 1906).
- GUNTHER, ALBERT, M.A., M.D., Ph.D., F.R.S., F.Z.S., M.B.O.U.; 2, Lichfield Road, Kew Gardens. (Sept., 1902). (*Honorary Member*).
- GURNEY, JOHN HENRY, F.Z.S., M.B.O.U.; Keswick Hall, Norwich; and Athenæum Club, Pall Mall, S.W. (Dec., 1904).
- HAAGNER, A. K., F.Z.S., M.B.O.U., Transvaal Museum, Pretoria, South Africa. (Nov., 1905).
- HALHED, Lieut. N. G. B.; King's Own Yorkshire Light Infantry; 3rd Battalion, Egyptian Army, Khartoum. (Dec., 1908).
- HAMILTON, Miss; 2, Upper Wimpole Street, W. (April, 1902).
- HARDING, W. A., M.A., F.Z.S.; Histon Manor, Cambridge. (Dec., 1903).
- HARDY, LAWRENCE, M.P.; Sandling Park, Hythe, Kent. (Nov., 1906).
- HAREWOOD, The Countess of; Harewood House, Leeds. (March, 1903).
- HARPER, Miss; 6, Ashburnham Road, Bedford. (March, 1902).
- 170 HARPER, EDWARD WILLIAM, F.Z.S., M.B.O.U.; 6, Ashburnham Road, Bedford. (Feb., 1901).
- HARTLEY, Mrs.; St. Helen's Lodge, Hastings. (April, 1897).

- HARVEY, The Hon. Lady; Langley Park, Slough. (Oct., 1906).
- HAWKE, The Hon. MARY C.; Wighill Park, Tadcaster. (Nov., 1900).
- HAWKINS, L. W.; Estrilda, 206, Clive Road, West Dulwich, S.E. (Jan., 1899).
- HAZELERIGG, Sir ARTHUR; Noseley Hall, Leicester. (March, 1907).
- HEATHCOAT-AMORY, Lady; Knighthayes Court, Tiverton, Devon.
- HEMSWORTH, The Rev. B., M.A., J.P.; Monk Fryston Hall, South Milford, Yorks. (June, 1901).
- HETLEY, Mrs. HENRY; Beauford Avenue, 114, Church Road, Norwood, S.E. (July, 1910).
- HEWITT, H. C.; Hope End, Ledbury, Herefordshire. (Jan., 1905).
- 180 HILL, Mrs. E. STAVELEY; Oxley Manor, Wolverhampton. (Oct., 1905).
- HINCKES, R. T.; Foxley, Hereford. (Feb., 1899).
- HINCKES, Miss E. MARJORIE; Barons Down, Dulverton. (Feb., 1908).
- HINDLE, R. FRANKLIN; 34, Brunswick Road, Liverpool. (Sept., 1898).
- HOBSON, F. G.; Villa Delta, Beverley. (May, 1905; dormant).
- HODGSON, The Hon. Mrs.; Clopton, Stratford-on-Avon. (March, 1903).
- HOLDEN, RALPH A., F.Z.S.; 5, John Street, Bedford Row, London. (May, 1906).
- HOLLINS, BERNARD; 9, George Street, Hull. (Sept., 1910).
- HOPKINSON, EMILIUS, D.S.O., M.A., M.B. Oxon., 45, Sussex Square, Brighton. (Oct., 1906).
- HOPSON, FRED C.; Northbrook Street, Newbury. (March, 1897).
- 190 HORSBRUGH, Major BOYD R., A.S.C.; Morristown Biller, Newbridge, Co. Kildare, Ireland. (Jan., 1898).
- HORSBRUGH, C. B.; 7, Kensington, Bath. (June, 1905; dormant).
- HORTON, LEONARD, W.; Hill House, Compton, Wolverhampton. (Feb., 1902).
- HOUSDEN, JAMES B.; Brooklyn, Cator Road, Sydenham, S.E. (Orig. Mem.)
- HOWARD, ROBERT JAMES, M.B.O.U.; Shear Bank, Blackburn. (April, 1903).
- HOWARD-VYSE, H.; Stoke Place, Slough. (Nov., 1906).
- HOWELL, THOS. A.; 109, Wall Street, New York, U.S.A. (April, 1910).
- HOWMAN, Miss; 6, Essex Grove, Upper Norwood. (March, 1897).
- HOYLE, Mrs.; The Vicarage, Stoke Poges, Bucks. (Nov., 1904).
- HUBBARD, GEORGE, 112, Fenchurch Street, E.C. (Jan., 1905).
- 200 HUGHES, Lady; Shelsley Grange, Worcester. (Nov., 1904).
- HUMPHREYS, RUSSELL; Bryn Court, Warlingham, Surrey. (April, 1896).
- HUSBAND, Miss; Clifton View, York. (Feb., 1896).
- HUTCHINSON, Miss ALICE; Alderton Vicarage, Chippenham, Wilts. (August, 1907).
- INCHQUIN, The Lady; Dromoland Castle, Newmarket-on-Fergus, County Clare, Ireland. (Nov., 1897).
- INGRAM, COLLINGWOOD; The Bungalow, Westgate-on-Sea. (Oct., 1905).
- INGRAM, Sir WILLIAM, Bart.; 65, Cromwell Road, London, S.W. (Sept., 1904).

- ISAAC, CHARLES; Somerton, Bath Road, Slough. (March, 1906).
- IVENS, Miss; 86, Rua do Coellho da Rocha, Lisbon, Portugal. (August, 1903).
- JARDINE, Miss EMILY; 11, Ashburnham Mansions, Cremorne Road, Chelsea. (Jan., 1903).
- 210 JOHNSTONE, Mrs. E. J.; Burrswood, Groombridge, Sussex. (May, 1900).
- KEMP, R.; c/o Mrs. Warner, Long Sutton, near Langport, Somersetshire. (March, 1903).
- KERR, N.; Primrose Club, Park Place, London, W. (Oct., 1906).
- KUSER, ANTHONY R.; Bernardsville, New Jersey, U.S.A. (Dec., 1908).
- LANCASTER, JOHN; Overslade, near Rugby. (March, 1904).
- LASCHELLS, The Hon. GERALD, F.Z.S., M.B.O.U.; The King's House, Lyndhurst. (Oct., 1896).
- LAWSON, Mrs. F. W.; Adel, Leeds. (Nov., 1903).
- LEE, Mrs. E. D.; Hartwell House, Aylesbury. (July, 1906).
- LEEKE, Miss DOROTHY; 9, Hertford Street, Mayfair, W. (May, 1909).
- LEIGH, CECIL; Lyburn Park, near Lyndhurst, Hants. (Nov., 1906).
- 220 LELY, Mrs. G. PEEL; Woodlands, Beckenham, Kent. (Feb., 1910).
- LEWIS, W. JARRETT; Corstorphine, Ryde, I. of W. (Oct., 1904).
- LILFORD, The Lady; Lilford Hall, Oundle, Northamptonshire. (Jan., 1898).
- LOCKYER, ALFRED; Ashbourne, Selsden Road, Wanstead. (Dec., 1905).
- LODGE, GEORGE E., F.Z.S., M.B.O.U.; The Studios, 5, Thurloe Square, S.W. (Aug., 1905).
- LONG, Mrs.; Sherrington Manor, Berwick, Sussex. (Feb., 1907).
- LONGDON, Mrs.; Arreton, Epsom Road, Guildford, Surrey, (March, 1908).
- LOVELACE, The Countess of; Wentworth House, Chelsea Embankment, London, S.W. (May, 1906).
- LYON, Miss K.; Harewood, Horsham. (Nov., 1894).
- MACCALL, Miss; The Rest, Church Crookham, Fleet, R.S.O., Hants. (May, 1904 dormant).
- 230 MCGEAGH, Dr. R. T.; 23, Breeze Hill, Bootle, Lancs. (Aug., 1908).
- MCGEE, The Rev. Father; Keppel Street, Bathurst, N.S.W. (July, 1908).
- MALONE, Mrs. M. L'ESTRANGE, The Manor Cottage, Clewer Green, Windsor. (Jan., 1902).
- MARSHALL, ARCHIBALD MCLEAN; Crogen, Corwen, N. Wales. (Jan., 1906).
- MARTIN, H. C.; 147, Victoria Road, Old Charlton, Kent; and Saladero, Liebig, Fray Bentos, Uruguay. (Jan., 1897).
- MARTIN-MASSON, G. J.; 5, Carrickblacker Avenue, Partadown, Ireland.
- MARTORELLI, Dr. GIACINTO, M.B.O.U. etc.; Collezione, Turati, Museo Civico di Storia Naturale, Milan, Italy. (July, 1906). (*Honorary Member*).

- MATHEWS, GREGORY M., F.L.S.; Langley Mount, Watford, Herts. (Dec., 1909).
- MEADE-WALDO, E. G. B., F.Z.S., M.B.O.U.; Stonewall Park, Edenbridge, Kent. (Jan., 1895).
- MILLER, TINNISWOOD; 27, Belgrave Road, S.W. (March, 1905).
- 240 MILLS, The Hon. VIOLET; Wilderness, Sevenoaks. (Oct., 1907).
- MILLSUM, O.; Everberg, Brabant, Belgium. (Aug., 1909).
- MITCHELL, HARRY; Holmefield, Lyndhurst, Hants. (Feb., 1904).
- MOERSCHELL, F.; Imperial Hotel, Malvern. (June, 1895).
- MOMBER, Lieut.-Col. G. A., F.Z.S.; La Junia, San Remo, Italy. (Sept., 1907).
- MONTAGU, E. S., M.P., M.B.O.U.; Trinity College, Cambridge, and 12, Kensington Palace Gardens, W. (May, 1905).
- MOORE, WM. FAWCETT; Ballyanchor Poultry Farm, Lismore, co. Waterford. (Aug., 1903).
- MORSHEAD, Lady; Forest Lodge, Binfield, Bracknell, Berks. Dec., (1894).*
- MORTIMER, Mrs.; Wigmore, Holmwood, Surrey. (Orig. Mem.)*
- MUNDIS, Miss SYBIL MILLER; Shipley Hall, Derby. (Jan., 1909).
- 250 MURRAY, A. L. KEITH; 1, Chudleigh Villas, Bideford, N. Devon. (Aug., 1908).
- MYLAN, JAS. GEORGE, B.A., M.B. (Univ. Cal.); L.R.C.P. and L.R.C.S. (Ed.) &c., 90, Upper Hanover Street, Sheffield. (Dec., 1901).
- NEWMAN, T. H., F.Z.S., M.B.O.U.; Newlands, Harrowdene Road, Weimbley, Middlesex. (May, 1900).
- NICHOLS, WALTER, B., M.B.O.U.; Stour Lodge, Bradfield, Manningtree. (Jan., 1907).
- NICOLL, MICHAEL J., M.B.O.U.; Zoological Gardens, Giza, Cairo, Egypt. (July, 1906).
- NOBLE, Mrs.; Park Place, Henley-on-Thames. (Oct., 1900).
- OAKLEY, W.; 34, High Street, Leicester. (March, 1896).*
- OATES, F. W.; White House Farm, New Leeds, Leeds. (Oct., 1897).
- OBERHOLSER, HARRY C.; 1445, Girard Street, N.W., Washington, D.C., United States of America. (Oct., 1903).
- ODLING, Mrs.; The Shepherd's Cot, Tankerton, Kent. (Aug., 1905; dormant 1906-7).
- 260 OGILVIE-GRANT, W. R., F.Z.S., M.B.O.U.; British Museum (Nat. Hist.), Cromwell Road, S.W. (Dec., 1903).
- OGLE, BERTRAM SAVILLE, M.B.O.U.; Steeple Aslton, Oxford. (Dec., 1902).
- OLIPHANT, TREVOR; Teston Rectory, Maidstone. (May, 1908).
- O'REILLY, NICHOLAS S.; 2, West Terrace Mansions, The Leas, Folkestone. (Dec., 1894).
- OSTREHAM, J. ELIOTT D.; Bank House, Thame, Oxon. (April, 1903).
- PAGE, WESLEY T., F.Z.S.; Glenfield, Graham Avenue, Mitcham, Surrey. (May, 1897).
- PAINTER, K. V.; 2508, Euclid Avenue, Cleveland, Ohio, U.S.A. (Dec., 1909).

- PALMER, Mrs. G. W.; Marlston House, near Newbury. (Oct., 1905).
- PAM, ALBERT, F.Z.S.; 35, Chester Terrace, N.W. (Jan., 1906).
- PARKER, DUNCAN, J.P.; Clopton Hall, Woolpit, Bury St. Edmunds. (June, 1903).
- 270 PARKIN, THOMAS, M.A., F.R.G.S., F.Z.S., M.B.O.U.; Fairseat, High Wickham, Hastings. (Oct., 1903).
- PAUWELS, R.; Everberg, par Cortenberg, Brabant, Belgium. (Dec., 1904).
- PEIR, P.; Box 504 G.P.O., Sydney; and 50, Bondi Road, Waverley, Sydney, N. S. Wales. (July, 1903).
- PENNANT, Lady EDITH DOUGLAS; Soham House, Newmarket, Cambs. (Sept., 1908).
- PENROSE, FRANK G., M.D., F.Z.S., M.B.O.U.; Wick House, Downton, Salisbury. (Dec., 1903).
- PERREAU, Capt. G. A.; 2/4 Gurkha Rifles, Bakloh, Punjab, India. (Dec., 1903).
- PERRING, C. S. R.; 1, Walpole Road, Twickenham. (Sept., 1895).
- PHILLIPPS, NOEL; 21, Addison Gardens, Kensington, W. (Nov., 1901).
- PHILLIPPS, REGINALD; 26, Cromwell Grove, West Kensington Park, W. (Orig. Mem.)*
- PHILLIPPS, Mrs.; 26, Cromwell Grove, West Kensington Park, W. (Orig. Mem.)
- 280 PHILLIPS, JOHN C.; Knobfields, Wenham, Mass., U.S.A. (March, 1910).
- PHILLIPS, Mrs. E. LORT, F.Z.S.; 79, Cadogan Square, S.W. (April, 1907).
- PICARD, HUGH K.; 298, West End Lane, N.W. (March, 1902).
- PICHOT, MORS. PIERRE AMEDÉE, 132, Boulevard Hausmann, Paris. (Sept., 1910).
- PICKFORD, RANDOLPH JOHN; Job's Hill House, Crook, co. Durham. (Feb., 1903).
- PIKE, J. G.; King's Barrow, Wareham, Dorset. (May, 1910).
- POCOCK, R. L., F.L.S., F.Z.S., M.B.O.U.; Zoological Society's Gardens, Regent's Park, N.W. (Feb., 1904).
- POWIS, The Earl of; 45, Berkeley Square, W.; and Powis Castle, Welshpool. (April, 1902).
- PRINCETON UNIVERSITY, LIBRARY OF; Princeton, New Jersey, U.S.A. (Nov., 1907).
- PROCTOR, Major F. W., M.B.O.U.; Downfield, Maidenhead. (May, 1903).
- 290 PYCRAFT, W. P., A.L.S., F.Z.S., M.B.O.U., &c.; British Museum (Nat. Hist.), Cromwell Road, S.W. (Nov., 1904).
- RADCLIFFE, Capt. A. DELMÉ; c/o Messrs. Cox & Co., Bankers, Bombay.
- RATHBORNE, HENRY B.; Dunsinea, Castleknock, co. Dublin. (May, 1901).
- RATIGAN, G. E.; Lanarkslea, Cornwall Gardens, S.W. (Aug., 1908).
- RAVEN, W. H.; 239, Darby Road, Nottingham. (Dec., 1909).
- REID, Mrs.; Funchal, Madeira. (Feb., 1895).
- RENAUT, W. E., M.B.O.U.; 17, Emanuel Avenue, Friar's Park, Acton, W. (April, 1897).

- RENSHAW, Dr. GRAHAM, M.B., M.R.C.S.; Bridge House, Sale, Manchester. (Jan., 1910.).
- RICE, Captain G.; Glayquhat, Blairgowrie, N.B. (May, 1902).
- RILEY, JOSEPH H.; U.S. National Museum, Washington, D.C., U.S.A. (June, 1906).
- 300 RITCHIE, NORMAN; The Holmes, St. Boswell's, N.B. (Feb., 1903).
- ROBBINS, HENRY; Billacy View, Mill Hill, Middlesex. (April, 1908).
- ROBERT, Madam; Hartland House, Sutton, Surrey. (June, 1906).
- ROBERTS, Mrs., M. Aust. O.U.; Beaumaris, Montpelier Street, Hobart, Tasmania. (June, 1903).
- ROBERTS, Mrs. NORMAN; S. Holbeck Hill, Scarborough. (Nov., 1907).
- ROGERS, Lt.-Col. J. M., D.S.O., F.Z.S., M.B.O.U. (Late Royal Dragoons); Riverhill, Sevenoaks, (April, 1907).
- ROGERSON, A.; Fleurville, Ashford Road, Cheltenham. (Dec., 1902).
- ROTCH, Mrs.; Sunnyclyff, Cholmondeley Road, West Kirby. (June, 1897).
- ROTHSCHILD, The Hon. L. WALTER, M.P., D.Sc., F.Z.S., M.B.O.U.; The Museum, Tring, Herts. (Jan., 1900).
- ROTHWELL, JAMES E.; 153, Sewall Avenue, Brookline, Mass., U.S.A. (Oct., 1910).
- 310 ST. QUINTIN, WILLIAM HERBERT, F.Z.S., M.B.O.U.; Scampston Hall, Killington, York. (Orig. Mem.)
- SALTER, ALBERT J.; Nevill Street, Abergavenny. (March, 1902).
- SAVAGE, A.; 3, Rue Gilbert, Rouen, Seine Inférieure, France. (April, 1895).
- SCHARFF, R. F., Ph.D., Secretary to the Royal Zoological Society of Ireland; Plicenix Park, Dublin. (Oct., 1905).
- SCHERRER, HENRY, F.Z.S., M.B.O.U.; 9, Cavendish Road, Harringay, N. (Dec., 1902).
- SCLATER, W. L., M.A., F.Z.S.; 10, Sloane Court, S.W. (Aug., 1904).
- SCLATER, PHILIP LUTLEY, M.A., D.Sc., F.Z.S., M.B.O.U.; Odiham Priory, Winchfield, Hants. (Sept., 1902). (*Hon. Member*).
- SCOTT, Professor WILLIAM E. D.; Worthington Society, Shawnee-on-Delaware, Pennsylvania, U.S.A. (June, 1900).
- SEPPINGS, Captain J. W. H.; The Army Pay Office, York. (Sept., 1907).
- SETH-SMITH, DAVID, F.Z.S., M.B.O.U.; 34, Elsworthy Road, South Hampstead, N.W. (Dec., 1894).
- 320 SETH-SMITH, LESLIE M., B.A., M.B.O.U.; Alleyne, Caterham Valley, Surrey; and Kampala, Uganda. (July, 1902).
- SETH-SMITH, Mrs. W.; Alleyne, Caterham Valley, Surrey. (Sept., 1904).
- SHELLEY, Captain GEORGE ERNEST, F.Z.S., F.R.G.S., M.B.O.U.; 39, Egerton Gardens, South Kensington, S.W. (August, 1903).
- SHERBROOKE, Mrs. P.; Ravenswyke, Kirbymoorside, Yorks. (March, 1897).
- SICH, HERBERT LEONARD; c/o Dr. J. Lovell-Keays, Park Lodge, East Hoathly, Sussex. (Feb., 1902).
- SILVER, ALLEN; 11, Foulser Road, Upper Tooting, S.W. (Aug., 1904).
- SIMPSON, ARCHIBALD; Blackgates House, Tingley, near Wakefield. (Feb., 1901).

- SLATER, ARTHUR A.; Keswick Road, St. Helen's. (Nov., 1894).
 SMITH, C. BARNBY; Woodlands, Retford. (August, 1906).
 SMITH, Miss E. L. DORIEN; Tresco Abbey, Isle of Scilly, Cornwall. (August, 1908).
- 330 SORNBORGER, J. D.; Rowley, Massachusetts. (Oct., 1905).
 SOUTHESK, The Countess of; Kinnaird Castle, Brechin, N.B. (Feb., 1901).
 SOUTHPORT CORPORATION; Curator; Hesketh Park, Southport. (Jan., 1904).
 STANSFELD, Captain JOHN; Dumfries, Montrose, N.B. (Dec., 1896).
 STANYFORTH, Mrs.; Kirk Hamerton Hall, York. (Nov., 1897).
 STAPLES-BROWNE, R.; Bampton, Oxfordshire. (August, 1908).
 STARK, W. P.; Hillstead, Basingstoke. (August, 1903).
 STERCKMANS, Dr. C.; 28, Rue de la Station, Louvain, Belgium. (Sept. 1910).
 STIRLING, Mrs. CHARLES; Old Newton House, Donne. (Sept., 1904).
 STOCKPORT CORPORATION; Superintendent; Vernon Park, Stockport. (Oct., 1902).
- 340 STURTON-JOHNSON, Miss; Orotava House, Ore, Hastings. (May, 1897).
 SUFFOLK and BERKSHIRE, The Countess of; Charlton Park, Malmesbury. (Feb, 1909).
 SUGGITT, ROBERT; Suggitt's Lane, Cleethorpes, Grimsby. (Dec., 1903).
 SUTCLIFFE, ALBERT; Field House, Grimsby. (Feb., 1906).
 SUTTON, Lady; Benham-Valence, Speen, Newbury. (Dec., 1901).
 SWAYSLAND, WALTER, 47, Queen's Road, Brighton. (Orig. Mem.) *
- TANNER, Dr. FRANK L.; Vauvert House, Guernsey. (Jan., 1904).
 TANNER, Mrs. SLINGSBY; 48, Lower Sloane Street, S.W. (Oct., 1906).
 TEMPLE, W. R.; Ormonde, Datchet, Bucks. (June, 1907).
 TERRY, Major HORACE A., M.B.O.U. (late Oxfordshire Light Infantry); The Lodge, Upper Halliford, Shepperton. (Oct., 1902).
- 350 TESCHEMAKER, W. E., B.A.; Ringmore, Teignmouth, Devon. (May, 1904).
 THOMAS, HENRY; 15, Clinning Road, Birkdale, Southport. (Jan., 1895).
 THOMAS, Miss F. G. F.; Hurworth Manor, Darlington. (March, 1899).
 THOMAS, Mrs. HAIG; Creech Grange, Wareham. (August, 1907).
 THOMASSET, BERNARD C., F.Z.S.; Hawkenbury, Staplehurst, Kent. (July, 1896).
 THOMASSET, H. P.; Cascade Estate, Mahé, Seychelles Islands. (Nov., 1906).
 THOMPSON, Mrs. F. F.; Canadaigua, N.Y., U.S.A. (July, 1907).
 THORNILEY, PERCY WRIGHT; Shooter's Hill, Wem., Shrewsbury. (Feb., 1902).
 THORPE, CHARLES; Selborne, Springfield Road, Wallington, Surrey. (Dec., 1901).
 THORPE, F. C.; The Zoo, Sunnyside, Worksop. (Jan., 1902).

- 360 TICEHURST, NORMAN FREDERIC, M.A., M.B., F.R.C.S., F.Z.S.; 35, Pevensey Road, St. Leonards-on-Sea. (Dec., 1906).
- TOMES, W., J.P.; Glenmoor, 31, Billing Road, Northampton. (Dec., 1902).
- TOWNSEND, STANLEY M.; 3, Swift Street, Fulham. (Sept., 1898).
- TOYE, Mrs.; Stanhope, Bideford, N. Devon. (Feb., 1897).
- TRENOW, EVELYN HENRY, F.Z.S.; Ivy Lodge, Epping, Essex. (Nov., 1910).
- TRESTRAIL, Mrs.; Southdale, Clevedon. (Sept., 1903).
- TREVOR-BATTYE, AUBYN, B. R., M.A., F.L.S., etc.; Royal Society's Club, 63, St. James's Street, W. (July, 1898).
- TURNER, Mrs. TURNER; Beaulieu Springs, Beaulieu, Hants. (July, 1910).
- TURNER, THOMAS, J.P.; Cullompton, Devon. (Dec., 1895).
- TWEEDIE, Capt. W., 93rd Highlanders; c/o Messrs. Cox & Co., 16, Charing Cross, S.W. (April, 1903).
- 370 VALENTINE, ERNEST; 7, Highfield, Workington. (May, 1899).
- VERNON, Mrs. E. WARREN; Toddington Manor, Dunstable, Bedfordshire. (Nov., 1907).
- VILLIERS, Mrs.; The Shielding, Ayr, N.B. (August, 1906).
- VIVIAN, Mrs.; Timber Hill Lodge, Caterham Valley, Surrey. (March, 1903).
- WADDELL, Miss PEDDIE; 4, Great Stuart Street, Edinburgh, N.B. (Feb., 1903).
- WAIT, Miss L. M. ST. A.; 12, Rosary Gardens, S.W. (Feb., 1909).
- WALKER, Miss; Hanley Lodge, Corstorphine, Midlothian. (Jan., 1903).
- WALKER, Miss H. K. O.; Chesham, Bury, Lancs. (Feb., 1895).
- WALLOP, The Hon. FREDERIC; 48, Eton Terrace, S.W. (Feb., 1902).
- WALTERS, Colonel FRANCIS DALREMPLE; Rougemont, St. John's Park, Ryde, Isle of Wight. (May, 1909).
- 380 WARDE, The Lady HARRIET, Knotley Hall, Tunbridge. (Aug., 1903).
- WATERFIELD, Mrs. NOEL E.; Port Soudan, Red Sea. (Sept., 1904).
- WATERHOUSE, Mrs. D.; 6, Esplanade, Scarborough. (Feb., 1903).
- WATSON, S.; 37, Tithebarn Street, Preston. (Feb., 1906).
- WEST, COLIN; The Grange, South Norwood Park. (Jan., 1906).
- WEST, Miss E. E.; The Homestead, Hawthorne Road, Bickley Park, Kent. (April, 1898).*
- WHITAKER, JOSEPH I. S., F.Z.S., M.B.O.U.; Malfitano, Palermo, Sicily, (August, 1903).
- WHITEHEAD, Mrs. HENRY; Haslem Hey, Bury, Lancs. (March, 1902).
- WHITMAN, Prof. C. O.; The University of Chicago, U.S.A. (Mar., 1908).
- WIGELSWORTH, JOSEPH, M.D., M.B.O.U.; Rainhill, Lancashire. (Oct., 1902).
- 390 WILLFORD, HENRY; Upland View, Haven Street, Ryde, Isle of Wight. (Nov., 1907).

- WILLIAMS, Mrs. C. H., 49, Okehampton Road, St. Thomas, Exeter. (May, 1902).
- WILLIAMS, Mrs. HOWARD; Oatlands, Sunbridge Avenue, Bromley, Kent. (April, 1902).
- WILLIAMS, SYDNEY, Jun., F.Z.S.; Holland Lodge, 275, Fore Street, Edmoucton, N. (Feb., 1905).
- WILMOT, The Rev. RICHARD H.; Bishopstone Rectory, Hereford. (Dec., 1902).
- WILSON, Captain P. A.; Manor House, Droxford, Hants. (Sept., 1909).
- WILSON, MAURICE A., M.D.; Kirkby Overblow, Pannal, S. O., York. (Oct., 1905).
- WILSON, T. NEEDHAM; Oak Lodge, Bitterne, near Southampton. (Dec., 1901).
- WINCHILSEA and NOTTINGHAM, The Countess of; Harlech, Merioneth. (April, 1903).
- WITHERBY, The Rev. T. C.; 15, High Street, Poplar. (July, 1910).
- 400 WOLFE, Miss GEORGINA; S. John's, 57, Granada Road, E. Southsea. (August, 1904).
- WORKMAN, WM. HUGHES, M.B.O.U.; Lismore, Windsor, Belfast. (May, 1903).
- WORMALD, H.; The Heath, Dereham, Norfolk. (Dec., 1904).
- WRIGHT, R. N.; Church Hill, Robert Road, Handsworth, near Birmingham. (Dec., 1908).
- YOUNGER, Miss BARBARA HENDERSON; 4, Douglas Gardens, Edinburgh. (July, 1909).
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RULES OF THE AVICULTURAL SOCIETY

As Amended January, 1908.

1.—The name of the Society shall be THE AVICULTURAL SOCIETY and its object shall be the study of Foreign and British Birds in freedom and in captivity. Poultry, Pigeons, and Canaries shall be outside the scope of the Society. The year of the Society, with that of each volume of the Society's Magazine, which shall be known as *The Avicultural Magazine*, shall commence with the month of November and end on the 31st of October following.

2.—The Avicultural Society shall consist of Ordinary and Honorary Members; and the latter shall be restricted in number to six, and be elected by the Council.

3.—The Officers of the Society shall be elected, annually if necessary, by members of the Council in manner hereinafter provided, and shall consist of a President, one or more Vice-Presidents, a Business Secretary, a Correspondence Secretary, an Editor, a Treasurer, an Auditor, a Scrutineer, and a Council of fifteen Members. The Secretaries, Editor, and Treasurer, shall be *ex officio* Members of the Council.

4.—New Members shall be proposed in writing, and the name and address of every person thus proposed, with the name of the Member proposing him, shall be published in the next issue of the Magazine. Unless the candidate shall, within two weeks after the publication of his name in the Magazine, be objected to by at least two Members, he shall be deemed to be duly elected. If five Members shall lodge with the Business Secretary objections to any candidate he shall not be elected, but the signatures to the signed objections must be verified by the Scrutineer. If two or more Members (but less than five) shall object to any candidate, the Secretary shall announce in the next number of the Magazine that such objections have been lodged (but shall not disclose the names of the objectors), and shall request the Members to vote upon the question of the election of such candidate. Members shall record their votes in sealed letters addressed to the Scrutineer, and a candidate shall not be elected unless two thirds of the votes recorded be in his favour; nor shall a candidate be elected if five or more votes be recorded against his election.

5.—Each Member shall pay an annual subscription of 10/-, to be due and payable in advance on the 1st of November in each year. New Members shall pay in addition, an entrance fee of 10/6; and, on payment of their entrance fee and subscription, they shall be entitled to receive all the numbers of the Society's Magazine for the current year.

6.—Members intending to resign their membership at the end of the current year of the Society are expected to give notice to the Business Secretary before the first of October, so that their names may not be included in the "List of Members," which shall be published annually in the November number of the Magazine.

7.—The Magazine of the Society shall be issued on or about the first day of every month,* and forwarded, post free, to all the Members who shall have paid their subscriptions for the year; but no Magazine shall be sent or delivered to any Member until the annual subscription shall have reached the hands of the Business Secretary. Members whose subscriptions shall not have been paid as above by the first day in September in any year shall cease to be Members of the Society, and shall not be re-admitted until a fresh entrance fee, as well as the annual subscription, shall have been paid.

8.—The Secretaries, Editor, and Treasurer shall be elected for a term of five years, and should a vacancy occur, it may be temporarily filled up by the Executive Committee (see Rule 10). At the expiration of the term of five years in every case, it shall be competent for the Council to nominate the same officer, or another Member, for a further term of five years, unless a second candidate be proposed by not less than twenty-five members of at least two years standing, as set forth below.

In the September number of the Magazine preceding the retirement from office of the Secretaries, Editor, or Treasurer, the Council shall publish the names of those gentlemen whom they have nominated to fill the vacancies thus created; and these gentlemen shall be deemed duly elected unless another candidate or candidates be proposed by not less than fifteen Members of at least two years standing. Such proposal, duly seconded and containing the written consent of the nominee to serve, if elected, in the capacity for which he is proposed, must reach the Business Secretary, on or before the 15th of September.

The Council shall also publish yearly in the September number of the Magazine the names of those gentlemen nominated by them for the posts of Auditor and Scrutineer respectively.

9.—The Members of the Council shall retire by rotation, two at the end of each year of the Society (unless a vacancy or vacancies shall occur otherwise) and two other Members of the Society shall be recommended by the Council to take the place of those retiring. The names of the two Members recommended shall be printed in the September number of *The Avicultural Magazine*. Should the Council's selection be objected to by fifteen or more Members, these shall have power to put forward two other candidates whose names, together with the signatures of no less than

* Owing to the extra pressure of work, the October and November numbers are liable to be late.

fifteen Member proposing them, must reach the Hon. Business Secretary by the 15th of September. The names of the four candidates will then be printed on a voting paper and sent to each member with the October number of the Magazine, and the result of the voting published in the November issue. Should no alternative candidates be put forward, in the manner and by the date above specified, the two candidates recommended by the Council shall be deemed to have been duly elected. In the event of an equality of votes the President shall have a casting vote.

If any Member of the Council does not attend a meeting for two years in succession, the Council shall have power to elect another Member in his place.

10.—Immediately after the election of the Council, that body shall proceed to elect three from its Members (*ex officio* Members not being eligible). These three, together with the Secretaries and Editor, shall form a Committee known as the Executive Committee. Members of the Council shall be asked every year (whether there has been an election of that body or not) if they wish to stand for the Executive, and in any year when the number of candidates exceeds three there shall be an election of the Executive.

The duties of the Executive Committee shall be as follows:

- (i). To sanction all payments to be made on behalf of the Society.
- (ii). In the event of the resignation of any of the officers during the Society's year, to temporarily fill the vacancy until the end of the year. In the case of the office being one which is held for more than one year (*e. g.* Secretaries, Editor, or Treasurer,) the appointment shall be confirmed by the Council at its next meeting.

To act for the Council in the decision of any other matter that may arise in connection with the business of the Society.

The decision of any matter by the Executive to be settled by a simple majority (five to form a quorum). In the event of a tie on any question, such question shall be forthwith submitted by letter to the Council for their decision.

The Executive shall not have power

- (i). To add or alter the Rules;
- (ii). To expel any Member;
- (iii). To re-elect the Secretaries, Editor, or Treasurer for a second term of office.

It shall not be lawful for the Treasurer to pay any account unless such account be duly initialed by the executive.

It shall be lawful for the Business Secretary or Editor to pledge the Society's credit for a sum not exceeding £15.

Should a Member wish any matter to be brought before the *Council* direct, such matter should be sent to the Business Secretary with a letter stating that it is to be brought before the Council at their next meeting; otherwise communications will in the first place be brought before the Executive.

A decision of a majority of the Council, or a majority of the Executive endorsed by the Council, shall be final and conclusive in all matters.

11.—The Editor shall have an absolute discretion as to what matter shall be published in the Magazine (subject to the control of the Executive Committee). The Business Secretary and Editor shall respectively refer all matters of doubt and difficulty to the Executive Committee.

12.—The Council (but not a Committee of the Council) shall have power to alter and add to the Rules, from time to time, in any manner they may think fit. Five to form a quorum at any meeting of the Council.

13.—The Council shall have power to expel any Member from the Society at any time without assigning any reason.

14.—Neither the Office of Scrutineer nor that of Auditor shall be held for two consecutive years by the same person.

15.—The Scrutineer shall not reveal to any person how any Member shall have voted.

THE SOCIETY'S MEDAL.

RULES.

The Medal may be awarded at the discretion of the Committee, to any Member who shall succeed in breeding, in the United Kingdom, any species of bird which shall not be known to have been previously bred in captivity in Great Britain or Ireland. Any Member wishing to obtain the Medal must send a detailed account for publication in the Magazine within about eight weeks from the date of hatching of the young and furnish such evidence of the facts as the Executive Committee may require. The Medal will be awarded only in cases where the young shall live to be old enough to feed themselves, and to be wholly independent of their parents.

The account of the breeding must be reasonably full so as to afford instruction to our Members, and should describe the plumage of the young and *be of value as a permanent record of the nesting and general habits of the species*. These points will have great weight when the question of awarding the Medal is under consideration.

The parents of the young must be the *bonâ fide* property of the breeder. An evasion of this rule, in any form whatever, will not only disqualify the breeder from any claim to a Medal in that particular instance, but will seriously prejudice any other claims he or she may subsequently advance for the breeding of the same or any other species.

In every case the decision of the Committee shall be final.

The Medal will be forwarded to each Member as soon after it shall have been awarded as possible.

The Medal is struck in bronze (but the Committee reserve the right to issue it in *silver* in very special cases), and measures $2\frac{1}{2}$ inches in diameter. It bears on the obverse a representation of two birds with a nest containing eggs, and the words "The Avicultural Society—founded 1894." On the reverse is the following inscription: "Awarded to (*name of donee*) for rearing the young of (*name of species*), a species not previously bred in captivity in the United Kingdom."

Members to whom Medals have been Awarded.

For a list of the Medal awards during the first series see Vol. II. (*New Series*), p. 18.

For a list of the Medal awards during the New Series see Vol. VI. (*New Series*), pp. 20-22
Vol. VII. (*New Series*), p. 20.

Series 2.

- Vol. VI., p. 257. Mr. W. E. TESCHEMAKER, for breeding the Dwarf Ground Dove (*Chamaepelia griseola*), in 1908.
- „ „ p. 337. Mr. T. H. NEWMAN, for breeding the Partridge Bronze-wing Pigeon (*Geophaps scripta*), in 1908.
- „ „ p. 345. Mr. C. BARNBY SMITH, for breeding the Black Francolin (*Francolinus vulgaris*), in 1908.
- Vol. VII., p. 208. Mr. W. E. TESCHEMAKER, for breeding the Cinnamon Tree Sparrow (*Passer cinnamomens*), in 1908.
- Vol. VII., p. 321. Mr. W. E. TESCHEMAKER for breeding the Rufous-backed Mannikin (*Spermestes nigriceps*), in 1909.
- Vol. VII., p. 334. Mr. W. T. PAGE for breeding the Grey-winged Onzel (*Merula boulboul*), in 1909.

Series 3.

- Vol. I., p. 28. Mr. E. J. BROOK for breeding the Black Lory (*Chalcopsittacus ater*), in 1909.
- Vol. I., p. 81. Mr. W. E. TESCHEMAKER for breeding the Giant Whydah (*Chera procne*), in 1909.
- Vol. I., p. 120. Mr. T. H. NEWMAN for breeding the Deceptive Turtle Dove (*Turtur decipiens*), in 1909.
- Vol. I., pp. 158 } Mr. T. H. NEWMAN for breeding the White-throated
and 194. } Pigeon (*Columba albigularis*), in 1909.
- Vol. I., p. 267. Mr. P. W. THORNILEY for breeding the Argentine Black-bird (*Turdus fuscater*), in 1910.



NEW FLIGHT CAGES IN THE BIRD HOUSE AT THE ZOOLOGICAL GARDENS

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Avicultural Magazine,

BEING THE JOURNAL OF THE
AVICULTURAL SOCIETY.

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NOVEMBER, 1910.

SOME NOTES ON A FEW EGYPTIAN DESERT BIRDS.

By Lady WM. CECIL (Baroness Amherst of Hackney).

“And as I gaze, these narrow walls expand;
Before my dreaming eye
Stretches the desert, with its sifting sand,
Its unimpeded sky!”

Longfellow.

What a vision is conjured up by these few lines! The Desert! vast, measureless, silent; glowing golden in the glare of burning sun, or changing through every hue of rainbow tint to silver-white, and purple-black in the magic of moonlight. Always mysterious, always lonely, a world of dreams, a wonderland of thought. To the traveller, perhaps, a world of terror, of sand storm, thirst and death! Yet here those who look for it may discover life that is of the deepest interest; the geologist and the naturalist might here spend years in research, and the ornithologist find a “happy hunting ground” wherein to exercise his pet hobby.

The bird-life in the desert is a study well worthy of attention. How the birds live, how they find food, build their nests, and rear their young in a land where all is sand and rock, and rock and sand; the herbage consisting mainly of thorny bushes and dry hard grass and prickly scrub. After a little rain, which falls every two or three years, for a few short weeks the desert ‘blossoms,’ perhaps hardly ‘as the rose,’ but still wee flowers and green things are brought forth, and many exquisite little blooms, such as a tiny mignonette and miniature Bugloss gladden the aching eyes of the tired traveller, as he trudges

across some secluded valley or wind-swept plain. Even minute Irises are found in the Nile valley some distance beyond the limit of irrigation.

But this transformation is only passing; soon the sun scorches the delicate growths, and withered stalks alone show where flowers have been.

Among the rocks, he who seeks may find the Brown-necked Raven (*Corvus umbrinus*), the nests of these birds are, as a rule, built in the clefts of the jagged desert hills, or in holes high up in some sun-baked precipice. I saw several pairs of Brown-necked Ravens hovering and flying evidently about their nests, near the summit of the cliffs between Bir Inglise and the Red Sea. These cliffs rise abruptly in an almost perpendicular wall direct from the desert, and are of a more or less chalky formation, quite distinct from the granite and sand-stone and crumbling umber-coloured rocks further west, and the limestone mountains north, south and east.

The rarer Abyssinian Raven (*Corvus affinis*) is also a native of the desert. This variety, too, has a brown neck, and the nostrils are fringed with stiff upstanding bristles, which gives the bird a very ferocious look; its legs are short, and consequently its appearance is somewhat stumpy. We saw a pair of these birds on the western side of the Nile, in the Lybian desert, in February, and another pair at Es Sid, perhaps some fifty miles away in the Easteru desert, a month later.

The Ravens find a plentiful supply of food in the desert, for they prey upon carrion, and probably also on small living animals, such as desert mice, jerboas, and young snakes. They are said also to eat locusts.

The Raven's gruesome feast is shared by the Vultures. The variety commonest in the desert is the Griffon Vulture (*Gyps fulvus*); a soft white down covers its head and throat, and a frill of whitish feathers decorates the back of its neck; it is rather smaller than its fellow in the desert, the Sociable Vulture (*Otogyps auricularis*), whose neck is skinny, though a little dark fluff covers the top of its head. Another vulture that may be seen here occasionally is the Bearded Vulture (*Gypactus ossifagus*): this bird is well-named for it has a beard of feathers at

least an inch in length, its head is feathered, and it has long feathers on its neck.

It is a strange sight to see in the lonely desert one of these raven and vulture orgies! A party of wandering Arabs or travelling merchants, with their strings of laden camels may be seen slowly tramping over the hot dazzling sand, following the narrow paths, like sheep-tracks on the Downs, worn smooth and hard by the 'pad-pad' of camels' feet, which for thousands of years have passed and re-passed the same way. One of the patient 'ships of the desert' is faint and weary with the weight of his load and long years of toil. In vain his driver encourages him with weird noises and snatches of strange song, such as camels love; the poor creature at last falls, to rise no more. His load is taken off, and, with much grumbling and grunting, is dispersed among the other beasts of burden, and the caravan passes on. He is left alone in the desert to die! the last straggler of the company is scarcely out of sight before his weary limbs are stretched in death.

All this time, far overhead a tiny speck may have been seen hovering and wheeling in the pale blue sky; it is the vulture's 'watchman.' The moment the last breath is drawn, as if in answer to some given signal, from every side flock the vultures, more and more they come streaming in, seemingly from nowhere, and in crowds they pounce upon the still warm carcase, and soon nothing is seen but a great mass of flapping wings and straining necks, and cruel, blood-smearred beaks and claws! In an incredibly short time the white bones alone are left to add one more land-mark to the 'desert route.' The vultures sit near by complaisant and fat, too gorged to fly, or even move more than a few yards from the scene of their horrid banquet. The Ravens, who have done their best to obtain a share, linger to get what pickings they can, till they too are satisfied, and then flop heavily back to their homes in the rocks.

Kites, Buzzards, Hawks and Harriers of several varieties may be found in the desert, but, as a rule, they frequent that portion of it which is nearest the cultivated land, and find their food to a great extent on the river banks. We did not meet with many, more than a days march into the wilderness.

The Short-toed Eagle (*Circaetus gallicus*) and the Saker Falcon (*Falco sacer*) I think range the furthest. The Eagle we saw in the desert behind Korosko, also at Dendereh, and in the desert round the Fayūm, as well as much further from the Nile. The Saker falcon, at El Kab and south-west of Abou Simbel, and many miles into the desert beyond the Alabaster quarries near Aswan. The parasitic Kite (*Milvus aegyptius*) which is met with everywhere in the Nile Valley, we noted building among the ruins of Meroë.

At Gebel Es Silseleh we found the Egyptian Eagle Owl (*Bubo ascalaphus*); not quite so large as the European Eagle Owl, it is, nevertheless, a very fine bird, with larger, more indistinct spots on its buff and white plumage. When angry or alarmed it puffs itself out into an enormous ball of fluff and feathers, spreads its wings downwards, like a turkey cock, lowers its head, and snaps its beak and hisses in a very fierce manner.

A few other owls inhabit the desert. For instance, the pretty little Scops Owl (*Scops giv*) builds among the rocks, and in rock-hewn tombs, far from the river. We disturbed a little family party of Scops, in the tombs in the hills behind El Kab; and in the more distant tombs in the desert, east of Tel El Amarna, were two or three pairs.

I suppose the handsomest of desert birds is the Houbara Bustard (*Houbara undulata*) but we sought him in vain. They are said to have become, of late years, exceedingly rare, but still are now and again to be sighted on the desert side of the Fayum, or between the Nile and the oasis of El Kargeh.

A real lover of the open desert is the Cream-coloured Courser (*Cursorius gallicus*). This bird truly earns its appellation, for it runs 'like the wind!' It seems to prefer to use its white legs instead of its wings, though I have once or twice seen it fly. In November, one year, we noticed a Courser between Waddy Halfa and the Second Cataract, and in February, two years later, saw three of these birds in almost the same place. They are said to cower in the sand to hide themselves like partridges when pursued, but I have never seen them do this. Those we frightened ran away, and in an extraordinarily short time were lost sight of, reappearing again at some distance, flying further into the desert.

Near Bueh we came across another rather rare bird, the Egyptian Goatsucker (*Caprimulgus aegyptidus*), a pair of them were sitting on the sand among some low scrub. I thought there might be a nest near, as it was late in March and the birds had paired, but I could not find it.

The Egyptian Swift (*Cypselus murinus*) builds in the desert, and circles round and round above the arid sand, far from the river. Its colouring is soft pale buff with white on throat and darkish underneath, and dark on its wings.

Swifts and Swallows seem to be continually eating flies, yet the 'plague of flies' in Egypt is no whit diminished.

Another inhabitant of the desert world is the Pale Crag-martin (*Cotile obsoleta*). It builds among rocks, under the sheltering eaves of some overhanging ledge. Its nest is also occasionally found in rock-hewn tombs, such as those at El Bersheh or Beni Hassan. We also found it among the ruined pyramids of Meroë. This Martin is of a soft pale brownish colour, with deeper shades on head, wings and tail, and on the latter a few white spots. The underneath parts almost white. I have often watched them flying in wide circles catching insects on the wing, as others of their kind do; I have also watched them sitting on the ground moving about and making little darts, as if hunting for, and catching, creeping insects, though I tried hard I never actually saw them seize anything. It would be interesting to know if this way of foraging is resorted to by the swallow tribe, and if so, for what reason?

The Desert Chat, or Desert Wheatear (*Saxicola deserti*) is found all the year round in Egypt and Nubia, and the Northern Soudan. Though frequenting the river and canal banks, it also ranges far from the Nile cultivation and is to be seen at some isolated oasis or desert well. Its feathers are prettily marked in browns of various shades, and black and white, it has a black beak and legs.

Two or three other Chats are distinctly desert birds. The White-Rumped Chat (*Saxicola leucopyga*) is conspicuous among them. These Chats are generally found in rocky places, and far into the desert. Sometimes their flight is peculiar, and has earned for them the name of 'Tumblers.' They rise quickly,

take a short flight upwards, and turn, and alight again ; this they repeat four or five times in the space of a few minutes, for no apparent reason.

We found them at Kasr El Benat, and two pair in the Waddy Hammamat. The plumage of both sexes is the same, and very distinct. The head usually being black, the rump white, and the rest of the body and wings and tail black and white. They may at times be mistaken for the much-rarer Hooded Chat (*Saxicola monacha*). The male bird only of this variety is black and white, the white top of the head and back of the neck, have the effect of a little hood. The female is light brown, with dark brown wings, and light and dark brown tail. The throat and breast almost white and a distinct white eyebrow.

The very old birds of the former (*S. leucopyga*) sometimes have white heads, and we saw one at Waddy Sabua with a black and white speckled head. At the oasis of El Gaeta, two days' journey from the Nile, a little flock of *S. monacha*, six or seven in number, were wonderfully tame, hopping and running among our men and camels quite fearlessly.

A Chat, called by Shelley the "Mourning Chat," is found in the desert, both in Upper and Lower Egypt. It is a dainty little bird, pale sandy brown, white on head and face and yellowish buff breast, with dark brown and black back, a white tail with dark brown tip and centre.* We saw several in the desert, but never so far from cultivation as the other Chats mentioned above. One or two were sighted, between Wasta and the Fayum, and also at Hawara.

At some distance from Fawakhieh, towards the Red Sea, I saw two specimens of another Chat, with a distinctly black throat and a good deal of chestnut colouring about it, with dark brown and a dark-brown and white tail. I did not know the birds, but think they must have been either the Black-throated Chat (*S. melanoleuca*) or Tristram's Chat (*S. moesta*). They showed a good deal of white when flying. I followed the two birds (a pair?) for some distance, but it was so terribly hot (a broiling mid-day sun in the desert is not conducive to undue exertion) that I was obliged to return to the shade and leave my curiosity unsatisfied.

* This does not agree with the typical specimens of *S. lugens*.—ED.

The Desert Lark (*Ammomanes deserti*) is a cheery, friendly little bird, and those near our camp became very tame, even venturing into the tents in search of crumbs and scraps, dexterously evading the long arms of our pet monkey, who always hoped, but never managed, to catch one. They took 'dust baths' in the golden sand, and in the early morning sang their small twittering song, as they flew from rock to rock. The plumage of the Desert Lark is sand-coloured, with pale-brown wings and tail, with flesh-coloured beak and light yellowish-brown legs, so that it matches its surroundings in a wonderful way.

Another Desert Lark (*A. fraterculus*) known as Tristram's Desert Lark, is much the same as the former, but it has a spotted throat. They both came to the camp, and seem to be about equally distributed between Luxor and the Second Cataract.

The large Bifasciated Lark (*Alaemon alaudipes*) is met with now and then in various parts of the country, always 'far from the madding crowd' and cultivation. We saw it only after some hours' journey into the desert. Other travellers have also noted the solitary habits of this bird. Some distance, perhaps three or four miles from the Der Simûm, opposite Aswan, I once stalked one of these birds for some way, and got quite near it, but the moment it caught sight of me it ran on very fast, then 'doubled' very cleverly behind some rocks, and, after a few minutes, rose suddenly and flew away, only a few yards above the ground, so that I soon lost sight of it in the dazzling distance of sand that quivered in the heat. This lark has a spotted throat, and very dark-brown and white wings.

I think it is permissible to place the Crested Lark (*Galerida cristata*) among desert birds, for they are always found in Egypt on the edge of the desert and in waste places. In the dreary Arab graveyards, and on the outskirts of the fellaheen villages, between the river and the sand, also many miles from any cultivation. They are knowing-looking little fellows with their odd pointed crests and bright eyes! The brown and buff of their colouring varies very much, and appears to take the tone of the locality which they inhabit. Those living in rocky district, such as Gebel Es Silsileh, or further south among the granite rocks of Aswan, were darker than those in the open

plains where the sand is paler. Some observers found these birds in Upper Egypt lighter in colour than those in Lower Egypt. Those I have taken note of appear to vary more with the soil than with the latitude.

Among the smaller birds found in the desert is the Desert Bullfinch or Trumpeting Finch (*Erythropsiza githdgina*). Its colouring is very distinct, the pale mottled brown plumage being shaded with rich pink, which in the breeding season deepens to a crimson rose-colour. Trumpeters are generally met with in small flocks, often a long distance from the Nile. They invade the plains of Thebes, and other grain-growing districts when the corn is ripe, and at other times the desert is their home. In the stretches of sand in the valleys near the Tombs of the Kings, I have seen them in large numbers. Also between Aswan and Shellal near the ancient wall, (the date of which, by the way, has never yet been determined) we met several flocks, constantly, and also many miles further into the desert. They build in low bushes and in stunted sount trees, and in the Spring time, their distinct, clear note may continually be heard.

The Tawny Pipit (*Anthus campestris*) is another "child of the desert." So like their habitation are they, that, although they are larger than larks, they are extremely difficult to see, unless they are moving. They became very friendly with us, and came constantly to visit our camp, like the Desert Larks.

The Rock Thrush (*Monticola saxatilis*) with the coat of tender shades of grey and brown and deep rufous, is a beautiful bird. All the winter it may be found, but in Egypt and Nubia it is not common. We found it at Illahum and at Gebelain, at Kalabsheh, and among the rocks at Gerf Husein. The Blue Rock Thrush (*Monticola cyanea*) is perhaps the most fascinating of desert birds. It is less shy than the Rock Thrush, and a pair of them came almost daily to our "diggings" at the Goubat El Hawa. They became marvellously tame. Each afternoon they sang to us as we worked, perched on a black rock set in the sand of burnished gold, the slanting sunbeams bringing out in its full beauty the dark indigo, and bright sapphire of their sleek plumage. And what a voice the handsome little gentleman had

What sweet trills and clear liquid notes were poured from that small vibrating throat, and what a joy to hear him sing.

Far away from the haunts of men, in the wild desert "Waddys," where the dry camelthorn, and withered Halfa grass flourish, and trailing plants of *Colocinth* shake off hard seed-balls to roll about on the smooth sand, where the only water visible is the phantom lake of some fast-vanishing mirage, and the only shade is thrown by barren rocks; such a place is the home of the Desert Partridge (*Anmoperdix cholmleyi*); the plumage of this bird blends exactly with this background, sandy fawn, brown, dark grey and black, with a little white on its head behind the eyes, warm red-brown and dull orange-brown, every colour in fact of a desert picture. We found this bird in several places, but the greatest number at Waddy Hammamat at El-Sid and Syala. In all three places they were running about, hiding from intrusive visitors behind rocks or big stones or under the thorny scrub. We got almost within arm-length of some by slowly stalking them with the greatest precaution; keeping hidden and silent, we watched them for some time unseen. They seldom fly, unless greatly alarmed, but run from rock to rock, keeping cover as much as possible, like the most perfectly trained "scout."

When they do take wing, it is only for a short flight, to some other and safer hiding place. It seems almost a mystery how these birds feed in this inhospitable place, but there must be a good supply of grubs and seeds, which are invisible to the human eye, for the Partridges we saw were very plump. Water, too, must be within range; not the deep wells on the desert route, but quiet little water holes hidden away in the heart of the grim mountains, and known only to the beasts and birds of the desert. That there are such delicious places, cool pools fringed with ferns is well known, though only seen now and then by some enterprising explorer and the thirsty desert beasts who hold the secret fast. The Singed Sand Grouse (*Peterocles exustus*) also ranges from the river, and flocks of these birds may be seen in many parts of the desert. They fly for miles over the "weary waste" to seek water, and may now and then be discovered on the river banks in numbers. They travel very swiftly from far

away, drink their fill, and as swiftly return whence they came. The early dawn is the time they are generally seen on the Nile banks.

A curious instance of the instinct of the Sand Grouse flying direct to water, was witnessed by a party of travellers in the desert in 1864.

The weather was frightfully hot, as it was in the month of July, the water in the goat-skins had gone bad, and on reaching the halting place, where they expected to replenish the supply, they found the well dry! They were suffering terribly from thirst, but were obliged to continue this journey, as they feared the attack of a hostile tribe, so they dare not retrace their steps.

Towards evening one of the party, a keen sportsman, and observer of bird-life, noticed a pack of Sand Grouse making for some distant hill. "Those Grouse are flying towards water," he exclaimed; but the Arab Chief, by whom they were accompanied, shook his head doubtfully. "True," he replied, "there are springs in those mountains, but alas! Khawjeh, at this time of year, they will be dry!" The traveller however, insisted on following the birds, and found to his great joy, and the relief of all, that the intelligence of these little feathered guides was proved, for after a long, weary ride they discovered, in a hollow of the rocky hills, a beautiful, clear spring of deliciously cold, fresh, water.

Some years ago a pack of Sand Grouse (*Syrrhaptes paradoxus*) spent the winter in Norfolk, and we timed their flight from their chosen haunt to the lake, where they came to drink every morning; they covered the distance of two and a half miles in about a minute and a half

We once, for some time, had a pet Sand Grouse in a cage which it shared with a tame Cuckoo. This bird often uttered its quaint call of "Gutta, gutta" (hence its Arab name) when seated at the bottom of its cage; thus in captivity, at least, it refuted the theory, that the bird only calls when on the wing. It was amusing to hear the "Gutta gutta" while its companion flew from perch to perch calling "Cuckoo cuckoo," a very quaint duet!

Another variety of Sand Grouse is the Senegal Sand Grouse (*Pterocles senegallus*); it is a much rarer bird, but now and again those who search for it, may find it! or a lucky chance may lead the seeker to its feeding ground. But it is far from the Nile, and by unfrequented paths, that the searcher must travel. The Senegal is much the same size as the Singed Sand Grouse, but it is distinctly lighter in colour and it has not the black "waist belt" that looks so smart across the breast of the Singed variety.

Rarer still is the Coronetted Sand Grouse (*Pteroclus coronatus*). It is found in Nubia and the Northern Sudan; and in colouring imitates the ground on which it nestles and cowers, so exactly, that it is almost invisible till it moves its head and shows the black on chin and neck, which is its distinguishing feature. It is rather a smaller bird than either of the other Sand Grouse.

This list of birds might be very greatly added to if those were included which inhabit the river banks, where the desert comes down nearly to the water's edge, and the line of cultivation is narrowed to a strip of beans and lupins, tamarisk bushes, sont trees and Palms. But these birds can scarcely be classed as purely desert birds, as they more constantly feed on the mud banks and in the cultivated patches, and roost and build in the fringe of trees.

I hope that a sufficient number of true desert birds have been mentioned to show that the solemn silent desert-world, is not the "pays mort" that it is proverbially understood to be, and that a weary wanderer may be cheered by the sweet chirping and songs of many "feathered choristers," and that the man of science, to whom the study of bird-life is an absorbing occupation will find in the wilderness much material for observation and research.

NOTES ON SOME BIRDS IN CONFINEMENT,
ESPECIALLY WITH REFERENCE TO THEIR AGE.

By Dr. A. GUNTHER, M.A., F.R.S.,

Hon. M. Avic. Society.

All Aviculturists will have studied with interest our Editor's long list of birds, of which he was able to indicate from his own experience the ages to which they have lived in confinement (*Avicultural Magazine*, 1910, p.p. 259, 299). I accept, with pleasure, his invitation to contribute some of my records, and hope that other aviculturists will do the same.

Considering the great variety of factors, by which the limit of life of captive birds is determined, generalisation from isolated experience is not of great value, and the more numerous the observers are who would contribute to the enquiry initiated by Mr. Bonhote, the nearer and sooner we should arrive at the truth. Thus, although my experiences as regards the Wryneck uniformly point to this species being unsuitable for confinement, other aviculturists may have followed a different treatment with very different results. I have kept many birds, but only a small number at the same time, having made it a rule to attend to them myself. Only of the most interesting did I keep more or less complete records, and of them I offer on the present occasion the following selection.

NIGHTJAR (*Caprimulgus europæus*).

Once only I had the opportunity of rearing this bird from a nestling. It was a historic specimen, being one of the two nestlings figured by Gould in his "Birds of Great Britain"; it was barely a week old when Gould gave it to me. I had no difficulty in rearing it, having a sufficient supply of moths, beetles and mealworms, to which, after a week or two, I added small pieces of raw beef. Being absent from home during the day, I could feed it only in the course of the evening, giving it one meal in the morning. But this was quite sufficient, and the youngster grew into a very handsome (male) bird. He was never confined in a cage, but was allowed full liberty to roam about in my study, where he eventually selected the top of a bookcase

as his perch during the day. When insects became scarce, I gave him a mixture of Spratt's dog-biscuits (ground fine), yellow of egg (raw), dried ant's eggs, mealworms and raw beef, which could easily be rolled into balls; he would swallow two or three in succession several times of an evening; at other times he refused food. He never learned to take up food by himself, but greedily took it from the hand. With the disappearance of daylight he became very lively, using his wings sparingly, running with a sliding motion over the carpet and a sofa, stopping frequently to scratch the ground and uttering a low purring sound. He never showed any signs of shyness or timidity, but one day, about Christmas, he was startled by the sudden and noisy entrance of a person into the room, and flew out of the open window which had been left without a wire guard. I saw him alight in a neighbouring field, but never found or saw him again.

These scanty notes will show at least that the Nightjar can be kept in good health; if taken young and not confined to a cage, and that by its interesting habits, so different from those of our other birds, it will amply repay the trouble which its keep entails. I must add, besides, that Mr. Galloway, of Caversham, has kept one for a considerably longer time, and that, according to an account in a foreign periodical, a German aviculturist has reared two young birds, which, in the year following, have nested on the floor of the room in which they had been brought up.

CARRION CROW (*Corvus corone*).

Taken from the nest when nearly fully-fledged; kept in a small enclosure, but most of the time allowed free run in the garden; at first the wing-feathers of one side were shortened, but after a year or two the bird, which proved to have been a female, had full power of flight, of which she made occasional use, absenting herself for two or three days. She was perfectly domesticated and very fond of being petted by those she knew. She lived with me 9 years and 8 months, and was found dead one morning in her roosting place. A *P. M.* examination revealed nothing but an inflamed condition of the skin of the throat, with several punctures, like the pricks of a needle, for which I could not find an explanation.

NUTCRACKER (*Nucifraga caryocatactes*).

My two birds were obtained from a dealer, and of uncertain age. I had them some months when both showed symptoms of gapes, but they survived nearly to the end of the second year. I knew that their aviary had been infested by some young Pheasants which had died from gapes, but as the place had been thoroughly cleaned out, disinfected and replanted, and, besides, had been inhabited for three or four successive seasons by Wag-tails, Nightingales and Bluethroats, none of which showed any signs of disease, I considered the aviary to be in a safe and sanitary condition. The Nutcrackers were succeeded in the occupation of the same aviary by Quails, Japanese Tits and Shrikes, all of which escaped infection. Of course it is possible that the Nutcrackers were infested already when I bought them, although I did not observe any suspicious symptoms. The question then arises, whether only certain species of birds are liable to be attacked by the worm (*Sclerostoma syngamus*), while others enjoy immunity.

BLACK-NECKED GRACKLE (*Gracupica nigricollis*).

This is an inhabitant of Burma, and some parts of Southern China. It is very rarely brought to the London market; I see that the Zoological Society has had only three specimens. Mine was bought by the late Lord Lilford about 1895, and given to me by Lady Lilford shortly after her husband's death (1896). It certainly was not less than three years old when bought of a dealer, perhaps several years older, possessing its full plumage, strong beak and feet, and having all those characteristics, specific or individual, which make it such a highly valued domestic pet, fully developed. He (it is a male bird) has, therefore, reached the respectable age of about 18 years, enjoying good health, but for a crippled foot caused by an attack of gout some four years ago; a calamity which has not disturbed his equanimity or temper even for a single day.

This species is quite equal in intelligence to the Mynahs, with which it has much in common, but seems to be inferior to them as a linguist; my bird never learned a word, although he has many distinct varieties of expression. But he surpasses the Mynahs in amiability, evincing great affection for some

members of the family, while children and dolls are objects of jealous hatred, and furiously attacked.

RED-BACKED SHRIKE (*Lanius collurio*).

A pair were bought as nestlings in July, 1903, and are still with me in perfect health; they are therefore at this date 7 years and 4 months old. These birds nested altogether six times, rearing four of their broods; their nesting in 1904 and 1905 has been described in the *Avicultural Magazine*.

They again reared their young in the two following years. In 1908 they were not allowed to nest; but in 1909 they produced again three young which were killed by cold and heavy rain-storms before they were fully fledged. This year, which has been fatal to so many broods of birds, they commenced their nesting operations as late as the middle of June, and left the nest unfinished without even laying an egg. I am afraid both birds are now getting too old for reproduction, although they do not show an outward sign of failing health.

The hen bird went through some adventures; she escaped from her aviary at Kew late in the autumn of 1907. I am informed by Mr. W. Frost, the ornithological collector, that she was caught by a Hammersmith bird-catcher on Barnes Common, and was rescued by him. Mr. Frost kindly restored her to me in the following summer. Her conduct on returning to her old home, as well as a scar at the base of the upper mandible were sufficient evidence as to her identity.

ROBIN (*Erithacus rubecula*).

Male rescued from a cat, lived for 4 years in the common Warblers' cage.

BLUE-THROAT (*Cyanecula svecica*).

An imported bird, lived for 3 years in an outdoor aviary.

NIGHTINGALE (*Daulias luscinia*).

A nestling reached an age of 3 years and 4 months in a double-sized Warblers' cage; it was a male, but its song was very imperfect.

LESSER WHITE-THROAT (*Sylvia curruca*).

Reared from nest, lived in a Warblers' cage 1 year and 6 months.

YELLOW WAGTAIL, (*Motacilla flava*, *subsp.?*)

A female, imported from Russia; after having been kept in an outdoor aviary for two years, was transferred to the Zoological Gardens.

TUI (*Prothemadera n. Zelandiæ*).

When TuIs were brought to England more frequently than they are at present, I obtained several, only to share the common experience of aviculturists, viz., to lose them a few months after they had been settled in their new home. The birds became inordinately fat, lost much of their sprightliness, and while seemingly still enjoying perfect health, fell into a fit of convulsions and died. I had kept mine in a roomy, high cage, allowed them almost daily exercise in a room, and fed them on Abraham's (the chief importer of TuIs) Insect-food with the addition of raw soft fruit. Thinking the cause of the disorder must be overfeeding, I finally reduced the quantity of food to one-half, adding a small quantity of cooked fruit (in the form of strawberry, or grape, jam). Under this regime my last two TuIs survived two and four years; and if I should ever again be fortunate enough to possess a specimen, I should place it in a covered out-door aviary. It would be impossible to give even a vague estimate as to the age to which this species may live in captivity in Europe, all the birds which I have seen having been evidently adult when they were caught. Much as aviculturists of the present day may regret its absence from the English collections of living birds, it was a very commendable measure on the part of the New Zealand Government to protect a type of such great faunistic interest throughout the colony and to prohibit its export to foreign parts.

HOPOE (*Uruba epops*).

Old birds rarely survive the first year of their captivity and retain their natural timidity and shyness, while young birds taken from the nest, not only get reconciled to captivity, but, if properly treated, become charming pets, which are never happier than when in company of those who attend to them. Having given elsewhere (*Field*, 1900, Jan.) an account of the habits of this species in captivity, I have only to add here that of the

many individuals I have kept females seemed to be longer-lived than males; one female attained to an age of four years and seven months, and I believe she would have survived an unusually cold winter if I had been more careful about the night-temperature of the room in which she was kept.

WRYNECK (*Jynx torquilla*).

This bird was for many years one of my favorites, but, unfortunately, also the one with which I have had no success in keeping for any time. The nestlings take at first, greedily, artificial food mixed with insects, but when they have once learned to take food by themselves, they become more dainty in their appetite. They continue to thrive while fresh ants and ants' eggs are obtainable, but after that, not even a liberal supply of mealworms and dried ants' eggs will save them from becoming anæmic, and dying before the middle of winter.

THICK-KNEE (*Oediconemus crepitans*).

I kept this bird once only. It came to me as a nestling in down, a singular creature with a most violent temper. It would hiss and peck at the hand offering a piece of meat or worm, and then tear away the morsel and swallow it. However, it grew rapidly, and after a month or two was strong enough to escape from its aviary into a small garden. I had given up all hope of seeing it again, when it was discovered crouching in the well-known Thick-Knee fashion in the middle of the lawn. How it escaped the cats, then and afterwards, has always been a mystery to me. I pinioned the bird, and when it had recovered, allowed it the free run of the garden. There it lived, foraging for itself and partly fed with scraps of meat and soaked biscuit, for a whole year, until it was killed in its second winter by a deep fall of snow, having reached an age of 1 year and 7 months. Gradually it had lost much of its shyness. It jealously guarded the dish in which it received its food against Sparrows and Blackbirds, and in the second summer of its life was sometimes seen amusing itself by aimlessly running about and practising the Bustard-like attitudes, by which the male Thick-Knee woos the hen. (*cf.* Bonhote, *Avicultural Magazine*, 1906, p. 108).

STORK (*Ciconia alba*).

I add this species to this list, because a pair have been under my constant observation, living in Kew Gardens, close to my house, for the last ten years. They nested and reared their young for the first time in 1902 (see *Field*, 1902, Aug.) and have continued to do so annually, losing their brood in three years. I counted the other day seven birds, the two old and five survivors of the last three successful broods; others had been given or flown away. The old birds are pinioned, but have the run of the garden, where, no doubt they destroy a large number of mice and young rats.

NOTES ON A HYBRID BETWEEN
HYPHANTORNIS CUCULLATUS and
HYPHANTORNIS SPILONOTUS.

By RALPH A. HOLDEN, F.Z.S.

In the November number of the *Avicultural Magazine* for last year (p. 33) I described the nesting of a pair of Spotted-backed Weavers (*Hyphantornis spilonotus*) and the hatching of one young bird, which, however, was unfortunately not reared.

The old birds remained outside all the winter, the cock assuming his full colour early in the year—I think in March. No effort at nesting was made by the birds and the cock seemed quite disinclined to build before June. Early in the month he died, and I spent some time endeavouring to replace him, but without success. Finally, about the 18th of June, I took a cock Rufous-necked Weaver (*H. cucullatus*) from the Zoological Gardens, and placed him with the old hen in a garden aviary some twenty feet square with indoor shelter.

The birds appeared to pair within a day of the introduction of the cock, who immediately started to weave nests. None of these were approved of by the hen, until a nest was commenced and finished in the top of a thorn tree some eight feet high. This nest was also attached to the wire-netting of the roof, and was within a few inches of the site of last year's nest, which had been cut down for preservation.

The exterior of the nest (which was very similar to that of

H. spilonotus) was composed of grass stems, and was finished in a few days, and was lined by the hen with feathers, cow-hair, and privet leaves. Incubation commenced on the 24th of June upon three eggs, all of which were pure white, and large for the size of the bird. The eggs of this species appear to vary considerably, being frequently spotted. These eggs should have been hatched in fourteen days, and on the 8th of July live ant pupæ were supplied, and for a week the hen bird behaved exactly as if she had young. I was suspicious, however, as I had found no egg shells, and on the 15th of July examined the nest to find that she was still sitting.

The eggs were taken away and were, of course, useless. On being blown only one appeared to have been fertile. I am inclined to attribute this non-success to the vile weather experienced at the time and the very exposed situation of the nest. For days together torrential rain had soaked it and the nights were extremely cold.

The cock while incubation was proceeding had, as seems customary, built many additional nests, none of them of the complete pattern, but thinner and smaller than the one in use. One nest, however, was built inside the house, about six feet from the floor, on a dead branch of Cupressus, and the hen, when her first nest had been taken down, took possession of the indoor nest and commenced to line it. A great quantity of feathers was used, so many in fact that they protruded from the under side of the nest. Whether or not she chose this nest after her experience of an English summer I am unable to say, but it was certainly a wise move. Two eggs were laid, and she commenced to sit on the 20th July, that is five days after she had abandoned her first nest.

I have never seen the cock enter the nest or feed the hen or the young birds. On the 3rd of August I discovered an egg-shell under the nest, which spoke of a clean hatch, and the supply of insect food was commenced. I think most members of the Society know what this means, especially when dealing with birds which will not touch any known kind of soft food. Live ant pupæ were supplied many times daily, most of which disappeared down the throat of the cock who certainly did not

transfer them to his offspring. This fact, combined with his unwelcome efforts to persuade the hen to occupy new nests, and also the belief that the young bird hatched last year was killed by the cock *H. spilonotus* induced me to confine the offender, and he was placed in a large cage where he could see the hen without annoying her, and without doubling the necessary supply of live food.

I am personally averse to supplying mealworms to the young of birds of this size in any quantity, and it is astonishing to see the amount of ant pupæ which go to the feeding of one young Weaver. Small worms, caterpillars, and flies were also supplied. On the 10th of August the young bird could be heard squeaking in the nest, the call resembling that of the young Sparrow. I left home on the 17th of August, a lady neighbour kindly consenting to look after my birds. She supplied insect food many times daily. However, when the young bird was almost fully fledged it appears to have fallen out of the nest, and to have been unable to get off the floor where it was killed in the night by mice. The specimen was sent on to me and, though disfigured, was very healthy. The general colour on the back, head, wings and tail being a dusky olive, with the breast lemon-yellow, the centre a brighter yellow, beak and legs horn colour.

From the bright streak of yellow down the breast I believe the bird to have been a male, and had it lived it would have been interesting to note the full colour when adopted, since the males of *H. spilonotus* and *H. cucullatus* differ considerably.

Since then the hen has laid three more eggs and incubated the full time, but none have proved fertile.

SOME EXPERIENCES WITH PARRAKEETS, ETC.

By WM. R. FASEY.

One sometimes reads of a mixed collection of birds being kept in an aviary with expectations of young birds being reared. I am afraid "expectation" is generally as far as it goes, especially when Parrakeets are concerned; at least that is my experience. I would not like to say success cannot sometimes be obtained, but the results will be far from encouraging. I have had young birds such as Rosellas, Cockatiels, Budgerigars, Love Birds, etc.,

leave the nest to be invariably killed by some spiteful member of the collection, although in an aviary 30 feet long and 15 feet wide.

Parrakeets require an aviary for an individual pair to get the best breeding results; and most of them will readily bring off a brood of youngsters if given an aviary large enough to keep them in fit condition and good health. The aviary, I think, should not be less than about fifteen feet long and six or seven wide, with a grass flight.

Budgerigars, Cockatiels and Love-birds will go on reproducing at an alarming rate.

Rosellas will generally rear two broods, most others one.

Blue Bonnets and Browns seem to require something I have been unable to discover yet; after eight years of perseverance with several different pairs I am still unsuccessful, although at the same time and with similar conditions, others and more rare species readily nest.

A mixed collection of Parrakeets in a large aviary is of course a delightful and amusing sight, and one I would not like to be without. You will see them continually on the move; woe betide the unwary individual who sleeps when some other member swoops down.

A mixed collection must, however, be carefully selected to avoid bloodshed. Blue Bonnets for instance are regular butchers. I had many deaths before I found out these were the culprits. I remember a year ago a pair getting into the next aviary to a pair of Browns, and in less than half-an-hour they had killed the cock and scalped the hen, which I just saved from death; the Blue Bonnets had scarcely disturbed a feather.

The following will be found to agree: King Parrots, Redwings, Rock Peplars, Barraband, Pennants or Rosellas (but not both), Many Colours or Redrumps (not both) if Pennants are the choice, but Rosellas do not like them; a pair of Coures are pretty but noisy: Blossom-heads, Cockatiels, Budgerigars, Love-birds, and I have a number of Giant Whydahs which add much to the interest and beauty of the aviary.

The Grass Parrakeets are too rare to include, although I have had them in a mixed collection and found them inoffensive birds when left unmolested. But they do a bit of fighting on their own account without, however, serious consequences.

When, I wonder, are Turquoisines coming over? I have one, and perhaps the only one in Europe; at least I would like to know where there are any others.

Pileated I have not yet tried in a mixed collection, but I propose turning out four youngsters of this year's produce; if they do agree they will make delightful additions.

Barnards, Pennants, Mealy Rosellas, Rosellas, Browns and Many Colours fight like turks together and must be separated. One of these days I will try if the hens are excluded, as Pheasants are kept, if it will stop the bloodshed.

Mice were troublesome until I concreted the floor and nailed sheet zinc one and half feet up the sides of the aviary. I now put the seed on the floor, and when they drop down they cannot get back, so if they have not already pined away and died which is generally the case I quickly despatch them. I now very rarely see one.

BIRD NOTES FROM THE ZOOLOGICAL GARDENS.

Some interesting birds have been received during the last month, foremost amongst which are two specimens, apparently a true pair, of the South African Giant Bustard, locally known as the Gom Paauw (*Otis kori*). This is not only the largest bustard in Africa, but the largest of all the family, and one that is very rarely brought home. These birds arrived together with a Stanley Crane and a rare Harrier Eagle (*Circaetus pectoralis*), all of which were presented by Dr. Peringuey to His Majesty the King, who has deposited them in the Gardens, and they are to form part of the South African collection which it is intended to exhibit next summer.

Major Harington has presented a White-winged Wood Duck (*Asarcornis scutulatus*), from Burmah. This is an extremely rare species, and the present example is the first ever received by the Society. It is a large duck, of a blackish-brown colour, with white upper wing-coverts and a white head minutely speckled with black.

A very fine pair of Japanese White-necked Cranes have been received by exchange, also a pair of Monaul Pheasants, a

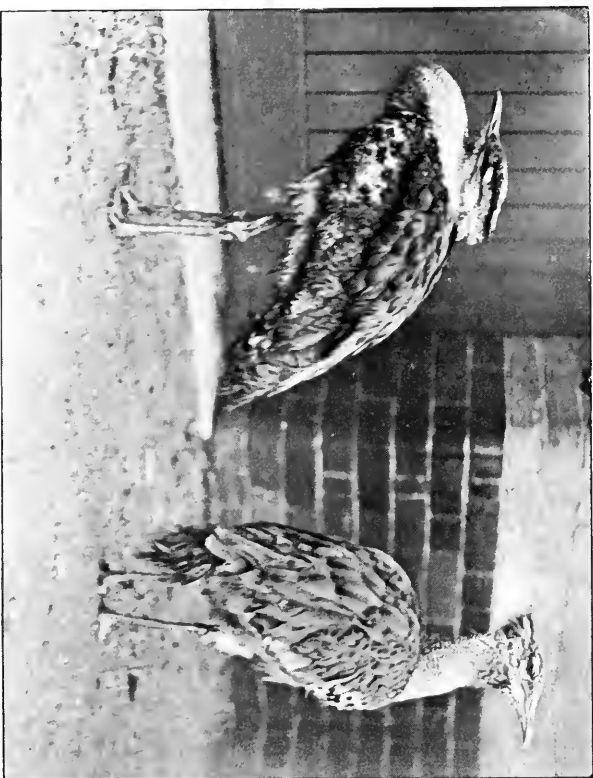


Photo by W. S. Bertling, F.Z.S.

GIANT BUSTARDS.
Otus kori.



very rare Black Troupial (*Quiscalus major*), and two pairs of the pretty Chilian Teal (*Nettion flavirostre*).

Mr. Hugo Pam has presented a very choice collection of birds from Venezuela, consisting of a Violaceous Night Heron (*Nycticorax violaceus*), a White Ibis (*Eudocimus albus*), three Naked-eyed Pigeons (*Columba gymnophthalma*), a Black-cheeked Cardinal (*Paroaria nigrigenis*), a Bare-faced Hangnest (*Gymnomystax melanicterus*), a Golden-crowned Troupial (*Icterus auricapilla*), a Grey-backed Ouzel, four Scaly Doves, and a rare Milvago Hawk (*Milvago chimachima*). The majority of these birds are extremely rare, and the last-mentioned has not been represented in the Society's collection since 1882.

The Naked-eyed Pigeon is equally rare, and with the exception of a specimen presented by the same donor two months ago, has not been represented for about thirty-five years. From 1858 until 1875 this species bred in the Gardens and produced hybrids with the American Spotted Pigeon (*C. maculosa*).

D. S-S.

KNOWLEDGE REVEALING IGNORANCE.

By Dr. A. G. BUTLER.

I have been asked to write something for our Magazine, but my birds are growing old and have done nothing worthy of record for the past two years, so that it is difficult for me to think of a subject worth writing about.

King Solomon, who was the Linnæus of his day, tells us that "he that increaseth knowledge, increaseth sorrow," and there is no doubt whatever that this statement is true as regards Natural History, for the study of that science becomes more complex and difficult every day.

When I first took up Entomology, and especially the study of Butterflies, nothing whatever was known about seasonal phases, so that all forms which exhibited constant differences were confidently described as distinct species; when it was discovered that the summer and winter phases of Butterflies frequently bore little resemblance to each other, the number of recognized species had to be considerably reduced.

As with Butterflies, so is it with Birds; difference of plumage, even when it is not sexual, is by no means always indicative of specific distinctness: in some cases it merely stands for youth, as in the case of *Calenas gouldiæ* of Gray with its greenish-black tail, which proved to be merely the young form of the common Nicobar pigeon: of course this is by no means an isolated instance. Then again there may be difference of structural outline without appreciable difference of plumage due to the same cause, as I have pointed out in the case of the Bluebird I bred, which, after it had attained its adult male colouring, still possessed the broad bill characteristic of a young bird.

The seasonal plumages of Birds have doubtless been responsible for considerable additions to ornithological synonymy: it is impossible for this to have been avoided, until the life-history of the species had been studied either in its native haunts or in suitable aviaries; therefore, for the cabinet ornithologist to decry the work of the aviculturist who is helping him to the truth, almost makes one wonder whether, where his own species are liable to go to the wall, he really desires light on the subject.

Apart from seasonal changes of plumage, we find also changes in the colouring of the soft parts; and, where these are very marked, the summer and winter types are very liable to be regarded as distinct species. The soft parts also become modified in colour with age, as I proved in the case of *Paroaria capitata*, the young of which had the culmen of the beak and front of the tarsi slate-grey, which colouring gradually disappeared as the adult plumage developed, though some examples retain it longer than others.

To complicate the study of birds yet more, we not only find sexual differences, juvenile differences, and seasonal differences, both in the plumage and the soft parts, but we meet constantly with slight local modifications which the modern cabinet-worker now regards as subspecies, and dignifies with a place in the nomenclature. Unfortunately the students of bird skins are not all agreed as to the rank of these localized forms, as witness the article by Mr. P. R. Lowe, in "The Ibis" for 1908

on the local representatives of *Chamæpelia passerina* which are all regarded as distinct species.

Although I consider the binomial system, as applied to all constantly differing forms of life, far more simple than the modern trinomial system; it cannot be denied that the latter, if judiciously applied, may express relationships more accurately than the former; but as it often is applied, it entirely misrepresents the relationships of such forms as originally had a common origin; giving to the offspring of great antiquity the same rank as to that of yesterday.

For birds which only differ markedly in the colouring of the soft parts (and a study of the field-notes published by various collectors show that these are sufficiently numerous to be worth consideration) I should consider subspecific rank amply sufficient; but before naming these, it would be as well for the technical worker to assure himself that such differences were constant to locality, and not due to either youth or season.

Now it is obvious that unless a collector resides for at least one year in the native birth-place of a species, he cannot satisfactorily decide to what extent its changes of colouring, either of plumage or soft parts, are permanent, whether they are sexual, juvenile, or local; but if he brings back living examples and either hands them over to the Superintendent of a Zoological Gardens or to the owner of suitable aviaries, these questions can be satisfactorily settled at home, and thus the describer of species and subspecies can be safeguarded.

In Nature the more one knows, the more one discovers of the unknown; and therefore each seeker after knowledge should recognize with gratitude every little mite of assistance given to him by his fellow-workers, and not assume an attitude of superior wisdom because he, sitting at a desk with a large library at hand, is intelligent enough to describe in detail the skins which lie before him, and indicate in what respects they differ from their nearest allies; nor if he be a student of bird-life, and privileged therefore to understand the real creatures as the exclusively museum-naturalist can never hope to do, must he regard with contempt the sometimes tedious and often perplexing labours of the systematist, since without him it would be impossible for either

the field-naturalist or the aviarist to speak or write intelligibly about birds.

A truly great Naturalist always deplores his own ignorance and never loses an opportunity of expressing his indebtedness to all those who have in any way assisted him; such a man was Charles Darwin, and it would indeed be well if all ornithologists whether they be systematists or aviculturists would follow his example both of humility and gratitude: mutual help is the very spirit of civilization and progress, but it is much to be feared that, as a rule, there is more envy, hatred, malice and all uncharitableness among students of Nature than among almost any other seekers after truth; it is all very childish and mischievous.

EDITORIAL NOTES.

We hear from Mr. Astley that his Hooded Siskins (*Chrysomitris cucullatus*) have nested this year in a small breeding cage and hatched two young ones, which, owing to being disturbed, they only reared for a week.

Mr. Rathborne writes asking us if we can identify a bird, recently imported from the West Indies, probably from Trinidad. The gentleman who brought them home calls them 'Cissas.' Mr. Rathborne writes: "They are insectivorous and quite as large as a Lark. Snow white breasts, black caps and long straight tails like the Swallow tribe. Can any member suggest what they are?*"

We were told the other day that for the last two or three years a foreign aviculturist has succeeded in breeding the Wall-creeper. Considering that this species is very difficult to keep in captivity, the keeping and successful breeding of these birds is a feat of which the owner may be justly proud.

In the current number of the *Revue Française d'Ornithologie* appears a short article by a M. Maillard on alterations produced in captivity on the colours of birds. After dealing shortly with the different kinds of moult, he points out that colours due to

* A subsequent letter seems to point to the bird as *Milvulus tyrannus*, which we have never before heard of in captivity.

structure are hardly altered, but the colours chiefly affected are the pure pigment colours, especially reds and yellows. He suggests that this alteration is not so much due to lack of suitable food as to lack of light. When we remember that birds from damp and dull climates tend to become duller and darker, and that those species of tropical birds such as Sunbirds, Humming Birds, Kingfishers, that spend their life in brilliant sunshine, are the brightest of all birds, there may be something to be said for M. Maillard's suggestion.

We have received a Prospectus and a specimen plate of a new work on Australian Birds, by Mr. G. M. Matthews, a well-known member of the B.O.U. This work promises to be the most complete account of the birds which has been issued since Gould's famous book, and will be lavishly illustrated with hand-coloured plates. It will be issued in parts at two guineas each, and it will be completed in about thirty parts. Part I. containing some of the Ratite Birds (Emus and Cassowary's) will appear this month.

Capt. Flower has just issued a reprint, brought up-to-date, of his List of the Zoological Gardens of the World. In England we notice the addition of two new Gardens since last year: one at Halifax in Yorkshire, under the management of Mr. A. R. McKill, and the other in the Edgbaston Gardens at Birmingham.

A paper on the subject was published by Capt. Flower in the *Zoologist*, for May, 1909, p. 161.

While on the subject of Gardens, we may note that proposals to open Zoological parks in Edinburgh, Glasgow, and Liverpool are being actively considered at the present time.

REVIEWS.

FOREIGN BIRDS FOR CAGE AND AVIARY.*

A notice of the first part of this useful work appeared in the *Avicultural Magazine* of December 1908, and we now have the pleasure of calling the attention of our members to the

* *Foreign Birds for Cage and Aviary.*

By ARTHUR G. BUTLER, Ph.D., F.I.S., F.Z.S., M.B.O.U. Part II. Illustrated.
London: The "Feathered World" Office, 9, Arundel Street, W.C.

second and concluding portion. Part I. dealt with some four hundred species of the smaller foreign cage-birds, and the present volume adds some six hundred more species, comprising the larger birds, such as Parrots, Doves, Birds of Paradise, Woodpeckers, Starlings and Crows. The author appears to have included nearly every species imported up to the end of 1908, and he believes the Doves to be complete up to the end of 1909.

We have been through the work carefully and have little but praise to bestow upon it. The species appear in the strict order of affinity in which they have been placed by systematic ornithologists, and the account of each is as complete as possible, both as regards its treatment in captivity and its wild life.

This work appeared first in the pages of *Canary and Cage Bird Life*, a weekly journal, hence its production has been slow, and some of the information is not quite up-to-date. For instance, on reading the account of the Rock Parrakeet (*Neophema petrophila*) one is led to infer that the only pair definitely known to have been imported were those mentioned by Russ as having been purchased from Abrahams and sent to the Continent; whereas in the spring of 1907 two pairs were imported by Messrs. Payne and Wallace, who again obtained quite a number the following year.

No mention is made of the rare parrots imported by Mr. Goodfellow in the spring of 1908, namely *Aprosmictus chloropterus*, *Charmosyna stellæ*, *Charmosynopsis pulchella*, *Hypocharmosyna placens* and *Cyclopsitta diophthalma*. Moreover, the pair of so-called Golden-shouldered Parrakeets obtained by Mrs. Johnstone in 1902 (p. 230) have since been proved to have belonged to another species, the Hooded Parrakeet (*Psephotus cucullatus*) of North, to which all of the recently-imported "Golden-shoulders" are referable.

Regarding the food for Lories and Lorikeets in captivity, the author mentions milk-sop as being recommended by those who have kept these birds, and, while admitting that he himself has had no experience with Lories in captivity, expresses a doubt that "so utterly unnatural a food as milk-sop can be good for any Parrot." Nevertheless we have abundant evidence that Lories and Lorikeets fed on milk-sop, especially when given with a

certain proportion of barley-water as recommended by Mr. Brook, very rarely have any ailment whatever, and live to a considerable age.

An Index to scientific names is printed at the end of the volume, but it is a pity that the specific as well as the generic names are not indexed in alphabetical order. Moreover, the omission of an index to the popular names is, in our opinion, a fault that should be remedied in a future edition.

With these few comments we commend the book to our readers with the assurance that it will be found a very valuable addition to their libraries. The author's task has been no light one, and he is to be heartily congratulated on having produced the most complete general work on foreign birds from the avicultural standpoint that has yet been produced. D.S-S.

THE July number of the *Emu*, the organ of the Australian Ornithologists' Union, has come to hand, and contains as usual many articles of interest on Australian birds. Mr. Iredale gives a most interesting account of the birds of the Kermadec Islands off the N.E. of New Zealand, illustrated by several photographs, and Dr. W. McGillivray describes a six weeks bird excursion in the Region of the Barrier Range. Notes on the habits and food of the Helmeted Honeyeater (*Ptilotis cassidix*) should be of use and interest to aviculturists, and the many other shorter articles and notes deal exclusively with Australian Birds.

THE water birds of Point Pinos, California, have been effectively dealt with in a paper by Mr. R. H. Beck, in the Proceedings of the California Academy of Sciences. Ninety-four species are dealt with, though the notes merely refer to their occurrence and the time of year, and are not, therefore, of special interest to our members. Under the heading water birds are included Grebes, Divers, Gulls, Terns, Petrels and Waders.

CORRESPONDENCE, NOTES, ETC.

THE SEX OF THE BLACK-CHEEKED LOVEBIRD.

SIR,—In 1908, and again in 1909 at page 149, I wrote to the effect that the iris of the male of this species is of a lighter colour than is that of the female. Mr. Astley, in October, 1908, also states that the colour of the eye of the male differs from that of the female.

Last autumn, my flock had increased in number to twenty-two, and many were sent away. On trying to sex them, I found that the eyes were of several different shades, and that I was unable to sex the majority of them by the colour of the eye.

I have to-day (September 24) been catching up some of my Lovebirds. For quite a time they have often been sitting together in couples, doubtless in pairs; with great care I succeeded in cutting three couples off, couple by couple, from the others and caging each couple by itself. In each of these three cases, one bird had a light and the other a dark eye. I think, consequently, I am justified at any rate in saying that this difference in the colour of the iris very probably is a true sexual difference, notwithstanding Mr. Temple's opinion as expressed last March at page 165. Most or all of these six birds, by the way, are grandchildren of the original specimens. As regards the confusion of last year, I can only suggest—as assuredly takes place occasionally, however rarely, with individuals actually bred in this country—that the birds were thrown out of gear by the transfer of the species from one part of the world to another.

There is one point I have not settled. To-day I did my utmost not to disturb the old birds but to catch only the young ones. Whether, therefore, the old females still retain the brown-red irides I referred to last February (p. 133) I do not know.

Perhaps it is worth mentioning that these grandchildren of this year are for the most part better coloured than were their parents at the same age.

REGINALD PHILLIPPS.

NESTING OF THE SULPHURY SEEDEATER.

SIR,—Mr. Teschemaker in his article on the Sulphury Seedeater, in the August number of the *Avicultural Magazine*, appears to doubt the correctness of Dr. Butler's description of the female of this species.

I can assure him it is quite correct, as in E. Pondoland, where I have spent many years, this bird is common.

From Mr. Teschemaker's description of his female bird, I rather suspect that he has been crossing two species, the female being, most likely, the White-throated Seedeater (*Serinus albigularis*), which species answers the description well. The latter species is a common bird in the South and South-Western Cape Colony.

C. G. DAVIES.

P.S.—The birds being of different species may account for the difficulty in breeding them.—C. G. D.

BREEDING NOTES.

SIR,—I am not making any application for Medals this season, for reasons which I will not enter into, but I should be exceedingly obliged if our members, who may know of any previous instances of the under-mentioned species having been bred, would kindly notify the same either in the Magazine or by post-card to me personally:—Stonechat, Reed-bunting, Argoondah Quail, White-cheeked Crested Quail (*Eupsychorlyx leucopogon*), Ruddy Finch (*Carpodacus mexicanus*).

W. E. TESCHEMAKER.

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DECEMBER, 1910.

ROSS' TOURACOU.

Musophaga rossæ.

By L. M. SETH-SMITH.

This beautiful Touracou is by no means uncommon in Uganda wherever patches of forest are found, and it spends most of its time in the forest, coming out to feed on its favourite fruit trees when they are bearing.

It has the habit—common, I think, with most Touracous—of rapidly running up branches and taking hops from branch to branch and thus is soon lost sight of among the thick trees. When flying, the red on its wings is very conspicuous, but this colouring is quite covered by its dark blue coverts when at rest. It is usually seen in pairs, and I never remember seeing it in flocks, like one sees the large blue Touracou (*Corythocola cristata*). This latter bird is frequently seen in companies of ten or more, flying across some open space in the forest, one after another, at short intervals.

About July 6th, this year, I called to see a friend, living some twenty-five miles from Kampala, the native capital of Uganda, who kept a few birds, and among them a lovely pair of *M. rossæ*. He had just received orders to move, and as he was unable to take these birds with him, and I was shortly returning to England, he kindly gave them to me. The birds had been reared from the nest which, I was informed, had been built in a comparatively low tree outside the forest. I have never found their nests, but had imagined that they were placed in the depths of the forest at the top of inaccessible trees. No natives whom I have asked have ever been able to tell me anything

about their nesting habits; in fact, the Baganda take no interest in natural history unless it be connected with food. The majority know nothing about birds, and can only tell one the names of a few of the commonest. Their information has at all times to be received guardedly, as the names they give often turn out to be entirely wrong, and some would I believe make up a name rather than disappoint you, as they think, by not giving a name at all.

The Baganda are also very bad climbers, which, I think, strikes one as curious, the general idea being that any nigger can climb like a monkey, but the reason is probably to be found in the fact that all their food is easily obtainable without the necessity of climbing.

To return to the Touracous. They were rather wild for a day or two in a cage as they had been accustomed to a small flight aviary, but they very soon settled down and were greatly admired on board ship on the way home.

Their food consisted almost entirely of fruit, but a little meat was also given, as I was told that there had been at one time several small birds including *Vidua principalis* in the aviary with them, but that these had gradually disappeared except the male *principalis*, and the Touracous were supposed to be the culprits. I cannot vouch for this and I do not know whether my friend had actually witnessed it, but they quite appreciated the meat which I gave them. The fruits given to them at different times included bananas, mangos, grapes, peaches, oranges, plums and apples; nothing seemed to come amiss, although they probably preferred mangos and grapes. Before I received them. boiled sweet potatoes had been their main food with occasionally a ripe banana; sweet potatoes seem to be an excellent food for almost any animal, and one's 'boys' will recommend them even for carnivorous animals, but as I pointed out above the natives are not naturalists.

The crest of these Touracous appears to be of just the same tint as that of the red wing feathers, and it would be interesting to know whether the colouring matter of the crest feathers is soluble like that of the wing, one would imagine not, unless the bird puts its head under its wing in a rain storm.

ADDITIONAL NOTES ON THE NESTING OF
THE RED-WHISKERED BULBUL.

Otocompsa jocosa.

By MAURICE AMSLER, M.B., F.Z.S.

I feel sure that Napoleon of aviculturists Mr. Teschemaker will not resent my supplementing his notes on the breeding of the Red-Whiskered Bulbul.

I obtained two birds—probably from the same importation as Mr. Teschemaker's—in 1909; they were much alike, but one was longer and slimmer than the other and, moreover, much more noisy. I labelled this bird a cock, the shorter and plumper bird I thought was a female and marked with a ring.

It is owing to this precaution that I am able to publish what I hope are a few unknown facts about the species. During the whole of 1909 the birds spent their time together with a few Cardinals and made no attempt at breeding; they spent the winter out of doors without heat, and appeared to be as hardy as Sparrows.

On the first of May this year I saw the cock trying to build on a small feeding shelf, and as the aviary they were in was at that time very crowded, I removed the Bulbuls to another smaller enclosure, about 7ft. square; here all attempts at nesting ceased. On May 10th I transferred them to an aviary, 18ft. by 6ft., where they at once began to persecute a pair of Virginian Cardinals, which I had to remove. On May 20th the cock began building again, this time in a covered travelling cage which I had fixed in a Poplar tree. Fibrous roots were the only material employed at first, but on the 23rd the hen took matters in hand, lined the nest with hair and laid her first egg on the 25th; she started sitting on three eggs, but laid a fourth on the 28th. At first things looked rather hopeless, as she came off at the slightest alarm; as time went on she became steadier, but would never stay on when anyone passed the aviary.

On June 7th there was a heavy thunderstorm, and the hen bird was off the nest most of the day. She behaved better on the following day and hatched out her first and only chick on the 9th of June. One egg had disappeared, one turned out to be

clear, and the fourth contained a dead chick. While the young bird was in the nest he was fed entirely by the hen on gentles and mealworms. On June 22nd I noticed the old birds were frantically excited, and on looking round found the youngster sitting at the top of his native tree about ten feet off the ground. I feel certain that he had left the nest too soon, but he never returned to it and roosted each night in the open. He seemed to have an enormous appetite, and clamoured for food from dawn till dark, his wants being now attended to by the male bird also, in fact it was owing to the latter that I was able to withdraw my supply of insects, for he seemed to think it was high time the youngster was weaned from his extravagant and selfish diet. He, therefore, appropriated the mealworms for his own consumption, and occasionally fed with gentles, but preferred "soft food" and banana.

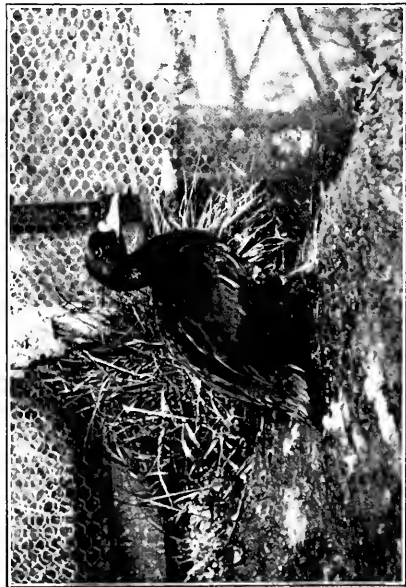
On July 4th the young bird could feed and the parents were repairing their old nest. On the 8th the hen was sitting on four eggs, and although she was still very uncertain and seldom sat for more than an hour on end, three chicks were hatched out on the 18th. Now began a series of catastrophies. In the course of the next few days all three young birds were thrown out and appeared to have empty crops. I was inclined to place the blame for this on the original young bird, who was still being fed by the parents, I, therefore, caught him up and disposed of him to a fellow aviculturist.

On July 31st the hen was again sitting on three eggs, which all hatched out on August 11th and 12th. I then decided to leave the feeding door of the aviary open, and allow the parents to forage for insects in the garden; this I did for a few days, but the cock bird refused to leave the aviary, the hen only going in and out several times a day. She seemed, however, to prefer the usual supply of mealworms, etc., and as she was rather inclined to stay out longer than I liked I finally gave up the experiment and shut her in again. While it lasted, however, it was an interesting experience, but not one I should like to try with a valuable bird.

Again I was doomed to disappointment, for by August the 20th the last of the chicks, who was well quilled, was thrown out



LITTLE BUSTARD (*Otis tetrax*).



COMMON SCOTER (*Oedemia nigra*).



AUSTRALIAN THICK-KNEE (*Barhius gallinarius*).

of the nest. I then went for my holiday and returned on Sept. 14th, when my man informed me that the hen had laid a clutch of four eggs during the last few days of August, started to sit on the 28th, and hatched out on Sept. 10th. When I looked in the nest I found one young bird three or four days old, and another dead on the grass close by. The following morning, as I expected, the last of the four was also dead and flattened out by the hen's kind attempts at resuscitation. I have no doubt that nesting operations would have commenced again, but I caught up both birds and have since parted with them.

My result was, therefore, one young Bulbul *reared* from fifteen eggs, of which eleven hatched out. The usual clutch appears to be four, and the incubation periods were fourteen days for the first and last nests and ten days for the second and third. I believe that if I had supplied live ants' eggs and more meal-worms, instead of a diet consisting almost entirely of gentles, I should have been more successful. Anyhow, I have verified Mr. Teschemaker's statement that our whiskered friend is a persevering individual.

NOTES FROM THE SCAMPSTON AVIARIES.

By W. H. ST. QUINTIN, F.Z.S., M.B.O.U.

I send a few notes to accompany some excellent photographs which my friend Mr. F. Barber-Starkey has taken of a few of my birds, and I hope they may be of some interest to your readers.

THE LITTLE BUSTARD.

Though none of the Bustard family are adapted to *aviary* life, and are apt to become dull, lethargic, and, I suspect, dyspeptic, unless they have plenty of room for exercise and range for natural food, the Little Bustard being so much smaller than the other species which have been tried in confinement, is less exacting, and can easily be accommodated anywhere on a light soil, where a dry sunny run can be found, with shelter from wind, and a shed with a floor of sand, or peatmoss, for cold nights and bad weather.

Except where much persecuted, I believe all Bustards

prefer open undulating country, with scattered bushes for shelter to a completely bleak surface. At any rate, the Little Bustard must have small bushes and tufts of coarse grass to nestle up to, if he is to be made really comfortable.

The females, and the males too, except when in nuptial dress, are 'extraordinarily inconspicuous in dry, coarse grass, as they bask in the sun. A few square yards of ashes and sand, protected by a roof, but open to sun and air, are much appreciated for dusting purposes, for, of course, these birds do not wash.

In the plumage of the first year, the sexes of living birds of this species are not easily distinguished. But, after the first moult, in the second autumn, the vermiculations on the feathers of the upper parts, especially of the shoulders, are much finer in the male, the corresponding feathers of the female being marked with broader lines, and henceforth the sexes are easily distinguishable at all seasons. In the spring, the male assumes a striking nuptial dress, the neck and breast being decorated with black, white, and lavender grey bands, as shown in Mr. Starkey's photograph which accompanies these notes. The breeding dress was assumed by my young males at the end of their second year, but the females did not lay till they were a year older.

Originally (four years ago) I had three pairs, but I am sorry to say that I have lost two of the males, in spite of great care taken with them. I think the damp of early autumn was the cause of death in each case.

The birds under notice came from South Russia, but I have had them from Spain also, but, unfortunately, always males. In winter, and in exceptionally bad weather at other times, the birds are confined a good deal in sunny, dry, sheds, on a floor of peatmoss. In spring and early autumn they are out during most days, and from April till September they are outside night and day.

They are no doubt all the better for as much fresh air and liberty as possible, but all Bustards are miserable in wet weather, and are apt to mope and stand against some sheltering fence or bush, and are then better under cover.

When in health they are, like the larger Bustards, full of frolic, and this has nothing to do with any nuptial display, but is

merely due to exuberance of spirits. When they are in this mood, they 'set' towards a companion or a human visitor, crouching to the ground, with tail erect and wings spread wide, then springing aside they pose again, and then suddenly resume their ordinary attitudes as if nothing had excited them.

Little Bustards are generally peaceable enough, except just at the breeding season, but they are nervous, and the movements of a mouse or even of a companion at night, will cause them to spring up suddenly, with great violence, to a height of five or six feet. I lost a female in this way, which broke her neck against the roof of the shed, and now I have divided the latter into several compartments, one for each bird, and have had no more accidents.

The display of the male is striking and peculiar. Even before his nuptial dress is quite complete his neck feathers begin to stand out, and he runs about with head held high and eyes blazing with excitement. He selects some favourite spot, and spends most of his time thereon, at intervals trampling with his feet, as it were marking time, and bleating like a miniature goat, then tossing his head with a resounding 'click,' which can be heard much further than the bleat, and finally leaping in the air a yard or more high, he displays the white portions of his plumage, while his wings make a peculiar whistle, all these movements no doubt deliberately calculated to attract attention. This performance is probably partly a challenge to rival males, but also certainly a true display. If a female approaches, he leaves his stand and rushes off in pursuit. While he behaves quite gently to the mate of his choice, he joins her in hunting off any other females with considerable violence. Whether the Great Bustard may rightly be called polygamous or not is disputed, but the Little Bustard undoubtedly pairs. In the breeding season the females fold their tails like a fowl (hen), and are quarrelsome amongst themselves.

I have so far been unlucky that, both this last summer and in 1909, when my Little Bustards went to nest, the weather was so exceptionally unfavourable at hatching time. The hens made scratchings amongst bunches of coarse grass, and my largest clutch consisted of three eggs. The birds sit very close, and are quite

concealed by the overhanging blades of grass. During the past summer, a bird that was sitting steadily was washed off her nest by a specially severe storm, and the eggs got chilled and the chicks perished in the shells. Last year several eggs were dropped in the enclosure, and were put under Silky-game hens. Young were hatched, but we could do nothing with them. They would not pick up food of any kind, nor take it when offered them; one was kept alive for a week by being crammed, and then died. In a favourable season I think the birds might be bred, but the young, if hatched, must be left to the parents who, no doubt, like the Cranes and Rails, pick up food and hold it to the young to take from their bills. Indeed, last year, I saw the female, whose eggs had been spoiled by the rain, running about some weeks afterwards with food in her bill, make a curious clucking noise as if to call up her offspring, which alas! were not forthcoming.

Little Bustards are nearly omnivorous, and will eat almost anything of animal or vegetable nature that one is likely to offer them—boiled vegetables, cooked meat and bread are greedily devoured, but the staple food of all my Bustards is good freshly-ground barley-meal, scalded with a little Spratts' Poultry meal and crissel, and mixed into a crumbly mass, which can be fed to the birds outside in pellets or balls, and in their pans when they are shut into the sheds. This they get thrice a day, with three or four times a week some sheep's heart at one of the meals. I am in favour of birds of this class having meals, rather than that the allowance of food should be left by them throughout the day. It is more easy to attend to the wants of a bird that wants favouring, and it makes the birds pleased to see one, and therefore, tamer. If there are Rooks or Sparrows about it also prevents much waste. In addition to all this, my birds have plenty of opportunities of grazing, which they take advantage of, and at the seasons when grass is not growing, or when they are in the sheds, they have cabbage or lettuce. I always have found Little Bustards hearty feeders, which all aviculturists know is a great point in their favour in captivity.

Besides the Great and Little Bustards, the only species of this family that I kept is the Oriental Houbaras (*H. macgullivii*) two of which I have kept for several years. Unfortunately they

are, as I believe, both females. I have not found them difficult to manage, they generally run with the Little Bustards, and live as they do. They are particularly fond of cooked vegetables, celery, all 'greens,' seakale and peas; also they greedily swallow mice, after beating them against the ground. No doubt, in a wild state, locusts and small lizards would be important articles of their diet.

My birds are rather sluggish, and spend much of their time in fine weather basking in the sun. But, of course, in captivity they are spared the necessity of searching for food. It is a pretty sight to see the Houbaras, Little Bustards and Australian Thick-nees—eight birds in all—run to the shed when shutting up time comes in the evening, each bird turning into its proper compartment, and in this way giving very little trouble and showing considerable intelligence.

* * *

THE AUSTRALIAN THICKNEE.

A bigger bird in every way than the European species, and proportionately longer on the leg, it has a general resemblance in plumage to our bird, with the same beautiful prominent eye, but has not the handsome yellow cere of the Norfolk Plover. I have found that they bear a considerable amount of cold, but they must be protected as much as possible from exposure to rain or damp ground, which last they never frequent in the wild state. Like the Bustards, they revel in sunshine, and spend much time basking; but, unlike the Bustards and like their other allies the Plovers, they are fond of bathing. A look at a Thick-nees' eye will lead anybody to guess that the bird is largely nocturnal, which is the case. At sunset, when left out all night, my birds range all over their enclosure, every now and then stooping to pick up some wandering insect, and, like the Cranes, they give a good deal of attention to the high wire fence which separates the different enclosures, and for the same purpose. If they hear a Dor-beetle strike the wires, which frequently happens on a summer's evening, they hurry up, and the clumsy insect before he can recover the use of his wings is seized and, after a few vigorous blows on the ground, is swallowed. The plaintive wailing whistle reminds one of the cry of our bird, which may be heard at best on parts of Salisbury Plain and in its other

haunts. Sometimes one bird calls alone, but, frequently, after two or three notes, the other chimes in, and a melancholy duet follows, which often surprises strangers, for my birds are extremely tame, and being under no necessity of concealing their whereabouts, often whistle at all times of the day. My Thickknees have not laid, but they are good friends and there are differences in plumage, and I have hopes that they are a pair, and if we ever have a genial summer again, they should go to nest.

Mr. Starkey's third photograph shows a drake Common Scoter, which I did not keep long. It had evidently been caught some time when it reached me, was light in flesh and had been kept from water till its plumage had lost all its water-shedding qualities. This is a great mistake on the part of the Dutch netters and the cause of the loss of many an interesting bird, for without the greatest care such a bird, when it finds water before it, soaks itself again and again, and if the weather be at all cold, often contracts pneumonia or other lung trouble.

I have not found Scoters nearly so easy to acclimatize as some sea ducks, such as Eiders, Scaup, and Golden Eyes for instance; but I once had two Scoters sent to me late in the spring, which, as they were light in condition, I turned out on to a large pond to take their chance, unopinioned, but with flight feathers shortened. These birds got through the summer and, after moulting out, escaped. Scoters will eat pieces of fish, bread and barley, and Spratts' meal scalded. No doubt mussels or cockles, if obtainable, would be desirable additions.

I do not know if it is the experience of other aviculturists that the sea-ducks, strange as it may seem, are more sensitive to cold than the fresh water species, even than those from South America or Southern Europe, but I have found this so and in a good many cases. At this moment I have a Scaup drake who always looks unhappy on a frosty morning, when Marbled Ducks, Brazilian Teal and Nyroca, for instance, show no symptoms of feeling chilled. I reared eight fine young Eiders this summer on a small field pond with high sheltering banks. When the time came for moving them to their permanent quarters on a large open piece of water, it happened to be a particularly cold unpleasant day (in September). For several days all the young

Eiders looked tucked up and miserable, and one died of pneumonia. On the other hand, though I cannot speak from experience of other young sea-ducks, young Eiders must be carefully protected from the direct rays of a scorching sun, or they will certainly succumb to what appears to be heat apoplexy and that quickly. We are now after sad experience, always ready, if a day threatens to be hot, to thrust into the ground plenty of leafy boughs to make a shady shelter, which the Eider ducklings quickly take advantage of.

I should like here to call the attention of those who keep ducks to the necessity of keeping them supplied with grit and coarse sand. My eyes were first opened to the fact that ducks, even of tender age, require this aid to digestion, when I was staying with a friend who was at the time rearing large quantities of so-called wild ducks. The ducklings visited the heaps of cinders that were left, as the cooking stoves which prepare their maize meal were shifted about; and it was noticed how quickly this not very promising substitute for grit and sand was consumed. I now supply flint and quartz grit to my ducks, as well as land-birds, and I find the best way, and the most economical, to give it is in large bowls or weighted wooden boxes sunk beneath the surface of the water. In some soils this, of course, is not necessary, but where the ponds are muddy and the surrounding ground deficient in gravel or sand, I am sure it is of great advantage and tends to keep the birds in health.

BREEDING OF THE PAINTED FINCH.

Emblema picta.

Cat. Birds Brit. Mus. XIII., p. 295.

By REGINALD PHILLIPPS.

Those who write about birds and pose as our teachers and masters have, as far as I know of their productions, always given us to understand that this is a rare species; so it came as a shock to many of us last February when it was announced that some sixty pairs had reached the Port of London. The explanation given to me was that, hitherto, they had been accounted rare because people had not gone far enough to meet with them, but

that, if one penetrated deep enough into the interior of the continent (Australia), they would be found to be common enough. Be this as it may, one point strikes the ordinary man—that, however common it may or may not be, our would-be teachers have not yet settled among themselves whether the species is to be permitted to have any sexual difference in plumage or not.

Volume XIII. of the *British Museum Catalogue of Birds* gives, amongst other details:—*Adult male*—“Lores, a narrow eyebrow, feathers below the eye, and fore part of cheeks scarlet; throat and under surface of body black, the chin and upper throat with scarlet-tipped feathers; centre of fore-neck and chest also scarlet; sides of the breast and abdomen black, spotted with white.” *Adult female*—“Similar to the male, but with only the lores and the feathers above the eye scarlet; no red on the cheeks or throat; the latter, as well as the fore-neck, black, spotted with white; the whole of the under surface browner below and more plentifully spotted with white; only a tinge of scarlet on the breast.” “The males differ from each other in the amount of scarlet, which sometimes extends over the whole of the throat and down the entire breast.”

This volume was published in 1890, and allows the male to wear a more brilliantly-coloured waistcoat and necktie and more paint on his cheek than his mate; but eleven years later this privilege was cancelled, and—of all men—by no less favoured a person than the man on the spot. In 1901 there appeared Campbell's *Nests and Eggs of Australian Birds* which, while dealing primarily with the nests and eggs, often gives additional particulars of interest and importance. At page 482, Mr. G. A. Keartland, the ornithological collector of the Horn Expedition (1894) is quoted without comment as follows:—“Although there is no sexual difference in plumage, they vary with age. The scarlet patch, so conspicuous on the breast of adults, is almost or entirely absent on the young ones, and the rich black on the under parts of the mature birds is also replaced by a smoky black on the young.” Here we have the positive statement—“there is no sexual difference in plumage.”

Up to as recently as last April, it would seem that the wise ones of the earth were still in uncertainty and content to remain

so, for some sixty pairs of living birds had been, as it were, flitting far and wide about the country—north and south and east and west—during some two months, and the ordinary man had inspected their plumage and formed his own conclusions. In that month, in a weekly Bird paper, there appeared an article on the Painted Finch which included both of the above references, and that without remark, contradictory though they be.

The statement that the plumage of the young ("they vary with age") differs from that of the adult may be accepted without question; but the assertion that "there is no sexual difference in plumage" seems to be contradicted by the living specimens that are with us, whose feathers say that the writer of the account of the species in the British Museum Catalogue which appeared twenty years ago differentiated the sexes with commendable accuracy.

Even if we suppose that the majority of the Painted Finches now in this country were fledgelings when caught, still it must be borne in mind that, for this class of bird, a rather long time must have elapsed since that event took place. I was told that the catcher had had them caged some two years by the time he had finished his wandering expedition after various species and they were all on board ship. This sounds a long time—let us reduce it to six months, but even that will make the youngest well over a year old. In several aviaries they nested this spring, then moulted, and since have been nesting again and still are nesting. If these are not evidences of maturity, where are we to draw the line between the young bird and the adult? Of these birds from Australia I have three females, and, of these three, only one (presumably a much older example) has any scarlet about the face and fully comes up to the description of the adult female in the B.M. Catalogue, whereas the other two have no scarlet on the lores and only a speck on the breast. All three have laid eggs and at least one has had young, so may, I should suppose, be classed as adults; at any rate they must be accepted as being as old as the males. But the males have their catalogued allowance of scarlet, much more than the old female can boast of, and the sexual difference in plumage is plain enough for any one to see. Has any body experienced difficulty in sexing his Painted

Finches? Possibly quite old females may become more like the males, but at present the sexes can be distinguished at a glance. I may add, however, that "age" seems to have made two of my females *less* red generally but considerably more black on the under parts.

I have heard it stated, with all the assurance of one who knows all or nothing about it, that it is the habit of the Painted Finch to roost on the ground at night. When circumstances are not favourable or to its liking, the Painted Finch does go to the ground a good deal; nevertheless I am satisfied that it will not pass the night on the ground unless there be something wrong. Usually it is a symptom of weakness or sickness. This spring, before my Painted Finches were turned into the aviary, their favourite roosting place was on and towards the tip of a long slender twig of a dead thorn bush in a pot in the birdroom, some 2—3 feet off the floor. Where they roost now I do not know, but there are no reasons for supposing that they roost on the ground.

The call-notes of this species are a kind of querulous *chur*, *chick* and *chuck*; but they vary considerably, while maintaining such a family resemblance as to be always recognisable. A few of the notes are not very unlike one or two of those of the Quail-Finch, but there is no need to mistake them. The song of the male is inaudible in the garden, though possibly not so in a quiet room; it is usually introduced by three, less commonly four, of its *chuck* notes. When singing on a perch, the male holds his head up and turns it from side to side, after the manner of Gouldians; but, when singing on the ground, he extends the head over the back of his mate, and moves it from side to side as if waving a flag. Owing to the noisy calling of nestling Cuba Finches, I am unable to say if I heard the young of this species while in the nest; the squeak of the fledgeling is a *very* squeaky squeak.

Notwithstanding an occasional squabble amongst themselves, the Painted Finch seems to live on friendly terms with other inmates of the aviary. On one occasion I noticed a fledgeling Cuba cuddling up, side by side, with an adult male Painted Finch, on a high perch in the sun. The effect of the combination or, rather, non-combination of colours was curiously un-

happy. The friendliness of the elder bird towards the tiny stranger, who had its own fussy little parents not many yards away, was, however, pleasing to behold.

Although, perhaps, not exactly gregarious, these finches are sociably inclined; and, if their home be large enough, it is probable that several together will succeed better than will one solitary pair.

I have found these birds tame and confiding but not familiar in the aviary, sometimes unsteady in a cage; but I read that they are timid in the wild state. The latter I can readily believe, for, in my reserved aviary, although they freely come to the feeding-ground in the front, they stay but a short time and then fly rapidly back to the hidden recesses of the interior. The fledgeling was most aggravating in this respect, just coming forward, taking a peck or two, and then darting off and disappearing.

One might suppose, from its name, that the Painted Finch is a beautiful species. Certainly a fine male, in a favourable position, is a brilliant fellow; but neither in elegance of figure nor delicacy of colouring is he to be compared with a good male Violet-eared Waxbill.

(To be continued.)

A PLEA FOR CAGE BIRDS.

By Mrs. STANLEY FLOWER.

I have been asked to write some of my experiences in bird-keeping, but as I am at present away from both my birds and notes it is rather difficult to be accurate, so that I feel it best to confine myself to expressing in print what I have so often felt on seeing birds in captivity, and that is their want of occupation.

Of course, I do not refer to birds in large aviaries, where shrubs, branches, grass and ponds are allowed; but the average small cage contains nothing whatever to provide occupation for its little inhabitant. The perches are fixed and uninteresting, the food is placed on one side, the water on the other, and there is no other distraction whatever except an occasional bath or perhaps a bit of sugar to peck at! When we remember the

busy life of the majority of birds—especially small birds—when in a wild state, we cannot help realising that such a life of forced inactivity, so contrary to their natural habits, must of necessity be prejudicial to their health and happiness. After many years experience in the keeping of birds I have found that a cage on the following lines will, if furnished as I shall suggest, not only provide a happy and healthy home for its occupant, but also add immensely to the interest its owner will have, in watching the habits and manners of the bird. The plan I find best is as follows:—For perches I provide the branch of some leafy tree, or even a fir-tree bough, and the birds come at once to one of nature's own perches. Here they find plenty of occupation in pulling off the leaves, pecking at the bark, looking for insects, etc., chirping and singing in a way which shows that they are happy in being busy.

Another great joy to the songsters is a handful of green stuff thrown on to the floor of the cage, and with it some stones and sand, etc. The turning over of this is a continual joy to any birds, and I am of the opinion that the exercise they get in this way adds materially to their longevity. In the hot dry air of Egypt I find that it is not necessary to clear away this green stuff every morning, and I usually add more to the pile every day till it forms a little heap, and the amount of time my birds spend in turning over and playing with this rubbish heap speaks well for their appreciation of it.

The rest of the furniture consists in a shallow bowl of water, and another bowl of seed, on the cage floor. Naturally a good deal of the seed gets scattered over the rubbish heap as the birds feed, but the finding of it again as they pull about among the green stuff adds but greater zest to their exercise.

In a cage of this description I have kept the following birds with success:—

Paradise Whydah bird (*Vidua paradisea*) nearly nine years, and still living.

Amaduvade Finch (*Sporacanthus amandava*) seven years and five months.

Black-headed Chestnut Finch (*Munia atricapilla*) nine and a half years. Still alive.



THE BLACK-BREASTED HARRIER EAGLE
(*Circus pectoralis*).

Photo by W. S. Berridge, F. Z. S.

West, Newman proc.

Spice Finch (*Munia punctulata*) eight years. Still alive. And some Bengalees for several years.

Of course I am not touching on breeding cages or their care, but I feel very strongly that if only people would take a little more time and care over the furnishing of the ordinary cage, they would be more than repaid by the increased health and happiness of the birds in their possession.

BIRD NOTES FROM THE ZOOLOGICAL GARDENS.

During the past month some interesting additions to the collection have been made, of which the following are especially worth mentioning:—

From the Zoological Society of New York have been received a collection consisting of four Clapper Rails (*Rallus longirostris*), three Blue-winged Teal (*Querquedula discors*), four Green-winged Teal (*Nettion carolinensis*), two Bahama Tree-ducks (*Dendrocygna arborea*), two Green-tailed Towhees (*Oreospiza chlorura*), one Albert Towhee (*Papilo alberti*), two Canyon Towhees (*P. mesoleucus*), four White-crowned Sparrows (*Zonotrichia leucophrys*) and three Gambel's Sparrows (*Z. gambeli*). This is a particularly interesting collection as all except the last two species and the Bahama Tree-ducks appear to be new to the collection.

The Carolina, or Green-winged Teal very closely resembles our Teal, but the male differs from the European bird in possessing a distinct white bar on each side of the breast. In the Blue-winged Teal, the male is a particularly handsome bird with pale blue upper wing coverts, and a large crescent-shaped patch of white in front of the eye.

The Towhees, of which the three species received are all new to the collection, belong to a group of bunting-like birds of which there are some twenty species in the North American list.

Besides the two species of Teal above mentioned we have received by purchase two pairs of the beautiful Cinnamon or Raffles Teal (*Querquedula cyanoptera*). The male is a bright chestnut red all over, with brilliant blue upper wing coverts, which are only visible when the wings are extended.

Five specimens of Jackson's, or the Drooping-tailed Whydah (*Drepanoplectis jacksoni*), two Crimson-ringed Whydahs (*Penthetria laticauda*), and two White-cheeked Colies (*Colius leucotis*) have been presented to the Society by Mrs. G. Style. The two species of Whydahs are both new to the collection; they are both said to be common around Nairobi, but at present the birds imported from East Africa are few and far between.

A Black-throated Hangnest (*Icterus gularis*), a Banded Tinamou (*Crypturus noctivagus*), a Ground Hornbill (*Bucorax abyssinicus*) and a pair of White-necked Cranes are additions that are worthy of special mention.

The Black-tailed Waterhens (*Microtribonyx ventralis*) have reared a second brood of two chicks, and there are three young Black-footed Penguins in the nests.

At present the Waterfowl section of the menagerie is rather over-crowded, but it will be satisfactory to those interested in this group of birds to know that the large paddock, west of the new Polar Bear enclosure, is being laid out for the *Anatidae*.

D. S-S.

REVIEWS.

THE HOME LIFE OF THE SPOONBILL.*

The fascinating pursuit of bird-photography is responsible for the production of this beautiful little book. The title is perhaps somewhat misleading, as it deals not only with Spoonbills but also in equal detail with the Home Life of the Stork, Common Heron and Purple Heron. The plates, which form the chief feature of the book, are extremely good, and being the actual photos, suitably mounted on tinted card, there has been no loss of detail in reproduction, and they form some of the best illustrations we have seen. The text, which is by comparison a minor portion of the book, is very readable, the author is undoubtedly a keen observer and, apart from the added interest given to the pictures, his story abounds in many little facts which, if we mistake not, are new to most of us.

**The Home Life of the Spoonbill*, by Mr. BENTLEY BEEHAM. 47pp. and 32 full page photographs. London: WITHERBY & Co. 5/- net.

The method by which the young are fed by their parents is a case in point, and one which should be of especial interest to aviculturists, since it is by a knowledge of such details that success in breeding captive birds may be more easily attained. The care with which a Heron erected a gorse screen to shelter her from the camera, the readiness with which young Purple Herons find their way back to their own nest, the failure of old or young Herons to recognize their own young. These and many similar notes bring the birds to our minds as living and reasoning beings, and, apart from fostering a love and appreciation of birds in general, should give the book a permanent value to the more scientific ornithologist. Like *Oliver Twist*, we should like more, and hope that sufficient encouragement will be given to this work to justify Mr. Beetham in giving us the Home Life of some other families.

A NATURALIST IN AUSTRALIA.*

Readers of the *Avicultural Magazine* will already have read many of these notes, which are a reprint of the articles with which the author has already favoured us. Mr. Seth-Smith has, however, added many other notes of considerable interest on the mammals which he came across, as well as several plates which did not appear in the *Magazine*. The book gives a very vivid and pleasing description of the commoner birds and mammals to be met with, and those that catch the newcomer's eye on a first visit. The fascination of being for the first time in a country where the whole fauna is strange, and of seeing birds that have previously only been known in captivity, in their native haunts, is not given to all of us. In the perusal of this book, however, we are able to realise even in a faint degree the pleasure of such an experience, and to comprehend a little of the spirit which has driven so many to explore and collect in distant lands.

* *Notes on a Naturalist's Visit to Australia*, by D. SETH-SMITH, F.Z.S., M.B.O.U. 6opp. and six plates, 2/- net. R. H. PORTER, 7, Princes Street, Cavendish Square, W.

BIRD MIGRATION.*

This is the fifth (interim) annual Report of the Migration Committee and is drawn up on a similar plan to the previously published volumes. Careful notes on the weather each day with the species migrating are given in parallel columns. The arrival of our commoner summer migrants is recorded by a map, a short account of the different waves and a detailed chronological table of the observations sent in. The rarer spring migrants and the autumn movements are dwelt with in long chronological tables which, in the case of some of the commoner species, runs to six or more closely printed pages. It is somewhat ungracious to criticize a task which has been carried out as a labour of love by keen ornithologists and which has to be spread with unflinching zeal over a considerable number of years before any real or tangible results can be attained, yet we can but feel that this report, which contains no less than 347 pages, would have gained in interest and usefulness had a more sufficient record and digest of the observations been published rather than the complete list of observations.

The fullness of the records are however ample testimony to the painstaking and hard work of the Committee and form of themselves a most valuable addition to Migration literature. We understand that an appeal is being made for further funds in order to carry on this investigation. We need not emphasize the usefulness of this work, which is also being carried on in other countries. Germany has a well-endowed ornithological station, in Hungary the ornithological bureau is a government department, in England pure science has to be carried on from scientific enthusiasm by those who are busily engaged in other professions.

This Committee does not want money for nothing, it only asks those interested to buy the Report for 6/- and we can confidently ask our readers to do so, not only will they receive good value for their money but also know that they are helping

* Report of the immigrations of Summer Residents in the spring of 1909, and notes on the migratory movements and records received from Lighthouses and Light Vessels during the autumn of 1908 by the Committee appointed by the British Ornithologists Club.

on that pure and unenumerative science which is the forerunner of economic science to which in the twentieth century we owe so much.

THE WEATHER.*

This is a small pamphlet dealing in a very concise and popular manner with weather instruments and how to use them. Although hitherto very little work has been done in observing the behaviour of animals in correlation with the climatic conditions to which they are exposed, we are convinced that a wide field of experimental study might be carried on on these lines. For instance we had at the beginning of this season no less than ten litters of rodents (of 3 species) born within four days. The animals had been paired two months previously and had been kept out of doors and all fed on similar food; the only variable element was the climate and had a careful note of the temperature and humidity been kept we should probably have had some clue to work on.

Aviculturists, therefore, who can afford the time might well take up weather observing in relation to the behaviour of their captives.

CORRESPONDENCE, NOTES, ETC.

PROTECTION OF THE QUAIL,

SIR,—*The Field* of Oct. 1st contains an able and moderate statement by Mr. F. C. Selous on the need that England should join the international combination to protect Quail, if these are to be saved from extermination. Many such appeals to our supposed national love of fair play have been made in the past, but England remains the chief marplot to the scheme which most other countries have long ago put in force, namely, to jointly respect the breeding season of these little migrant game birds, which, incidentally, are highly useful to agriculture.

I write to suggest that we aviculturists, who love birds well enough to include them among our penates, should set an example, and make a beginning to check, at least during the spring and summer, the present abuse of Quail, with its attendant cruelty and enormous waste.

Will not you, Mr. Editor, publish a list of those of our members who

Weather Instruments and how to use them.—G. D. W. HOMER, F. R. MET. SOC. 48pp. (illustrated). London: WHITERBY & Co. Sixpence net.

will send you their names, pledging themselves to do their possible to combat this thoughtless and discreditable consumption of cage-fatted game birds? Every revolution was once the thought of one mind, and who shall say that half a thousand sturdy aviculturists cannot do somewhat to turn the flow of so desultory a current as public opinion.

G. A. MOMBER.

[While thoroughly agreeing with Col. Momber's sentiments, we feel that Bird Protection hardly comes within the scope of the *Avic. Mag.* We hope, however, to publish a complete account of the habits and migrations of this bird, from the pen of Mr. Seth-Smith. next month, and those who wish to bring about the very necessary legislation should communicate with the Roy. Soc. for the Protection of Birds, 23, Queen Anne's Gate, S.W.]

NOTES ON THE AGE OF BIRDS IN CONFINEMENT.

SIR,—I regret that in the introductory remarks in my Notes on this subject (*supra* p. 34) I have inadvertently omitted to refer to Dr. A. G. Butler's important paper, in which he gives a long list of the ages of birds kept by himself (*Avicult. Mag.*, I. 1910, p. 181), and which, in fact, was the first devoted to this enquiry.

A. GÜNTHER.

THE SULPHURY SEEDEATER.

SIR,—Since reading Mr. Davies' letter in the November number of the Magazine, I have had an opportunity of inspecting the series of skins of this Seedeater in the Natural History Museum and I have come to the conclusion that the female mentioned in my notes is, as Mr. Davies suggests, a female *S. albigularis*, though a somewhat abnormal specimen.

I will not review the evidence which I relied on further than to say that it included three odd coincidences: one, that I compared this bird carefully with a skin, in a private collection, labelled *S. sulphuratus*?; two, that it was imported with, paired with and had identical call-notes with a male Sulphury, and, three, that the member from whom I obtained the other female had a similar experience.

I will, therefore, only say that I am exceedingly sorry for the error and that I beg to tender a sincere apology both to the Society and to Dr. Butler. I have already written privately to the latter and am glad to know that I have been forgiven. I may add that I have always found Dr. Butler's descriptions of plumage and other data most accurate and they have been of the greatest possible assistance to me. Had the description of the female of *S. sulphuratus* to which I referred been original, I should not have doubted its accuracy for a single moment, but Dr. Butler expressly tells us that he has not (or had not at that time) ever possessed a female of this species.

I must also thank Mr. Davies for his kind assistance in clearing the matter up. I am not sorry to have this opportunity of withdrawing (by

leave of the Society) my notes on the subject because I felt, when I wrote them, that the occurrence was not really worth describing. When the young only qualify for the Society's medal by the narrow margin of one week, it means that there is something wrong with the system of treatment. Such occurrences are not successes really: they are failures.

W. E. TESCHEMAKER.

P.S.—Why does not Mr. Davies send us some notes on South African Seedeaters? They would be most interesting.

RARE BIRDS AT THE L.C.B.A. SHOW.

By D. SETH-SMITH, F.Z.S.

The London Cage-bird Association held their 22nd Annual Cage-bird Show, at the Royal Horticultural Hall, Westminster, from November the 25th to 28th.

As this is written just as the Magazine is going to press, and only a small space therein is available, it will only be possible to mention here, the more important of the exhibits, and I shall not attempt to criticise the judging.

The foreign birds made an extremely fine show, amongst them being some of great rarity, and a good many that had never before been seen on the show-bench.

Perhaps the most startling exhibit of the show was the trio of Blue Budgerigars shown in the first of the Foreign classes. In one's early days of bird-keeping one heard of a Blue Budgerigar, but for my own part I never expected that I should ever see one, and probably the majority of us regarded it as a myth. However here were no less than three specimens, barred across the back like ordinary Budgerigars, but the green of the common bird was replaced by sky-blue, and the yellow of the face had given place to white. In short the yellow in the bird's coloration had been entirely eliminated, leaving the blue pigment perfectly pure. These most interesting birds were shown by Mr. Pauwels, who had sent them, with many other rare birds from his aviaries in Belgium.

In the class for the larger Parrakeets and Lories, Mr. Panwels showed a good Uvæan Parrakeet, a nice pair of Red-naped Lorikeets, a Black-capped Lory and a pair of Blue-winged Grass Parrakeets. Mr. C. T. Maxwell, a rare Mitchell's Lorikeet,

a poor specimen of the Queen Alexandra's Parrakeet, and a good pair of Brown's Parrakeets.

In the rarer Waxbill class, a beautiful pair of Red-faced or Melba Finches were conspicuous.

Amongst the Grassfinches and Weavers, Mr. Maxwell's Red-rumped Weaver (*Dinemellia dinemelli*) was quite the most interesting and rare exhibit; the same gentleman's Painted Finches, and Miss M. Bousfield's Tri-coloured Parrot-finches being also noteworthy.

Mrs. Leslie Miller's Rainbow Bunting (*Cyanospiza leclancheri*) was quite the finest thing in the class for "Grosbeaks, true Finches and Buntings," it is a wonderfully beautiful bird.

The Tanagers made a fine class that must have been difficult to judge; very rare and beautiful specimens had to be content with mere commendation cards. The rarest bird in the class was certainly Mr. Maxwell's "Black-throated Chatterer." Mrs. Leslie Miller showed a remarkably good pair of Festive Tanagers; four exhibitors showed specimens of the Rufous-throated Tanager; Mr. A Sutcliffe sent two very rare birds in his Yellow-bellied, and his Desmaresti's, or Chestnut-headed Tanager, while Mr. Maxwell's splendid trio, a Black-backed, a Blue and Black, and a Black-throated, made up a grand lot of this gaily-dressed family.

Amongst the Sugar-birds and their allies, Mr. Maxwell certainly had the rarest bird, in his Purple Sunbird. It was out of colour, and without careful comparison it would not be easy to identify the species, but a Sunbird of any species is a unique cage-bird. There were no less than four "Banana Quits" (*Certhiola*), three apparently belonging to the Jamaica form (*C. flavcola*) and one being apparently *C. luteola*. They are pretty and very rare as cage-birds. Two of them belonged to Mr. Sutcliffe, one to Mr. Maxwell, and one to Mr. Townsend. Mr. Maxwell had also a fine pair of Black-headed (*Chlorophanes spiza*), a Yellow-winged, and a splendid Purple Sugar-bird. A Yellow-winged Sugar-bird belonging to Mr. Townsend was absolutely perfect, and perhaps the most brilliant gem in the Show, while this exhibitor's rare Jerdon's Green Bulbul was well worth notice.

The last class but one was reserved for all species not comprised elsewhere, smaller than a King Bird of Paradise. Here Mr. Maxwell's Great-billed Flycatcher and Mr. Ezra' Temminck's Robin (*Erithacus komadori*) were great rarities, the latter being a very striking exhibit.

The last class, for the larger birds not provided for elsewhere, contained what to the general public certainly proved the most attractive bird in the Show, namely a Greater Bird of Paradise, beautifully shown by Mr. Pauwels. It was a fine specimen in full plumage, and probably the first of its species to be seen on the show-bench, although of course the species is well known from the specimens in the Zoological Gardens.

A second Paradise Bird was Mr. Maxwell's Violet Manucode, though this attracted little attention. The latter exhibitor's Crested Wood-Partridge (*Rollulus roulroul*) and Cuban Trogon were also noteworthy, as were also Mr. Pauwel's Cuban Woodpecker, and Spot-billed Toucanette.

PRACTICAL BIRD KEEPING.

A NEW DEPARTURE.

THE EDITOR.

We have much pleasure in announcing that, thanks to the co-operation of some of our leading members, we hope to start a new departure in the January number of this Magazine.

It has been felt for some time by a good many of our readers that the interest of those members, who are as yet amateurs in the art of bird-keeping, were not given sufficient consideration, and also that practical advice and information on the every-day management of birds might, with advantage to all our members, play a more important part in the Magazine.

We have, of late, been so fortunate in securing articles of such high value that the *Avicultural Magazine* now receives recognition amongst Scientific Journals, and this is a position which no efforts will be spared to maintain.

There is no question but that aviculture, if conducted properly, can be, and is, of enormous importance as an aid to

scientific knowledge. Scientists are realising more and more that, if research work on certain problems is to be carried out with any degree of thoroughness, the study of living things must play a very important part in their investigations. The living things most ordinarily used for study are, of course, plants and insects, these being the easiest to keep and work at, but there are many important problems which require other material, both for original and corroborative work, and it is here that birds and bird-keeping can play such an important part.

In a minor degree, the very study of the art of how to keep different species alive and healthy is of distinct value, as this information will save many a disappointment and much loss of valuable time and money to the scientist who decides to keep birds for scientific ends; but there is much more open to the keeper of birds, even if his scientific knowledge is negative or scanty. He can at least make accurate notes on the lives of his birds, on their moult, their breeding habits, date and length of incubation, mode of feeding young, length of life, etc., not to mention the hundred and one little habits peculiar to both species and individuals.

These notes may seem to be of little value by themselves, but if they are all recorded in a common journal they then become of untold service to the academic scientists who find in them corroboration or otherwise of some natural law.

It is strange that the term "scientific" should prove so alarming to the ordinary lay mind, and not only alarming, but, in some instances, undesirable. I am sometimes amused at the zest with which some members, who forward me copy, hasten to say "Not in the least scientific." They are often right, but, at the same time, why should they not *be* scientific? In this case, what does it amount to? Simply to accurate records of accurate facts, if possible with some understanding on the part of the writer of what these facts point to. But this latter is not essential, though, when there, it is apt to make the whole difference to the interest and business of bird-keeping; when there to any extent, and when added to it there is a certain amount of scientific knowledge, then you get your scientific aviculturist—a man or woman greatly to be envied of all men,

for in their pursuit they have a source of unending fascination and absorbing interest.

This is neither the time or place in which to go into the natural problems, the elucidation of which are so absorbing. I merely wish to point out how we can make scientific use of the results of our experience as aviculturists if we so desire, and any records with this object in view will always be most gladly welcomed by the Editor.

We also intend to keep our columns open for all possible notes and observations of birds in their wild state, this with the primary object of assisting our members the better to keep birds in captivity by a knowledge of their natural habits, and secondly, of thereby adding to ornithological knowledge generally.

On the other hand, we most certainly do not wish to ignore or under-rate what was one of the primary objects in the founding of the Avicultural Society, *i.e.* mutual help and advice from all its members on the keeping and breeding of birds. We wish the Magazine to be a permanent record of all experiences of interest and value gained by our members, and we also wish it to be a Journal through which advice and information can be freely obtained from our more experienced aviculturists by those members who are as yet unskilled in the difficult art of bird-keeping. Those amongst us, who have kept birds for years, do not always realise the hundred and one little difficulties which beset the beginner, and are apt to forget that all the little "tricks" and "tips" which are now to us a matter of course, can only be learned by our fellow-members through sad and heart-breaking experiences, unless we make use of the pages of the Journal to lay before them in detail the results we have attained. To this end, therefore, it has been decided to set apart a certain portion of the Magazine each month, where, under the heading of *Practical Bird Keeping*, matters relating to the absolute business of the keeping of birds will be dealt with. We are arranging to have one article each month by experienced authorities on the subject, in which the best methods of keeping the commoner species will be discussed. This, we hope, will be of infinite assistance to the member with but a few birds to care for, as well as of interest and value to the more experienced aviculturist.

Dr. A. G. Butler—whose writings are so well-known and whose knowledge is so exceptional—has kindly consented to write the first of these articles, when he will deal with FOREIGN FINCHES, and those of our members who have already enjoyed his wise advice and benefited by his practical knowledge, will realise how much we are to be congratulated in securing his co-operation.

Under the heading of Practical Bird Keeping we shall also open a column for Correspondence, and hope our members will take every advantage of it, not only to ask any questions which they want answered, but to criticise and add to any points of agreement or disagreement in the previous articles; to send in their own experience on some moot question, and to raise any problem which may present itself.

In addition to these two features, we hope to persuade our members to combine to provide matter for a third, where, under the heading of "NOTES" they will send in periodically and without a personal request, notes relating to their own birds and aviaries. Most, if not all our members, must have a few such notes which they could contribute, not enough perhaps to form an article in themselves, but sufficiently interesting to be worth recording. It is more difficult than members perhaps realise, for the Editor to know which, out of the four hundred members of the Society, are in a position to send in such information, and it would be of very great assistance to the whole Society if such members would voluntarily and without waiting for a personal suggestion contribute the result of their own experiences.

The first number of the Magazine containing this new development will appear in January, 1911. The Editor will be glad to receive any correspondence, notes, or suggestions for publication in this number up to December 16th, 1910.



A BIRD LOVER'S GARDEN.

West, Newman proc.

Avicultural Magazine,

BEING THE JOURNAL OF THE
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JANUARY, 1911.

SOME PHEASANTS AND A JAY.

By Mrs. GREGORY.

For the last eight years I have kept Pheasants—Gold, Silver, Amherst, Swinhoe, and Reeves! It is of the latter species I have most to say. Called the “long tail” on account of its length, this appendage in my bird measures exactly four feet (that is to say, the longest of its feathers does), and it is most difficult to keep in good order. When rain comes the feathers look draggled and shabby, and soon break off. The bird twists and turns as he walks, and, not having the arch in the tail that the Amherst has, the hard gravel wears it all away. So to preserve his tail I determined to let him go free. These Reeves have the habit of suddenly flying up when they are frightened, and often injure or kill themselves against the wire. I lost my last one from this cause. In the morning his run was brushed out by a new man, who left a broom standing up against the door. The bird rushed down and saw it, dashed up to the roof, struck his head—and fell dead! They are certainly less intelligent and more timid than either Gold or Silver Pheasants. I determined to gain the confidence of my bird *inside* the aviary before I risked letting him out. So I gave him a few monkey nuts, now and then, as a treat, and when he got tame enough to come and take them from my hand I caught him as gently as I could (they hate a net and are very nervous when held), cut the feathers of one wing, and waited till next day for him to recover. Then I opened the door and let him loose in the garden. At first he kept out of sight under shrubs and bushes, but now I have the pleasure of seeing him on the lawn close to the house,

in company with three Golden cocks, two Silver hens, and three Amhersts, one of which I have had over seven years.

All my pheasants have their names, and most know them, and will come running up when I call, and take bread from my hand. When I am taming a new one I never look at its eyes until it has lost all fear of me and does not mind my doing so. I had one Gold cock that would fly up and take mealworms off my shoulder! The Pheasants are not afraid of the Cranes, and it is a pretty sight to see them all together. The 'Demoiselles' step on the long tails and, being very light, fly over the Pheasants' heads when they all try to rush for the same piece of bread thrown—generally the pheasant gets it!

In the spring I cannot have them all loose, they would fight and kill each other. Each bird has to be separated by wire divisions in the run until the moulting time begins. I learnt this after I had two or three of my favourites "done to death."

For rearing young pheasants much space is required. They are difficult to bring up unless the pheasant hen hatches them out and looks after them herself. One of my Silver hens is an excellent mother. Each spring she makes her nest in the garden under the shelter of a large Pampas on the lawn. The day after the chicks are hatched out, she takes them off to a more secluded part and does not bring them back to the aviaries until they are six or seven weeks old. I hardly trouble to put food (as they get all they require in the garden); only once a day some fine bread-crumbs and hard-boiled egg, which the Sparrows get most of. But I always have a load of manure put down, and on it they will scratch about for hours at a time finding insects and tiny red worms. This last spring my Amherst hen made a nest *inside* the *wire run* and hatched out five young ones. I did not know that the cock bird should at once be taken away, and he killed two of them and pecked the others so that they had to be destroyed. But if they had lived, I do not think I could have brought them up, as the hen was not tame enough to let loose. Before dusk I call all my pheasants up and drive them into their respective runs, except the two Silver hens, who roost in the topmost boughs of an old apple-tree.

Living with the pheasants for the last year and a half I

have had a very dear and interesting Jay, which was given to me for a home. He had been kept in a cage, in a hot kitchen, and naturally was in poor condition. I gradually got him used to his new and spacious quarters, giving him his old cage inside the run at first, but I do not think, after he had the courage to once hop out, he ever entered it again. Jays are very active birds, and ought to have a large place to fly in. I cut a large round hole in the side of the wire, and 'Jack' soon learnt to fly into the adjoining run. Here the boughs of an old Arbutus tree made excellent perches, and he delighted to fly from one aviary to the other, being equally friendly with the inmates of both. I fed my Jay on 'Cecto,' mixed fresh daily with hard-boiled egg and biscuit, and moistened with boiling water; also acorns, fruit and plenty of insects, but I never gave him any meat at all. He grew a fine big bird with perfect plumage, and has never ailed a day. He would look up to my window and call for me the first thing in the morning, for my aviaries are all within sight of my windows, which I have found an excellent plan. Having the inmates constantly in sight has saved many a life from fights or bullying birds, or greedy ones who will not let others eat. I do not think birds *can* be looked at too often by their owners.

My Jay became so very tame that I got into the habit of leaving the door open when I went in or out. This I did once too often, and a fortnight ago he flew out, right into my arms. I put him back, but unfortunately went away. When I came back he was out again and flying among the trees, calling to me continually. Gradually he got further and further away, and I saw him no more. Being told a few days afterwards that he had been seen in a wood, where there are a few oak trees and many firs, not far away, I went there and called 'Jack.' He flew towards me at once, calling loudly in answer to his name. But I fear I shall not get him back now that he has tasted liberty! My only hope is that when the hard frosts come, food becoming scarce, and the acorns no more, he will return to the care of his mistress, and to the society of his old friends the Pheasants.

RANDOM NOTES ON BIRDS AND NESTS IN
UGANDA.

By L. M. SETH-SMITH.

I have been asked to write a few notes on the birds met with in Uganda, and so intend jotting down a few facts which have, from time to time, come under my notice, and which may possibly interest our members. I do not pretend that the observations are being noted now for the first time, but I think that corroboration of other observers has its uses.

One sees it stated sometimes that Sunbirds do not hover, and, although this statement has been contradicted by others, I would like to repeat that they do frequently hover for a second or two whilst catching minute insects on the wing, and sometimes at flowers.

Whether dates of nesting are of any scientific value or not I cannot say, as some bird or another seems to be nesting at almost all seasons; however, I will jot down dates of a few as I come to them.

The Kilimanjaro Bronze Sunbird (*Nectarinia kilimensis*) was seen building near Kampala on the 17th of September, 1905; the nest was almost overhanging the roadway, and was right at the end of, and hanging from, a long branch, about ten feet from the ground. It was of oval shape with a hole in the side and lined with thistle-down or something similar.

When in Toro, some years later, I saw a nest very much like it, but much smaller, and, on reaching it, I found there was no entrance to it at all, and could not understand it, until I broke it open to find that it was not a bird's nest, but a nest of cocoons of some moth (species of *Bombyx*).

In early January the grass becomes sufficiently dry to burn well and, at this period, one sees fires all over the country, which the natives light so as to get good succulent grass as soon as the first shower comes on. As soon as a grass fire is started birds immediately congregate. Swallows and Kites are most numerous and, at times, they appear to almost dash through the flames to catch some insect prize driven out by the smoke, and while the charred remains of grass are still hot, birds come

down poking about among the ashes for dainty morsels. On January 2nd, 1906, I particularly noticed the Blue-headed Wagtail (*Motacilla flava*) in numbers, where a fire had an hour or so before been raging; these birds were evidently on migration.

Another sure attraction is a white ants' nest at the time the ants are flying. They always commence their flight about sunset, and are the signal for all kinds of insectivorous birds to congregate; Swallows fly backwards and forwards, Drongos and Flycatchers of several species choose points of vantage from which to swoop out and back again, a Shrike flies out, catches an insect and, probably, continues its flight to another bush near by, while higher up Hobbies take their toll; but now it is getting dusk, and Nightjars come to join the feast, and so on, until it is too dark to see, and one has to get back to camp.

One of the prettiest sights in bird-life is the courting of the Pintailed Whydah (*Vidua principalis*). While in the mood he is most energetic, and as soon as he sees one of his many wives he flies towards her and hovers within a foot or so of her with rapidly moving wings, the only movement of the body being a slight up and down motion, the long flowing tail lagging a bit behind each movement, at the same time he is trilling out his love song. After a while she appears to get bored by his behaviour and flies off, at which he begins over again before another wife; she soon flies off and he, getting tired, flutters away with an undulating flight singing all the while, to rest on a branch or grass near by.

It is quite amusing to watch a colony of Weaver Birds (*Hyphantornis abyssinicus*) building; the noise is almost unbearable when close by. The cock bird does most of the building, flying off perhaps two hundred yards to fetch grass. Why he goes so far I cannot say, as there always seems to be plenty of good grass much nearer, and time appears to be a very important matter with him. He pecks off a piece of green grass, some six or eight inches long, and flies back to the nest with it streaming behind him, and immediately begins weaving it in, all the while clinging on to the nest, sometimes in very uncomfortable positions, and flapping his wings rapidly while almost bursting with his chattering song. The hen meanwhile squats in the nest directing

operations, sometimes giving a hand at the weaving, but she never, I think, deigns to fetch the grass. At times, when a builder has gone off to fetch more grass a neighbour will make a dart at the nest, seize a piece of grass and carry it off for his own use. But they live very happily on the whole, and are always welcome, preferring to remain near human habitations. The Black Weaver Bird (*Melanopterys nigerrima*) frequently occupies the same tree as its commoner relative (*H. abyssinicus*).

On April 10, 1905, I found at Entebbe a nest of the Paradise Flycatcher (*Terpsiphone cristata*). It was placed about 25 feet from the ground on an almost bare, small branch. The nest was very small and cup-shaped, not unlike a Chaffinch's, the outside being composed of lichen and moss, woven together with spiders' webs, the inside being lined with fibre about the thickness of horse hair. It contained two partially-incubated eggs, which were large for the size of the nest, and I should think this number, or possibly three, probably represents the full clutch.

We get several British birds in the migrating season, but my notes of these are very meagre.

On the 29th of February, 1908, I saw a lot of our English Swallows (*Hirundo rustica*), among them being some immature birds with dull brown crowns and the throat only just beginning to get a tinge of rufous, and without the long tail-feathers. While on the subject of Swallows, I should like to mention a nest I found at Nimule on the 19th of February, 1906, of that beautiful large Brown Swallow (*Hirundo senegalensis*). It was placed under an overhanging ledge attached to a river sand-bank, and was composed of mud outside and lined first with goats' hair, above which was a soft lining of feathers. Unlike our Swallow's nests, it was bottle-shaped, with the neck pointing outwards and curved downwards, not unlike a Weaver-bird's nest, but made of mud instead of grass. There were two fully-fledged young in the nest.

Cuckoos also appear in their season, but I cannot say whether their note is the well-known call which is so popular in England, although I have been told by a good observer that he had heard on one occasion a number of Cuckoos calling with a note exactly similar to that of *Cuculus canorus*; other Cuckoos

have a note not very dissimilar, and my informant may possibly have been mistaken. The only dates I have of having identified this bird are the 2nd of April, 1908, and the 10th of April, 1909, at Mubende and Kampala respectively.

The Willow Wren (*Phylloscopus trochilus*), again, is not an uncommon bird in the migrating season, although the only times I have been certain of its identification have been at Entebbe on the 3rd of April, 1905, at Butiaba on the 17th March, 1907, and at Mubende on the 20th of March, 1908.

I have not often been in a locality where Bee-eaters nest, but have a record of finding a colony of that lovely red-breasted species (*Melittophagus frenatus*) hard at work at Nimule on the 17th of February, 1906. The holes—some 60 in number—were in the sandbanks of a stream, and some were not more than six inches from the top of the bank; they averaged about three feet in length, and there was no lining of any sort to the nest cavity, which was strewn with wings and indigestible parts of beetles. In each of the two nests, which I was able to examine, I found three young birds, varying so much in size that I came to the conclusion that the bird must commence sitting on the first egg she laid, like Parrakeets. A few days later, at Gondokoro, in March, 1906, there was a colony of the brilliant pink Bee-eater (*Merops nubicus*) nesting.

Colies, or Monse-birds, among the most attractive birds to a stranger, not on account of their plumage which is very dull, but their curious flight is at once noticeable, as they fly from bush to bush, usually in small companies, one after another at short intervals, a few beats of the wing being followed by a long aeroplaning scoop, looking like miniature pheasants with their long tails streaming behind. When disturbed they fly from a bush with a great fluster. They are great fruit-eaters, and can always be found when pawpaws and guavas are ripe. On the 1st of May, 1905, at Entebbe, I found a nest of Shelley's Coly (*Colius affinis*) in the middle of a thick clump of low bushes, about four or five feet from the ground. The nest was composed of a few small twigs outside with a thick lining of fine grass and fibrous roots. Two young and a bad egg were found in the nest. Honey guides are not uncommon throughout the protectorate

and one frequently hears them calling, sometimes becoming very persistent in their endeavours to attract attention. I have tried to follow them, but have never yet found a bees'-nest through their means. On one occasion, my men were cutting a line through forest when they came to a tree with a strong bees'-nest in it; after some hesitation and many stings (I personally kept in the background) grass and leaves were brought up, a smoky fire lighted below and the tree was cut down by some spirits more plucky than the majority. The next day, when passing the spot, I saw a good many bees going in and out, but the hole had been enlarged and the honey extracted, and probably the bees were more infuriated than ever. While watching, to my great surprise, a Honey Guide (*Indicator variegatus*) flew out of the hole. It had been right in among the angry bees, and one would think not a welcome intruder. I can only surmise that its skin, which is almost as tough as leather, is able to withstand the bees' stings, though how it protects its eyes and more vulnerable parts I cannot say.

The nest of the Hammer-headed Stork (*Scopus umbretta*) is well-known to most of our readers, either from books or from the nest, out of which a young bird was (last season) reared in the Zoological Gardens. I have only once come across this nest in Uganda, placed in the fork of a tree some thirty feet from the ground. The nest had been taken possession of by a pair of Kestrels (*Cerchneis ardesiacus*) which had a fine brood of three young ones in March of this year. One of these young birds found its way later to the Zoological Gardens, being the first of its species received there, but, unfortunately, it did not survive more than a few weeks.

The stately Crested Crane (*Balearica pavonina*) is common in parts of Uganda, and is to be seen round about most of the Government stations. It makes a lovely pet, and quite an ornament to one's garden. I brought one up from quite a chick when last in Uganda, and it used to go about with my chickens. Later on, when full grown, it still stayed about and, although others of its species were frequently close at hand, it never seemed to have any inclination to join them, but every night slept on the roof of my bungalow, sometimes, on a brilliant moonlight night,

taking a midnight flight, where to I cannot say, returning with a clatter on the iron roof a few minutes later. Although, as I pointed out above, an ornament to one's garden, he was a bad gardener, treading down my choicest flowers as he stamped about to drive out any insects which might be taking refuge among the foliage. These birds nest in swamps, beating down the long grass and making a platform of it just clear of the water. On the 6th of October, 1906, I found a nest in just such a position at Masindi, containing two large eggs of a dirty greenish-white blotched all over with brown. The water in the swamp was not more than six inches deep.

Marabou Storks make nice pets when they become tame. I cannot call them handsome, but they are certainly entertaining. One I had was a wonderful catch, and if a piece of meat was thrown to him in any direction, and as hard as possible, as long as it was within his reach he would catch it nine times out of ten. One favourite game he had was to pick up a piece of stick or rag and throw it up in the air, dancing round it with outstretched wings and catching it again. When in the mood he would play like this for a long time. Although he was near my house all day long he would always fly off in the evening and roost on the highest tree he could find about half-a-mile away. One day he never returned and, probably, went off with a mate.

On January 2nd, 1905, I was walking through some long grass at Entebbe when my boy, who was following me, noticed a nest on the ground: it was oval in shape, composed of grass with a hole in the side, and was built right on the ground among the grass stems. I waited to see the bird return, and before long was able to identify it as Heuglin's Pale Waxbill (*Estivida paludicola*). I should have thought the ground would have been the worst possible site for a nest as snakes must be their worst enemies.

While walking through a thicket at Masindi on December 27th, 1905, I heard a young bird chirping but could see no signs of it until I traced the sound to what looked like a bunch of dried grass which had been caught amongst some hanging creepers. The 'bunch' turned out to be a nest of Emin's Bush

Warbler (*Eminia lepida*), though I did not discover this until I had waited for some three hours to catch sight of the parent birds, which remained in a dense bush only a few yards away calling repeatedly to each other. The nest was a very untidy structure, composed of grass and lined with thistle-down and was only partially domed. There was only one young bird in the nest and it was of similar plumage to the adults.

One of the finest songsters I have come across in the Uganda protectorate is (*Cichladusa guttata*), a bird very similar to, only smaller than, a Thrush to the casual observer, but only a distant relation according to the systematist. A nest of this species was found at Gondokoro on April 21st, 1906, in a thick clump of bush about four feet from the ground. It was composed of mud outside and lined with grass, and contained two nearly-fledged young similar in plumage to the adults.

The Yellow-billed Kite (*Milvus aegyptius*) is a very common bird and a useful scavenger throughout Uganda, albeit a terror for young chickens. A nest of this species was observed on the 13th of February, 1906, at Nimule, in the fork of a tree some 25 feet from the ground. It contained two eggs of a yellowish-white colour, thickly blotched with red-brown.

Now I ask, are dates of the nesting of birds in the tropics of any value? I happen to have looked up one of the birds mentioned above, viz., *Eminia lepida*, and see that Mr. Woosman, during his expedition to Ruwenzori, found this bird nesting at the beginning of May, and again at the end of July, both nests containing young birds, while I find it on Dec. 27th, also with young in the nest. I am inclined to think they nest whenever they are ready. The same difficulty is seen in trees, some species at least of which have no proper seasons, for you may see two trees of the same species, side by side, one just budding and the other just shedding its leaves.

BREEDING OF THE PAINTED FINCH.

Emblema picta.

Cat. Birds Brit. Mus. XIII., p. 295.

By REGINALD PHILLIPPS.

(Concluded from page 67).

The nesting seasons of this species in this country seem much the same as those of many foreign finches. This year, they nested in the spring, then moulted, then nested again. They go to nest freely and sit well, both birds assisting; and it is not quite clear why there has been so little success; I can only suggest that the weather has been too cold for them. The nests here have been large substantial domed structures of hay and lined with feathers.

The first nest to which I need refer was built in a box some 7—8 feet from the ground, and was so concealed by trees that I have little to say about it. It was occupied for some two months, but nothing came of it. Now, in mid-October, a female is again sitting in this box.

While this was going on my second pair, who would not settle down in the general aviary, was admitted and, before long, had built a nest in a dead *Thuja borealis*, just about two feet from the ground. On August 30, moved by a strong impulse in a moment of weakness, I examined the nest, and found that it contained two or three eggs (I thought three, but may have been mistaken) and one nestling quite recently hatched. About this time it was very wet and cold. On September 11, I again examined the nest and found two eggs and one backward nestling, backward that is if it was the same I had seen before; but it is not impossible that the first had died and that this one had been hatched later. In either case I feel satisfied that the very cold weather had much to do with the general unsatisfactory state of Painted-Finch affairs.

Towards the end of August a third pair—an old female and a new male—had been loosed into the aviary; and on this second visit I found that these two birds had also built in the dead thuja, a little above and actually touching the first nest. One point of etiquette had been observed, however; the aperture

to the new nest faced in a different direction, so that the occupiers would not come into collision when approaching or departing from their respective habitations.

The first of these two nests looked towards the aviary door, and from time to time I would turn the binocular upon it. When the male was in the nest, his red face was conspicuous, but when it was the female that was at home I had to approach nearer and had difficulty in making her out, for the sexual difference in plumage between the two birds was marked.

On the 21st, the nest looked dilapidated and deserted, so again I approached it, and found that the roof had been torn to rags, although the solid and substantial structure itself was practically uninjured; whether the wreck had been caused by the rather high winds of the two preceding days or by a big battle I do not know, but on the following day I found a female that had been injured. The inside of the nest, viewed from above, seemed very large, and was not too scrupulously clean. Quite lost in the cavity was a little brown figure, braced tightly up, and crouching in just the same manner as the young Blue-breasted Waxbills I wrote about last year (p. 346). It was quite fully feathered. It had left the nest by the following morning, when I noticed it squatting with its parents on a sunny bank.

Not a day passed but I hunted up the fledgeling with my binocular. It was quite at home on the wing, and seemed well, but it felt the cold terribly; it worshipped the sun, and followed its rays about from place to place—when there were any to follow. Early in October it disappeared, and I did not immediately find the body—I did not want to disturb the second nest in the thuja, and a Quail-Finch was sitting close by; however, on the 7th, I extended my search to the tree, and found the body just below the nest in which it had been hatched. The feathers on the under parts and about the head were ruined; but from my notes taken before its death, supplemented by what I could make out from the remnants of the plumage, I may give the following as a tentative description of the fledgeling Painted Finch:—

General aspect above brown, tinged with what in the distance had seemed to be chocolate, but which had appeared pink when seen in the nest and now also on the dead body; the

shades were darker about the crown, lighter about the cheeks, and inclined to red about the centre of the back. Upper tail-coverts (and lower back?) brown-black boldly tipped with bright scarlet; tail above brown-black, each feather strongly but irregularly stained—almost veined—with red about the centre but *not* extending to the edges; under surface of tail dull black. Wings above brown, with some of the coverts washed with pink; under aspect of half-open wing light, with entire centre pale pink; this latter effect (not observable in an adult female I examined) was produced by the inner webs of the primaries and secondaries being in part pink; in the centre of the wing this colour extended upwards and downwards nearly but not quite to the tip and base of the feather, but became more and more restricted, upwards and downwards, on each feather as either extremity of the wing was approached, the first two or three primaries and the innermost secondaries being scarcely touched. The breast, when viewed during life, had what looked like an ill-defined smudge of sooty black right down the centre; after death this seemed to be more definitely black, and in the centre were a very few black feathers unmistakably if but slightly tipped with bright red. No spots were visible: daily, on some days two or three times, I looked for the spots which are so conspicuous on the adults but failed to detect them; none could be traced on the dead body, but this was but negative evidence, the plumage being in such a bad condition. The rather thick but comparatively short beak was black, with a sharply cut dirty-white patch on each side of the lower mandible towards the base; feet and claws darkish but not black: eyes, no trace— but probably dark as they could not be seen during life, and in the nest they had not attracted attention.

I take it that this fledgeling was a male, and think it probable that the patch at the base of the lower mandible (*Adult male* “. . . under mandible scarlet, with a triangular patch of livid blue at the base.” *Br. Mus. Cat.* XIII., p. 296), and possibly also the scarlet tipped feathers on the breast, may be sexual distinctions which are observable at an early age.

October 18.—The second nest in the thuja has been a failure; and although there is another nest going, it is unlikely

that anything will come of it, so I bring this record of disappointments to a close forthwith.

* * *

SUPPLEMENTARY.—An adult female I have examined since writing the foregoing had, in addition to the narrow eyebrow, a broader line of scarlet below, running forward and expanding into the scarlet lores. The under parts, including the under aspect of the tail, were rich black, with the spots for the female as given in the *B. M. Catalogue*; but, with the exception of quite a few scarlet-tipped feathers in the centre of the breast, there was not a trace of red anywhere, differing materially from the males in this respect. The upper aspect of the tail-feathers was rather brown-black than black; and the red markings were confined to a faint edging of the outer webs—thus differing curiously from the fledgeling. This bird, although a female, had a small triangular patch of white or whitish at the base of the lower mandible, a mark not mentioned in books. It *seemed* to be smaller, of a different shape, and more black underneath than in the fledgeling; doubtless I am mistaken—but I especially noted that I could not make out the patch on the latter to be triangular as I considered it ought to be.

The bill of the fledgeling was not long and slender as in the adult. What useful purpose in the economy of the species does the very long bill serve? That the Painted Finches should prefer spray millet to any other food I am able to offer does not help us much; but I think the way in which, like the Regent Bird, they pluck off and swallow the tops of blades of growing grass is unusual among finches. Probably the wild birds have a partiality for some particular food. The parents here fed the young bird—as far as they went—on such small insects as they were able to obtain.

The eggs, so far as I know them, are small for the size of the bird; I compared one with a Cuba Finch's, and found the latter to be almost the larger; they are, of course, white.

The alarm-call is a rapid running repetition of the *cuck* note.



NOTES OF A BIRD-KEEPER IN LIGURIA.

By G. A. M.

Rats in hordes and field mice have invaded the sea-board all this year. From everywhere the same lamentation. Dozens were trapped and scores poisoned on these premises, but exclude them from the aviaries we could not. Hence I found, on returning in October, that most of my small fowl lived only in memory, and even such as large as a Redwing, Blue Thrush, an historic Song Thrush, a pair of perfect Rock Thrushes, a Greater Spotted Woodpecker and a Water Rail had succumbed to the foul rodent, and the survivors had been caged indoors. Some veiled notice to be prepared for grief had come in the gardener's letters. The Italian has not the English domestic's exultant pessimism, he tells you what he thinks will please; so that Giacomo's written assurance that "*tutto va discretamente bene*" implied a boding reservation.

By chance I brought out a stronger than usual contingent of Northern birds from England. And these are always my favourites. They help to bend the exile to his fate in this country where inveterate persecution makes it difficult to observe any feathered creature. The breath of grey skies and subdued harmonies these homely birds bring, is grateful and inspiring in the sun-tyranny of the South; and a chamber knowledge of our wild creatures complements our outdoor knowledge of them, and helps complete it.

Although Italy yields a wider supply than England, the rarer sorts are not easier to come by alive. The native birds are kept (and very badly kept) mostly by the poorer people for use as decoys. As cagelings, Rock Thrush and Blue Thrush are fully appreciated, but they must be hand-reared to thrive and become tame. Both command a relatively high price, from twelve to twenty lire, whereas I have secured a Bluethroat for eight and a Chough with cage for ten.

My last Nightingale recently hopped his final twig, but long he so ruled me that one summer I took him with me on my travels. He did not entreat me altogether well on that occasion, for, although he had sung discreetly at home from

January to mid-May, we had no sooner reached Aix for a stay of some weeks, than he allowed himself to be swept into enthusiastic rivalry with a wild Nightingale in the hotel garden. Probably, the latter was deep in domestic affairs, and Phil's voice sounded that of an interloper. Anyway, the two trilled at each other day and night without stopping, until Phil drooped wings and eyelids with fatigue. I drooped too. But, though out-classed, he refused to be out-sung. One *tio tio tio tix* from the garden revived him to torrents of melody. The hotel visitors also grew heavy with watching, and complained of the loud songs before sunrise, though they knew not the cause. I tried to evade my responsibilities by quartering him at night in bath rooms and uninhabited places. I tried smothering his cage with rugs, engulfing him in cupboards, and whacking it with a stick each time he sought to utter. At length, after a night of strife, one dawn I grew desperate and, taking him from his cage, I tied him up in a handkerchief. That interrupted his song but not my vigil, for the Furies took the place of Melpomene, and remorse racked me worse than Phil. Finally, a padded cell, the telephone box, brought relief to all. I have heard of captive Nightingales in the same room singing each other, or themselves, to death.

Except for the nimety of his fire in spring, Phil was one of the pleasantest companions Fate has vouchsafed me. My parlour stood open to his roaming, but he was always glad to return to his cage, and roosted there—or in someone else's. He took interest in all that went on, and if left too long unnoticed, came to see why. Unlike most feathered boarders, he enjoyed visitors, and would hospitably hop on to them, even if they wore big hats. And his friendliness did not wane as it so often does with the tamest birds whilst the sap was rising in the trees, (especially a Wryneck and a Chough, which knew not fear but became distant and wilful in spring). If he was not always, as M. Rostand describes "un son qui berce," I have forgiven him his vibrating poems, and now strongly feel that "Il fant, dans la forêt, toujours un rossignol."

Aristophanes, in the *Birds*, renders the voice of Hoopoe and Nightingale in syllables which hold good to this day. We hear no differently now than Aristophanes heard, twenty-four

centuries ago. Yet a bird's song, one might think, would be easy and apt to change compared with the type of the bird. What an earnest that gives of the aeons that went to the development of the species.

My last Bluethroat escaped after eight months of mutual good understanding. His buzzing song, which has caused the unknowing to look about for a bee in difficulties, was the least of his merits. Other Warblers board with me: Whitethroat, Sedge Warbler and Willow Wren (an all the year singer) and all are engaging and intelligent. But the Blackcap, perhaps the finest songster of them all, lacks the grace and port of the others. Two Hedge Accentors, most inobtrusive of all Passerines, I also boast; one hailing from the Zoological Gardens, where he was continually being caught in a duck trap, and liberated, until one day I carried him off in a paper bag.

A poor flier in the open, there is no quicker or more active dodger than *A. modularis*, and if anyone doubts it, let him try and take a caged one in his hand. Its retiring ways are in contrast to the Robin's pompous self-importance and its neatness and cheery song render it a pleasant room fellow. In an aviary it keeps out of sight. For a slenderbill it is singularly fond of oats and seeds. The Chats are too Warbler-like to have escaped my attention; the Stonechat does not draw me, but the Wheatear is very stylish, and still more so are the S. European Black-eared variety and the Desert Chat. How many persons are familiar with the song of the Common Wheatear, or even of the Spotted Flycatcher (*Muscicapa grisola*) which nests against our very houses?

Olives are much liked of all the Thrushes. A Ring Ouzel and Song Thrush from England took to them at sight, and Rock Thrushes seem to reserve a special squeak for the hammering of them. We have been told a good deal lately about the latter, *Monticola saxatilis*—by the way, why "pied"? it is no more pied than a Water Ouzel or a Wheatear, not so much so as a Martin—and it needs close observation to appreciate its pronounced variations of colour and markings, according to season and age. The hens vary less and some sing fairly well. I have only two Rock Thrushes now: one, an old confidential friend, who accompanied

me into Inverness-shire three years ago, where he disliked the hyperborean conditions. He invariably ducked at the many Gulls (*L. ridibundus*) that sailed close past the windows, and felt the July cold so much that he sat on the fender, and uplifted each wing in turn towards the fire, to warm his flanks. His present autumn splendour baffles all description, for, on the fore body, each light feather has a darker tip, and each dark feather a lighter rim, and many have two crescent bars of differing shades. The Italian name Codirossone (Big Redstart) is good description of its general appearance and quivering tail-play. One of the German names, Steinrötel, endorses this. They are charming chamber birds, wayward, and a trifle tempersome, like all the Thrushes, and sing the year round. When feeling comfortable and well, they let their feathers hang very loose until they swell into round balls of puff. My old stager always snatches tit bits with a scold, and bolts them quite angrily, but only from those persons he knows. He keeps his pecks for them, too, so possibly they are a sign of affection. Last year he somehow cut two toes whilst at large in my room. They would have healed, had he allowed them, but he was so enraged by the pain and weakened grip that he was continually pecking at them, until they came off. One of my hens was fearlessness embodied, and allowed herself to be picked up anywhere, but she eventually became so crippled from what seemed a rheumatic affection of the legs, that I had her killed; and rats ate an irreplaceable pair, which I had turned into an aviary in hopes of increase. At Stresa, last spring, I repeatedly observed a pair hunting earthworms, which they carried off a long way, to the boulders on a steep hillside. Here they are not rare in the mountains in summer, but we have none by the coast.

The Blue Rock-Thrush (*Monticola saxatilis*) is pretty common, and I have seen its nest in old walls. A beautiful hen of mine nested in an aviary and laid four Starling-like eggs, but did not sit. Her mate, my war-thrush, has tyrannized this household for five years, and is a known character hereabouts for the murderous onslaughts he makes on every human male who enters into his aviary or room. His conduct is uniformly consistent. Civil to me as the governor, the first sound of any



ROCK THRUSH
(Spring plumage).

Photo by Lt.-Col. G. A. Momber.

West, Newman proc.

other man's voice starts him off on a loud and very musical war-chant, kept up whilst the intrusion lasts. As soon as the intruder is within reach, he flies headlong upon him and belabours him; but he never molests women and, if several are present, he even refrains from fleshing his bill until they have left. He evidently thinks it bad taste to brawl before ladies, but he makes up time when they are gone. He takes pride in making hay on my writing-table, scattering pens and small things wide around; and makes a point of breaking up cigarettes, in this respects emulating an African Grey Parrot, which has borne with me for twenty-three years. The smell of tobacco seems to attract both. Solitary Thrush is a fitting name, and it is not hard to believe that any other bird trespassing on this one's sphere of action would have a poor time. I have never seen this species bathe. It is more insectivorous than most of the thrushes, and rarely eats fruit or olives.

Meadow and Tree Pipits I am never without; pleasant fellows both, with their soft song, enquiring expression and contented, busy ways. They are great ventriloquists, especially the former, and combine the run of a Wagtail with the waddle of a Lark. Grey Wagtails are common in winter. A Pied Wagtail with a shot-broken wing, was being led about on a string by some children and brought to me, and on the fourth day took mealworms from the hand. It lived some years in an outdoor aviary until killed by rats. Larks, too, I cannot withstand—Sky, Wood, Short-toed and Calandra. The former are errant here in winter. The Calandra, a loud singer, is less robust than its size suggests, and likes soft foods, despite his heavy bill. They are all somewhat shy and with other birds generally peaceable, but an old Skylark killed a Button Quail. A tame Skylark, big-eyed and puffy-cheeked, is as great an acquisition as a good steady Linnet. If only the hand-reared birds were good singers, or the good singers more steady. Serin Finches (*F. serinus*) are common in Central Europe, and migrate here in autumn; stupid little birds in captivity—their high-pitched song suggests a convivial bat. Redpolls we never see here, and none of those I have brought have survived a summer.* No one knows the

*Since writing this note I have recently bought some which were taken in November in the mountains close by, both the Mealy Redpoll and the Alpine variety of the Lesser Redpoll.

Lesser Redpoll until he has heard the sundown concert of a flood of them in a wintry larch plantation.

Citrel Finches (*F. citrinella*) have appeared this autumn for the first time in eight years, and I find them pleasing in the bird-room; tame as Siskins, rather like tiny Greenfinches, but with a Linnet-like softness of expression and a deep call-note for so small a bird. We are strong in Sparrows, with House, Cisalpine, Tree and Rock. The two former are much the commonest, and have become through persecution so wary that they always keep in little groups, and are seldom shot or snared. At a distance the Cisalpine is not easy to distinguish from the House-Sparrow. The Tree-Sparrow is not seldom caught with Siskins and Mountain Finches, and is more vagrant than the House-Sparrow, for the latter never roams with other birds here. The Rock-Sparrow (*P. petronia*) occurs during its winter wanderings. Its pale plumage recalls the ground birds, and the curious sulphur-coloured ace of diamonds on its breast is, at times, quite hidden. Hawfinches, Chaffinches and Mountain Finches are more plentiful in winter, and the latter materially help to fill the coat-pockets of the local sportsmen.

The S. European Buntings are many in kinds, but one in character, and nearly all I have kept were dull, fluttersome and stupid. Meadow and Cirl Buntings are common; in an aviary they will flap for years against the same window-pane, when a few feet off there is exit to the outer world. One Ortolan I had become tame and had a pleasant little song. In point of intelligence I should place the whole family at the bottom of the Passerines. Nor is the Golden Oriole more commendable—hard to please in the matter of food, and most time a spell-bound dreamer, with feet singularly small for so large a fowl. I have a young male now, in immature green and grey, rather like a Grey Woodpecker, that scorns even mealworms. Figs and bread pulped with boiled milk suits it better than mixed insect food.

Tits, of course, are indispensable. There is nothing stupid about them, indeed the Great Tit has almost corvine perceptions. The Crested Tit I found rather less restless than its congeners. The seeds of the stone pine, *Pignoli*, are much liked by the whole group, and Robins and Rock-Thrushes bolt them whole like pills.

Lately a pair of Bearded Reedlings have come to me in silkiest feather. They have a foreign look, and the incessant chirp and cuddling, leap-frog ways of some of the small African finches. Their black legs and straw irides, and the cock's blue head and black moustache and vent are in striking contrast with their general hue. They make my Coal and Blue Tits look shabby little ragamuffins. Coal Tits bathe until too wet to reach their perch, but the Reedlings splutter whilst the water lasts. My Greater Spotted Woodpecker spent a year in an all-wire cage chipping pieces of wood lent him for the purpose. He gave a bell-like monosyllabic cry. Afterwards, in an aviary with some Thrushes, he had a big olive tree to shuffle round, and made the most of his opportunities to hammer its hard surface for some years, and added a loud squall to his previous note. He came to hand for mealworms rather timidly, but, once there, remained and consumed the tit-bit, instead of snatching it and hurrying off, which was nice-mannered. He had a very painful bill, when handled, which made his death by rats the more surprising. The Water-Rail referred to strode about an aviary manifestly contented with any soft food and a liberal supply of fresh water. He was always in perfect feather during his two years with me, and flicked his tail and flapped about in the bushes very like a Moorhen. His reddish bill was noticeably translucent in strong sunlight. Identical in habits, with him are a pair of African Blue Coots; except that the male shed nearly all his flight-feathers* in one night last May, and that he never fails to give a loud squeak if a fire-arm is discharged near him.

BIRD NOTES FROM THE ZOOLOGICAL GARDENS.

By THE CURATOR.

The old semi-circular building near the Tunnel pond—which was formerly used for mammals and, latterly, for the smaller raptorial birds—has been repaired and flight cages have been added. It is intended to use it for the smaller Parrakeets, several of which it is hoped may breed.

The arrivals during the past month have been compara-

* This is a habit common to all Rails.

tively few. Our Waterfowl collection has been enriched by the acquisition of a male Orinoco Goose (*Chenalopex jubatus*), making a pair with the one we already possess. These beautiful South American Geese are closely allied to the Egyptian Goose, but, at the present time, are extremely rare in Europe. They are not hardy, and have to be kept from frost. The present specimen is from Mr. Blaauw's unrivalled collection of Waterfowl. Two females of the American Wigeon (*Marca americana*) and a Scaup (*Fuligula marila*) have also been acquired.

The Black-footed Penguins in the Sea-lion enclosure appear to nest at almost any time of year, but so far as my experience of them goes, they rarely hatch successfully during the summer months, but do so during our winter. We have now two fine young birds in one nest, and one in another nest (mentioned last month), and a third is being built by another pair. The parents of the above-mentioned twins are also the parents of a young bird hatched about this time last year, and, in addition to feeding the present family, the cock bird still feeds the young bird of last year.

A fine pair of North American Wild Turkeys have been presented by Sir Edmund Loder, and a fine specimen of the Pileated Parrakeet received by exchange.

Three specimens of the Bearded Long-tailed Partridge (*Dendrotyx barbatus*), and six Montezuma Quails (*Cyrtonyx montezumæ*) from Mexico have been acquired.

REVIEWS.

BRITISH BIRDS.*

In the three numbers under review this Magazine continues to contain notes and articles full of interest to those who are interested in our native birds. Mr. Dunlop contributes a good article on incubation, dealing more especially with the reason for many species commencing incubation with the laying of the first egg. Mr. Beetham takes up the theme commenced by Mr. Headley, on the position of the wings in flight, illus-

* *British Birds*, October, November, December, 1910. London: H. F. WITHERBY & Co. Price 1/- net.

trating his points with instantaneous photographs. Among the shorter notes we may draw attention to the supposed habit of some Jackdaws to daub their eggs with mud, the ceremonial habits of the Magpie and the irruption of the Crossbills. Mr. Wormald sends a further instalment of observations on his tame Snipe, and the recovery of marked birds forms an interesting feature of each number.

PRACTICAL BIRD KEEPING.

I. THE CULTURE OF FINCHES.

By Dr. A. G. BUTLER.

The Editor has suggested that I should contribute a paper upon this subject for the benefit of beginners in aviculture, and although I do not profess to know more about these birds than many others of our members, the fact that I am the author of "Foreign Finches in Captivity" probably induced him to select me for the task.

Finches are not my favourite birds, although they are tolerably easy to provide for; they are neither so easily tamed as a general rule, so intelligent, or so long-lived as so-called "Soft-billed birds" still they are very beautiful and many of them are easy to breed in captivity. They are all seed-eaters, but most of them eat a certain amount of living insect-food, especially when breeding; many of them feed also upon the green seeds of grasses, buds, small fruits and berries, and the leaves of weeds, but especially chickweed and groundsel.

The Finches, as is well known, belong to two large families—*Fringillidæ* and *Ploceidæ*; the former having the bastard-primary shorter than its coverts, the latter with it longer. The *Fringillidæ* are related to the Larks and in a lesser degree to the New World Starlings. The *Ploceidæ* in my opinion form a link between the true finches (*Fringillidæ*) and the New World Starling (*Icteridæ*).

The most insectivorous of the finches amongst the *Fringillidæ*, are the Buntings, some of the Grosbeaks, the Chaffinch group and the various forms of Sparrows; the Weavers and Whydahs amongst the *Ploceidæ*; but during the winter months

all these birds thrive without insect-food. With these general remarks respecting food we may for the present leave that subject and pass on to the housing of finches.

Undoubtedly, like most other birds, these also do best when kept in spacious aviaries having both an indoor and outdoor compartment; the indoor portion should be fitted up with natural branches the walls being partly decorated with nesting receptacles of various kinds—old straw-hats with a round hole near the edge of the crown and tacked to the wall through the rim so as to leave the hole at the highest point, cigar nest-boxes, converted travelling Hartz-cages, ordinary square Canary nest-boxes, wicker-cages with the door removed, large Weaver-birds' nests, or any other appliance suitable for finches to build in.

If delicate birds are kept, this inner compartment should be provided with hot-water pipes and sliding panels to shut it off from the outer flight during the winter months, the birds being all driven inside in the autumn and allowed egress again only with the coming of warm weather; but it is better for beginners not to attempt to keep any but hardy birds, passing on to the more tender species when they have gained experience. If the outer compartment or flight is sufficiently large, it is better for it to be as wild and natural as possible, bushes, trees and creepers being grown all over it with the exception of a central more or less winding path for the convenience of the owner. In such an aviary many finches will nest in the shrubbery without difficulty and often without the owner's knowledge provided that soft food containing egg, dried ants' cocoons, etc., with chickweed, are supplied daily, the parents finding sufficient small insects, caterpillars and spiders amongst the grass and bushes around them.

I have found it far more difficult to breed finches in cages than in aviaries, although some aviculturists have had the opposite experience; but there are a few common species which can generally be depended upon to reproduce their kind under either condition, such as the Saffron-finch, Java Sparrow, Ribbon-finch, Zebra-finch, Bengalee and Sharp-tailed finch; the Grey and Green Singing-finches will also build and hatch their young in cages and have been known to rear them: I see no reason why all the Serins should not be bred in cages although I have not

myself been successful with them. Our British Goldfinch will breed both in cage and aviary; I have myself bred it in the latter enclosure and have bred mules between it and a Canary in a large cage.

This brings me to another point with regard to the indoor culture of finches and indeed of all birds in close confinement; none of them should be permanently kept in cages which are too small for them to use their wings as freely as their legs, or to indulge in a bath whenever they are inclined to do so. Nothing is more conducive to the health of a bird than plenty of natural exercise, and cleanliness combined with fresh air.

The small stuffy cages formerly in use with seed and water hung outside and no exercise beyond a monotonous pendulum-like hop from upper to lower perch were most injurious to the health of their inmates, and more especially when their cages were hung up in a close gas-heated room and were not frequently cleaned out. I have found a cage about three feet long, eighteen inches high and eighteen inches from front to back, open only in front and with a central sliding door, none too large for a pair of small finches, if one has any wish to breed from them. There should be a metal tray sliding in from the front, a nest box in the centre upon the back wall close to the roof of the cage, a perch from front to back high up near each end and a pan of water on one side of the door, a pan of seed on the other. When breeding a small pan of soft food should be added and green food stuck through the wires near one of the perches. Hygienic fountains are cleaner than open pans, but the birds cannot wash in them and if both are supplied the birds, like human babies, will always drink from their bath.

Some aviculturists have been successful in breeding the commoner Waxbills in cages, but with me they never attempted to build excepting in a good-sized aviary and even then I never succeeded in getting them to hatch their eggs. The same is true of most of the Mannikins, though they are more ready to build and sit than the Waxbills but are so nervous that with the least alarm they spring up from the nest, kicking their eggs right and left in their excitement.

According to the late Dr. Karl Russ the Waxbills require living ants' cocoons when feeding their young, but in a large

well-grown shrubby outdoor aviary I suspect they get a sufficient quantity of tiny insects to meet the requirements of their progeny.

The Cardinals will build in an indoor aviary and also lay, though they do not always do so in the nests they have constructed, but often smash their eggs by dropping them from a branch on to the floor; in an outdoor aviary, however, they succeed far better, only they require abundant living insect food from the day that the young break the shell until about a fortnight after they leave the nest, and the quantity which each youngster eats in a day is generally so considerable that the supply fails and the young are thrown out of the nest, perhaps one alone being retained by its parents.

Finches always feed their young at first from the crop, but the more insectivorous kinds begin to feed with crushed or broken up insects when the young are only a few days old, though even then they sometimes give them the food in a partly digested condition: the young thus get triturated seeds, green food and insects combined in a moist and easily assimilated form: some of the larger finches also give broken-up earth-worms, a repulsive looking article of food which I have seen the Pine Grosbeak devour greedily.

I must now say a few words respecting the seeds which I have found most suitable for the commoner kinds of finches. For the more typical Buntings, Chaffinches and Sparrows a mixture of Canary, white millet, German rape, hemp, oats and perhaps a pinch of linseed occasionally serves admirably; but for the Cardinals I have found canary, oats and hemp most suitable with a little apple or other fruit when they will accept it; sometimes they will not touch fruit.

The Serins and our English Linnet with its allies do well upon canary, white millet and a little German rape or, when moulting, a pinch of hemp: they all delight in green food, for which the Buntings as a rule do not care much; they are also, perhaps, the least insectivorous of the true finches, though they will accept small green caterpillars or green fly: Goldfinches and Siskins, but especially the latter are eager for this kind of food and need a more liberal seed-diet; thistle, teasle, and hemp, with an occasional pinch of maw-seed being much appreciated by them.

The Grosbeaks, with a few exceptions, care little for green food, but the larger forms require a generous seed-diet; sun-flower, beech-mast, hemp, millet, canary and German rape forming a good general mixture; berries are also eaten by some of them; but the smaller forms, of which the White-throated finch may be considered typical, do well upon white millet and a little canary seed. Waxbills, in addition to the last-mentioned seeds like spray-millet and grass-seed in the ear, both in the milky and ripe stage. The Grass-finches should be treated like Waxbills although some of them never touch green food and merely use the grass-stems with their seed-panicles to build with. The Mannikins also with the exception of the Java Sparrow which likes oats or paddy rice in addition to millet and canary, should be similarly treated.

The Weavers and Whydahs eat oats and hemp as well as millet and canary and, as previously stated they are eager for insects, their larvæ, and spiders. The Long-tailed Whydah will eat cockroaches at any time as also will the Grenadier and other large Weavers. I have never seen one of these birds eating green food.

For nesting materials hay is the principal thing, to which may be added feathers, fir-needles, cow-hair, coarse cocoa-fibre, and moss with white wadding; but many of the finches use hay alone in the construction of their nests. Do not forget to supply nesting birds with abundance of cuttle-bone, crushed up eggshells or old mortar, to lessen the chance of egg-binding; and remember at this period to supply a pan of soft-food daily with plenty of living insect-food when necessary.

It is better, even in the case of birds coming from the Antipodes, not to encourage them to breed during our winter although in a heated aviary, for the young then produced are liable to be affected by sudden falls in the temperature characteristic of our very depressing climate and grow up weakly when they survive at all. My Gouldian Finches would not attempt to nest earlier than July and I had no young earlier than September, so that there was barely time for more than one nest in the season, but Zebra-finches will breed all the year round if provided with nesting-materials.

CORRESPONDENCE, NOTES, ETC.

GREEN FOOD FOR CAGE BIRDS.

SIR,—If I may venture to comment on Mrs. Stanley Flower's article in this month's Magazine, I would warn inexperienced bird keepers to be very careful *what* green stuff they give their birds, especially the tiny foreigners. Many years ago, in my quite early days of keeping these small friends, I threw a handful of green stuff on the bird room floor and the next morning, to my sorrow, picked up the dead body of my treasured Cordon Bleu! I took the dead bird to a naturalist who concluded it died of inflammation caused by eating Groundsel.

For many years I have contented myself with giving only *grass* when in flower as recommended by Dr. Butler.

I found natural perches as advised by Mrs. Flower a great delight to my birds, and always use them in my bird-room. H.E.W.

NOTES ON SUGAR BIRDS.

SIR,—Having kept several species of Sugar Birds the following notes may be of interest to your readers.

In all I have had three Yellow-wings, one Green and one Purple. The three first succumbed, at various periods, to pneumonia; the Green must, I think, have died from old age as the bird was in good condition.

The Purple is still with me, after a year, and the curious thing is that he is continually in moult; not a clean moult but a good amount of small feathers come off and green ones take their place, changing again about three months later to the purple colour. He is kept in a wooden box cage with wire front, this has a sliding door, which is put in at night, with perforated zinc air holes across the top so that he never gets a draught. His food consists of sponge cake moistened with hot water and then squeezed nearly dry, honey, Mellin's food and condensed milk made with boiling water. He is very fond of fruit which consists of grapes and oranges cut open and from which he sucks the juice. He likes mealworms but above all revels in gentles of which he will eat any quantity. The gentles, however, are never digested but pass through the bird's intestines and are often alive after voiding. I have therefore stopped giving them, as food that is not digested cannot be good. Of course Tanagers and Sugar birds seem alike in the way food passes through them so quickly.

The Purple Sugar Bird takes baths continually and keeps himself in spotless condition.

Hoping these notes may be of some use.

EDITH WARREN VERNON.



H. Gronvold, del. et lith.

Baird & Daubenton, L^{rs} imp.

COMMON CROSSBILL

Loxia curvirostris

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FEBRUARY, 1911.

NOTES ON THE BREEDING OF THE CROSSBILL.

By ALLEN SILVER.

In Vol. 5, N.S., pages 55 and 56, Mr. St. Quintin gives an interesting account of the breeding of *Pinicola enucleator*. Unless my search through our Magazine to date has been too hurried, I can find no instance of the successful breeding of Crossbills, and having been requested by our Editor to contribute some notes, I intend to deal here with an experience relating to this, enjoyed last year by a friend of mine at Tunbridge Wells.

In a pigeon-house aviary were confined five examples of *Loxia curvirostra*, three males and two females, in company with Goldfinches, Greenfinches, Siskins, Redpolls, at least one Chaffinch, a Bramblefinch and some Reed-buntings. The enclosure, which was boarded in top and bottom and one end, with the exception of perches and a bundle of fir twigs pushed tightly together up one corner, was bare and did not approach natural surroundings in the least. Nevertheless, after a time he discovered that the Crossbills were breeding, and, if my memory serves me correctly, the young were a good size before he became aware of the fact.

Whilst staying in Tunbridge Wells I paid a visit to Mr. Reed and closely questioned him regarding his pets. He assured me that the young were fed entirely from the crop, and that he supplied the parents with seed, fir cones, and branches covered with green aphides, which they freely devoured. The change in the shape of the young birds' bills occurred at an early age.*

* The tips of their bills overlapped almost directly on leaving the nest; at any rate fourteen days after this character was fully matured.

This, however, was not the only pleasure in store, because he informed me that for some weeks he had been allowing the birds their entire liberty, and that they seldom stayed away long and always returned to the aviary, or alighted on his hands when called down from the fir trees. One youngster stayed out all night, but this was found "sidling" along a clothes line early next morning, and came to call at once. To my delight he then opened his aviary door and spread his arms, offering the birds seed, and not only did the young speckled Crossbills come out but the old birds and Siskins as well, and on performing the same practice the birds alighted on the hands and arms of both myself and another friend who was with me. After a while some of them flew off into space, calling Yep! Yep! Yip! Yip! and I quite thought they had gone for ever. Mr. Reed said this was nothing unusual, and that if they did not return shortly they would before night, and, before leaving, I noticed an old red male and several young had come back, and were busily engaged with fir cones on a tree overhanging the pit in which the aviary stands, and the tamest bird of the flock was the old male that had been wild. Writing to me, Mr. Reed says he has continued the practice every few days since, and that he has still all the birds; moreover, that, whilst on his holidays abroad, the aviary door was left open by mistake and the other birds escaped, as well as the Crossbills, and that all returned with the exception of a Redpoll, which, probably, got lost; as these birds in winter can generally be taught to "home" to a decoy if not frightened. The house in which Mr. Reed lives is situated on a hill, from which one commands a full view of the surrounding countryside, and if these Crossbills and other birds had the option of roaming the whole county of Kent, and in spite of it, returned to a small pigeon-house aviary, when they could have rejoined their companions and enjoyed the sweets of liberty (as our friends put it who have never kept birds); it is a fine demonstration of the fact that small birds are incapable of deep reflection, and that their mental powers are not sufficiently complex to deal with the question as to whether they were in prison or not. The owner of these birds is fortunate in not being troubled by cats, guns, or many children, although close at hand are houses leading to the

town. In the district, earlier in the season, I saw numbers of wild Crossbills. Mr. Reed has homed other birds successfully, especially Siskins, but fears losing birds, principally owing to the instinctive impulses connected with migration and the season of love; otherwise, providing birds are not frightened and have become accustomed to a reasonable sized enclosure, he sees no great difficulty in getting them to return. He, however, can never trust a Hawfinch, which is not to be wondered at, considering no British finch takes longer to understand that a human being in the vicinity does not necessarily mean danger.

On leaving Mr. Reed, I especially asked him to inform me of the colour change in the males, both old and young, of these Crossbills, which have been fed principally upon seed, and have, with the exception of a few days now and again, been allowed entire liberty. He replied later: "The young Crossbills have now all moulted, most of them (the males) have assumed yellow plumage mixed with red, but one is a beautiful carmine tint with a few yellow feathers under the bill." This was on or about September 13th. On October 6th, I learned that both old and young males were pale yellow in colour, and the young carmine cock was splashed here and there with a few old gold feathers.

The difficulties concerned with the preservation of rose tints and pinky flushes in many birds are thus brought to mind. At the present time I have under observation a Two-barred Crossbill (*L. bifasciata*), which was caught in Maryport Docks in 1908, and was then in a yellowish garb; in 1910 it moulted (although kept indoors in a bird-room) a beautiful geranium pink. In 1895, Mr. E. G. B. Meade-Waldo, writing on the Trumpeter Bullfinch (*Erythropsiza githaginea*) in Vol. 2, O.S., speaks of a male of this species in his possession since 1888, which was then nearly as rich-coloured as a wild bird, although usually the rose-pink of the male is lost or becomes very dingy in captivity. We know also that the geranium red of the Scarlet or Sepoy Finch (*Haematospiza sipahi*) becomes orange yellow or this tone suffused with red blotches.

Mr. St. Quintin's male Pine Grosbeaks retain their colour, but usually this is lost in captivity. Mr. H. Wormald, in Vol. 7, Ser. II., page 359, gives us an instance of two immature examples

of the Lesser Redpoll (*Acanthis rufescens*) which assumed red heads and pink breasts. Of this I have known several instances. Last year, a correspondent writing to me through the queries of "Canary and Cage Bird Life," informed me of a similar occurrence with some young birds he had in his possession.

A friend in this district possesses a Redpoll, moulted in a cage, showing a pink "flush"; another was exhibited early last year, and I have in my mind two other instances at least. Concerning the Twite (*A. flavirostris*) I have never known the pinky rump retained after a moult, neither have I met with a properly cage-moulted example of the Linnet (*A. cannabina*) showing a red crown or a crimson-pink breast, except in one instance that I met with last year. This bird had a large awkwardly shaped red patch rather low down on the side of the breast. If taken before the moult in nestling dress, before a feather has been shed, or hand-reared, one may safely conclude they never attain these ornaments. If caught in winter plumage, before the colour is conspicuous, or even in the case of partly-moulted young males of the year caught in October, their brilliant plumage will come to the fore by the next Spring in a greater or lesser degree, and, after the next moult, although never again a conspicuous feature, the rusty areas on the feathers that should be reddish are clearly discernible for some time. In cage-moulted "caught" nestlings, hand-reared birds, and birds that have been moulted several seasons in captivity, practically no trace of this band of colour can be seen on turning up the breast feathers. On the other hand, when *A. cannabina* is crossed with *Serinus canaria* (dom. var.) the male offspring have the crown and breast ornament (although pale in colour) distinctly visible and, when treated with colour-food, will exhibit in the Spring this character to a marked degree, in some specimens the areas become almost red. A Rosy Pastor (*Sturnus roseus*) I had some years ago, directly after the moult, had quite a nice pink tinge, and was almost free from blemish; this, however, did not improve as the Spring came round, and every other example I have seen has invariably moulted a dirty blotched creamy tint. In the cases of a Red-backed Shrike (male) and a Lesser Whitethroat I have known the slight suffusion of pink to occur on the breast after the

moult and to be lost the next season. Unless I am mistaken, both the Scarlet Ibis and Flamingos lose, to an extent, the depth of tone relating to their pinky hues; but I can obtain no information concerning the moulting in captivity of a Roseate Tern. The beautiful rose tints in birds of this kind have always captivated me; but I cannot convince myself, owing to numerous contradictions that its presence or absence entirely depends upon food. The red crimson and rose feathers of such birds as Weavers, Cardinals, Tanagers, Goldfinches, Gouldian Finches lose nothing when they are properly moulted in captivity. In the case of *Pyrrhula europæa* it is true that the colouring of the breast feathers seems less stable; on the other hand, a discreetly fed and naturally rich-toned bird will retain its beauty for years. Zoönerythrin seems to be the colour pigment affecting red feathers in birds, and I am inclined to think it exists in its most unstable form in the case of those species that have pinky or rosy tones in their plumage. This change, which occurs usually after a moult, in no way disturbs the general health of the creature, or lessens its powers of propagation, and the only partial explanation that suggests itself to me is that these altered conditions are not conducive to the normal distribution of pigment in the course of new feather-building. Although the superstructures may be altered but little, a disturbance is set up in the formation of these highly unstable materials. New colour pigments may be built up, or a natural pigment may disappear and its place may be taken by an abnormal one. Possibly, with such birds as the Linnet and the Scarlet Rose Finch (*Carpodacus erythrinus*) a condition arises in which an abnormal amount of Zoömelanin is formed, which, fused with the natural Zoönerythrin, forms a brown or rusty area instead of a crimson one. In the case of Crossbills, Sepoy Finches, and "brassy"-looking Redpolls Zoönerythrin seems to disappear, and possibly Zoöxanthin is formed, or a green compound, due perhaps to mixtures of yellow and greyish-brown pigments. White birds, such as Snow Buntings, seem to develop a much more stable form of pigment in captivity, and Lapland Buntings usually reach quite a ripe age before their black becomes well developed.

Allowing for seasonal changes of plumage and wear and

tear, it seems that something of the kind actually does occur, although I have no grounds for asserting this, and would leave the matter in more capable hands, who perhaps might be in a position to compare the differences in the bacteria inhabiting the alimentary canals of an apparently healthy wild and tame bird.

P.S.—Whilst sending this off the owner of the Crossbills writes to say that four of the aviary-bred young birds seem to have lost their instinctive tendency to migrate or roam. They do not care to leave the trees in the garden, and when flocks of wild Crossbills are about do not mix with them.

FURTHER NOTES ON THE CROSSBILL.

By J. LEWIS BONHOTE, M.A.

Although by no means rare in suitable localities in Scotland and occasionally found in England in considerable numbers, especially after an irruption from the Continent, such as the one that took place in the autumn of 1909, this bird has had but little written about it in the pages of our Magazine, well-known as it must be to many of our members.

Shortly before receiving Mr. Silver's valuable contribution on this species, Dr. Günther kindly sent me an old cutting from the *Inverness Courier*, relating to the breeding and rearing of Crossbills in the aviaries of a Mr. Hugh Rose. As this forms, so far as I am aware, the first authentic instance of the successful nesting of these birds in confinement, I give the extract in full.

HOLME ROSS,

17.5.87.

DEAR MR. LOCHABER,—You will no doubt remember my communicating to you last year the rare find of the nest of the Crossbill, which you were good enough to mention in the *Courier*. I had the luck to catch the two old parent birds in a trap cage by putting the young birds in the decoy half of the cage, and they (the old birds) reared their young ones (two in number) in the cage in which I put them; and, with the exception of one young bird, which unfortunately got out of the cage (through eating the door away) and killed itself against the window, I now have the two old birds and their young one, which I have taken great care of, and have had them over a year; and as they are extremely tame I thought I would try an experience with them, and that was to see if they would

breed in confinement; so I separated the young bird (a hen) from the two old birds and put them in a secluded room, though not entirely isolating the last year's young bird from the old birds, as she might have pined at such a critical period as that of the breeding season. I allowed the male and female to remain in the same cage, though not a very large one, as it might have unsettled them had I shifted them into a larger cage, and placed an elder branch with a crotch on it in the cage, putting a kind of barricade of smaller twigs to make a lodgment for the nest should they have such a thing.

I then procured the necessaries for the making of the nest, and, as they showed signs of nidification, I continued to do so, and fancy! I have now got the female sitting on four eggs, since Tuesday, April 26th, in the cage. I think you will admit that I have achieved an unprecedented feat in the annals of natural history this time.

The old birds are so tame that I can stand beside the cage while the female is sitting on the nest, and the male will eat out of my hand and then feed the female as she sits on the nest.

The securing the material for the nest was tolerably easy, though rather laborious in one way, as a very great deal of stuff was required; for instance, you might get a whole handful of different stuff, and probably the Crossbill would not take any as it did not suit her. She would look at each shred and reject it, but I overcame these difficulties, as I gave her any amount of material to choose from; of course it is exactly the reverse in their wild state, they get what they require to a nicety. Before despatching this letter to you I thought it more desirable to wait till I could give you the result of the eggs—whether they were barren or not. Well, I am very glad to be able to tell you that after the female sat twelve days two young birds were hatched. She (the old bird) began to sit on April 26th, and the young birds were hatched on Sunday, May 8th. A third young bird was hatched the following day May 9th. The young birds are beginning to get their feathers and were a week old yesterday and are thriving well.

It may be interesting for you to know the size of the cage which they (the young birds) were bred in. The dimensions are as follows, viz.: Length, 2 feet; breadth, 13 inches; height, 15½ inches. The material which I gave the Crossbills to make their nest with was inner decayed bark of the lime tree, thin fibre roots, alder and larch twigs, wool, hair, and fine grass.

I shall be very glad to hear from you on the subject, and whether the Crossbill (*Loxia curvirostra*) has been known to breed in confinement before.

HUGH F. ROSE.

Professor Newton, in Yarrell's British Birds, records the nesting of a pair in the Audley End aviaries in the year 1836,

but a reference to the original record shows that, though a nest was constructed and five eggs laid, they were never incubated. Considering how well this species adapts itself to confinement, and how frequently it is to be found in bird-dealers' shops, this absence of records and notes on its habits in confinement is rather curious.

Its habits in a cage are very parrot-like, as it is essentially a climber, continually hanging in all manner of curious attitudes, and pulling to pieces any branches or woodwork with which it can come in contact.

The curious crossed-shape of the bill is a device, specially adapted to enable it to extract the seeds from the fir cones, which form its principal food, and, except on migration, it is usually found in small parties in the neighbourhood of Scotch Firs.

In habits it is a wandering bird, and every now and again large numbers visit this country from the Continent. One of these rushes occurred in the late summer of 1909. Towards the end of June small parties of these birds made their appearance in the Orkneys, Shetlands and Western Hebrides, and, a few days later, had been noticed in various places along the east coast as far south as Hampshire. At this time they were found in many unaccustomed situations, and had in consequence to feed on a variety of unusual food, such as grass seeds, daisy centres, sea pinks, and so forth. In a few weeks, however, they had passed on and were only found in the neighbourhood of Fir trees, where they were able to get their usual food, though in a strange country. Here they remained and (differing from our regular migrants) they proceeded when the season approached to breed and rear their young; records of their nesting being furnished from a number of English counties. Few, however, settled in Wales or the west of the country, and Irish records were very isolated. The last chapter of this story is still unwritten; gradually and almost imperceptibly their numbers are decreasing, whether owing to departures at the end of last summer or from natural enemies cannot be ascertained, but, although a few are still with us, another year will probably see the last of them, and we shall have to wait for another irruption before it again becomes a common bird with us.

The study of migration is luckily being more seriously undertaken at the present time than has hitherto been the case, and we may hope that when the details of this irruption, which included a large part of the Continent as well as England, have been carefully worked out, we may be a step nearer to fathoming the origin and cause of the migratory instinct.

The different plumages of the male, female and young are well shown in the plate, but much yet remains to be discovered. According to Layard, writing many years ago, the males first assume a greenish yellow dress, and, subsequently, the better known red livery. When working at the subject a few years back I came, from a careful study of skins, to the same conclusion as Layard, viz., that normally the first winter plumage is greenish yellow, and that they frequently breed while in this plumage in their first year. At the same time (I quote from my notes) 'there is no doubt that they become red to a certain extent during their first year.' Very old birds lose the red and become golden yellow. Unfortunately these birds always become yellow in confinement so that we are unable to test the matter in this direction. The female is always of a dull green, and the young are greenish with darker stripes on the breast and back.

Great differences are shown in the thickness and depth of the bill, those with the larger bills being known as Parrot Crossbills, these may quite possibly represent a distinct race, but the matter is still a debateable one. The Scotch Crossbill has recently been differentiated from the Continental birds by Dr. Hartert, and it apparently shows certain definite minor differences; but, in view of these irruptions occurring from time to time, it is difficult to understand how the differences can have arisen or remained pure, and it would have been interesting and instructive if the matter of the cross-breeding of the races had been investigated last year, which we fear was not done.

We trust that these notes may attract the attention of some of our readers to this most delightful bird, and that they may be tempted to try and fill in some of the uncertainties which still exist in regard to its habits, plumage and movements.

NESTING OF SPOTTED-BACKED WEAVERS.

By G. E. RATTIGAN.

Seeing Mr. Holden's interesting article in the November number of the *Avicultural Magazine*, I thought that perhaps it might be of interest to some of your readers if I also gave my experiences on the nest of Spotted-backed Weavers (*Hyphantornis spilonotus*).

This year (1910), unfortunately, I have been quite unsuccessful in my attempts to breed them, but in 1909 I was successful enough up to a point, though I never succeeded in actually rearing any to maturity.

Taking my experiences of 1909 first. My birds paired off about the end of March, but although the cock built several unfinished nests, he invariably pulled them down again when he had reached a certain stage in their construction. The hen during this period (from, roughly, the end of March till the second week in June) took no part whatever in the construction of the nests, but merely perched on a twig beneath the cock, apparently taking a kind of languid interest in his proceedings. At the end of the period named, however, I noticed the hen for the first time carrying a leaf to a nest that had a more finished and workman-like appearance than any I have hitherto seen. The cock bird, too, seemed even more excited than usual, and was working away at the outside of the nest as if his very life depended on his getting it finished as quickly as possible. I went in and had a look at the nest, which was suspended from the wires at the highest part of the aviary, and discovered that it was being lined by the hen with bay leaves and feathers. She seemed, by the way, to have a marked preference for the tail feathers of some unfortunate Budgerigars that were in the aviary, and had pulled the tails out of practically all of them. However, I quickly supplied her with some loose feathers and this saved the remainder.

The hen continued to line the nest for a day or two weaving the leaves and feathers into the interior of the nest with extraordinary skill, while the cock confined himself strictly to strengthening the outside, (though it was the latter that also constructed the kind of bar stretching across the interior at the

junction between the neck and the body of the nest). She then laid the first egg, and another on the following day, after which she commenced to sit, and, I think, hatched out one young one on 12th or 13th day after incubation commenced. The other egg disappeared, leaving no trace of what had become of it; and this, curiously enough, happened to each of subsequent clutches, one egg invariably disappearing.

During incubation the cock used to hang practically all day long suspended from the bottom of the nest, uttering its terrible apology for a song and flapping its wings much after the style of a clockwork butterfly. From time to time he would enter the nest, but only for a few seconds, and not, as far as I could see, with any idea of feeding the hen, but merely, I imagine, to try and find out what was keeping her shut up for so long a time.

On the second day, after the hatching of the young, the cock began to get more fussy and restless, continually popping in and out of the nest, and evidently endeavouring to persuade the hen to desert it for a new one he had commenced to build. About the fifth or sixth day after the hatching out of the young he must have evidently got to the end of his patience, for, on going into the aviary in the morning, I found every vestige of the nest had been pulled down and the young bird was lying dead amongst the ruins. I know now who was the real culprit, but, at the time, I suspected another cock of the same species, who was also in the aviary, and had him removed.

After this the cock built another nest, which was lined as before by the hen, who laid the usual two eggs, and again hatched out one young bird, but within a week after this the nest was again destroyed and the young one killed. This time I suspected a Glossy Hangnest to be the miscreant, for I discovered him pulling down a few remaining remnants of the nest, and so he also was removed.

The third time when the eggs were laid—"two again,"—I removed one and placed it under a Canary; a third egg was then laid, which I also placed under the Canary. After this no more eggs were laid, but the hen commenced to sit on the single

egg I had left and, I think, hatched out a young one on the 13th day.

I was in two minds as to the advisability of removing the cock, but finally, to my sorrow, allowed it to remain, partly because it seemed on its best behaviour. I noticed it for the first time taking food up to the nest, and also because I was afraid that in trying to catch it I might disturb the hen and cause her to desert.

All went well till the 15th day, after the hatching of the young when the nest was again thrown down and the partly-fledged youngster dead on the floor. No further attempt at breeding was made after this, and unfortunately, the cock escaped whilst being transferred to another aviary.

Last year I hoped to achieve complete success, but, unhappily, my hopes have been totally unrealised. About the middle of March I removed two other Weavers of different species that were in the aviary, and the hen soon afterwards appeared to pair off with the remaining Spotted-backed cock. This bird, however, has proved an absolute failure, as, although it has started several nests, it seems quite incapable of being able to finish one, and spends most of its time fussing round and showing off to the hen. Whether it is too excitable or too unskilled I do not know, but the fact remains that it seems quite incapable of getting beyond a certain very elementary stage in the construction of a nest.

In the end it gave up even this pretence at building, and contented itself with smothering the whole of the top of the aviary with bits of grass and hay woven together in lines from one side to the other. All the eggs laid last year were of a greeny-blue colour, very narrow and elongated, and the young were born quite naked, without the least suggestion of down of any kind. Incubation lasts, I think, thirteen days, but on this point I am not quite sure.

I hope these notes may be of interest to some of our members though I fear they are very much lacking in important details.



THE SOUTH AFRICAN GROUND HORNBILL
(*Bucorax caffer*).

From the 'Zoologist.

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West, Newman proc.

THE BROM-VOGEL.

Bucorax cafer.

By W. L. SCLATER, M.A.

During the years in which I had charge of the Museum at Cape Town I was able to secure and keep a certain number of birds and animals alive; though I must say that the opportunities for getting hold of live animals were very infrequent. This was perhaps due to the position of Cape Town, standing as it does, in the extreme south-west corner of the Colony, and on a peninsula separated almost completely from the main mass of the land.

Still, from time to time, I did have live animals and birds given to me. We had round the Museum a large open space or compound and it was possible to house some of them on this ground, while others I used to keep out in the suburbs in my own garden.

Of all the birds which I had from time to time in my possession, by far the most interesting and unusual was the South African Ground Hornbill (*Bucorax cafer*). The particular individual which I had, was given to me by Colonel Bowker, a well-known naturalist, who was associated with my predecessor at Cape Town—Mr. Roland Trimen—in his great work on South African Butterflies.

I paid a visit to Col. Bowker, a short time before he died, at his house near Durban in Natal, and there I first saw "Brom." He was more like a pet dog than a captive bird. He lived about the house following his master when he went for a walk, and squatting by the side of his chair when he was at work or reading. I was much struck with the bird, and after my return to Cape Town, to my great delight, Col. Bowker sent him round to me as a present.

The genus *Bucorax* is confined to Africa and contains two species. One of these is found throughout western and north-eastern Africa and is known as *Bucorax abyssinicus*. It is distinguished by having on its bill a considerable casque abruptly truncated and open in front, while the great wattle of bare skin in front of the neck is blue.

The South African species has much less of a casque. It is rounded off above and gradually slopes down on to the bill instead of being truncated and open in front. It also has the wattle and bare skin round the eye, bright vermilion red in the male; while in the female, the middle portion of the wattle is blue and the surrounding portion and skin round the eye is red.

As the whole of the plumage, except the white primaries, is jet black, as are also the beak and legs; and as it is as big as a full-size Turkey, often weighing 9 or 10 lbs., it is sufficiently striking in appearance.

Another character which gives the Brom-Vogel an almost human touch, is a row of long black bristles along the edge of the upper and lower eyelids.

The bird sent me by Col. Bowker was, as I have already remarked, most thoroughly domesticated. It always preferred company, and liked to come and squat down by one's side, resting on the whole length of its tarsus and partially withdrawing its head and beak between its wings. It lived chiefly in the garden and was most useful there, spending its time searching for worms and snails of which it was very fond. One day "Brom." caught a large snake and this caused great excitement. He marched up and down the lawn, dragging the snake after him and puffing out his wattle and "broming" loudly. At last he began to swallow it, head first, but alas! the snake was a long one, about four feet, and it was too much for him, but still he marched up and down trailing half the snake behind him, till at last out of pity for his distress, I had to cut the snake in two and keep the tail half for another day's meal.

"Brom" was not at all particular in his diet, he was in fact omnivorous. In addition to what he picked up in the garden, he was given kitchen scraps, and if a mouse or rat was caught it was a great treat for him. He would commence at once digging at it with his long bill until he had broken all its bones, and then he would swallow it down. Once or twice he got into the fowl run with disastrous results to the young chickens.

In the summer time, when we had tea out in the garden, he always appeared as soon as tea was laid out and was fed on bread

and butter and cakes. These he skillfully caught when thrown to him. He would also, if no one else was by, carry off the food from the table, as well as the spoons which he delighted to hide away like a Jackdaw.

Unlike other Hornbills, the Brom-vogel walks and does not hop. He can get over the ground at a good pace and I often had a good deal of difficulty in catching him if he strayed away, as he was sometimes apt to do. When flushed in a wild state, they fly, though not for very far, and I had to keep one of "Brom's" wings cut or he would have escaped altogether. At night they roost in trees and my bird was always anxious to do so, but I usually shut him up in a shed for safety sake.

The call is a kind of "boom-boom" constantly repeated until it becomes quite wearisome. Though pronounced low it can be heard at a great distance. When "booming" the red pouch was usually observed to be distended, but this was not invariably the case.

I kept my bird about two years, if I remember rightly; foolishly enough I allowed him to roost in a tree in the garden for several nights during the rainy season, and, unfortunately, he caught a chill and succumbed.

Our knowledge of the nesting habits of the Ground Hornbill is still very imperfect and uncertain. Some observers say that it builds a nest in the flat crown of a tree when the trunk has decayed away; others say that it nests in a hole in a tree trunk, but it would certainly have to be a very large hole.

There was an egg in the South African Museum taken by Col. Bowker at Old Morley, a Mission Station in Tembuland, Cape Colony. It was an elongate oval and dirty white and measured 2.95 by 1.80.

The bird is known as "Turkey Buzzard" by the English Colonists and "Brom-Vogel" among the Dutch, and is spread all over the eastern half of Cape Colony, Natal and the lower districts of the Transvaal and Rhodesia, extending as far north as Angola, Nigeria and German East Africa. Both it and the Abyssinian species can often be seen in the Zoological Gardens.

THE COMMON QUAIL.

Coturnix coturnix.

By D. SETH-SMITH, F.Z.S.

Most people are familiar enough with the subject of this paper, from seeing it, either alive or dead in the poulterers' shops. Many again, know it perhaps too well, when roasted and served on toast!

Some years ago, at certain seasons of the year, generally in the Spring, there might be seen in almost every large poulterer's shop large flat boxes with canvas tops and a row of wooden bars in front, between which appeared numerous small heads, stretched out to obtain the millet seed and water which was placed in long troughs attached to the front of these boxes. Live Quails were packed in these boxes with just enough room to enable them to move about sufficiently to get to the cage front for food and water.

It is extraordinary that these little birds managed to exist under such conditions, even for the short time which usually elapsed between their capture and execution for the table, but, unlike the majority of birds which would certainly pine and die under similar treatment, Quails appear to feed well and to fatten.

For some years past it has been illegal for a poulterer to expose for sale live Quail, and, consequently, these birds are not now seen except when dead. Nevertheless, there are probably plenty of live Quails behind the scenes, and hardly a public dinner is served in which these little birds do not form an item in the menu during the time when they are in season.

Whence come these birds in such numbers? Let us look into the life history of the Common Quail, and its presence on the table of the gourmand will be explained.

The distribution of Common Quail is very wide. It occurs over nearly the whole of Africa and most of Asia. In the Spring a general northward migration takes place, the birds suddenly appear in vast numbers along the coasts of the Mediterranean, the majority passing on to their nesting homes in Europe. Occasionally considerable numbers visit Great Britain, but since the rough land which this species loves has been broken up for

cultivation, the Quail has become less numerous as a breeding species here than it was formerly. Nevertheless, a certain number annually visit us, and the call-note of the male, which has been described as sounding like "wet-your-lips," may not infrequently be heard on quiet evenings in the Spring in our Southern and Eastern Counties.

Of skulking habits and small size, it is easily hidden by quite a small tuft of grass, and it is rarely seen until perhaps a few are shot in September. But, as a rule, the majority of Quail have commenced their southward migration before much shooting commences. It is chiefly on the northward Spring migration, when they are travelling with all speed to their nesting-homes, that Quails are caught in vast numbers all along the coasts of the Mediterranean. Long nets are employed, and either the first few live birds caught are put in small cages behind the nets to act as decoys, or else Quail calls are used to attract the passing birds. The Quails are caught in hundreds, hurriedly packed into the boxes before-mentioned and despatched to the large European towns. As many as 160,000 are said to have been captured in one season in the island of Capri alone.

But the Quail has not only the net to fear, for both along the coasts and on the islands of the Mediterranean every man who possesses a gun brings it out when the Quail arrive, and constant shooting is indulged in so long as these birds are in evidence.

In spite of all these dangers to contend with, however, the Quail is still a very common species, though probably not nearly so numerous as in the days of the exodus of the Israelites.

The food of the Quail consists of the seeds of many kinds of weeds and small insects of all sorts.

The nest consists merely of a few bits of hay or small sticks drawn together into a hollow scratched out under some thick tuft of grass. The clutch varies from six to ten or even twelve, the eggs being about an inch in length, of a creamy white colour, blotched and speckled, especially at the larger end with umbre-brown. Incubation lasts for about twenty-one days, the young following the mother from the nest a few hours after hatching. The male bird appears to take no further notice of

the female when once she has commenced to incubate, but goes away in search of another mate.

Two resident forms of the Common Quail occur, one, *C. coturnix capensis*, in South Africa, Madagascar, the Canaries, and the Cape Verde Islands; and the other, *C. coturnix japonicus*, in Japan and China. With both of these races the Common Quail interbreeds whenever they meet.

There are only four other species belonging to this genus, all of which appear to be migratory to a greater or less extent. These are *C. novæ-zealandiæ*, now said to be extinct; *C. pectoralis* of Australia; *C. delegorguei* of Central and South Africa; and *C. coromandelica* of India.

In this Journal for November, 1906, appeared some notes on the genus *Coturnix*, with a coloured plate illustrating the heads of different forms, and some remarks on their treatment in captivity; and to this readers interested in the subject are referred.

THE BREEDING OF RHEAS.

By Mrs. E. WARREN VERNON.

For some time past I have kept a pair of Rheas, and have allowed them a considerable amount of liberty, permitting them to wander at will in an orchard of over an acre, near the house, and to live as much as possible in unrestrained conditions. At the same time I have succeeded in establishing personal relations with them both, and have, therefore, been able to make close observations of their habits, as they show no signs of fear in my presence. The accompanying photo shows them coming through the orchard towards me, in response to my call of "Abraham" and "Sarah," for they know their names perfectly and invariably answer with alacrity.

It was a great delight to me when I discovered, in the spring of this year, that my Rheas had thoughts of breeding. The cock bird commenced booming in the early part of the summer, and continued doing so until June 6th, on which date the first egg was laid.

The place chosen was in the orchard amongst the elm suckers. A large space was scratched on the bare earth, and here



YOUNG RHEAS FIVE DAYS OLD.



ADULT RHEAS.

the first egg was deposited, and every other day another egg was added to the last until nine eggs were laid. When this was accomplished, "Sarah" seemed to have absolutely no further interest in them. She ignored their existence entirely while they remained eggs, but when the chicks appeared her negative attitude changed to one of positive dislike, and she became so spiteful and untrustworthy that I was obliged to keep her wired off from her young ones in case of accidents.

From the first, therefore, the whole duty of incubation fell upon "Abraham," and he sat splendidly, never leaving the nest until the sun came full on it, when he left it for a time, always returning, however, the moment any shadow fell upon the eggs. It is curious that, though there was a difference of eighteen days between the laying of the first and last eggs of the clutch, yet all the birds were hatched out within two days of each other. Incubation lasted forty-two days, from the 24th of June until the 5th of August.

The photo of the young was taken when they were five days old. They were able to run about almost at once, and were very strong and active. They caught many flies for themselves in the grass, but I provided them with plenty of food in the shape of biscuit and meal; as they grew older I gave them crushed Spratt's biscuits, and they did remarkably well on this. They were very intelligent and, when only a few days old, realized that my appearance generally coincided with the appearance of food, and would come running towards me the moment they caught sight of me. I found they had a great liking for broken bits of toast or stale bread, but they never cared for soft food of any kind, and I have not observed any of them attempt to eat it.

Abraham was the most devoted parent possible, and it was difficult to realise that it was the father-bird who so magnificently carried out the duties we usually call maternal. He brooded them at night, and never relaxed his vigilance and care by day. When he wished to call them to him, he did it by snapping his beak. I saw him one day in the rain with his wings lifted up as if they were umbrellas, and under them the young ones were cuddled up safe and dry.

In spite of his devotion, however, the parting with his offspring did not seem to be a very bitter one, for, when I removed them from his charge, he seemed a little perturbed for just a few minutes and then went off contentedly with Sarah, and forgot, I presume, all about the children he had reared with such care.

It was extraordinarily interesting to watch Abraham and his charges, for, apart from the pleasure of observing the habits of the young, the fact that such a reversal of ordinarily maternal and paternal duties was taking place, added a constant interest and amusement to the proceeding.

The young Rheas had no shelter so long as the weather was fairly fine. When they got about a month old they were brought into a very large yard, where there was grass growing and hovels all round, and at night a partition of hurdles was put up in one corner, and they were driven under with Abraham, who soon got to know his sleeping quarters. They were turned into the orchard by day.

BIRD NOTES FROM THE ZOOLOGICAL GARDENS.

By THE CURATOR.

There is little to record in the way of arrivals for the past month. A Naked-throated Bell Bird, and a pair each of Manchurian Crossoptilons, Cabot's Tragopans, Brazilian, Blue-winged and Versicolor Teal being the most important. A very interesting bird, the Nacunda Goatsucker (*Podager nacunda*) was received from a sailor who captured it at sea off the coast of Brazil, and is the first of its kind to reach the gardens. It was apparently injured on arrival but lived for nearly three weeks.

The word *Nacunda*, according to Azara, is the Indian nickname for a person with a very large mouth.

This Nightjar is found throughout the whole of South America, where it is gregarious. It is said never to perch on trees, being an inhabitant of the open pampas.

Cereopsis Geese, hailing as they do from Australia, have a habit of choosing our winter for nesting. Our pair which successfully reared a young bird in 1909, are now busy in building a nest and we hope they may be successful in rearing a brood.

The old Kestrel's Aviary has been re-named the "Crescent Aviary." It has been partially stocked with Budgerigars and Black-checked Lovebirds, and later it is hoped to add several other species of Parrakeets.

Mr. Pauwels has most kindly presented the Society with one of his celebrated blue Budgerigars and has promised a mate for it of the same variety. At present the *rara avis*, a hen, occupies a large cage in the Parrot House with a mate of the normal colour.

CORRESPONDENCE, NOTES, ETC.

SHAMA CATCHING FISH.

SIR,—I think the following occurrence is rather unusual and so am sending a brief account of it on to you.

Some time ago I procured some minnows and other small frogs for a Kingfisher I had, but which unfortunately drowned itself, I fancy, through hitting it's head on the bottom of the tank which contained the fish.

I should feel very much obliged if some member who has kept these birds would inform me whether the tank containing the fish should be deep or very shallow.

When the Kingfisher met its fate I had still a number of these fish left, which I kept in a fair-sized glass aquarium in a storeroom attached to my aviaries.

One day, whilst I was in this store room, I noticed a Shama which I possess, and which often follows me into it on the lookout for titbits, sitting on the edge of the aquarium eyeing the fish with evident interest.

I did not take much notice of him at the time, but soon afterwards was very surprised to see him fly off to a shelf with a fish in his beak and then proceed to quickly despatch it with a few blows on the head, after which he devoured it piecemeal with relish. After this I supplied him with two or three fish every morning as long as the supply lasted, sometimes in a shallow and sometimes in a deep receptacle, and it was most interesting to observe the extraordinary skill with which he secured the fish with equal ease from the one or the other.

In the case of a shallow vessel being used, he would either chase the fish until he came up with it, when he never failed to secure it at the first attempt, or else he would jump boldly into the water and secure the fish as it dashed past him. In the case of a deep vessel being used, he would sit quite motionless at the edge until an unwary fish approached the surface, when he was on it like a flash and seldom failed to secure it, often plunging his head well under the water in the effort.

Some of the other inmates of the aviary, notably several species of Yellow Weavers and a pair of Cuban Blue Thrushes, probably stimulated by the example of the Shama, soon began to try their skill at the game, but were very amateurish at the business and moreover only attempted to secure the fish when placed in a shallow receptacle, and even then had considerable difficulty in effecting a capture.

In view of the above it would be interesting to know whether the Shama ever attempts to catch fish in its wild state, as from the extraordinary dexterity displayed by my own bird, I should fancy it does!

GERALD E. RATTIGAN.

[This note seems to us of exceptional interest, and we hope that any of our members who keep Shammas will try their pets with fish, in order to ascertain whether this habit is an individual one or common to all Shammas.

—ED.]

PRACTICAL BIRD-KEEPING.

II. THE BRITISH WARBLERS.

By W. E. TESCHEMAKER, B.A.

I sincerely wish that this subject had been allotted to some more experienced aviculturist than the writer, because undoubtedly the treatment of the *Sylvinae* in captivity presents special difficulties of no mean order, and there is considerable divergence of opinion as to the most suitable methods of feeding and housing. Nevertheless, having some time since promised our excellent Editor any small assistance that I was in a position to offer, I felt that I must not fail him the very first time I was called upon.

I shall make no excuse for endeavouring to point out the principles involved in the various methods of treatment, which we shall have to discuss, because I have always most fully realized the truth and importance of our Editor's recent remark that it is those aviculturists and those alone who take a *theoretical* interest in birds that derive the maximum of enjoyment and the minimum of disappointment from their hobby. With these preliminary remarks I will turn at once to my subject and commence with:—

A list of the Warblers that have occurred in Britain and have been successfully kept in captivity.

N.B.—Some species, such, for instance, as Savi's Warbler,

have been kept in Germany and have even been imported into this country, but are omitted on account of their rarity.

		INS.			
FRUIT-EATERS.	Tails nearly square	<i>Sylvia</i>	Blackcap 5.75 (Möuch-grasmücke)		
			Garden Warbler .. 5.75 (Garten-grasmücke)		
			Orphean Warbler .. 6.0 (Orpheus-grasmücke)		
			Whitethroat 5.5 (Dorn-grasmücke)		
			Barred Warbler .. 6.5 (Sperber-grasmücke)		
			Lesser Whitethroat.. 5.25 (Muller-grasmücke)		
	Tails slightly rounded	<i>Hypolais</i>	Icterine-Warbler .. 5.2 (Spott-vogel)		
			Melodious Warbler.. 4.9 (Sänger-Laubvogel)		
			Tails more rounded	<i>Acrocephalus</i>	Great Reed Warbler 7.3 (Drossel-rohrsänger)
					Reed Warbler .. 5.25 (Teich-rohrsänger)
Marsh Warbler .. 5.25 (Sumpf-rohrsänger)					
Sedge Warbler .. 5.0 (Schilf-rohrsänger)					
BERRY-EATERS.	Tail rounded	<i>Locustella</i>	Grasshopper Warbler 5.4 (Heuschrecken-grasmücke)		
	Tails forked	<i>Phylloscopus</i>	Chiff-chaff 4.6 (Weiden-Laubvogel)		
			Wood-wren 5.2 (Wald-Laubvogel)		
			Willow-wren 4.9 (Fitis-Laubvogel)		
		<i>Regulus</i>	Gold-crest 3.6 (Gelbkopfiges-Goldhähnchen)		
			Fire-crest 3.7 (Feuerkopfiges-Goldhähnchen)		

I have attempted to classify the above species in the first place according to their diet (*i.e.* diet additional to insects). Be it noted that the "Fruit-eaters" will also consume berries but the "Berry-eaters" will not, as far as my experience goes, also consume (wall) fruit, though the Chiff-chaff and the Willow-Wren will, in captivity, eat a little banana.

Secondly, I have endeavoured to classify them according to the shape of their tails. There is a lot in tails—almost as much, in fact, as in beaks. The square, or nearly square, tail connotes a species that does not depart much from the ordinary types of Passerine birds; it is not highly specialized; it is generally seen perching in fairly open situations and is not remarkably skilful in capturing insects. The slightly-rounded tail

connotes a species which generally haunts fairly thick covert, into which it slips like magic when disturbed; it is seldom seen at any considerable height above the ground.

The more rounded tail connotes a species which has been to some extent modified by environment; a species which spends a large portion of its life in threading its way through dense reed-beds and sedge tangles. A still more rounded tail is that of the Grasshopper Warbler, a bird which I have watched for hours creeping through the thickest undergrowth like a mouse. We obtain a good idea of this type of tail if we imagine that the undergrowth closing behind the passage of the bird has in the course of long ages gradually worn away the tips of the outer rectrices. (I do not say that the tail has actually been modified in this way, though this is conceivable). This type of tail (though carried to a greater extreme) is exemplified by the Bearded Tit, which passes its life in slipping through the stems of the sedge and which will perform the remarkable feat of flitting through a reed bed without striking the reeds. This introduces us to another use of this type of tail, namely, that of instantly altering the line of flight by powerful leverage. Lastly, we come to the forked tail, which connotes a bird which is constantly making rapid darts into the air in pursuit of insects. Every one must have noticed the little "leaf-inspectors" (*Phylloscopi*), such as the Chiff-chaff and Willow Wren, eking out a scanty subsistence during the cold days of early spring by catching gnats. This type of tail, carried to a further stage of development, is found in the Swallow-like birds.

Now, inasmuch as the more highly specialized species are always least amenable to domestication, we should expect to find that the Square-tailed Warblers will do better in a state of captivity than the round- or forked-tailed species, and it is, I think, some confirmation of the above suggestions, that the order of precedence of the species in the above list might almost be accepted as indicating their degree of suitability for cage-life. There are some exceptions, of course; for instance, the Great Reed Warbler is probably a much hardier bird than the Icterine, or Melodious, Warbler, which is not surprising seeing that it is a much larger bird. An old marshman who, long years ago,

came across a pair in a reed-bed near Hickling in East Anglia, described them to me as being "as big as Mavishes" (thrushes). Mr. Galloway tells me that he considers the Chiff-chaff hardier, easier to "meat-off" and less susceptible to cold than the Reed and Sedge Warblers, and this is to some extent confirmed by the fact that it occasionally winters in our Southern counties: nevertheless, the only Chiff-chaff I ever owned was an exceedingly delicate and chilly little bird, and others have had the same experience.

I think that I have said enough to show that, when one receives a new Warbler, it is well worth while, with a view to estimating its habits and requirements, to have a look at its tail—always supposing that it possesses a tail on arrival, which is by no means always the case.

As some of the above Warblers are not well known in this country I have also classified them by their comparative sizes (length in inches).

Lastly, I have added the names by which these species are known in Germany. The common species can generally be procured in this country, and we are so fortunate as to have in our member Mr. Galloway an expert who can frequently assist us in this matter; but some of the rarer Warblers are not likely to be obtained elsewhere than in Germany. In the German bird-market most of those mentioned in our list can be obtained without any great difficulty in September and May, despite the recent Protection Act.

CAGES.

Speaking generally the Warblers are better housed in aviaries than in cages: they require a large amount of exercise to keep them in health and their tail-feathers are so fragile that they are easily broken. For these reasons, the Thrushes and the Nightingale and short-tailed species, such as the Whinchat, make better cage-birds than the Warblers.

If, however, it is desired to cage them, the cage should be a large one—let us say 3ft. long. It should have a canvas top to prevent injury to the head: if birds are alarmed at night it will be found that they always fly upwards, possibly because the inherited experience of their race has taught them that their

nocturnal enemies are mostly four-footed. In a large cage one usually sees a large number of perches but this appears to me to be quite a wrong principle. We shall only require two perches and those should be set as far apart as possible and should be twigs of varying diameter, thus preventing any tendency to cramp. The object of setting our perches as far apart as possible is to compel our Warblers to *fly* from perch to perch (instead of jumping) thus exercising their wing-muscles. Except in a position where it is impossible to avoid draughts the ends (sides) of the cage should not be of wood. With a cage of this type it is quite easy to make a single bird take regular exercise. All that is necessary is to lightly tap one end of the cage, thus inducing the bird to fly to the opposite perch; then to tap the other end of the cage, thus driving it back to its original position. After a little practice it will be found that the bird can be made to take really hard exercise in this way and this can be continued until it shows signs of distress by opening its beak. Contrary to what might be supposed this system of exercising will not make a bird wild. I once had a Sprosser, which I used to frequently exercise in this way, and yet it became so familiar that I succeeded in training it to sing to command and several of my friends can testify that it would do this even in an out-door aviary and in the presence of strangers.

Wire netting does not look so well for cages as wiring but it is infinitely preferable because in this way only can mice be excluded. I think we can go so far as to say that any cage to which mice have access, no matter what its cost or how artistic its appearance, is a bad cage. The netting I recommend is of three-eighths of an inch mesh and can be obtained at Gamage's to order, but only in lengths of 50 yards.

AVIARIES.

A mere glance at the names of the species in our list will convince us that one type of aviary cannot possibly suit the requirements of all; and, moreover, the same design would not suit all pockets or all tastes, so in the matter of aviaries it will be better merely to suggest what should be avoided and what should be aimed at in designing a summer aviary for small insectivorous birds.

In the first place, we must have shelter from cold winds, which is best secured by a palisading of tongued and grooved boards, at least seven feet high, extending the entire length of the aviary on the North and East sides. Our aviary, however, must not be built against a wall, or a hedge, or under trees, any one of which conditions will render it absolutely impossible to prevent the ingress of mice, rats and weasels. My original aviaries are in a small walled garden and, I regret to say, I followed the conventional design and built against the walls, the inevitable consequence being that I have been continually pestered with vermin and I look upon these aviaries now as chiefly useful for winter housing. My breeding aviary has now been up almost two years; it has been absolutely free from vermin and has given better results in every way. The space between the palisading and the aviary I use partly for a service passage but chiefly for observation purposes; I have planted it with fruit trees, which bear well, and had a pair of Redstarts in it last year, which flourished exceedingly and almost fed themselves on insects. If an aviary is to be built in a walled garden, there should be a space at least 6ft. wide between its sides and the walls of the garden.

The South and West sides of the above-mentioned aviary are boarded to the height of 3ft.; where the boards enter the ground they are protected by a length of small meshed wire netting 2ft. wide, half of which width is nailed to the skirting and half is buried in a horizontal position under the soil.

The size of netting most suitable for a Warbler's aviary is five-eighths of an inch: if three-quarters of an inch mesh is used, Wrens and Blue-Tits will find their way in and carry off a quantity of live insect food.

The size and shape of a breeding aviary are, I think, immaterial; if it is mouse-proof, sunny, sheltered and not overcrowded one may reasonably hope for good results, but it is really waste of time trying to work with a mouse-ridden aviary because any breeding results will be merely flukes.

We now come to the subject of winter aviaries and we shall have a choice of three courses which we may briefly describe as (1) no heat, (2) heat or (3) some heat. So far as my

experience goes all the Warblers, except the hardy little Black-cap, and I may add the majority of the smaller insectivorous species are better for a little heat in the winter. Only the other day I found a very fine Yellow Wagtail in a cold aviary in a badly collapsed condition after a night of hard frost. It was so weak that it was only with the greatest difficulty it could swallow a mealworm and it would undoubtedly not have survived another night in the open. I caught it and placed it in a heated aviary and in two days time it had perfectly recovered.

If we decide to heat our winter aviary we still have to consider whether our Warblers shall be confined solely in the heated portion, or whether they shall be allowed access to the outer flight. Some years since I determined to give the former system a good trial and I accordingly built a small house measuring 12ft. long by 8ft. wide by 7ft. high, the sides being entirely of glass and the roof having two glazed lights, each 30ins. by 24ins. of double glass with an air space between to avoid loss of heat. One side is planted with large clumps of Bamboo and Eucalyptus; on the other side is a large quarantine cage, a small division for invalids and an apparatus for rearing Quails. The foundations are of brick and are mouse-proof and the large ventilating windows (each 4feet long) are screened with mouse-proof netting. The pipe-area is large and the temperature averages 65°. Last winter I quartered all my Warblers here and the result was most promising. Every sunny morning there was a continuous chorus of song, the Lesser Whitethroats contributing the tenor parts, the Greater Whitethroats the baritone and the Garden Warblers, whose song closely resembles the Black-birds', the bass. To enter this little aviary on a bleak, chilly morning was to pass in a single moment from mid-winter to mid-summer. All the Warblers moulted successfully and, when I turned them out in May, they were in the pink of condition. Then came the disappointment! The weather was cold, especially at night. The first day or so all went well. After that there was no more singing and I saw clearly that something was wrong: they seemed to be getting light-headed, flying aimlessly about and striking the netting or hanging head downwards from the roof of the aviary. I caught up two or three and replaced

them in the warm aviary where they recovered, but the rest died. The fact was I had turned them into hot-house flowers and at the first breath of our chilly May weather they simply withered away.

Nevertheless, for wintering delicate foreigners and for singing birds I find this little house invaluable and I think it quite likely that, if these Warblers had been cooled off gradually, they would have turned out much better.

On the whole, I think the best system for small migrants is that which I have described as "some-heat," although this practically means that most of my birds spend much of the day in the heated house and roost at night in a bush in the open. I hang up brushwood close to the roof in the house and let them take their choice. Some roost in and some roost out: probably every bird knows what suits its constitution best. At all events after an extensive trial I find the system answers well.

One word as to management. One constantly sees advice given to beginners to keep insectivorous birds in separate aviaries. I regard this advice as quite mistaken. It seems to me that the more soft-bills are mixed up with hard-bills and distributed amongst the different aviaries the better: by this method we get less fighting and whatever food supplies the aviaries afford in the form of live insects is fully taken advantage of.

FEEDING.

There is probably no subject on which aviculturists differ more than that of the feeding of insectivorous birds. This alone shows that we have not yet devised a good system of feeding, because, if there were such a system, everyone would adopt it. As a matter of fact I do not believe that more can be done with insectivorous birds to-day than was done a couple of centuries ago. In the first avicultural article I ever wrote (I think it appeared in the *Zoologist* in 1887) I showed that the Swallow was successfully kept in a cage through a whole winter more than one hundred years ago, and I gave instances of the successful domestication of the Martin and Swift. Yet when, years later, a Swallow appeared on the show-bench, everyone thought it a marvel! Until some genius introduces us to a wholesome, nutritious insect, which can be propagated cheaply and in quan-

tities at any time of the year, the feeding of Warblers must remain as it is at present, a compromise between a natural and an artificial diet.

Nevertheless, the system which I shall venture to put before you is an attempt to render the feeding of insectivorous birds more simple, more economical and more natural. I aim at feeding the Warblers entirely on live insect food but, inasmuch as this is not always practicable, it is absolutely necessary to have some kind of stock-food as a stand by. The very best I know of is Mr. Galloway's "Life" food, which, I believe, is chiefly composed of dried flies and ant-cocoons and "gram" (known in India as *saloo* or *setlu*). I use a good deal of "Life" and I should use more if I were wealthier, but a family of some forty Softbills is not fed for nothing. I, therefore, substitute for general use ordinary sponge-cakes, as sold at twenty-five a shilling. They are fairly nutritious, require no preparation, and cannot by any possibility become stale or sour. I do not crumble or damp them. There is alleged to be some egg in sponge-cakes, with regard to which I can only say "*credat Judæus Apella,*" but at all events I do not use egg in any other form. Freshly-boiled yolk of egg is, however, undoubtedly nutritious and we must also accept the fact, strange as it may appear, that some aviculturists can use even stale egg with success. For instance, our member Mr. Tinniswood Miller recently recommended (in *Bird Notes*) a soft-food mixture which included "the yokes of two hard-boiled eggs rubbed in, made up fresh *every week*" (my italics), and Mr. Miller, as we all know, is most successful with his birds.

The only practicable and inexpensive form of live insect food which I at present know of is gentles. These are somewhat indigestible and most unpalatable; hence our Warblers will not eat many at a time, and we can, therefore, afford to keep some always before them. Instead of gorging on live-food my Warblers take a few from time to time as they feel inclined, which is, of course, exactly what they would do in a state of nature. I will ask you to carefully compare this system with the conventional one of making the bulk of the food supplied artificial and giving a little live insect food as a luxury.

In the matter of obtaining gentles in the winter I think

the best course will be to give you the address of Mr. F. Fishburn, Silsden, Keighley, who can supply at reasonable rates throughout the year. I produce my own gentles in an Incubator which, however, is exceedingly imperfect (being probably the first of its kind) and is so difficult to manage that I cannot recommend it.

The above system of feeding will be found adequate for all the Warblers in our list, except the little "Fork-tails," and for these I have found Mr. Galloway's system ("Life," crumbled York cheese and chopped mealworms) fairly successful. It is important to remember that all insectivorous birds should be fed on as dry food as practicable, one advantage of which is that the crop, which has a tendency to become slimy, is kept in good order. I have known a Blackcap fed successfully on a perfectly dry mixture of Quaker Oats and small seeds, and this is the more remarkable because there is some evidence that insectivorous birds cannot digest seeds unless crushed. I have, however, seen a Black Redstart eating Canary seed, and on several occasions have noticed insectivorous birds feeding their young on small seeds, so the latter may perform some useful function even if not fully digested.

P.S.—I have omitted to say that ripe fruit should always form part of the diet.

PRACTICAL BIRD-KEEPING.—CORRESPONDENCE.

BURMESE ROLLERS.

SIR,—I have just had sent to me a Burmese Roller; the bird is poor but, I think, healthy.

Can you tell me the proper diet for the bird; raw meat seems to be the only thing it cares about, also mealworms and beetles.

The insectivorous mixture it does not seem to care about.

In the cage the Roller came in was sponge cake and *millet* seed, no wonder the poor creature is thin if it was expected to eat the latter.

E. J. BROOK.

The following reply has been sent to Mr. Brook:

In their wild state the Rollers are strictly animal-feeders, living upon various insects, small mammals such as mice, shrews, etc.; they may perhaps also eat frogs and newts: in fact they are far more strictly animal-feeders than the Crows, which perhaps explains why they have been so rarely kept excepting in Zoological Gardens.

Russ does not mention Rollers in his "Foreign Chamber-birds," nor

do I in my recently published "Foreign Birds for Cage and Aviary," excepting as being relatives of the Bee-eaters.

According to Naumann vegetable matter given to caged Rollers causes their death; but, as suggested in "British Birds with their Nests and Eggs," it ought to be possible to keep them upon cockroaches, raw meat, mice, frogs, newts, etc. Perhaps small fish might be also acceptable, I do not know how these birds are fed in the Zoological Gardens, but doubtless Mr. Seth-Smith would be able to tell you. A. G. BUTLER.

MANAGEMENT OF WADERS.

SIR,—Might I trouble you to give me some information about Waders? I read a rather glowing account of them by Mr. St. Quintin in Vol. I., N.S., and lately I found some correspondence written by you in Vol. V. with many more details in it.

(1) Is it any use buying newly-caught Waders in the Spring?

(2) The aviary is 48 feet by 29 feet, boarded up all round to 21 inches; north side protected by two rows of various evergreen shrubs; west side, privet; the same on the east side. It is rather damp and on clay; the pond was dug out about three feet below the general level, in order that a small stream might run through it. The banks are very stiff clay, would that be better sanded over?

(3) Is the covered-in part large enough? It is 12ft. by 6ft. and on the north-east side. I always find that birds will not go into my shelters if they are covered in very much, owing to darkness or some other reason. I can only keep the most hardy species as there is no artificial heat. The rest of the aviary is turfed over, the covered part is sanded with seasand.

(4) Will the following birds be suitable? a pair of each: Knots, Red-shanks, Common Sandpipers, Stone Curlews, Bar-tailed Godwits, with two Ruffs and several Reeves.

I should be very pleased if you would answer me through the post or in the Magazine. H. L. SICH.

The following reply has been sent to Mr. Sich:—

SIR,—In reply to your queries *re* Waders.

(1) Waders caught on the Spring migration, viz., in April, adapt themselves quite well to confinement. If their wings have been cut, the stumps of the feathers should be extracted, a few at a time, as soon as they have settled down, *i.e.* in two or three weeks, in order that they may regain the power of flight as soon as possible.

(2) The clay in the aviary should be well covered over, as otherwise it clogs on the birds' feet. I would suggest, firstly a layer of rough gravel and then a good layer of sand.

(3) The covered-in part is quite large enough, but as you are on a clay and, therefore, damp soil, it would be a good plan to have part of the floor of the shelter raised a few inches from the ground and boarded. I should also add a few clumps of tall grass or rushes in different parts of the aviary and keep the rest of the grass short.

(4) Your selection of birds should do very well, but I would suggest a few more Knots to make sure of getting a pair, and you could also do with several more Ruffs. Reeves are more difficult to procure, so get a good stock of them if you get an opportunity.



THE ANDEAN GOOSE
(*Bernicla melanoptera*).

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THE ANDEAN GOOSE.

Bernicla melanoptera.

By F. E. BLAAUW.

The accompanying photo is that of a pair of rare geese which I got a few weeks ago. They are known as the Andean Goose (*Bernicla melanoptera*) and come from the Chilian Lakes in the Andes. I had one specimen of this rare species previously about eighteen years ago and since its death this is the first time that I have come across the species.

The birds are about the size of the Upland Goose (*Bernicla magellanica*) but shorter in stature.

They are white all over except for the wings and wing coverts, which are black with a beautiful metallic gloss of green and purple. The transition from the dark colour to the white is not abrupt but black or brownish black spots are to be seen on the scapulars, those feathers nearest the dark portion showing more brown than those further away as may be seen on reference to the photo. The legs and feet are scarlet and the bill pink or flesh-coloured with a black nail.

The sex of the birds is at present rather a puzzle to me. Both birds puff themselves up in a remarkable way lifting their wings at the same time, they also have a peculiar little song, during the utterance of which they are continually gazing skywards.

At first I was inclined to believe that they were both males, but I am now somewhat doubtful as there is a slight difference in their voices and they are also very affectionate—preen each others feathers and are constantly about together. Next spring will, I hope, clear up my doubts on this subject.

THE ACCLIMATIZATION OF THE GREATER
BIRD OF PARADISE (*Paradisea apoda*)
IN THE WEST INDIES.

By Sir WILLIAM INGRAM, Bart.

At considerable expense I have sent expeditions to the Aru Islands, New Guinea, for the purpose of collecting that magnificent Bird of Paradise, the *apoda*. It was from the fear of its becoming extinct that I endeavoured to secure a large number of live specimens and preserve the breed by turning them loose on the Island of Little Tobago in the West Indies, and I purchased the island with the object of forming a sanctuary for them.

Little Tobago is about 400 acres in extent, thickly covered with tropical jungle and very tall trees. The climate is as nearly as possible the same as that in the Aru Islands, and as there are no snakes or vermin on the Island it is an ideal spot for the experiment of creating a stock of *apodas*. These lovely birds used at one time to be fairly plentiful in the Aru Islands. Some years ago over 3000 male full-plumaged skins were imported to Europe every year, but that number has gradually fallen off, until at the present time little more than two or three hundred skins are collected. Mr. Goodfellow,* who has been at the head of the recent British Expedition to Dutch New Guinea, reports having seen specimens of the *apoda* on the mainland; this may be a variety of the Aru Island *apoda*, and it is certainly satisfactory to learn that this species exists elsewhere. Mr. Stalker, the well-known naturalist, who unfortunately lost his life while employed on the British Dutch New Guinea Expedition, was engaged by me to collect my live birds. He received most valuable assistance from Mr. Frost, and they were fortunate enough to send home over fifty-six live specimens of the *apoda*; some of these were retained in England, a few died on the journey, but forty-eight were set free on the Island of Little Tobago. On the journey home from the Aru Islands, Mr. Frost was lucky enough to come across a most intelligent Swiss sailor, who was employed

* *Avic. Mag.*, Ser. 3, Vol. I., p. 278 (1910).

on the ship in which the birds were shipped, and who gave him much assistance in attending to them on the voyage. This man I engaged to remain as caretaker on the Island, and it is his report on the condition of the birds that I am now sending, thinking it may be interesting to aviculturists. With respect to the sex of the birds no reliance can be placed on the discrimination of Herold as, from my knowledge derived from keeping these birds in confinement for several years; it is impossible to determine the sex until the birds are two years at least in age. One bird I have, although to all appearance full-grown, I first of all took to be a hen as it showed no signs of male plumage until after the second moult, and now, after four years in my possession, it has no side plumes visible, although under the wings there are what might be termed small short chocolate-coloured plumes about four inches long; however, the bird has the head fully marked with the yellow colouring of the male, is resplendent with the emerald green throat, and it has also two long wires. Perhaps these Paradise birds do not get their full adult long side plumes until they are six or seven years old, or very likely even older than that.

The age at which these birds begin to nest is quite unknown, but I ought soon to learn from the reports of my caretaker Herold; the uncertainty, however, is whether amongst the forty-eight birds turned out on the Island there are any females at all. Out of the large number of specimens of the Paradise birds of different species I have been able to import alive into England very few have eventually proved to be hens, although, when first imported, many of them had the sombre plumage of the females. Nearly all the *apodas* that were set free in Little Tobago had no trace of male plumage, and yet, I expect most of them may turn out to be cock birds. Recently, Mr. Pauwels, the Belgian aviculturist, has received from the Aru Islands a consignment of live birds, and I have obtained from him two *apodas*, small chocolate birds; these certainly look like being females, and they will be sent out to join their compatriots in the West Indies.

* * *

The following is Herold's report, which gives the result of the experiment up to the present time.

"The *apodas* were set at large at the end of September, 1909, with the exception of a few weaker specimens, which were set free later on. There were in all forty-eight birds.

At first they did not leave the place where the tents were pitched, but kept roaming about the neighbouring trees, the tents and their old cages. I captured them again and brought them to a place which had been planted with pawpaw trees, where I let them loose again. There they stopped and seemed to get on very well, feeding on pawpaws, insects, etc., etc. About the end of December, 1909, they took to other parts of the Island, chiefly to those places where the biggest and highest trees grow. At present they are all over the Island and liable to be seen or heard anywhere.

FEEDING.

At first the *apodas* fed as stated above, chiefly on pawpaws, insects and bananas, brought to the place they frequented; but they left off feeding on pawpaws and took to the same food the Orioles or Cornbirds feed on, viz., the berries of the wild cherry tree, the grapes of palms, wild plums, and other wild fruit of the trees the Island abounds with. A great part of their food also consists of insects, and I have watched them pilfering the nests of smaller birds, eating their eggs and young ones. I have put water on different places of the Island for the birds to drink, and keep the receptacles for the same constantly filled, but the *apodas* seldom come there to drink now. I have watched them drinking the water collected in the hollow parts of trees, big leaves, etc. With the exception of two or three months in the year, we have rain enough here, which enables the birds to find water for themselves. I have planted bananas, but I do not think the *apodas* will take to that fruit very well, as I have never seen any of the birds feeding on the bananas that already grow on the Island.

LOSSES.

One day, at the beginning of December last, I found two male *apodas* fighting, and as they were entangled with each other I separated them. One bird died immediately as the other one's claws had lacerated its bowels. The remaining bird I took to the camp, bandaged it up and kept it in confinement; after four

days it got quite well again, so I set it free. While brushing the woods to make roads I found the carcasses of two male *apodas*. They must have been dead about two or three months, and it is my opinion that they were two weaker specimens which succumbed to the boisterous weather we had here at the end of last year. Some time after the birds were set free a male *apoda* came into my tent in a weak condition. I took it up, put it in a cage and gave it food and water. As it would not eat anything I gave it a dose of castor oil, but it died over night. I cannot say what was the cause of its death, there were no marks to indicate that it had been fighting. These are all the losses I know of, I do not think there are any more. I cannot keep account of the birds respecting their number as the Island is very large and covered with dense forest and thick bush. There are plenty of hawks on Little Tobago, and, although I am destroying them as fast as I can, there are always fresh ones coming over from the larger Island, Tobago; but I do not think they annoy the *apodas*, as I have never seen any attacked by hawks yet, nor found remains of one killed by a bird of prey. There are plenty of wild pigeons and fowl here the hawks feed on, and I should not like to have all the wild fowl shot, as Mr. Frost suggested at first.

There was no water on Little Tobago when I arrived, only pools collected by rain, which dried up with the exception of one place where a little pool of water could be found in the hollow of a rock the whole year through. I cut the side of the said hollow rock and placed a pipe there, leading the water into a tub. I also covered the hollow with leaves and branches. In consequence I have running water the whole year, not much, but sufficient for my own and the birds' wants. The water is fresh and wholesome.

The roads that were cut at the beginning of this year enable me to keep good control over the Island. Nobody is allowed to visit Little Tobago, and, with the exception of some neighbouring gentlemen planters and a couple of higher Government officials who came and stayed an hour or so, nobody has been here. I am planting cocoa-nut trees, and, with the exception of a small patch of land which had been cultivated in

former years and where I grow a few vegetables for my own use, the Island is kept in its virgin state.

The *apodas* have been growing a deal and are very strong on the wing, healthy and lively, but very shy. There is no change of plumage yet nor signs of mating, building nests, dancing, etc., etc., but at the least appearance of any change I shall report immediately.

It is my firm belief that, if the birds are not molested in any way and care taken to have water when need arises, they will breed in time and prosper well. There is no fear of the birds leaving Little Tobago, as they never take long flights, but keep mostly hid in the foliage of the highest trees.

There is nothing else important enough to report. If I am in need or want of anything respecting the birds or myself Mr. H. H. Tucker, a planter on the mainland, is always kindly disposed to help immediately in every way."

ROBERT HEROLD.

Mr. Herold has since sent monthly reports, but nothing new or interesting, except that he has noticed some of the *apodus* have begun to dance and that all the birds are in a healthy condition.

[As a general rule the acclimatisation and importation of natural species into parts of the world other than that to which they rightly belong cannot be too strongly deprecated. Instances of the harmful effects of such importations like the rabbits in Australia, Sparrows in America and Mongeese into Jamaica are numerous and well known. Sir Wm. Ingram's experiment stands on quite a different footing. Little Tobago is a wild and uninhabited Island standing by itself in the ocean, it has no commercial industries to upset, nor has it any special indigenous native fauna to lose. The large Birds of Paradise are being terribly harassed in their native country, and it is by no means improbable that unless legislation intervenes their total extermination will only be a matter of a few years. Under these circumstances Sir William's public spirited action in attempting to preserve for posterity one of the most beautiful of living creatures is much to be commended. Apart from this, there is another and scientific aspect to the question—our knowledge of the evolution of geographic races and the time taken for them to evolve is practically nil. It is extremely unlikely that if these birds thrive and increase they will in course of years remain exactly similar to what they now are. Differences of tint and possibly of structure are sooner or later almost bound to occur. In this case we have full details of the time and circumstances under which these birds were



WHITE-NECKED CRANE
(*Grus leucauchen*).

liberated, as well as plenty of skins to show their plumage at the present day and a comparison of the descendants of these birds, if they persist, with those from their original home should be able to throw considerable light on a practically unknown subject. For these reasons, therefore, we have cause to be very grateful to Sir William for undertaking the experiment as well as for enabling us to put on permanent record the commencement thereof, and we hope that, as time goes on he will keep us informed of the progress and welfare of the birds.—ED.]

NOTES ON THE CRANES AT LILFORD HALL.

By R. COSGRAVE.

(By kind permission of the LADY LILFORD.)

I have been asked to write a short account of our birds at Lilford, and I think that I cannot do better than tell you something about our Cranes, of which we have at the present time some thirty examples, namely: two Sarns (*Grus antigone*), four White-necked (*Grus leucauchen*), two Manchurian (*Grus viridirostris*), three Demoiselle (*Grus virgo*), two Stanley (*Terapteryx paradisea*), two West African Crowned (*Grus pavonina*), two Cape Crowned (*Grus chrysoplargus*), two Hooded (*Grus monachus*), two Canadian (*Grus canadensis*), one Wattled (*Grus carunculata*), three Siberian (*Grus leucogeranus*), two Common (*Grus communis*), one American White (*Grus americana*), one Australian Native Companion (*Grus australasiana*), one Hybrid + male *Canadensis* and female *Viridirostris*.

The White-necked Cranes breed regularly with us each season, invariably rearing two young. Only two eggs are laid: these are placed on the bare ground in the centre of the compartment, surrounded by a few bents of grass and any rubbish that may be handy. The first egg is laid two clear days in advance of the second, and the male begins to incubate the first egg at once, so that it hatches two days before the other. About four hours after hatching the young begins to take food, and it is a most interesting sight to see it put out its head and neck from under the mother's wing to take a tiny insect from the bill of the father, who now becomes most industrious in providing for his family wants. When one day old the first young one leaves the nest, and is immediately taken charge of by the

male, who finds all food, and broods it in the most careful and affectionate manner.

When the second bird is strong enough to leave the nest, the mother takes charge of it, and both parents work hard from dawn until about eight p.m. searching every inch of ground for grubs and insects of all kinds. It is a very pretty sight to watch all this labour going on; as a rule each parent takes charge of one young with the idea, doubtless, to avoid overfeeding one of them more than the other. About ten days old, the young begin to take artificial food; we give them a mixture of soaked stale bread, scalded poultry meal, and the best English barley meal, this is mixed into a crumbly mess, and, in addition, they have sheep's heart or rabbit's flesh finely minced. They take this freely and grow strong; at first they are fed four times daily, which is later reduced to two meals, morning and evening. When first hatched, the young are funny-looking little creatures; their absurd long, thick legs and little body look like a boy on stilts.

During the first nine months they retain the same colour, a uniform rufous, darker on wings and back; then comes a slight change until, by the time they are twelve months old, they show a dash of white feathers on the nape and also some dull slaty feathers on the breast and sides. They remain in this condition until the moult sets in about August, and if the birds are healthy and well-cared for they then change into the adult plumage, though it is not quite perfect till after the second moult.

A young pair of these birds started house-keeping on their own account in 1907, and it is worthy to note that, in their nesting operations, they are not easily satisfied like their parents with a few handfuls round the eggs, but must have a good heap, about half-a-barrow full or more, and we have known them not to deposit their eggs for ten days after the nest was completed.

On two occasions we have been successful in rearing young Canadians (*Grus canadensis*). Unfortunately, the female and one young were killed by a female Siberian Crane, and we have only the two males left; we found these quite as easy to rear as the White-necks, and the parents equally as painstaking in their devotion to the young.

Only on one occasion has the Sarus Crane nested with us;

they successfully hatched off both eggs, but the young, I am sorry to say, died of gapes at three weeks old. This loss we attributed to stale ground, and removed the birds to a fresh and more roomy place where, we hope, they will nest this year and be successful in rearing young.

The Canadian and Mantchurian Cranes have bred together on two occasions. We have only kept one. It is a fine bird, but could not be called very handsome; he is a mixture of white and dark grey, and possesses all the characteristics of the father (the Canadian) but is slightly larger. Here, again, we found that the parents did their very best in providing insect-life, especially the Canadian, and the young were reared quite easily. Old age and rheumatism ended the long life of the Mantchurian last summer.

We find that the Crowned Cranes (*Grus chrysoplargus* and *Grus pavonina*) differ in many respects from all the other members of the family. In the first place, they never want to make friends, particularly *Pavonina*. They go to a considerable height to perch at night, and will sometimes go up during the day if a suitable place is provided in their compartment. They are large feeders of young grass, and will eat very little grain if a plentiful supply of bread and other soft food is at hand. Last summer *pavonina* made a nest of grass sticks and other things found handy in the run, but nothing more happened; as this was their first attempt at nest-making we hope that they will go one better this year and give us some eggs at least.

The Siberian Cranes make a large nest every season of flags and their roots, just far enough from the pond to be above high-water mark; during the process the male stands knee-deep in water, pulling up the flags vigorously, and passes each mouthful on to the female who is within reach, and she in like manner puts them on, or as near as she can, to the nest, without leaving her place, until a good heap is ashore, then both birds walk up to the nest and put it in order; if there is not enough to finish they then go off again and repeat the process until the nest is completed. Two eggs are laid, and, as is the case with the White-necked species, the male incubates until the laying of the second egg. It is to be regretted that these birds never succeed

in hatching young with us, and the eggs have always been clear. My view of this is that our climate does not suit them. I find that, during our summer months, they are in very poor health, and appear altogether out of sorts, and suffer much from the heat. On the approach of Autumn they begin to pick up again, and by December they are looking well; they are most happy when we get snow and frosts, and take a great delight in skipping about on the ice and sleeping thereon while it lasts. They are by far the most aquatic of all the family when it suits their purpose; they take the water like a duck, and if any young ducks should happen to be on the pond they never rest until they are all swallowed.

These Cranes are clever fishermen. I have seen them stand in the water up to their feathers for an hour or more at a time, in that well-known motionless attitude of the Common Heron; and, although they are not such experts as the Heron, they rarely miss a chance if an eel or other small fish comes within their reach. Should the first shot be missed, it is wonderful to see the lightning-like stabs with which they follow up the chase in shallow water. When a fish is secured it is at once brought ashore and receives heavy blows from their powerful bill; when killed it is, if small enough, swallowed whole, otherwise it is broken up.

I am sorry to say that their temper is not a very sweet one, the male in particular is prone to fight all other Cranes, and, with his companion, generally comes off victorious.

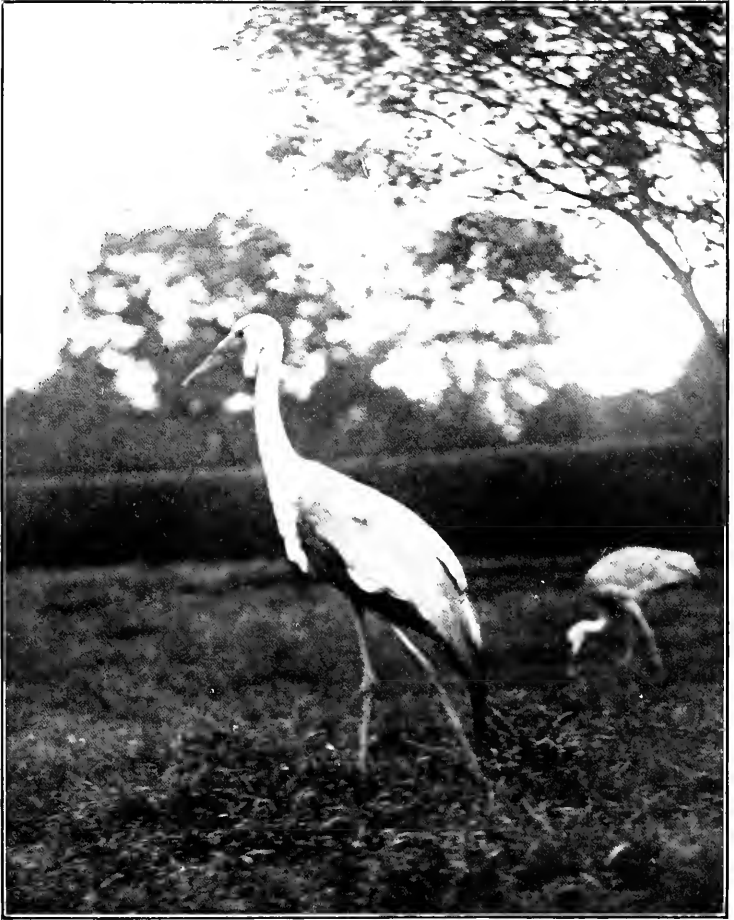
I hope these notes will be of interest to the readers of our magazine; although rather long I feel that a great deal more could be said of this most interesting and fascinating family.

THE CRYSTAL PALACE BIRD SHOW.

I. BRITISH BIRDS.

By ALLEN SILVER.

On the occasion of this annual exhibition of prize winning specimens of native birds, a fine collection were on view. Finch-like birds were well to the fore, Bullfinch (males) numbering 38, and the hens 17. Goldfinches and Greenfinches made an



THE WATTLED CRANE
(*Grus carunculata*).

exceptional show, the former numbering 41 and the latter 24. Linnets were short in number and the quality below the average, only 18 birds competing. Chaffinches were good, twenty-three excellent birds toeing the line. Mealy and Lesser Redpolls competed together, a large number of the former being shewn owing to the "glut" of specimens that have been obtainable this season. There were thirty birds in the class, cage-moulted "Lessers" deservedly taking premier honors, the "Mealy" examples not having experienced a moult in captivity.

Fourteen Twites made a pretty show and the eighteen Siskins were an attractive feature. Bramblefinches were shorter in numbers than usual, but the regular spangling fine polish and immaculate condition of the leading bird was alone worth a visit. Hawfinches of varying merit made up a fine class of seventeen, and eighteen Yellow Buntings formed a strong class. The class for any other species of Bunting contained six Corn Buntings, one Cirl Bunting, one Lapland Bunting, four Snow Buntings, three Reed Buntings, one Meadow Bunting and one Black-headed Bunting. The class for Hen Finches and Buntings numbered fifteen; Hawfinches, Chaffinches, Greenfinches, Twites, Linnets, Siskins, Redpolls and Buntings, etc., of the gentler sex competing for places.

The Pied, Albino and Rare Feathered Section contained birds of considerable interest. Among these we notice a "silver" Starling, a greyish white bird showing distinctly defined light silver spangles; a white Thrush, three white and two prettily pied Blackbirds, two white Goldfinches, a pied Sparrow, a pied Linnet, an exceptionally brilliant Redpoll with two large white areas on cheeks, a black Hawfinch, two black Bullfinches, a cinnamon Lark, a cinnamon Chaffinch, a cinnamon Sparrow and two cinnamon Greenfinches. The exhibition alive, tame and in perfect condition of such freaks of nature are of great interest, much more so than the preservation of them in cabinets. The institution of such class at shows has saved from the gun many a curious example of a native bird.

The Insectivorous and Soft Feeding Birds attracted many visitors. Blackbirds numbered 9, Thrushes 14, Starlings 9, and the class for Nightingales and Blackcap Warblers numbering

thirteen birds. I heard one of the former singing freely whilst judging a class near. Skylarks, although of high merit, were small in number, which was a disappointing feature considering the great age to which these birds live in confinement, and the fact that they have been easily bred and are one of the easiest birds in the world to retain alive and in song in captivity. The production of a tip-top show bird in perfect feather, however, requires considerable care.

The Small Resident Insectivorous and Seed-eating Section contained ten birds, a Nuthatch, two Goldcrests, three Tree Creepers, a Grey Wagtail, a Lesser Spotted Woodpecker and a Redstart, the last named, although a delightful bird, was "wrong-classed" owing to it not being a resident. The winner in this class, a bird never yet beaten, was a delightful example of the Dartford Warbler, claimed at the catalogue price of £12 10s., and exhibited by Mr. John Frostick of Balham, an original member of this Society. Those who do not know the delightfully captivating antics of this hardy little Warbler lost a "sight" in missing this. To exhibit for the benefit of the general public, a live specimen in perfect health and condition and remarkably tame, of a little known bird, is, to say the least, conferring a boon on the community.

Ten birds competed in the class for Small Migratory Insectivorous and Seed-eating Birds. Among these we noticed two Lesser Whitethroats, two yellow Wagtails, some Wheatears and an excellent example of the Crested Lark in perfect condition.

Large Soft Feeders were also an interesting feature, the class containing two Redwings, two Missel Thrushes, three Waxwings and a Great Grey Shrike. Extra classes this year were added for Novices, and were well filled. Among the hybrid sections were a large number of the Canary-Bullfinch cross and among other Bullfinch crosses we noticed those with the Greenfinch, Redpoll, Goldfinch, Linnet, and a bird exhibited as a Chaffinch-Bullfinch. This was wrong classed, and, from obtainable evidence and appearance of the specimen, we agree with the verdict. The bird differed only from a normal Bullfinch in having a brownish crown and white lesser wing coverts. The former seems merely an inability to have produced black feathers on the

head, and if a bird exhibits abnormal plumage in one part of the plumage, it is just as likely to do so in another. Crosses between two other British Birds numbered seventeen, they include hybrids of the following kinds:—Goldfinch-Siskin, ditto-Redpoll, ditto-Greenfinch, Siskin-Greenfinch, Linnet-Greenfinch, Redpoll-Greenfinch, Bramble-Chaffinch. Beautifully variegated, evenly-marked and perfectly clear (*i.e.* free from dark feathers) hybrids between the Canary and other Finches were to be seen. A remarkable feature being clear birds from Goldfinch, Linnet and Greenfinch with the Canary. Large classes of brilliantly coloured Dark (*i.e.* birds with no light feathers in their plumage) were also to be seen.

The immaculate condition, tameness and healthy appearance of first-rate examples of birds exhibited alive in such a manner, that the public can get a good grasp of their appearance, is a hobby which bears good fruit and is also of value to the scientist.

Colour-feeding is not now practised to that extent in which birds are entirely disfigured, it being more the custom now to use it in such a way that lost yellows are regained; moreover birds are in no way harmed constitutionally by the sweet, so-called tasteless peppers now in use. Curiously enough, Bramble Finches show a marked partiality for this kind of food, and one example, a great prize-winner (still hale and hearty, that has travelled all over the British Isles) is no less than twelve years old, as far as we know, and was not a chicken when captured. Mr. Dewar of Scotland, Mr. Swaysland of Brighton, Mr. Weston of London, and myself, were selected to adjudicate upon the birds competing in our respective classes.

II. FOREIGN BIRDS.

By D. SETH-SMITH.

In the Bird Show held by the "London and Provincial Ornithological Society," from February 3rd to 7th, foreign birds were not so well represented as at the recent show at the Horticultural Hall (see page 75). The space in the centre transept opposite the organ was curtained off and specially warmed for the occasion, but in spite of this the place was very draughty and

the show too long for delicate birds, and it is hardly to be wondered at that many owners of rarities hesitate before submitting them to the ordeal of a Palace Show. There were several very rare exhibits, foremost amongst which was a fine team of birds sent by Mons. Pauwels from Belgium, while Messrs. Maxwell and Townsend were also in the front rank.

In the first of the foreign classes, that devoted to Budgerigars, Lovebirds and Hanging Parrots, M. Pauwels easily won the first place with his pair of Blue Budgerigars. It is not often that a variety or freak is more beautiful than the normal bird from which it is derived, but in this case I think most people will agree that the delicate blue, set off by the white of the face, renders this variety more strikingly beautiful than the normal green, lovely as this bird is. Mr. Townsend's Blue-crowned Hanging Parrot, which came second, was a very perfect specimen, while the pair of Ceylonese Hanging Parrots sent by Mr. Maxwell, although uncommon cage-birds at the present time, were not in show condition.

The class for the larger Parrakeets was headed by a very perfect male Black-hooded Parrakeet (*Psephotus cucullatus*), sent by M. Pauwels; the second prize going to the same exhibitor's fine pair of Bourke's Parrakeets; third came Mr. Maxwell's pair of Browns. The Queen Alexandra Parrakeet sent by Mr. Maxwell, although a decidedly rare bird, was old and out of condition. Mr. O'Neill sent a nice pair of Ceram Lories.

The class for other Parrots was again headed by M. Pauwels with a good Hawk-headed Parrot. The Rev. G. H. Raynor's Meyer's Parrot was awarded second place, though it was not nearly such a rare exhibit as his Everett's Thick-billed Parrot which was placed third. M. Pauwels sent a so-called "Pigmy Parrot," which unfortunately escaped before the show, and was not re-captured. This bird was not, however, a true Pigmy Parrot (*Nasiterna*) but a species of *Cyclopsittacus*. No specimen of any species of true Pigmy Parrot has ever been seen in Europe so far as I am aware.

Amongst the common Waxbills, Grassfinches, &c., there was nothing to call for special mention; though in the class for the rarer species there were a few interesting exhibits. The first

prize went to a very fine Melba Finch sent by Mr. F. Howe, while M. Pauwels secured second place with a pair of Painted Finches (*Emblema picta*), the third prize going to a very fine Red-headed Gouldian Finch belonging to Mr. Maxwell, while a fourth was awarded to Mr. H. Botting for a nice pair of the uncommon Rufous-backed Mannikins. A fine cock Violet-eared Waxbill was sent by Mr. J. M. Walsh. One of the most interesting birds in this class was the Red-rumped Weaver (*Dinemella dinemelli*) shown by Mr. Maxwell which failed to secure a prize, though its rarity should, in my opinion, have stood for a good deal. I saw several of these in Germany lately, but Mr. Maxwell's bird is almost unique here.

The class for Grosbeaks, true Finches and Buntings contained a pair of Blue Grosbeaks and three Nonpareil Buntings only.

The Tanager class is always an interesting and showy one, and was no exception to the rule on this occasion.

The rarest exhibit was, undoubtedly, the cock Pretre's Tanager shown by Mr. Maxwell, which took fourth prize. The same exhibitor showing also a fine Black-backed and a Rufous-throated Tanager. The first prize went to an All-green or Neck-laced Tanager shown by Messrs. Pitchford and Stocker. Mr. Walsh sent a good Maroon and a Black, while Mr. S. Beaty showed a Tricolor and a Black-backed, and Mr. R. J. Watts a Rufous-throated.

The class for Sugar-birds, Honey-eaters, Bulbuls and Sunbirds was headed by a most perfect male specimen of a Purple Sunbird, which reflected the greatest credit upon Mr. Maxwell, its owner. It was perfectly steady and sang merrily during the show. Needless to say that, besides the first prize, it carried off several specials.

Second came a Banana Quit, belonging to Mr. Townsend, the only one in the show (there were four at the Horticultural Hall Show). Third, a Purple Sugar-bird (Mr. Arthur Morris), and, fourth, a most perfect Yellow-winged Sugar-bird belonging to Mr. Townsend. There are few birds more exquisitely beautiful than this. Mr. Maxwell sent, beside the Sunbird, a Purple and a Black-headed Sugar-bird.

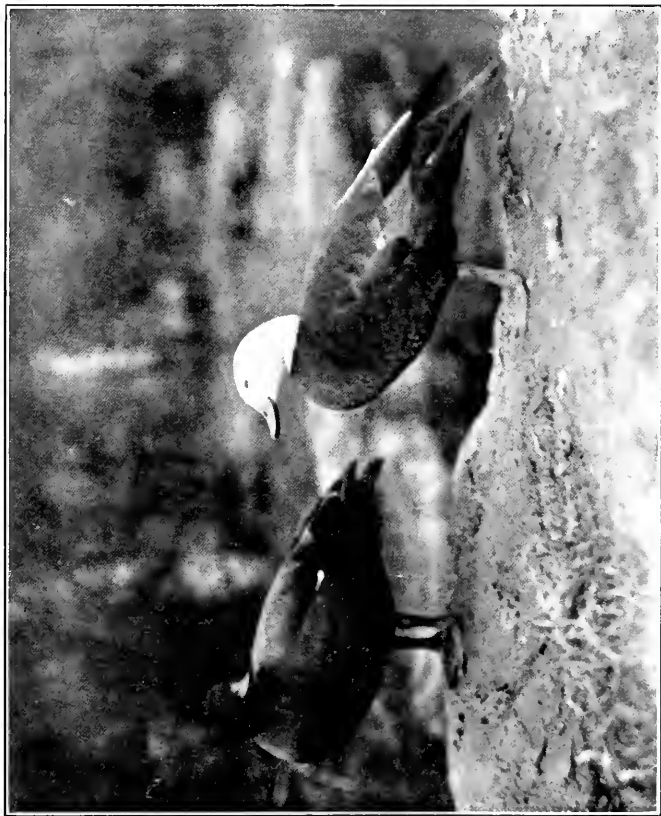
The class or classes at the end of the list, in which are placed birds belonging to species not comprised elsewhere, are always particularly interesting, and, as a rule, contain the rarest exhibits in the show. In this show there were two classes for such, the first for birds smaller, and the second for those larger than a King Bird of Paradise.

In the former of these two classes a Levaillant's Barbet was shown, but being larger than a King Bird of Paradise had to be wrong-classed. It was one of the rarest birds in the show; this specimen and the one at the Zoological Gardens being probably the only examples of this species ever imported.

The first prize in the class went to an Indian Great-billed Flycatcher shown by Mr. Maxwell, a rare and pretty bird, well shown. A White-eyebrowed Wood Swallow, belonging to Mr. Walsh, came second, and a rare Mexican Hangnest, belonging to Mr. O'Neill, third, while Mr. Walsh's fine pair of Black-headed Sibilas came fourth.

Besides the prize-winners there was a nice Blue-winged Siva (Mr. Maxwell), a Black-throated Hangnest (Mr. Townsend), and several birds of less importance.

The class for birds *larger* than a King Bird of Paradise contained perhaps the best bird in the whole collection, namely, a fine Cock-of-the-Rock. This was one of those collected by Mr. Frost for Sir William Ingram. With others, it was deposited for a time at the Zoological Gardens, where its companions remain. It passed into the hands of M. Pauwels, who exhibited it in faultless condition and, thanks to the art of colour-feeding, in its natural deep orange hue. Of course it took the first prize as well as several specials, and well it deserved all it got. The second prize-winner was a good Ariel Toucan belonging to Mr. S. Watson, while Mr. Maxwell took third with a nice Crested Wood Partridge, and Mr. Cushman fourth with a Purple Glossy Starling, the latter exhibitor showing besides an Indian Pitta.



PARADISE DUCKS
(*Tadorna variegata*).

Photo by W. S. Berridge.

West, Newman proc.

PARADISE DUCKS.

By Miss INNIS DORIEN SMITH.

In May, 1908, my brother brought me back a pair of Paradise Ducks (New Zealand Sheldrakes) from that country. I still have them well and flourishing. Of course the first year they made no attempt to nest, but the following spring I had them in an enclosed wire run (they were pinioned) on the edge of a fresh water pool, in which I had put some branches and one day under these branches I discovered the duck was sitting on two eggs.

I was afraid she would not be able to rear the young ones herself, as the place was by no means safe from rats, so I took the eggs and put them under a hen, but sad to relate only one duckling appeared and that was promptly squashed by the hen!

Last year they made no attempt at nesting although they were put in the same enclosure. I was obliged to keep them in as when they first came they had a strange habit of wandering right away, and one morning at 5 a.m., paid a call on the keeper's house in the village, a mile away at the other end of the island; and they were also found another day down on the beach and going towards the sea where they were caught and brought safely back, and for fear they might stray right away, I had to put them in the wire enclosure for the rest of the spring. Each year I have had to do the same, as every spring they wander to another part of the island.

At the beginning of last December I think they made another attempt at nesting, although the nest was never actually found, but the male disappeared across the pool for two or three days. and although they called to each other they never attempted to meet. I think he realized his wife would be furious with him for having left the nest and he was quite right, as when he did attempt to return he was driven off and violently attacked by his furious wife who would not allow him near the place! This went on for some time, but he became gradually braver and thought he must "face the music"; and now, although she is perpetually turning round and chasing him, he walks about two or three yards behind her at a respectful distance, runs away a

few yards when she attacks him and then back he comes again. I hope by degrees they will become reconciled and make another nest this spring.

They are the most talkative birds I have ever heard, and as soon as anyone appears they begin to chatter and continue to call out when anyone is about, and lay their necks on the ground and run along after one.

They are extraordinarily tame and the female lies down quite quietly to be stroked and looks as if she had been mesmerized.

It is very funny to watch the way the duck runs after the boy who feeds them and the other birds; she never stops to eat herself when he is there, but rushes about after him at every turn, calling out all the time.

They are rather pugnacious, too, and keep all the other ducks and geese, such as Sheldrakes, Carolina Ducks, White-fronted Bernicle, Chinese and Magellan gesse, in great order.

When the Paradise ducks first arrived, a Demoiselle Crane took complete charge of them and kept all the other birds from interfering and wandered after them wherever they went, and was very much perturbed when they swam out on the water farther than she could wade, but as soon as they took to wandering she had to give up her occupation as nurse.

The male and female differ considerably in size, the duck being a good deal smaller. The male has a black head and neck, with dark grey pencilled body, becoming browner towards the tail. White, green and chestnut bars on the wings and primary feathers black. The female has a white head and neck and chestnut brown body, the same white, green and chestnut bars on the wings and grey pencilling on the back, but not as distinct as the male bird.

They are much like the Australian Sheldrake without the chestnut band underneath.

I think anyone would find them most entertaining birds to add to their collection.

BIRD NOTES FROM THE ZOOLOGICAL GARDENS.

By THE CURATOR.

The most important arrivals for the past month consist of a fine King Penguin, a Jabiru Stork and a Black-necked Swan, presented by the Director of the Buenos Ayres Zoological Gardens. It is some years since the King Penguin was represented in the Gardens. The last were kept in a small enclosure with a pond near the old Sea Lions' pool, which has long since been demolished to make room for the Elands' Paddock. The present specimen will be kept with the Black-footed Penguins, and have the run of the Sea Lions' enclosure, providing it agrees with the present occupants.

A small collection, consisting of eleven Night Herons, two Rufous Pigeons and a pair of Montezuma Quails have been received from the Washington Gardens. It is hoped to establish a nesting colony of Night Herons in the Great Aviary, but at present most of the new arrivals are in the brown plumage of the first year, and they will not breed until two years old. Nevertheless, we have a few adult birds which, we hope, may breed this spring.

A very rare and pretty finch from Southern South America has just been received. This is Aldunati's Finch (*Phrygilus aldunatii*), the prevailing colour being greenish yellow, the head and wings grey. In general appearance it is not unlike a Greenfinch with a grey head.

The Waterfowl enclosures on the site of the Western Paddock have been completed and stocked. The footpath which passes the Western Aviary has been carried straight through the paddock, leaving a space of some sixty-five feet deep on the right, and a large triangular space on the left. The space on the right of the new footpath has been divided into eleven paddocks for geese. Each paddock is separated from the next by a hedge, protected on either side by wire-netting, so that the geese cannot see their neighbours. Where breeding pairs of geese are separated by wire-netting only, they spend most of their time in running backwards and forwards in their endeavour to fight with one another. The idea of division hedges originated with Mr. Blaauw, and, when visiting him in 1909, I was so impressed

with the excellence of the plan that I have wanted to adopt it in Regent's Park ever since.

The space to the left of the new pathway has been formed into an enclosure for ducks and Flamingoes. A pond with two islands has been made, and a shed built for new arrivals or birds unable to stand severe frost, and the whole has been surrounded by a rat-proof fence. The ducks here are all foreign, and comprise several rare species of Teal, such as *Querquedula cyanoptera*, *Q. discors*, *Nettion castaneum*, *N. carolinensis* and *N. formosum*. So many of the ducks and Teal prefer to nest off the ground, that I have adopted the plan of fixing nest-boxes some four or five feet above the ground against the side of trees or on stumps let into the ground, with sloping logs leading to the nests. Last year, of six boxes so placed, five were taken possession of, and from eggs laid in these boxes, we reared Andaman and Chestnut-breasted Teal and Manded Geese. We always line the boxes with turf and dead leaves.

In years gone by the Black-necked Swan bred freely in the Three-island pond enclosure, and we hope that the species will breed there again this year. It could never be kept there while the place was occupied by Flamingoes, as the male Swan is inclined to be very spiteful towards any large birds, though taking little notice of the smaller ducks. The Flamingoes have now been moved to the new pond, from which they can be run into a warm shed in specially cold weather. Frost does not kill Flamingoes, but they are apt to get frost-bitten legs and feet.

The collection of Pheasants is gradually being improved, and all the available accommodation for these birds will be fully occupied this spring. A valuable addition to the pheasantries is a cock Bornean Fireback (*Lophura ignita*), presented by the Duke of Bedford.

REVIEW.

THE EGGS OF EUROPEAN BIRDS.*

We have just received the fourth part of this book, which when completed will fill a long vacant space in the library of

* *The Eggs of European Birds*. Part IV. 80pp. and 10 coloured plates. By the Rev FRANCIS C. R. JOURDAIN, M.A., M.B.O.U. London: R. H. PORTER. 10/6 per part net.

oologists. The part under notice commences with the Fly-catchers, but is chiefly concerned with the great family of the Warblers. The order and nomenclature is brought very strictly up to date, but as, in many cases, the more familiar latin names are also added, risks of confusion are eliminated. The Breeding Range of each species, Distribution in England and on the Continent, Nest, Eggs, Breeding season and measurements are all carefully and clearly given under separate headings as well as a short synonymy and the vernacular names in different countries. This part contains ten plates, covering many species not included in the text of this particular part; they are carefully done and the colouring in most examples accurate. The text itself leaves nothing to be desired, and as a *vade mecum* to working oologists it is bound to prove an invaluable mine of information.

THE COUNCIL MEETING.

By the courtesy of Dr. Chalmers Mitchell, a Meeting of the Council of the Avicultural Society was held in the Zoological Society's new offices, Regent's Park, on Feb. 17th, when the following members were present:—The Duchess of Bedford, Miss Alderson, Mr. H. D. Astley, Mr. Newman, Mr. Willford, Mr. D. Seth-Smith, the Hon. Business Secretary, and the Editor and Treasurer. A considerable amount of routine business was transacted; and in connection with the discussion as to the award of medals for priority in breeding and rearing, it was decided that claimants for medals must be reminded that the fullest possible details must be submitted and that the report must be sent to the Editor within the specified time, that is to say, not later than eight weeks after the young have left the nest. It was also decided that the date of the winter meeting, which according to the rule must be held some time in January, be extended to February, so that for the convenience of country members it may be possible in the future to hold the meeting on one of the days of the Crystal Palace Bird Show. It was also proposed that, if possible, a friendly and informal meeting of the members of the Society shall be held in the Zoological Gardens after the

Council Meeting of July, so as to give members an opportunity of becoming personally acquainted with one another. The proposal met with unanimous approval; and it was decided to leave the settlement of the matter to the members of the Executive Committee. If the Committee find the plan feasible, due notice containing full particulars of the arrangement will be published in the Magazine.

R. I. P.

THE SOCIETY'S MEDAL.

The Council at their recent meeting have been pleased to award the following Medals.

- To Mr. H. D. Astley for breeding the RED-CAPPED PARRAKEET (*Porphyrocephalus spurinus*). Ser. 2. Vol. VII., p. 291.
- „ Mr. W. R. Pasey for breeding the BLUE-WINGED GRASS PARRAKEET (*Neophema venusta*). Ser. 2. Vol. VII., p. 357.
- „ Mr. W. E. Teschemaker for breeding JERDON'S ACCENTOR (*Tharrhaleus jerdoni*). Ser. 2. Vol. VII., p. 359.
- „ Mr. W. E. Teschemaker for breeding PELZELN'S SAFFRON FINCH (*Sycalis pelzelni*). Ser. 2. Vol. VII., p. 298.
- „ Her Grace The Duchess of Bedford for breeding HUTCHIN'S GOOSE (*Bernicla hutchinsi*) and SARUS CRANE (*Grus antigone*). Ser. 3. Vol. I., p. 36.
- „ Mr. W. E. Teschemaker for breeding the BLUE GROSBEAK (*Guiraca cyanea*). Ser. 3. Vol. I., p. 64.
- „ Mr. W. E. Teschemaker for breeding the BLACKCAP (*Sylvia atricapilla*). Ser. 3. Vol. I., p. 145.
- „ Mr. W. E. Teschemaker for breeding the RED-WHISKERED BULBUL (*Otocompsa jocosa*). Ser. 3. Vol. I., p. 208.
- „ Mr. W. E. Teschemaker for breeding the GREY-HEADED SPARROW (*Passer diffusus*). Ser. 3. Vol. I., p. 238.
- „ Mr. W. E. Teschemaker for breeding the SULPHURY SEED-EATER (*Serinus sulphuratus*). Ser. 3. Vol. I., p. 292.

OBITUARY.

It is with much regret that we have to chronicle the death of Prof. C. O. WHITMAN, of Chicago, one of our members. Although not so well known in this country, except to those whose studies lead them to read his scientific work, he was well known in America as a pioneer in developing modern methods of experimental research in Zoology. His efforts were chiefly

devoted to the study of embryology, heredity, hybridisation, and the habits of animals, and some of his most curious and notable results were obtained from the crossing of different species of Doves. Born in 1842, he studied and took his degree at Bowdoin College in 1868, after travelling and studying at various Universities abroad, he held several educational posts, and was, at the time of his death, head of the Department of Zoology at the University of Chicago, a post to which he was appointed in 1892.

PRACTICAL BIRD-KEEPING.

III. FOREIGN DOVES.

By Miss ROSIE ALDERSON.

The keeping of foreign doves and pigeons has never been a very popular branch of aviculture, though many more people keep them than in former years; and yet they are birds that have many advantages, being long-lived, hardy (with a few exceptions) and very adaptable to confinement. In many cases they will rear young whilst in captivity, and a *nesting* bird is, to my thinking, a *contented* bird; it shows that the old life of liberty is to some extent only a memory and not a regret.

Though I have kept, and still have, many other kinds of birds, yet I have gone in chiefly for keeping doves, and, at one time and another, have had more than 40 varieties.

The Fruit Pigeons are so seldom to be had, and so rarely kept, that there seems little to say about them. They vary very much in size, and are often most beautiful in their colouring, many of them being green, with perhaps a touch of purple or yellow. They need boiled maize as their staple food, prepared freshly every day, for it soon turns sour, and this is rather a drawback to keeping them, as any bird-food that has to be *cooked* is a certain amount of trouble.

In giving a list of such doves and pigeons in each family that are *generally* kept, I have thought it well to add some very brief notes on the colouring of the plumage for the purpose of identification. *Setting, therefore, the Fruit Pigeons aside, as

birds almost unknown in English aviaries, a fact much to be deplored, we come to the

TYPICAL PIGEONS (*Columbidæ*.)

THE TRIANGULAR SPOTTED PIGEON (*Columba guinea*).

A large bird, slate grey in colour, with a reddish neck of bifid feathers, the wings are dotted with triangular white spots. This pigeon's coo is a strange kind of barking noise, sounding almost unnatural in a bird. The eye is red, surrounded with bare red skin.

THE SPOT-WINGED (OR SPOTTED) PIGEON (*Columba maculosa*).

A large, but beautifully-shaped bird; the general colour being pearl and ashy grey, the wings covered with whitish spots. The eye is also grey, and the "bloom" on the neck and shoulders of a well-conditioned bird is very lovely. I look on this pigeon as almost the most beautiful of any of the larger varieties I have known.

THE WHITE CROWNED PIGEON (*Columba leucocephala*).

A handsome dark slate bird, with a whitish cap on the head and a sheen of colour, like the scales of a mackerel, on the neck.

All the above birds are too large to keep in a small aviary with other occupants, though they might do well if given an aviary entirely to one pair of birds. I have found all these pigeons hardy and all good-tempered to others of their own kind.

We now come to the Turtle Doves and their allies (*Peristeridæ*), beginning with the sub-family *Zenaidinæ*.

MARTINICAN OR AURITA DOVE. (*Zenaida aurita*).

A plump, well-shaped dove; the general colour being rich chestnut fading into purplish-pink on the breast. There are a few black and white spots on the wings, and the neck has very beautiful purple and gold reflections. The eye is full and dark. The Aurita is a very handsome dove and easy to breed, but its great drawback is its aggressive ways to others of its kind, and being a very bold bird it soon becomes master of the situation. It is very common in Jamaica.

THE WHITE-WINGED ZENAIDA DOVE (*Melopelia leucoptera*).

This bird is about the same size as the Aurita, but rather

more slender, and it has somewhat the same tyrannical disposition. Its colour is a soft drab, with a broad white band running down the wing. The eye is bright orange surrounded by a beautiful patch of bare sky-blue skin. The neck is metallic with purple and brass sheen.

We now come to the sub-family of the Turtle (*Turturinae*), beginning with the familiar

BARBARY TURTLE DOVE (*Turtur risorius*).

This dove is too well-known to need much description, and yet in spite of its being so common—a pair can be bought for two shillings—it is always beautiful in its coat of cream with black collar and bright red eyes. These birds have become so domesticated, like the Canary, that no one would think of them at the present day in the light of an imported foreign bird. They breed almost too easily in captivity, using any site or material; they are very long-lived, and can be very readily tamed. I have kept some for years as foster parents for hatching rarer doves eggs, but I never found them a great success in this way; they seem to find out they are being imposed upon and their interest in the strange young when hatched is generally short-lived. A pure white variety is known as the Java Dove.

THE MADAGASCAR TURTLE DOVE (*Turtur picturatus*).

This is a rare dove, and has not so far been kept by many aviculturists. It is grey on the head and face with a checked hinder neck, while its body is maroon and brown. In shape it is strong and sturdy, though not a large bird.

HALF-COLLARED TURTLE DOVE (*Turtur semitorquatus*).

A fine large bird, vinous colour (in varying shades) all over. The tip of the head and forehead whitish grey. It has a black hind collar with a narrow grey edge; the eyes are red.

DAMARA TURTLE DOVE (*Turtur damarensis*).

Very like the Barbary Turtle, but much greyer and smaller and with dark eyes instead of red. It is a common bird in its own land, but seldom imported to this country.

THE DWARF OR RUDDY TURTLE DOVE (*Turtur humilis*).

A beautiful little dove, very small compared to any previously described, trim and graceful in shape. The sexes are

very distinct in colour, the cock being of a ruddy colour with black wing quills and a clear ash-grey head and broad hind black collar, while the hen is dun grey except for a collar of black. The eyes of both are very dark and full. The young birds resemble the female till they are quite a large size when the ruddy feathers will be seen coming gradually. The Ruddy Turtle nests readily, but the young are often forsaken just before they can do for themselves.

THE NECKLACED DOVE (*Turtur tigrinus*).

A very lovely dove, slender in build and with a long tail. The general colour is brown, with light buffish spots on the wings. The breast is vinous, the head pinkish grey, and the eyes reddish orange. A very broad black and white checked collar round the back of the neck. This dove seems very seldom imported now, though, at one time, some years ago, it was very easy to procure it. It nests freely, and is one of the most beautiful of the dove family. The Necklace comes from Burma, but a very similar dove known as the Spotted Turtle Dove (*Turtur suratensis*) comes from India, and is really the handsomer of the two, for the eye is larger and a rich ruby-red, and the wing spots are much brighter and more distinct. My cock Spotted Turtle and my hen Necklace brought up many young ones; one year I reared seven birds.

THE SENEGAL TURTLE DOVE (*Turtur senegalensis*).

This is a very favourite little dove; in colour reddish and grey. It has a black-checked collar running round the *front* and sides of the neck, differing in this respect from most doves, for the collar is usually behind. The Senegal Dove readily breeds in captivity and is a very pretty and bright little bird, though, to my thinking, not so attractive in colouring as the Ruddy Turtle.

We now come to the aberrant TURTLE DOVES (sub-family *Geopeliinæ*).

THE BAR-SHOULDERED DOVE (*Geopelia humeralis*).

This is one of the handsomest and, at the same time, one of the most quarrelsome of all the members of the dove family. It is not a very large bird, but is long and slender in shape, with rather a small head in proportion to its size. The colouring is

chiefly grey and brown with bars of black across the wings, and a fine deep hind collar of cinnamon and black. The breast is a delicate pinkish shade, the head grey and the eye yellow, while the bare skin round is blue-grey. The two hens I have had were both smaller and duller and not so striking-looking as the cock bird.

THE PEACEFUL DOVE (*Geopelia tranquilla*).

This is another barred dove, but much smaller in size than the Bar-shouldered; its length being only about nine inches. The general colour is grey crossed with narrow black lines, the iris is bright ash-grey.

THE ZEBRA DOVE (*Geopelia striata*).

There is little difference between this dove and the Peaceful Dove, but in the latter the black bars *entirely* cross the breast, which is not so in the Zebra, also the last-named has a brown iris. It is much the more amiable bird of the two.

THE DIAMOND DOVE (*Geopelia cuneata*).

This tiny little dove is deservedly a favourite. It is very small, slender in shape and with a long graceful tail. It varies in colour, some specimens being drab, and others a clear ash-grey. The wings are dotted over with tiny white spots as if the bird had been out in a snowstorm. The colour of the eye and surrounding skin also differs; in some birds being bright ruby red, in others, greenish-yellow.

THE SCALY DOVE (*Scardafella squamosa*).

This is another small slender dove; in colour pale brownish with darker barring of brown. It is not often imported and specimens vary very much, some seeming almost black and others quite light brown, the bars in the latter case showing, of course, most conspicuously.

We now come to what Dr. Butler terms the METAL-SPOTTED DOVES (sub-family *Peristerinæ*). The first is:—

THE PICUI OR STEEL-BARRED DOVE (*Columbula picui*).

This is a very tiny little dove. I have kept many specimens and found it vary very much in colour, from grey to almost black. The hens are much browner than the cocks; the most usual colour for the latter being a soft grey. High up in the

shoulder is a bar of steel-blue feathers right across the wing. The eyes are very lovely, the iris purple surrounded with a pale straw-coloured outer ring.

THE PASSERINE DOVE (*Chamæpelina passerina*).

This is an even smaller dove than the Picui, and is found in many parts of the world. It varies very much in the ground-colour of the bird; some are almost vinous, others brown, and again I have had one bird almost black. In all, however, the ground-colour is dotted with a darker shade, giving the bird an almost scaled appearance. There are steel-blue dots on the wings, the eyes are purple, the beak orange (or in some birds yellow) with a dark-brown tip. The Passerine is very much of a ground dove and can run at a great pace.

THE CINNAMON OR TALPACOTI DOVE
(*Chamæpelina talpacoti*).

A small reddish-brown dove with steel-blue marks on the wings and a grey head. It is rather larger in size than the Passerine.

The next in order are the BRONZE-WINGED PIGEONS (sub-family *Phabinae*).

THE HARLEQUIN OR CAPE DOVE (*Ena capensis*).

This pretty little dove is sometimes called the Masked Dove. In shape it is long and slender, greyish and black in colour with a black mask (in the cock bird) over the face and throat. The bird's flight is very weak and hovering, and with its long tail-feathers it looks like some large swallow-tailed butterfly poised in the air, but it is seldom this dove flies about, for most of the day it sits quite still on its perch unless disturbed.

THE TAMBOURINE DOVE (*Tympanistria tympanistria*).

This dove is also small, but totally different in shape to the Harlequin, being round and chubby. It is a most beautiful little bird, rich chocolate brown in colour with dark metallic spots on the wings, the forehead, cheeks and breast being pure white, the contrast between this and the dark-brown is very marked. The hen has no metallic spots, and is lighter-brown in colour, and greyish where the cock is pure white.

THE AUSTRALIAN GREEN-WINGED DOVE
(*Chalcophaps chrysochlora*).

This is a very handsome bird and is always admired in an aviary. The cock is rich maroon with bright "bottle green" wings and back. The shoulder butts are pure white, the beak bright red. The hen is browner in tint, and has no white, or only very little, on the shoulder.

THE INDIAN GREEN-WINGED DOVE (*Chalcophaps indica*).

This dove is very similar to the one previously described, but, to my mind, it is the handsomer of the two, as it has a white forehead (shading into lead colour on the crown) and a white eyebrow streak which gives it a very distinctive appearance. In the hen the forehead is greyer.

THE BRONZE-WING PIGEON (*Phaps chalcoptera*).

A fine large bird, but with rather short legs in proportion to its size. It is mottled like a pheasant and, as its name implies, has beautiful metallic reflections in the wings. In my cock these reflections are emerald and fire-red, in the hen sage-green and gold, but individual specimens vary. The forehead in the cock is buff, in the hen white. The Bronze-wing nests readily, but it is too large a bird for a very small aviary.

THE BRUSH BRONZE-WING PIGEON (*Phaps elegans*).

A much smaller bird than the former and much more rounded in shape, but equally beautiful. The colouring is not mottled but rich maroon brown and grey, with bright metallic feathers in the wing. The hen is duller in colour, and has not so buff a forehead as the cock.

THE PARTRIDGE BRONZE-WING PIGEON.

(*Geophaps scripta*).

This is a very pretty little dove. In shape it is rather like the ordinary Bronze-wing, and mottled with brown and white in something the same way. It has very decided white-face markings, and the reflection in the wing is green. The nest is made in a hollow in the earth, two eggs being laid therein. It is a bird that seldom flies about, but spends most of its time on the ground. It is very quiet and never interferes with any other inmate of the aviary.

THE PLUMED GROUND DOVE (*Lophophaps plumifera*).

This is a very tiny little dove, with a long upright crest on the head. It is very active and, like the Partridge Brouze-wing, nests on the ground, and can run at a great rate. The general colour is bright cinnamon, with darker markings, and black and white face colouring, a grey and black band cross the breast. A touch of brightness is given by the bare red skin round the eye. A very similar dove in shape and colour is the White-bellied Ground Dove (*Lophophaps leucogaster*), the chief difference being that it has a white band—as well as the black and grey one—across the breast

THE AUSTRALIAN CRESTED PIGEON (*Ocyphaps lophotes*).

A very handsome bird, but rather a tyrant in the aviary. It is a fair size and well proportioned. In colour it is chiefly grey, barred over with black, with purple, green and white metallic feathers in the wings. The breast is pinkish-grey, and a black upright crest surmounts the head. The Crested Dove is very hardy and breeds well in captivity. Some birds are darker than others and, as a rule, the darker the bird the richer the metallic colours, but I look on the light birds as being far the prettier of the two shades.

We now come to the GROUND DOVES and PIGEONS (sub-family *Geotrygoninæ*).

THE RUFOUS DOVE (*Leptoptila reichenbachii*).

The upper parts of this dove are olive brown, the breast soft rufous, while the forehead is whitish, shading into grey on the top of the head. There is a purple sheen on the neck and shoulders. In shape it is stoutly built, with rather long legs. The Rufous is a very good-tempered dove and nests readily in captivity.

THE WHITE-FRONTED or VIOLET DOVE.

(Leptoptila jamaicensis).

This is one of the most beautiful of all the dove family. It is about the same size as the Rufous Dove; the back is olive brown, the neck very metallic in lights of gold, green and purple, the forehead white, shading into grey on the top of the head; the face, throat and breast pure white, with a patch of purple pink

on each side of the upper breast, the shoulder butts white. This dove does well in captivity, but it is not often that young ones are reared. It seems to feel the cold, but not to such an extent but that it can winter out of doors if protection is given.

THE RED GROUND OR RED MOUNTAIN DOVE.

(*Geotrygon montana*.)

This dove is getting increasingly rare. It is small in size and the sexes differ in colour, the cock being rufous red shading to buff on the under parts, whilst in the hen the red is replaced by olive brown. It is a timid bird and seems to have no idea of standing up for its own rights. A hen I had was fond of fruit, grapes and tomato, as well as seed.

BLEEDING HEART PIGEON (*Phlogoenas luzonica*).

This is a very striking looking bird. It is a fair size, sturdy in shape, with long legs. The upper parts are a beautiful blue-grey with darker bars, alternating with lighter ones across the wings, making four bars in all. The forehead, throat, and breast are pure white, and in the centre of the latter part is an irregular shaped patch of blood-red feathers. The back of the neck and shoulders has a lovely sheen of dark opal green, the eye is soft purple. This pigeon is fairly easy to keep, but I find it needs warmth and a dry floor in winter, as it spends much of its time on the ground, and if exposed to a wet and cold surface its feet may become diseased. It will often nest, but it is very seldom the eggs are hatched or any young reared.

THE WONGA-WONGA PIGEON (*Leucosarcia picata*).

A very large bird, slate-grey, black and white in colour. It is very handsome, with lead-grey breast patches and white chest, covered at the side of the body with triangular white spots. It is too large and heavy a bird to keep in a small aviary, though those I had were of a peaceful disposition.

THE NICOBAR PIGEON (*Caloenas nicobarica*).

This strangely-shaped bird belongs to the family of Hackled Pigeons (sub-family *Caloenadinae*). It is a large heavy bird, its prevailing colour metallic green and bronze. The neck feathers are hackled, giving the bird a most curious look, almost as if it had got wet through and had never properly dried. I

have not kept the Nicobar myself, though I have seen it in other aviaries; the bird's colouring is beautiful, but its shape very clumsy and unattractive.

(To be continued).

PRACTICAL BIRD-KEEPING.—CORRESPONDENCE.

ALLEN'S RAIL.

SIR,—I should be very much obliged if any of our members who have kept "Allen's Rails" for any length of time would communicate with me as I am most anxious to compare notes. C. BARNBY SMITH.

SHAMA CATCHING FISH.

SIR,—In reply to this interesting communication, I may say there is no doubt that fish in some form would form an excellent addition to the menu of insectivorous and partially insectivorous species, especially *fresh* water fish; and in a state of nature I opine that there are many more of our own indigenous species that so indulge than is generally supposed. I never tried my Shammas with living fish, but I well recall the fact that our esteemed member, Mr. E. W. Harper, when in Georgetown, British Guiana, fed his Tanagers on fresh water shrimps and found them very keen on such diet. I am of the opinion that the Dhyal and Water Robins (Redstarts) would be equally keen on either minute fish or shrimps from fresh water.

WESLEY T. PAGE.



H. Goodchild del

West, Newman chr.

THE SNOW PIGEON
Columba leuconota

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THE SNOW PIGEON.

Columba leuconota.

By T. H. NEWMAN, F.Z.S., M.B.O.U.

The genus *Columba* may be said to be remarkable for containing many notable examples of the most conspicuously and curiously marked birds in the whole of the splendid order *Columbæ*, but probably no bird exists anywhere with more quaint and artificial looking markings than the subject of these notes; surely no freak of the most persevering fancier has surpassed this bird in the violent contrasts and abrupt divisions of its markings and colours. If seen where one would expect to find domestic pigeons one might very well pass it for some variety of the "German Toy" class.

Though well known, and a bird when once seen is not likely to be easily forgotten, I append the following brief description, taken from an adult female specimen:—Entire head dark slate grey, contrasting strongly with the white of the neck and under parts, which become light ashy-grey on the under tail-coverts; upper surface brownish-grey, becoming purer grey on the wing-coverts; the wings are crossed by three dusky bands; the primaries, which are remarkably long, are grey; lighter towards their bases; under surface of wings ashy; lower back white, conspicuous in flight, but nearly concealed when at rest; rump and upper tail-coverts slaty-black; tail slaty-black with a most remarkable whitish band, on the central feathers it is rather more dusky than on the others and occupies about the central part of the feathers, on the lateral ones it gradually approaches nearer the tip, coming quite to the end of the outermost feathers,

which have also some white on the base of the outer webs, the effect of this band is that of a Swallow-tailed mark when the tail is closed, but when it is spread in flight, it looks like a straight white band drawn across the tail, becoming narrower at the ends. A few brownish marks on the white of the hind-neck enhance the "tame-bird" look of the Pigeon by assimilating a slightly mis-marked appearance. Iris, rather narrow, bright yellow; bare skin round the eye grey, same shade as the feathers of the head; bill dark slaty-grey, cere powdered with white; feet bright light red, with which the dark slaty-black claws contrast sharply.

The sexes are very similar, the male being a trifle larger, and his colours seem brighter and purer, the back is rather less diffused with brown and the breast appears a purer white. It is essentially a bird of rocky heights, being found at elevations, varying according to season, up to 14,000 feet; its habitat extends from Ferghana in the Russian Empire to Yarkand, Cashmere, through the Himalayas to Thibet.

Notes on its habits seem rather meagre, but I have come across the following:—Jerdon, "Birds of India," III. p. 472, writes:—"This remarkably coloured Pigeon is found in the Himalayas, . . . and is stated to frequent rocky heights and sequestered valleys, from 10,000 feet to the snow level, in large parties. It feeds in the fields, returning to the rocks to roost, and is said to be shy and wary." Hume in "Lahore to Yarkand," commenting on the above, observes:—"During the summer this species is, doubtless, as Dr. Jerdon remarks, chiefly found at heights of from 10,000 to 14,000 feet, far in the interior of the Himalayas; but during the winter it descends to the lower ranges, is common about Simla, Massuri, Murree, &c., and the valleys below them, at elevations of from 3,500 to 7,000 feet, and occasionally stragglers are killed quite at the foot of the Hills." A. L. Adams, P.Z.S. 1858, p. 497, remarks that it "Inhabits the high and rocky ranges north of Cashmere near the confines of snow; seen frequently associating with the Indian Blue Rock-pigeon (*C. intermedia*). . . . Flight strong and rapid." Again in P.Z.S. 1859, p. 187, he writes: "Gregarious: common in certain sequestered mountain-valleys on the northern Cashmere ranges.

. . . Feeding in fields in the Wurdwan Valley ; it was met with in Ledakh on one occasion." Lieut. W. W. Cordeaux, *Ibis*, 1888, p. 219, says that on April 25th at Zogila Pass, Cashmere, "Flocks of the Snow Pigeon were feeding on the patches of vegetation from which the snow had melted." While Davidson writes in *Ibis*, 1898, p. 38, "This beautiful Pigeon was very common in the beginning of May on the Sonamurg plateau (Cashmere), and occasionally among the cultivation along the Sind River as far down as Kulau. It was then in small flocks. During June we saw it occasionally at Sonamurg, singly or in very small flocks. It seemed generally to fly to and from a ridge of rocks not far from the nullah joining the Sind River close to the village of Sonamurg." Blandford, "Fauna of British India," Birds, IV. p. 32, observes: "This Pigeon, in summer at all events, is usually to be seen in flocks about rocky hill sides. I found it irregularly distributed in Upper Sikkim, common in places, rare in others at the same elevation. I never heard its call, nor apparently has any other observer, and its nidification appears not to have been noticed, except that Lieut. Cordeaux says that he found it breeding among inaccessible crags in the Ai Nullah, Cashmere, in August." I conclude my quotations with two that deal with the bird in captivity. Scully, *Stray Feathers*, VIII. p. 340, remarks: "This Pigeon is found in the upper northern regions of Nepal, but never occurs in the Nepal Valley. I kept a specimen in confinement for several months; it was very tame and not at all active. It never attempted to perch, but remained on the ground, generally in a corner of the room. When approached by Pheasants or other birds kept with it in the aviary it uttered the purring coo common to all pigeons, and used to strike at the birds with its wing when they came too near." Lastly, our member Mr. Finn, writing on the Cage-Birds of Calcutta, *Ibis*, 1901, p. 443, makes the following observations: "Before leaving the Pigeons, I ought to record the curious fact that the Alpine *Columba leuconota*, which Mr. Rutledge sometimes obtains, bears the heat perfectly well, and even shows a desire to breed. As its note has apparently not been recorded, I may mention that it is not a coo, but a repeated croak, not unlike a hiccough, and, much as the bird resembles the domestic Pigeon,

I have never seen it sweep the ground with its tail when courting, but rather raise it."

The bird was originally described in 1831 by N. A. Vigors, the first Secretary of the Zoological Gardens, in the first volume of the "Proceedings," and forty-five years later the first two examples were exhibited in the Gardens, where a few specimens have been fairly frequently represented since.

My experience of the species dates from the 4th of August 1908, when I received two birds, and a third on the 20th of the same month; these three birds were kept together. On March 25th, 1909, two of them seemed to have mated, and on April 5th I found the first egg, which must have been laid the previous day, as a second appeared on the 6th; these eggs were infertile. Another was laid on April 20th, and on the 30th I discovered them sitting on *three* eggs, all of which proved infertile; 17th of July another egg, and on the 24th the nest contained four eggs. Of course these two birds were both hens, as well as the third one, yet they had behaved just as a true pair would have done, being always together unless taking turns in sitting on the eggs.

A real pair were obtained on Jan. 6th, 1909, and a sixth example—which proved to be a cock—on July 22nd, 1909; this last bird mated with one of the original hens early in 1910, and it is to this pair that most of the following notes will refer.

I have already called attention to the extreme length of wing in this elegant bird: the tip seems to come to within about an inch of the end of the tail, this length of the wings results in extreme lightness and buoyancy of flight, accompanied by a noticeable whistling sound; from their marking, grey above and white beneath, and mode of flight, the "Gull" Pigeon would not be an inappropriate name for the bird. I have fastened up some flat boards, which are much appreciated as resting-places, but much time is spent on rather broad perches, though the birds will often alight on quite small branches, they can perch quite readily, much better than a domestic Pigeon. I think they always spend the night in the inner house roosting on the top of faggots; not very much time is passed on the ground, in fact I think they may be said only to go there to feed. They are not

quarrelsome birds, but will defend their domain from intruders ; one pair carries on constant warfare with a pair of South African Triangular Spotted Pigeons (*C. phaeonota*) which live across the way, and have quite ousted a pair of Half-collared Doves (*Turtur semitorquatus*) which formerly nested in the place which they have chosen, so much so that the poor Half-collareds did not attempt to nest last year at all, though formerly they were hardly ever without eggs or young. The other pair are hard put to it to hold their own against an aggressive pair of White-crowned Pigeons, who want the whole of their inner house (about 10 feet square) for their exclusive use.

I will now describe the notes and gestures, which are by no means the least interesting feature of this curious bird ; the usual note, which has been well described by Mr. Finn above, is a sort of hiccough ; this note is uttered when the bird is fighting, or when it wishes to drive another from the food. When the cock wishes to pay his addresses to the hen, if they are on the ground, he runs after her and utters a note like *kuck-kuck-kuck* rapidly repeated many times, the head bobbing at each *kuck*, this is generally followed by the hiccough note several times repeated ; at each the head is bobbed down while the hinder part of the body is jerked upwards so that the tail will point almost straight up, but is not spread as one might have imagined in order to display its markings ; this action is quite ludicrous to watch, and reminds one for all the world of some child's mechanical toy. If he is very excited he may give a little hop after the hen now and then, during which the tail is certainly spread and depressed a little, this is very like the action of a hen domestic Pigeon when the cock is playing up to her. The note used by the male when sitting in the nest, in order to attract his mate, seems to be a sort of combination of the two usual notes—hiccough hiccough, *kuck-kuck-hiccough*.

It is to be regretted that the nidification of this Pigeon does not seem to have been described ; perhaps Lieut. Cordeaux never actually saw the nests, but it undoubtedly nests among rocks, very likely like our Rock and Stock Doves, but whether in deep caverns like the former, or shallower depressions like the latter, it is impossible to say. For a rock-building species, I was

surprised what very substantial nests my birds built ; the pair that afterwards hatched young, placed a number of small branches in a corner of the inner house of their aviary on the top of a heap of faggots, some eight or nine feet from the ground ; this place seemed to suit them as they always sat well, the birds became tamer as nest succeeded nest ; at first the sitting bird would slip off the nest when anyone entered, but after a time the old bird would allow itself to be touched when sitting, only puffing out its feathers and gently striking with its wing.

I have thirteen eggs, laid by at least three different females, they are pure white and glossy and vary in shape to a remarkable degree, from a prolonged pointed oval to a very round form, with one end scarcely more pointed than the other, in size they about equal those of our Stock Dove ; in addition I have also an abnormally small egg, perfectly formed, but which is scarcely as large as that of a Turtle-dove.

The first egg of my breeding pair was laid on the 4th of March, 1910, the second on the 6th, a young one was hatched on the 25th ; duration of incubation nineteen days ; the egg was chipped on the 24th ; this bird lived to be about five weeks old, and is the bird described in the early stages below ; the other egg was addled. On May 14th I found a fresh egg, another being laid the following day, these hatched on June 1st ; incubation seventeen days ; these birds lived respectively for four weeks and five weeks and three days. On June 30th the old birds had two more eggs which hatched on July 18th ; eighteen, or perhaps nineteen, days incubation ; these birds died when nearly five and seven weeks old. The fourth and last set of eggs were laid on August 19th and 21st, and two more young—making seven altogether—were hatched on the 8th of September ; eighteen days incubation. One young died when four weeks old, the other was fully reared and lived until December 13th, being over three months old at the time of its death,

(To be continued).

DURATION OF LIFE IN CAPTIVITY.

By Dr. A. G. BUTLER.

Although I published an article on this subject in the April number of our Magazine for last year, I think it is of importance to continue the record, in order that whenever a complete paper on the longevity of captive birds is prepared at a later date, the full period for which the various species have been kept in health may be known.

In my former paper I mentioned various species in my collection which were still living when I wrote it; some of these have since died, but others are still living and likely to continue alive, so far as I can see, and each extra year passed in cage or aviary is of importance in a record of this nature.

GREY-WINGED BLACKBIRD: still in good health, nearly nine years.

My SHAMA is still living, having been over seven years in my possession.

SOUTH AFRICAN MOUNTAIN CHAT. Presented April 1908: the female is still living after nearly three years.

CHINESE BULBUL purchased June 1899 and still in good health: eleven years and nine months in my possession. I somehow confounded its probable age with the time I had owned it in my previous note.

ARCHBISHOP Tanager. Presented end of 1903 and still in vigorous health: over seven years.

SCARLET Tanager: Two males purchased in 1897, both living and well: fourteen years.

CHINGOLO SONG - SPARROW. One sent to me by Mr. Teschemaker in 1907 still living: over three years.

TROPICAL SEED-FINCH. One presented in November 1907 still living: over three years

FIRE-RED FINCH. One presented in November 1907 still living: over three years.

BLACK-HEADED LINED FINCH. Presented November 1907, died June 4th, 1910. As it was singing the day before, it was probably killed by the Tropical Seed-finch: two and a half years.

GOULDIAN FINCH. Birds born in 1905 are still living: five and a half years.

LONG-TAILED GRASSFINCH. Purchased 1905; still living after five and a half years in my aviaries.

ZEBRA-FINCH. Four cock birds still living after over nine years. They were born in my aviaries.

RED-HEADED FINCH. Four cock birds still living after five and six years in my possession.

YELLOW-RUMPED FINCH. Received in 1906; several still living: nearly five years.

JAVA SPARROW: one bred in 1896 or 1897 still living—over fourteen years.

LONG-TAILED WHYDAH. Received in exchange April 1907, when it was certainly not a young bird: it died while assuming its winter dress December 16th, 1910.

NAPOLEON WEAVER. I have no record of the date of purchase of my present half-dozen specimens; they have been a good many years in my possession, but probably not longer than the one recorded in my previous paper.

GRENADIER WEAVER. Presented September 1906, still in good health: over four years.

RED-BILLED WEAVER. Two still living, one of them over sixteen years in my aviaries.

COMMON HANGNEST. Both birds still in excellent health; that purchased in 1899 having been in its flight-cage about eleven and a half years.

FLAME-SHOULDERED MARSH TROUPIAL. Still living: over twenty-one years.

I have been looking up the date when my ENGLISH JAY was given to me; it was then a blue-eyed nestling. I find that I received it about June 1898 and it is still in magnificent condition, having only once been temporarily indisposed. I now very rarely give this bird raw meat, though, when I catch one, I give it a mouse: over twelve and a half years.

COCKATIEL. Received end of 1905; pair still living: over five years.

DIAMOND DOVE. Purchased 1903; male still living after over seven years.

PASSERINE DOVE. The male purchased July 1899 is still living after eleven and a half years.

TAMBOURINE DOVE. Male presented August 1902 still living after seven and a half years.

BLUE-SPOTTED DOVE. Purchased 1903, still living; over seven years.

EMERALD DOVE. Purchased 1903, still living; over seven years.

BRONZE-WINGED PIGEON. Purchased 1897; the hen is still living after thirteen years and a half.

Of the foregoing the following are the most noteworthy:—

<i>Merula bouboul</i>	Nearly nine years:	still living.
<i>Cittocincla macrura</i> ..	Over seven years:	„
<i>Pycnonotus sinensis</i> .	Eleven years and nine months:	„
<i>Tanagra ornata</i>	Over seven years:	„
<i>Rhamphocelus brazilius</i>	Fourteen years:	„
<i>Poephila mirabilis</i> ..	Five and a half years:	„
„ <i>longicauda</i> ..	Five and a half years:	„
<i>Taniopygia castanotis</i> ..	Nine years:	„
<i>Amadina erythrocephala</i>	Six years:	„
<i>Munia oryzivora</i>	Over fourteen years:	„
<i>Quelea quelea</i>	Over sixteen years:	„
<i>Icterus vulgaris</i>	Eleven and a half years:	„
<i>Agelasticus humeralis</i> ..	Over twenty-one years:	„
<i>Gerrulus glandarius</i>	Over twelve and a half years:	„
<i>Geopelia cuneata</i> ..	Over seven years:	„
<i>Chamæpelia passerina</i> ..	Eleven and a half years:	„
<i>Tympanistria tympanistria</i> .	Seven and a half years:	„
<i>Chalcopelia afra</i> ..	Over seven years:	„
„ <i>chalcospila</i> ..	„ „ „	„
<i>Phaps chalcoptera</i> ..	Thirteen and a half years:	„

When describing the mating of my Grey-winged Ouzel to a female Blackbird, I mentioned an English Blackbird which fought the Indian species through the wire-netting of its aviary throughout the summer of 1904 and up to the end of February 1905, when we captured it: I still have that Blackbird in perfect health and condition after six years in a partition of my little ornamental aviary. I find that all Blackbirds are fond of oranges

(as of course they are of other fruits—notably strawberries) and they get all that my other insectivorous birds leave unsoiled. On the other hand my English Jay will not touch orange, though he is fond of banana and grapes: most fruit-eaters delight in grapes. I am told that some Shammas will eat fruit; my bird will not look at it, and on one occasion when I put a small sweet-water grape into his cage, which he apparently mistook for a coiled up green caterpillar, and so pecked it, he was so disgusted that he continued jerking his bill sideways for quite a long time in the effort to get rid of the objectionable taste.

TWO UNCOMMON BIRDS.

THE WHITE-CRESTED TURACO & MAROON ORIOLE.

By H. WILLFORD.

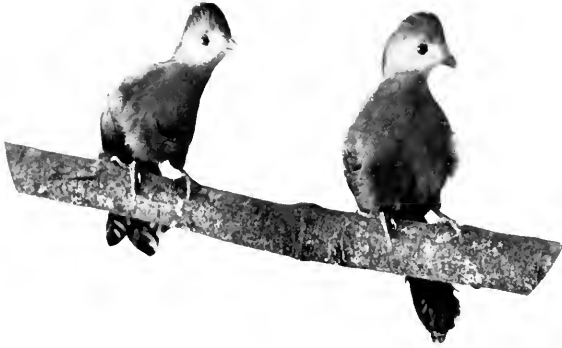
It may be of interest to some of our members to have a few notes on the two species I am about to describe, and I am able to show photographs of both, taken from life in my bird studio.

THE WHITE-CRESTED TURACO is an exquisitely beautiful species belonging to the family *Musophagidæ*, which consists of six genera, comprising about two dozen species. They are natives of Africa, the present species (*T. corythaix*) ranging over South Africa where it is locally called the Lory. The *Musophagidæ* are also known as Plaintain eaters. Their feet are semi-zygodactylous, the outer toe being reversible and the claws strong.

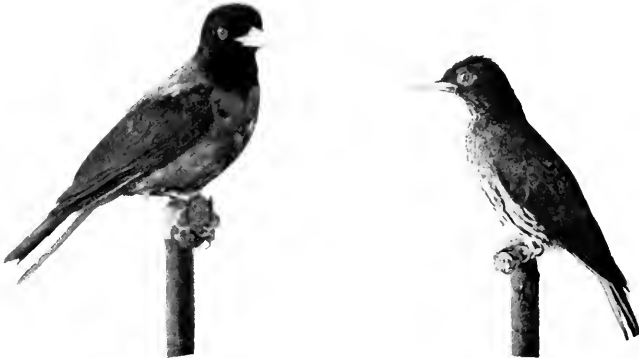
The Plaintain eaters are mostly to be seen on the tops of high trees, though they are also to be seen amid the tangled creepers below, flitting from shrub to shrub if disturbed, and alighting with crest erect and upturned tail.

In a state of nature their food, we are told, consists of bananas, tamarinds, papaw-apples and other wild fruits and berries, which are varied with insects, worms, caterpillars and even small birds.

The nest is a mere flat structure of sticks in some tall tree; the clutch usually consisting of three greenish or bluish-white eggs.



THE WHITE-CRESTED TOURACOU
(*Turacus corythaix*).



Male

Female

THE MAROON ORIOLE
(*Oriolus trailii*).

Our fellow member, Mr. H. D. Astley, possessed this species, and in 1908 one chick was hatched out but unfortunately not reared (see Vol. VI., New Series p. 297).

One may often observe on these birds, when descending from a high perch or rising up to the same again, the beautiful carmine of the under wing coverts and flights, and also for a brief spell at the moment of alighting, their regal garb is then noticed in all its beauty.

The body colouring is green, with bronze shades on the wing; lower throat, shoulders and breast beautiful pea-green; iris of the eye dark red, eye lids red; beak yellow, short and curved.

This species is indeed exquisite with its beautiful soft blends of green relieved by a reddish crest reaching down the neck, and lightly tipped on top with white, also the greyish white face, and the carmine red of the under wing coverts and flights.

My birds, four in number, came over in pairs; the first pair having been with me now about three months. It was entirely due to Miss Ivens, another member of our Society, that I was fortunate enough to secure them. They seem very hardy, thriving on a mixture of ordinary soft food with plenty of small pieces of banana and apple with occasional other fruits, though oranges I have been warned against as being too acid. Previous to their coming into my possession they were fed largely on Peros, a Portugese fruit, half pear, half apple, these I am unable to get, but find they like bananas and grapes better.

At present, my birds are in a large cage till the Spring, when I hope to turn them out with an idea of their breeding.

THE MAROON ORIOLE (*Oriolus trailli*).

The family *Oriolidae* are all beautiful and striking birds, very pugnacious, in particular with each other, and not to be trusted with birds smaller than themselves.

They are bold and fearless, but do not readily become steady in a cage, though there is a good deal of individualism in this respect; and so far the Maroons are the most confiding of any I have kept.

The Maroon Oriole has but seldom been imported, and it

is very probable that my three birds, consisting of an adult male and female and immature male, are the only living representatives of this species in Great Britain at the present time.

The adult male has a black head and throat, bluish beak, maroon back and breast, black wings and dirty salmon pink tail.

The hen is similar and of the same size, but has the back brownish black, breast striated black, grey and white, and tail of a warm brown. The young cock is exactly like the hen, except for the eye, and here one finds a point by which to sex immature birds; the young cock, like the adult cock, has a light yellow iris, whereas the hen's is of a dark-brown, almost black.

They are easy to keep and thrive on a diet of fruit, mostly bananas and soft food—both males have a harsh song, very loud and oft repeated, but I have only heard them in the spring. They have been with me now for over twelve months and last summer the young male was seen carrying twigs about but no nest was built; this year, however, they may go further, at least I hope so.

The nest is a suspended bag or pocket, constructed of bark, grass, leaves, moss, hair and fibre, the rim being woven over the fork, formed by two branching twigs.

THE LESSER SPOTTED WOODPECKER.

NOTES ON THE REARING BY HAND
FROM THE AGE OF FIVE DAYS.

By P. F. M. GALLOWAY.

This little Woodpecker is a handsome bird and a very interesting one in captivity.

It is some five or six years ago since I first found the nest of this species. The site chosen was a projecting limb of a dead apple tree, at the end of a paddock, close to a small wood and the nest was not more than fifteen feet from the ground; the top portion of the limb had been blown off at some period by the wind, and within a few inches of the top of the stump a hole had been beautifully bored, about the size round of a penny and about seven inches in depth.

The hole faced a footpath frequented by children and I felt sure the nest would be interfered with by them sooner or

later, and as I was anxious to obtain a male of this species, I kept a very keen eye on it.

I noticed the hen bird fly to the hole and watched her in, I waited a quarter of an hour and as she did not come out, I concluded she was incubating and made a note to that effect in my pocket book, so that I should know when the young would be feathering.

On the day I considered them large enough to rear by hand I went to the tree, but when some distance from it, was surprised to hear such a noise going on in the hole, I naturally thought that I had been deceived and that she had been sitting a few days longer than I had reckoned and in consequence the young would be larger than I had expected them to be.

With a small keyhole saw I took out a piece of the wood, in shape like a half circle so that in case the young were not old enough to take, the piece could be replaced just where it had been taken from and could be fixed firmly in its place by a small nail each side, and the difference in the size of the hole would be only the width of the teeth of the saw.

On getting the young out (five in number) I was astonished to find them quite naked and evidently only five days old, probably less, for their eyes were barely open, thus proving that instead of sitting on eggs when I saw her go in, she was only commencing to lay her clutch. I at once put them back and replaced the portion of wood cut out and retired some distance from the spot to watch the hen feed and go on to brood them. She arrived at the hole within a couple of minutes with food and made several attempts to go in but would not, the cock did the same, they would both go off and return in a short time, but refused to go into the hole. This more than astonished me, for the Green and Greater Spotted Woodpeckers will take not the slightest notice of the nesting hole being made larger or even being altered in shape, as I have examined young at different ages of both species, replaced them in the hole and they have all been reared successfully by the parents and have flown.

I waited a full hour, but the birds did not feed, neither did the hen go on to the nest to brood them and I knew that the young, being so small, they would be getting quite cold, so there

was nothing to be done but take them and rear by hand. When I took them out they were almost stone cold and could only just move, I kept them in my warm hands and before I reached home they were getting lively from the warmth. At that time I had a small Hearson's Incubator at work, so I placed them in the warm drying box at the top of the Incubator, and this having a glass lid I was thereby able to see at a glance how they were going on, and within half-an-hour their necks were all stretched out and their mouths open for food. I fed them every twenty to thirty minutes, from 5 a.m. to dusk, on live insect food, consisting of daddy long legs, wood lice, earwigs and smooth green caterpillars found on Oak and Beech trees, also found on the leaves of Hazelnut bushes. Knowing where to find this food in plenty, I had no trouble and the birds thrived, grew quickly and feathered well. When fifteen days old I added to their diet the larvæ of the cockchaffer, selecting the smaller ones, also meal-worms; at three weeks old, I began to give them small pieces of my own soft food "Life" and gradually substituted live fresh ants' eggs for the caterpillars, etc.

No water was given until they were being fed partly on soft food and then only a drop occasionally.

Nestlings do not require water and it is never carried to them by the old birds, the caterpillars and other insects given by the parent birds contain quite sufficient moisture; even in the case of Hardbills, the parents carry no water to the young, the various seeds being fed to the young somewhat in a pappy state from the crop of the old birds, and not until the young begin to feed themselves is water really required. The five grew into very fine birds and they proved to be two cocks and three hens, the former had very rich scarlet caps on their heads and the black and white plumage was also very rich, in fact they were almost as bright in plumage as the adults and exceedingly tame.

I kept them for some time together in a large cage fitted up with bark from an oak tree.

After some weeks, I took the three hens and released them in the same neighbourhood as I had taken them from and quite close to the same spot.

I walked down to see if I could see anything of them a

couple of days afterwards and found that they had shifted from the side of the wood to some large Elm and Poplar trees at the bottom of the field close to a brook, here they were busy running up the smaller limbs hammering and pecking.

I did not see the third hen, but as the two were all right, I had no reason to doubt but what the other was also.

A few days before releasing the birds, I fed them principally on caterpillars, earwigs and such insects as the birds would be able to find when at large, this should always be done before giving birds their freedom, especially the insectivorous species.

It is a great mistake to turn a bird loose after being fed for a long time in captivity on a soft food, mealworms and gentles, etc., it cannot find these foods when given its liberty, and being thoroughly used to this diet, it naturally looks for it and I am convinced, many, if allowed their liberty, would soon get thick and starve, especially hand-reared birds.

The two males which I kept, soon made holes through their cages, so much so that they looked as if they had been riddled with large bullets, and the new cages I had to have lined with zinc.

The Lesser Spotted Woodpecker is far rarer than the Greater Spotted or Green and its habits are somewhat different. The nesting hole of the two latter species is invariably bored into the main trunk of the tree, whilst that of the former species is almost always bored into a limb projecting up from the trunk and this often in a dead limb, only a few feet in circumference. The favourite tree chosen is generally a tall Poplar or Elm, occasionally an Oak or Apple tree.

They seldom alight upon the main trunk like the other Woodpeckers, but prefer to run up and search over all the smaller dead boughs and twigs for their food. This bird likes to keep to himself and I have never seen more than one at a time, except in the spring of the year, when they have paired.

If the weather in early March should be sunny and fine the cock of this species will commence his call of Ke, Ke, Ke, repeated several times in succession, something like the note of the Wryneck, but pitched in a much higher key. This bird (the cock) also makes a loud jarring noise at this season of the year,

the sound resembling a thick stick being drawn rapidly along some wooden railings, sometimes this jarring may be heard pitched in a high key and the next minute in a deep or lower tone, this is not a note from the bird's throat, but is produced by the bird's beak being hammered against the dead, but tough, hard limb of the tree at a tremendous pace, so fast, that the head of the bird can scarcely be seen to move. It may be heard at a very great distance, on a calm day. The reason of the rattling being heard in different tones is caused by the bird moving from a thick to a thinner branch, the thick wood causing the lower tone, when rapidly hammered, and the thin the higher pitched sound.

When courting, the male bird sometimes in flying a short distance to another tree, will alter its bounding or undulating flight and fly straight and limply flap its wings, similar to the flight of a large Bat or Butterfly. These birds wander about the country, far from their breeding-ground, in winter, but return to it as early as the middle of February.

ZOO. NOTES.

By THE CURATOR.

A pair of Siamese Fireback Pheasants (*Lophura diardi*) has been purchased, together with a female of the rare Bornean species *L. ignita*, the latter making a pair with the male presented by the Duke of Bedford as mentioned last month.

The collection of Birds of Prey has been enriched by the acquisition of a Jackal Buzzard (*Buteo jacal*) from South Africa, and a Red-backed Buzzard (*B. erythronotus*) from South America.

A Chestnut-breasted Teal (*Nettion castaneum*) is the first to lay eggs in the new enclosure at the west end of the Gardens. She selected a nest box about four feet from the ground and laid four eggs, but as the weather was very cold the eggs were taken and are now in an incubator. These Australian Teal besides being very rare are some of the most desirable of the smaller Waterfowl, being excellent breeders, hardy and beautiful.

REVIEWS.

HOW TO ATTRACT AND PROTECT WILD BIRDS.*

This is the second and revised edition of a German work which has been translated for the benefit of English bird lovers. It may be said to deal chiefly with the active side of Bird Protection. To protect birds efficiently in a continent like Europe, which is almost entirely dominated by man and his works, it is not sufficient merely to pass laws and prevent undue destruction of bird-life. Many species owe their diminution not so much to their direct destruction by man as to the destruction of their homes, such as woods, old ruins, draining of marshes, and the general higher state of cultivation, which must inevitably follow the advance of civilisation. Count Berlepsch, an eminent German ornithologist, has, after many years experimenting, discovered the best and most efficient way by which artificial homes, either in the form of nest boxes or by the planting and cultivation of special shrubs and trees, can be made to replace the natural homes that have been unavoidably destroyed. By these means many species of birds can be induced to settle and nest and their numbers thereby greatly increased. The results of Count Berlepsch's work are given in this little book, which is copiously illustrated to show the different forms of nest-boxes, feeding troughs, etc., etc., and also to show the most suitable situations and methods in which they should be fixed. To all bird-lovers who have a garden, however small, this book should especially appeal, as by following its directions they will probably be able to induce many species to make their home with them. We might mention that specimens of the Berlepsch nest-boxes are on view and on sale at the offices of the Royal Society for the Protection of Birds, 23, Queen Anne's Gate, London, S.W.

THE BRITISH WARBLERS.†

Part V. of Mr. Eliot Howard's fine work on the British Warblers is fully equal to the very high standard of the preceding parts both as regards letterpress and illustrations.

* *How to Attract and Protect Wild Birds*, by MARTIN HIESEMANN; translated by EMMA S. BUCHHEIM, with an introduction by HER GRACE THE DUCHESS OF BEDFORD. Second Edition, with many revisions and illustrations. 101 pp. London: WITHERBY & Co.

†THE BRITISH WARBLERS, A history with problems of their lives, by H. ELIOT HOWARD, F.Z.S., M.B.O.U. Part V. London: R. H. PORTER. Price 21/- net.

Almost the entire part is given up to the Reed Warbler, the account of this species occupying no less than sixty-one pages. Certainly never before has this species, if any other, been treated so thoroughly.

The life history of any species forms a subject of the utmost interest and fascination to the individual who knows how to observe and has the facilities for doing so. The Warblers being amongst the shyest of birds present the greatest difficulties to those who would unravel problems of their life history; and a species such as the Reed Warbler, whose haunts are the swamps and reed-beds of the Broad-lands and similar localities, is perhaps one of the birds whose habits are least known of our wild birds. Mr. Eliot Howard therefore deserves the thanks and congratulations of ornithologists and naturalists generally for the extraordinary success he has attained in the difficult task he has set himself to accomplish.

In the Midland Counties the forerunners of this species arrive during the first week in May, the males appearing first and occupying their several territories, these territories being carefully guarded and every other male of the same species fiercely driven away. When the females arrive nest-building commences at once. Males and females however continue to arrive and pair so long as suitable and sufficient territory remains.

This question of territory is an important one, much more so, Mr. Howard believes, than has been generally supposed, in fact he attributes the constant battles which take place amongst the males of so many species more to the acquisition of territory than to the securing of females; which throws an entirely new light upon the problem.

This and numerous other problems connected with the life history of these birds are discussed at length by the author and some of his conclusions if proved to be correct will add considerably to our knowledge not only of Warblers but of other species.

This part contains five coloured and five photogravure plates by H. Grönvold, all of which show the birds in characteristic attitudes.

D.S-S.

BRITISH BIRDS.*

The numbers of *British Birds* under review are of varied and general interest. Mr. Mullens gives a detailed and historical account of the Tradescant Museum. Messrs. C. J. and H. G. Alexander continue their observations on the Song Period of Birds, and it will doubtless come as a surprise to many to find that a number of our native birds are in song during a large portion of the year. Messrs. Witherby and Hartert describe the Irish Jay as a new race and without offering an opinion as to the validity or otherwise of their diagnosis, we think it a pity that original descriptions should be published in a popular magazine. For the rest there are a large number of short notes, dealing, for the most part, with the occurrences of rare birds, or of continental races of our commoner species in various counties, and the recovery of marked birds is also referred to in each part.

BRITISH BIRD MANAGEMENT.†

Our member, Mr. Allen Silver, has given us a most exhaustive and complete account of the best methods for keeping our native birds. Although primarily written for exhibitors, the directions given are wide and comprehensive, and the book will be found equally useful both for those whose only available space is a cage in a living room or for others, who can afford an aviary in their gardens.

The book is divided under monthly headings, and in due season we are told how to catch and meat off adult birds, or how to hand-rear nestlings. The best kind of aviaries and different sorts of food are all dealt with in detail, as well as the more technical points of preparing birds for exhibition. To those interested in British Birds, whether they be novices or old hands, this book should prove invaluable and the birds themselves, could they but speak, would we feel sure thank the author for putting their special needs in captivity before the public. Having made a special study of British Birds for many years, we can

**British Birds*. January, February, March, 1911. London: H. F. WITHERBY & Co. Monthly. Price 1/- net.

† BRITISH BIRD MANAGEMENT, by ALLEN SILVER. 85 pp., 2 coloured plates and many illustrations. London: *Feathered World*, 9, Arundel Street, Strand. Price 1/3 post free.

most heartily endorse all Mr. Silver's methods for they are identical with those we employ and we can thus vouch for their success. Apart from illustrations showing the different kinds of cages, aviaries and appliances the book is further illustrated by some coloured plates, which, however, are not up to the standard of the text.

Forthcoming Publications. Mr. Bently Beetham, whose book on the "Home Life of the Spoonbill" we had the pleasure of reviewing a few months ago, has in the press a further illustrated volume entitled "Photography for Bird Lovers." As photographers will shortly be preparing for the coming season this book, which is to be a practical guide to the pursuit of bird photography, comes at an opportune moment and should prove of great service especially to the less experienced hands. The book will be published by Messrs. Witherby & Co.

A new book on the management of "Ornamental Waterfowl in Captivity," by Messrs. McLean and Wormald, with "Notes on the Diving and Sea Ducks," by Mr. W. H. St. Quintin, and illustrated by Mr. Wormald will also be published shortly.

Books received. "British Birds in their haunts," by the Rev. C. A. Johns; "List of Animals at the Giza Zoological Gardens," by Capt. S. S. Flower; "Mules and Hybrids of Birds," by Rosslyn Maundering; The "Emu," October and December 1910, January 1911.

CORRESPONDENCE, NOTES, ETC.

THE LAW RELATING TO CAGE BIRDS.

SIR,—In consequence of a recent judicial interpretation of the Acts relating to wild birds in the County of London, the possession, purchase and sale of such creatures is in danger of prohibition in the said County.

This Bye-Law was intended to protect birds inhabiting the County of London, not to prevent citizens possessing or selling lawfully caught birds obtained in other districts. Such a state of affairs imposed upon the community would practically annihilate the several branches of aviculture largely practised to-day, and the consequent benefits and pleasure derived therefrom.

On account of this interpretation of the law, the National British Bird and Hybrid Club (a Society that has done much to instruct, encourage and perfect bird-fanciers in the art of bird-keeping, showing, etc.) has formulated and set in circulation a petition to the Home Secretary in order that a proper understanding may be arrived at. Bird-keeping is a pastime that is enjoyed by all sections of the public, and the lot of domesticated birds has vastly improved. Just as members of this Society derive entertainment and knowledge from the keeping and breeding of exotic species, so do those less fortunate enjoy the pleasure of keeping, as hybridizing agents, exhibition specimens, pets or song birds, the various common

British species that are the favourite cage birds to-day, and it is only reasonable that they should object to interference with the possession or traffic of legally acquired property.

The species that are in chief demand are without exception still extremely common throughout the greater part of Europe and are, moreover, a moving quantity. The toll taken of their numbers for purposes of caging is insignificant compared with the manner in which their presence or absence depends upon the suitability of existing conditions or the manner in which thousands of the birds we protect are slaughtered for food and other purposes when they leave our shores.

I therefore appeal to members of this Society to, where possible, support this petition with their signatures should it come their way, in order that their less fortunate brethren may be allowed to continue the progress of this very legitimate form of indulgence. It may not be long before we shall find ourselves in a similar plight, owing to an inability to acquire foreign birds, and in spite of the short-comings that may exist (which by business-like methods can be set right) it would be a pity after the good work that has been done to find that the keeping of birds was confined practically to public bodies who (owing to almost unsurmountable difficulties) are not always the most perfect exponents of the art of keeping, breeding or retaining in good health perfect examples of once wild birds.

ALLEN SILVER.

THE HOOPOE IN CHESHIRE.

Mr. Witherby informs us that a Hoopoe frequented some private grounds in the neighbourhood of Macclesfield from December 20th to January 28th last.

Although this species is an occasional spring visitor to this country, chiefly in the southern and eastern counties, the occurrence of this individual so far north in mid-winter points to its being in all probability an escaped bird. Should any of our readers have lost such a bird, or know of any importations a short time previous to the first-mentioned date, we should be glad if they would let us know in order that the record may be corrected. ED.

PRACTICAL BIRD-KEEPING.

III. FOREIGN DOVES.

By Miss ROSIE ALDERSON.

(Continued from page 172).

FEEDING.

I give my large doves a staple diet of wheat, dari, hemp, white millet, and a little rice. They have also a good supply of pea nuts (or monkey nuts) shelled and cut into pieces, and I look on this last item as being very important in keeping the birds in good condition and glossy plumage, the oil in the nut contribut-

ing to this end. I know of only one firm that supplies the nut in this form (and also a "soft food," price 8d. per lb., that I shall mention later on), namely, Messrs. Armitage, Seed Merchants, Castle Gate, Nottingham, and the price is about 4/- per stone, the size of the piece of nut can be regulated as desired.

Doves are also fond of ground sweet biscuit, this I cut up myself in a Spratt's cutter, but I look on the biscuit more as a luxury than a necessity; still a change and variation of diet is good for all birds, and helps to keep them happy and healthy.

Some doves are fond of fruit as well as seed. My Black-bearded Doves like red currants, the Bronzewings wineberries (not quite ripe), the Bleeding Hearts grape stones, and I have already told you how the Red Mountain Dove liked cut up grapes and tomato.

I also find that "soft food" is much appreciated by some birds. My Bleeding Hearts, for instance, have it daily, and it keeps them in perfect condition. I have no doubt many of the others would enjoy it too, but to give it to *all* my doves regularly would mean a large addition to the cost of my food bill. I have used this particular "soft food" for years, it is mixed with an equal quantity of dry ground biscuit and moistened; the birds all seem to do well on it (if given in addition to the seed diet) including my cock Barraband Parrakeet and many other birds besides the doves. Of course, the very tiny doves must have small seeds given besides those larger seeds already mentioned.

Another thing to remember is to have a good supply of ground egg-shell, the shells being well dried over the kitchen range before they are crushed. Especially put plenty of grit on the floor during the nesting season, and you should have no soft-shelled eggs.

When nesting, give the old birds plenty of food, especially of any seed they seem to like. Remember they have not only to feed their young ones from the crop, but to keep up their own strength under the strain of nesting. A young bird well fed will stay contentedly in the nest, and between eating and sleeping should grow well; but if not sufficiently nourished it will be restless and probably wriggle out of the nest in its helpless efforts to satisfy its needs.

HOUSING.

Most doves are hardy and can stand our winters if some protection in the shape of cover is given. Of course the severity of the winter varies in different parts of the country. Here in Nottinghamshire we get our share of cold (up to 28 degrees of frost sometimes) though not very far north.

As a rule, doves do not seem to care much for heat, and in my largest aviary they prefer roosting under the glass roofed part of the flights to going in the shelters, where they would get some heat from the stove in the passage that runs along the back of the aviary. As it is, this fire is of little or no benefit to them, but it is a necessity on other accounts, namely, keeping the stored food-stuffs from damp, and giving heat to some parrots and squirrels who live in cages in the passage, also it is very useful to have heat in case of sickness.

If you have room, therefore, give your birds as long a flight as possible, with plenty of cover *under a sheltered roof*, for I do not think it advisable to encourage the birds to roost in cover that has only wire netting above it, for it must mean that on a wet night the birds are often sleeping wet through. I put plenty of bare perches in my open part, but, though the birds use them in the daytime, at night they nearly all go into the cover under the glass roofed part of the flight, and looking in from the front of the aviary you would almost think it empty.

The best cover to use is *Scotch Fir* branches fastened with nails and wire to the aviary walls. It makes the aviary look very pretty, and can easily be renewed when necessary; further, the branches being off the floor it gives more ground room, and the mice cannot so easily climb up it. I find the *Scotch* is the only fir that keeps its "needles" well; if this cannot be had pea-sticks can be used, laid crossways, but nothing is so nice as the fir.

My doves much enjoy a broad wooden shelf running along the front of the inside of the aviary, about half-way up from the ground. They spend most of the day on it, basking in the sun in summer, or enjoying, with uplifted wings, a shower of rain. A good wetting like this does them good in the daytime, and is quite a different thing to birds roosting wet through.

A bath is a necessity, for doves are very fond of bathing.

It should be large and shallow, with a waste pipe let into the ground. I use earthenware cottage sinks, and make a flight of two or three steps down into the bath by cementing in some flat tiles.

Half my flight, that portion under the glass roof, is floored with cement; the other half, directly under the wire netting, is of crushed ashes over earth, with wire sunk underneath.

It is a good plan to have a draw curtain, with rings on a wire, across the front of the aviary. It keeps out the cold at night and prevents cats frightening the birds. In the daytime it can be tied back, but in very bad days in winter I keep it drawn. In cold weather I also have a piece of canvas stretched and nailed down over the wire top, and in summer this is shifted up to the glass-roofed part to act as a shade, for the glass gets very hot and trying to any nesting-bird sitting underneath it. Of course, in a very large wire-roofed flight it would be next to impossible to cover it with canvas, but my flights are, unfortunately, only small.

I have to bring in a few of the doves in winter into a closed-heated aviary, even with the protections from cold I have described. The Bleeding Heart Pigeons have always to come in, and, as a rule, you will find any of the tiny doves, such as Cape, Passerine and Picui cannot stand the severe weather, they seem to have far less stamina than the larger varieties. A cold bird often ends in being a sick bird, and though I strongly advocate fresh air, yet I think it cruel to force a bird to winter out when its constitution cannot bear the strain.

* * *

NESTING.

Doves readily make nests and lay, but not so easily rear their young. A good pair of parent birds, that are sober enough not to start a second nest until the first is finished, are invaluable. The aviary should be prepared for nesting by the middle of February, all cleaning done, any fresh branches put up, and the zinc nest pans tied in their places. These pans I have made at our ironmongers, they cost 6d. to 9d. each, and are shaped something like a flower-pot saucer, but with a rounded bottom and a more slanting edge. They can be made any size, will wash, and are never worn out. Holes are punched at intervals round the

edge, through which to pass the string to tie them to the branches. You need two nests to each pair of birds, as if you put up one only the young ones may be turned out before the proper time if the old birds desire to nest again. It may be urged the second nest only tempts them to start afresh, but I look on it as the lesser evil.

Plenty of dried heather should be scattered on the floor. If you have none growing near you it can be bought by the bundle from Mr. Fred Hiscock, Blashford, Hants. I get some from him every year and know of no better or more cleanly nesting material, and it may even be soaked and washed and used a second time. I also put a small handful in each nest to start the birds. The heather should be broken into lengths about five inches long, and after the birds have picked up what they want from the floor, and the eggs are laid, the remaining heather should be taken away or they may still go on piling it on the top of the eggs.

Sometimes the birds will not care for your site of a nest, but will choose their own, *squatting*—not perching—in the particular branch. When you notice this it is as well to put a nest pan up in the exact spot, when the birds will probably start at once; doves are very peculiar in their little ways and cannot be forced.

I make it a rule always to fasten up my nest pans in the cover under the glass roof or shelter—not in the open flight, for it is most essential that whilst the young are in the nest, and especially when too large to be brooded continually—they are kept *dry*. Be sure and put a thick bed of hay or straw under the nest when the young are hatched, so as to make their first descent easier or to soften their fall should they tumble out prematurely. Sometimes you may find a partly-fledged dove on the floor, with no broken limbs,—the hay has saved *that*—but in a state of collapse and cold and limp, its legs stretched, and head dangling down, perishing for want of its parents' warmth. It is always worth while to hold the helpless little thing in your hand for say half-an-hour or more. If there is just a spark of life left the live warmth of your hand will bring it round more quickly than anything. It is wonderful how far gone a bird may be and yet

recover. Do not hurry its recovery, let it at least be able to hold its head up and to sit upright in your hand before you put it back in the nest, and be sure and do this very gently, or the second young one may jump out too, and do not attempt it while the old bird is in the nest. Of course, you may just send it off, but there is a great risk it might not come back, and in that case you would probably lose both young ones.

It is useless, however, to attempt to restore a young bird to the nest when it has got beyond the fledgling stage, and is getting fully feathered, for it would only jump out again. If a young bird should leave the nest just a day or two before it naturally should do, it is better to leave it and not interfere.

When the young ones are out, take away all your hay bed, save a small handful in one corner for the young birds to nestle in, (for a soft floor quickly makes weak legs), they should be prevented from wandering into any part of the aviary where the top is open netting or the floor damp. If you do not do this they will be certain to squat where they should not, for their little legs are soon tired, and the result will be an internal chill caused by contact with the cold surface. The next stage will be that the young one will become greatly relaxed, and will weaken and die, for the parents will purposely neglect an unhealthy young bird. It is not a bad plan to put lidless boxes (turned on one side) with a snug bed of hay in, for the young ones to go into at night, as they will probably not return to the nest after once leaving it, indeed, as they are not yet at the flying stage it would be an impossibility when once they are on the floor.

On the question of hand-rearing a deserted young bird, I think there is much to learn, and all being well this summer I hope to make some experiments. I used to think it a hopeless task, but recently I have rather changed my mind from an accidental discovery.

The most important point is to know *when* to take the bird in hand. If the weakness has got ahead there is a poor chance of overtaking it, and whilst ever there seems a chance that the parents are doing their duty one is reluctant to interfere.

Quite accidentally last year I learnt *how* to feed a young dove. Doves, as you know, feed the young from the crop, the

young ones putting their beaks right inside that of the old bird who pumps up the food from its crop. I never liked the idea of feeding young birds from one's lips, so I used to try and hand-feed with a blunted and shaped quill toothpick, opening the beak and forcing the food down the throat. Often it was a failure. Young doves are very obstinate and *will* die, if they want to, despite all you can do. Last summer, I was hand-rearing a little Barbary only a day or two old. *Its* rightful place had been taken by a small Brush Bronzewing, who, being smaller than its foster-brother, was getting too little food and doing badly, so I took the Barbary's own young one away. It did wonderfully well, and being very healthy wriggled about in my left hand as I fed it with the toothpick, making it rather a work of patience, for it lost as much food as it took. Suddenly it accidentally pushed its head between the base of the first and second finger of my left hand, and the change in its attitude was instantaneous. *It thought my fingers round it was the enclosing parent's beak*, and its mouth opened very wide and it took the food almost faster than I could put it in. After that things went gaily, I had no more trouble of forcing an obstinate little beak open with the toothpick, but had only to put its beak between my fingers when it would wriggle and squeak for food, opening the beak *very* wide and standing on tip toe in its excitement.

During the intervals of feeding, the little dove was kept in a pot placed on the hot pipes in the greenhouse. A handful of hay was put in the pot, some flannel on the top of the bird, and over this a piece of perforated zinc to prevent the young one jumping out. It soon knew my step and voice, and would at once start squeaking, even if it could not see me, when I came to feed it.

The young Brush Bronzewing dying I put the Barbary back with its parents; they seemed very pleased, and at once went to feed it. And now comes the strange part, instead of thrusting its beak into that of the old bird, the young one just *opened its beak and squeaked*. The cock Barbary retired quite puzzled, and evidently consulted with the hen, for in some way she made the young one understand, and shortly after I saw it being fed in the natural way. It may have been partly the heat,

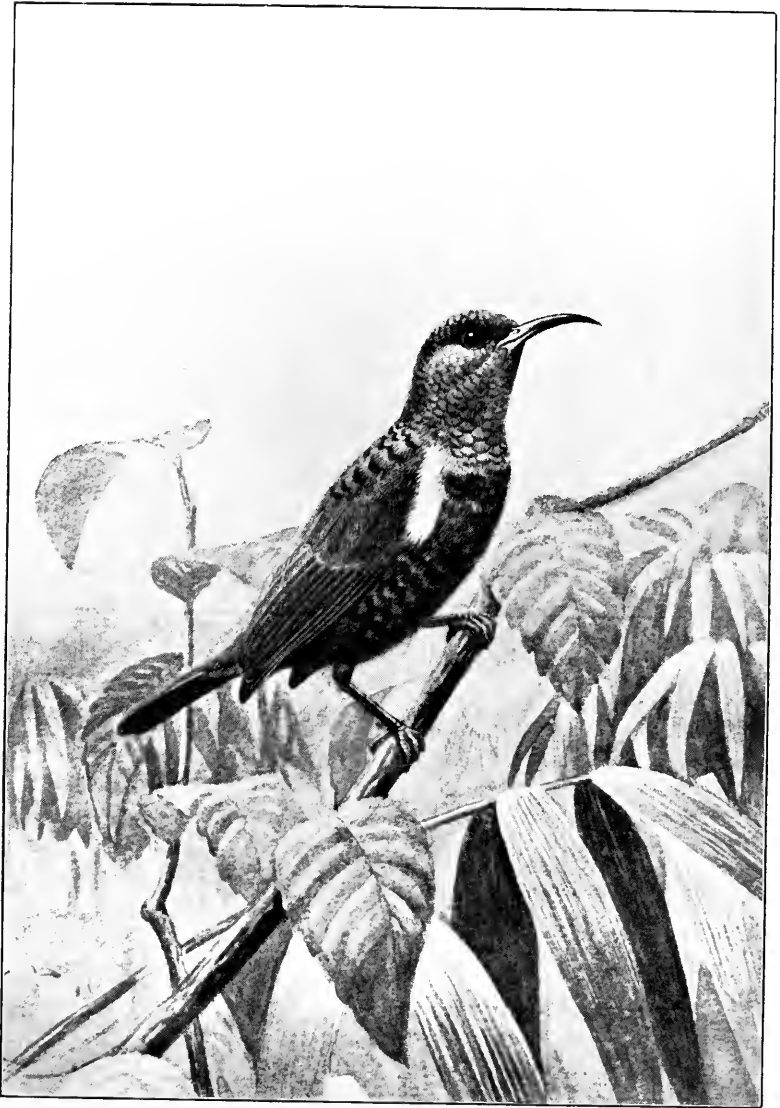
but this young bird grew and thrived most wonderfully under my care, which was almost from the time of hatching. It was a well-feathered bird when I put it back in the nest. As food for hand-rearing a young bird I should give the following articles, all moistened and made soft with water: Spratts' malt milk and pepsinated puppy meal for the first day or two (both these articles are in powder form, like flour, and can be mixed to any consistency), then "soft food" in addition, mixed with biscuit, and, later still, soaked small seeds.

Doves have the reputation of being quarrelsome and, in some individual cases it is true, but this is the case with *all* kinds of birds, their tempers vary just as much as human beings do. I think the great secret in doves living happily together (where more than one pair is kept) is to find out which birds will agree, and having once found a peaceable combination, not to disturb it. Some time ago I had four pairs of different doves all nesting in one small aviary; further, they carried their amiability so far as to feed each others young ones. On the other hand, if there is going to be trouble it will show itself at once, and it is better to separate the birds straight away, for nothing will induce them to be friendly if they have made up their minds to be the reverse.

I look on doves and pigeons as very pleasant birds to keep, and their harmonious colouring grows on one very much. Their different notes, too, are very interesting, for many birds have varied coos to express their moods.

I have no space to touch on sickness, but with any sick bird I think *heat* is most important, for an ailing bird so quickly grows cold, and for this purpose a stove in the aviary is invaluable. In summer, a *flat* hot-water bottle in a box with a bed of hay might be used, or I have sometimes thought a chicken "foster-mother" would make a good "hospital cage."

This is only a bare outline as to the keeping of doves; they are a family of birds long neglected, and there is still very much to learn about them. There are hundred of kinds never yet imported, for the dealers get very little encouragement, but to anyone with enterprise and ample means at their disposal there is a grand opening to bring some entirely new knowledge to aviculture, of a very pleasant kind.



THE PURPLE SUNBIRD
(*Cinnyris asiaticus*).

Avicultural Magazine,

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MAY, 1911.

THE PURPLE SUN BIRD.

[We have received the following notes on this bird, which forms our frontispiece for this month, from Mr. C. T. Maxwell, whose success in keeping these delicate birds is well-known. ED.]

SIR,—I am indeed pleased to hear that you contemplate giving an illustration of my Purple Sun Bird in the *Avicultural Magazine*. I have had the bird now about a year; it came into my possession out of colour, and apparently a young one.

My method of feeding this and all the more delicate Sugar Birds is to place as much Mellin's Food as can be heaped up on a salt spoon into a cup, and then pour on to it about a quarter of a pint of boiling water and well stir, then add a salt spoonful of honey and a good tablespoonful of Nestle's milk, again well stirring together. After first putting a little crumbled stale sponge cake into each bird's food pot I fill it up with the above, which is sufficient for about eight birds. For fruit my Sun Bird likes nothing so well as Tangerine oranges, and I endeavour to get these nearly all through the year.

I keep it in a cage, about two feet long, in which it seems perfectly happy and contented, singing lustily—for it has an extraordinarily loud song for its size—whenever the weather is at all bright.

I know of hardly any desirable bird, if any, to equal it for exquisite beauty and adaptability to cage life; but of course it needs great care, and I have found specimens most difficult to obtain, if it were not so the charm of possession would diminish infinitely.

C. T. MAXWELL.

MORE NOTES ON THE CROSSBILL.

By KATHARINE CURREY.

The fact of Crossbills nesting in captivity in England is deeply interesting. The Crossbill has always been a special favourite of mine among pet birds, and one I brought several years ago from Tyrol had a romantic story.

One autumn day, when driving in a wild part of the mountains, we met some Roumanian gypsies. Under their cart swung a little battered cage, and in it sat a Crossbill. We stopped and bought the bird, and brought it home to England. The delight of the little creature on being transferred from its wretched prison (which we took care to have burnt at the next inn we stopped at) to a new roomy cage, was quite touching, and when he was given a bath, it amounted to ecstasy. He "chipped" and whistled, and splashed in and out as if he never could have enough. One wing was broken—an old injury—but otherwise he was quite healthy.

In his home in England he lived near a window looking south-east, on a large branch of an apple tree, with a fir bough on it. On the matting below was his little cage with his food in it, and close by his bath a large flower-pot saucer, which I prefer to any other kind, as birds can perch on the rim. He had complete freedom, but never left his bough, except to climb down sometimes for a trip in the garden, where he "chipped" to the wild birds, and then hurried back again to his bough, especially when the Ring-doves walked in and helped themselves to the food in his cage. Once he fetched me in from the garden to fill his bath which was empty, and in order to make me understand what he wanted he took hold of my dress in his beak. His days were spent in climbing up and down his beloved bough, and sitting among the fir needles, singing his sweet song, expressive of all the sounds of his native forest—the chip of the woodman's axe, the clink of falling stones and bits of rock, the tinkle of the brook, and the whistle of the wind in the pines.

"Ziller," as we called him, used to hide in his fir bough if visitors came, and would hiss at them if they were strangers. He loved a game, and used to play with me on his branch a sort of hide-and-seek, 'chipping' and hissing with fun and excitement.

When the sun set, he concealed himself most wonderfully on his branch, as he objected to being caught and put in his cage to roost. Alas! one morning, Ziller was found lying in his cage in great suffering, and, in spite of every effort to relieve him, he died in my hand. He had pecked the rubber tubing of the window as he sat on his bough, and this obviously was the cause of his death. We still miss our little mountain friend with his clever ways and sweet music.

The pair I have now are full of character, and enjoy their liberty to a great extent, for the bay-window in which their aviary cage is, is open at the top all day and their cage-door is often open, but they never fly away. Their cage is divided into an 'orchard' and a 'fir-wood.' The orchard has fresh earth thickly strewn in it, with moss and leaves and tufts of grass and their bath, and apple and nut boughs to perch on and pick to pieces. The fir-wood has sand and gravel, small pine logs and chips and fir branches. I give them hemp, fir-seed, canary and buckwheat, fir cones and the cores of apples, for even when the cones are empty they like playing with them and picking them to pieces, always dropping them into their water—either to soften the cones or add turpentine to their bath? When our Christmas tree was dismantled in December last it was placed near their cage for them to enjoy, and all day they played in it, and roosted in it at night. We have seen them in their own native haunts—the mountain forests of Germany and Austria—playing among the great spruce firs, where clusters of their favourite cones hang ready for them to work at and pick out the fir seeds.

In Tyrol, and other mountainous districts of Austria, the country people keep them in little cages and feed them on hemp only, believing firmly that the Kreuzschnabel, or Krummschnabel, keeps off illness; any infection being carried off from human beings to himself—a belief probably based upon the legend of the Crossbill. I have often been told in Tyrol that there are two kinds of Kreuzschnabel, the greenish bird which is red when young, and retains the mystic ruddy spots upon its breast for some time; and the yellow Crossbill, a larger bird.

I get my fir-seed (Tannen- or Fichten-samen) from Germany, as I cannot find any corn-dealer in England who sells it.

THE SNOW PIGEON.

Columba leuconota.

By T. H. NEWMAN, F.Z.S., M.B.O.U.

(Concluded from page 178).

The record of another pair is much worse; these are the birds received on Jan. 6th, 1909. They live in another compartment and are chiefly remarkable for building a most substantial and well put together nest among the open branches of some brush wood; it was entirely composed of small branches, was several inches thick and was lined with smaller twigs, not in the least the sort of nest I should have expected from such a rock-loving bird. Later on, another nest, nearly as well made, was built about two or three feet from the first one, after which first one and then the other was used to lay in; however, it may well be that this unnatural site did not really suit the birds, as they always deserted their eggs when they had been sitting about a week. Four eggs were laid in 1909, and about a dozen last year, the last two on the 18th and 20th of August; these eggs were put under a pair of White-throated Pigeons (*C. albicularis*) which hatched one young on September 7th; incubation again eighteen days, so that the period is evidently 17—19, average eighteen days. This last young bird lived to be six weeks old. Thus the net result of a year's breeding from two pairs was eight young hatched from about twenty eggs, all now dead. I have the melancholy satisfaction of seeing an unique row of eight nice skins ranging from four weeks to three months old, a series rendered very complete by the presence of a beautiful skin of one of the adult odd females, which died early last year.

I do not know if the damp, sunless summer had anything to do with lack of vigour in the young birds; they all seemed to be doing well until the time approached proper for them to leave the nest, then they generally declined, and the old birds seemed to lose interest in them and refused to feed them. I believe if only they would have continued to look after them for a very few days longer that, at least, several would have reached maturity; certainly the only one that did become fully independent was reared during the sunny days of late September and early October; it seemed a very strong bird, soon taking to driving even

the big White-throated Pigeons from the food pots when feeding, and went on well, although it was plucked by a cock Crested Pigeon on the head and wings rather badly soon after leaving the nest; at first it used to give a squeak when pecking at another bird, but it soon acquired the hiccough note of the adults. I had not noticed anything wrong with it until I found it one morning on its back dead.

The following notes will show how the young bird develops. March 26th, a young one hatched previous day was covered with light yellow down; bill dusky pink, with narrow dark band near the tip; feet bright pink. When five days old its eyes were well opened, feathers on wings, back and flanks appearing, some downy ones on the latter part beginning to burst their sheaths. April 4th, the young one was much grown, feathers on wings, back and rump well developed, feathers on crop, pale grey with buffy tinge, not white as in the adult; tail just beginning to grow, but looks very short for the size of the bird; primaries just beginning to expand; feathers on head only just showing with yellow down on their ends; bill blackish with whitish tip; bare skin round eye and ear ashy grey; feet dull grey with pinkish tinge; iris dull brown; general appearance of a grey bird with conspicuous white lower back. When a fortnight old it was much grown, one bar beginning to show across the wing; crop and breast pale ashy grey, former with buffy tint; feathers on head still in sheath, but ready to expand; tail still short, but beginning to show beyond its coverts; when touched it snaps its bill and pecks; utters a shrill squeak when being fed by its parents. At three weeks the young bird was much bigger, two black bands now on the wings, on the median and greater wing-coverts; head dark grey; tail growing; the white band beginning to show on the outer feathers; crop region very buffy-looking. April 21st, nearly four weeks old, bird now well fledged, all the tail feathers (except the two central ones) show the white band; the pale grey of the breast now extends round the back of the neck; head dark grey, thickly covered with yellow down; iris very dark brown; bill brownish black, yellowish horn at extreme tip; feet greyish pink; claws, which are very long, dark horn, almost black.

Two skins of birds four weeks old differ rather in colouration, the smaller specimen has the breast and crop ashy, with the feathers strongly tinged with buff; abdomen lighter, more ashy; if the adult bird was not known it would be difficult to imagine that it would then be white breasted; the whitish bar on the central tail-feathers has not yet appeared; head, wing, rump and breast, especially in the larger specimen, thickly sprinkled with yellow down adhering to the ends of the feathers; the tail is about three inches long.

Three individuals, about five weeks old, are now about two-thirds grown, the under surface is pale grey diffused with brownish buff; the wings have become long and pointed; one specimen shows four distinct bars on the wings; tail about four inches long, all the feathers showing the light band; yellow down has mostly disappeared, thickest on the rump. At six weeks the bird has practically attained its adult proportions, the light band on the tail is now very noticeable; all the primaries, except the outermost ones, are full grown; a little down here and there still remains on the upper surface; the bird becomes independent of its parents about this age. When seven weeks old the first plumage is quite complete; a few traces of down still retained.

It will be well here to compare the young bird with the adult. In size it appears nearly as large, but is slimmer in build; the upper surface is practically the same, being of exactly the same brownish grey tint, not at all duller as might have been expected; in fact, if anything the grey is purer and lighter, especially at the edges of the wings; entire head same slaty grey. The under surface is very different, when the feathers of the crop and upper breast first appear they are of a brownish-buff tint at their ends, light ashy at their bases with *whitish* shafts; as the bird grows older the breast becomes lighter and more ashy; the flanks in both adult and young are pale ashy, slightly tinged with buff. I should here like to call attention to the enormous size of the claws of the young bird; when four weeks old they are fully as long as in the full-grown bird, and at seven weeks they look almost like the talons of a bird of prey, being over three quarters of an inch long, strongly curved and hooked

at the tip, doubtless this is to enable the bird to get a firm footing on the rocks, they soon get worn down ; the adult birds, even in captivity, having much shorter and blunter claws.

I now come to the bird which died when it was a little over three months old. The first quill and tail-feathers are still retained, but nearly the whole of the smaller feathers seem to have been renewed, many are still growing and so are perfectly fresh moulted, this perhaps accounts for the brilliant colouring of this bird ; the upper surface as well as the sides of the head are a good shade darker than in the adult, being of a blackish-grey colour, the chin is lighter and does not yet seem to have been moulted, numerous pin feathers appearing here ; the upper surface of the body does not call for special remark, beyond the fact that the three bars on the wings are very distinct and black ; on the under surface all trace of the brownish buff of immaturity has disappeared, but the crop, and to a lesser extent the abdomen, is covered by feathers of a beautiful pure pinkish-buff ; the breast might be described as diffused with a pale rosy tint, I believe that this is the normal colouration of this part when the feathers first appear, but that they fade to almost pure white after a little while, though my old birds have moulted twice since I have had them I certainly have not remarked this rosy tint, but when the bird is flying about it is not so conspicuous ; I had not noticed it in the young bird until I came to handle it. Although the breast appears white in the old birds, the downy part at the bases of the feathers is ashy-grey, and the central portion of the upper surface of the shafts of these feathers is dark-greyish in colour. The plumage of the breast is wonderfully thick and silky looking.

This brings me to the end of my notes on this most curious and highly interesting bird, which is also known by the names of White-backed, White-bellied, Blanched and Hooded Pigeon. It is seldom imported, so cannot often be obtained ; it seems scarcely credible, yet the importer of my birds told me that there was little demand for them and that he would never go to the trouble of obtaining more, so singularly apathetic are Bird-keepers when they have the opportunity of acquiring something really worth having.

MORE NOTES ON THE BROM-VOGEL.

Bucorax cafer.

By Miss ALICE HUTCHINSON.

I was much interested in reading Mr. Selater's article in the February magazine on this somewhat uncanny-looking bird of S. Africa, for to me he is quite an old friend.

He is not at all timid in his wild state, and I have often seen couples of them walking about on the veldt, looking for tit bits in the way of frogs, beetles, locusts, &c., and not troubling to fly off as we passed on horseback.

A pair built every year in the big gum trees not far from our house, though the nest was never visible; the trees were large and of a great height, and as the limbs were often torn off by the wind, or smashed by lightning, most likely they found many convenient hollows for their nest, quite invisible to human beings below.

Their curious booming note has earned for them, in Natal, the name of Doom-doom, from the Kafir word *duma*, meaning thunder, and the natives have a great superstition that if a Doom-doom is wantonly destroyed, a most terrible thunderstorm will come and work havoc among their crops and cattle; so, thanks to this superstition, this large and interesting bird is left in peace.

He seems to be quite harmless, and is certainly not a beauty, so there is no reason why he should be molested, and we hope that the Kafirs will always keep up their superstition about him, and not take a fancy to any part of his person with which to adorn themselves. The pretty little cock 'isakabu!a' (Whydah bird) suffers from the vanity of the natives, for he is persecuted for his beautiful bunch of tail-feathers, which are considered a very high-class adornment as a head-dress on festive occasions.

I think the Colonists have a secret affection for the Brom-Vogel, and rather like to hear them about among their trees, for he does not seem to fall a victim to the too ready gun of most of them, who, worse luck, learn to shoot from their childhood, and evidently find a great pleasure (save the mark) in destroying God's creatures.

AUSTRALIAN BIRD NOTES.

By GREGORY M. MATHEWS, F.R.S.E.

In a collection of bird skins, eggs and nests sent to me from North-West Australia, I find some interesting material.

The nest of the PALE BUSH LARK (*Mirafra milligani*, Mathews), was found out in an open plain and was placed between two small bunches of grass. It was constructed of stems and blades of old dead grass and lined with finer material of the same kind. In shape it was hooded, with a large opening in the side. Dimensions outside: $4\frac{1}{2}$ by 4 by 4 inches high. Inside: 2 by 2 by $2\frac{3}{8}$ inches high. Size of entrance: $1\frac{3}{4}$ wide by 2 inches high.

The nest was built into a small neatly-made hole in the ground.

Clutch, three. Stone-colour marked all over with irregular spots of brown, with underlying ones of lilac. 20^{mm} . by 14.

Two of these eggs were hard set, the other clear. The parents were also sent. Collected on January of this year.

This Bush Lark is found in the North-West of Australia only.

The nest of the BLACK-TAILED THICKHEAD (*Pachycephala melanura*, Gould), was placed six feet up in a Mangrove tree, in a three-pronged fork. It was constructed of soft coarse rootlets (one of which was twenty-four inches long) and lined with finer ones. The outside of the nest was lightly covered with cobwebs and was loosely attached to the tree with the same material. Dimensions outside: $3\frac{1}{4}$ by $3\frac{3}{8}$ by $2\frac{1}{2}$ inches. Inside: 2 by 2 by $1\frac{3}{8}$ inches deep.

Clutch, two. Whitish ground colour, with a ring round the top end, of red spots and underlying ones of grey. 21^{mm} . by 16.

Collected Dec. 27th, 1910. The parents were also sent.

The nest of the WHITE-BELLIED THICKHEAD (*Pachycephala lanoides*, Gould), was placed six feet up in a white Mangrove, and was built in a fork in the centre of a small tree growing out in the open beach about ten yards from the Mangrove thicket. The nest was conspicuous, and was built of twigs and rootlets and lined with finer material. It was fastened to the tree with cobwebs. Dimensions outside: $4\frac{1}{2}$ by $4\frac{3}{4}$ by $2\frac{1}{2}$ inches deep. Inside: $2\frac{7}{8}$ by $2\frac{1}{2}$ by $1\frac{3}{8}$ inches deep.

Clutch, two; brown olive spotted round the larger end with deeper olive spots. 27^{mm.} by 18. One egg hard set, the other clear. Collected 23rd Dec., 1910. The parents were also sent.

A peculiarity of these two species of Thickheads is that so often one finds one of the eggs hard set and the other clear.

The GREY ROBIN (*Pacilodryas cinereiceps*, Hartert), is never found away from the Mangroves. They are quiet birds, mostly ground feeders, and are usually seen perched on a twig close to the ground. They sit perfectly still, occasionally uttering a low whistling note, which is repeated once.

Piezorhynchus nitidus, Gould, are found in the very densest Mangrove scrub, and are usually seen creeping through the roots within a few inches of the ground. They are not numerous.

The DUSKY FLY-EATER (*Gesygone terebrora*, Hall), is purely a bird of the Mangroves, and is very tame, and will come within a foot or two of one; in fact, they have alighted on the barrel of a gun. It is difficult to get far enough away from them to shoot them, so that one can skin them afterwards.

It is very noticeable how the scrub birds, and those of the Mangroves, keep to their own localities. Taken as a whole there are few birds in the latter place.

With reference to the LONG-TAILED GRASS FINCH (*Poëphila acuticauda*, Gould), there is absolutely no difference between the colour of the bills of those from Wyndham and those from Derby. It will be remembered that a sub-species was described from captive birds and called *P. hecki* by Heinroth, and *P. aurantiivostis* by North. These two latter names are only synonyms of *P. acuticauda*.

The nest of the WHITE-SHAFTED FANTAIL (*Rhipidura alisteri*, Mathews), is wine-glass shaped (with a tail-piece) composed of soft pieces of dried bark, plastered over the outside with spiders' webs, and lined inside with horse-hair or soft bark. Dimensions: outside, 2 inches to 2½ inches, by about 4½ inches (including the tail-piece). Inside, 1¼ to 1½ inches by about one inch deep.

Clutch, three. Very light buff, spotted all over, but more thickly (forming a zone) round the larger end. 16^{mm.} by 12.

The nest of the AUSTRALIAN RAVEN (*Corvus marianæ*, Mathews), is a large open one, composed of sticks, which get finer as the egg cavity is reached. Situated in a forked tree. The cavity is lined with fine material. Inside measurements: 8 inches by 5

Clutch, three to four. Long shaped; pale green ground colour, irregularly spotted, but more at the larger end, with spots and smudges of dark-brown. 45^{mm.} by 28.

The nest of the MANY-COLOURED PARROT (*Psephotus dulciei*, Mathews), is placed in a hole in the tree.

Clutch, three. Pure white. 22^{mm.} by 18.

The nest of the YELLOW-MANTLED PARROT (*Platycercus ceciliae*, Mathews), is placed in a hole in the tree.

Clutch, five to six. Pure white. 25^{mm.} by 21.

BIRD NOTES FROM THE ZOOLOGICAL GARDENS.

By THE CURATOR.

The most important arrivals during the past month are as follows.

1 Hybrid duck, between *Aythya nyroca* and *Marmaronetta angustirostris*; 1 Indian Roller (*Coracais indica*); 1 female Swinhoe's Pheasant (*Euplocamus swinhoii*); 2 Woodhouse Jays (*Aphelocome woodhousei*), and 3 Pigmy Ground Doves (*Chamaepelia minuta*) from America, both of which species appear to be new to the collection; 1 Fraser's Eagle-Owl (*Bubo poensis*); 2 Sharpe's Wood-Owls (*Syrnium nuchale*); 1 Beautiful Wood Hawk (*Dryotrionchis spectabilis*), and 1 One-streaked Hawk (*Melierax monogrammicus*) from West Africa; a fine adult cock Monaul Pheasant (*Lophophorus impeyanus*) from the Himalayas; a Red-bellied Thrush (*Turdus ruftventris*) from Brazil, and three Mortier's Waterhens (*Tribonyx mortieri*) from Tasmania.

We have several clutches of ducks eggs under hens, and hope to rear a number of good kinds. At present we have Chestnut-breasted, Chilian and Andaman Teal, Carolina Ducks and Variegated Sheldrakes' eggs. I believe that the only really satisfactory way of rearing the better kinds of ducks is to take the eggs and trust them to reliable hens.

The Black-necked Swans, which nested too early in the year, failed to hatch, the eggs being doubtless chilled by the excessively cold weather. These birds often go to nest in June or July, when success is much more likely.

The Pheasants have commenced to lay, and it has been extremely interesting to watch the wonderful and various methods of display of the cocks of the different species. The Horned Tragopan for instance walks round the hen with his body flattened out so as to display as much as possible of his wonderful plumage on the side nearest to her. Occasionally in moments of great excitement he suddenly inflates the loose skin of his throat forming an elongated bag of intense blue.

The male Peacock Pheasant again is a wonderful spectacle when in full display, but as I understand Mr. Pocock is about to give us a paper on the display of this species I will not attempt to describe it here.

I hope we may be successful this year in breeding the Hammer-head (*Scopus umbretta*). The pair that bred last year have been busy all through the winter finishing off a nest commenced last autumn.

Nesting platforms have been fitted up in the Eastern Aviary for Curassows and the pair of Cariamias, and I hope we may be successful with some of these interesting birds.

In the Crescent Aviary Redrumps, Cockatiels and Bugarigars are nesting.

CORRESPONDENCE, NOTES, ETC.

AVICULTURE AND BIRD PROTECTION.

SIR,—With regard to Aviculture and the Protection of Birds, I cannot see why the two should clash. I belong both to the "Avicultural Society," and the "Wild Birds' Protection Society," and it has always seemed to me that the two could with advantage work together. The Aviculturist should be as keen about the Protection of Birds, as the Wild Birds' Protectionist.

Exaggeration and going to extremes usually defeat the object in view, and prevent useful work from being done.

Aviculture is a beautiful, interesting and useful branch of learning, giving pleasure and knowledge to very many, and enabling the bird to become acquainted with and have confidence in his human friend. Very

few people are able to study the bird in its native haunt, and the only way of learning about him is to keep him—not a prisoner, but a pet.

A pet bird should be given its own natural surroundings as far as possible, and the owner should learn of the bird, and not expect the bird to learn of him.

What a wretched sight to see a little Goldfinch or Redpoll doing tricks, or to hear a piping Bullfinch go over the same song like a machine wound up! On the other hand, given their natural conditions as far as possible, these same birds will exhibit far more interesting traits of their own than any tricks that man can teach them.

The crying evil of bird-taking is the senseless indiscriminate way in which the birds are caught, millions to adorn (?) fashionable hats of silly women, and millions to fill the bird-dealers' shops.

If, in addition to the Anti-plumage bill, laws were enacted for the restriction and proper surveillance of bird-catching—all over the British Empire—the cause of aviculture would not suffer, while beautiful species would not become rare or extinct. There could be licensed watchers and catchers, one young bird to be taken out of a brood, and only so many taken as are wanted. If the trappers are sufficiently keen to almost clear a district of birds, the watchers can be equally keen to prevent this being done. Boy-scouts would make excellent watchers.

Bird-dealing could be relegated to a few licensed dealers, thoroughly understanding their business, to receive the birds on their arrival. It is often a joy and solace to a poor person to keep a pet bird, and this should be permissible, members of the Avicultural Society seeing to it that proper conditions are fulfilled. As a wild bird's protectionist, I should be tempted in my zeal for my beloved feathered friends, to push things to extremes, if I did not reflect that untold myriads of beautiful birds perish yearly in migration, becoming the prey of other birds, or dashed against lighthouses.

We have just read of the remarkable rush of millions of birds coming to Ireland, terrified by atmospheric conditions, and the fearful waste of bird life in consequence. Add to this the frequent congested flocks of Larks and Crossbills arriving here, more than half probably perishing, not to mention the countless numbers of birds that perish from cold in winter all over the earth,—and the capture of a few hundred birds in the cause of Science, with the prospect of a happy life before them with their human friends, sinks into insignificance.

KATHARINE CURREY.

NOTES FROM WOBURN.

SIR,—I fear it is somewhat late to send notes relating to the breeding season of 1910, but though many interesting birds were hatched, the number reared was not such as to prompt an irresistible desire to rush into print to record our successes.

One pair of Sarus Cranes nested three times. On the first occasion

a young one was hatched and lived for a month, but waded into some soft mud and was unable to extricate itself. They nested again twice but did not hatch their eggs.

A second pair had two chicks both of which were drowned. They nested again a second time, but with no result.

The White-necked Japanese Cranes reared one young one. The Manchurian Cranes did the same.

A male Whooper and female North American Swan (*C. columbianus*) nested and hatched five cygnets. Two were killed by deer and the remaining three survived. These hybrids are curious as neither species has nested at Woburn before, and though both birds could have mated with their own kind, they have persistently "walked out" together for at least two years.

There were broods of Bahama Pintails, Fulvous Ducks, Brazilian Teal, Chilian Teal, Chilian Pintails, Mandarin Ducks, Carolina Ducks and American Wigeon, but I do not think that any arrived at maturity.

A pair of Rose-breasted Cockatoos made a hole in the ground in the Abbey quadrangle in which they laid three eggs. Two young birds were hatched, both of which survived. The old birds are full-winged and at large, but come to the Abbey to feed.

The Orange Weavers, which are also at large in the garden, made nests and laid eggs, but I am not aware that any were hatched. They are very satisfactory birds to turn out as we see a flock of about twenty-four of them, day after day on the same bushes.

Two pairs of Red-eared Bulbuls made four nests in the garden.

Sixteen Darwin's Rieas were hatched but only four were reared. Both adults and young birds suffered very much from ticks which attached themselves round the eyes. After the ticks came flies, which caused the eyelids to swell so that the birds were blinded and could not feed. As the cock bird was wild when in charge of the young, and as we have not been successful in rearing them by hand we were obliged to leave them out, and only just saved the cock by taking him in for treatment when the young were old enough to look after themselves.

M. BEDFORD.

THE MAROON ORIOLE.

SIR,—With reference to Mr. Willford's most interesting article in last month's Magazine, I may mention that I also possess a pair of these birds which I purchased from Mr. Jamrach, of St. George's Street, E.

POLTIMORE.

[From reference to the last published "List of Animals" (1896), this species does not seem to have ever been exhibited at the Zoological Gardens. Ep.]

REVIEWS.

BRITISH BIRDS IN THEIR HAUNTS.*

Written so long ago as 1862, this book is now in its twelfth edition, so we must conclude that there is still some demand for it amongst those for whose use it was designed. In his preface the author expressly disclaims all idea of proposing it as a substitute for more comprehensive works, and suggests that it will be found a pleasant companion for country walks and as a preparation for the more serious study of ornithology. In the present age of increased interest in all things appertaining to Nature Study an elementary and popular handbook devoted to the study of our country's Birds is certainly welcome, if the knowledge contained in it be sound. We can heartily recommend the book as one which contains a reliable groundwork for young Nature Students. Having been written so long ago, errors are to be expected, but these are surprisingly few, and we have come across none of serious moment, the arrangement and nomenclature are of course antiquated, but for the class of reader for which this book is intended this is of minor importance.

The wood blocks, which illustrate almost every species, being taken from drawings by Wolf, are of course accurate and quite adequate to the subject matter. The coloured illustrations on the other hand are, we think, a mistake. It is impossible to produce really good coloured plates at the price at which the book is sold, and bad ones are we consider worse than useless. We should have certainly liked the present work better without them.

N. F. T.

THE GIZA ZOOLOGICAL GARDENS. †

The second edition of the "List of Animals," by Captain Stanley S. Flower, the Director, is an imposing volume of 372 pages, and several excellent photographic plates.

The Giza Gardens were founded in 1891, but unfortunately no record appears to have been kept of the animals living there-

* BRITISH BIRDS IN THEIR HAUNTS, by the late Rev. C. A. JOHNS. 8vo., 12th Edition. 600 pp. and 16 col'd. plates. Price 5/-. The Society for Promoting Christian Knowledge.

† LIST OF ANIMALS AT THE GIZA ZOOLOGICAL GARDENS, by Captain S. S. FLOWER. 8 vo. 372 p.p. Illustrated. Cairo. Price 5/-.

in during the first seven years. The present Director however commenced a detailed list of the stock directly he took charge in 1898, and this has been carefully kept up to date.

During the last twelve years 8,250 animals have been registered at the Gardens, of which 4,010 were birds. The progress made is shown in a Table published of the number of animals living in each year. In 1898 the total was 270, and this has gradually increased until in 1910 there were 1,464.

Captain Flower has introduced a most valuable feature into his List, namely figures showing the maximum ascertained length of life in the Gardens of an individual of each species.

In the case of some of the smaller birds, the length of life has been probably longer than stated, for in a collection of specimens of the same species it is not possible to recognise each individual, and when one dies it is presumed to be the earliest acquired. Thus no exaggeration of longevity can appear in the records.

Turning to the records themselves we find that a Redstart has lived 1 year 6 months and 6 days, and was still alive when the Report was written; a Red-throated Pipit 1 year, 6 months, 27 days, and still alive; a Pintailed Whydah, 5 years, 10 months, and still alive; while a Paradise Whydah was living when the Report was compiled, which had been in the Gardens for 9 years, 2 months and 7 days. A common Avadavat lived for 7 years and 5 months; while a Java Sparrow lived for over 10 years, and a Pintail Nonpareil for over 4 years, and so on.

There are several records of species having been bred in the Gardens, such as the Yellow Sparrow (1), Grey-headed Love-bird (8), Griffon Vulture (1), White Pelican (5), Buff-backed Heron (many), White-faced Whistling Duck (16), Barred Dove (27), Crowned Pigeon (3), Spotted Sand-grouse (2), Hey's Partridge (41) and Green-backed Porphyrio (10).

That Captain Flower has done much for the Giza Gardens is known not only to those who have been fortunate enough to visit them, but to all who have followed their progress by their publications, and now it is evident from the present Report, that the Gardens and their live-stock reflect the greatest credit upon their able Director and his assistant.

D. S.-S.

THE EMU.*

Although not strictly an avicultural journal *The Emu* contains abundant material of the greatest interest to those whose acquaintance with the Australian avifauna is perforce confined to caged specimens. Of late years many Australian species have been imported alive into this country, so that birds from that region are to be found in many private aviaries.

In the number for October, 1910, there is an extremely interesting article by Mr. S. W. Jackson on the habits of the Tooth-billed Bower Bird (*Scenopæetes dentirostris*). Snails are apparently its favourite food, and, from an examination of the stomach contents, no less than four new species of Molluscs have been described, apart from snails however, it also feeds on insects, seeds and fruit, and should therefore adapt itself fairly readily to captivity.

In common with other species of Bower Bird, the Tooth-bill has 'play-grounds' to which he frequently resorts at certain times of year, and which are decorated with many kinds of leaves. Mr. Jackson studied its habits carefully and found that it only used the leaves of certain trees, and although the leaves used were of various sizes and shapes, yet they were obviously not picked at random but carefully selected. The play-grounds are not used during the breeding season, when, as Mr. Jackson remarks, it has other and more important business to attend to.

Mr. Chandler communicates some notes on the Pardalotes, with especial reference to their nesting habits and the plumage of the young; and a most interesting illustration shows a flock of Wild Lorikeets (*Trichoglossus novæ-hollandiæ*) coming down to feed at a 'bird-table,' while their human provider ladles out a syrup of milk and sugar on to a plate. These birds, which are entirely wild-bred, have lost all fear, and settle on the arms, head and shoulders of their benefactress.

The December number is a special part devoted to the annual meeting and excursions in connection with it. We are pleased to note that the A. O. U. is in a flourishing state both as regards its membership and finance, and, in fact, with so many

* *The Emu*, Oct. & Dec., 1910, Jan., 1911. Quarterly 4s.

London Agent: R. H. FORSTER, 7, PRINCES STREET, CAVENDISH SQUARE, LONDON, W.

keen and intelligent ornithologists it could not well be otherwise. Space forbids us from noticing this number in detail. It is lavishly illustrated with photographs showing both the localities visited and many nests and young birds, and one cannot fail to be a little envious of Australian ornithologists in having so many interesting species, nesting within comparatively easy reach of their large commercial centres. The haunts of the Blue Wren and of the Crimson Finch will perhaps appeal most to aviculturists. Those interested in the habits and life histories of Australian birds might do worse than subscribe to a journal so full of excellent articles and illustrations.

MULE AND HYBRID BIRDS.*

Last month we had the pleasure of noticing a book by Mr. Silver on the practical management of British Birds in captivity, and the book now before us follows practically the same lines in dealing with the much more intricate subject of mule and hybrid breeding. To the beginner, as well as to the experienced fancier who wishes to take up this branch of the subject, this book will prove a reliable and exhaustive *vade mecum*, and if the hints given are carefully carried out, success should be as nearly assured as it is possible to make it. Mr. Mannering has very wisely devoted his space entirely to the practical side of the matter, the hybrids themselves are not described, though those most frequently seen on the show bench are figured in the coloured and other plates.

In the case of a book full of good things, it becomes difficult to mention any special points, but those members who will remember the discussion which raged some years back on Cages *versus* Aviaries will be interested to note that for most crosses Mr. Mannering advocates the former as giving the greatest probability of success.

Those who are more interested in hybrids from the scientific side will find much food for thought in many of the author's notes. The breeding of light mules from sib-bred canaries still awaits a scientific interpretation, and the details and difficulties of sib-breeding, as given by a practical breeder, are well worth a study.

* MULE AND HYBRID BIRDS, by ROSSLYN MANNERING, 48pp, 4to., with five coloured plates and other illustrations. London: *The Feathered World*, 9, Arundel Street, Strand. Price 1/6; post free 1/8.

Lastly, a list is given at the end of the book of the known Hybrids that have been obtained. Although this list does not claim to be complete (and we notice several omissions) yet it forms a good basis on which a list may be formed, and being one of the first attempts to make a complete list is most valuable for reference.

Practical books, written by practical men, always contain useful information, and we heartily recommend it to all our readers, whether they breed hybrids or not, as it abounds in information valuable to all aviculturists.

FEATHERS AND FACTS.*

In spite of the diminution of many of the most beautiful birds in the world, the demand for the feathers still continues with unabated force. We do not for one moment believe that ladies wilfully aid in this destruction, but rather that from the dictates of fashion and from ignorance of the real state of affairs they continue to adorn themselves with some of the most beautiful of Nature's creations. In so doing they are exterminating Nature's works of art, and once destroyed these are gone beyond a possible hope of ever again existing. Were these facts more widely realized we feel sure that the trade in these plumes would cease to exist, and the little pamphlet before us, which has just been published by the Royal Society for the Protection of Birds not only puts the case and the results very clearly, but at the same time gives an answer to the feather traders, who are opposing tooth and nail an anti-plumage Bill now before Parliament.

The destruction done by collectors for the plume trade becomes especially dangerous to the existence of the species they hunt, because they are usually slaughtered during the nesting season, when the plumes of all birds are at their best, and also because at such times birds are tamer and many species collect in large breeding colonies, thus reducing the labour of getting the plumes to a minimum. The enormous destruction that is thus brought about is almost inconceivable, but the fact remains that in many parts of its range the Egret has ceased to exist, that on some of the islands of New Guinea no full-plumaged Paradise

* FEATHERS AND FACTS. Statement by the Royal Society for the Protection of Birds. 74 pp., 8vo. London: Roy. Soc. Prot. Birds, 23, Queen Anne's Gate, S.W. Price 6d.

Bird escapes destruction, and that during the early part of one season no less than 300,000 Albatrosses were slaughtered on one small island, and the remainder only saved by the timely arrival of a revenue cutter. No species in a state of nature can long withstand such destruction, nor are we better than vandals to countenance it. Although not, strictly speaking, an avicultural subject, the wider the facts are known the better, and all lovers of birds should read this pamphlet and learn the by no means pleasant facts.

Books received: Ornamental Waterfowl by Hugh Wormald; Nests and Eggs of Birds found breeding in Australia and Tasmania, Vol. III, Part I., by Alfred J. North, C.M.Z.S.; British Birds, April, 1911.

PRACTICAL BIRD-KEEPING.

IV. PARRAKEETS.

By D. SETH-SMITH, F.Z.S.

The keeping and breeding in captivity of Parrakeets has for long been a favourite hobby, for, taken as a whole these birds are hardy, easy to keep and very showy.

In a popular article it is not possible to go very fully into the habits and requirements of the various and very numerous species of the smaller Parrots which are known as Parrakeets or Paroquets, so I propose to divide this paper into two parts, the first dealing with the kind of aviaries most suitable for these birds, and the second with the birds themselves.

AVIARIES FOR PARRAKEETS.

The best type of aviary, in the opinion of the present writer, is that consisting of a well lighted covered shed or house, opening into a large wire flight containing a drinking fountain or large bath and a turf lawn. If many species of Parrakeets are to be kept, a range of such aviaries should be erected with a southern aspect, compartments being divided off for each pair of the larger kinds.

Regarding the size of such aviaries. This of course must be governed by the available space, but as a general rule the covered portion should not be less than eight feet square and ten feet high. If larger than this, so much the better.

The wire flight should, if possible, cover a larger area than the shed. A good rule being to make the area of the former double that of the latter.

It is advisable that the flight should be less in height than the shed, and the top of the opening from one to the other should be as high up, or nearly so, as the top of the flight, most birds, especially when new arrivals, objecting to dipping down into a low opening.

The covered portion of an aviary should be substantially built, preferably of brick, or double tongued boarding, and care must be taken that no holes or chinks are left that would cause a draught.

The roof should consist of tongued boarding, felt, and tiles or corrugated iron, and should contain a large skylight made to open for ventilation in hot weather, a wire-netting guard being fixed on the inside.

A door or large window should be fixed to the opening into the flight, so that the birds can be shut in altogether if necessary. All windows should have a wire-netting guard on the inside.

The floor of the shed should be of concrete, that of the flight mostly of turf with a gravel path.

Such is, in outline, the plan of a very simple and useful type of aviary, but this can be improved upon considerably if thought desirable. For instance, in a range of such aviaries a service passage running along the back with doors into each compartment is most useful as it allows the attendant to visit any one compartment without the necessity of going through several other compartments to get to it.

It is most important that the aviary be made secure against the ingress of such vermin as rats, stoats or weasels. The inside or shed portion, if provided with a concrete floor will be practically safe, but the outer flight, which has a natural floor of earth is the most likely place for the enemy to attack. A simple and effective method of making this secure is as follows. A trench should be dug round the flight, eighteen inches wide and eighteen inches deep, and the wire netting, which by the way should be of five-eighth or even half-inch mesh, should be carried to the bottom of the trench and then turned outwards at right

angles to the width of the trench, and the soil filled in and rammed. With this protection, providing there are no old drains below the site, the aviary may be regarded as safe.

WARMING.

If only the hardy species of Parrakeets are to be kept, and these introduced during warm weather, it will be unnecessary to provide artificial warmth during the winter months, providing the aviary is in a sheltered position and has been properly constructed. As a rule, however, the amateur is not content to keep only the hardy kinds, but wishes to keep those from such habitats as the Northern parts of Australia or Tropical America, and this being so it is necessary to provide artificial warmth during the English winter. For newly-imported birds also, some slight warmth is necessary until they become acclimatised, even though they belong to species which are quite indifferent to cold when once established. It is, therefore, desirable that an efficient warming plant be included in the specification of an aviary for Parrakeets.

If the aviary is divided into several compartments it would be a good plan to be able to warm say half, that is, there would be three of the inner portions warmed in an aviary of six compartments.

Regarding the type of apparatus most suitable. Hot-water pipes, heated by a coke or anthracite boiler provide the most economical and safest means of warming. A row of two four-inch pipes, one the flow and the other the return pipe, should be found quite sufficient. The boiler should be outside the aviary, in a small shed at one end, where it can be stoked at night without disturbing the inmates of the aviary. If possible the pipes should run along the front of the building, just below the doors into the flight, or the flow pipe may be carried above the doorways and the return below them. The pipes should be protected by a removable wire-netting guard.

There are many good boilers on the market. The present writer used a "Horseshoe" boiler, which was quite successful, but there are others equally good. One word of advice regarding the boiler may be added, namely, that it is false economy to have a very small boiler, as in order to properly warm the pipes it is necessary to drive a small boiler so fiercely that it

requires constant stoking, and thus burns much more fuel than a larger boiler which is allowed to burn gently.

AVIARY FITTINGS.

A tray, about two inches in depth and from nine to twelve inches in diameter forms a very useful receptacle for seed. It should be supported upon a light iron framework hung from the roof, where mice cannot reach it, and in such a way that it can be lifted out for cleaning daily.

Nesting boxes are made in varying shapes and sizes. They should be oblong in shape, with an entrance hole at one end near the top, a short perch just below this hole, and a small door near the end farthest from the entrance, for inspection and cleaning. The bottom of the box should be so formed that there is a saucer-shaped depression near the end, and a gentle slope down to this from the entrance.

For such Parrakeets as Cockatiels, Rosellas, Redrumps, and so forth, the dimensions of the box would be: length, 1 foot 6 inches; height and width 8 inches; and the entrance $2\frac{1}{4}$ inches in diameter. For larger birds, such as Kings, it should be somewhat larger, and rather smaller for such as the smaller Conures and Lorikeets.

For Budgerigars I have found the most suitable box is one eight inches in height by six inches in the other two dimensions, with an entrance hole of $1\frac{1}{2}$ inches in diameter, and the bottom made slightly concave. But for these little Parrakeets several nesting-boxes can be made in one as they are gregarious and very sociable and do not object to their nesting-holes being only a few inches apart.

Nest-boxes should always be fixed high up on the walls of the covered portion of the aviary, preferably in a corner as far away from the door as possible and somewhat hidden by brush-wood.

Perches should be freely supplied, and should consist merely of strong branches of trees securely fixed to the walls or roof. If perches or seed-tray are hung from the roof by a stout wire, this should have a stick wired on to it to make it visible to the birds, and so prevent them flying against it, as they might do if the wire were practically invisible.

The floor of the shed should be covered with clean sharp

sand, and in one corner there should be a small heap of old lime-mortar.

If a fountain, with proper supply and drainage, is provided in the outer flight, no water will be necessary in the shed, unless the birds are for any reason shut in, when of course water must be supplied in a clean dish such as a glazed flower-pot saucer.

(To be continued).

PRACTICAL, BIRD-KEEPING.—CORRESPONDENCE.

THE RESULT OF TRYING TO KEEP VARIOUS BIRDS IN AN UNHEATED AVIARY DURING THE WINTER.

SIR,—Records of failures are often as instructive in their way as accounts of successes, and that is my excuse for sending what may seem rather an unsatisfactory record of an experience in keeping several of my birds in an ordinary out-of-door aviary during the winter.

The aviary was a good sized one, 17ft. by 4ft., with an average height of 6½ft. and boarded on every side except the east; I left the east side unboarded to enable the birds to get what sun there was, as the south and west sides were so over-shadowed by large firs and pines that they were always in the shade. The east side, too, was fairly sheltered from winds, but to make it as warm as possible I built a little hedge of furze up to about 3½ft. high. In this aviary I made a covered-in shelter, where I hoped my birds would take refuge in the hardest weather, and then when I had also boarded over most of the top, I hoped I had made it warm enough for the birds I had decided to put in.

These were a pair each of Masked Finches; Yellow-rumped Munias; Bronze-winged Munias; Jungle Bush Quail; Hemipodes (*Turnix pugnax*); Stubble or Australian Quail; a cock Bengalese, and an odd hen Bush Quail.

I turned them in in November, just before leaving home for the winter, and when I returned in the following April I found a sad record of disaster.

Both Hemipodes had died and mysteriously disappeared, not a feather of either having been found. The hen Jungle Bush Quails had both died from egg-binding, the last one on April 18th; this one had also lost every toe of both feet. The cock Australian Quail had died crop-bound. Both Bronze-winged Munias had died. The hen Masked Finch was dead and the cock had lost a toe from either foot.

So of the fourteen birds turned out seven were dead in April. The ones that came through: the cock Jungle Quail; the hen *pectoralis*; the Yellow Munias, and the Bengalese; passed the winter in perfect health, in spite of the fact that during the early part of February there was a heavy snowstorm from the east which banked up inside the aviary, and that there were several exceptionally hard frosts during the winter.

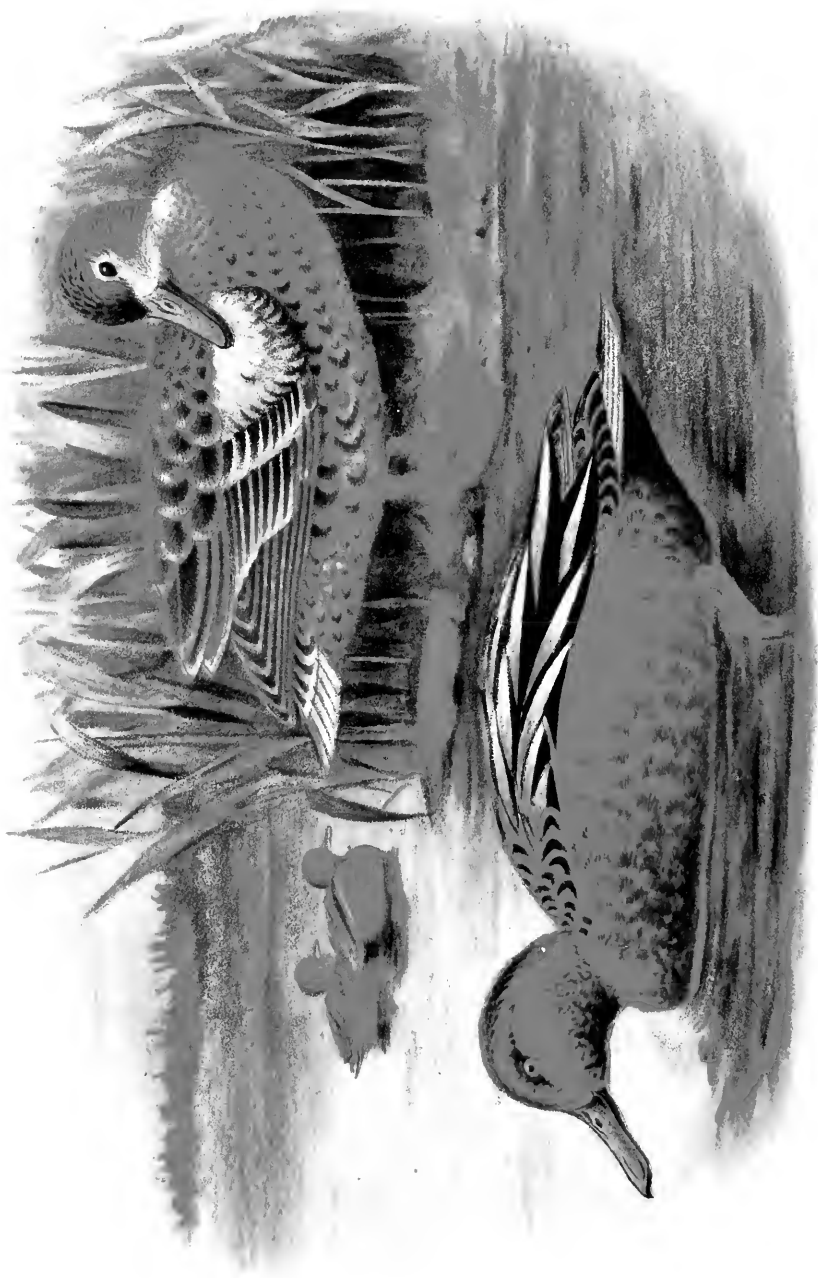
The loss of toes was most certainly, I should say, caused by the frost, and the cold was also accounted for egg-binding. The crop-binding I cannot account for.

The Grass-finch probably died from egg-binding as there was a nest built in the furze before I left in November.

H. L. SICH.

[It would interest many of our readers if members would send in records of what birds they *have* been able to keep in out-door aviaries, and give also details of the aviaries, how built, and what special precautions were taken.—ED.]





H. Goodchild del.

CINNAMON TEAL
Querquedula cyanoptera.

West Newman chr

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THE CINNAMON TEAL.

Querquedula cyanoptera.

By D. SETH-SMITH, F.Z.S.

During the summer of last year I had the great pleasure of viewing the wonderful collection of Waterfowl at Woburn, and amongst the smaller species of ducks the one that struck me most was the very handsome and brilliantly-coloured Cinnamon Teal. I had never before seen a living example of this species, and promptly resolved that no stone should be left unturned to secure specimens for the Zoological Gardens.

I was successful sooner than I anticipated, for, after writing letters to both North and South America with a view to importing specimens, I received an offer of examples of this and other desirable species from Holland, and was able to secure two good pairs. The Cinnamon Teal has a wide distribution in America, occurring from California to the Straits of Magellan, and in the Falkland Islands. It is rare in Eastern America.

Writing of this Teal in the Argentine, Mr. W. H. Hudson remarks: "On the pampas it is common, and almost invariably seen in pairs at all seasons. Many of the Teals are quarrelsome in disposition; but this species, I think, exceeds them all in pugnacity, and when two pairs come together the males almost invariably begin fighting."

The two pairs now in the Zoological Gardens are kept on separate ponds and appear to be perfectly peaceable with other species. The male and female seem to be very affectionate and are never more than a few yards apart. So far they have not nested, but it is still early in the season and I imagine that they are rather late breeders. I hope to be able to supplement these notes later on with an account of the young birds. The nest is

said to be placed on the ground, and to be composed of grass, lined with feathers, the eggs, numbering from nine to fourteen to the clutch, being pale bluish-white or cream-white in colour. (Cory).

A description of this lovely Teal is unnecessary in view of Mr. Goodchild's excellent plate which accompanys this paper. It is about sixteen inches in length, and both sexes possess the beautiful blue-grey wing-coverts, a character which they share with the closely allied Blue-winged Teal (*Q. discors*) of North America, and a few other ducks.

Ridgway describes the downy young as follows: "Above dark olivaceous, varied by a spot of deep greenish buff on each side of back (behind wings), and a spot of clear yellowish on each side of rump, at base of tail; top of head and hind neck similar to back but darker; forehead, broad superciliary stripe, sides of head and neck, and lower parts generally, deep buff yellow, the sides of the head marked with a distinct narrow stripe of dark brown."

In the "Zoological Society's Vertebrate List," *Q. cyanoptera* is given the trivial name of "Blue-winged Teal," a title that is now universally applied to *Q. discors*. Between 1884 and 1893 five specimens were received at the Gardens, but no young appear to have been bred.

WATER-COLOUR STUDIES OF BIRD LIFE.

By H. GOODCHILD.

Before these lines appear, some of our members will have had the privilege of seeing the series of water-colour studies, some thirty in number, of British Birds, by George E. Lodge, that is being exhibited at the Rembrandt Gallery in Vigo Street, London, W.

To those who have received invitations but who have not yet gone, I should give the advice "go," especially if they have been to the Royal Academy to look at such pictures of birds as are to be seen there, and wish, as a relief, to see works by an artist who is also an observer.

Mr. Lodge is probably more an outdoor student, and less a museum worker, than anyone I know, who professes to be a

bird-artist, and as might be supposed, his work reflects Nature in a less conventional or artificial way than that of many artists who have received Academy or art school trainings, and especially is he superior to those whose work is to provide scientific cabinet Ornithologists with the transcripts that we know all too well in orthodox works. Not that this is a personal or artistic virtue of his, for the poor "scientific artist" (if such a being can be) as the writer knows to his cost, has to "render unto Cæsar," while Mr. Lodge goes his own way and is his own master.

As he recently remarked to me "One gets tired of drawing birds in profile, and eliminating the light and shade so as to show the local colour all over."

That he goes his own way in the matter of attitude is shown by the remark made to me by an old pupil of Wolf's—"You see a drawing of a bird by Lodge, in a peculiar attitude and you think it is incorrect, but by and by, as you watch, you see the bird in just the attitude Lodge has drawn it in." Such a remark applies to the study of the Grouse crowing—the attitude is one in which I have seen a cock Pheasant when giving his violent cry or alarm call, although I have not had the opportunity of seeing a Grouse in that exact position.

Mr. Lodge's early years were largely spent in engraving drawings for such periodicals as the once charming "English Illustrated Magazine" and such books as Lord Lilford's "Birds of Northamptonshire," and from doing much black-and-white work, his earlier studies were apt to be deficient in colour, but the time has come when he has freed himself from the restraint unconsciously exerted by the black-and-white work, and can allow himself to indulge in colour freely and to place it on the sound artistic basis of tone.

Some of us, who know Mr. Lodge's work principally by the reproductions in black and white, or monochrome, will look with pleasure at the soft and airy rendering of some of his skies and water subjects, and especially will that be the case with the subject of the Heron, flapping leisurely across a hazy sky, with the sun just visible through the mists; while an example of soft rendering of the reflected clouds is found in one of the studies of a Mallard. A charming water subject is that of a flock of Long-tailed Ducks, seen as they might be on a winter's day, when the

sun is trying to break through the mist or slight fog of a December's afternoon. This study is not a large one and the birds themselves appear quite small in it, but to my eyes, the charm of it is the ripple left by the receding birds, on the otherwise smooth water. Another water subject, with the water in movement amongst reed beds, shows a flock of Wild Duck coming down, as we may suppose, on to a broad in Norfolk, with a reed bed as real in appearance as need be wished. Still another shows a pair of Wigeon, with the male bird rolling over on the water scratching its head: the drawing of the duck is comparatively commonplace, but the pose and drawing of the drake show a courage not often met with amongst bird artists.

That Mr. Lodge can draw the Passerine birds which are most familiar to people who keep birds in captivity, is evinced by the studies here shown and although the two, of Magpie and Jay respectively, are not up to the general standard of these works, the one of the Snow Bunting is one of the best, if not *the* best, drawings of a Passerine bird I have ever seen. It has not the peculiar interest of the painting of the Sedge Warblers at Wicken Fen exhibited at his last London exhibition, which had the distinction of being the best and most life-like study of Warblers I have seen, but it is remarkably faithful and characteristic, and as I have kept Snow Buntings, I can speak with confidence.

The Wren and the Robin are both drawn with fidelity and softness and the same might be said of the study of Goldfinches. The one Passerine subject I did not like, was that of the Bearded Tits, nor did I like the study of the Snipe in the stream amongst the snow, which was rather harsh and unpleasant.

But though Grouse, Gulls, Ducks, Herons and Pheasants may all be drawn well and faithfully, it is amongst the studies of birds of prey that we find Mr. Lodge at his best. There are not so many of them this year as hitherto; but the knowledge is still shown as of yore and the two studies of Peregrines, the one of a Merlin, another of an Iceland Falcon and last, but far from least, the exceptionally good study of a Kite, are alone worth a visit that few, if any, of our members would regret making.

To those who are thinking of visiting this fine collection I may mention that it will be on view until June 30th.

THE DISPLAY OF THE PEACOCK-PHEASANT.

Polyplectron chinquis.

By R. I. POCCOCK, F.R.S.

In "The Descent of Man," pp. 396-400 of ed. 2, 1883, may be found a longish account, illustrated by two woodcuts, of the courtship-display of the males of the Peacock-pheasant and Argus Pheasant. To this are added, by way of comparison and contrast, brief allusions to the display of the Peacock and Tragopan. On information supplied to him by the elder Bartlett, Darwin wrote of the Peacock-pheasant (*Polyplectron*) as follows:— "The tail and wing-feathers of this bird are ornamented with beautiful ocelli, like those on the Peacock's train. Now when the Peacock displays himself, he expands and erects his tail transversely to his body, for he stands in front of the female, and has to show off, at the same time, his rich blue throat and breast. But the breast of the *Polyplectron* is obscurely coloured, and the ocelli are not confined to the tail-feathers. Consequently the *Polyplectron* does not stand in front of the female; but he erects and expands his tail-feathers a little obliquely, lowering the expanded wing on the same side, and raising that on the opposite side. . . . The male Tragopan Pheasant acts in nearly the same manner, for he raises the feathers of the body, though not the wing itself, on the side which is opposite to [turned away from] the female, and which would otherwise be concealed, so that nearly all the beautifully-spotted feathers are exhibited at the same time." Then follows the description of the display of the Argus Pheasant, which is referred to as "a much more remarkable case"; but possibly because the author was not specially dealing with display from the comparative point of view, he made no comparison between the method employed by the Argus Pheasant and the method employed by the other game-birds he mentioned; and the impression remains that the display of the Argus Pheasant is unique in its entire want of resemblance to that of any other species of the group.

As will appear in the sequel, Darwin would probably have written otherwise than he did on this subject if the information he had received as to the display of the Peacock-pheasant had been complete; for he would have been the first to appreciate

the interest of the fact that the display of the Argus Pheasant is merely an exaggeration of the display of the Peacock-pheasant, and that the display of the latter is joined by intermediate links to that of ordinary Pheasants on the one hand, and of Peacocks and Turkeys on the other.

Darwin, it will be noticed, contrasted the display of the Peacock-pheasant with that of the Peacock, and likened it to that of the Tragopan. He pointed out, however, that the Tragopan differs from the Peacock-pheasant in not opening its wings; but he made no allusion to the fact that the Peacock's wings are partially spread in display. Thus the difference between these two birds is not quite so great as might be inferred from the contrast drawn between them. Judging nevertheless from his account, the Peacock-pheasant in its manner of self-exhibition falls into the same category of game-birds as the true Pheasants which practise what T. W. Wood * called the 'lateral' or 'one-sided' method—that is to say they present one side of the head, body and tail to the hen, stretch the neck downwards or forwards, raise the off shoulder and further side of the back and spread the feathers of the tail in a vertical plane, to a greater or less extent, in such a way as to convey the impression of attempting to show at one moment the greatest possible expanse of colour compatible with the attitude assumed. The wings, however, are kept closed or the near one may be lowered to a small extent. More than forty years ago, T. W. Wood described this method in the Common and Japanese Pheasants (*Phasianus colchicus* and *versicolor*) and in the Gold Pheasant (*Chrysolophus pictus*); there is a coloured plate of it as exhibited by the Common Pheasant in Mr. J. G. Millais's *Natural History of British Game Birds*, facing p. 86; and one showing the very similar pose of the Amherst Pheasant (*Chrysolophus amherstiae*) may be seen in Mr. Pycraft's recent book "A History of Birds." I have myself watched it in these species, as well as in other kinds of *Phasianus*, in Swinhoe's Kalij (*Gennæus swinhoii*), and in the Satyr Tragopan (*Tragopan* or *Ceriornis satyra*). The phenomenon, indeed, must be familiar to all who have kept pheasants of diverse sorts in captivity. There are, as might be expected, detailed differences in the

* "The Student," 1870, p. 115, cited by Darwin. I have not seen this periodical.

display both with respect to completeness and according to the species or genus of the performer. The male of *Chrysolophus*, for example, races round the female in circles and rattles his tail-feathers when he comes to a standstill in front of her. I have not seen this behaviour in the males of *Phasianus* or of *Tragopan* which stalk in a stately manner in front of the hen. Possibly, however, it has been my misfortune to observe only the partial display of these two genera. At all events I am not in a position to affirm that their sedate strut does not lapse at times into the headlong run of the Amherst and Gold. These two pheasants never, I believe, spread the tail to any great extent. Nor have I seen it widely spread in any species of the genera above mentioned, with the exception of a Mongolian Pheasant (*Ph. mongolicus*), which on one occasion was noticed to extend the tail like a fan and twist it round vertically, presenting its entire upper side to the hen. The Satyr Tragopan, moreover, has another pose * which I have never seen assumed by any species of the Silver, Gold or Common Pheasant types. Facing the hen with the body slightly crouched, the tail on the ground and the wings partially spread and flapping, he suddenly erects his head and exposes and inflates the ultramarine and crimson tongue-shaped gular wattle, or 'bib,' which, except during sexual excitement, is concealed by the feathers of the throat. From the comparative point of view, this pose, accompanied by inflated wattles and partially-spread wings, is interestingly reminiscent of the display of the Turkey; but deviation therefrom is shown by the downward inclination of the back and the depression of the tail. At the moment, however, I am not especially concerned with the display of the Tragopans. It is sufficient for my present purpose to reiterate that the 'lateral' method of self-exhibition is in all essential characters the same in the species of *Phasianus*, *Chrysolophus*, (*Thaumalee*), *Gennæus* (*Euplocamus*) and *Tragopan* (*Cerionis*) that have come under my notice in the Gardens. †

* See T. W. Wood "Curiosities of Ornithology," pp. 16-18, with coloured plate. Wood speaks of this as the 'characteristic' display, but I have only seen this bird show off in the 'lateral' manner above described. Mr. Angus Macdonald, the Society's Keeper of Pheasants, however, tells me he has seen the exhibition of the wattles by the cock bird in the Zoological Gardens.

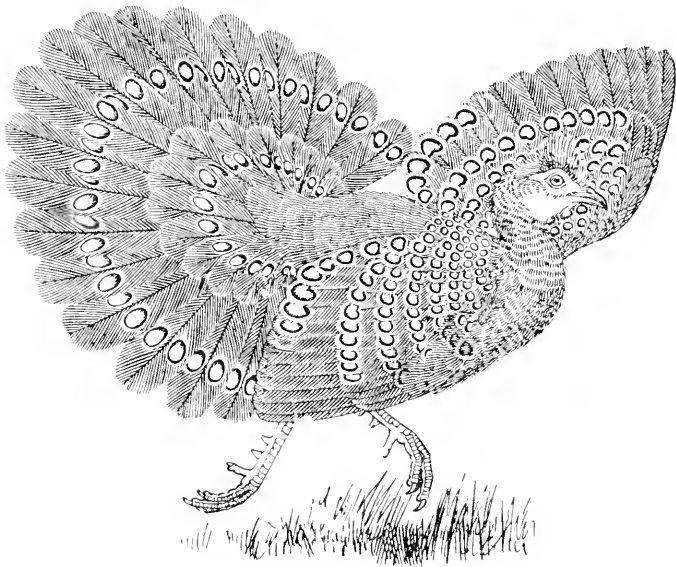
† The observation of others confirming or modifying this conclusion or extending it to other species, like Reeves and Elliott's Pheasants and various kinds of Kalij Pheasants, of which the Silver is the commonest type, would be both interesting and valuable.

Widely different and resembling in all important points that of the Turkey, as I have already mentioned in this Magazine * is the display of the Peacock (*Pavo*). In this bird, as in the Turkey (*Meleagris*), the display is 'frontal,' that is to say the cock faces the hen with the tail raised and spread fan-wise, the back inclined more or less upwards, the head and neck withdrawn against it and the wings partially spread and drooped, but not strictly speaking exhibited, on each side.

Reverting once more to the Peacock-pheasant (*Polyplectron chinquis*), it will be remembered that its method of display as described to Darwin induced him to regard it as 'lateral,' or what may be called pheasant-like. I myself, however, have never seen this bird show off in exactly the manner depicted and described in "The Descent of Man," except as a preliminary to what must be regarded as full display. One interesting point I have to record about the courtship of this species is that the display is made in two widely different ways, each complete in itself, yet each, unlike the two methods of the Tragopan, subservient to the exhibition of the self-same ornamentation. One method is markedly 'lateral.' Nevertheless in the disposition of the wings it differs widely from the lateral method described in this species by Bartlett and represented, it is alleged, by T. W. Wood in the drawing already mentioned, which was possibly taken from Bartlett's mounted specimen referred to by Darwin. I say 'alleged' because the drawing in question does not quite suggest to me lateral display, but rather a preliminary to the frontal display of this species, to be described later on. The perspective of the drawing may, however, be inaccurate; and since it is impossible now to settle this point, we must take Darwin's word for it that the drawing was intended to coincide with the description. In this drawing both the wings are partially spread, the one on the side nearest the hen being drooped towards the ground, and the one on the opposite side raised above the level of the uptilted back, their primaries being pointed towards the tail and away from the direction in which the bird is looking. In the lateral display of this species that has come under my notice (fig. 1), the wing on the side near the hen is scarcely opened at

* The Display of the cock Ostrich, *Avic. Mag.*, VII., p. 290, 1909.

all, while that of the opposite side is spread to its fullest extent, lifted high above the back and pointed forwards, its tip stretching well in front of the head, which is somewhat retracted and not thrust forward like the head of ordinary pheasants. Nevertheless; this display of the Peacock-pheasant recalls in a striking manner the display of typical pheasants in the lateral presentation, the folding of the near wing, the uplifting of the back and the circular run with which the cock courses round the hen. The tail of the Peacock-pheasant in this display is, like the off-wing, fully spread

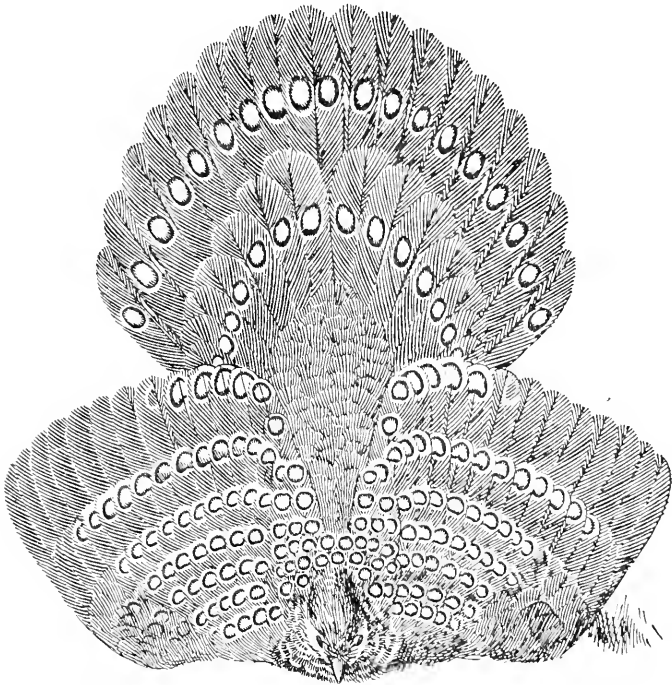


LATERAL DISPLAY OF THE PEACOCK-PHEASANT. (Fig. I).

and is twisted round with its ocellated surface towards the hen, so that the plane of its fan-like expanse is vertical, the external tail-coverts of the off-side overlapping with their tips the backwardly inclined tips of the secondaries of the expanded wing. Thus the fullest possible exhibition is made of the ocelli of the tail and of one wing. The only other point to be noticed is that the dusky crest on the crown of the head is turned forwards so as to overhang the base of the beak in front. This indeed seems to be its usual position during the entire period of courtship, irrespective of display. I have never heard the cock make any

sound when showing off in this fashion; but the display of the second kind, in my experience far the commoner of the two, is frequently heralded by a chirping sort of whistle which brings the hen running to his side as if expecting food.

The attitude of this second and prevalent display is very remarkable. The cock faces the hen, raises and spreads the tail and wings, thus bringing the rows of ocelli into full view, and



FRONTAL DISPLAY OF THE PEACOCK-PHEASANT. (Fig. 2).

at the same time tilts up the back until it is quite vertical and in the same plane as the erect tail, tucks the head and neck back and down between the bases of the wings and lowers the throat to the ground so that the legs are entirely concealed from view in front. In this position the bird looks, not like a bird at all, but like an irregularly triangular speckly-brown shield adorned with transversely arcuate bands of ocelliform studs (fig 2).

Thus this display of the Peacock-pheasant is essentially 'frontal' and dorsal. Apart from certain minor features, like the

uprightness of the pose and the drooping of the forepart of the body to the ground, it differs from the display of the Peacock and Turkey merely in the uplifting of the wings so that their ornamentation is shown to the best advantage.

There can be no question that the two courtship-attitudes just described must be regarded as full display, but I am not sure that the pose described by Darwin on Bartlett's authority can be deemed otherwise than as partial. It does not, however, lose in interest on that account; for if we may trust the accuracy of the record—and I see no justifiable grounds for disputing it—it is evident that in the raising and spreading of the two wings and tail in the same plane, combined with their exhibition from the lateral aspect, this display is to all intents and purposes intermediate between the full lateral and full frontal methods shown in Mr. Goodchild's drawings.

Perhaps, however, the chief interest in the display of the Peacock-pheasant lies in the circumstance that the habit of elevating and exposing the upper side of the wings in the frontal attitude associates this bird closely with the Argus Pheasant. I am unable indeed to find any fundamental distinction between the methods of self-exhibition practised by these two species. The apparent difference depends merely upon a difference in the size of the wings. Like the Peacock-pheasant the Argus faces the hen and raises and expands the tail and wings. The wings, however, are lifted higher and are thrust more forward. The feathers, which are of extraordinary length, meet in the middle line over the head in front and over the back behind, forming an enormous subcircular lineally ocellated shield which conceals the entire head, body and tail, with the exception of the ends of the two long tail feathers.* Despite this difference, the attitude of the Argus in display is in all important respects the same as the attitude of the frontal display of the Peacock-pheasant; and it is not difficult to trace, in imagination, the special features contributing to the display of both from the features possessed by a common ancestral type differing from the Turkey in its method of self-exhibition only in lifting instead of depressing its spread

* In addition to the above-quoted figure in the 1883 edition of "The Descent of Man," there is a good illustration of the display of the Argus Pheasant on p. 430, Vol. IV. of the Royal Natural History.

wings. Thus from the standpoint of display, the Peacock-pheasant is highly instructive. He practices, with modifications, the 'lateral' method characteristic of Pheasants, and the 'frontal' method exhibited by the Peacock and Turkey, showing how the one method may have passed into the other. He supplies in addition a connecting link between the two stages of 'frontal' display manifested respectively by the Peacock or Turkey and the Argus Pheasant.

There is one more point to be noticed. It may be inferred from Darwin's above-quoted remarks about the Peacock that he supposed the method of frontal display practised by this bird was assumed to show off "his rich blue throat and breast," as well as his erect and expanded tail; the assumption of the particular attitude, that is to say, was a habit acquired subsequently to the decoration of the areas in question. It may be so. It must be remembered, however, that the Peacock's 'train' is composed, not of the tail-feathers, but of the enormously elongated tail-coverts which are uplifted and supported by the fan-shaped tail spreading beneath them exactly as the tails of the Argus, Peacock-pheasant and Turkey are spread. Hence it appears to me probable that the wonderful 'train' of the Peacock, a very special development, was originally acquired in a less perfect form by an ancestor of this bird that had already adopted the frontal attitude in courtship. In other words the assumption of the pose was antecedent to the growth of the 'train.' The same opinion may be held about the coloration of the neck and throat. That frontal display may be practised quite irrespective of special coloration of the head and breast is proved by the case of the Peacock-pheasant. This being so it must not be hastily assumed that the brilliant blue pervading these parts in the Peacock is related in a causal sense to the attitude of this bird in display.

Those who describe the courtship of such birds as the species constituting the subject-matter of this article usually write as if unquestioningly accepting the proposition that the cocks purposely pose in a particular manner to display their decorated plumes, adopting the attitudes that make the most of their beauty. My own opinion is that we shall be nearer the



NEST OF THE OVEN BIRD
(*Funarius rufus*).

truth if we invert the idea and say that the decorations are developed on particular areas, because the cocks pose in a particular manner; the decorations, that is to say, are adapted to the display. Or to put it tersely, the birds do not display because they are decorated, but are decorated because they display.

One of the differences between these two opposed conceptions is this: the first and prevalent one involves, in the judgment of many naturalists, purposive action and consciousness of his own beauty on the part of the cock bird; the second does not necessarily imply anything of the kind, the actions of the birds being interpretable as prompted by instinctive impulses, unaccompanied by any consciousness of the display of beauty that results therefrom.

There is, in my opinion, more to be said in favour of the second view of the matter than will be acceptable to those who prefer to measure the behaviour of birds by the human standard; and I do not flatter myself that the opinion that birds, in the matter of display, are mere instinct-driven machines will commend itself to the predilections of most of my readers.

THE OVEN BIRD.

Funarius rufus.

PART I.

By J. LEWIS BONHOTE, M.A.

This bird, which is a native of South America, has long attracted the attention of ornithologists, as, apart from being very widely distributed, it has a partiality for human dwellings near which its curious and conspicuous nest is almost invariably placed. By the kindness of Miss Dorrien Smith, who forwarded the accompanying photograph to Mr. Astley, we are able to show the nest in position in its native country. Personally, I have had no acquaintance with the bird itself, but in the absence of Mr. Astley abroad, I have looked the matter up and append a few short notes on its habits when wild. It is a small rufous bird rather smaller than our Song Thrush and, like that species, procures most of its food, which consists of larvæ, worms and other insects, on the ground in open places. It apparently pairs

for life and most 'estancias' have a pair of these birds, which, as it is non-migratory, remain with them throughout the year. According to Mr. Gibson, they have no particular song, and their only cry is a succession of loud short notes accompanied by a flapping of the wings. It is usually seen alone, but at intervals during the day, whether in the breeding season or not, the pairs meet together as though by appointment and indulge for a few minutes in a duet, the female being as loud and vociferous a singer as her mate.

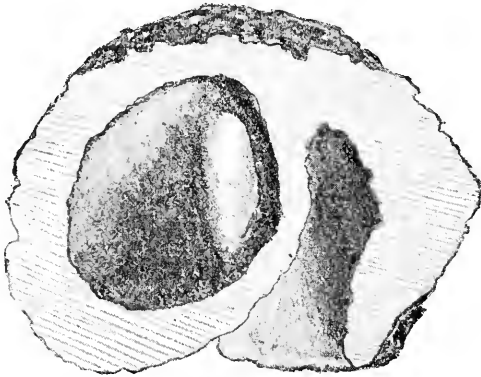
The nest, which is almost unique among birds, and always placed in a very conspicuous position, on a tree, roof of a house, post, etc., without any attempt at concealment, has always attracted much attention. It is a very solid mud structure, weighing as much as eight or nine pounds, and takes months to build. It is commenced soon after the moult in the late autumn, and is built at intervals, whenever the weather is mild and wet during the winter. Both sexes build. A piece of hair, straw or small rootlet is taken to the edge of a puddle, covered with mud and rolled into a small pellet, which is then conveyed to the chosen site. After the foundation has been made, the walls are built up, leaving the side facing the house or road open till the last, and it has been suggested that this is so that the builder may be able to see any approaching intruder. The open side is then half walled-in, leaving the rest for the external opening, which is almost invariably on the right hand side. The builders then proceed to put in the centre or partition wall, which is carried right to the back of the nest, leaving only an opening just large enough for the entrance of the bird, which is thus easily able to defend its home against intruders. The inner compartment is lined with a few bents and, in due season, four pear-shaped white eggs are laid. Incubation is carried on by both sexes.

Only one brood is reared each season, and although so solid is the nest that it can bear the weight of a man and last for several seasons, yet it is never used more than once and a new nest is re-commenced every winter.

Round so domestic a bird many tales and fables have naturally arisen, one being that it is extremely pious and never

builds on Sunday. In confirmation of this Hudson tells a good story, which was told him by an old ranch keeper.

It appears that one of a pair died in the nest, which was just completed. The surviving bird, after waiting for a short time, went away, and in a few days returned with another mate. This pair promptly began nest-building, but their first task was to hermetically seal up the door of the old nest, after which they proceeded to build a new one on the top.



SECTION OF OVEN BIRD'S NEST.
(From Prof. Newton's Dictionary of Birds).

For those, who are anxious to know more of this curious bird, notes on its habits may be found in Darwin's Naturalist's Voyage, chap. V.; Durnford, *Ibis*, 1877, p. 179; E. Gibson, *Ibis*, 1880, pp. 16-18; Hudson's Argentine Ornithology, Vol. I., pp. 167-170; Göldi, Zool. Gart., 1886, pp. 268-271, to which sources I have to express my indebtedness for the notes given above, and also to Messrs. A. & C. Black for permission to use the block from Prof. Newton's Dictionary of Birds.

PART II.

By HUBERT D. ASTLEY.

These birds are rather difficult to keep for long in captivity, although they might be all right if a supply of gentles and fresh ants' eggs were given.

They are fascinating birds, with their curious strut as they

run swiftly on the ground. They perform a sort of goose step, each foot is raised and poised for half a second, which gives them an air of swagger.

Their call is very penetrating and shrill ; it reminds me of something—is it of the Wryneck ? if so, it is a more rapid utterance. I had four of these birds, but all died before long, except one, which I kept for over two years.

It was my ambition to see the curious oven nest of mud built, but like other ambitions, it came to nought ! Oven Birds require artificial heat in cold weather, but my last bird, although he had a warmed house to go into, used to often be out in the outside run during the daytime in winter.

I had no time to attend very particularly to my birds, but as I have said, I believe they need a supply of live insect food, and plenty of space in which to run about, they are not cage birds.

BIRD NOTES FROM THE ZOOLOGICAL GARDENS.

By THE CURATOR.

The collection has been enriched by the acquisition of a pair of young Australian Bee-eaters (*Merops ornatus*), the first ever received of this elegant species ; in fact the only other Bee-eater that has been represented in the collection is the European species (*M. apiaster*). Another species which has been added to the list is the Three-coloured Parrot-finch (*Erythrura trichroa*), of which a pair has been acquired by exchange.

An extremely rare Owl from West Africa, which has only once previously been exhibited, is Bouvier's Owl (*Scotopelia bouvieri*), a young example of which, still retaining its nestling down, has been received. It is closely related to (but considerably smaller than) Pel's Owl (*S. peli*), a specimen of which has been living in the collection for some time.

A very nice collection has been received as a present from Mr. Hugo Pam at Caraccas, Venezuela, to whom the Zoological Society is indebted for a number of rare birds. It consists of the following :—Two Orinoco Geese (*Chenalopex jubatus*), three

Curassows (*Crax globicera*, *C. daubentoni* and *Pauxis galeata*), a Magpie Tanager (*Cissopsis leveriana*), a Golden-crowned Hangnest (*Icterus auricapillus*), a Baltimore Hangnest (*I. baltimore*), and four Black-cheeked Cardinals (*Paroaria nigrigenis*).

From Tasmania we have just received a number of the rare Fire-tailed Finches (*Zonæginthus bellus*).

The most interesting event during the month has been the hatching of a young Stork in the large Gull's aviary. One of the parent birds being pinioned, the nest was built on the ground and consisted of a pile of sticks and rubbish some three feet in height. Four eggs were laid, but one disappeared (probably the Black-backed Gulls ate it) the three remaining ones being incubated for twenty-eight days, when one hatched, the other two proving unfertile. The chick was fed by the parents, who regurgitated food from the crop, placing it in the nest where it was greedily picked up by the nestling. In the process, however, it apparently picked up a quantity of the nest material with the food, for it was found dead on the eleventh day, and a *post mortem* examination revealed a quantity of dried grass in its stomach.

So far we have six young ducks, namely three Andaman Teal, two Summer Ducks and one New Zealand Sheldrake.

D. S.-S.

THE FORTHCOMING RECEPTION OF MEMBERS OF THE SOCIETY BY THE COUNCIL.

As was announced in the March issue of this Magazine, the Council of the Avicultural Society, at their meeting in February, decided to organize a friendly and informal meeting of the members, to be held in the Zoological Gardens on an early date in July, provided satisfactory arrangements could be made to insure the success of the gathering, the sole purpose of which is to give members an opportunity of becoming personally acquainted with one another.

On behalf of the Council I am glad to be able to announce that the following details have been settled. *The meeting will*

take place on Thursday, July 6th, at 4 p.m. in one of the large rooms in the Refreshment Department, where the Council will receive members from 4 to 4.30, and where afternoon tea will be served.

Since it is necessary to know beforehand the numbers likely to be present, members are requested to fill in the post card issued with each copy of this number of the Magazine and to post it, as soon as possible, as addressed.

R. I. POCKOCK.

CORRESPONDENCE, NOTES, ETC.

HECK'S LONG-TAILED GRASSFINCH.

SIR,—In the last number of the *Avicultural Magazine*, Mr. Mathews appears to doubt the validity of *Poëphila hecki*, Heinroth, and proposes that the name shall be regarded as a synonym of *P. acuticauda*.

There is however no doubt in my mind, and I think other aviculturists will agree with me, that there are two distinct forms of the Long-tailed Grassfinch, one with waxy yellow bill and the other, slightly smaller, with bright orange-red bill. There was a large importation of the latter form in 1902 or thereabouts, and I think some had come over earlier than this, while those that have arrived in this country since have mostly, if not all, been of the typical yellow-billed form.

The difference in the two forms was first noticed by Dr. Heinroth of Berlin (*Ornith. Monatsb., Jahr. VIII.*, p. 22, 1900.), and he described the red-billed form as *Poëphila hecki*. Later Mr. North noticed the same difference in Sydney, and not knowing that Heinroth had already described this form, named it *P. aurotirostris* (*Proc. Linn. Soc. N.S.W.*, XXVII., p. 207, 1902); while about the same time several of us in this country noticed how these birds differed.

I have before me skins of both *P. acuticauda* and *P. hecki*, and although the red bills of the latter have considerably faded, the difference in the two forms is readily seen.

I maintain that after the testimony of two such good observers as Heinroth and North, who examined the living birds, Mr. Mathews should not sweep their opinions aside on the strength of there being no difference in the dried skins when the point of difference is the colour of the bill, which is known to fade after death.

D. SETH-SMITH.

RIFLE BIRD NESTING IN CONFINEMENT.

It will interest our readers to hear that a Rifle Bird (*Ptilorhis magnifica*), belonging to Mr. E. J. Brook, has laid in confinement. Mr. Brook writes to us as follows:—"My hen Rifle Bird (New Guinea) laid an egg

on Saturday last (6th May). The egg unfortunately fell to the ground and was broken. I think this will be the first instance of any species of Paradise bird laying in this country. The egg was rather elongated, colour buff with heavy streaks and blotches of brown." Mr. Brook is to be congratulated on this event, and we hope that before long we may hear from him of the successful breeding of this fine bird.—ED.

REVIEWS.

BIRD PHOTOGRAPHY.*

In this instructive little book Mr. Bentley Beetham tells us in a clear and concise manner the best ways of portraying wild birds by means of the camera. As is well known, Mr. Beetham is a most successful bird-photographer, and his previous book "Home Life of the Spoonbill" contains some of if not the best photographs of wild birds we have ever seen. Such being the case, the volume before us, though containing little that is absolutely new to bird-photographers, will be welcomed by all interested in this most fascinating pastime—we had almost written sport, for such it undoubtedly is, as all those, who, like the writer, have spent hours hidden within a few feet of some of our shyest birds for the purpose of photographing them will readily agree.

Mr. Beetham discusses at moderate length the necessary apparatus and the different means of obtaining satisfactory pictures. Each subject is treated of in a separate chapter; thus we have one on "Nest Photography"—Photographing young birds—Photography by the stalking method and by the concealment method, etc., etc. Under the treatment of the last named (p. 72) the author describes, though he does not recommend, the "umbrella hide." In this we are not quite in agreement with him, for the "umbrella" is easily and quickly put up, and can be worked by the operator alone. The hide described by Mr. Beetham seems rather clumsy and slow to put in position. The quicker the operator can erect and enter his hide the better, in our opinion. We also find from experience that a "hide," pro-

* *Photography for Bird-Lovers*, by BENTLEY BEETHAM. Roy. 8vo., 122 pp.; 18 photographic plates and text figures. London: Witherby & Co. 1911. Price 5/- net.

vided it is perfectly rigid, alarms a bird far less than does a concealed camera, strange though it may seem (p. 61).

Mr. Beetham has an abundance of patience, as can be seen by a perusal of his interesting book, and this is a *sine qua non* for the would-be successful bird-photographer. The photographic plates, illustrating the results obtainable by the different methods described, are admirable, though not quite up to the standard of those published in his earlier works.

The book is well and clearly printed, and is of a handy size for use in the field. For the beginner it contains a mass of information, and the practised bird-photographer will doubtless find many useful "tips" in this volume which we heartily recommend.

ORNAMENTAL WATERFOWL.*

Mr. Wormald has written a short, but very practicable, pamphlet on the management of the different species of Wild Fowl most often seen on ornamental waters.

Details of food, the best size for enclosures and the rearing of the young are very fully given and should enable the most inexperienced to keep these birds with success. Most people, who make a speciality of any particular group of live stock, have usually their own particular methods which they have learnt from experience, and although Mr. Wormald's methods are in the main those we should recommend, we cannot agree in keeping young ducklings away from water as he suggests. In their natural state ducklings take to the water within a few hours of hatching and we have always had the best results from following Nature in this respect; unless however they have free access to water from the first, they must not be allowed a swim till at least a month old, when the feathers are beginning to grow.

The sea ducks and diving ducks are dealt with by Mr. St. Quintin, than whom we have no greater authority on such matters. The book is illustrated by twenty-two black and white plates by Mr. Wormald, which will assist the beginner in recognising the various species.

*Notes on the Management of Ornamental Waterfowl in Confinement, by HUGH WORMALD
vo. 18pp. and 22 full-page illustrations.

THE DUBLIN ZOOLOGICAL GARDENS.

We have received the Annual Report of the Royal Zoological Society of Ireland by which we are glad to note that the past year has been in all respects quite up to the average. During the year a fine new range of Eagle and Bird of Prey aviaries has been constructed, and the illustration given shows a fine large dome-shaped flight, apparently very similar in structure and design to a portion of the recently-erected Bird of Prey aviaries in the London Gardens.

The stock of birds is fairly representative, but of certain large groups, such as the Waders and Gulls, only one or two species are at present in the collection. These Gardens, however, are chiefly renowned for their Mammals, and especially the large Carnivores, and as their finances are limited, the Council is undoubtedly wise in keeping a small number well rather than a large number indifferently. The total stock on January 1st was 931, an increase of about 60 as compared with the previous year. Full details are given of the deaths, arrivals and breeding results of the year, and the report is illustrated with many photographs and drawings.

OBITUARY.

THE LATE MR. HENRY SCHERREN.

It is with great regret that we have to announce the death of our member Mr. H. Scherren, which occurred on 25th April after a long illness, at his house at Harringay.

Mr. Scherren commenced his journalistic career on the Editorial staff at Messrs. Cassell & Co., where he compiled the *Encyclopaedic Dictionary*. Besides many contributions to the Scientific Proceedings, Mr. Scherren wrote the history of the Zoological Society of London, which was published in 1905, and this was possibly his greatest piece of work, though several other books of importance were written by him before that date.

Perhaps Mr. Scherren was best known to most of our members for his notices of scientific meetings and Natural history notes contributed to the *Times*, *Standard* and *Field* news-

papers, all of which notes were famed for their extreme accuracy. In 1889, Mr. Scherren was elected a Fellow of the Zoological Society of London and a member of the British Ornithologists' Union and Club nine years later, while in 1902 he joined the Avicultural Society; and as an acknowledgment of his services to Continental institutions, he was in 1908 elected a corresponding member of the Royal Zoological Society of Amsterdam. This was a well-earned distinction, for Scherren's careful and most interesting accounts of Continental Zoological Institutions, especially Zoological Gardens—published from time to time in the columns of the *Field*—were of inestimable value.

Of his personal worth it is impossible to speak but in terms of praise, his kindly and genial disposition endeared him to all who knew him, and his death causes a gap that will not be easily filled.

PRACTICAL BIRD-KEEPING.

IV. PARRAKEETS.

By D. SETH-SMITH, F.Z.S.

(*Concluded from page 224*).

It is of course impossible in the space at my disposal to deal with anything like all of the Parrakeets that the enthusiastic student of these birds will have an opportunity of possessing, providing he keeps touch with the dealers' importations and private advertisements, so it will be best to deal briefly with the most popular.

THE BUDGERIGAR (*Melopsittacus undulatus*) is the most popular of all the Parrakeets, and it well deserves its fame, for it possesses just those qualities which the aviculturist most desires, namely, beauty, vivacity, hardiness and prolificacy. The only quality it does not possess, and one which the more experienced aviculturist looks for, is rarity. When the first of these little Parrakeets were brought to this country, more than half-a-century ago, they naturally commanded a very high price; now, however, about six shillings will secure a good pair.

In one of the compartments of the aviary described, about half-a-dozen pairs of Budgerigars could be kept. For food they

require only canary seed, and no artificial warmth is necessary in the winter. It is desirable to separate the sexes from October to the beginning of April, as otherwise they will breed practically the whole year round, and the hens will be liable to die of egg-binding during the cold weather. Moreover, the nests get damp in the winter and the young suffer.

It is advisable to supply two nest-boxes for each pair of birds so that there may be a choice of sites and quarrelling will be avoided.

The Budgerigar is almost too well known to need any description. It is mostly bright green with black wavy cross-bars over the back. A yellow face and blue tail. The cock has a bright blue cere over the beak; in the hen this is brown, while in the immature bird it is dull bluish in both sexes.

There is a common variety of the Budgerigar, which has been produced by selection, which is almost entirely yellow, the dark pigment having disappeared from the plumage. Yellow Budgerigars are now so common that the price is little higher than that asked for the normal bird.

An extremely rare and beautiful variety is the Blue Budgerigar. It was known some twenty-five or thirty years ago, but completely disappeared until Mons. Pauwels, a well-known Belgian aviculturist, exhibited a pair in London in 1910. In this variety the yellow pigment is absent, the bird being of a most beautiful blue, with a pure white face and black bars over the back.

The COCKATIEL or COCKATOO PARRAKEET (*Calopsittacus novæ-hollandiæ*), of Australia, is another popular favourite, almost as well-known as the Budgerigar, and equally hardy. It is about the size of a Thrush but with a longer tail. The male is dark-grey with a yellow face and crest, a white patch on the wing-coverts and a brick-red patch on the cheeks. The hen is quite different in colour, being brownish, with the underside of the tail barred with yellow.

One pair of Cockatiels can be kept in the same compartment as Budgerigars, with which they will agree, although they would disagree with others of their own species or parrakeets of about the same size. They are very free breeders, laying from

four to six white eggs to a clutch, and producing three or four broods in a season. Both sexes share in incubation, the cock sitting by day and the hen at night, and incubation is commenced with the first egg.

Canary, hemp and oats are the only seeds required, although these, and, in fact, all parrakeets require green food.

The BROAD-TAILED PARRAKEETS (*Platycercus*), of Australia, are mostly quite hardy, brightly-coloured and very desirable birds for an aviary. They require the same food as that recommended for Cockatiels. Each pair should have a compartment of an aviary to themselves, and if provided with suitable nesting accommodation and left undisturbed, will probably breed. The following species belonging to this group may be mentioned. The ROSELLA (*P. eximius*), PENNANT'S PARRAKEET (*P. elegans*), the MEALY ROSELLA (*P. pallidiceps*), the STANLEY PARRAKEET (*P. icterotis*), BROWN'S PARRAKEET (*P. browni*).

The genus *Psephotus* contains some of the most beautiful and desirable of the Australian Parrakeets. The best-known being the RED-RUMP (*P. hæmatonotus*), a hardy and free-breeding species. The MANY-COLOURED PARRAKEET (*P. multicolor*) is fairly hardy, and has been bred by several aviculturists. While of the rarer species there are the very distinct BLUE-BONNET, of which there are two races (*P. xanthorrhous* and *P. hæmatorrhous*), the BEAUTIFUL (*P. pulcherrimus*), the GOLDEN-SHOULDERED (*P. chrysopterygius*) and the recently-described HOODED (*P. cucullatus*), the three last mentioned being extremely rare and rather delicate.

There are many other desirable seed-eating Parrakeets in Australia, such as the KING (*Aprosmictus cyanophygius*) and CRIMSON-WING (*Ptistes erythropterus*), the ALEXANDRA (*Spathopterus alexandræ*) and BARRABAND'S (*Polytelis barrabandi*), as well as the beautiful GRASS PARRAKEETS of the genus *Neophema*.

South America contains a large group of Parrakeets known as Conures, most of which are comparatively hardy and easily kept on a simple seed diet and green food. They are not so popular as the Australian Parrakeets, nor, as a rule, are they such free breeders.

The PATAGONIAN CONURE is a large bird of a dull greenish colour relieved by yellow and blue. The BLACK-HEADED and RED-HEADED CONURES (*C. nenday* and *C. rubrolarvatus*) are bright green birds with characteristic markings on the head. The CACTUS and BROWN-THROATED (*C. cactorum* and *C. aeruginosus*) are smaller, tame and confiding little birds, which make charming cage pets; while several small and pretty species are contained in the genus *Pyrhura*, the best known being the WHITE-EARED CONURE (*P. leucotis*).

To the same sub-family belong the GREY-BREASTED or QUAKER PARRAKEET, a parrot distinguished from all others by its habit of constructing a large domed nest of twigs; the LINEOLATED PARRAKEET (*Bolborhynchus lineolatus*), the PASSERINE PARRAKEET (*Psittacula passerina*), and the TOVI and other species of the genus *Brotogeris*.

A large number of species are contained in the genus *Palæornis*, which is spread over a part of Africa, India, Burma, the Malay Peninsula and adjacent islands. The best known species are the Indian RING-NECKED PARRAKEET (*P. torquatus*), the ALEXANDRINE (*P. eupatria*), of which there are several races, and the BANDED PARRAKEET (*P. fasciata*). The first of these has been bred in captivity on several occasions, but, as a rule, these Parrakeets are kept merely as cage-birds, in which state they sometimes make quite good talkers.

Confined entirely to the African Continent and Madagascar is the small group of true Lovebirds (*Agapornis*), all of which have short rounded tails. The chief peculiarity of the group is that they make their nest by lining the hollow of a tree-trunk or limb with some material such as dry grass or the soft green bark of trees. The three well-known species are the RED-FACED (*A. pullaria*) from West Africa, the ROSY-FACED (*A. roseicollis*) of South Africa, and the GREY-HEADED (*A. cana*) from Madagascar; while the recently-discovered BLACK-CHEEKED LOVEBIRD (*A. nigrigenis*) from Rhodesia, is, at the moment, perhaps the commonest kind in captivity, being an extremely free-breeding species.

There still remains to be mentioned the large family of honey-eating Parrakeets which inhabit Australasia and are

known as the Lorikeets. They are a restless active group, mostly clad in brilliant colours. Their natural food consists of the sweet nectar and pollen of flowers, principally that of the various species of Eucalyptus. But they also partake largely of fruit, and are in consequence a great trial to colonial fruit-growers. In captivity they are not, as a rule, difficult subjects. They should be fed upon sweetened milk-sop, which is made by pouring boiling milk upon plain biscuit and sweetening with cane sugar. Ripe fruit in season is also essential. Some species are fairly hardy, but in the writer's opinion it is advisable to allow them to have access to a warmed compartment in cold weather.

Lorikeets are not very free breeders in captivity, but several species have reared young. For a nest the ordinary parrakeet nest-box as described above is all that they require.

SWAINSON'S or the BLUE-MOUNTAIN LORIKEET (*Trichoglossus novæ-hollandiæ*) is the best-known species, and makes a delightful aviary bird, brilliantly clad in green, red, blue and yellow. It is a common species in the Eastern parts of Australia.

The RED-COLLARED LORIKEET (*T. rubritorques*) is the north-western form of the last-mentioned, while the ORNATE LORIKEET (*T. ornatus*) comes from Celebes.

The closely-allied genus *Psittenteles*, which is doubtfully distinct from *Trichoglossus*, contains birds which differ chiefly in the absence of any red colouring in their plumage, being chiefly green and yellow. The SCALY-BREADED LORIKEET (*P. chlorolepidotes*) inhabiting the South-east of Australia is a well-known member of this genus. Another denizen of the same region, but one rarely imported on account of its reputed delicacy when first captured, is the MUSKY LORIKEET (*Glossopsittacus concinnus*) a charming bird that is not difficult to keep under proper treatment.

In the foregoing very brief sketch of a most delightful group of birds it has only been possible to mention the mere names of a few of the species that can be kept in this country. For a more complete account of these birds I would refer the reader to my book entitled *Parrakeets*, which deals exhaustively with the imported species.

PRACTICAL BIRD-KEEPING.—CORRESPONDENCE.

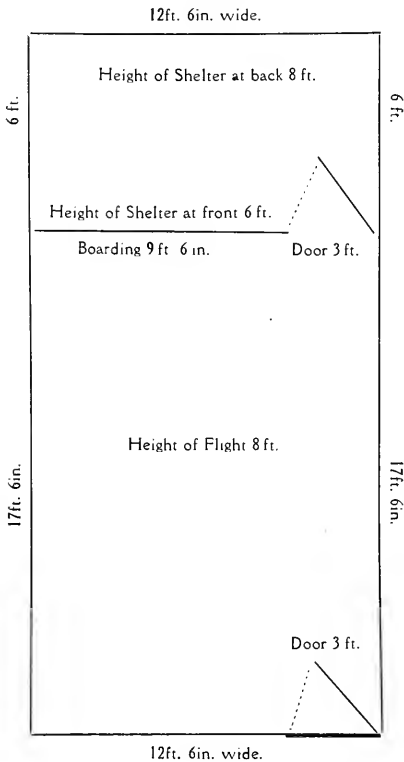
WINTERING BIRDS IN OUTDOOR AVIARIES.

Mr. H. I. SICH asks us to say that the birds mentioned in his letter in the last number of our magazine (p. 224) were not turned out of doors for the first time that year, nor were they newly-imported birds. They were taken from one aviary, where they had spent the summer, and turned out into the one which he described in his letter, and which had been especially built for a winter aviary.

SIR,—Your readers may be interested in my experiences of an outdoor aviary. I have it in a corner with a very high wall on the north and west side, and tall, thick shrubs growing against the aviary on the east. There is a lean-to shelter against the north wall, in which there are plenty of perches high up, also cocoa-nuts and boxes of all sizes and descriptions hung on the walls in which hay is put, and the birds sleep or nest in them as they please. In this bedroom I have a stove with patent fuel burning all

night in winter and on the coldest days; it has a pipe through the wall into the open to let out any bad gas fumes. The door, which is against the west wall, has the top on hinges and can be dropped according to the weather, but there is always about twelve inches that cannot be closed; in summer of course the door is kept wide open.

The outside flight is a good size, and in it there are two Retinospora shrubs growing, and tall tree trunks with their branches left on but cut short, and to the top of these are fastened fresh branches of Box, in which the birds love to hop about, and the Weaver weaves his wonderful work. There are also perches along and across the top and a variety of boxes for the birds to build in hung about; ivy grows up the west wall, a hunting-ground for insects. The seed-boxes hang inside the shelter and a saucer of water also, but the larger saucers for their baths are outside.



I have kept through several winters: an Indigo Finch, Cutthroats, Diamond Finches, Pekin Robins, Weavers, Zebra Finches (who constantly add to their numbers), Orange Breasts, Orange-cheeked Waxbills, Avadavats, Firefinches, Diamond Doves, etc. My trouble is that the Pekin Robins have each hatched three clutches of eggs these last two summers, and will not or cannot rear them; and the Diamond Finches build and lay eggs for ever, but do not even hatch.

I enclose a rough plan of my aviary in case you care to make any use of it.

ADELAIDE DAWNAY.

SIR.—Seeing your appeal for accounts from members of the results obtained from wintering birds out of doors, I send the following notes.

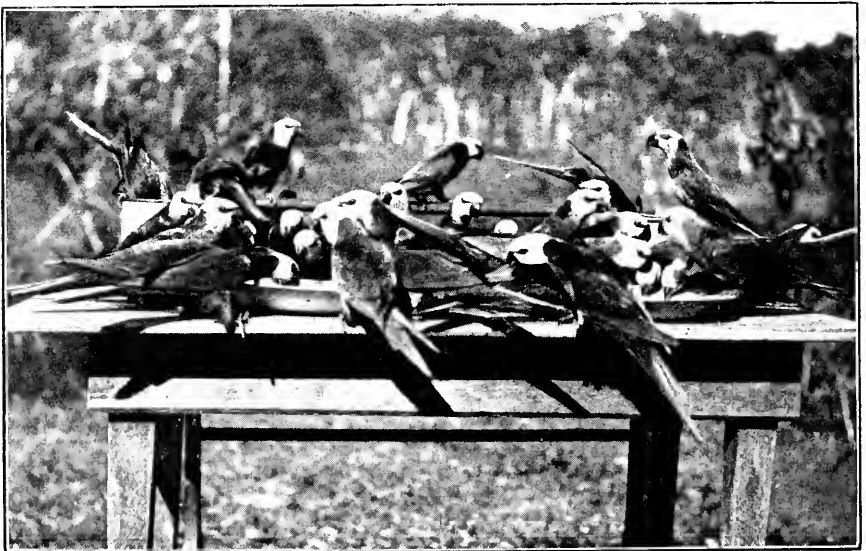
I have two small aviaries, each consisting of a glazed and boarded shelter, a roofed flight and open flight. One aviary has the glazed shelter heated with pipes, the other has no heat at all.

In the unheated aviary I have kept the following birds in perfect health:—Barbary Doves (the cock aged 23 years this spring), a Barbary Partridge, Bullfinches, Green Glossy Starling, Pekin Robins, cock Indigo Buntings, a cock St. Helena Seedeater and a cock Black-faced Yellow Weaver. I am not sure to which species the last mentioned bird belongs. When in colour he is bright golden yellow, beak and wings greenish yellow, face, bill and throat jet black, forehead ruddy chestnut, irides scarlet. Rather heavily built and about the size of a Greenfinch. There has not been a death in this aviary for over two years.

The other aviary has the compartment where the birds sleep heated during the winter, and is tenanted by a Hoopoe, a pair of Diamond Doves and a very aged Orange Bishop. The Hoopoe has lived there two years. A cock Red Gouldian Finch and a cock Hooded Siskin also wintered there successfully.

These aviaries have tiled and felted roofs and are match-boarded throughout, with tiled floors except in the flights, which are partly turfed and partly sanded. They face South and West, and are sheltered by other buildings from the North and East. That they are warm and snug is shown by the fact that even in the unheated part water does not freeze when less than 7° of frost is registered in the open. I do not find the birds care to remain in the heated part during the day, unless snow be falling, they generally remain in the open flight and only come in to feed and roost. With the pipes on I can keep a minimum of 40 to 45 degrees.

E. F. CHAWNER.



WILD SWAINSON'S LORIKEETS IN NORTH QUEENSLAND.

Avicultural Magazine,

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JULY, 1911.

TAME LORIKEETS AT LIBERTY.

By Mrs. ELLA M. INNES.

(Communicated by D. SETH-SMITH, F.Z.S.)

In the *Emu* for October, 1910, appeared a photograph by Mr. Cornwall of a number of wild Lorikeets (*Trichoglossus novæ-hollandiæ*) coming to a table to be fed upon syrup by a lady who had tamed them at her home in Mackay, Queensland. These Lorikeets have always been great favourites of mine, and the photograph and short note accompanying it interested me so much that I wrote to Mrs. Innes, the tamer of the birds, and asked her to be kind enough to supply me with fuller particulars. In reply to my letter she most kindly sent me the excellent photographs here reproduced, together with the following very interesting letter.

DEAR SIR,—Your letter of 19th Nov. reached me just as I was leaving home on a visit, so I laid it aside to answer when I could give leisure to it.

I enclose one or two of my own photos of my birds. They do not object to my camera in the very slightest, even at close quarters. I believe my pets are unique in being so thoroughly tamed, yet left in their free state. When we came to this country (seventeen years ago), while clearing land for cultivation my husband got two young birds from a fallen tree. One was a Blue Mountain Parrot and one a Green Leak or fish-scale Parroquet. He brought them home to me, I reared them and petted them so that we became very fond of them and they of us. They were devoted to me. If I did not appear at the breakfast table they very soon came round to my bedroom.

They kissed me and petted me. They nestled at my neck and used to go to sleep there. Daintier and more affectionate little pets one could not have. If I mourned they mourned with me; if I was inclined for fun they were as eager for a game as a kitten. They never missed our meal hours, although free to go where they wished. We often used to try and dodge them, taking afternoon tea in different rooms, but they always found out. It was very quaint to see the two looking for us. "Where are you?" "where are you?" they would call, till at last we were discovered. After three years one of them met with an accident and died; the other lived just two weeks longer, it literally died of a broken heart. It used to go about calling "Where are you?" "Where are you, my sweet?" but no answering call came. It scarcely left my shoulder during the day, and at night it was so lonely in its cage that I was really glad when it also died one morning in my hand. After that I vowed I would never make such pets of any animal.

However, one day, a little bundle of fluff, and eyes and beak was brought to me, and I, of course, took it and reared it also. It was a jolly little fellow, and used to have great fun with the cats and dogs. One big cat especially loved a game. He would lie down on his back and the bird would take a header into the soft fur, and the fun used to be very great as they rolled over and over. The cat would play for a long time with it. How often have I wished I had had a camera in those days of fun and frolic. After I had this one a year, mates came round, and my little fellow could not make up his mind which he would have. He treated all alike, but at last he decided, and then he hunted all the other little flirts most unmercifully. To this favoured one he kept true year after year. They were always together and brought many families to my care. Now I have so many that I cannot say if he is still true to his first love. We had some very wet weather after he chose his mate, and every evening they had a few words, rather heated at times, over the camp for the night. Jenny wanted to go to the trees, but Joey preferred the comfort of his snug cage. Very often his word was law, and Jenny very shyly dropped into the cage, which was never closed all

day but only during night, as a precaution against wild cats and snakes.

My family has increased very rapidly; uncles and aunts, and every possible relative soon flocked to my table. Seeing no fear in my own birds they soon got as tame; the pictures show how tame they are. None now sleep in the cage, all sleep in the hollow trees around, but by daylight they clamour for breakfast. They are fond of taking out my hair pins as you will see by the photos.

When I went to town last week there was a girl on the coach behind me. I noticed that she had a tin biscuit box on her knee with holes cut in it. I asked her what she had, and on hearing that it was a bird, I said I hoped it was not one of my parrots. I gave my usual call and immediately the answer came from the tin, and a little eye looked out at a hole. I put my finger in and the little spongy tongue licked it all over. The girl said she had got it feeding on a lantana bush with others and it had allowed her to catch it. She would not give it up and I had no legal right to it. She lives a mile-and-a-half from my home. We live about twenty miles from Mackay, and all the way, every time I spoke to the driver or to the girl the little voice answered me from the tin. I have asked some one in town to try and buy it back for me from the person to whom the girl gave it. I hope I may get it, I cannot stand my little free pets being caged.

This is all a ramble and may be of no interest to you, but Mr. Cornwall seemed to think that from all he knew of you it was a letter such as this that would interest. The photos, of course, are rare. In one you will see the spongy tongue sucking up the sweet liquid from the plate, and you will also notice the tails sticking out of the cans, showing that the little gourmands are greedily licking the bottom of the cans. They are noisy little pets, but very beautiful. Their free life keeps their plumage in good order. They are great believers in the daily tub and there are great scenes of revelry in the spouting round the roof.

I hope I may revisit England some day before long, and I am sure that I shall want to get inside the Parroquets cage at

the Zoo, that is to say if I see any of my friends there. I have been away some times for four or five months at a time, and during that time my pets are not so well looked after, so they almost stop coming, but I am not home more than two days before the circular has been sent round the tree tops, and my little friends wing their way from all sides and swarm on me, some times twenty or thirty hanging on me and squabbling for the post of honour on my shoulder.

During the fine weather they do not trouble us beyond coming for food, but in weather such as we are having now (rain daily) they scarcely leave the verandah. As I write I counted over seventy on the wire round the verandah. I had to stop writing to give them food as they gave me no peace, over my shoulders, drinking the ink, tearing the paper, etc.

If you should visit Australia again my birds will join me in extending a welcome to our bush home. I am sorry that the photographer spoilt one of the best negatives by taking the shadow of my face ; it has made it ghoulish, but it is best of the birds I am sending.

ELLA M. INNES.

A FIRST FLIGHT.

By EVELYN TRENOW, F.Z.S.

The advent of our Summer visitor the Swallow, reminds one that the first flight of the young birds is not often seen in its initial stage, though most of us have seen them wheeling in the air with nearly as much power as the old birds, but a few hours after they have first stretched their wings.

In the ordinary way the youngsters make their first efforts towards flying soon after daybreak ; this, in the breeding season, means about three in the morning—an hour when most people are in bed—and for that reason their essays are not often witnessed.

Most of us, however, on thinking over our experiences, will recollect that the nest seen full of young birds overnight has been empty the next morning, and the late occupants have been found already following their parents in their skimming flight.

The opportunity I had of observing the first efforts of a brood of four was due to an accident. One night, about mid-

night it was, a sound of breaking glass—suggesting burglars—caused me to investigate, with the result that I found the floor of a conservatory strewn with broken glass and pieces of dried mud. A nest built under the eaves of the house had become detached from the wall and had fallen through the glass roof of a conservatory; but no young birds were to be found in the debris.

The first thing to do was to find the birds and, with the aid of a lantern, I discovered them uninjured in one of the valleys of the conservatory roof. No doubt they had fluttered when the nest dropped from under them and had thus escaped damage.

The four youngsters, fledged and ready to fly, were placed in a cage with the door shut on a window-sill below the site of the nest, in the expectation that the old bird would feed them as soon as day broke. The expectation was duly justified. Later on the door of the cage was opened to facilitate feeding operations, which were somewhat difficult through the wire-front. The old bird, however, soon discovered the open door, perched for a moment in the doorway and then launched itself into the air with outspread wings towards a fir-tree some thirty feet away. Having demonstrated the ease of flight it returned to the cage and persuaded the fledglings one by one to fly from the cage to the tree, accompanying each on its journey until all were safely perched in the tree. Within an hour these birds were all fully on the wing and flying round as though they had never done anything else in their lives.

Considering the inaccessible positions in which Swallows' nests are generally placed, I have often wondered if the young are always schoolmastered in their first flight.

NESTING NOTES ON THE BLACKBIRD.

By Miss E. E. WEST.

I do not know if a few notes about the nesting of a Pied hen Blackbird and black mate will have any interest for our members, but send them to you on the chance.

I am sorry I kept no notes about it at the time, so am not sure about dates. At the end of April, last year, I found my Pied hen (of whom I sent a note to the *Avicultural Magazine* about

two years ago *) flying about the bird-room with pieces of hay, or anything she could find, and constantly going to the window bars and calling and talking to the birds outside, so I concluded she wanted a mate. I at once did my best to gratify her, by going to a naturalist and bird dealer in our town of Bromley and procuring a nice cock Blackbird. I brought the gentleman home with me, and the next day I fixed up boughs in a good-sized aviary (*not* a cage) where the two could be quite to themselves and very private. I got an old Blackbird's nest out of the garden and put in hay and stuff for the use of my two, then put the hen in and let the cock loose in the other part of the room. He at once joined the hen and they took to each other and mated without any fuss.

The hen had begun egg-laying before I left home on the 10th of May, and it was thought she had hatched a bird while I was away, which was nearly three weeks, but this did not prove to have been the case. However, they had another try, and on the 18th of July I felt sure there was a young bird. I noted *that* date, but fancy the young one was hatched on the 15th. The parents were so attentive I had great hopes they might rear their offspring; of course I did not know if there was one or more. The gardener and I worked quite hard getting worms for them, and put some in the room in a box with some mould every day, and provided also a constant supply of fresh turf. I gave a lot of mealworms and plenty of the soft food I always use for the Blackbirds, viz., Neutratine, ant eggs, and preserved yolk of egg.

The cock bird was a most devoted husband and father, he never ate a mealworm himself, but carried them all to his wife and little one. I do not know if he ate any of the garden worms, but they always disappeared.

Things went on well for just a fortnight, and then disaster put an end to my hopes. I went into the aviary early as usual that morning and found a little bluish heap on the floor, which proved to be my young bird. It was beginning to get the wing feathers, which were quite blue, and it seemed a fine bird for its age. I had a suspicion that the hen had pulled it out of the nest and killed it, as it had certainly been knocked about. I had noticed for some days that the hen had taken to eating the meal-

worms herself, instead of giving them to the young as she had been doing, and wished I could take her away and let the cock feed the baby or babies, but I have had no experience in breeding these birds and did not know what was best to do. There was only *one* baby. When I examined the nest later on I found another egg but it was spoiled.

The Blackbirds had still another try at nesting, quite late in the season, but I do not think there was even an egg laid. I much wanted to see if the young would be all black or develop white feathers like the mother.

As soon as the weather turned cold in November the hen drove away the cock and would not let the poor thing feed or have any peace, so I opened the door of the aviary and he was very glad to fly into the other part of the room, quite away from the hen, where I let him pass the winter, as it was warmer and more cheerful for him. He is a fine bird with a brilliant yellow beak, but has not got very tame. At the beginning of this month (April) I let him fly into the room where the pied bird is still living, but she would have nothing to do with him for some time. Only about a week ago she tolerated him in her aviary, and now they are again nesting in earnest. I think the hen was busy this morning laying an egg, and poor Mr. cock is again in close attendance, and never gets a mealworm for himself. I have not much hope of rearing a bird even if one should be hatched, as I suspect they require more insect food than it is possible for me to give them, and that my hen will not have sufficient patience to bring up a baby.

Perhaps some of our readers will give me some hints about feeding and management of soft bills when nesting, they will be thankfully received.

The cock sings sweetly to his wife, but it is not his full song at present.

Since the above was written I have an unfortunate sequel to record. On the 22nd May, I left the door of the aviary open and the hen escaped. Although she remained in the garden for three days I could not catch her and she has now quite disappeared. In the nest was one young bird just hatched and five eggs, one of them chipped!

SOME NOTES ON BREHM'S HOOPOE.

Upupa epops major.

By M. J. NICOLL.

Assistant Director Giza Zoological Gardens.

As long ago as 1855, Brehm separated the resident Egyptian Hoopoe from the European race and called it *Upupa major* (Brehm Vogelfang, p. 78, 1855). Subsequent writers have entirely overlooked this well-marked subspecies, although there are several specimens in the British Museum collection.

Early in 1909, Mr. J. L. Bonhote and the present writer obtained specimens of Hoopoes at Inchas in Lower Egypt, which were at once recognised as being different from *Upupa epops epops* by their longer and much deeper bills. A comparison of these specimens with Brehm's type, now preserved in the Hon. W. Rothschild's collection at Tring, showed them to be identical with *Upupa major* (c.f. Bull. B.O.C., XXIII. p. 100, 1909).

Subsequent researches by the writer have proved that Brehm's Hoopoe is resident in Lower Egypt, and also probably in the Fayoum, though as regards the latter place further investigation is necessary as we have at present no absolute proof that this race breeds there, though it is extremely probable that it does so, seeing that *Upupa major* is the breeding form at Luxor, where there is little doubt that it is resident.

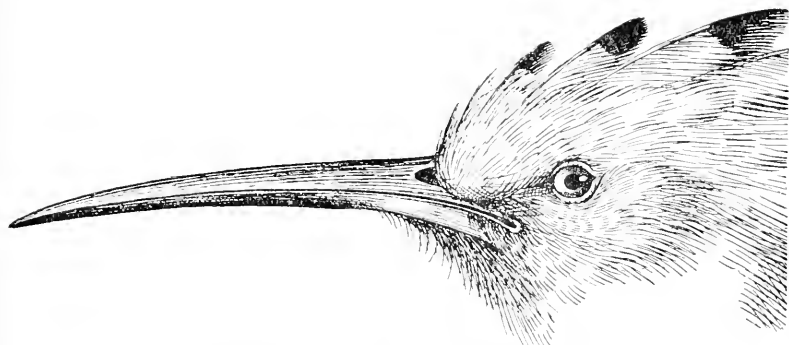
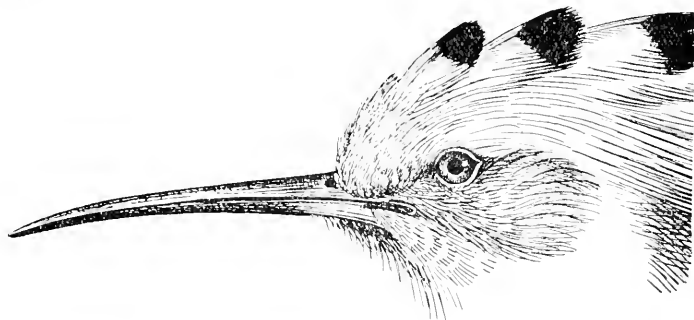
There is no doubt, however, that Brehm's Hoopoe is *the* breeding Hoopoe of the Nile delta, where it is resident and resorts to the mud houses of the native villages for nidification.

On April 20th, 1910, I paid a visit to Inchas for the purpose of obtaining young examples of this Hoopoe for the Giza Zoological Gardens. Several nests were found containing newly-hatched young, but none of them were old enough to take. The nests were all in holes in the mud walls of houses, and in several cases the adult females were brooding the young.

As we were too early, I made arrangements with a local native to get me young birds of a suitable age for rearing, and a short time afterwards I received from him two lots of young; the first being two well-grown young birds, and later, a nest of six youngsters, which were just feathering.

Of the first lot, one met with an accident which caused its

death a few days after its arrival; all the others were reared to maturity, though one, a sickly bird, died when full-grown. Several months later, one of the remaining six birds was found dead in the pond in the aviary and, up to the time of writing (April 24th, 1911), the remainder are in perfect condition.



UPPER FIGURE: Head of *Upupa epops epops*.
 LOWER FIGURE: Head of *Upupa epops major*.
 (Natural size).

When they first arrived, all the young Hoopoes refused food, and I had to cram each one separately. After a few hours, however, they readily took their food, and as they grew older they left the open biscuit tin in which I kept them and literally mobbed me every time I entered my house.

The food used was a preparation obtained from France, and contained biscuit, locusts, "dried flies" and ant cocoons ground into a fine powder. This mixed into a thin cream with

water or milk proved the most suitable food and was taken readily. When feeding the young I always called to them with a certain whistle, and as they grew older they would follow me about the house on hearing the whistle. On one occasion one of the young birds flew out of the window, but returned the next morning on hearing me feeding the others.

At the time of writing, the Hoopoes are enclosed in a large aviary in company with Doves and Plovers, and up to the present we have had no trouble with "split bills," which seems to be a common failing with Hoopoes. The floor of the aviary is for the most part loose rubble and sand, and the birds can probe in this to the full extent of their bills without any difficulty.

From the time they were able to feed themselves our Brehm's Hoopoes have taken practically nothing but fresh chopped meat placed in a dish of water, and on this they seem to thrive well.

A few days ago one of them started singing, if "Hoop hoop" can be expressed as a song. They are provided with nesting-boxes, but up to the present show no signs of using them.

The characters by which the present form may be distinguished from the typical *Upupa epops* is as follows:—Brehm's Hoopoe is easily recognisable from *Upupa epops epops* in having the bill much larger and stouter, especially at the base, and the males are less brightly coloured than are the males of typical *Upupa epops*. In both forms the males have always larger bills and are more brightly coloured than the females.

SOME WILD PET DOVES.

By KATHARINE CURREY.

For more than thirty years I have kept Ring Doves—*i.e.* the ordinary light brown Barbary or Laughing Dove—loose about the garden, but now-a-days I find it more difficult to get the pure-bred brown Dove than formerly, no doubt on account of the inter-breeding with the white Java Dove. Barbary Doves are now almost pearl-coloured, and they appear to me to be more pugnacious. Everyone who keeps White Javas know how fierce they are.

The gentle harmless Dove is a mythical bird. No birds are fiercer in the breeding-season than the Doves. I used to keep my Doves in a large flight aviary; I have kept Java, Barbary, Common Turtle Doves, Bronzewings, Zebra Doves and Cambayan Turtle Doves, the last-named, to my mind, the loveliest of all; but, like all birds, they are never so interesting as when loose, as their characters do not develop as when they have to a large extent to fend for themselves. The Cambayan Turtle Doves have never left the garden, but many Ring Doves have flown away, no doubt to other gardens with more attractive trees. It is during the nesting-time when they fly off, pursued by their rivals. I began keeping the Cambayan Turtle Doves in an aviary, but, like all Turtle Doves, they were so restless and chafed so at their captivity that I let them out. A Japanese gentleman who was here and watched them flying about said they would never leave their home, like the Ring Doves do. They abound in Japan. And so it has proved. For years they have lived here, every Spring nesting about in the trees, in ivy, or in an old yew-hedge, and come every morning and afternoon to be fed. Just now they are in beautiful plumage, the golden sheen on their wings is very brilliant, and the apricot colour of their necks very rich and pure. They are quite friendly with the Ring Doves, and feed out of the same wooden bowl. If they are annoyed, they make a buzzing noise like a large blue-bottle, and their cooing sounds absurdly patronizing and affected, accompanied by a succession of such rapid little bows that you could not count them. The cock is especially cruel to the hen in the Spring, preventing her feeding, like the Ring Doves.

It is very pretty to watch a flight of Ring Doves in early Summer chasing each other in play round and round the garden. They love to get the wind under their wings. When they build they collect little sticks in their beaks and fly to the nest-site, where the mate waits to receive and adjust them to form the very slender nest. The Barbarys and Javas come indoors and assert their right to the house, flying up on to a wardrobe in a bedroom to build there, and much resenting being turned out. Their young perch on people's hats and on the dog's back, and scramble on to the tea-table to get at the cake,—thoroughly

troublesome, but the Cambayans will not get quite tame. I think, if it is possible—but of course one is apt to lose one's birds—it is far more interesting to have pet-birds free than caged, and to be able to watch their natural ways; and I find many birds prefer to stay in or near their cage—provided it is made a home to them and not a prison—to taking their liberty.

But for this they must be made very tame and have real attachment to their owner. A Blue Thrush I had for some years got out of his cage and flew across the garden into an orchard and over to a little wood, then back again over the garden and house to a grove beyond. Of course I gave him up for lost. Next day he appeared at a bedroom window, and hopped in on to a pin-cushion, where he stood bowing, as if to say "Here I am again!" He was overjoyed to see his cage and hurried back into it.

I should imagine the Blue-bearded Cuban Dove (*Sturnænas cyanocephala*) to be one of the most beautiful of all doves, but I have never seen it.

"A TRIPLE ALLIANCE."

By C. BARNBY SMITH.

Lack of space (which of course is a polite euphemism for limited means) compels me to keep my Cayenne Spur-winged Plover (*Vanellus cayennensis*) in a miserably small aviary, measuring only about nine yards by two yards. Nevertheless in this restricted space they have flourished and nested and seem quite happy. The Cayenne Plover, apart from the interesting spurs on the wings, quite suggests a coarsely made native Lapwing with a fierce red eye. The plumage, however, is very beautiful.

The wing-spur, which varies in length considerably in different birds, is usually only noticeable when the wings are stretched and is said (and no doubt correctly) to be used for the purpose of defence and attack. I have never seen a blow actually struck with it.

Two of my birds arrived in the autumn of 1909 and a few weeks later I got a third bird which had practically only one wing—the other having been so badly damaged by accident that

it had to be taken off in a way that I am told would have killed most birds. However, this bird survived and seemed none the worse for the operation. Its arrival was welcomed by the other two birds in a very striking manner. They both went up to the stranger, placed themselves shoulder to shoulder one on each side and the trio marched thus up and down, perhaps a dozen times, all three birds shrieking loudly but with this difference, that the winged bird gave out slow notes at intervals whereas the other two birds gave out notes repeated as rapidly as possible.

They then settled down without further performance except a good deal of chattering. This is I think, interesting in view of what is stated (in Hudson's "Argentine Ornithology") of their antics in their native country.

These Plovers are very fierce, excitable birds, and when I once put an Indian Yellow-wattled Lapwing in with them I think they would have killed it in half-an-hour if I had not gone to the rescue.

They seem quite hardy—at any rate in a grass run on a well-drained sandy soil with a shelter shed. I feed them on raw chopped meat and boiled rice in the morning, and the same or chopped shrimps and Victoria poultry food in the afternoon. If allowed to do so, they would eat nothing but raw meat, but this would not, I think, suit their health for long. They are very vociferous at all times when anything strange comes near the run and chatter loudly on moonlight nights. It is interesting to note that Lapwings flying over are always greeted with loud cries and clearly at once distinguished (even when flying at a great height) from other birds.

On the 11th March last, I noticed two of the Plover very busy lining a small hole in the ground with bits of dried grass in a way that suggested nesting operations. I also noticed them rushing with outstretched wings and loud cries of anger to attack a Martinique Rail with whom they had previously lived on fairly friendly terms.

Between the 11th and the 24th March the two birds were intensely active with the nest, deepening the hole with their beaks, pulling out all the grass, rearranging it, then pulling it all to pieces and again deepening the hole, and so on. They evidently

thought they were very clever and usually approached the nest in a crouching manner and with lowered crest. As a matter of fact the net result was very poor as the nest was not large enough for the eggs afterwards laid, and one on several occasions got pushed out and I had to put it back. The eggs were blotched something like a common Lapwing's in colour but more the shape of an ordinary fowl's egg, and were not arranged in the nest with points to the centre like the common Lapwings.

The first egg was laid on the 24th March and three more on the 26th, 28th and 31st. Whether the winged bird or one of the others laid the eggs I cannot say as they were both constantly going on and off the nest. They both began to sit in turns on 1st April, the third bird apparently being little interested in the nesting operation, but all along all three birds were on quite friendly terms and there was no suggestion of jealousy.

The first week in April was truly arctic weather and it was strange to see one of the Plover sitting on the eggs with the ground all round covered with snow. As these birds are said to nest in Argentina in the month of June if the weather is favourable, I quite expected the severe frosts and blizzards we had in early April would make my birds desert the nest, but to their credit they did not. The only thing that really disturbed them nesting was a wild Ring-necked cock Pheasant that would stand amongst some fir trees just outside the run to watch proceedings. This conduct, thoughtlessly repeated, caused all three Plovers to rush violently about and set up deafening yells that could be heard half-a-mile off.

Matters went on like this until 11th April, the winged bird and its mate sitting on the eggs and standing to guard the nest in turn, and so far there appeared to be merely a friendly understanding with the third bird. On 11th April, however, a striking change occurred, the third bird began to assist at the nest, occasionally sitting, standing on guard or joining with one of the others in throwing bits of grass about near the nest. This third ally seemed to be quite welcomed by the other two birds.

On 16th April hearing the three allies making a most awful noise I went to see the cause and found they had removed one of the eggs at least a yard from the nest. I placed it back again and

within half-an-hour found they had again removed it, this time they had taken it into their drinking pan four yards distant and left it broken in the water. The birds continued to sit on the other three eggs until 28th April when I took the eggs away. The birds during this period were apparently on the most friendly terms. The eggs were all rotten and I suspect that the frosts of the first week of the month would account for this. At the same time I should not describe the allies as good sitters as they were relieving one another every few minutes when sitting. One curious thing I noticed a few days before I took away the eggs, and that was the entire removal of the nest and eggs to a hollow immediately adjoining the first nest. There was no mistake about this as the position of the original nest was just outside the shelter shed, whereas the substituted nest was just inside the shed. All the lining of the original nest was removed and a good deal more dried grass added to line the new one which was better made than the original nest. I have not the least idea why the birds did this. I am inclined to think that the triple alliance consisted of two cocks and one hen (the winged bird) but "all my mind is clouded with a doubt." I think I am right in saying that somewhat similar nesting arrangements of Spur-winged Plover have been noticed by Mr. Hudson in Argentina, the hen sitting on the eggs and the two cocks standing by the nest. I hope, on a future occasion, to be able to report the successful nesting of some of the allies.

BIRD NOTES FROM THE ZOOLOGICAL GARDENS.

By THE CURATOR.

During the past month quite a number of rare birds have arrived and space will only permit of my mentioning the most important.

A fine specimen of the rare Kakapo or Owl Parrot of New Zealand (*Stringops habroptilus*) has been purchased. This very distinct flightless Parrot was at one time very numerous in the bush country of New Zealand, sleeping by day in a hole or crevice in the ground and coming forth at night to feed upon roots and other vegetation. It is now fast disappearing and the

present specimen was received from the West Coast of the South Island where a few remain.

Dr. Philip Bahr, a member of the Society, has spent some months recently in the Fiji and Tonga Islands from which he has brought a few very interesting birds. He has presented the Zoological Society with a specimen of the Tabuan Parrakeet (*Pyrhulopsis tabuensis*) and a Taviuni Parrakeet (*P. taviuensis*), the latter being new to the collection.

Besides these he has sent us three specimens of the rare Fijian Parrot Finch, *Erythrura pealei*, which has never before been imported. It is like the Parrot-finch of New Caledonia except that the throat is blue instead of red.

Several very nice birds have been received in the King's Collection of which the following are the most noteworthy:—Four of the Grey-necked Crowned Crane (*Balearica regulorum*) a species now seldom imported; two young Black-necked Crowned Cranes (*B. pavonina*), two Stanley Cranes, four Secretary Birds, two Eastern White Pelicans (*Pelecanus roseus*), three Cape Gannets (*Sula capensis*), one Martial Hawk Eagle, three Jackal Buzzards, four Spotted Eagle-Owls, one Grey Eagle-Owl, one Ground Hornbill, one Yellow-billed Duck, two Red-billed Ducks, one Scarce Duck (*Anas sparsa*), probably the first ever imported, and four Black-footed Penguins.

Mr. Frost, who has been collecting in India, has just returned with a wonderful collection of birds, of which perhaps the rarest are a pair of Hooded Cranes (*Grus monachus*) of which species one example only, obtained in 1876, has been previously represented in the Gardens. It inhabits Eastern Siberia, China and Japan. It is little larger than the Demoiselle Crane, grey, with a white neck and the forehead black and red, the latter colour being produced by the red skin showing through the black bristles.

With these came a pair of the Eastern race of the Common Crane which was once thought to be distinct and named *Grus lilfordi*; also a number of rare small birds which I must leave until next month.

The most interesting event in the way of breeding results is the hatching of a young *Cariama* in the Eastern aviary. We

fixed up a nesting platform of sticks in the spring which the birds promptly took possession of and laid two eggs. One got broken, but the second hatched, and the young bird, which is now about ten days old, is doing well.

Red-winged Starlings and Grey-winged Ouzels have young, and we have chicks of Satyr Tragopans, Peacock Pheasants, Sonnerats Jungle-fowls and several of the commoner Pheasants. Of ducks we have some fifteen Carolinas, three Red-crested Pochards, three Andaman Teal, eight Variegated Sheldrakes, and fifteen Wigeon, and still a good many eggs to hatch.

CORRESPONDENCE, NOTES, ETC.

BREEDING OF THE RED-VENTED BLUE BONNET.

SIR,—I do not know if the Red-vented Blue Bonnet Parrakeet has nested and reared young in this country before, but in case it may not these few notes may be of interest.

In the spring of 1908 I obtained a pair which had been privately imported; they were in perfect health and plumage, so I turned them out at once into an unheated outdoor aviary, where they had a compartment consisting of a small shed and rather long flight to themselves; they took very kindly to their new surroundings, were not wild and never ailed in any way.

In the spring of 1909 they paired and scraped a hole in some saw-dust there was in a large nesting-box, but did not lay, and in 1910 they did much the same; but early this spring, the winter having been very mild, they began to take interest in an old stump of a tree I put on the ground in their shed and which was hollow and had several holes in it. About March 4th I missed the hen for a few days, but on the 17th she was out, so I looked in and saw certainly one egg, though there may have been more. After that she was seen off but once till April 11th, when she came out for a short time, and then did so daily, remaining out longer each day till the end of the month, when she no longer remained in the nest during the day.

On May 14th the first young bird came out, it was quite full-feathered and flew about well, but returned to the nest frequently; on the 19th, a second came out, and it was also full-feathered and able to fly, and I then looked in at the nest and saw one egg remaining, I suppose an unfertile one. The young birds never made the least noise, and there was no evidence of their being in the stump, except that the old ones consumed a larger quantity of food than they could want for themselves.

These Parrakeets, though coming from a fairly hot part of Australia, must be very hardy, as, during the end of March and fore part of April

when the hen was sitting, we had frequent snow-storms, and occasionally sharp frosts about the time she was hatching. Their food has consisted of canary seed, hemp and millet and a large quantity of English white oats, and they have had plain cake daily (of which they seem very fond), groundsel and shepherd's purse have also been given, but they did not seem to care much about them. The young birds are just like the old ones, except their tails are not so long, but they bow to one another and make the same call and behave quite in the same way. DUNCAN PARKER.

P.S.—Since the above was written the birds have again gone to nest and are now (June 6th) sitting.

[We believe this is the first instance of the nesting of this species in Great Britain. If any members or correspondents know of a previous instance we should be much obliged if they will kindly let us know.—ED.]

HECK'S LONG-TAILED GRASSFINCH.

SIR,—In the last number I wrote a letter under the above heading in which I pointed out my reason for disagreeing with my friend Mr. Gregory Mathews in his assumption that *Poephila hecki* was synonymous with *P. acuticauda*.

The last paragraph of my letter, however, is perhaps somewhat unfair to Mr. Mathews, and I hasten to apologise if this is so.

I said, in effect, that he had no right to sweep aside the testimony of those who had seen the living birds, when he himself had only seen the dried skins in which the colour of the bill had probably faded. This may seem to imply that I accuse Mr. Mathews of looking only at the skins and not at the labels.

Mr. Mathews has since pointed out to me that all of his skins are labelled with full data, and that his collectors have instructions to observe especially the colour of the bill and soft parts generally, and to carefully note them.

Hence it is clear that all of Mr. Mathews' specimens belong to the typical yellow-billed form, a fact which, however, does not in any way prove that a distinct red-billed form does not exist; even though the habitat of some of his birds is the same as that from which North, on the evidence of a catcher only, believed *P. hecki* to originate.

So far we know that the red-billed *P. hecki* exists somewhere in Northern Australia, but the exact locality still remains doubtful.

D. SETH-SMITH.

SIR,—On May 4, 1897, I obtained a couple of Long-tailed Grassfinches; at that time some few were on sale at 50/- and 52/- the nominal pair, one dealer asking 60/-. On July 24, the late Dr. W. T. Greene sent me a body for identification: "Did you ever see any thing like this before?" he wrote; "but for the elongated tail feathers, it looks like an ordinary Parson

Finch." On November 5, I received an odd bird which, with only one pair besides, had been exhibited at the L. & P. O. Show at the Aquarium on the preceding day. The same pair, and that alone, appeared at the Palace three months later. And two months afterwards, in April, 1898, I purchased three more of these birds from a dealer. Five out of the six that I had secured lived with me for a considerable time, and gave me opportunities of making many notes. All of them, and all that I had then seen, were orange-billed birds: all that I had seen were the same as my own: therefore my six would seem to have been ordinary normal examples of *Poëphila heeki*, though not at that early day specialised and recognised as such.

Towards the close of the summer (1898), a good many more Long-tailed Grassfinches reached this country; and by September they were being advertised at 25/- the pair. I did not see these birds; but I have a suspicion that this was the first arrival of the yellow-billed form—but I may be wrong here.

As with several other species, I found that my Long-tailed Grassfinches, when transferred from a cage in a warm room to the open aviary, lost the beautiful bloom from their plumage. Moreover, the colour of the bill differed not only in different examples but, at certain seasons, in the same individual, becoming (to quote my own notes) "deep red," "red orange," "deep orange red" when in breeding condition, but often fading into a dull orange, and occasionally into quite a light shade. And so it followed that when it was bruted abroad, or perhaps at first only whispered with bated breath, that there were two forms of the Long-tailed Grassfinch, I, who had never seen a "yellow-bill," judged that the world was wrong, and that the differences were no more than what I have hinted at above.

But my vanity was doomed to receive a cruel shock. I think it must have been on the 5th October, 1898, that the blow fell, on the occasion of my paying a visit to the "First Great Specialist Show" at the Crystal Palace, when there were several pairs (or so-called pairs) on view—but *all so different from those in my own aviary!* Some species respond to the arts and crafts of the exhibitor in a marvellous way—and my Longtails were nowhere by comparison with them. And in some cases a tail grown in the warm will "run away" from one grown in the garden aviary—and, compared with these exhibits, mine were but Short-tailed Grassfinches. Their bills, too, instead of being dull, or faded, or out-of-condition bills, were of a bright, clear, almost aggressive yellow. And very reluctantly I was constrained to come to the conclusion, either (1) That there are, in truth, two distinct forms of the Long-tailed Grassfinch, or (2) That certain exhibitors at the Palace are uncommonly clever artificers. REGINALD PHILLIPPS.

NESTING OF THE TREE CREEPER. (*Certhia familiaris*).

SIR,—It will no doubt be of interest to members of the *Avicultural Society* to know that I have a nest of four young Tree Creepers hatched on Saturday and doing well. I believe this to be a record? W. R. TEMPLE.

NESTING OF THE ORANGE-HEADED GROUND THRUSH.

Geocichla citrina.

SIR,—In May, my pair of Orange-headed Ground Thrushes built a nest on the broad ledge of a nesting-box, fixed high up in the aviary under the overhanging roof which partly covers in an outside wire flight.

The nest was about twelve feet up, and was composed of moss as a foundation, very neatly put together, and lined with fine grass-stems. There were three eggs, rather smaller than a Blackbird's (*Merula*) of a pale blue, blotched with rufous, especially at the stouter ends, where the spots were thickly laid on.

Three young hatched, and thrived for a week or ten days, when they were found thrown out of the nest, and carried some distance from it. I fancy they had died first, and were removed by the parent birds. They were just beginning to feather, and pale buff-orange could be seen on the breast at the tip of the quills.

I fancy these beautiful Thrushes have not nested in England, but I may be mistaken; at any rate, the death of the young ones was one of the great disappointments through which a keen aviculturist has to go.

The parent birds had been well supplied with earth-worms, gentles and cockroaches, and both seemed to be anxious for the welfare of their progeny. No other bird was ever seen to go near the nest, and I do not think that any mouse did either.

HUBERT D. ASTLEY.

 REVIEWS.

BIRD CATCHING AND BIRD CAGING.*

We have recently received a little pamphlet with the title "The other Side of the Bars" issued by the Humanitarian Society and accompanying it a short note asking for review or criticism. This pamphlet, needless to say, gives but one aspect to the case and that aspect painted in colours so lurid that we feel inclined to doubt the authenticity of some of the statements, and are quite certain that, even if true in isolated instances, which we do not for one moment admit, they do not represent a fair and average account of the majority of bird dealers' shops. Were we so disposed we could under the same title "The other Side of the Bars" draw a much happier and perfectly true picture of the "miserable creatures" singing not "for relief" but from full enjoyment of health and vigour. We could tell of caged birds

* *The other side of the Bars.* 8vo. 24pp. illustrated. LONDON: THE HUMANITARIAN LEAGUE, 53, Chancery Lane. Price 4d.

living in luxury and happiness to an age when under natural conditions they would long have surrendered their life to the stress of Nature, or again we could show the birds mating and bringing up their broods in full ecstasy of health and happiness and relieved from the ever present sense of danger and the necessity of hunting early and late to feed ravenous nestlings. Yet, as every bird-fancier knows, all this goes on "the other side of the bars."

But the Humanitarian may reply—Few birds lead this ideal existence compared with the thousands that suffer as we have described. To that the reply is, that never having kept a bird or mixed with those who have, they know nothing of the happy and well-cared-for birds in private homes, whereas the bird-shops are open to all.

There is, however, a very good proverb which says that there is "no smoke without fire" and as bird-keepers we must allow that the conditions of *some* bird shops do require alteration. To attack bird caging because some bird shops are badly kept seems to the writer illogical and equivalent to trying to prohibit *all* paraffin lamps because *some* explode.

I am quite sure there is no bird-keeper who is not a bird lover and therefore just as anxious to put down cruelty as the most rabid Humanitarian, and the reason why bird-fanciers have not taken in hand the so-called "cruelties" of the dealer is probably because as practical men we know that such cruelties are largely exaggerated.

It seems, however, that it is time that the foundation of truth, on which such pamphlets have been based, should be removed. It has recently been suggested at an informal meeting of a few bird lovers that the registration and licensing of bird dealers (which plan was also suggested by Mrs. Currey in the Magazine for May, p. 213) would be a step in the right direction—it would at all events sort out the respectable dealer from those less reputable, and if members of the different fancier societies only dealt with those dealers who kept their birds properly, others would soon be starved out to the mutual benefit of the fancier, the respectable dealer, and last, but by no means least, of the birds themselves. Apart from actual overcrowding,

small cages and ill-ventilated rooms, the question of selling and catching birds in the close time is one that calls for much attention. The law, however, as it stands, if far from ideal, is at all events sufficient and, once dealers were licensed, these and many similar matters would adjust themselves. In the case of game it was found necessary to license the dealer, and the result has worked well; the case of cage birds is very similar, and we feel sure that if the licensing question was taken up we should hear no more highly coloured tales of misery and pain on "The other side of (some) bars."

As this is a question which concerns all of us whether our birds be kept in cages or aviaries, we shall welcome the opinions of members on the subject.

THE UPPINGHAM SCHOOL, NATURAL SCIENCE SOCIETY.

Our member Mr. Constable has kindly favoured us with a report of the Uppingham School Natural Science Society. Although the ornithological portion deals chiefly with observations on wild birds, we have much pleasure in referring to it here as it is essentially well-arranged and a model of what such reports should be. There is no better plan of helping the protection of our native birds than by stimulating the observing and recording of notes on the various species of birds which may be commonly met with. Such observations are valuable, not only from the interest and education they give to the observer, but by their collection and publication they form a history of the birds of the neighbourhood, which has its importance for the more serious student.

We have just received the Bulletin of the Société Nationale d'Acclimatation de France. This number contains a continuation by Dr. Loisel of some early Russian Zoological Gardens, the earliest of which seems to have consisted of a large collection of bears, kept by Ivan IV. about the middle of the 16th century, which were chiefly used for bear baiting or for torturing his serfs. The greater part of this publication contains much interesting

matter, which does not, however, concern birds with the exception of several articles from our pages which are reviewed at some length. We notice, however, that one of the dealers at Marseilles has just received a large importation of Many-coloured, Swainson's and Pennant's, Parrakeets, Mandarin Ducks, Formosan Teal, Black Swans, Bleeding Heart Pigeons and last, though not least, Snow Pigeons.

PRACTICAL BIRD-KEEPING.

V. HAWKS AND OWLS.

By J. LEWIS BONHOTE, M.A.

I. HAWKS.

Although not, properly speaking, cage birds, this Order includes, to my way of thinking, some of the most fascinating of birds. Probably from their use in the royal sport of Hawking they were one of the earliest birds to be kept in confinement (excepting, of course, fowls, pigeons and ducks, and possibly the Brush Turkeys) and their extreme reluctance to breed in confinement has probably been the most powerful factor in preventing their domestication. In spite, however, of the many centuries during which they have been kept by man, there is perhaps no group of birds that, considering its very simple needs, has been so misunderstood, and owing to this, but a very small percentage of the individuals seen in Zoological Gardens are in what one might consider really good trim. I am not dealing in this article with Hawks used for hawking, they naturally need a treatment to suit the purposes for which they are required, and to any readers who may wish to keep them for that purpose I may refer them to Mr. Harting's valuable book on the "Practical Management of Hawks."* We have, however, to consider the keeping of these birds in large cages or aviaries in which much active exercise is impossible. To keep a Hawk as kept by falconers on 'jesses' tied to a perch or block is, if it is not being used for hawking, cruel and unkind.

* *Practical Management of Hawks.* Second ed. 8vo. London, 1898.

Diurnal birds of prey, which are for purposes of this article included under the rough and inaccurate term Hawks, may be divided into three main groups—Vultures, Kites and Hawks proper. The former feed entirely on carrion, the Kites chiefly on carrion, while the Hawks proper always catch and kill their own prey. Of these three groups the latter are the most delicate, and thus, if we treat the two hardier groups as we do the most delicate we shall err, if indeed we err at all, on the safe side.

In our treatment of these birds, the first popular delusion which must be dispelled is that these birds are hardy, and that all they require is a cage with or without shelter, and a little food daily. This is a very great mistake; true they are not difficult to keep, but unless properly kept, although they may not actually die they will never look nice and always be out of condition.

In the first place, let us see how they live when wild, that we may have some wrinkles as to their requirements in confinement. Although having perforce to seek their prey in cold, bleak and open situations, their actual home is either the gullies of some steep and broken cliff or in the tall trees of some huge forest, and, when not actually hunting for their prey, they are extremely sedentary birds. The capturing of their prey again is no certainty, and many attempts have sometimes to be made before success brings a well-earned meal. The meal, however, being once procured is a good and substantial one and sufficient to last the captor two or three days before the pangs of hunger once more drive him to the chase. Further than this, in their methods of feeding, bones, fur and feathers become swallowed together with the more digestible portions of their food; these, by the action of the stomach, become collected into a pellet and subsequently ejected, and it is not until some time after the ejection of the pellet that they require another meal. Compare this mode of life with the usual conditions under which these birds are kept in confinement. A large open cage, exposed alike to sun, wind and rain, without any shelter, so many ounces of cold raw meat given daily whether required or not, opportunities for casting pellets but seldom supplied, and, if supplied, the next meal served punctually to the hour, regardless of whether Nature demands the food or not. Is it to be wondered

at, therefore, that the birds of prey at most Zoological Gardens become dull, listless and apathetic, often 'hanging' in their moult and generally with broken wings and tail. Yet such are the facts.

We have already pointed out that, in a wild state, Hawks spend much of their time sitting in some fairly sheltered place till the need of seeking a fresh meal puts them on the move, and in captivity we must as far as possible try to imitate these conditions. In the first place, the aviary must be in a sheltered spot; it is quite useless to have an open flight with an elaborated devised house, as but few Hawks will enter the shelter of their own accord, and, moreover, being of a rather wild disposition there is a great tendency for them to break their flights and tail, and also to damage themselves if kept entirely in an open flight. The ideal aviary is one which is only open in the front and boarded at the sides, top and back. It should be provided with two perches placed end on to the observer at a moderate height from the ground and a fair distance apart, so that the bird must use his wings to get from one to the other. If the aspect is in any way open to cold or wet winds there should be a flap about three feet wide hinged on to the front of the roof. In ordinary weather this should be raised, but in cold and wet weather, or if it be very hot, it can be lowered to serve as a shelter and retreat. A further perch should be placed fairly high up against the back as a roosting-perch, and should only be large enough to accommodate one bird at a time. This perch must be arranged sufficiently high up so that the bird when on it may have the advantage of the shelter given by the flap when lowered. The ground of the aviary should be covered with coarse sand and gravel. In such an aviary almost any species—except some of the smaller and more delicate species—may be kept in all weathers.

Now as to food. No bird of prey should be given more than he can finish at a meal, and any food left untouched an hour after feeding time should be removed. This, of course, does not apply to freshly-caught or very wild individuals. Once a day for six days a week is as often as they should be fed, and the best time is about two o'clock in the afternoon. By this method the bird will have his dinner, rest, and then retire to

roost; the pellet, if he is going to cast one, will be thrown early in the morning, and the first part of the day, feeling hungry, he will be somewhat restless and take a lot of exercise moving from perch to perch. Many people are apt to think that because a bird is restless he is unhappy; no greater fallacy was ever put forward, for so-called restlessness is often his only method of taking exercise, which is as essential for birds as for men. As a rule, the only way to get a captive bird to exercise is for him to have a healthy appetite, which is in turn further stimulated by the exercise. The happy and contented individual that sits preening himself all day on his perch almost invariably suffers from liver and eventually dies from an accumulation of superabundant fat.

No birds, however, are so lethargic and 'livery' in captivity as birds of prey, and hence it becomes essential if they are to be kept not merely alive but in the 'pink of condition' that details in the structure of their aviaries and their diet should be carefully attended to. This brings us to the all-important question of diet; if possible to obtain, nothing can excel fresh birds, rabbits or rats, but in most cases such a diet cannot, apart from expense, be easily procured, and so we are driven to butcher's meat. On this, however, most species will live well, provided they are given good, sound, lean meat, with as little fat as possible. Although some people use 'lights' or 'liver' I have very little faith in it, though it may be given for a change, but, apart from their nutritive properties, this food is too soft, and the bird loses the exercise gained by pulling to pieces good, strong meat.

Another food extensively used by some is fowls' heads, these are chiefly skin and bone, and as the bones are too large and of the wrong shape for a Hawk up to the size of a Peregrine this food is chiefly useful to give the bird a certain amount of feather and a good deal of exercise. For five days in the week, however, good lean meat is the best and most suitable food; on the sixth day the bird should be given some fur or feather—bird, rabbit or rat—in order that it may cast a pellet. In default of 'natural fur' a good substitute may be made by cutting up tow in lengths of about an inch and mixing it with the meat; this

plan is, I believe, followed in the Giza Zoological Gardens with excellent results. Fowls' heads, *in addition to* the usual rations are very useful here, but whatever 'fur' be given the bird should on this day have a gorge, that is to say be given double rations, the remnants of which need not be removed till the next morning. On the day following the 'gorge' it should be fasted. By this means almost any Hawk can be kept in the finest trim and condition. The birds, however, will require watching during the moult, which commences in the early part of the summer, and then they will require rather more generous feeding, which has to be continued well on into the autumn, long after the moult has ceased; by November, however, a return may be made to the ordinary rations. The amount of food that should be given at any meal can be easily judged by the actions of the bird. If it has not all been eaten at one sitting too much has been given, and if, on the other hand, he is ready for more when the surplus food is being removed his dinner has erred on the 'short' side. I am afraid that when written down all this may sound very complicated, but it is not so in practice, it is quite easy to make a rule not to feed the birds on Sunday and to give them larger rations with chopped tow on Saturday, and that is all that is essential. Of course, anyone who cannot take sufficient interest to find out when his birds are in moult should not keep birds.

Next comes the question of water for bathing and drinking, for the latter purpose water is not necessary, and I cannot remember ever seeing a Hawk drink, though good observers have stated that they do, but many species undoubtedly like a bath at times, even though they are not great bathers. The best bath is a large rectangular tray, about four inches deep, which may be put in on fine bright days. Hawks properly kept are, like most birds, very seldom ill; if, however, they appear out-of-sorts I have generally found that a day without food, followed by a good meal off a freshly-killed *warm* bird or rat, and then giving them for some days as much 'fur' as possible soon brought them back to health.

The species of Hawks, though numerous, are all so alike in habits that the same treatment will do for all, especially the larger kinds. There are, however, some delightful small species,

which are rather delicate and require a little more care. Firstly, we have the SPARROW HAWK; this species rarely does well or lives long in confinement and is also extremely wild. It will not live on butcher's meat, and does not care for rats and so small birds are the only food on which it will do well. The MERLIN is 'par excellence,' one of the tamest and most delightful of our native Hawks. Young ones reared from the nest make charming pets, but generally die during the winter; however, if given plenty of tender meat (birds and mice) and kept in an indoor aviary where they can take plenty of exercise during the bad weather they will do fairly well, but I have never found them very long-lived.

The HOBBY, RED-FOOTED FALCON, AMERICAN SPARROW HAWK (in reality a Kestrel) and several other small species may sometimes be procured. These must all be taken indoors during the winter or a glass front fixed to the aviaries already described. They should be given as many small birds and mice as possible, and also beetles or other similar insects. When given butcher's meat it should be cut up into small pieces.

Hawks do very much better if kept in separate aviaries, as when several are kept together the strongest almost invariably take the lion's share of the food; but if several are kept together the same number of pieces of meat must be given as there are birds, no more and no less, for if they are keen on their food, as they should be if in health, they will not settle down to feed till all the food is gathered up and an extra piece leads to fighting and quarrelling. Another reason against keeping several together is that in autumn, when the birds get ravenous, the weaker are almost certain to be partially starved and possibly killed outright, though this is not very often the case.

Kites and Vultures have quite different habits and may safely be kept together, as may also Owls, except in spring and autumn, when they must be carefully watched.

Hawks are said to be extremely shy breeders in confinement and, except for the Kestrel which has been known to nest about three times, I can find no records of the successful breeding of other species. Personally I do not think there would be much difficulty in inducing these birds to nest, provided they were

given a suitable place and that a pair could be got to live together. They should be introduced to each other in late autumn and kept together during the winter, being turned out into their breeding aviary early in spring. Few people, if any, have tried to breed them, and captive Hawks are seldom in breeding condition.

The BLACK KITE has laid and hatched with me on several occasions, both in a large barn and in a comparatively small aviary, and Vultures have been known to nest not infrequently.

It is hardly necessary to add any special remarks on Kites and Vultures, they are much hardier than Hawks and will live peaceably together. Being by nature carrion-feeders they are not nearly so particular as to their food, and it is not so important to give them fur every week. On the other hand, they are much more greedy and lazy than a Hawk, and care must be taken not to overfeed them; in other respects, if kept in the manner described for Hawks they will thrive and in all probability breed.

* * *

II. OWLS.

Beyond the fact that the majority of Owls are raptorial birds, they have no other claim to be considered in any article dealing with Hawks. From their similarity of food, however, they may be kept in confinement in a manner similar to the diurnal birds of prey. They are not nearly so wild or so liable to knock themselves about as Hawks, so that if necessary their aviary may be wired at the top and sides, but we find that they undoubtedly keep in better condition if their aviary be covered in; it is, however, unnecessary to have the front flap. They must be provided with a closed-in box, having merely a large hole by which they can enter, and the box should have the bottom of one side hinged to facilitate cleaning out. Certain species, such as the EAGLE OWL, SHORT-EARED OWL and several others will not enter a box, and in these cases the front flap should be used, but it may be permanently fixed down in order to provide a dark retreat during the day. The feeding should be precisely the same as for the Hawks, except that as they feed at night it is advisable to feed them late in the afternoon and remove the surplus food, if any, in the morning.

Several Owls may safely be kept together, but as most species breed readily in confinement they should be separated into pairs in the spring, or fighting (and murder) is pretty sure to take place. Birds of the same sex will live together without much fighting at all times of the year, but should a pair mate they will soon kill off any other inmates. The loss of birds in this way does not necessarily mean that they kill each other by fighting, it more often happens that the weaker are driven to one corner of the aviary from which they dare not move, and become, in consequence starved. In the autumn, Owls need a much larger amount of food and, where several kinds are kept together, unless they are very much overfed, the weaker will have a bad chance, but it must be remembered that if overfed, as is usually the case, they will never be in condition or come into breeding trim.

When breeding, they require no special attention, but when the young are hatched they should, if possible, be given nothing but mice, rats and other natural food.

Owls will do very well in an aviary with a total absence of sun, but, on the other hand, many species do enjoy occasionally a 'bask' in the sun, though it is in no way essential to their health; the same remarks apply to a bath.

Comparatively few species of Owls are commonly kept; the EAGLE OWL is the largest and finest species usually met with and nests very freely. The eggs are generally laid in March in a depression scraped in the floor of the aviary, and incubation is carried out by the hen alone. The approach of the breeding season is heralded by the almost continuous hooting, the male and female answering each other continuously and with monotonous frequency. Care must, of course, be taken when entering the cage, or even if standing near it, as both birds are at this time extremely savage. This may also be said of most species when nesting, except the Barn Owl, which I have found extremely docile, allowing itself to be lifted off her young or eggs without a protest.

Probably the most delightful Owls to keep are the SCOPS, they are small and quite inoffensive and may comfortably be kept in a living room in an ordinary cage and allowed out periodically to exercise their wings. For this and other small species the

food should be cut up into little bits as they are not very good at tearing their prey to pieces, and I have found it best to cut open Sparrows and mice. They are passionately fond of mealworms, and when flying about a room will take them from the fingers while hardly pausing in their flight, in fact, the Scops is one of the most delightful bird-pets imaginable. Several of these small Owls, however, are rather delicate and require a little artificial heat in winter.

I am afraid I have already exceeded my legitimate space, but I can heartily recommend any of the birds of prey as most delightful pets; with few exceptions (*e.g.* the HARRIERS) they will become exceedingly tame, and as they have only to be fed once a day they are essentially birds which one can feed oneself and thus get into personal touch with them in a manner not so easy with smaller species, whose food is always at hand. However tame they get, it is always as well to remember that they have sharp claws, and as when thoroughly tame they often ‘strike’ in play, it is best to wear thick gloves when handling them.

PRACTICAL BIRD-KEEPING.—CORRESPONDENCE.

WINTERING BIRDS IN OUTDOOR AVIARIES.

SIR,—You have asked members to write and say what birds have wintered successfully in their garden aviaries.

My aviary consists of an open wired flight and a strong wooden house. The windows face south and the door west; during the winter this door is closed, and the birds gain entrance to the flight by means of a small square hole quite near the floor level, fitted with a sliding door, and put in that position for the convenience of Quails which I kept some time ago.

The long side of the open flight faces south, the east is sheltered by the bird-house, the north is boarded, and the west is sheltered by a hedge. It sounds as if it were a very good position, but the soil is heavy and cold, and as the garden slopes gradually down to the aviary, the mists and frost seem much more severe there than in the upper part of the garden. The house is without any heating arrangement, and this winter the water-pau inside was thickly frozen during the hard frosts after Christmas.

Only a few birds spent the winter there. A pair of nesting Sibilas thinned them out sadly in the summer before I quite realised what was wrong.

The winter residents were :—

A Comoro Weaver, which has been out over a year and came into gorgeous colour in April.

A Red-vented Bulbul, bought in 1908, now in fine condition, its head and neck shining with quite a metallic sheen.

A very old pair of Masked Weavers, bought last autumn from a friend who had had them for years ; the cock is now in fine colour.

An American Bunting bought last June.

A cock Blossom-head Parrakeet, bought last autumn from a friend, but though accustomed to open-air life, he rarely left the bird-house. He arrived rather shabby, but soon got into perfect condition.

A pair of English Thrushes, rescued from a cat at different times last spring.

These are all the birds which spent last winter in the garden aviary, though I have successfully wintered Grassfinches, a cock Gouldian, Orange Cheeks, Lavender Finches, etc., in this same aviary some time ago, but I rather think they were entirely shut in the bird house.

I can throw a light on the disappearance of the Quails of which your correspondent complains, for the same thing happened to some of mine. They were taken by rats, which will tunnel a long way and come up in the run, and then I believe drag the poor things down. I once found a rat hole under a little wooden box, turned upside down with a hole cut in the side, in which my Quails used to sleep. I was hunting for missing ones and picked up the box, only to find the hole, and to get there the rats must have burrowed several feet as they could not have got into the run in any other way.

I think that to winter birds successfully without heat in a garden aviary it is necessary to have them out all the summer before.

L. WILLIAMS.





THE RED-CAPPED PARRAKEET (*Porphyrocephalus spurius*).

West, Newman proc.

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THE RED-CAPPED PARRAKEET.

Porphyrocephalus spurius.

By HUBERT D. ASTLEY, F.Z.S., M.B.O.U., etc.

Geographical Distribution.—West and North-West Australia.

Nest.—Usually in a hollow branch of the taller Eucalyptus trees.

Eggs.—Seven to nine; milk-white, 1·12 by ·87 inches. (Gould).

Native Name.—“Dja’r-rail-bur’-taug” (Aborigines).

“King Parrot” (Colonists).

* * *

The Red-capped Parrakeet—known also by the unenphemic name of Pileated Parrakeet—is a most gorgeous bird, differing from others of its family by the unusual shape of its bill, which gives it the effect of panting, there being an open space between the mandibles, the upper one of which is not nearly so rounded as in other Parrakeets and the tip of the lower one resting in a notch of the upper.

I cannot believe that the Red-capped Parrakeet is a true *Platyercus*, although Gould has placed it in that family. Voice, action, shape of head and bill, etc., are decidedly different.

In “Nests and Eggs of Australian Birds,” Mr. Campbell writes—“I enjoyed many opportunities of observing them in the karri and jarrah forests, where they love to feed upon the kernel of the native pear (*Xylomelum*) when the fruit opens under the summer sun.”

My magnificent pair which I still have, and which again have, I believe, a family of young in a hollow log, were the first to rear a brood (of four) and win our Society’s medal, in June, 1909, but last year they failed to do so.

I have tried in the accompanying coloured illustration to

depict the male in a characteristic attitude, especially when the female leaves her nest and settles near him, with the feathers of the crown partly erected, by which means he displays in its full beauty the magnificent cherry red of that part. At the same moment he often droops the wings, puffing up the yellow feathers of the lower back and upper tail coverts.

The young birds in their nestling plumage and after their first moult lack the crimson crown, which in their case is dull green, otherwise their colouring is a subdued edition of the adult birds, the breast being a washed-out mauve, and the red on the under tail-coverts much less brilliant. The yellow-green cheeks too are very lacking in brightness.

Red-capped Parrakeets, when once acclimatized are extremely hardy, and will spend the winter in an open flight, so long as they have good shelter to take refuge in when they feel inclined. They are extremely active birds, constantly calling in tones which are not exactly musical, and they are apt to be quarrelsome, although mine have never actually damaged other Parrakeets.

A Red-capped Parrakeet in full and perfect plumage is a really splendid bird, and is certainly one of the most brilliant of a brilliantly-coloured family. In size they may perhaps be compared to the Mealy Rosella.

I reared, by hand, one young male which lived a year or a little over, and when apparently in splendid condition and health, died quite suddenly. This bird became very timid at the age of three months and onwards, but before his death he evinced great affection for my bird-keeper, feeding him and "displaying" to him. At a year old, one or two cherry-red feathers began to show on the crown of the head, and he was apparently about to assume the brighter colours of the adult plumage. In time I believe he would have become extremely tame, and his death was very disappointing. He showed signs too of powers of mimicry.

I believe he had been frightened by something and had knocked his head; for an hour before I found him lying in the cage as if he had had a convulsion, he appeared to be perfectly well and happy.

MORE NOTES FROM NORTH-WEST AFRICA.

By T. H. NEWMAN, F.Z.S., M.B.O.U.

It may be remembered that last summer (*Avic. Mag.*, I. 3rd series), I wrote some rough notes on the birds seen in Algeria and Tunis in November and December 1909. Having again gone over the same ground during March and April of this year, the season, therefore, being three months more advanced, it may be of sufficient interest to record what I saw this time, though I fear I have even less to relate than before.

England was left on March 6th. A number of Gulls were noticed at Folkestone—mostly Herring—the greater number immature; there were also a good many Black-headed Gulls, most of which had nearly completely assumed their dark hoods. While crossing the Channel I saw two Cormorants half flying, half swimming, in order to get out of the way of the boat; further off a number of Guillemots or Razorbills were swimming about and diving.

The next day, between Paris and Marseilles, a few Rooks were observed and, of course, many Magpies, as many as seven together at one place. A large brown Bird of Prey sitting on a rail, and which afterwards flew round in a circle as the train went by, appeared to be a Common Buzzard. On the morning of the 8th I strolled round the Marseilles Zoo, which was looking more neglected than ever. I did not notice anything of much interest, but gave most attention to my favourite Doves, of which I saw a pair of Blue-spotted Doves (*Chalcopelia afra*), some Tambourine Doves had some very conspicuous dark purple spots on their wings; there were also Half-collared, Barred, Common Turtle and Barbary Doves, as well as some Turtle × Barbary Hybrids. Great Tits were numerous in the tall trees in the Gardens, and some Warblers were singing sweetly in the shrubs, but were shy and kept out of sight. The Black-headed Gulls at Marseilles were not nearly so far advanced with their breeding plumage as those at Folkestone. The afternoon and most of the next day were spent at sea; landed at Algiers about four in the afternoon, the weather being dull and inclined to rain, for this time Algiers was first visited; while before, this place was left

until last, so that now everything was seen in nearly the reverse order. The Black-headed Gulls here had very black heads.

In the afternoon of the 10th, a long, beautiful drive was taken along the Mustapha Hill, and back round by the Botanical Gardens (Jardin d'Essai), noted chiefly for its wealth of Palms; the flowers in the gardens were very beautiful, many houses being covered with purple masses of Bougainvillea or orange-yellow Bignonia, while lovely Roses were in profusion, Cinerarias were the usual bedding plants, while the ground was carpeted with Freesias, Violets, and a host of other flowers. Many birds were about, the Jardin d'Essai was swarming with Blackcaps (*Silvia atricapilla*), which were very lively, singing and chasing one another, and seemed in no way depressed by the rain which was falling at the time; they were mostly cock birds, but I noticed a good many hens, these would be more likely to hide, so expect they were equally numerous to the cocks. March 11th was spent in an excursion to the Chiffa Gorge. A whole family of Barbary Apes were sitting in the trees near or on the roofs of the out-buildings of the little Inn at the head of the Gorge, some were so tame that they would take food from the hand. I saw a good many small birds, among them, I believe the Yellow Bunting, a rather uncommon bird, a Kestrel was flying about some rocks, I just caught sight of a Martin, which, from the locality, was probably a Rock Martin. I was very anxious to see something more of the Grey-rumped Rock Doves I had seen here before, but I only saw a pair flying along the face of the cliff, which did not give me time to make much examination; however, I received confirmation that Rock Doves with ashy or bluish-coloured rumps do occur not unfrequently in this region. Unfortunately it turned very wet when I was at the Gorge, so I was able to see very little of the birds.

The next day was Sunday. In the afternoon I walked up to the old Chasba above the town; the tall Eucalyptus trees were full of Serin Finches singing their cheerful little songs; every now and then a bird would give a little flight straight up into the air and return to the same branch; there were also some brown birds among them, Linnets I think, a Blackcap was bathing in a ditch, House Sparrows were numerous. A little later

on I saw some Mistle Thrushes under some trees, and in a garden among Orange and Lemon trees I saw a Robin looking almost as fearless as at home, while Blackcaps and Sparrows flew about the trees. I went on again to the Jardin d'Essai, but only identified more Blackcaps and Blackbirds; this was a lovely day. All the Sparrows seen clearly in Algiers were certainly *domesticus*. Left early next morning and reached Bougie about the middle of the afternoon in brilliant sunshine. I at once started for a walk in the direction of Cape Carbon, a rocky promontory jutting out into the sea; I noticed many Serins, a Robin, heard and saw Blackbirds, saw a bird, apparently a large Falcon, dip down behind a rock; in the direction of an old fort, over the sea, were circling what appeared to be a pair of Ospreys (*Pandion haliaëtus*), but they were a good way off. Ultramarine Tits and Algerian Chaffinches were numerous among the trees, and a Barbary Partridge got up almost under my feet from amongst some rocks overlooking the sea. Just as it was getting dusk I came to the base of a great cliff, Barbary Partridges were calling on the lower slopes; high up an Irby's Raven (*Corvus corax tingitanus*) was heard, and presently I made it out silhouetted against the sky as it sat on a rocky point, and looking no bigger than a Starling, it began to soar round above the cliffs, and was joined by three others; then one flew into a small cave, and I thought I heard the voices of young ones. A Falcon flew into a cleft of the Rock; the Falcon found inhabiting the cliffs of the Mediterranean Region is frequently the Lesser Peregrine (*Falco punicus*), so that birds seen here may well have belonged to that race. A Kestrel made its appearance, uttering shrill cries whenever a Raven flew near to where, doubtless, it had its nest; all this was so interesting that I could not tear myself away until it was nearly dark. During a short walk next morning I only saw House Sparrows, a pair of Linnets by a Prickly Pear hedge, a Robin in a Fig tree by the road-side and a White Wagtail.

Left Bougie just after 9 a.m. for the two days' drive to Setif; just after leaving the town saw two White Storks, as this was just the time when these fine birds were arriving for the summer, Martins, a Hawk, a large Bird of Prey in the distance, perhaps a Black Kite. The road passes for some distance through

vineyards which were still quite bare of leaves ; numerous flocks of Goldfinches, Serins and Algerian Chaffinches were observed among the vines. Lunch was taken at Cap Okras outside a little inn overlooking the sea ; a pair of large Birds of Prey were circling round, they seemed to be the Desert Buzzard (*Buteo desertorum*), they finally settled in some trees. In the immediate neighbourhood there were House Sparrows, Cirl Buntings, Algerian Chaffinches and a small flock of White Wagtails. I also came across an Algerian Coal Tit (*Parus ledouci*), a bright coloured form, having the cheeks, nuchal spot and under-surface lemon yellow. A pretty sight was afforded by a pair of (I think) Willow-Wrens (*Phylloscopus trochilus*) fluttering about a small Apricot tree in full bloom. I very often saw little greenish Warblers with more or less yellow superciliary stripes and under-parts, but cannot be sure if they were Willow or Wood Wrens, though I have noted that some seemed yellower below than others, and these birds I have called Wood Wrens. Continuing the drive through the magnificent Chabet Pass, where Algerian Chaffinches seemed to be the commonest bird. At one place a party of Barbary Apes ran across the road just in front and scrambled up the rocks. The next day I saw nothing very remarkable ; House Sparrows had nests in trees by the side of the road, a long distance from any house, while Blackbirds, Corn Buntings, Larks and Goldfinches were very common, many Irby's Ravens, at one spot a large flock soaring over a hill ; one gets so used to seeing this bird that one thinks no more of them than Rooks at home, this familiar bird being absent from North-West Africa. Several White Storks, the first nest seen being in a tree near a farm building.

On arrival at Setif, train was taken to Constantine, which was reached by eight in the evening. The Arab portion of this town is a very favourite nesting resort of the White Stork ; on the afternoon of the next day (March 16th) I counted eighteen of these birds, all within a small area, sitting on or near their nests placed on corners or projections on the flat roofs of the houses. It was an interesting sight to see so many of these birds together, every now and then one would fly up to its mate sitting on its nest, when both birds would throw their heads back and, with

bills pointing upwards, vigorously clap their mandibles together, this noise can be heard quite a long distance off, I often heard it when the birds themselves were out of sight. Just outside the Gorge, which runs round the greater part of the town, I saw an Egyptian Vulture (*Neophron percnopterus*) on the wing, and in the Gorge itself six more, four sitting together on a ledge of rock; I believe they nest here as one was seen a few days earlier carrying a stick just outside. Jackdaws were here in numbers, a peculiar interest is attached to these birds, for many of them, apparently about two-thirds of the entire number, are of a very distinct brown shade, especially on the wings and tail, some were quite a rich chocolate colour, matching exactly the dark-brown soil on which they were walking. I thought these brown birds seemed rather smaller than the others, they certainly had very little grey on the back of the head, but at this early date I do not think they could have been young birds; I find these brown birds have been noticed by several people who have lately visited this ravine. Kestrels were, as usual, very numerous here, they are mostly Lesser Kestrels (*Falco naumanni*), but I made out several of the common species (*F. tinnunculus*) quite clearly. In a small tree, at the end of the Gorge, several small Warblers were very busy; from their greyish upper surface, yellowish rump and whitish under parts I took them for Bonelli's Warblers (*Phylloscopus bonelli*).

Next morning I took a lovely walk in the neighbourhood of the town. The Sparrows seemed mostly to be typical *domesticus*, but one was rather chestnut on the crown, and had some black spreading slightly along the sides of the breast, so seemed to approach *hispaniolensis*. On some rough steep ground were flocks of Goldfinches and many Corn Buntings; by a bridge over the river Rumel were a number of Swallows, they looked like young birds as they had not much chestnut on the head and had rather short tails; with them was one House Martin and I think a Sand Martin, but I could not see this bird quite plainly, so it may have been a Rock Martin. A number of little greenish Warblers were hopping about the bushes by the side of the water, frequently darting over the surface to catch flies—they seemed to be Willow Wrens. A little later I saw a pair, the cock of which had a very

yellow throat and breast, so they may have been Wood Wrens (*Phylloscopus sibilatrix*). A graceful little greyish bird with a longish tail, which it raised above its back like a Dartford Warbler, was hopping about at the base of a small bush, I took it for a Marmora's Warbler (*Melizophilus sardus*), an interesting species said to be of very local distribution. I also saw several Blackcaps, a couple of common Starlings, an Ultramarine Tit, some Kestrels and a few Irby's Ravens; turning across some fields I met with some Larks, which appeared to be the Greater Small-billed Crested Lark (*Galerida theklae major*) which is a very dark form found mostly in hilly country in the north. Birds seem plentiful round Constantine, and I have no doubt would well repay a few days spent in their study in the neighbourhood, as interesting species might be met with. Unfortunately I had to hurry on and left at midday; as the El Kantara bridge over the Gorge was crossed, on the way to the station, several Egyptian Vultures could be seen flying in the distance, and just before stepping into the train, a Stork was noticed soaring aloft, it alighted on a tall chimney; from the train many more were seen, as many as eight together in a marshy field. Several nests were seen built in trees, one quite low, on another tree were two close together each with its attendant pair of birds; an Egyptian Vulture on the ground, while many Kestrels and Larks were also noted.

Batna was reached about six o'clock. I was awakened by the chattering of Storks and found a pair had a nest on the top of the cupola of the Church tower, just opposite my windows; several others were near, but they were not so numerous as at Constantine. Most of the day was taken up by the long tedious drive to and from Timgad. Many Larks were seen in the open country, among them, I believe, the Calandra (*Melanocorypha calandra*), a large species with a conspicuous black patch on each side of the breast, a few Kestrels, many Irby's Ravens, a White Wagtail. A pair of Storks had their nest on the top of the old Roman arch at Markoura, near Lambessa, which is passed on the way. At Timgad itself I only noticed a cock Black Redstart (*Ruticilla titys*) and a pair of Moussier's Redstarts (*Diplootocus moussieri*) flying about the deserted houses; this lovely little bird delights to resort to the neighbourhood of ruins during the

breeding season. The Sparrows here were certainly House, not Tree, as I formerly thought they might be. A short walk next morning round Batna only revealed Sparrows, Corn Buntings and Ravens. I watched a Stork bring a big stick to its nest where its mate was sitting, both birds then took some time to arrange it comfortably. In the extensive forests near Batna such interesting birds as the Algerian Black-headed Jay, the Algerian forms of the Pied and Green Woodpeckers and Bonelli's Eagle may be met with.

Batna was left about ten, and El Kantara reached at mid-day. This is a delightful place, just on the edge of the desert; a great variety of birds may be met with, as, on the one hand, there are the mountains, and on the other, the extensive Date Palm groves. The Hon. Walter Rothschild and Dr. Hartert were collecting here, I saw some of the birds they had got, including a fine hen Bearded Vulture (*Gypaëtus barbatus*) shot on her nest the day I was there; the nest contained an addled egg and a newly-hatched young bird, an attempt was going to be made to bring it up by hand. I could not help regretting the death of the parent bird, and remembered the pleasure given me by the sight of one of these noble birds on the wing at the Cliffa Gorge on my first visit. I spent the next day (March 20th) in a stiff climb up the mountains. On the way up I saw several pairs of Black Chats (*Saxicola leucura*), the cocks sitting on the big boulders pouring out their short, cheerful songs; I expect they were nesting. On my former visit, at the beginning of Dec. 1909, I saw these birds lower down, but now they all seemed to have gone up the mountains to breed. A familiar little sandy-coloured Lark was very common, they were mostly in pairs running about among the stones on the hillside, they were probably the Algerian Desert Lark (*Ammomanes deserti algeriensis*). I climbed up to the top of the mountain, which was fairly flat and covered with grass, here I saw what I took for a Barbary Falcon (*Falco barbarus*), a Kestrel, Ultramarine Tits, and the only Blue Rock Thrush (*Monticola cyanus*) I met with for certain, perched on the rocks at the extreme summit. On my first visit this bird was quite common below near the Palms. A Golden Eagle's nest containing eggs was found close to this spot about a week later, but I saw

nothing of the birds. The next day was very hot, I spent most of it wandering among the Palm Gardens. Flying about the rocks in the Gorge I saw several Kestrels, I believe both the Common and Lesser occur here. I found *Serius* everywhere pouring out their energetic little twitterings. I heard a loud, whistling note from among the Palms, very likely the voice of the Blue Rock Thrush. I saw one or two birds which I think were Thrushes, one Swallow, a White Wagtail, a flock of Goldfinches, a Robin by some water among the Palms, also a few Ultramarine Tits. At the Red Village, House Sparrows were numerous, there were several House Buntings (*Fringillaria saharae*) on the outskirts, but at the smaller Black Village this charming little bird was very common and tame, some of the cock birds were singing away on the top of the mud walls, some of their notes rather resembling those of a Canary; at one place I came across some quite away from the houses. Mr. Rothschild told me that on a former visit he found a colony of Tree Creepers right in the middle of the Palms, not at all the sort of place where one would expect to find this species. I was glad to hear that the Chough is still to be met with in the mountains. I left El Kantara in the evening for Biska.

(To be continued).

ANOTHER NESTING FAILURE :

THE RUFIOUS-THROATED TREE PARTRIDGE.

By C. BARNBY SMITH.

Watching birds at their nests is of great interest to me and I considered myself fortunate when, during the holidays last Easter, I was able to place a hammock chair in the garden in such a position that I could see the nests of (1) Cayenne Spurred Plover, (2) Satyra Tragopan Pheasant, and (3) the Rufous-throated Tree Partridge (*Arboricola rufigularis*). It is of the Partridge nest only that I am now writing notes.

As long ago as the end of last February, I noticed two of these birds (then in a run with Tragopan Pheasants) very busy pulling long pieces of grass about, and one feeding the other and

whistling at intervals, which they never do except in the spring. I at once fetched my landing net and moved the Partridges into a small run to themselves, the ground being covered with old tussocks of grass and a small shelter shed (with sanded floor) being provided at one end of the run, also several branches for perches outside. I gave the birds for nesting purposes a lot of dried grass both outside and inside the shed.

About 10th March nearly all the dried grass inside the shed was moved from one corner to another and formed into a covered nest, the bottom of the nest being a hollow scooped out in the sand. Apparently this nest was not pleasing to the birds and they were soon seen very busy pulling about the dried grass I had provided outside the shed.

By the 18th March they had completed a second nest—a curious domed structure. The back of the nest was a large tuft of grass, the nest itself being a rather deep large hollow in the ground lined with grass and covered all over (except the entrance hole in the side opposite the tuft) with a large mass of dried grass. On the 26th March I saw one of the birds go into the nest and stay some considerable time, the other bird staying by the entrance. The bird in the nest ultimately came out looking very wretched with feathers all standing out. I guessed she was egg-bound. She, the same day, afterwards laid an egg near the door of the run, away from the nest. I picked this egg up in a spoon and carefully placed it in the nest. The Partridges kept going in and out of the nest at intervals but without laying any more eggs, until 2nd of April when I discovered a second egg. It was interesting to note how careful the birds were during the nesting period to put dried grass from time to time so as to nearly block up the entrance at the side of the nest when not in use. The result of this was excellent as when one of the birds had just emerged from the nest the round hole would strike the eye but, when partly blocked with grass, the nest was practically invisible. From the 2nd to the 7th April the weather was simply awful—frost and blizzards. On the 6th April the entrance to the nest was covered with snow. On the following day, one of the birds entered the nest and cleared out the grass in the entrance, which was left open until the 10th, when it was again blocked. On the

11th I noticed one of the birds busy going in and out the nest and on the 13th a third egg was laid. On the 15th one of the three eggs in the nest was brought outside by the birds and broken, and on the same day I noticed a soft egg which had been laid some distance from the nest. On the following day another egg was laid in the nest and one bird began to sit. On the 23rd I found another egg laid outside the nest and I began strongly to suspect, what afterwards proved to be the fact, that both my birds were hens.

A few days later the bird that had been laying outside elongated the nest on the entrance side, bringing a good deal of dried grass for the purpose, and soon afterwards joined the other bird in sitting in the nest. Both birds continued to sit like stones for some time and when I finally disturbed the nest I found four eggs in it.

These eggs were white and measured 1.6 by 1.2 inches.

I was, of course, greatly disappointed that my birds were not a true pair, as their nesting habits and the habits of the young seem little known.

The Rufous-throated Tree Partridge comes from Mount Mooleyit in Tenasserim, and should any member of the *Avicultural Society* happen to be passing in that direction and be able to bring back a cock, I will gladly let him have one of my hens in the hope that successful nesting results may ensue.

In conclusion, I may mention that these Tree Partridges are absolutely hardy (sleeping out in the open during the most severe weather without suffering) and they are easily kept on grain, without any insect food, although they much relish this whenever they can get it.

They are very active and sprightly birds and scratch about constantly with the greatest vigour, far more than any other Tree Partridges I know. They seldom perch during the daytime but always roost a good height from the ground.

SOME EXPERIENCES OF AN AVICULTURIST.

By ARCHIBALD SIMPSON.

I fear I am unable to add anything to the sum of knowledge already possessed by those who have made aviculture either a scientific pursuit or a mere hobby, but it has been stated by more than one writer on the subject that it is often possible to learn something from the non-success of others, in which case the present article may be justified as it certainly furnishes a most unhappy record of failure.

I have kept foreign birds continuously for the past fifteen years, but a limited purse has confined my experience to the commoner varieties; indeed had the lovely corpses which have passed through my hands represented the expensive sorts I should now be a charge on the Parish funds. Nevertheless, I have derived more real pleasure from this form of extravagance than I could have got from a like expenditure in other directions, and therefore I ought to be satisfied.

It has been a painful surprise that my efforts to induce birds to breed have not met with a larger reward, but the fact must be chronicled that I have been singularly unlucky, as notwithstanding my feathered friends have had suitable food, ample accommodation and freedom from disturbing influences they have rarely got beyond eggs.

I originally started with an indoor aviary, devoting a large room to the purpose, which was fitted up in the most approved fashion, the walls being covered with twiggy branches from dead trees, washed river sand spread on the floor to a depth of one inch or so, provision being made for possible nesting by a plentiful supply of cokernut husks, boxes and small wicker cages, arranged about the room at such spots as appeared to me to be most seductive. Large shallow earthenware dishes were filled with white and Indian millet and Canary seeds and a self-filling water fountain, also lumps of rock salt and fine oyster shell grit completed the commissariat department. The room was lighted from the top by a skylight which could be opened, and indeed was only closed in winter, the aperture being covered with wire netting to prevent the escape of even the smallest bird. The

floor area of the aviary was 12ft. by 9ft., and in due course the room was tenanted by pairs of the following:—Cockatiels, Budgerigars, Grey Singing Finches, Golden Breasted Waxbills, Zebra, Double Banded and Fire Finches, Cordon Bleus, Bronze-winged Mannikins, Gouldians and Long-tailed Grass Finches, with odd cocks of Orange, Napoleon and Yellow Weavers and Paradise Whydahs, and the finest pair of Red Crested Cardinals I have ever seen, which were obtained from a former lady member of our Society in exchange for Canaries.

It was quite evident to me from the first that my bird-room was too crowded to expect breeding to be the success I desired, and after a time I found myself able to devote two rooms to the purpose in hand, having in the meantime removed to a somewhat larger house, and I therefore separated the Parrakeets and larger birds from the others.

I ran these two aviaries for about four years, and was so badly affected by bird-fever that I had no time for annual holidays, always supposing that the state of my finances was such as would have admitted of my taking them, which was far from being the case, as the Railway Delivery Van was to be found at my door two or three times per week, regularly throughout the year, depositing small boxes which, on examination, were found to contain specimens of birds in no particular corresponding with the glowing advertisement which had been responsible for their arrival. They sometimes lived sufficiently long to regard me as their food purveyor, but very often "passed in their checks" within a few hours.

I am afraid my friends regarded me as having had a bad mental twist, and the partner of my joys and sorrows was at her wits end to find a more sociable and less costly hobby for her husband and, at the same time, one which did not involve such nasty messes. I admit it must have been particularly distressing to the orderly feminine mind to be constantly finding mealworms on the drawing-room carpet, and maggots would sometimes take excursions into the best bedroom, but it needed more than considerations of this sort to lure me from the avian cult.

My note-book at this period contains some interesting details in regard to my purchases. I find that in order to secure

one pair of healthy Cordons I bought no fewer than twenty-eight birds within four months, and then I had a "find." I saw an advertisement of one of the dealers announcing "the arrival of Cordon Bleus in finest condition and health," and I wrote requesting a true pair to be sent. In due course they arrived and their appearance gave me the greatest satisfaction; they were as tightly-feathered as a Java Sparrow and in the pink of health, but I noticed neither of the two had the crimson crescent check mark of the cock Cordon and I wrote to the dealer pointing out that he had sent me two hens. His reply was to the effect that he was certain one of them was an immature cock, and I accepted his statement. Within a fortnight these birds had built a nest and four eggs were deposited. The nest was cleverly concealed near the ceiling behind a few twigs nailed to the wall, but I was able to see that one or other of the birds was constantly on the nest. This went on for about three weeks, until at last I found myself unable to resist a desire to investigate how matters were progressing, and I therefore examined the nest without however touching it; the eggs were there still and, of course, I was then quite certain that they were clear. On breaking the eggs afterwards I found that two or three, I am not sure which, contained dead young, which at once settled the debateable point as to my having a true pair, and the coloured illustration accompanying the article by Mr. Phillipps in Vol. I., No. 4 (New Series) of the *Avicultural Magazine* proved to me that I had been in possession of the comparatively rare Blue-Breasted Waxbill. They never again attempted to nest, although they lived with me for about eighteen months, both subsequently dying from some kind of fit, at least I suspect this to have been the cause as they were plump and in good feather to the last.

My experience of these birds confirms in one or two particulars the observations of Mr. Phillipps, in respect of the difference in size and colouring between the Cordon Bleus and Blue-Breasts. It must be remembered that, at the time, I did not know that my birds were not Cordons, and I constantly remarked how much brighter and bigger they were than others I had at the same time, but I am ashamed to say that I did not detect the difference in the colouring of the bills of the two

varieties, but I *did* notice that the male Blue Breast had a larger area of blue than the cock Cordon, and also that there was a very marked difference in the extent of the brown underparts of the hen Blue Breast, the corresponding area in the hen Cordon being much smaller.

To return to my notes. I have entries showing that out of sixteen Fire Finches bought within six weeks only one lived beyond a fortnight, the exception being a bird much deeper in colouring and with a greater number of white spots on the sides and was heavier in build than the others, but as I made no actual measurements I cannot give comparative figures. I kept this bird over two years and had innumerable mates for him, all of which died within a few weeks of my obtaining them. I believe this bird was a Peter's Fire Finch from the description and coloured plate furnished with a later number of the Magazine. Lavender Finches also gave me trouble: I bought them in dozens but could not get a single one to live beyond six or eight weeks, a great disappointment to me as I regarded them with something akin to affection, in much the same way as I do the timid little Grey Singing Finch. Speaking of the latter recalls to my mind the first occasion on which they bred in my indoor aviary. A pair had a nest and had hatched out one young bird immediately beneath the squatting place of a pair of Common Avadavats, who, apparently resenting the propinquity of their neighbours, raided their demesne and dislodged the nestling on the very morning of its appearance. I found it on the floor quite cold and to all appearances dead, but, to my astonishment, the warmth of my hands revived it, and after repairing the nest, which had been partly demolished by the combatants, I replaced the young bird, at the same time destroying the roosting place of the aggressors, and to my delight the Greys returned to their charge and successfully reared the youngster. This at least taught me not readily to abandon hope even when the odds appear against one. I am never without several examples of this little Finch, and have probably given more attention to it than to any other species. I find they are fairly hardy after getting over the "importation sickness," but they are very much disposed to eye trouble which manifests itself in one or two ways. Sometimes

the locality of the eyelids swells to such an extent as to completely conceal the eye, and it remains in this condition for a week or more, in spite of constant bathing of the parts with Boracic acid dissolved in hot water and allowed to cool. At other times a waxy exudence shows itself round the eye lid, but if taken in time yields quickly to the same treatment.

With regard to the singing qualities of this bird there can be no two opinions, when heard at its best it much resembles the Skylark, but of course it has neither the volume or the variety of notes of the latter, but it is none the less a charming songster. I have found a very great difference in individuals, having possessed some that were very free singers and others somewhat shy. I have one at the present time which, although I have had him for upwards of twelve months, has only sung three or four times to my knowledge, but is incessantly calling to his mate. He bred last year, but the young disappeared mysteriously from the nest. I blamed mice.

I must not overlook the remark made somewhere by Dr. Butler in regard to a statement made to him by the late Mr. Joseph Abrahams who had said that when a Grey Singing Finch was actually singing "he showed a white spot on the throat." I seem to remember Dr. Butler saying he had looked in vain for this white spot. I can only hope that so careful an observer as the worthy Doctor has now found it, as it certainly is present in *most* individuals, and shows to greater advantage in old cocks whose plumage is generally darker on the surface. The action of the throat parts the outer feathers, exposing the downy feathers underneath which show up in the form of a small round patch. This spot is quite distinct in two or three specimens I have at the moment, although their plumage has undergone no change due to age.

Golden-breasted Waxbills have always been great favourites with me, and experience has led me to believe the cock bird is shorter lived than the hen, as out of eight pairs I have not had a single case where the former has outlived his partner purchased at the same time. The most satisfactory pair I ever possessed lived with me for about three years, and during that time I must have had dozens of eggs laid in a small wicker cage in which

they had made a nest. I found them exceedingly nervous sitters, bolting from the nest each time I entered the room. I never got beyond eggs, although many of them were fertile, perhaps had the room been a heated one I might have been more successful. The colouring in the male bird is much brighter in the breeding season than at other times, the change taking place without apparent loss of feathers. I advise beginners never to buy newly imported specimens during the winter months; they are almost certain to die within a few weeks.

(To be continued).

BIRD NOTES FROM THE ZOOLOGICAL GARDENS.

By THE CURATOR.

The most interesting recent event in the way of breeding has been the hatching and rearing of a young Brazilian Cariama (*Cariama cristata*) which has taken place in the Eastern Aviary, as mentioned last month. The young bird was hatched on June 7th, in a nest some eight or ten feet from the ground. A platform of sticks had been fixed up, and the pair of Cariamas formed upon this a nest of twigs, straw and any rubbish they could obtain. The two eggs, one of which got broken, were about the size of those of a common fowl. From a distance they appeared white, but, as a rule, the eggs of this species are thinly spotted with reddish. Incubation lasted 28 or 30 days, and the chick when hatched was covered with down of a buffish brown colour. The parents were supplied with chopped butcher's meat, chopped hard-boiled egg, mice, cut into small portions, and cockroaches.

The food was taken to the nest in the parents' bill and bolted whole by the young bird, which left the nest on July 6th, when just a month old.

The photographs here reproduced, show the young bird at this stage. It has since developed more distinct striping on the back of the neck and mottling of brown on the wing coverts.

In last month's notes I mentioned the valuable collection of birds brought home by Mr. Frost and presented to the Zoo-



FIG. 1.

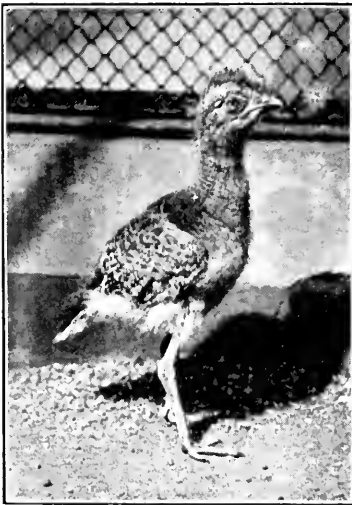


FIG. 2.

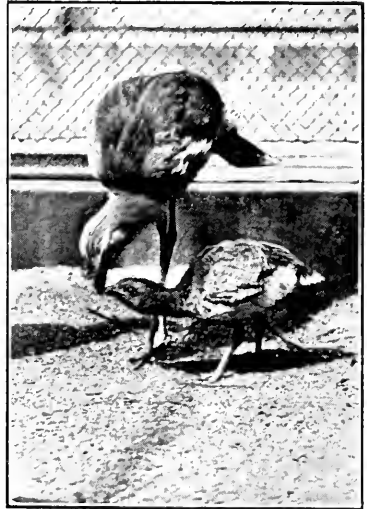


FIG. 3.

YOUNG BRAZILIAN CARIAMA, FOUR WEEKS OLD.

FIG. 1.—IN THE NEST. FIGS. 2 & 3.—JUST OUT OF NEST.

logical Society by Mr. E. J. Brook, and I promised to say more about them this month.

The most interesting of these birds is a pair of Blood Pheasants (*Ithagenes cruentus*) which are new to the collection. This species inhabits the high regions of Nepal, Sikhim, and Western Bhutan. It is very partridge-like in shape and size. The back is grey, the underparts greenish, the crown reddish buff, and the throat, underside of tail and some spots on the breast blood-red. The female is much browner.

The Chestnut-bellied Nuthatch (*Sitta castaneiventris*) is grey on the upper, and deep chestnut on the under surface.

The Yellow-cheeked Tit (*Machlolophus xanthogenes*) has the back olive green, the cheeks and undersides bright yellow, and a long tapering black crest.

The Pied Bush Chat (*Pratincola caprata*) is black with white tail-coverts and a white bar on the wing. The Ruby-throat (*Calliope camtschatkensis*) is a most beautiful and striking bird, olive brown in colour with a brilliant scarlet spot on the throat.

The Sikhim Siskin (*Chrysomitris tibetana*) is chiefly olive green and yellow in colour, and the Blue-throated Flycatcher (*Cyornis rubeculoides*) is much like a small Nyktava Flycatcher. All of the above are new to the collection, and besides these came several which, although not new, are very rare and desirable. There is one Nyktava Flycatcher, a Spotted Wing, two White-bellied Drongoes, a Verditer Flycatcher, a Hardwick's and a Green Fruitsucker, a pair of Yellow-eyed Babblers, Ashy-crowned Finch-larks, Silver-eared Mesias, and Orange-headed and White-throated Ground Thrushes.

A few weeks ago a Roseate Cockatoo appeared in the Gardens and spent most of its time in the Squirrel's and Marmot's enclosure, where it caused much amusement amongst the visitors by the quaint way in which it played with the Marmots. I could see by its dark eye that it was a male, so, as we had a large number of the same kind in the parrot's aviary, I had a female caught and placed in a cage in the enclosure. The two made friends at once, so I opened the door of the cage and watched. Presently the bird at liberty flew down from a tree on to the cage, and the

bird inside walked out and climbed up beside its companion, which promptly commenced to comb its crest with his beak. Then they both flew away into a neighbouring tree, and were not seen at all the next day, but the following day they returned to the squirrels' enclosure to which they now resort daily.

Every evening the pair take long flights round the Garden uttering their call note repeatedly and exhibiting a rare spectacle of parrots entirely at large, which is extremely pleasing to watch.

D. S-S.

CORRESPONDENCE, NOTES, ETC.

NESTING NOTES FROM HEVER.

SIR,—The following notes may be of interest to your readers. I have a brood of three Pintailed Sandgrouse just hatched. The father is a son of the old hen whose death I recorded some time ago, and he (the father) is *twelve* years old.

Our pair of Hanging Parrots (*Loriculus galgulus*) are nesting, the hen is sitting in a hole in an old apple tree. She is quite unapproachable, being somewhere right down in the trunk; she has been practically out of sight for three weeks. Some bark from the tree and dried strips of *Ancuba* leaves were taken in as nesting material. The male (who by the bye does not get full adult plumage until he is two years old) is most solicitous, he is much smaller than the female. I will report if there is any result. I fancy this is the first attempt at nesting in this country of these little parrots.

E. G. B. MEADE-WALDO.

THE CUCKOO.

[We have received from Dr. Jones a copy of the following letter, which appeared a short time ago in the *Spectator*.]

To the Editor of the Spectator.

SIR,—Many are the legends about that chief bird of angry, the Cuckoo, (the husbandman's time-keeper) and many also are the flowers, which, appearing about this time, take its name and share its prophetic character. These and the lugubrious joy of the Wryneck (expressed in the minor key in its "peep, peep, peep")—a bird usually called the Cuckoo's mate, more appropriately its "servant," in that it follows its "master" almost everywhere, and at a respectful distance,—remind me that just a year ago (May 14th) you permitted me to inform your readers that I had successfully reared a young male Cuckoo and kept it through the previous winter. As then

stated, my Cuckoo was taken out of a Greenfinch's nest in our woods early in August 1909, and was kept (near the window of a large warm room) in captivity until the onset of the cutting east winds in the middle of February (last) 1911, when it died somewhat suddenly, having passed nearly two winters, or more exactly, a period of eighteen months in confinement.

Our Cuckoo completed moulting in January of its second year, but it began to throw off its nesting feathers in the previous October, appearing, after moulting, in its mature plumage, and almost a different bird—having changed from brown to a blue-grey.

Its unique winter sojourn under observation has thrown some light upon its life and habits, also upon the question of migration. It knew its caretaker (a patient) well, and would eat minced meat off his hand; but it was ever timid and fearful of strangers, fluttering against its cage if anyone unfamiliar went too near. Although unamiable and often pugnacious, it was fond of play.

It possessed the germ of its nature—which shows no love of offspring—in that it never demonstrated affection: It preferred as food the larvæ of lepidopterous insects, but it ate raw meat with relish, and always refused bread by itself. It devoured crickets, beetles, flies, spiders, wasps' "eggs," moths and mealworms.

It crushed beetles in its beak in a very original and unusual way, turning them round and round until sufficiently "masticated" when it suddenly swallowed them. It was always fond of young mice and would peck at them in the cage until they were insensible and would then devour them whole; indeed it seemed to be a little hawk-like "after its kind." Next to the larvæ it seemed to enjoy skinned mice. It was insectivorous as well as carnivorous.

It acquired its *piquante* vernal song in captivity and was heard to "cuckoo" quite clearly (see my previous letter) although at first doubtfully and indistinctly, probably learning the sound by mimicry from the newly-returned elders of its race, or possibly from its own parents.

Migration in birds is probably caused by a reaction to

food shortness, but it has interested many as a miracle or some unsolved mystery rather than an example of imperfect instinct supplemented by intelligence. The food theory, however, does not explain why the males leave in July, as they do, before the females, unless the latter remain in the face of scarcity to continue depositing their eggs; nor does it explain why the males are the first to arrive. The rarity of the whole incident, and the fact that I received many letters from readers of the *Spectator* commenting upon my first letter, induces me to send the complete account.

ROBERT JONES, M.D.

[In the *Zoologist*, 1844, p. 655, there is a note of a Cuckoo that had been kept in confinement over a winter. The notes given of its food and disposition agree closely with those given by Dr. Jones. Dr. Jones', however, began to moult in the October of its second year. The one recorded in the *Zoologist* in May, when about twelve months old, and one we kept commenced its moult in April. So far as we are aware these are the only recorded instances of this species being kept through the winter in confinement. Many have at various times been on exhibition at the Zoological Gardens, but no records of their moult or the age to which they lived are available.—ED.]

REVIEWS.

NORTH'S AUSTRALIAN NESTS AND EGGS.*

We have received for notice in this journal the first part of Volume III. of the second edition of Mr. North's well-known work on the nests and eggs of Australian birds. In it the author deals with the Family *Cuculidæ* and the Sub-family *Centropinæ*; the Family *Loriidæ* and part of the Family *Cacatuidæ*.

Although primarily concerned, as the title explains, with the nests and eggs, this work also contains detailed descriptions of the birds themselves, their distribution and habits.

The author deals exhaustively with his subject, supplying notes from correspondents in all parts of Australia. The accounts given of the birds that we are familiar with in captivity here, will be read with great interest by aviculturists.

Of the capture of the Mnsk Lorikeet (*Glossopsittacus concinnus*), a species now rarely imported, although not difficult

* *Nests and Eggs of Birds found breeding in Australia and Tasmania* by ALFRED J. NORTH, C.M.Z.S., &c., Ornithologist to the Australian Museum. Vol. III. Part I.

to keep under proper treatment, Mr. North gives some interesting particulars from which we quote the following:—"When living at Dobroyde, Ashfield, in 1889, large flocks used to fly over from February to the middle of April, fairly high in the air, resembling in form a wave or the spray left on a long beach by a receding wave. These flocks were about three hundred yards in width, and three or four birds deep, and were travelling from the south-west to the north-east, and were probably a quarter-of-a-mile apart. They could be seen at almost any time of the day, from early morning until nearly sunset. Numbers of these birds were allured and caught by means of a captive call-bird in a cage and a snare pole. The trap consists of a long pole about twenty feet long, which is placed in a socket, and has at the top one or two thin forked limbs, which fairly bristle with horse-hair nooses. A pulley is usually attached, so that the cage containing the call or decoy bird can be lowered as required. . . . It seems strange that these birds, when once they alight on one of these poles, repeatedly come back until they are eventually entangled in one of the many horse-hair nooses with which the forked extremity of the snare-pole is covered. These poles may be seen as one passes through from Paramatta to Petersham, even from the window of a railway carriage, and are usually erected in yards and gardens, and attended to by school children or the average boy. The number caught in a day varies; I met one boy who informed me that he had caught one hundred and twenty."

We can very strongly recommend Mr. North's book to all who are interested in Australian birds. One of its best features consists in the numerous field-notes from reliable sources.

D. S.-S.

MY FOREIGN DOVES AND PIGEONS.*

The appearance of a book entirely devoted to the culture of foreign Doves and Pigeons is most welcome, and will no doubt do much to popularize these most interesting and beautiful birds.

It is strange we have had to wait so long for a book on the Pigeons, they have been neglected for a long period, until quite recent years; although several fine monographs were published

* *My Foreign Doves and Pigeons*, by Miss ROSIE ALDERSON. *Canary and Cage-Bird Life*, 9, Arundel Street, Strand, London, W.C. 3s. 6d. nett.

in the early part of the 19th Century. Temminck, Prévost and Bonaparte all gave us fine illustrated volumes. But we have not waited in vain: it has never before been the writer's privilege to find in any book devoted to birds, such careful attention given to all the little details which go to the making of success, everything is carefully explained; for example, not only are we told that the birds like biscuits and pea nnts, but we learn the best methods of preparing these articles and where to get them; attention is also called to the fact that many Doves are undoubtedly partly insectivorous; only a few years ago a new species of *Haploperia* was recorded in *The Ibis* as having a large number of gnats in its gizzard.

The first chapter gives details of the author's aviaries, which will be found of great value, as showing the sort of enclosures best suited to the requirements of Doves and Pigeons. The next two chapters give accounts of the arrangements for nesting purposes, the best way of sending birds away, many valuable hints are given as to the best treatment for sick birds, and good methods for handling a bird, for everyone who has held a Dove or Pigeon knows how hard it is not to pull out a handful of feathers.

The bulk of the book is taken up by concise accounts of some forty species, all of which have been kept by the author, each account is conveniently arranged under headings: "Habitat, Length, Colouring, Wild Life, Life in Captivity," so that any particular point can be referred to without having to read through the whole article.

On the last page but one, mention is made of a "Francisian" Dove, which would appear to be the rarely-imported *Chamæpelia cruziana*, better known as the Garnet-banded Ground-dove, while the so-called "Malayan Ring-doves" are evidently the handsome and rare Double-ringed Turtle-dove (*Turtur bitorquatus*).

The book is profusely illustrated, mostly by excellent photographs taken by the author, most careful acknowledgment being made when this is not the case. Perhaps the book would have been improved in appearance and been more handy if it had been 8vo. size, the one or two full-page illustrations of aviaries would only have had to be very slightly reduced.

All our members should add to their libraries this very valuable addition to our knowledge of these birds; after reading the book all will become ardent devotees of this fascinating group, which only needs really knowing in order to be appreciated.

BRITISH BIRDS.*

The chief interest of this periodical is, as usual, a large number of short notes recording the presence of rare species within our islands.

Articles deal with the Crossbills as a British Bird, Positions assumed in Flight, and the Migration of the White Stork, this last being an account of the results of the ringing at Rossiten referred to in our pages last Sept., Ser. 3, Vol. I., p. 336. The longest and most important article is one by Messrs. N. F. Ticehurst and Jourdain on the "Distribution of the Nightingale in Great Britain." These writers have gone into the matter at great length and have accumulated notes from observers in the different countries; as a result they show that the distribution of this species is in the main defined by land over 1,000ft., which apparently it cannot cross. That its distribution agrees roughly with the low lying portion of England is an undoubted fact, though even on this basis there seems no reason why it should not occur on the Eastern border of Northumberland, the North coast of Devon or Pembrokeshire, all of which lie in its line of migration with no intervening high land, from these and other more complex reasons we are inclined to doubt whether the conclusions drawn are justified by the facts. If their conclusions were right, its distribution in Europe should also agree roughly with the height of the land although the actual limit of height might be different in the various latitudes, and a few notes on this matter would have made their theory more convincing.

In the writer's opinion the distribution of this bird at present is merely defined by its numbers. If the country can for example support two pairs to an acre and 250 pairs arrive they will occupy 125 acres in an area represented roughly by a segment of a circle with their point of entry as centre. In some

* *British Birds*, April, May, June, 1911. LONDON: H. F. WITHERBY & Co. Monthly, price 1/- net.

years we should expect to find their range extended when from favourable conditions a larger number of birds arrived in the country, and this would account for the scattered stragglers occasionally found beyond the normal borders of its range. In years of scarcity on the other hand the diminution in numbers would naturally first occur towards the periphery of its distribution and these details are confirmed to our mind in the map shown.

There is also another reason for taking this view. At least three other species, the Red-backed Shrike, Wryneck and Turtle Dove enter this country by a similar route to the Nightingale, they are all of limited distribution in our islands and their distribution is, at the same time, on precisely similar lines. The Red-backed Shrike does not reach quite as far as the Nightingale, the Wryneck rather further, while the Turtle Dove, whose range is increasing yearly, reaches furthest of all. But there are also species that are only known in England from scarce stragglers to our South-Eastern coasts, The Tawny Pipit and Great Reed Warbler, these probably arriving along similar lines, stop short at the neighbouring shores of France. It cannot be argued that they dare not cross the Channel since they cross the Mediterranean and the coast on either shore is very similar. The cause of this limitation may still be open to doubt but these cases must be borne in mind before we decide that a 1,000ft. will form an insuperable barrier to a Nightingale.

J. L. B.

OBITUARY.

On the 25th March, after an illness of only a few hours' duration, our member Col. G. A. MOMBERT died at San Remo, Italy, where he had resided for the past nine years. Born in 1860, he served many years in the Militia and saw active service in South Africa in 1900 with the Remounts. He was devoted to an open-air life, to hunting and farming; throughout his life a student and lover of birds, he became in later life a keen aviculturist. By the English colony at San Remo he was highly esteemed not only for his intrinsic merits but also for the

unflinching devotion with which he carried on the work of the Field Club, the Sports Club and the Society for the Protection of Animals. The delightful articles which he contributed to our Magazine will be fresh in the recollection of our members.

Col. Momber was especially interested in European birds and in measures for their protection, and, in collaboration with Mr. H. A. Macpherson, wrote a Prize Essay on this subject. His very last contribution to our Magazine was a plea for the better protection of the Common Quail. Col. Momber was also a collector of books and well read in Philosophy—in fact he was an all round man—and his loss will be keenly felt by all those who knew and estimated at their proper value his services to aviculture and the cause of the preservation of the rapidly vanishing European Fauna.

W. E. T.

THE SOCIETY'S MEETING AND RECEPTION.

On July 6th, the date of the Summer meeting of the Council, an informal reception of members of the Society, as previously announced, was held in the Zoological Gardens.

Her Grace the Duchess of Bedford, Vice-President of the Society, and the Council received the members, who then proceeded to take tea in one of the rooms of the refreshment department of the Gardens, which had been specially engaged for the occasion. After tea the members present visited the various exhibits in the Gardens, the majority proceeding to the Small Bird House and Western Aviary.

The Duchess of Bedford was conducted to the Eastern Aviary where Her Grace showed much interest in the young *Cariama* which was walking about with its parents, having left the nest that day for the first time. The various young birds being reared in the new Western Duck and Goose Paddocks were also inspected.

Amongst those present were the following: Her Grace the Duchess of Bedford, The Hon. Walter Rothschild, Dr. F. Penrose, Mr. and Mrs. W. L. Sclater, Mr. and Mrs. R. I. Pocock, Mr. and Mrs. J. L. Bonhote, Mr. and Mrs. D. Seth-Smith, Mrs. Hartley,

Mrs. Connell, Mrs. Hetley, Miss Alderson, Messrs. F. E. Blaauw, Hubert D. Astley, Ogilvie-Grant, A. Trevor-Battye, Albert Pam, B. C. Thomasset, T. H. Newman, Gerald Gurney, Hugh Wormald, H. C. Martin, S. M. Townshend, Duncan Parker, E. H. Trenow, J. G. Mylan, W. Oakley, J. B. Housden, R. Staples-Brown, H. Grönvold, C. Dell and S. Williams.

PRACTICAL BIRD-KEEPING.

VI. STARLINGS.

By Dr. A. G. BUTLER.

The Starlings of the World divide naturally into three tolerably well-defined families—the New World Starlings (*Icteridæ*) which appear to be related on the one side to the larger Weaver-birds and on the other to the Old World Starlings; the Old World Starlings (*Sturnidæ*) with the exception of the true Grackles, between which and the *Icteridæ* they form an intermediate group, and lastly the Grackles (*Eulabetidæ*) which are nearer to the Bower-birds and Crows in general appearance and outline.

In the first of these families the bill of the male is generally markedly longer than in the female, and the bastard primary, though well-developed, is shorter than its coverts and is therefore called a remicle. In the second family the difference in length of bill in the sexes is much less marked and sometimes hardly appreciable, but the bastard primary is longer than its coverts. From the latter family the *Eulabetidæ* (represented by *Eulabes* only) are readily separable by the remarkable difference of width in the bills of male and female, the heavy, far more Crow-like, character of the bird, and its possession of both face-wattles and neck-lappets: it is also a group of hopping birds.

I have thought it necessary to mention these points, because the affinities of groups have some relation both to their food and nidification: thus the *Icteridæ*, which come nearest to the Finches, are, as regards some of their members, seed-eaters to a greater extent than either the *Sturnidæ* or the *Eulabetidæ*; moreover they contain species with finch-like beaks, and one species

—the Bobolink, which assumes a special nuptial plumage, after the manner of Weavers of the genus *Pyromelana*. In their nidification the *Icteridæ* are quite as varied as the Finches, both with respect to the position and character of their nests; much more so, indeed, than the *Sturnidæ*, the majority of which breed in holes: the *Eulabetidæ* also build their nests in holes.

If one wishes to breed these birds, it is of course necessary to acquaint oneself with their natural methods of nidification; and, as nearly every group of the *Icteridæ* has its own method, it will be necessary to consider each separately. So far few attempts have been made to breed the New World Starlings in captivity, owing probably to the difficulty of securing both sexes, so that they offer a very promising field of enterprise to aviculturists.

The imported *Icteridæ* are referable to five sub-families, the first of which *Agelæninæ* includes the Meadow Starlings and Marsh Troupials, Maize-eaters, and Cow-birds, all of which can be kept upon a seed-diet; but the more slender-billed forms, for which I have reinstated the generic name *Agelasticus*, do not live long upon that food, but need to be treated like Bulbuls, Tanagers and other fruit-eating insectivorous birds; they also differ from the broader billed species in their more confiding nature, which renders them suitable subjects for keeping in roomy cages, whereas the Bobolink and other Meadow Starlings as well as the Cowbirds require a moderate-sized aviary to render them happy.

The soft food which I supply to all my insectivorous birds and which I have found more successful than any other in keeping them in health for many years, consists of two parts crumb of stale household bread, one part chicken-meal ground in a coffee-mill, one part Trower's "Improved Cekto" and one part hard-boiled egg passed through a metal potato masher: I mix the whole together in a bason and damp with water to a crumbly consistency. All my Starlings receive a handful of this mixture daily, together with a quarter of an orange or pear, about an inch of banana and two or three grapes when obtainable; strawberries or currants may also be given when they are in season, and any insects, their larvæ or pupæ, as well as spiders, which may come to hand.

Although, as I have said, it is possible to keep the more

finch-like Starlings for a considerable time upon seed alone, I do not recommend it as an exclusive diet; I think that some at least of those which I owned in past years would have lived longer under occasional soft-food treatment: unfortunately some of these had been brought home upon a seed-diet alone and I consequently found them unwilling to touch soft food.

The *Agelaiinæ*, with the exception of the Cowbirds, which are parasitic, construct their nests, as a general rule, on or close to the ground near water; or in reeds, rushes and other aquatic plants over water; one or two however place their nests in low trees or bushes, or even on the leaf-sheaths of palms. Attempts have been made to breed Cowbirds by turning them loose among many other nesting birds, but they did not avail themselves of the opportunity thus offered of securing foster-parents for their young.

The *Sturnellinæ* or typical Troupials do best in a moderate-sized aviary: their natural food consists of seeds and insects and therefore they are better suited to a seed diet in captivity than any other Starlings excepting the more finch-like members of the preceding Subfamily. I kept De Filippi's Troupial chiefly upon seed and cockroaches, as I did also the Bobolink, the Red-breasted Marsh-Troupial, the Brown-headed Meadow-Starling and the Silky Cowbird: I also attempted to keep the Yellow-shouldered Marsh-Troupial on the same diet, because it did not take kindly to soft food, but my later experience with the allied Flame-shouldered species proved this to be a fatal mistake.

The Glossy Black Troupials or American Grackles (*Quiscalinæ*) are powerful birds which build open cup-shaped nests either in dense or shrubby trees, low bushes, reeds, matted grass-tufts, or holes in trees or banks, usually near to or over water; mud is frequently used in the structure. The birds feed not only upon seeds and fruits, but also upon eggs and young of other birds, frogs, newts, fish, molluscs, crustaceans, spiders, insects and worms, so that their diet in captivity should contain a moderate amount of animal food, shredded raw beef being only given when no small dead birds or other vertebrates are available.

The Cassiques (*Cassicinæ*) are again large birds, most of

which form pensile purse-like open net-work nests swung from the branches of tall trees or rarely large bushes overhanging water; but the Black Cassique (*Cassidix oryzivora*) is parasitic, laying its eggs in the nests of other species; the last-mentioned bird feeds in its wild state upon seeds and insects, but the purse-builders are all fruit and insect eaters and should be treated like the typical Hangnests in captivity.

The Hangnests (*Icterinæ*) construct pensile long, openly woven, purse-like nests which are suspended from the branches of trees or bushes; their food consists of fruit, insects, spiders and worms and in captivity soft food, fruit and an occasional insect will keep them in perfect health and plumage, until eventually they die from sheer old age. These are the most confiding, clever and attractive in every respect of all the New World Starlings, and, provided that one could obtain both sexes, there seems not the least reason why they should not be bred in an outdoor aviary without difficulty. The sexes are easily distinguished, even where the plumage does not differ, owing to the very marked difference in the length of the bills of male and female.

It is dangerous to associate the species of *Icterus* with other birds, as they have very strong and pointed bills and are aggressive. When kept in a cage it is not safe to bring one's face too close to the wirework; for these birds, like all Starlings, are attracted by anything bright and might stab one's eyes; children should therefore be cautioned not to go too near.

The Old World Starlings hitherto imported belong to the Subfamily *Sturninæ* and, as already stated, mostly nest in holes, in trees, rocks, or buildings; but the Glossy Starlings of the genus *Calornis* construct pensile nests after the manner of the Icterine species and lay spotted eggs like many of those birds (as well as other Glossy Starlings) for which reason I regard them as probably the nearest allies to the New World family.

The species of *Calornis* feed upon seeds, other vegetable matter and probably insects; the African Glossy Starlings also feed upon fruits, berries, seeds, insects, and of course spiders. In captivity, therefore, these birds should be treated like the Icterine Starlings. The typical Starlings (*Sturnus*) and the Star-

ling-like Mynahs (*Poliopsar*, *Sturnopastor*, *Dilophus*, *Temenuchus*, *Graculipica*, *Acridotheres* and *Sarcops*) can be fed in the same manner with the addition of earthworms; the species of *Acridotheres* will also eat small mice,* so that it is probable that, in their wild state, they take toll of some of the smaller reptiles and batrachians: they are very eager for locusts, grasshoppers, crickets and cockroaches.

The typical Mynahs or Grackles (*Eulabes*) are somewhat delicate when first imported, or perhaps they are (more often than not) supplied with too much shredded raw beef for their good. They feed in their wild state chiefly upon fruits and berries, though doubtless they also take insect-food, since in captivity they accept it eagerly. The so-called "Hill Mynahs" should therefore be treated like the species of *Icterus*, but owing to their great size and voracious appetites they naturally require a much more liberal supply both of fruit and soft food.

Apart from the imitative powers of *Eulabes* I do not consider them attractive as pets; they are dull and clumsy in their movements, dropping from branch to branch with a heavy hop, even more carefully taken than that of a Satin Bower-bird or a Crow, to both of which they bear some resemblance in outline. In my opinion these birds should never be confined in cages; a small aviary with the companionship of a few other smaller birds suits them well. I did not find *Eulabes* aggressive, it struck me as too apathetic and lazy to exert itself sufficiently to be objectionable to other birds, in which respect I should say it was unlike the Bowerbirds and Crows. I do not of course know what it might do if associated with tiny finches; possibly it might acquire a taste for feathered food in that case: one cannot safely prophecy what might or might not happen.

Unless it is intended to breed them, all the smaller Old World Starlings are better kept in roomy cages, just sufficiently large to enable them to use their wings and bathe freely.

*My Crested Mynah was very fond of young mice taken from nests which we discovered on various occasions.



Photo by W. E. Teschemaker.

MALE SPROSSER (*Dunantia philomela*) AND NEST.

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THE NESTING OF THE SPROSSER.

Daulias philomela.

By W. E. TESCHEMAKER, B.A.

DISTRIBUTION.

The Sprosser has a somewhat extensive range, as a breeding species, but it cannot be described as an abundant species in any part of its area. Its eastern limit may be roughly indicated by an imaginary line drawn from the Caucasus to a point in Finland a little north of Lake Ladoga. Its exact northern limit is difficult to determine, but it is not included by Prof. Collett in his list of birds of Northern Scandinavia, even as an accidental visitor, and we shall probably include most or all of its territory if we carry our imaginary line westwards to Christiania and thence almost due south to Berne. Its status in Italy is somewhat doubtful; Salvadori, Durazzo and Cara have claimed it, but its occurrence as a nesting species has apparently not been proved. We will, therefore, carry our imaginary line eastward and southward to the head of the Adriatic and thence to Constantinople. Bree ("Birds of Europe") includes Persia as a part of the range of this species, but, seeing that he calls the Sprosser the "Eastern Nightingale" and does not recognise *D. golzii* as distinct, he is probably referring to the latter species.

ALLIED SPECIES.

In Germany, Austria, Turkey and Southern Russia the Sprosser comes into contact with a near relative—the Nightingale of the West (*D. luscinia*). In Germany they seem to have divided up their territory fairly well, the Nightingale claiming the Rhine lands in the west and the Sprosser the southern and

eastern districts, watered by the Elbe and the Oder; but in the other territory which they hold in common the two species seem to be a good deal mixed up, and we may guess that warfare is not unknown for, if we may judge by their behaviour in captivity, they do not like one another and, as the Nightingale is the first to arrive at its nesting haunts, it probably often has to do battle for the site it has selected. The Sprosser has the merest trace of a bastard-primary, as pointed out by Howard Saunders and many years previously by Bree, which alone would serve to distinguish it from its relative; it is also a longer bird (7 in. as against 6.50 in.) and a bulkier bird, and lastly, its upper breast is clouded and, in some specimens, distinctly streaked with a darker shade. Nevertheless, it has been stated—on one occasion the remark was made to me personally by a most experienced aviculturist—that the Sprosser is no larger than the Nightingale. I explain this in two ways: in the first place a singing Sprosser is worth in Germany 30/-, its relative only 20/-, and it is, therefore, quite possible that the latter species has been frequently imported under the name of the former; secondly, in the case of both species there are the usual variations in point of size.* I can testify to this because I once conveyed in the same small cage a genuine, though remarkably small, Sprosser, caught in Russia, and an abnormally large Nightingale, caught in the neighbourhood of London. Not only was the Nightingale as large as the Sprosser, but he soon proved to the latter that he was the more doughty warrior. Nevertheless, it would be no exaggeration to say that an expert could generally tell the one from the other in the dark—by the simple process of taking them in his hand.

In the wild tract of country where the mighty Volga makes a sweeping bend towards its smaller rival, the Don, the Sprosser meets another near relative—the Eastern Nightingale, *D. golzii*. The Sprosser is undoubtedly a good species, but the claims of *D. golzii* to this distinction are not by any means so obvious. † *D. philomela* and *D. luscinia*, as we have seen, overlap as breeding species, but *D. golzii* and *D. luscinia* do not. True, we are told

* At the B.O.C., October, 1896, I exhibited a large Nightingale from Cambridge, whose length was 7 inches, and wing measurement 4.5 inches.—ED.

† Dr. Hartert (Vog. Pal. Fauna, I. p. 735, 1910) classes it as a subspecies of our Nightingale, and the Sprosser as a distinct species.—ED.

that *D. golzii* has a longer tail, but the difference in length cannot be great; at all events, in the two living specimens of the latter species which I have had an opportunity of inspecting, it did not catch the eye. The Sprosser itself has a decidedly long tail (I have measured several and make it 2.75 in. : Bree says "3 in. to the vent") so, if *D. golzii* has a longer one, one would think it would be a very distinctive feature.

It is probably the latter species which has earned for the Persian Bulbul, through the medium of the poets, its fame as a songster. In at least two countries the Nightingale is called "Bulbul." One of these is Egypt, where our member Lady W. Cecil tells us in her charming little book, "Bird Notes from the Nile," that this name is applied by the Arabs to *D. luscinia*; the other is India. A correspondent, who is himself an expert in the art of keeping Nightingales, wrote me some years since as follows: "I have been 32 years in India where Nightingales are brought from Persia or some northern part and are called 'Bulbul basta' to distinguish them from the Indian Bulbuls." Writing me again as to the meaning of the word 'basta,' he replied:—"I have enquired from a Persian gentleman, who says that he does not know the word 'basta,' but that there is a word 'bastan,' which means 'garden' and that 'Bulbul-e-bastan' means the 'Garden-Nightingale.'" In some countries then the Nightingale is called a Bulbul, but in Palestine, according to Evans, a Bulbul (*P. xanthopygus*) is called a Nightingale.

MIGRATION.

If anyone wants to gauge the extent of our knowledge (?) of even the most familiar summer migrants he should tax the resources of a good library and note what he can ascertain of the area of their winter quarters, their migration routes and their life in tropical countries. With regard to the present species Dixon tells us that the Sprossers bred in Denmark and Scandinavia pass through Central Europe and winter in N.E. Africa. We may conjecture that the Russian contingent skirt the shores of the Black Sea, pass through Asia Minor (where, however, no Nightingales remain during the winter) and wing their way, with the Scandinavian Sprossers and the eastern contingent of *D. luscinia*, up the valley of the Nile. Lady W. Cecil tells us that

the Sprosser is more rarely seen in the Nile Valley than *D. luscinia*, though it is sometimes seen on migration. It would, however, be impossible to estimate the comparative rarity of the species unless a large number were collected and other observers have seen large numbers of Nightingales (many of which would probably be Sprossers) in the Delta at the time of the spring flight.* No Nightingales remain in Egypt during the winter months, and Witherby, who followed the course of the White Nile southward from Khartoum for some distance, does not record either species, though he seems to have come across many of our summer migrants. They press on further south, following the course of the great "river of mystery"—a mystery which was, however, really solved some 2,400 years since, when Herodotus rightly guessed that it had its origin in the melting snows of the mountains of the far interior. Some Sprossers pass the winter in Abyssinia and Somaliland, but others in accordance with the well-known principle that species which summer furthest north winter furthest south, wing their way to the country of the Masai, to the Mountains of the Moon (specimens being obtained on both Kilimanjaro and Kikuyu), to the Great Lakes, to German East Africa, and, passing the normal southern limit of *D. luscinia*, according to Hartert (Vög. pal.) even reach the Zambesi itself. Kilimanjaro certainly sounds a very unlikely locality for a Nightingale, but it must be remembered that a large area of the base of the great mountain is clothed with dense forest, swathed in eternal mist and drenched by incessant rain, and therefore presumably affords a bountiful supply of the kind of insect diet which this species chiefly depends on; for the Sprosser is a somewhat lethargic species and would soon starve if it had to depend on winged insects only for its livelihood. It is essentially a hunter of caterpillars, a turner of dead leaves and a devourer of the larvæ of beetles, nor have I ever seen it display more skill or activity in foraging than that involved in hovering beneath a spreading branch and picking caterpillars from the underside of the leaves.

D. luscinia appears to have two main routes—one stream

* Mr. Nicoll (Wild Birds observed in the Giza Gardens, Cairo, 1898-1908, p. 9) only records two Sprossers, while the Nightingale is stated to be abundant and numerous on the spring migration.—ED.

of migrants making for the Straits of Gibraltar, N.W. Africa and the Gold Coast, the other crossing the Mediterranean at points considerably further east and heading for the Nile Valley. It is the Sahara which really divides up these two contingents, a region which all migrants give as wide a berth to now, when it is a sea of sand, as they probably did in those remote days when it was a vast expanse of salt water.

The Eastern Nightingale, according to Hartert, winters in Southern Arabia, in parts of India (*e.g.* Oudh) and in E. Africa.

SEXUAL DISTINCTIONS.

Except during the short period of the pairing season it is always a difficult matter to determine the sex of a Nightingale. The first hen Sprosser which I succeeded in obtaining was a hand-reared bird and did not show any marked indications of sex: I did not attempt to breed from it. In the following year a German dealer, who has had many hundreds of Sprossers pass through his hands, sent me a bird which he undoubtedly considered to be a female because he valued it at the not extravagant figure of 5/-. This 'hen' is in my possession to-day, and sang so freely in the spring that I was able to take some Phonograph records from it! When I mentioned this fact to the dealer he replied that next time he would make no mistake, and he was as good as his word, for last May he sent me a Sprosser which I had no difficulty in recognising as an undoubted female. It was somewhat paler on the back, very much lighter on the underparts and had a finer head and beak, and what I can only describe as a feminine air.

SONG.

Of the three Nightingales I have no hesitation in saying that *D. luscinia* is the finest songster from an artistic point of view. Its tones are more varied and melodious, its expression more facile and impassioned and lastly, but by no means leastly, it has no discords. Many of the Nightingale's tours are reproduced by the Sprosser with success, but there are others which it does not attempt. The beautiful whistling tour ("tee-tee-tee") which *D. luscinia* generally selects as a prelude to its song and which, when it is introduced as a *finale*, is sung with a *rallentando* effect, is really exquisite, and might almost be described as

all its own. Though I have heard many Sprossers, it was not until this season that I ever knew one attempt it and the fact that the Sprosser can sing it but does not, except in rare instances, do so may be said to show that it has not the artistic taste of *D. luscinia*.

The song of the Sprosser is exceedingly powerful and mellow but it introduces tours which one feels that no true artist would select. Some of these appear to be borrowed from the Sedge-Warbler and Greater Reed Warbler and, in this connection, we may note that, at all events in Central Europe, the favourite nesting site of this species is a scrub-covered island in a river or a dense thicket on a river bank. Perhaps I should not say "borrowed from" because it is a tempting theory that the notes of birds were in the first instance a reproduction of the familiar sounds of their environment and anyone who has heard a Stonechat "chatting" on rocky ground can hardly doubt that there is a substratum of truth in the hypothesis. Be this as it may, I think that I am on safe ground if I say that there is at all events a harmony between the songs of the reed-haunting species and the voices of the river, marsh and mere—the lapping of the water, the croaking of frogs and the rustling and rattling of the reeds bent by the wind; so possibly it is to these influences and not to the Sedge-Warbler that the Sprosser is indebted for some of its tours. The most characteristic phrase of the Sprosser's song is called by the Germans the "Jacob" tour and sounds like the word "tit-up" with the accent on the last syllable.

It is singular that, although the Sprosser's song has more volume than that of *D. luscinia*, it cannot be heard at so great a distance, on account of its lower pitch. I once had an opportunity of testing the carrying power of the Nightingale's high tour ("chip-chip-chip") and found that it could be heard on a still evening at a distance of 750 yards and perhaps further. Nevertheless the notes of the Sprosser are exceedingly powerful, as may be judged from the fact that during the past spring I heard one in an out-door aviary on several occasions challenge and fairly sing down a Thrush.

I have spoken of the Sprosser's song as though it were something fixed and invariable but, as we all know, every in-

dividual songster has his own particular style and, what is more, each individual has as many songs as he has moods. Last May I had the privilege of hearing the love-song of this species; it was so completely different from the ordinary song, so low and sweet and varied, that I should never have guessed it proceeded from a Sprosser if I had not seen the bird singing. Alas, it only lasted for the three days during which pairing was taking place.

I have not heard the song of the Eastern Nightingale and therefore am not able to compare it, but I am told by one who has heard it sing in captivity in India that its song is more powerful than, but not so varied or melodious as, that of the Western Nightingale; it is, however, a very free singer and will even deliver its song when being carried about in a cage by hand. To sum the matter up in a few words, the further east we go the more freely will Nightingales sing in captivity and the less melodious will their song be.

NESTING.

It was on the 11th of May that I received the hen Sprosser; it had not been "meated off" and had evidently only been a few days in captivity. It is rarely that I have the luck to secure a "softbill" in so satisfactory a condition, unless I do my own trapping. As a rule they reach me with digestions ruined by some horrible "mixture" and are quite worthless for breeding purposes. All that I knew about the nesting habits of this species at that time was that, according to Bree, it preferred the "neighbourhood of water and marshes." It so happened that I had a shallow tank in the larger aviary which was not in use, so I soon fitted up a corner for them by planting part of it with bamboos and reeds. This sounds delightfully simple but I feel damp even now when I recollect how we brought those bamboos ten miles, and the clumps of reeds six miles by boat, filled the tank with earth and planted the clumps which varied in weight from half a hundredweight to a hundredweight each. I also constructed a mound of earth and planted it with a kind of fine grass which grows on the cliffs because our Nightingale likes to nest on a bank and, if *D. luscinia*, why not *D. philomela*?

By the 19th, everything was ship-shape, and on that day I turned out the newly-arrived female with a male which had been

in my possession more than a year. They seemed quite to appreciate their new quarters; the female used to forage in the bamboo jungle and bathe in the shallow pools, whilst the male, perched in a quince tree, would fill the garden with the glory of his song. It interested me to note that, whereas this Sprosser had previously always sung in the early morning and never after midday, he now sang a little in the morning, more in the late afternoon and his very best in the evening, from 8 p.m. to 10 p.m.; in other words, the very moment he found himself in a natural environment he reverted to first principles to the traditional habits of his race. In some notes which I wrote on the habits of *D. luscinia* some time since, I suggested that the reason that this species sings a good deal at night is because it is liveliest at that time, and that the reason that a caged Nightingale sings by day is because it is impossible for it to find much occupation at night in a stuffy cage in a dark room. The above observation seems to confirm this theory. I also stated that I believed that the Nightingale did not sleep at all during the breeding season. This also I have been able to some extent to confirm; during this past summer I have had a look at the Sprossers' aviary on many occasions and at every hour of the night and early morning and have invariably found them awake and active.

(To be continued).

LAUGHING KINGFISHERS.

Dacelo gigas.

By KATHARINE CURREY.

I have to mourn the loss of a pet of nearly twenty years, the cock of a pair of Laughing Kingfishers 'Jack' having survived 'Jill,' his mate, a few years.

He obviously died of old age, for he looked very decrepit for some months before his end. For all the years I had the pair, they never had an hour's ill-health, and as they bathed every day, their plumage was most beautiful. Jack's head and neck were of a creamy-white, and from the back view had the appearance of a full-bottomed wig. His crest, a rich dark-brown, was only raised when he was intent on watching something.

Jill's head and neck were ashy grey in colour, her crest dark brown, and a ring of brown feathers extending from ear-covert to ear-covert round the back of her head. Her wings were beautifully marked with light blue feathers, his with iridescent pink.

When I bought them, the poor birds were in a wretched state, with broken beaks and no tails. Their beautiful brown dog-like eyes, full of expression, induced me to buy them.

After arriving at their new home, they were almost bewildered at the sight of a clean bath, but having once splashed into it, they bathed again and again as if it were impossible to have enough. They managed to laugh, a hoarse cracked sound at first, but after living in their country home for a year or two, their laugh became the complete duet they sang together—musical and in perfect harmony. They sang at dawn, noon and sunset, and at other times as well. In spring and early summer their laugh was so incessant and loud, in the early hours of the morning, that they had to be shut into an inner cage till the world was astir. Their habits were most fascinating to watch, and their intelligence was great. They were very nervous and shy of strangers, but quite tame and very gentle with their owners. They bore the winter quite well, and broke the ice in their bath to splash into it from a branch close by, on which they sat intently watching the water, and raising and depressing their crests. They bathed by turns, never together. After the bath their toilet was a very pretty performance, as they shook their soft crests and combed them with the shoulders of their wings, bringing the wing over the back of the head.

Their home was a large wired-in enclosure under some yews and an old walnut tree, sheltered from the north and north-east by a high log palisading and the stable wall. They had all the south sun, and some of the south-east and south-west sunshine as well. A wooden roosting-box of double thickness was fixed high up against the wall, but they never used it, always preferring to sleep in the open, sitting on a yew branch, one laying its great bill across the other's back, the one pressing close to the other. Sometimes they had games of hide-and-peek among the logs and trees in their enclosure, chasing each other

with a sort of gurgling laugh. Once they gave signs of nesting, but it came to nothing. I have been told they never breed in England. Their native land is Australia, and a lady from Melbourne who admired their fine condition very much, told me they are quite hardy birds, living in the hills, where you can see flocks of them and hear them laughing at sunset. They are called the Settlers' clock, and are greatly valued for keeping down the snakes and mice and troublesome reptiles, on which they live. Raw meat they thrive on quite well, but must also have fur or feathers, as they cast pellets.

One day I was brought out of the house by hearing them chuckling as if they had caught a little bird, a sad event that sometimes occurred when the aviary door was opened. I found them playing at "French and English" with what looked like a long strip of India-rubber, the ends of which they held tight in their beaks. At first I thought that it was a snake, and wondered how they could have caught it. On closer examination I found it was the remains of an unfortunate frog. They sat pulling at it for hours, and well into the night. Next morning it was gone, and they were very subdued and silent.

Jill was found lying dead on the ground one morning early, after being with us many years. She and her mate were not young when they came, so I could not tell their age. Presumably they live to a high age. I had an autopsy of her made, and the Naturalist who undertook this reported that he had never seen so fat a bird. She had died of suffocation from over-eating. The fact was she took all the food from her poor mate, who was quite thin in consequence. What wonder that he seemed rather relieved at her departure, and enjoyed his food more than he had ever done before! He laughed and sang merrily, but the song always sounded disjointed, like a duet played on the piano by one person.

I have had them extremely well set up in a glass case by Messrs. Watkins and Doncaster, and though a stuffed bird is a poor exchange for a living one, yet I like to look at the beautiful plumage of my old friends, and recall the days when their joyous laugh sounded over the garden.

SOME EXPERIENCES OF AN AVICULTURIST.

By ARCHIBALD SIMPSON.

(Concluded from page 302).

Gouldians and Long-tailed Grassfinches : The former have been a real trial to me. I have had perhaps a dozen pairs, most of which died at periods varying from one day to a fortnight from the time of my obtaining them. Here, again, I have an exception in the case of one hen which lived about a year and was ultimately killed by a rat.

Long-tails have done better, and some pairs (?) I have kept quite a respectable time, in one or two cases, eighteen months to three years. The sexing of this Grassfinch is one of the difficulties of the non-scientific aviarist. I know the white tip to be found on the wings of some specimens is not an indication of the masculine gender, as I have undoubted hens with this characteristic, and of this I am absolutely certain. Further, size is no guarantee of sex as of the last pair I possessed, the cock bird was a shade smaller than the hen, the extended tail feathers were shorter, but the black gorget was unquestionably larger in this particular cock bird, and though it may need a fine eye to discern a difference sometimes, I think the bib is the best index of the sex, that is to say given a stock to choose from, those with the biggest bibs would be certain to prove cocks.

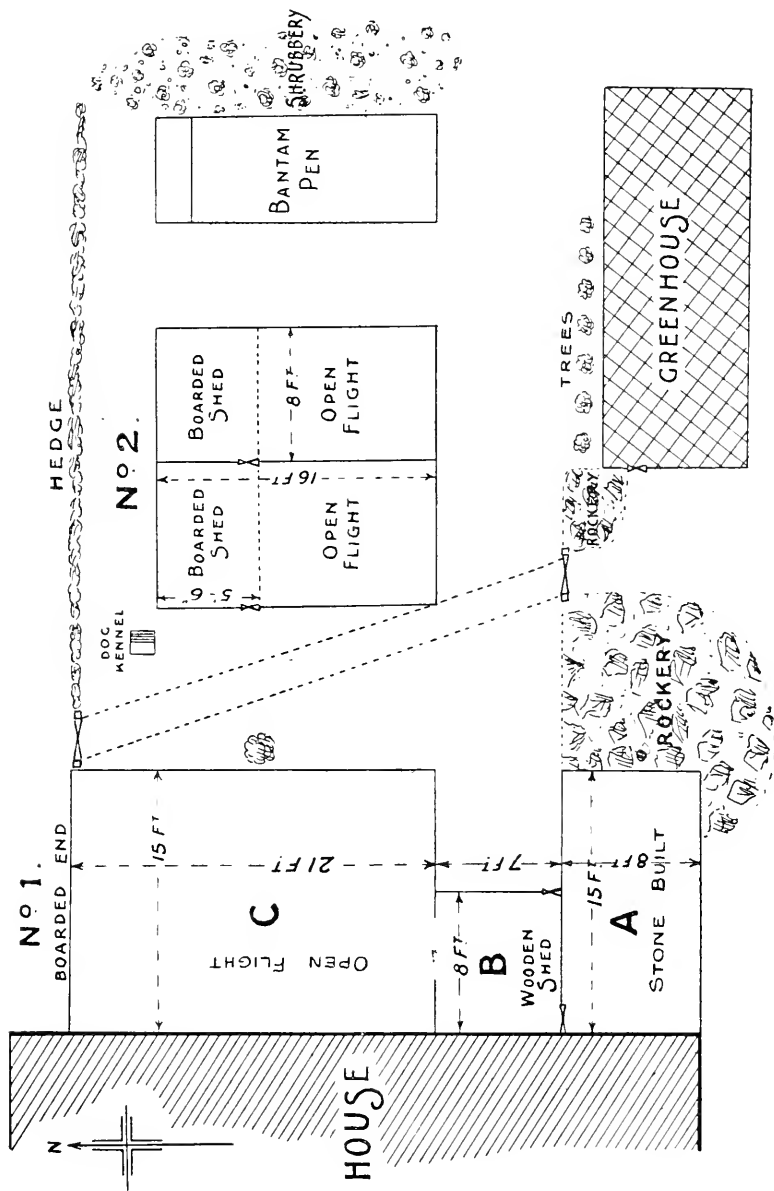
Of Bicheno or Double Banded Finches I have only kept two pairs, one hen living with me about five years. This bird broke both legs on separate occasions, recovering rapidly under careful treatment, the limb being set in improvised "spelks" made from the soft pine wood of "Puck" matches and carefully bound with knitting wool. There was no deformity in either limb after recovery, although in the first accident the fracture was at a point not more than half an inch from the body. The bird was of course kept for about a month in a cage, from which all perches had been removed and the bottom covered with hay to a good depth, food and water being conveniently to hand so that she had really not to move her position to obtain either.

My Zebra Finches never reared any young, though nest after nest was built, each having a complement of eggs varying

from four to ten, and I found on one occasion no fewer than four nests erected on the top of each other. I got the impression that my food supply was too stimulating, so cut off soft food and ants' cocoons, but this did not make much, if any, difference, they continued nesting operations to the usual stage and commenced again *de novo*.

On entering one of my birdrooms one morning I was horrified to find that the wire-netting guard covering the open window had fallen down and most of the birds had escaped, indeed all those I valued most had gone without exception, including two Noupariel Buntings, one Indigo Bunting, two Gouldians, four Long-tail Grassfinches, two Paradise Wydahs in full colour, one cock Rosella and a number of commoner birds. My feelings may be better imagined than described, and a sympathetic friend, to whom I related my trouble and who had never quite understood my penchant for live stock, but who had on many occasions consented to listen to my recital of the charms of bird-keeping, laconically observed, "Well, old chap, this will surely put the lid on," from which I gathered he anticipated my interest in aviculture would forthwith cease. He was mistaken. I may say that I never recovered a single bird, but I had accounts brought to me of strange birds being seen in different parts of the City, which I recognised from the description as formerly my property.

Shortly afterwards I removed into the country, and my mind was at once centred upon the construction of outdoor aviaries. I had considerable difficulty in selecting a suitable site owing to the number of large Beech and Sycamore trees around the house, but eventually I decided to erect one at the end of the house on the site of a small shrubbery and into which I could obtain a view from a window which opened out on that side from a room most frequently occupied. Although it would face east, I rightly argued that it would get ample protection from the winds from that direction, and was also fairly well sheltered from the north. The accompanying ground plan will explain the position of this aviary as constructed:—"A" is a small stone-built outhouse, forming part of the permanent structure and has a flagged roof, the walls are quite 18in. thick. I had several of the roof flags removed and a sheet of glass 30in.



by 18in. by $\frac{1}{8}$ in. let into a frame and fixed in their stead, this lighted the interior splendidly, and after the walls had been whitewashed I regarded it as being almost perfection, but so as to afford additional shelter I built up to it a wooden house "B," constructed of $\frac{3}{4}$ in. tongued and grooved matchboarding, covering the roof with prepared felt; the total dimensions of the structure, including the stone-built place, are 36ft. long, 15ft. wide, with an average height of 7ft. "C" is the open flight, 21ft. long. The height is 7 ft. 6in. at the back, with a fall of one foot to the front. I raised the ground level inside to the top of the skirting board, which is seven inches wide, with fine gravel, except a strip about five feet wide on two sides which was turfed, but on which a blade of grass is now rarely seen. The outside flight is of course covered with fine mesh galvanised netting (half-inch) blacked with Wailes, Dove & Co.'s bitumastic solution (which I find spreads much better than Brunswick Black and is innocuous and much cheaper). The wooden framework was painted green, and when the whole was completed and ready for occupation I felt quite satisfied I was now in a position to compete with my fellow members who write the nice long accounts of breeding successes, and annex the Society's medals as a consequence.

In addition to my usual stock, I received from a Jamaica friend one pair each of White Crowned Pigeons, White Bellied and White Wing Doves, and subsequently purchased a pair of Pennant Parrakeets and also introduced a trio of Gold Pheasants, finally dispelling all doubts on the part of my family connections as to my sanity by erecting two more aviaries, on the ground that I had not yet sufficient room.

The last mentioned were constructed on the open-shed principle, that is to say, the covered-in portion was not wholly boarded but only on three sides and for a span of about three feet from the top on the fourth, fronting to the wired-in portion. They each measure 16 ft. by 8 ft., really being a 16 ft. square aviary divided by half-inch mesh netting down the centre with a door from one into the other, the outside portion of each being 10 ft. 6 in. long and 7 ft. 6 in. high, the covered portion being 10 feet high in front sloping to 8 feet. They face south, but are

much shaded on this side by a large greenhouse, rockeries and trees, they nevertheless get a fair amount of sun, and in the summer months I am satisfied that the screen may be regarded as an advantage; they are shown on the sketch plan marked "2." In one of these I have a pen of three Gold Pheasants and Budgerigars, and in the other four Amhersts, Pekin Robins, Thrushes and Cardinals.

For a period of about three months the inmates of my outside aviaries appeared to be doing well; my White Crowned Pigeons reared two nests of young, the first, a solitary bird, which proved to be a cock, and then a nest of two, one of either sex. The old cock bird had evidently been shot as he had one mutilated wing, which prevented him rising from the floor, though he often made attempts at flight; he was very wild and untractable, but his partner was a pattern of tameuess and would come to feed from the hand at call, they were both furiously jealous of the approach of any bird within two or three feet of the nest, which was constructed on the top of a small rockery in one corner of the flight. The White Bellies were constantly quarrelling with each other and I could not sex them, though I think they were both hens, as I found odd eggs in various parts of the aviary, but no attempt was made at the construction of a nest. I subsequently got a pair of common Barbary Doves, under which I placed eggs of the White Bellies, but they never hatched. The White Wings tolerated each other and that was their limit. A pair of Zebra Doves also built and laid, but were so wild they left the nest on the least noise and their eggs were always blanks, very disappointing but nothing to the debacle shortly to come. I found one of the White Wing Doves had something wrong with its bill, and an examination showed this member to have become quite soft and elastic, rendering the bird incapable of picking up food. I was recommended lime water as a drink, and soft food for a time, but this treatment proved useless and the bird died about a week after my noticing its condition. There was plenty of old mortar and cuttle fish bone in the place, so the lack of these materials could not have been the cause. Should I again have a bird in a like state I shall resort to heroic measures, and stiffen both mandibles with fish glue, taking care not to cover the

nostrils, and continue the lime water treatment, which to be effective must need a considerable time, and the artificial stiffening of the bill would at least enable the bird to continue on ordinary seed instead of soft food, which some birds decline to eat readily. I feel sure this experiment would prove successful. Less than a week after, I lost its companion, I found it jammed tightly between a large tree trunk and the wall of the house, a position from which it had been unable to extricate itself. This was the beginning of another long run of misfortunes, as I shortly afterwards found the old cock White-crowned Pigeon with its head eaten off, evidently by a rat or some member of the weasel family. I made a thorough search through the aviary, and at last discovered a rat had entered the place through the floor of the stone-built inner house. I had the floor taken up and a thick layer of cement and broken glass laid down and the flags replaced. Two days afterwards I found the earth thrown up in the wooden shelter, the animal had tunnelled beneath the cement and come out close to the seed vessels, from which he took toll for some days, as he refused to enter traps, however carefully they were laid. Eventually I got him by opening a dead bird and inserting arsenic, laying the bait out of reach of any of the birds, though I do not suppose they would have touched it, but the greatest care ought always to be exercised when using poison. I then dug down below the level of the cement and sank half-inch netting to a depth of two feet the whole length of the old building, feeling certain I had now a barrier against the invasion of rodents, but shortly afterwards found another White-crown had been partly eaten, and though I made a most minute search over the whole floor area of my large aviary I could find no signs of a hole. Will it be believed, that almost every day for about three weeks there was a fresh victim, notwithstanding traps, poisoned birds, meal and lures of all descriptions. He took every one of my remaining doves before sampling the others, eating the head and breast portions only, and followed on by destroying a Golden Plover and two Lapwings; several of the smaller birds were found eaten on the nests, or rather the few feathers and feet left there would seem to prove this to be the case. I watched the place for hours together, but never once

caught a glimpse of him, though we often heard noises at night which warranted our conclusions that he was about. Then by accident I got a clue to his procedure. I had been examining the ivy on the large rockery which abuts on the outside wall of the stone-built house, and on which there is the stump of an old tree rising to about two feet above the level of the roof and situated about the same distance from it, when I saw the vermin crawl up the trunk, spring across to the roof and run along the top to where the glass had been fixed, he disappeared beneath the overlap of the flags and thus gained access from the top behind a cross beam on the inner side. I determined to have him, so fixed a length of wire netting flat across the top to prevent his escape and made a search without success. He was inside for a week before I again saw him, and then I discovered he had been in the habit of running up the inside wall and hiding in one of the nest boxes. His requiem was sung by a handy dog and I have had no further troubles from *Mus decumanus*.

I had again to re-stock the aviary, a process attended by the usual high percentage of losses, but I do not intend to further particularize, the recital would be a melancholy one. For the present I am content to sit at the feet of those experts in Foreign Bird-keeping, whose articles tell us in simple terms what to do and what not to do, a veritable monument of Hope awaiting a solution of the problem as to why, with all the care and attention it is possible for an enthusiast to expend upon his subject, my record is one which entitles me to "The Wooden Spoon" of Aviculture should the Society ever deem it wisdom to award one.

NESTING OF THE ROSE-BREASTED GROSBK.

Hedymeles ludovicianus.

By HUBERT D. ASTLEY, M.A., F.Z.S., M.B.O.U.

My pair of these most beautiful Grosbeaks were turned loose in a disused bedroom in the winter of this year, and in May they showed signs of wishing to build a nest. They began one in the branches of a dead spruce fir, which had been placed so that the top of it touched the ceiling of the room, which kept it firm. But the Grosbeaks did not succeed in building a sub-

stantial home for their future family, and in June the female, after placing some scanty material in a Canary nesting-box of wood with perforated zinc at the bottom, laid two or three eggs, which were broken. Therefore I found a Blackbird's nest, which I fixed securely into the artificial nesting-box, and the hen bird at once took to it. As it was about nine feet up and close under the ceiling I could not see what was going on, but in the middle of June I found egg shells on the floor from which young birds had evidently hatched. The shells were of a pale green blue blotched and spotted with rufous umber, a broad belt of which colour formed an unbroken ring round the stouter end.

Both the male and female took their regular turns in incubating and (later on) in brooding the young, a fact which is borne out by Mr. C. O. Tracey (*Ornithologist and Oologist*, Vol. X. p. 37) where writing from Vermont he says [see "Foreign Birds for Cage and Aviary," Part I., p. 141, Butler]:—"The sexes arrive together. The male is at once conspicuous, both by his beautiful plumage and melodious song. While essentially a forest bird—and one must see and hear him in his forest home to see his full beauty and hear him in his happiest song—they often come into the orchard and shade-trees about our homes. Along the lightly timbered river banks and roadsides they find their favourite breeding places, but these must be at no great distance from the more heavily timbered forest. The forked top of a sapling is usually selected for a resting place. Sometimes, however, the horizontal branch of a large forest tree is chosen. The nest is a frail structure, made of fine dry twigs and a few grass or weed stalks. Sometimes only twigs are used, and these are nearly always hemlock. It is seldom less than eight or more than twenty feet from the ground. The full complement of eggs is usually four, sometimes but three. Dimensions vary from .1 by .75 to .90 by .70 of an inch: colour greenish-blue, spotted with different shades of brown.

"Both sexes incubate, the male performing his full share of this important duty. My records show that where I have made observations in thirty-four cases, the nests were occupied by males twenty-three times and females eleven."

I want to especially draw attention to these records of Mr.

Tracey's, because Dr. Butler mentions that Dr. Russ states that when these Grosbeaks nested in his bird-room, the eggs were incubated *by the hen alone*.

My male bird fully bore out Mr. Tracey's testimony of their habits in a wild state, and I believe it was often on the nest all night.

My pair of Rose-breasted Grosbeaks have proved themselves to be most harmless to other birds, for in the same room where they nested (quite a small one too) there was the following collection of mostly raræ aves:—

One pair of Hooded Parrakeets (*Psephotus cucullatus*).

One pair of Blue Budgerigars.

Two pairs of Hooded Siskins (*Chrysomitris cucullatus*).

One pair of Fire-tailed Finches (*Zonæginthus bellus*).

One pair of Parrot Finches; and

One pair of Red-headed Gouldian Finches.

All of which often perched quite close to the Grosbeak's nest, paying no attention to the sitting bird, and in turn being paid no attention to.

One day towards the end of June, I found a dead young Grosbeak, apparently about eight or nine days old, placed on the sill of the window. It had evidently died in the nest and been carefully taken out and deposited there, for there were no marks of injury whatever, but the body itself was by no means fresh. However, disappointed as I was, I was relieved to see the old birds still taking their due turns in brooding, so that I felt assured there was still one live nestling; which turned out to be the case. Unfortunately, however, although it has since left the nest, it is [up to the date of writing] a cripple, being apparently rickety in the legs, but otherwise strong and healthy. I believe it to be a male bird, for although resembling the female in markings, the general colour, especially on the wings and head is much darker. I have put this youngster in a cage, as he is unable to perch, but I have hopes that his legs will gain strength later on, for they do not seem to be deformed.

For the benefit of those who are not acquainted with this most lovely Grosbeak, let me say that the bird is much the same size as a Red Cardinal, but it is tighter and neater in its plumage.

The upper surface of the male is (*in the breeding colour*) chiefly black, but there are white spots at the tips of the secondaries, etc. and upper tail coverts, and the inner webs of three outer-tail feathers are white. When flying away he has a pied appearance. The under surface is a very bright and pure white, a large patch of cardinal rose-red on the fore-neck and centre of breast, this colour running down into a point. The sides of the body and thighs are rather greyer, flecked with black. The under wing-coverts are rosy, the beak whitish; feet grey-blue; eyes dark hazel-brown.

The contrast of black, white, and the beautiful rosy red is very fine and equally conspicuous. The female is altogether different, her general effect being ochre-brown, streaked and spotted with a brown of a much darker tint, or black; her under wing-coverts are orange-yellow.

Dr. Butler, in his work referred to already, says: "In the autumn the rose-red (of the male) disappears, to reappear at the approach of the breeding season," and he adds, "This fact, observed by Dr. Russ, has been questioned by scientists." Why, I do not understand, for it is a well-known fact, or ought to be, that the male Rose-breasted Grosbeak has a distinct winter plumage. I have seen mine go through three bi-annual moults, and his winter plumage is very dingy as compared with that of the spring and summer.

In the autumn the Rosy-red on the breast all but disappears, being obliterated by brown, the white of the under-parts loses its brightness and is splashed with brown, as also is the black of the upper parts; but, about March, the bright and pure colours commence to reappear, each year becoming more brilliant.

These birds seem to feel the damp and cold of the English winter, and for that reason I removed mine from an outdoor aviary and put them into the empty bedroom, where they have done extremely well. The song of the male is difficult to describe (what bird's song is not?) but it is gay and buoyant, although disjointed. The quality of the notes is good however. They are very quiet birds, not moving about so actively as the Cardinals, and they are very tameable. They are summer migrants to



THE GREAT BUSTARD
(*Otis tarda*).

North America and Canada, wintering in the South. They also occur in Cozumel, Cuba and Jamaica.

It is curious that these Grosbeaks were so seldom imported in old days, when one used to see cages full of Red Cardinals, Blue Birds (Robins), etc. from the United States; and until three years ago I never saw a female. My present pair were most kindly presented to me from the New York Zoological Gardens.

NOTES ON BIRDS AND AVICULTURE IN PORTUGAL.

By Miss IVENS.

I am sending a photograph of an interesting pair of birds, for reproduction in our Magazine, if found acceptable. They occasionally breed in this country, chiefly in the province of Alentejo, south of Estremadura, in which Lisbon is situated. I am told they are rare and difficult to keep in captivity, unless taken as fledgelings from the nest. If caught when adults they are apt to refuse food and to pine away. Their Portuguese name is "Batarda," and they are also known as the European Ostrich. Indeed the photograph shows a certain resemblance to that bird.

The colouring of their plumage, except in the purely white parts; is a mottled combination of cinnamon-brown, black and white intermixed with slight touches of yellow; their size about that of a large Turkey. Before concluding this description of them (given to me by my bird-dealer, for I have not been fortunate enough to see the birds myself) I must call attention to the singular hair-like appendages, "whiskers," so to say, that adorn their faces.

With regard to other birds found in this country, many are identical with those of Britain. Most of our familiar songsters, both graminivorous and insectivorous, are even more common here than with us. Hoopoes, Jays and Kingfishers likewise. Among game-birds there is the wild duck, which breeds largely in the marshes up the Tagus, some 22 miles above Lisbon, in the district known as the "Ribatejo." They are plentiful in the markets of this city. Snipe and Woodcock, Quails and Partridges

(the red-legged kind) also abound. The "Alemtejo" seems to produce a larger kind of Partridge than those that inhabit the rest of Portugal. At a bird-show recently held here I saw a pair of them, and was much struck by their size and really fine appearance.

Aviculture as a science is still in its infancy here in Lisbon. Bird-shops are not wanting, and I must add they are *clean* and singularly free from the unpleasant odour which makes a prolonged stay in such establishments in England, to say the least, undesirable, and one can see that the birds are well kept and attended to. The drier climate and greater amount of sunshine probably contributes to this satisfactory state of things. But when one seeks for the varied kinds of seeds for one's pets, so easy to procure in England, one is doomed to disappointment.

Lisbon boasts of a population of about half-a-million; yet, in a city of this size, it is impossible to obtain any of the ordinary white French millet so common with us; I actually had to send to Oporto for some, where it *is* sold. Spikes of the brown millet are likewise conspicuous by their absence, Dari is simply unknown. As to special mixtures for Doves, Finches, or other birds, you are simply stared at as eccentric if you do but ask for them.

I may include in the same vast catalogue of "necessaries" that are "wanting": flint-grit, calcined oyster-shells, nesting material, ants' eggs, soft-food mixtures and numberless other articles which I cannot recall to mind at the moment, but that I have to find substitutes for constantly.

The seeds that can be obtained are the following: Wheat, Indian corn (but never crushed), hemp, Canary seed, rice, and the universal "Painco," that is the brown Indian millet, with which all the smaller Doves, Parrakeets, or African Finches are fed. Lastly, there is "Limpadura"—mill sweepings—which contains tares and many other wild seeds that grow in the wheat, barley or oat crops. Of this I give a certain quantity to all my Doves, even the small ones, mixed with the richer seeds. But I always have to sift it carefully first, as it is full of such refuse as husks, small bits of straw, much dust, etc.

So the aviculturist here has to exercise some ingenuity to

keep his pets in good condition. As sand, I use that from the sea-shore, of which there is an abundance on the banks of the Tagus, close to Lisbon. I add to this cuttle-fish bone (*not on sale anywhere*) from the same source, old mortar and crushed raw egg-shells. So the little foreign Doves I brought with me from England still flourish under their changed conditions.

Of green foods, one can get most of our English weeds, in favour with the birds, though in less abundance; then there is lettuce and watercress to fall back upon when they are lacking. So we manage to get on after all.

There is a singular absence of enterprise in this nation. They prefer to go on in their time-honoured customs undisturbed, and look upon any improvements or innovations only as an additional and wholly unnecessary trouble. Indeed they tell me that if they did get any of them on trial they would only remain on their hands, as there is no demand for them.

On my first arrival here I had thought what a splendid opening there is in this city for a really good English corn chandler. But I think so no longer, seeing that, as I have shown, they would find no customers. However, there are rare and interesting species to be found in the bird-shops, notwithstanding all these "limitations," so therewith we must be content.

I trust this very poor contribution to the Magazine, from an old member, will prove of slight interest to others belonging to our Society.

BIRD NOTES FROM THE ZOOLOGICAL GARDENS.

By THE CURATOR.

An interesting collection of birds has been received by exchange from the Zoological Society of New York, amongst which are three species new to the collection. These are the Douglas Quail (*Lophortyx douglasi*) of which there are two pairs, a species allied to the Californian Quail. It is an extremely pretty bird of a mottled grey splashed with brick-red, and with a reddish crest. A pair of Bendire Thrashers (*Toxostoma bendirei*), brown thrush-like birds with curved bills; also four Gila Woodpeckers (*Centurus uropygialis*), very pretty greyish birds splashed with yellow, the males having a crimson crown.

Besides these three which are new to us, there are in the collection Meadow Starlings (*Sturnella magna*), Picazuro and White-crowned Pigeons, Passerine Doves, Snow-birds (*Junco hyemalis connectens*), Chipping Sparrows, Cayenne Rails and Laughing Gulls.

The Duke of Bedford has presented a hen Borneau Fire-back Pheasant (*Lophura ignita*) of which species we already had a pair, the male having also been given to the Society by His Grace, so we now have a male and two females of one of the finest of the Firebacks.

Another acquisition of more than ordinary importance is a beautiful pair of Regent Birds from Mr. Reginald Phillipps.

Members of the Avicultural Society do not need to be reminded of Mr. Phillipps' success with this most beautiful of Bower Birds, and it is interesting to note that the male of this pair was actually bred in London, and is without doubt the only Regent Bird that has ever been reared in captivity.

We have secured one pair of the recent importation of Purple-rumped Sun Birds (*Arachnechthra zeylonica*) a species which is not entirely new to the collection as Mr. E. W. Harper presented a pair several years ago.

Our collection of Birds of Paradise has been augmented by the presentation by Mr. E. J. Brook of a male Lesser Superb Bird (*Lephorhina minor*), a species new to the Society's list. It is about the size of a Missel Thrush with velvety black plumage, its throat ornamented with a metallic shield like that on the Six-plumed Bird, while from the nape grows a wonderful hood of long greenish-black feathers which, spreading out over the back, reach nearly to the end of the tail.

We have quite a flock of young Hey's Partridges (*Ammoperdix heyi*) about twenty at present, and other eggs due to hatch soon; some eight or nine young Australian Rails, some young Cape Sparrows, and in a few days we expect a brood of young Martineta Tinamous.

The young *Cariama* of which I wrote last month is now nearly as large as its parents, which are sitting again on two eggs, the full clutch. It is interesting to note that these birds breed twice in the season.

D. S-S.

CORRESPONDENCE, NOTES, ETC.

NESTING OF BICHENOS.

SIR,—I do not know if it is of any interest to the members if I mention that a pair of Bichenos have nested successfully in a large cage in our dining room and four fine young ones have left the nest and are flying about. This was the second attempt. They hatched out one young one about five weeks ago but would not feed it, and immediately laid another clutch. They brought up the young ones practically on Trower's "Cecto" in addition to seed and lettuce.

L. J. HETLEY.

NESTING OF PRINCESS STEPHANIE'S BIRD OF PARADISE.

Astrapia Stephanieæ.

SIR,—A hen *Astrapia stephanicæ* has built a nest and laid an egg in my aviary.

The egg is long and large, being larger than a Rook's egg I should say, and more oval in shape.

The ground colour is buff and is heavily marked with brown and purple blotches.

The nest is a rough, rather loose structure and is built in the inner part of the aviary and placed on a natural branch where that is fastened to the wall. It is composed of a few birch twigs and a quantity of thin bamboo shoots and leaves.

Very little moss has been used and the nest is practically unlined. Unfortunately this egg will be useless for reproduction as the male was in full moult when the hen came into breeding condition, they had to be separated to save the life of the male bird, the hen was so vicious.

E. J. BROOK.

BREEDING OF QUEEN ALEXANDRA PARRAKEETS.

Spathopterus alexandraæ.

SIR,—I have just had a very *great* disappointment! There was one beautiful young bird in a hollow log, hatched on or about the 25th of July, and on the 9th of August I found it dead, nibbled by some Parrakeet; perhaps one of its own species, jealous at not having succeeded as well as the parents of the young bird. It was just beginning to feather, the bright "sunny" green of the wing-coverts showing quite plainly, and it was a finely-grown bird too.

All through the summer, the females have been desirous to breed, and certainly four out of the five have laid eggs, and the two males have been seen constantly to mate with more than one female; so that I had every reason for hoping. I can only console myself with the fact that I am the

first to breed these beautiful Parrakeets in Europe, in spite of the young not being raised to maturity.

As I have tried now to attain this result for the past eight years, I think that other aviculturists will sympathize with me in such a loss.

Except for the birds of its own species, there was only a pair of Stanley Parrakeets (they *may* be the culprits!) in a large aviary, in which any quantity of hollow logs and nesting-boxes have been placed. I believe that none of the other clutches of eggs have come to anything. One hen has laid a great many, but has proved a bad mother, breaking several, and constantly fidgeting in and out of the nest.

HUBERT D. ASTLEY, F.Z.S., M.B.O.U.

Note and description of young by the Editor.

We have received and examined the young bird referred to above, which was apparently in good health and condition and being well tended by its parents for its crop was full. Death was apparently due to bites, bruises and ill treatment from some other inmate of the aviary. We are sure our members will heartily sympathize with Mr. Astley and wish him better luck in the future. We have never before had an opportunity of examining so young a Parrakeet and there are one or two points about the development of this bird, which show differences from other Orders. The down plumage is rather difficult to make out as the bird is in spirit, but there seems to be a scanty covering of short whitish down on most of the feather tracts, though the head itself is almost naked. At the base of the neck on the back the quills can just be made out; this feather tract bifurcates at the shoulders, the quills becoming longer and more developed as we go backwards. This double tract only continues for about half-an-inch behind the shoulders when it comes to a sudden end and there is no further trace of any quills over the whole of the back. The head and front side of the neck are entirely naked. Between the crop and the thighs on the underside are two parallel rows of quills just breaking through the skin and a few isolated quills may also be seen on the upper part of the thighs. On the scapulars the quills are well developed and just beginning to burst. The most forward development however, has taken place on the wings, both the primary and secondary quills and their coverts are well grown and just bursting, while in the secondary coverts the feathers are a quarter-of-an-inch long. This is a point, which if it holds good for all Parrots may have considerable significance when we remember that these coverts are the first to be developed in Game Birds and Guillemots and as far as we know at present (and our knowledge in these matters is very deficient) in no other Orders. Waders and Ducks of course go to the other extreme and grow their flight feathers and coverts last, and in the majority of Passerine birds these feathers are grown *pari passu* with the rest of the plumage.

Except in the Game Birds, however, we know of no young in which the wing-coverts develop so much in advance of the rest of the body

plumage. The tail feathers have like the primaries just burst their sheaths but their coverts both upper and under are only just through the skin. The feet are well developed and very rough to the touch and there is a fair sized callosity on the 'heel' comparable to that found in some species of Owls. The beak which is pale yellow becoming more orange on the culmen, is well developed and the cere is very large and swollen. We are extremely obliged to Mr. Astley for allowing us to examine this very rare and interesting bird and hope that before long the Council may have the pleasure of awarding him a medal, which will in part make up for his years of trials. A coloured plate and short account of this species appeared in our Magazine 1st Ser. Vol. V. p. 168 (1899) and it is fully described by Mr. Seth-Smith in his "Parrakeets" p. 125.

OFFICERS FOR THE YEAR, 1911-12.

The Council recommend in accordance with Rule 9, that Mr. J. L. Bonhote should be re-elected Treasurer, that Mr. E. G. B. Meade Waldo and Mr. H. Wormald should be elected to the Council to replace Mrs. Johnson who has resigned and Mr. W. P. Pycraft who retires by seniority. They also recommend that Mr. Arthur Gill be elected as Auditor and Mr. W. P. Pycraft as Scrutineer.

THE SOCIETY'S MEDAL.

The following gentlemen are apparently entitled to a medal for breeding the following species for the first time. If any member knows of any previous instance of their having been bred will he kindly communicate with the Hon. Secretary.

Mr. T. H. Newman for breeding the SNOW PIGEON (*Columba leuconota*)
p. 173.

Mr. Duncan Parker for breeding the RED-VENTRED BLUE BONNET (*Psephotus hamatorrhous*) p. 269

Mr. W. E. Teschemaker for breeding the SPROSSER (*Daulias philomela*)
p. 317.

Mr. H. D. Astley for breeding the ORANGE-HEADED GROUND THRUSH (*Geocichla citrina*).

Mr. H. D. Astley for breeding the CUBAN BOBWHITE (*Ovtyx cubanensis*).

The articles dealing with the breeding of the two last species have been received and will appear in the October number.

PRACTICAL BIRD-KEEPING.

VII. TANAGERS.

By S. M. TOWNSEND.

To write an article on Tanagers! What a tremendous task! A bird lover with a ready pen could fill volumes, it is such a vast subject, but mine is an unready pen and now when I wish to start, I cannot think what to write about. Besides now that I have kept Tanagers some years I am beginning to know how much I still have to learn about them. It is strange that the beginner, or the person who has never kept a Tanager, always has more confidence; I, for instance, started with a Superb and Violet, and if I had parted with them at the end of a few months, and never kept another Tanager, I should have been ready to agree that they were quite hardy.

Tanagers are most interesting birds to keep as pets, as they are beautiful to look at and, in the majority of cases, very intelligent and full of character. In all the years I have kept them, I think I have only had one that never learned to know me or take kindly to cage life, and though I do not look upon them as hardy birds I think with careful treatment they can be kept to a ripe old age.

My experience of keeping them is only in cages, so I suppose I ought not to criticise others, but it will take a great deal to convince me that *Calliste* and some others can be kept out of doors all the year round with impunity. Occasionally one hears of a Superb wintering out of doors, but it is rare to hear of that Superb having successfully moulted the following year, the strain on its constitution having been too great.

Another difficulty I find in writing about Tanagers is the wide difference in individual birds of the same species. Take for instance the Violet. If you buy one one week and write out a bill of fare for it, from what you have observed that it takes to readily, it does not follow that the same bill of fare will do for all Violets, the next one you get may be a bird of entirely different tastes and absolutely decline to touch the provisions enjoyed by the first. I think the best plan with a newly-bought Tanager is

to follow no rule, but to try different things in the way of food and fruit, and you will soon see what it likes and what seems to suit it the best.

While I am on the subject of buying I may say I have found it the best plan not to go for the bird in the best condition, with regard to feather. A bird just come over in a large consignment, that has a bright eye and a fairly plump chest, though he may not have a whole feather on him, is very often worth six birds that are in apparently perfect plumage but have breast bones like a knife edge. Again I would much rather be in time to buy a Tanager in the dirty state it arrives in, it is so much better to get it like that, before anybody has had time to try and clean it up for sale. I do not like my birds to be dry cleaned.

Having bought the bird I get it home as quickly as possible, put it in a cage by itself, give it some slightly tepid water, sometimes with a little port in it, if the bird seems run down and a choice of fruit and some insectivorous food, and keep it as quiet as possible, only watching to see that it finds its way to the water, etc. I keep it like this, away from all other birds, for a fortnight or more, according to its condition; when it has a clean bill of health, I take it up in the birdroom and look round for a suitable companion for it, this is a difficult task, as there is always a great uncertainty as to what birds will agree together, but I think it is better to have two birds together, if you have a large enough cage, it promotes exercise and stops over-feeding. With two Tanagers in one cage, if one of them is over fond, say of ants' cocoons, the other will probably prevent him from picking them all out of the food at once, and he in his turn will perhaps prevent the other from eating half an orange, or banana, at a sitting, as some Tanagers seem to want to do. One of the greatest things to guard against with Tanagers is their getting too fat and it is sometimes very difficult to see this in time, because sometimes a fat bird will hold himself so sleek and trim, that he looks slimmer than a thin bird, who does the reverse; so the great secret is to keep a careful eye on them and directly you see anything wrong with the eye, or breathing, or any signs of diarrhœa, or constipation, you must take steps at once and make a radical change in the food, and perhaps give a dose of Epsom

salts, or any other simple remedy to meet the case. I have been laughed at very much, by some medical men, for my attempts at doctoring, but I have certainly had some remarkable cures.

Tanagers are such a large family that it is hard to say where they begin or where they end. To the ordinary lay mind it is difficult to trace any sign of Tanager in the Magpie Tanager, whose beak is decidedly Shrike-like, but in captivity at any rate, it does not live up to its appearance, either in habits or feeding, though I have seen mine hold a grape skin with its feet and tear it, but I am much more content to call it a Tanager, than I am to accept the decision of many, that the once called Rufous-throated Tanager is a Sugar-bird, I have watched mine very carefully, but I cannot find any likeness to a Sugar-bird in him.

The way Tanagers are imported into this country makes it almost impossible to say which are hardy, and one ought to be very careful in making statements about individual birds, though some people think a bird hardy if they keep it for six months. Take for instance the White-capped Tanager. The Zoo had one for many years and my own is still alive, now these birds are but seldom imported, yet I know some have arrived, but we do not hear of them living, still they may be, as there are many aviaries whose inmates are never heard of. The Magpie Tanager I bought years ago was a single importation and was very healthy and lived very well, but I have since seen others arrive and die off very quickly.

Tanagers sometimes arrive with one, or sometimes both eyes filmed over, very like a cataract, some think this is caused by the birds knocking their heads coming over, but I think it is because the birds are put into dirty cases and when they want to clean their beaks, they rub them along the dirty perch and get some poisonous matter in the eye; but at any rate the novice will be wise to leave such birds severely alone, though some dealers will assure you that the bird will soon lose that; but then according to some of them a bird will recover from anything. I remember once finding a bird in a fresh consignment, that I had been on the look out for for a very long time. I jumped at it and put it in a small cage, but when it turned round, I saw one eye was injured, it had very much the appearance of a film over it, but I

could see that the eye ball had been damaged by another bird, I was assured that it would soon be allright, but I did not buy it. However, it was sold, and about a fortnight after, the dealer told me he had heard from the lady who had bought, it that the bird could see, and the eye had almost recovered. Unfortunately for the truth of his story I came across the buyer of the bird, quite by accident, about eight months afterwards and was told that the eye never changed in appearance and the bird had just died.

I give my birds a simple insectivorous mixture made of Spratt's Puppy Cakes ground to a meal and ants' cocoons scalded with enough water to just damp the meal, and sometimes some ground silkworms' cocoons, mixed with grated carrot and chopped lettuce, when obtainable; this of course is freshly made each morning. I also give them plenty of ripe fruit, such as banana, orange, tangerine, apple, pear, grapes, strawberries, cherries, etc. So many of the smaller Tanagers live almost entirely upon fruit, but I always try to encourage them to eat some of the insectivorous food, and they most of them enjoy a mealworm or so during the day, but I do not give them more than this, as in cage life I think they can be overdone. Occasionally, about a teaspoonful of scalded bluebottles is mixed into the food, and I find these are much appreciated, especially in the winter months.

It is said that some Tanagers can be kept on seed alone, such as the Black, but I do not believe it. I had a Black Tanager for some years, to which I used to give a little Canary seed, but I am sure it would not have survived long on that alone. I once had a Black-necked Tanager that never would touch anything but banana, and even that had to be exactly to its liking. If you gave it a piece either not ripe enough or too ripe, it would go without for hours, until it was changed.

All Tanagers are particularly fond of bathing, but some to a more marked extent than others, some will lie in the bath and literally soak, before splashing in the usual way, and come out so wet, that they are totally unable to get to their top perches, and others go in and make a great splashing and hop straight to the top perch, having hardly wetted themselves at all. It is curious

to notice the effect of the water on the different colours, some birds seem to change colour entirely when they are wet, a Tri-colour is one of the most noticeable in this respect.

PRACTICAL, BIRD-KEEPING.—CORRESPONDENCE.

FEEDING AND HOUSING FOR A YOUNG HERRING GULL.

SIR,—Can you advise me as to the feeding and housing, as to space and water, sun and shade for a young Herring Gull. At present it is in rather a small netted-in space on grass with a zinc tub for water with a few stones and fed on a herring a day, worms and slugs! Is it not very important the fish should be fresh? Should sea shore grit be provided? I shall be most grateful for an answer.

M. DRUMMOND.

The following reply was sent to Miss Drummond.

These birds are extremely hardy and will do anywhere and on almost anything. I presume it has its wing cut and could therefore, either be kept in a netted enclosure or allowed to roam about the garden (if walled in). I always fed mine on fish cuttings but they are not at all particular about it being fresh; they will eat and thrive on scraps from the house and in fact nothing comes amiss. They require a tub of water in which to bathe but it need not be very large. The floor of their enclosure may be grass or rough shingle but not sand as it clogs on the feet; grass alone is too damp in winter. They do not require any overhead shelter but there should be some bushes or large stones or something of the sort so that they may shelter from stormy winds.

J. J. BONHOTE.



W. J. B. News, 1911

HYBRID BRAMBLEFINCH AND CHAFFINCH

Avicultural Magazine,

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OCTOBER, 1911.

HYBRID FRINGILLIDÆ.

By ALLEN SILVER.

The accompanying plate depicts an adult pair of hybrids between (*Fringilla montifringilla*) and (*F. cœlebs*), bred by Miss Janette Reeves of Watlingbury Hall, Kent, and now the property of our esteemed Editor; who requested me to supply notes relative thereto. A description of the birds would, under the circumstances, be supererogant, owing to the excellent handiwork of the artist; it being only necessary for me to point out that this pair is the result of a cross between the male Bramblefinch and hen Chaffinch. In the nest feather, young birds resemble in plumage, nestling Chaffinches, excepting that their breast and cheek feathers are warmer in tone; a few smoky marks are sometimes discernible on the nape and mantle; the wing when spread shows partly the combined characters of the parents, and in addition to that fact that they are more sturdy in build; their movements and general demeanour favour the Bramblefinch parentage. At this age, birds bred by crossing with the sexes reversed (*i.e.* male Chaffinch \times hen Bramblefinch) are practically indistinguishable, as also are adult hens; on the other hand, adult males produced by crossing in this manner are browner in tone and not generally so rich and distinct in colour as when the male parent is a Bramblefinch.

It is common knowledge among those who keep in touch with the work of hybrid breeders, that little certainty attends their experiments; excepting perhaps in those cases when the female parent is a Canary paired to a bird which readily fertilizes her eggs. The rearing of hybrids between two British Finches

has often been successfully accomplished by foster parents, in the shape of Canaries, or in rarer instances by the parents themselves; but in the case of Bramble-Chaffinch hybrids it seems that not only are Canaries (however fed) useless for the purpose, but that when placed under the care of Linnets, Bullfinches, Greenfinches and other birds that feed their young whilst in the nest, largely upon regurgitated seed, the young hybrids always die. Miss Reeves eventually discovered "friends in need" to meet the case in the shape of Robins, Hedge-sparrows and Greater Tits, which readily undertake the duties of hatching the eggs and fostering the young hybrids until they are about eight days old, after which they are hand-reared upon green caterpillars, aphides, etc. This lady, to whom I am much indebted for many interesting details concerning her experiments, informed me that the period of incubation is usually twelve days and that she finds it better to use Bramblefinches as paternal parents, not only because the resulting offspring are more beautiful, but because male Bramblefinches are usually ready to fertilize eggs by the time Chaffinch hens are laying the first or second batches; whereas by the time hen Bramblings are ready to lay, cock Chaffinches have often commenced to moult or at least have lost interest in domestic affairs. The method employed in obtaining this cross, amounts to confining in a large garden aviary, twenty or thirty hen Chaffinches paired accordingly; the eggs being collected and the young reared in the manner described. Needless to say many of these eggs are unfertile, and of those hatched, a large percentage of the young, especially in the earlier experiments, died, owing principally to the difficulty of obtaining foster parents that could supply suitable food. Since 1907, Miss Reeves has to my knowledge reared to maturity at least twenty hybrids of this cross and is, as far as I am aware, the only individual who has been able to accomplish such a feat* and I believe I am correct in stating that the first Canary-Bullfinch hybrid was also bred by this lady.

Among small cage birds, probably no greater profligate exists than hens of the domesticated race of (*Serinus canarius*); although many of the reputed crosses between this bird and

* Mr. John Howe, of Dundee, bred five B-C. hybrids some six years ago.

certain others belonging to the family Fringillidæ have, upon proper investigation, proved fallacious. In taking a retrospective view of the situation and, at the same time, omitting all doubtful instances, *Serinus canarius* (dom. var.) has produced hybrids when paired to males of the following species:— *Serinus hortulanus*; *S. leucopygius*; *S. icterus*; *S. sulphuratus*; *S. flaviventris*; *S. canicollis*; *Alario alario*; *Chrysomitris spinus*; *C. tristis*; *C. icterica*; *C. cucullata*; *Carduelis elegans*; *Cannabina cannabina*; *C. flavirostris*; *C. rufescens*; *Carpodacus purpureus*; *Ligurinus chloris*. Other members of the “Serin” group have been successfully interbred both with close and slightly removed relatives, and hybrids have resulted from crosses which for convenience sake I will class as “Siskin” and “Serin” Hybrids, viz:—

♂ <i>Serinus icterus</i>	×	<i>Serinus leucopygius</i>	?
„ „ <i>hortulanus</i>	×	„ <i>icterus</i>	„
„ „ <i>icterus</i>	×	<i>Carduelis elegans</i>	„
„ „ <i>canicollis</i>	×	<i>Alario alario</i>	„
„ <i>Chrysomitris spinus</i>	×	<i>S. sulphuratus</i> or <i>flaviventris</i>	„
„ „ <i>icterica</i>	×	<i>C. spinus</i>	„
„ <i>Cannabina cannabina</i>	×	<i>S. leucopygius</i>	„
„ <i>Chrysomitris spinus</i>	×	<i>Cannabina flavirostris</i>	„
„ „ „	×	<i>Carduelis elegans</i>	„
„ „ <i>totta</i>	×	<i>S. canicollis</i>	„
„ <i>Cannabina rufescens</i>	×	<i>C. spinus</i>	„
„ <i>C. spinus</i>	×	<i>C. cannabina</i>	„
„ „ „	×	<i>Ligurinus chloris</i>	„

In the foregoing, and in some other cases, hybrids can and have been produced by reversing the position of the sexes; but as far as one can gather, males of *Pyrrhula europæa* have proved useless as fertilizing agents. Whether any experiments have been conducted in the direction of pairing a male of this kind to a hen of *P. griseiventris*, I do not know. Such an attempt might prove an exception to the rule; it is, however, sufficient to remark that all Bullfinch crosses at present bred have been produced by mating a hen of this species to a male of some congener. The only authentic and successful unions that I am able to record are as under:—

♂	<i>Serinus canarius</i>	×	<i>Pyrrhula europæa</i>	♀
„	<i>Carduelis elegans</i>	×	„ „	„
„	<i>Chrysomitris spinus*</i>	×	„ „	„
„	<i>Cannabina cannabina</i>	×	„ „	„
„	„ <i>rufescens</i>	×	„ „	„
„	<i>Ligurinus chloris</i>	×	„ „	„

Ligurinus chloris (in addition to those cases where it elsewhere figures) has been also successfully crossed in the following manner :—

♂	<i>Carduelis elegans</i>	×	<i>Ligurinus chloris</i>	♀
„	<i>Cannabina cannabina</i>	×	„ „	„
„	„ <i>rufescens</i>	×	„ „	„
„	„ <i>flavirostris</i>	×	„ „	„
„	<i>Ligurinus sinica</i>	×	„ „	„

Furthermore, other allied crosses have also occurred that could not conveniently be included with those already mentioned viz :—

<i>Cannabina cannabina</i>	×	<i>Carduelis elegans</i>
„ <i>flaviventris</i>	×	„ „
„ <i>rufescens</i>	×	„ „
„ „	×	<i>Cannabina flavirostris</i> †
„ <i>cannabina</i>	×	„ „

Of Sparrow Hybrids I can gather but three instances, namely :—

<i>Passer arcuatus</i>	×	<i>P. luteus</i>
„ <i>luteus</i>	×	<i>P. montanus</i>
„ <i>domesticus</i>	×	„ „

Lady Pennant bred the Cape Yellow Sparrow Cross in 1910 (see *Bird Notes*, f. 198, Vol. I., N.S.) the Yellow Tree Sparrow cross being bred by another member Mr. Suggitt (f. 95, Vol. V., N.S. *Avic. Mag.*) and the Tree House Sparrow cross was first bred by Mr. Rosslyn Mannering in June, 1907. This gentleman kindly informs me that he has bred about a dozen birds by crossing these closely allied Sparrows, using a male *P. montanus* and a female *P. domesticus*. He also says that in the nestling dress the sexes differ in colour. The cocks resemble young Tree Sparrows and the hens young House Sparrows; the latter thus closely resembling their maternal parents. When moulted, the cocks

* Not reared.

† Fledged but not reared.

become brighter in colouring, showing in addition male House Sparrow characters, and a young hen that lived six months, although resembling a hen House Sparrow, exhibited traces of chocolate colour on each side of its head, together with slight traces of Tree Sparrow cheek marking. A mental comparison of the adult and nestling plumages of both sexes of the pure species alongside these particulars is of considerable interest.

Several "Cardinal" and "Bunting" Hybrids have also been bred, namely, such crosses as :

<i>Paroaria cucullata</i>	×	<i>Paroaria larvata</i>
" "	×	<i>Cardinalis cardinalis</i>
" "	×	<i>Gubernatrix cristata</i>
<i>Cardinalis cardinalis</i>	×	" "
<i>Zonotrichia leucophrys</i>	×	<i>Zonotrichia pileata</i>

The latter by Mr. D. Seth-Smith (*Avic. Mag.*, f. 331, Vol. III., N.S.) An account of what one may be pardoned for calling a Ploceid × Fringillid Hybrid appears in Vol. I., N.S., f. 222, and rementioned by Dr. Butler in his Notes on Hybrid Ploceidæ. Dr. Greene's correspondent "White Doe" may have been unused to young birds and, probably, mistook the thick and clumsy shortened head of a nestling for a sign of "Mammakin" parentage; especially as no information is forthcoming as to the colour of the birds' feathers. Concerning Saffron Finch hybrids, in *Bird Notes*, Vol. 8, f. 195, Mr. Willford, Ryde, I.W., mentions having bred in his aviary birds believed to be the result of a cross between *Sycalis flaveola* and *Serinus flaviventris*. Dr. Butler has crossed *S. flaveola* and *S. pelzelni*, and in "Foreign Birds for Cage and Aviary" remarks upon the hybrid males "being usually indistinguishable from the sire of the Saffron Finch, but the females more nearly approaching their mother." He was also successful in obtaining a hybrid produced from the union of a male Canary and hen Saffron Finch in 1898. Dr. Karl Russ, in the translated version of *Canary Birds*, refers to Nonpareil and Indigo Buntings as "adapted" for hybrid breeding with a Canary.* In this country at any rate I cannot ascertain that such

* I have fully entered into the question of hybridizing the Indigo Finch and Canary in Vol. I. of "Foreign Birds for Cage and Aviary" p. 124, where I record the fact that the late Mr. W. E. D. Scott assured me that he had bred this hybrid; his plan was to turn males of various finches in with females of other species in a birdroom; so that all resulting offspring were necessarily mules.—ED. *pro. tem.*

a cross has been bred. It is obvious that a list of Hybrid Fringillidæ cannot well be termed "complete," and in consequence the writer would esteem any supplementary information regarding "fringillid" hybrids not included here, and which have been bred in cage or aviary. I might add, that although hybrid birds have been bred between the Bearded Seedeater and Canary, I have not included them in the Serin list owing to the fact that that bird seems to be only a phase of *Serinus icterus*.

Although fertility is by no means uncommon among hybrid birds belonging to other groups, it is singularly less frequent in the case of "fringillid" hybrids. We know that *Serinus hortulanus* when paired to *S. canarius* (dom. var.) produces hybrids perfectly fertile; but such crosses hardly can be termed hybrids, *i.e.* if the late Dr. Sharpe and others are correct in regarding the wild Canary as simply a large race of the common Serin. Dr. Russ and others have found these "mongrels" freely fertile with their progenitors and among themselves; moreover, a Spanish aviculturist who similarly experimented records in *Cage Birds*, April 30th, 1910, the successful mating of a female "mongrel" (Serin × Canary) containing $\frac{2}{3}$ ^{ths} Canary blood with a Greenfinch. The bird died upon hatching; but such fertility in so-called hybrids would lead one to agree with the correctness of Dr. Sharpe's diagnosis.

The offspring resulting from crossing *Sycalis flavicola* × *S. pelzelni* are freely fertile (f. 103 Butler's Foreign Birds). It is, however, an unsettled question in my mind whether the two birds are sufficiently far apart for one to rank them as more than distinct sub-species. Hybrids produced by crossing *Chrysomitris cucullata* and a hen Canary (the *Mista canaria*), however, are usually regarded as prone to fertility. Miss Norman, in Vol. II., N.S., f. 282 records an instance, and in *Bird Notes*, Vol. III., Dr. Hopkinson mentions having seen the offspring of a Hooded-Siskin-Canary hybrid in the aviaries of Mrs. Reid, of Funchal, Madeira, bred by crossing such a hybrid and a hen Canary. Reputed instances of fertile Goldfinch-Canary, Linnet-Canary, and Siskin-Canary mules, have from time to time been recorded; but it is quite another matter to authenticate the cases. A correspondent (Mr. J. A. Murray, Sunderland) writing in *Cage Birds*,

1910, notified having bred from a four-year-old Linnet-Canary mule paired to a hen Canary, five young birds. Later, a Mr. Reid of the same district, together with other local fanciers, investigated the matter, and agreed that no mistake had occurred. I think nine young were bred that season, some being "dark," others variegated, and two nearly white. Several of these birds were sent down to London, and Mr. Geo. E. Weston (to whom I am much indebted for particularly bringing the case under my notice) a well-known judge of cage-birds, exhibited them before a body of metropolitan fanciers: various opinions were naturally expressed as to their origin and incredulity ran rife. This gentleman assured me that the paternal parent was unquestionably a Linnet-Canary mule (an opinion shared by an old hybrid expert, Mr. Vale, of Clapham), and although I was, unfortunately, unable to see this bird owing to the fact that it was at the time again paired up with his former mate, Mr. Weston very kindly obtained again from the North three of the reputed $\frac{2}{3}$ Canary $\frac{1}{3}$ Linnet birds for me to examine. One, a white bird, strangely peculiar in shape and appearance, had only a few grizzled feathers on its mantle to relieve the otherwise sickly hue of its plumage. It was evidently a hen; but the other two birds, which were males, upon examination, exhibited distinct, although faint (as one would expect in a bird $\frac{2}{3}$ Canary and $\frac{1}{3}$ Linnet) crescentic bands on their breast feathers; a significant fact, inasmuch as such characters are unknown in the same feather tract of a pure green Canary, but nearly always possessed by male Linnet mules and by all normal male Linnets. This year, in *Cage Birds*, Sept. 2, 1911, Mr. Reid says that "it may interest readers to know that the Mules from Mules bred by Mr. Murray (five birds previously referred to in 1911) this year, are bred from the same cock Linnet Mule and hen Canary that produced the youngsters I have previously written about, this year's birds being bred before I sent the old pair on to a well-known muling expert who now has them in his possession, of which more anon"; therefore showing that the pair are again fertile, which I understand has been effectually confirmed by young having been produced since the pair has been in the hands of another breeder.

Mr. Weston also showed me a bird reputed to be the off-

spring from a cock Goldfinch and a hen Goldfinch-Canary mule. Not being able to ascertain any accurate particulars of the birds breeding, its parentage is open to doubt; nevertheless, although it unquestionably shows *Serin* (Canary) parentage and looks fully $\frac{2}{3}$ Goldfinch it is interesting, and at least favourable, to allude to the fact that it was mistaken in gaslight from a curious Goldfinch.

The hybrid offspring of *Ligurinus sinica* and *L. chloris*, which I understand were bred at the Zoo. some few years ago, were found to be fertile. I am unable, however, just at the present moment to verify the particulars relating to the case.

MORE NOTES FROM NORTH-WEST AFRICA.

By T. H. NEWMAN, F.Z.S., M.B.O.U.

(Concluded from page 294).

The following day, March 22nd, near the river bed which mostly consists of big stones, I saw Sparrows, very many Swallows, which I think were the commonest bird here, at any rate, it was the one most often seen during the whole trip; Serins in numbers, a small flock of little Larks were, as far as I could make out, the Lesser Short-toed Lark (*Calandrella minor*), a small sandy brown species, with the breast spotted and streaked with dark markings. They were feeding by the road side among the weeds growing on the rough ground near the river.

Some small birds kept hovering over some growing crops near, uttering as they did so, a monotonous *zig zig* sort of note; they were shy and dived into cover when closely watched, so that I was unable to see them clearly, but from their habits and notes I have no doubt they were Fantail Warblers (*Cisticola cisticola*). I often heard this bird elsewhere.

Later in the day, I saw a small flock of House Martins, many Serins, and with them, Linnets, these last looked to me smaller than our own birds and I should have been inclined to have thought them Redpolls, but no such bird has, I believe, been recorded from here. I watched a fine hen Pallid Harrier (*Circus mærvurus*) flying over some growing corn, near a Palm Grove, and also saw a couple of Ravens and I think a Wood Wren. Next day at Old Biskra I saw Swallows, House Martins and a Senegal Dove

(*Turtur senegalensis*). In the afternoon on the way to Sidi Okba, I passed a good many Larks, among them I think the Rufous-headed Short-toed Lark (*Calandrella brachydactyla itala*) and the Pale Long-billed Crested Lark (*Galerita cristata arenicola*). The birds seemed to resemble closely the plate of this form in Mr. Whitaker's "Birds of Tunisia;" some of his finest specimens were procured from this neighbourhood. About a dozen Senegal Doves were feeding in the road, just outside the village, and a couple of Scarabæus Beetles were trying to roll their ball up a little incline.

Next morning I walked to some Palm Gardens near the town where I saw a fine cock Redstart (*Ruticilla phœnicurus*), a party of four or five Hoopoes (*Upupa epops*) were feeding on the ground, these birds were always fascinating to watch, they look pretty as they flit on banded wings among the trees, the crest is generally raised, when they alight otherwise it is usually depressed. There were, of course, other birds which I have already mentioned. I noticed a couple of cock Wheatears (*Saxicola œnanthe*) on the open plain, where there were many Desert Larks.

On some rocks I was very pleased to see a beautiful cock Cream and Black Chat: in his book, Mr. Whitaker describes four forms of these Cream and Black Chats, two Black-eared and two Black-throated, an Eastern and Western form of each, but Dr. Hartert has recently pointed out in Nov. Zool. XVII. p. 479 (1910) that there are really only two forms, an Eastern and Western, each of which may, or may not, have the black throat. The Western form is the most abundant in North-West Africa; according to Dr. Hartert, the proper name for this bird is *Saxicola hispanica hispanica*. I believe the bird I saw belonged to this race, general colour a beautiful creamy buff, darker on the back than below, wings black, tail white with central feathers and a terminal band on the rest black, lores and ear-coverts black; this particular bird seemed to have the chin black but this did not extend very far down the throat, I watched him for some time as he flew from stone to stone, every now and then uttering a pleasing little song. On my way back I got a good view of a Black Kite (*Milvus migrans*).

On the day after I drove to the Col de Sfa, a low rocky hill a few miles from Biskra, a lovely view for many miles round can be

had from the top. A pair of birds flying a good way off looked like Egyptian Vultures, I think I saw a Black Kite and a pair of dark looking Birds of Prey were perched on the very top of a rock, but too far off to be sure what they were. A Black looking Chat darted across below, I fancy it had a white crown and nape, so most probably was a White-rumped Chat (*Saxicola leucopyga*), which when adult, is a black bird with white crown, nape, rump and tail-coverts, also the usual white Chat-markings on the tail.

Later in the day I saw a beautiful pale grey cock Pallid Harrier in almost the same spot where I saw the hen bird three days before. I came across what appeared to be a colony of quite typically coloured Spanish Sparrows a little way outside the town, the cocks had chestnut crowns, black stripes on the sides of the breast and black and white markings on the wings; Corn Buntings were numerous, some little greenish Warblers which from the amount of yellow, I think were Wood Wrens were busy hunting for insects among the bushes. The Wryneck is a very common bird here, the resident North-African bird has been considered distinct from ours and has been named *Lynx mauret-anica* and Mr. Meade-Waldo has just called attention to the difference in the notes of the two races. I caught sight of one sitting on a Palm frond close to the trunk. Serins were in numbers; a pair of Algerian Greenfinches in a small Olive tree, then I saw a fine Woodchat Shrike (*Lanius pomeranus*) sitting motionless on the branch of a Mimosa tree. Woodchats are very plentifully distributed throughout the country. I noticed a couple of dull coloured Wagtails, greenish-grey above, eye-stripe and entire under-surface including chin dull yellowish. I should think they were immature birds, so cannot be sure of the species. Common Redstarts were not uncommon, I saw one cock bird and heard another. Last time I was here it was Moussier's Redstart which was inhabiting the same spots, now this species appeared absent. On the afternoon of the next day I visited the Dunes de Sable, a district covered with curious low heaps of soft sand, but saw nothing of much account as regards birds, only the usual Swallows, a white Wagtail, a female Harrier was flying over the Palm trees, I think it was a Pallid Harrier, it showed very little white on the upper tail-coverts, a Hoopoe; I was just too early for the Bee-eaters, a few days later and plenty

of the beautiful little Blue-cheeked species might have been seen. Several pairs of common Wheatears were by a small stream, the cocks frequently flying a short distance up in the air and down again. A sandy-coloured bird on a sand heap may have been a Desert Chat. The soft sand was everywhere marked by the curious herring-bone pattern of the tracts of Scorpions; an Arab youth dug one out of a hole about two feet long with a stick. The Scorpion was only a little over two inches long, it was of a greenish-yellow colour.

March 27th was spent in the train. Storks were seen near Batna; at Kroubs there were numbers of Martins and Swallows, the latter nesting in the waiting-room at the station. The Sparrows seemed to be *domesticus*, with a dash of Spanish blood as they had a good deal of black on the breast, but had not got chestnut crowns. Hammam Meskontine was reached late in the evening. At this charming place it was a great pleasure to meet Mr. Meade-Waldo; he told me about the birds he had seen in the neighbourhood and, as he made a lengthy stay, he could tell us far more about them than I am able to do from my flying visits. The day after my arrival was most glorious, being extremely bright and hot. I spent the morning by the hot spring which runs through a charming luxuriant valley; here I saw a number of very brightly-coloured Algerian Greenfinches, they seem much brighter than those I saw at Biskra. Swallows were numerous, and I saw my first Alpine Swift (*Cypselus melba*), a fine mouse-grey coloured bird with a white undersurface crossed by a mouse-grey pectoral band. Birds were very numerous, I saw Hawfinches (*Coccothraustes buvryi*), the Algerian bird differs slightly in colour from ours, and has a rather smaller bill; just before, this had been the commonest bird here, swarming everywhere in thousands. Goldfinches and Greenfinches were in flocks in the Olive trees which grow abundantly in the vicinity; Blackbirds and Thrushes, a Blackcap, a Hoopoe on the grass near the stream, Corn Buntings on the ground, Ultramarine Tits in the Palms, from which came the unmistakable note of the Senegal Dove; I was interested to find this bird so far North, as it is much more common in the extensive Palm groves of the South, but there were plenty of luxuriant Palms in this warm valley to attract the Palm Doves. A pair of Tortoises were

enjoying the hot sunshine and, later in the day, I saw three others. In the afternoon I saw Algerian Chaffinches, some dark-coloured Crested Larks, which I think were the Greater Small-billed Crested Lark. In some bushes I came across a party of three Dusky Bulbuls (*Pycnonotus barbatus*): I was very pleased to meet with this bird again, this was the only place where I had seen it before, at a spot about a mile away from these present birds. While I was watching them one flew on to the tall flower spike of a large Asphodel—which is such a conspicuous plant all over the country—and began to pluck and swallow one after another about a dozen of the pinkish-white blossoms; this was very likely for the honey they contained, as I found them very sweet to the last. On my return I saw five or six of these birds about the same place, I also saw a flock of Linnets on the ground. Two Hoopoes were flying over the Olive trees; a pair of Barbary Partridges, which are very common here, flew whirring away. Small birds were most numerous, every tree seemed to have a flock, but they were all of the species I have already mentioned as far as I could see.

I must not forget to mention, that I think I again saw the Algerian Coal Titmouse at Hammam Meskontine; this bird is of especial interest just at present as it is the form which seems to some nearest to the recently described Irish Coal Titmouse (*Parus hibernicus*), both birds having the cheeks, nuchal spot, breast and belly strongly washed with mustard yellow, but the Algerian bird has the sides of the body and flanks greyish, these parts being cinnamon in the Irish form.

During a short walk next morning I again saw plenty of birds, including several species of Warblers and some Sparrows, a couple of Starlings, which I think belonged to the common species, but as they were flying between me and the sun, I could not make out their markings; but the finest sight was a magnificent Serpent Eagle (*Circaetus gallicus*) which rose above the Olive trees close to me with about a foot of Snake hanging from its bill; as it soared rapidly upwards the Snake gradually disappeared down the Eagle's throat. Birds of Prey are numerous in this neighbourhood; Mr. Meade-Waldo told me he had seen ten different species in one Gorge when riding through. With much regret I left Hammam Meskontine a little before midday, arriving

at Bone about three in the afternoon. This is a prettily-situated place with a fine bay, but the town itself is modern, mostly European, and not of much interest. Hippo, with its memories of St. Augustine, was visited the same afternoon. Storks were common; I heard Corn Buntings and, at dusk, a flock of Swifts were flying high over the town, but the light was not good enough to make them out clearly.

March 30th, took a short walk early by the harbour. A few Black-headed Gulls, mostly immature, were flying about, but some had the dark hoods of maturity; a flock of Martins were collecting mud at a puddle in the road, a few Swallows, Greenfinches and Warblers; the cock Sparrows had black stripes on the breast with greenish-grey crowns. Some Storks were heard early, and one seen to alight by its mate on its nest near the station, over which several Alpine Swifts were wheeling.

Bone was left at 11 a.m. and Tebessa reached late in the evening. The first part of the journey is interesting, as the little line passes through fine gorges and rocky country; for some distance the course of a stream is followed, then the high plateau country is traversed, covered with a low Juniper forest: views of rugged hills are obtained, and finally the level plain near Tebessa is reached. Tebessa was a most important Roman town; there are many ruins, including a perfect little Temple of Minerva, an interesting four-sided Gateway and, just outside, the magnificent ruins of the largest Christian Basilica in Africa; the town is still surrounded by a high wall built of large stones. All this part of the country was new to me. The morning after my arrival was spent seeing the ruins. I noticed a Black Kite; at the Basilica were several Moussier's Redstarts and Sparrows, Swallows were very numerous, they were nesting under the roof of the courtyard of the little Hotel; some lamps projected from the wall about six feet up, each lamp had nearly always a Swallow sitting on the top, they took not the slightest notice of passers-by, although they were not above a couple of feet away. A few Irby's Ravens were outside the town, also a number of Goldfinches in the trees, I also saw Greenfinches; Serins and Goldfinches were in cages. In the afternoon I walked to the ruins of what is called Old Tebessa, about a couple of miles from the present town; they are not very extensive. By a curious round structure, thought to have been a

Roman bath, a pair of Moussier's Redstarts had their home, I watched them for some time as they flew and hopped about the loose stones lying about. A magnificent Arab gentleman, with his three wives and families were also taking an afternoon stroll round the ruins. A large dark Crested Lark was common in pairs, a few Hoopoes were about, also some Wheatears and a cock Algerian Chaffinch. On the way back, I saw two more pairs of Moussier's Redstart flying about among the low bushes which are scattered over the stony plain. All the Sparrows, even at this out of the way place, seemed to be *domesticus*.

I left early next morning, April 1st, at a place called Clairfontaine, where rather a long stop was made. I noticed Sparrows by the station, Serins in the Eucalyptus trees and a few Swallows flying round; a fine pair of Egyptian Vultures were soaring over the station, when first seen they were quite close so that an excellent view could be had of them; they gradually went up almost out of sight, but afterwards again returned. Later in the day, just as it was getting dark, I noticed a pair of white Storks sitting on a low building and another pair on a haystack—these were the last Storks seen.

I reached Tunis about 9.30 p.m. In the morning, on some waste land near the harbour, I came across a flock of brightly-coloured Wagtails, with bright yellow underparts; as most of them had distinct white superciliary stripes and scarcely any white on the chin, I think they were Blue-headed Wagtails (*Motacilla flava*), but at least one bird among them had no white eye stripe but a distinct white chin, which would seem to be the Grey-headed Wagtail (*M. cinereocapilla*). As several forms of these Yellow-breasted Wagtails occur in Tunisia, there is no reason why they should not mix during migration. There were also a number of small light-brown Larks, but they were very wild; I should think they were some sort of Short-toed Lark. A very typical Spanish Sparrow was showing off just outside the town. In the afternoon I walked to the borders of the inner Lake of Sebka, es-Sedjoemi, above the grassy slopes near the water, what were probably Tunisian Sky-Larks (*Alauda arvensis harterti*) were soaring aloft singing; this is a paler and more rufescent bird than ours and is the resident form in Northern Tunisia. A small dark Crested Lark was plentiful, but wild, but

Corn Buntings were extraordinarily tame, sitting on the tops of the low bushes within a few feet. An elegant Warbler, brownish above, with conspicuous eye stripe and light underparts, was possibly a Bonelli's Warbler. Flocks of Cormorants could be seen from time to time flying over the water, and right in the middle of the Lake, marching in single file, were a flock of twenty-seven Flamingoes; I had them under observation for quite half-an-hour, and could make out that they kept putting their heads under water, every now and then one would flap its wings, but I did not see any fly, they seemed to vary in size, but they were a good way off. A pair of little Waders were running actively about over the soft mud close to the water; from their dark legs and absence of a distinct band on the breast I took them for Kentish Plovers (*Ægialitis alexandrina*), a common resident species. I also picked up several Duck feathers, but did not see the birds themselves.

April the 4th and 5th were taken up by a visit to the most interesting town of Kairouan. It is a sort of Arab Oxford or Cambridge, as there are many Dervish Colleges or Zaouias, which are very like ordinary Mosques: they contain many lovely examples of exquisite tile and plaster Arabesque work. It is considered a very sacred spot, the whole place is very Eastern-looking and quaint. On the way there, from the train I got a good look at a Southern Little Owl, which was sunning itself by the side of the line—after glaring at the train it hardly condescended to fly a few yards away. I also saw a Hoopoe. From the top of the big Minaret of the Great Mosque of Sidi Okba at Kairouan, which is one of the finest Moorish buildings in existence, I watched a number of Swifts dashing about below and up under the roof of the cloisters which surround the great court-yard of the Mosque; I have a note that some seemed a rather pale mouse-colour, and I find that Mr. Whitaker says he saw both Common (*Cypselus apus*) and Pallid Swifts (*C. murinus*) at this spot in the beginning of April, so I have no doubt I also saw both species here. The Sparrows seemed to be Spanish. I had hoped to find the Rufous Warbler here, as I had heard that it had been seen a few weeks earlier. Some low mounds, covered with a luxuriant growth of an ice plant, just outside the walls,

were the favourite resort of Scorpions. Swallows, Corn Buntings and a Hoopoe were also seen.

Returned to Tunis on the evening of the 5th. The next day being my last in Africa I thought I would spend it in a visit to the Djevel Ressas or Lead Mountain, a somewhat isolated peak a few miles to the S.E. of Tunis, as I knew it to be the haunt of Vultures and other birds. A light railway runs to Lavarie at the foot of the mountain, the lower slopes are covered with Juniper Scrub, among which small birds such as Goldfinches, Algerian Chaffinches, Serins, Ultramarine Tits and Warblers were common. After a somewhat stiff climb I reached the top, which somewhat resembled a gigantic rock garden, as the spaces between the rocks were bright with the varied hues of a multitude of beautiful flowers, also a most wonderful view was obtained on all sides. On one side, in the distance, Tunis could be seen with the sea beyond, while on others, miles of open country or rocky heights lay spread before one; there was no lack of birds, though not so many as I had hoped to see. Ravens flew round the higher points, several Barbary Partridges were on the very top, as well as a flock of Linnets, Ultramarine Tits, a fine cock Moussier's Redstart; a Rock-dove dashed round at a tremendous pace, a female Kestrel flew backwards and forwards below, a beautiful Serpent Eagle, recognisable by its boldly banded undersurface, flew over my head, while round a distant corner two large birds disappeared, which I think were Griffon Vultures (*Gyps fulvus*); a colony of these birds nested here for many years and may still do so. Not a long list, but, nevertheless, I much enjoyed this excursion into the country. I got back to Tunis about six in the evening. At Tunis most of the Sparrows seemed to be Spanish. One morning I think I saw some Sand Martins among a number of Swallows and House Martins.

April 7th, at mid-day, Tunis was left behind. Several Yellow-legged Herring Gulls and Black-headed, both adult and young, but none with dark hoods, were flying about the harbour. Just outside the Tunis canal I saw several Mediterranean Shearwaters (*Puffinus kuhli*) flying singly, low over the water. Thus ended another five weeks visit to this interesting land, where plenty of bright, hot sunshine was found, while frost and snow were raging at home.

FURTHER NOTES ON THE REGENT BIRD.

Sericulus melinnus.

By REGINALD PHILLIPPS.

At pages 51, 88, and 123 of Vol. IV. N.S., of our Magazine may be found various notes on the Regent Bird, an exceptionally handsome and interesting species, now probably extinct out of Australia excepting only one pair, concerning which I propose saying a few words.

In 1905, a young male was bred in my aviary; and in July, 1910, I succeeded in obtaining a mate for him, one of the lot that was brought to this country by Mr. Carrick in January, 1903.

This species, like other Bower Birds, constructs a regular bower, a small affair by comparison with some others but very interesting, and permanent if in a sheltered place. These bowers are much more than mere 'play-grounds,' as it seems to be the custom to call them now-a-days. It is the spot where all the Regent Birds of a district, of both sexes and all ages, congregate together and where they become acquainted; but at these General or Courting Bowers the birds do not go beyond dancing, romping, and flirting.

As the nesting season draws near, the adult females withdraw from the General Bower, scatter, and each makes a private bower for herself, somewhat of the shape of a horse-shoe magnet (*ibid.* pp. 61 and 62). I see that I called these 'love-parlours' before, but probably the name 'Nuptial Bower' would be better. In these Nuptial Bowers, each by herself, the females, who are understood to out-number the males, use all their arts to attract a male. For a while, the two birds are all in all to one another in and around the Nuptial Bower, the female commences to build, the Nuptial Bower—or what remains of it—is scattered to the winds, the spot is deserted, and the male goes off after female No. 2 in another Nuptial Bower elsewhere, leaving the first to finish her nest by herself, lay two beautiful eggs, sit upon them for 18-19 days, hatch out two chicks with bills and legs of a leaden-black colour, and whitish down with a leaden tinge, rather irregularly distributed, and so developed on the top of the head as almost to form a mop. When, as branchers, they have cast the down from the head, they adopt on the crown a brown-

black bar running across from behind each eye, with two horns projecting forward—in the fledgeling male in the form of a Turkish crescent, in the female pointing nearly straight forwards towards the nostrils (*ibid.* pp. 126-7).

This year, my female built her first nest in the top of a poplar, about 8ft. from the ground, and laid the usual two eggs. The male, not having a second female to follow on with, and having a little weakness for raiding other birds' nests, improved the occasion by raiding his mate's—and stole the eggs. The female touched up the nest, and was in course of laying a second clutch when she was laid low by the unusually severe thunder-storm, or series of storms, with fusillades of hail of remarkable violence, which occurred on May 31. She was so seriously affected that for a while her life was despaired of; of course the eggs did not come to anything. On being discharged from the hospital, she ruefully inspected the nest. Owing to the dry weather, the foliage of the tree had not developed sufficiently to form a shelter, and the storm had not spared it. Without wasting time she set to work and builded another nest, about 9ft. from the ground, on the top of some birch brooms which are fastened against the house and protected from rain by a board. I carefully watched the Nuptial Bower, or rather the site—for on each of the three occasions they returned to the same spot—and immediately it was deserted, on the evening of June 29, caught and shut up the male. I cannot be sure whether the first egg was laid on July 1 or July 2. Incubation commenced on the morning of July 2, the first nestling was hatched by the morning of the 20th, and, by the 22nd (I was unable to watch on the 21st), both were out of the shell. One died on the 26th, the other on the 28th—it is suggestive that each seems to have died during a thunder-storm.

In 1905, the breeding Regent Bird laid her eggs in a basket which I had filled with hay; she did not build a nest (*ibid.* p. 65),

This year the mother Regent, who could not have seen a Regent Bird's nest since she left Australia 8-9 years ago, insisted upon building a perfectly orthodox nest of the species. Ignoring all my elaborate preparations, with no little labour she constructed two entirely original nests and a 'repair,' and all after a pattern

not to be found materially nearer than Australia, but very present in her own inner self at the proper season—such are the wonders of Nature!

The nests were a kind of hybrid between a Wood-Pigeon's and that of an English Jay, adapted to the surroundings—a stout structure of fairly thick sticks, lined with finer twigs and hay. They had a definite cup, some five inches across by two and a half deep. As regards the last, from my 'watch-tower' a few feet away, which brought my eyes slightly above the level of the nest, I could not see the eggs, nor the young when in repose. At first the female sat like a wild bird, and all that could be seen of her was just the line of the crown and bill. Soon she relaxed, and a little of the body might be seen; and sometimes, when very warm, she would half stand: two slight depressions in the nest indicated where the feet were wont to rest. She was very inconspicuous and absolutely mute. When feeding the nestlings at first, she could not be seen to carry food nor were there signs of regurgitation; she held her head down and seemed to allow a semi-fluid to flow from her mouth into theirs, doubtless the product of severe mastication. She swallowed the *excreta*. Like the female in 1905, she was a most devoted mother.

I obtained my first Regent Bird twenty years ago this August; and since August, 1899, the species has been represented here without a break; but I have now parted with my old friends—for the male was a sore robber. The two birds I have now been writing about have gone to the Zoo., and their nest has gone to the Natural History Museum.

THE SOCIETY'S MEDAL.

Medals have been awarded to the following gentlemen for breeding species for the first time in this country.

Mr. T. H. Newman for breeding the SNOW PIGEON (*Columba leuconota*) p. 173.

Mr. Duncan Parker for breeding the RED-VENTED BLUE BONNET (*Psephotus hæmatorrhous*) p. 259

Mr. W. E. Teschemaker for breeding the SPROSSER (*Daulias philomela*) p. 317.

Mr. H. D. Astley for breeding the ORANGE-HEADED GROUND THRUSH (*Geocichla citrina*) p. 368.

Mr. H. D. Astley for breeding the CUBAN BOBWHITE *Orlyx cubanensis*) p. 369.

BREEDING OF THE
ORANGE-HEADED GROUND THRUSH.*Geocichla citrina.*

By HUBERT D. ASTLEY, M.A., F.Z.S., M.B.O.U.

Although, as I reported in a previous number of the Magazine, my Orange-headed Ground Thrushes were unsuccessful in rearing to maturity the three youngsters that they hatched in June, I am able now to give a more favourable account, for one young bird of the second brood has been successfully brought up. The parent birds set to work immediately after the loss of their first family to repair the old nest, which I find was firmly plastered on to the shelf of a nesting box, and made after the foundation of wet earth had been placed, of moss and fine bents, forming inside a neat cup.

A good supply of ants' eggs, wasps' grubs and cockroaches enabled the Thrushes to rear their young.

Whether the bird is a male or female I cannot yet tell. In colour, the upper part of the head and shoulders is a dark cinnamon brown, the wings, etc., a much deeper brown, the wing-coverts having straw-coloured spots at the end of each feather, forming two bars of that colour across each wing. The cheeks are fawn-coloured with some darker colour intermixed, and the throat and whole under surface is also fawn, with an indistinct band of dusky brown across the breast.

It is quite easy to tell the adult male from the female; for in the former, when in proper colour and condition, the cinnamon-orange of the head and underparts is decidedly richer and the grey of the back is much purer, for in the female the back is greenish-grey, and the colour of the head certainly paler.

In my former notes, I described the eggs which I saw in the nest before the first brood was hatched.

These Thrushes are fine songsters, but like other birds, seem to vary in vocal powers amongst individuals.

I fancy that this is the first time that they have been bred in England.

BREEDING OF THE CUBAN COLIN (OR BOBWHITE).

Ortyz cubanensis. (GOULD).

I have also bred this beautiful Quail, or Colin, which is, I believe, distinct from the "Bobwhite" of North America.

In June the female constructed a nest in some long grass, hollowing out a receptacle for her four creamy-white eggs, rather smaller and rounder than those of the Californian Quail's, and pulling a roof of grass over to conceal it.

I believe the hen bird would have laid more eggs, but during the spell of chilly weather that we had at the time of the Coronation, she died, and I had to put the eggs under a Bantam; the result of which is that I have two young ones now half grown (14th of August).

When first hatched they were tiny balls of very dark-brown fluff, but now the crown of their heads is cinnamon brown, the underparts pale fawn, and the upper parts dull brown, each feather on the back and wing-coverts having a straw-coloured quill with the same tint former a small spot at the extremities.

Since they have been hatched some half-grown rats managed to squeeze through the wire-meshing, out of which some Parrot-finches had never escaped! and killed not only the male Cuban Colin, but also three Parrot Finches.

Can I, in the case of the young Cubans, again claim to be the first in the British Isles in rearing them?

* * * *

I might add that this summer the following have nested :
RUDDY-HEADED BERNICLE GOOSE (Fulkaud Islands). Young reared annually.

GREAT BUSTARD. Eggs; unfertile.

SHAMAH. Eggs; destroyed before hatching.

STRAW-NECKED IBIS. Eggs; thrown out by other Ibises, with young ready to hatch.

AMERICAN ROBINS (*Turdus migratorius*). Three young ones, killed (probably by Orange-headed Ground Thrushes) when a week old.

GREY-WINGED OUZELS. One young male reared to maturity.

Nested twice; second brood destroyed.

ROSE-BREASTED GROSBKAK. One young one reared to maturity.

STANLEY PARRAKEET. Four young ones.

QUEEN ALEXANDRA PARRAKEET. One young one, killed by some other Parrakeet when a fortnight old.

Not a very encouraging report!

THE NESTING OF THE SPROSSER.

Daulias philomela.

By W. E. TESCHEMAKER, B.A.

(Concluded from page 324).

The courtship of the male was a delightful thing to watch. With drooping wings and tail spread fan-wise and carried erect in Peacock fashion he would run up and down a ledge a few feet from the ground, gazing solicitously downwards at the female on the ground below and singing incessantly. Another distinctive feature of the courtship of the male was quite new to me, and may perhaps be peculiar to the Sprosser. He would make a kind of dash at the female from a distance of a couple of feet and, just before reaching her, would spring in the air, apparently turning a complete somersault, and drop to the ground again on the spot from which he started, repeating the performance several times.

The female, however, did not require much courting. Unlikely as it may appear, this insectivorous bird, reputedly delicate, caught in Central Europe in early May and sent by rail and steamer a distance of more than a thousand miles, commenced a nest in Devonshire on the 25th, completed it on the following day, and by the last day of the same month in which it was trapped, had laid its full clutch of four eggs. Of course this is a very unusual experience, but, whatever view we may take of it, it tends to prove that a Nightingale may be trapped even in the breeding season and despatched on a long and trying journey with so little shock to its mental or bodily health that it is willing and able to breed in captivity within a month of the date of its loss of liberty, and furnishes a convincing answer, I think, to

those who claim that there must be cruelty in caging wild birds. I do not, however, wish to sail under a false flag so I take this opportunity of also saying that I do not think that anything will quite compensate a bird for the loss of its liberty—not the most skilful treatment, the most generous diet or the most spacious aviary in the land: we can, however, at least claim to make them fairly comfortable.

To return to our Sprossers. The nest was constructed in a little hollow in the side of the mound mentioned above, under a projecting tuft of grass. The foundation was entirely composed of the dead spathes which had fallen from the bamboos, lined with fine grass, and was so deep that its contents could only be seen from a point directly above it. It was entirely constructed by the female. On the 27th, the little architect took a day's rest. On the 28th, and following days, the four eggs were laid: incubation commenced on the 29th and was completed in thirteen days.

EGGS.

I quite expected that the eggs would be of the same distinctive shade as those laid by *D. luscinia*, but I was wrong. Bree says: "It lays five or six eggs . . . very similar to those of our well-known species. Count Muhle says the egg is generally darkly spotted, which is not however mentioned by Temminck and denied by Degland. All the specimens sent to me are deep olive; one lighter in colour." I can only say that this particular clutch was very much lighter than any clutch that I have seen of *D. luscinia*, and unspotted; our Editor, however, to whom I sent a portion of the shell of a hatched egg tells me that it is not lighter than some eggs of *D. luscinia* in his collection.

IMMATURE PLUMAGE.

On the 11th June two young birds hatched and were most carefully brooded by the female and fed by both parents up to as late as 8.15 p.m. They were covered with very dark down. The male, who had taken no part in incubating the eggs, now showed himself quite as attentive in the matter of feeding as the female. The latter was an exceptional mother; she refused to leave her nest when I cut off a bough which overhung the latter and, when on the 13th I was watering the shrubs with a hose, she evidently

observed that some of the fine spray was falling on the nest, and at once returned to the latter though I was only a few yards away. On the 14th, we had a night frost of sufficient severity to blacken the potatoes.

By the 16th, the young seemed to have cast a good deal of down and on the following day some small feathers were showing on the wings which, as in the case of *D. luscinia*, were greyish; on other parts of the body they were bare. On the 18th, they were showing some feathers on the dorsal tract, and on Coronation Day the first young Sprosser left the nest.

The old birds showed great anxiety for its safety and upon the smallest indication of danger continuously uttered a very shrill, high-pitched whistle which might be rendered "tseet-tseet." Their anxiety, however, seemed to me singularly unnecessary, for the young Sprossers were adepts in the art of taking cover. Their dark brown plumage, mottled with yellowish spots, harmonised remarkably well with some bay shrubs in which they generally perched and, if dislodged from this stronghold, one would hear a scuttling among the dead leaves and would perhaps catch a fleeting glimpse of some brown shadows streaking away in the direction of the bamboo jungle. When asking for food they would utter a subdued "chik-chik," and their parents would respond with a resonant "cur-r-r."

On the 26th, I succeeded in cornering one and examined it. The wings and tail were a very dark brown, darker than the immature plumage of *D. luscinia* and without any trace of red; the yellowish spots were also more symmetrically arranged—the lower back and flanks having almost the appearance of barring—and the upper breast showing distinct striations.

On the 27th the adult male, who had ceased singing after the young left the nest, piped up again and both parents sunned themselves lazily, evidently feeling that their anxieties were over and success in sight. It is remarkable what heat the Sprosser can stand; the old birds could be seen sunning and apparently enjoying themselves when the thermometer registered 120° Fahr. (in the sun) and other birds were gasping in the shade. Still, as we have seen, many of them winter under or near the Equator.

In the early days of July—the week of the great heat wave

—the young Sprossers came along very fast; their tails grew to almost full length, and they began to wave them up and down in the dignified manner of their parents. The curious undulatory action of the tail is very characteristic of this species, but is rather hard to describe. Some idea of it may be conveyed by comparing the tail to a fan spread out and held horizontally, one corner being then slowly depressed and the rest following with a wave-like motion.

THE MOULT.

By the 10th July they were moulting fast and losing the buff spots. What a strange thing is this moult of young birds which have only recently left the nest and whose constitutions cannot have hardened sufficiently, one would think, to withstand this heavy tax on their vitality! Can the protection (if any) afforded by the nestling plumage be a sufficient compensation for the strain on the system, or is Nature so devoted to her traditional procedure, so tied down by "red-tape," that she cannot permit an embryo to quit an egg-shell and develop into a young Sprosser without passing it through certain stages of development reminiscent of its ancestry? I vote for the latter explanation, because I cannot bring myself to believe that a young Sprosser is appreciably less conspicuous when ticked with buff spots than in its autumn plumage.

By the 14th the young birds had shed a large area of the immature plumage, and the adults had lost their tails and looked very ragged.

On the 20th, I was shown a young Nightingale, which had been trapped, and noticed that it was not nearly so forward as the young Sprossers.

I caught the Sprossers in the first week of August and brought them into the house. The adults could be distinguished by their longer beaks and by the warmer colour of the tail and rump; in other respects it was very hard to distinguish them.

GENERAL REMARKS.

The Sprosser is certainly a very easy species to breed, which fact has been especially brought home to me by some humiliating failures this season with fine broods of species, such as Garden Warblers and Whitethroats, which one would have

thought would be quite as easy to rear. Further, there was no sacrifice of bird-life in obtaining a breeding pair; all the eggs hatched; all the young were reared and finer young birds it would be hard to find.

I make it a rule to part with all species after breeding them, so I hardened my heart and advertised the Sprossers with other surplus birds at a very moderate price. The result amused me. Some of the birds (which I should describe as most uninteresting) were sold by wire and could have been sold several times over, but for the glorious song of the Sprosser—surely one of the greatest achievements of Nature—there was practically no demand.

In this country there is a demand for Fire-finches and for Cordons Bleus, but no one wants Nightingales. It is useless to criticize public opinion and equally useless to attempt to influence it. They tell me, however, that there was once a man who really did mould avicultural taste, and that the modern craze (suggestive word this!) for keeping delicate foreign birds is largely due to him. If this is correct, I wonder whether that aviculturist sleeps quietly today or whether his disembodied spirit is compelled to wander, haunting bird-shops and bird-shows and the ash-pits of enthusiastic disciples, wringing spectral hands and ceaselessly bewailing the havoc his example has wrought. For many of his followers, however, there is this excuse that they probably know not what they do. If they once realised that for every Cordon Bleu or Fire-finch which pays a brief and chilly visit to this country, nine other little lives have generally petered out miserably somewhere between their aviaries and the Equator, I feel sure they would take up some other branch of aviculture.

It is because I feel strongly on this subject that I venture to suggest that in breeding European species, such as the above, one has an interesting pursuit and at the same time the satisfaction of feeling that there need be no waste of bird-life. Of course it involves a great waste of time, but, if one chooses to waste one's time, that is one's own affair: if we waste bird-life, other people may reasonably claim to have something to say about the matter.

BIRD NOTES FROM THE ZOOLOGICAL GARDENS.

By THE CURATOR.

There is not very much to report this month in the way of nesting as this is now over for the year.

Since my last notes five young *Martineta* or Crested Tinamons have been hatched and are being carefully reared by their father. The eggs of this species are a beautiful grass green in colour with the glossy surface common to the eggs of this group of birds. The chicks are very hemipode-like in appearance.

A very fine specimen of the Yellow-naped Cassowary (*Casuarinus unappendiculatus occipitalis*) from the island of Jobi, has been deposited by the Hon. Walter Rothschild and forms a very valuable addition to our series of these fine birds, while another important addition is a Red-crested Touraou (*Turacus erythrolophus*) from West Africa deposited by Mr. E. J. Brook. It is one of the most beautiful of a group in which the majority are beautiful and the species has not been represented in the Zoological Gardens since 1878.

Dr. Hopkinson has sent us from Gambia a pair of Broad-Tailed Babblers (*Crateropus platycercus*), very rare and interesting birds which appear to be entirely new to aviculture. D. S-S.

PRACTICAL BIRD-KEEPING.

VIII. THE CARE AND FEEDING OF PARROTS.

By HUBERT D. ASTLEY, M.A., F.Z.S., M.B.O.U.

There are undoubtedly others who are more entitled to write upon this subject than I am, by reason of their greater experience and maturer knowledge, but I have been asked to do so, and I therefore will do my best.

Parrots are, for the most part, when duly acclimatized, extremely hardy, and thrive better in fresh air and a not too artificially heated atmosphere, than in ill-vented rooms or glass houses.

This applies especially to the smaller Parrots and Parakeets. For example, I have had such birds as Red-capped Parakeets (*Porphyrocephalus spurius*), Cockateels, Stanleys, Port

Lincolns and Pennants passing the winter entirely out of doors, with only shelters, and those unheated. The gloss and tightness of their plumage, as well as their activity and sprightliness, testify to their robust health.

I have had to break the ice in the bathing dishes for these birds to take their baths, which they often do directly the fresh water is poured in; for Parrots delight in bathing, and the difference between a bird that has a bath and one that hasn't, is very marked.

I wonder if the inmates of the host of cages in the Parrot House at our London Zoological Gardens ever have a good syringing. It would be a long task, but perhaps in the warm weather it is done. Were I their keeper, I should make a point of syringing half a dozen each day, putting them outside to do so, and removing the seed and sand trays first of all, afterwards sponging the cage dry before returning the food, etc.

I know a Jardine's Parrot, and on visiting it one day, I suggested to the owner that the bird looked as if a bath would improve its appearance. "I am so afraid of its catching cold," was the reply. I pointed out that it would on the contrary be more inclined to prevent its doing so, especially as it is a very tame bird and can be taken on the hand to flutter its wings and so shake off any superabundance of water.

I called another day, and the bird looked fifty times better in his plumage. Of course one must be sure that a parrot is in good health, and if it has been used to ablutions of this sort, the water (if it will not or cannot take its own bath) should be only slightly sprinkled at first. But I have Parrots whose plumage is so tight and so accustomed to a syringing, that one has to spray with force before the feathers are apparently wetted: and although individual birds do not always approve of a shower-bath at the moment, they evince great pleasure directly it is over, shaking themselves and preening their feathers and often attempting another bath in their drinking water!

It is unnatural to keep a Parrot indoors all through the year without a bath, when one thinks of the drenching tropical rains through which they fly, and the daily baths in some mountain stream or forest pool which they enjoy.

And in Australia, where Parrakeets are often far from water through a great part of the day, there must be a certain amount of dew-drenched grass through which they run and scramble when seeking their breakfast. Parrots' feet too keep in better condition if they are syringed.

Not long ago, I received a pair of Hooded Golden-shouldered Parrakeets from the Continent. They are acclimatized birds, and it was delightful to see how, when I hooked a roomy bath on to their cage, they lowered themselves into the water and splashed and splashed. One felt the vibrations of their pleasure very strongly. But newly-imported birds must not be treated in this way, not at least until they are thoroughly strong and decidedly healthy, by which time they have probably ceased to be newly-imported!

As to the food of Parrots, taking first of all such families as those of the Macaws, Cockatoos, Amazons, etc., some people recommend boiled maize as a staple supply, but they usually do well upon a good Parrot's mixture of various dry seeds, such as sunflower, oats, maize, etc. Besides this, a little Marie or Albert biscuit put in a mixture of three equal parts of boiled milk, barley-water, and water, and pressed fairly dry, is good; and this in cold weather may be given warm in the morning. Fruit too of every kind, of course. Bananas, apples, pears, oranges, grapes, figs, etc. A piece of boiled potato occasionally, seems to be appreciated, and also a bunch of chickweed or a lettuce leaf in season. Some wood, somewhat decayed, is knawed to pieces with much interest, and I sometimes put some coarse grit in the seed-pan.

But these Macaws and Parrots should not have coffee or tea or rich cake, as are offered them, and certainly not meat. Parrots do not need to be feeding all day, for in a wild state I believe they sit for hours during the heat of the day, snoozing amongst the deep foliage of the trees, feeding chiefly in the morning and towards evening.

The smaller Parrots and Parrakeets (I am not writing about Lories, the Brush-tongued Parrakeets, for I prefer to leave that task to someone who has had more experience than I have, although I might say *en passant* that they need the mixture of

biscuit sop already mentioned, as well as soft fruits—the smaller Parrots and Parrakeets, as I was about to say, will do well on Canary and millet and other seeds, with some hemp seed added in the winter, and even a very sparse addition of linseed, but they also like fruit, especially apple in winter time, and strawberries in summer, and what is almost most important, especially for the Australian Parrakeets, an abundance of salad in the shape of groundsel, chickweed, etc., etc., as well as flowering grasses, as soon as there is no frost on the ground. I generally leave off green food of this description by perhaps the middle of October (although it depends upon the weather) and recommence it *with care* in the middle of February. But it must then be of a fresh growth, and not be sodden with rain, or frost-bitten. Chicory leaves are beneficial in winter-time, if grown in a frame, but great care must be taken at that season of the year.

From March to October, my Parrakeets usually have an abundance of green food put fresh every day into the aviaries, and a nice bunch into each cage. Where there are Budgerigars and such like, a large bouquet of grasses, etc. can be wired round a stout stick, which can be fixed in a flower pot. If the bunches are wired round the stems, it enables the birds to pull at what they want, as if it was actually growing, and at the same time prevents the stuff from being scattered untidily about the aviary. I believe my young Bourke's Parrakeets, etc. are fed almost entirely upon half digested green food and grass seeds, and they usually leave the nest in the pink of condition. After all, it is their natural food, and consequently most necessary.

And Parrots need water to drink, care being taken that the water vessels are well scrubbed out, and even scalded; for one sometimes sees them with a nasty slime at the bottom, which must assist in generating microbes of some kind or another.

Parrots, like all birds, need wing exercise to keep them healthy and robust, although one sees individuals living in cages year in and year out, who are never able to stretch and flap their wings: and Parrots are as swift and agile on the wing as any other birds. I have an especially tame Queen Alexandra Parrakeet (*Spathopterus alexandræ*, as it is dubbed!) which is kept in a cage, but is let out at least twice a week for a fly in a large room. To

see that bird swoop round and round for two or three minutes at a time, shrieking with joy and exuberance of spirits, is delightful. If possible the larger Parrots and Cockatoos should be trained to come on the hand, or at any rate on a stick, when they can be waved up and down to make them flap their wings. They will soon learn what they are intended to do, and look out for these gymnastics.

I know a lover of Parrots, who always takes Macaws and Amazons for walks in the garden. They are chained to perches, and after removing them from the latter, he will put them on the ground, holding their chains, and allowing them to walk in the wet grass, or else sit on an old stone wall, where they sun themselves and chew mortar.

A Double-fronted Amazon which I have, loves to be taken on a personally-conducted tour like this, and when he is put on a railing and syringed, he brings his wings completely forward in front, so that they actually meet, whilst he ducks his head down on to his breast beneath his wings, as much as to say, "I like it on my wings, but I cannot stand it in my eyes and mouth."

Certain species of Parrots must necessarily be kept in artificial heat during the cold months of the year, but it is astonishing what some, which one would think might be delicate, can stand.

As for the nesting of Parrots in an aviary, the fewer there are the better, and in some cases one pair only is advisable. If the aviary is large enough, and they can be obtained, old hollow limbs of trees put up upon cross beams are helpful towards encouraging the birds to breed, but there are many ways of making nesting-boxes.

Parrakeets like to get into semi-darkness to lay their eggs, and if they can whittle the natural rotten wood within, all the better. Whatever the hollow is, it must not be too spacious or flattened where the eggs will be laid, or they may roll out beyond the parent bird. It is best to put nesting boxes of various sizes and shapes, for what one pair of birds may take a fancy to, another may not.

All Parrots nest in hollow logs or banks, laying their eggs in a depression on rotten and chipped wood, except perhaps the

Quaker Parrakeet, which builds a roofed nest; whilst Love-Birds (*Agapornis*) use twigs, which they carry into a nesting-box or log.

For Budgerigars cocoa-nut husks do well, but it is advisable to either cleanse or destroy these after a while, for fear of red mite, etc. within. In any case, the nesting-boxes must be roomy enough for the young birds to keep in until their due time arrives for flying, otherwise they may crawl out and fall down with disastrous results, but the boxes must not be so deep that they cannot get out at all.

Parrots and Parrakeets will often take a year or more, and even three or four before they nest, so that if any aviculturists have a pair of birds about whom they are beginning to feel disheartened in this respect, let them be patient and they may be finally rewarded.

PRACTICAL BIRD-KEEPING.—CORRESPONDENCE.

SIR,—I have just lost a pair of year-old Black-shouldered Peafowl, evidently from lack of power to moult. Both were a mass of pin feathers and very few had pushed through.

They were hatched here just a year ago, and had always been well and strong. They have, however, never had free range, having been kept in not large aviaries—about 10ft. by 20ft.

What treatment would you have recommended for these birds? We have another brood now, two months old, and we hope to learn how to safely carry them through.

J. E. ROTHWELL.

The following reply was sent to Mr. Rothwell:—

I think that there is no doubt that Mr. Rothwell's Peafowl want a more generous diet during the moult. He does not say how they have been fed, but possibly on grain alone. I should advise an addition to their usual allowance of grain (which ought to be varied, and not always the same), some meal (barley for choice), scalded with a little Spratt's meal, as a good addition to their grain, when moulting; also a little chopped up cooked meat, boiled potato, raisins or other cheap fruit, earthworms.

I do not keep Peafowl, but I find it is a good thing to give such things to the more delicate pheasants and Tragopans when they are moulting. Of course the object is not to merely mature the moult—an easy operation; but to help them to grow the *best* feathers possible.

W. H. ST. QUINTIN.

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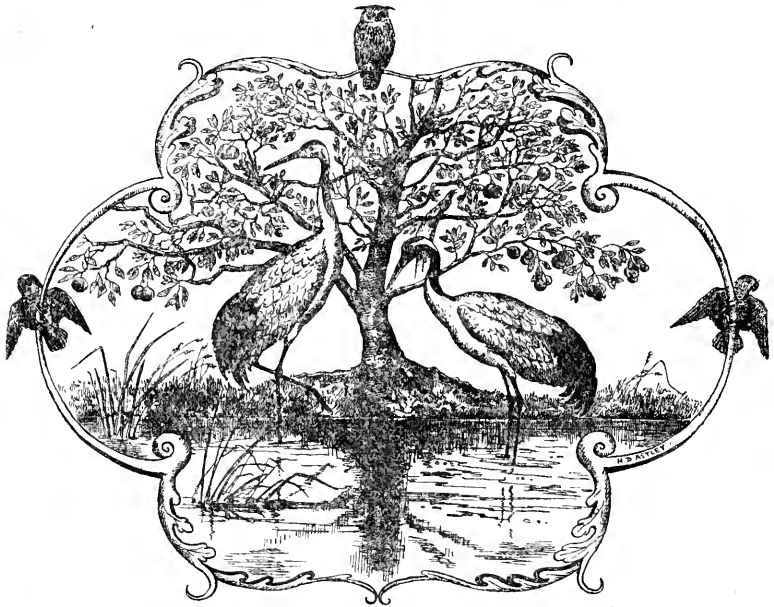
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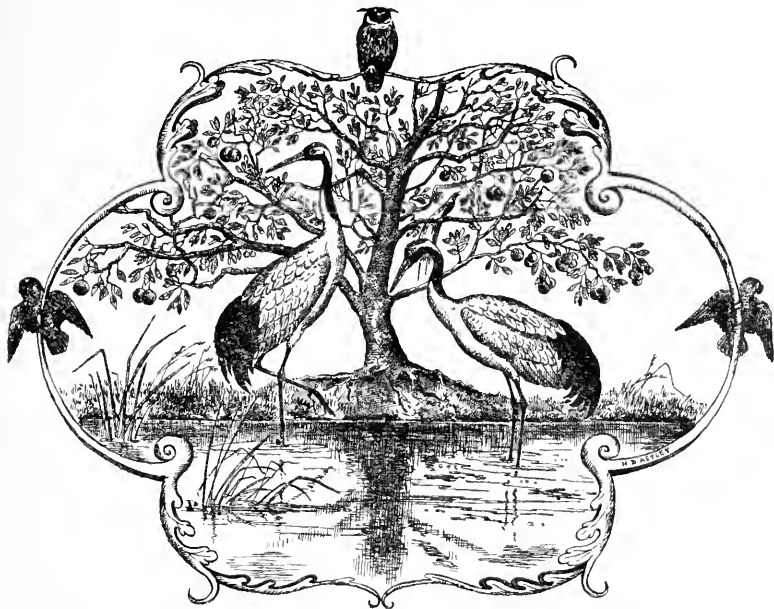
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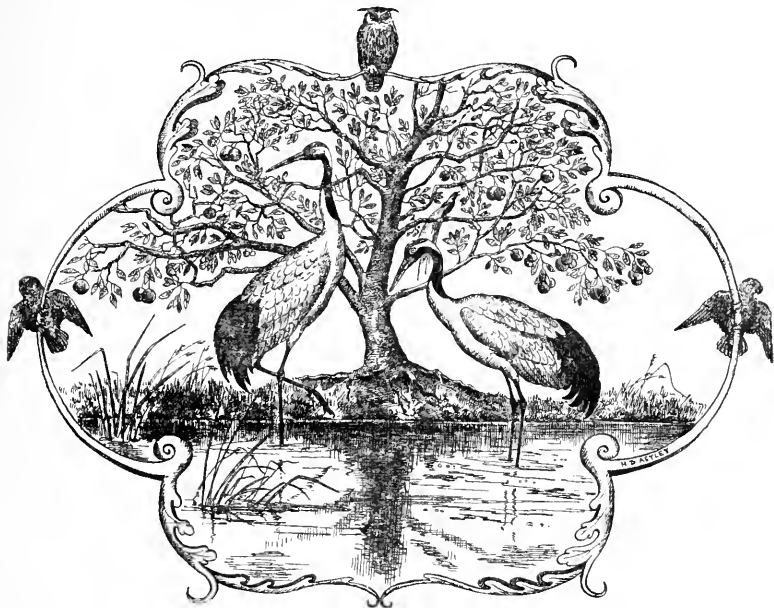
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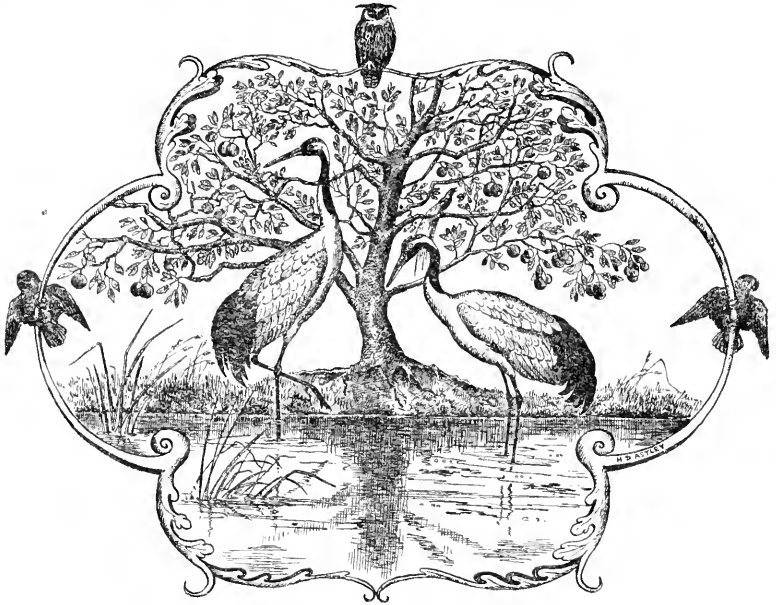
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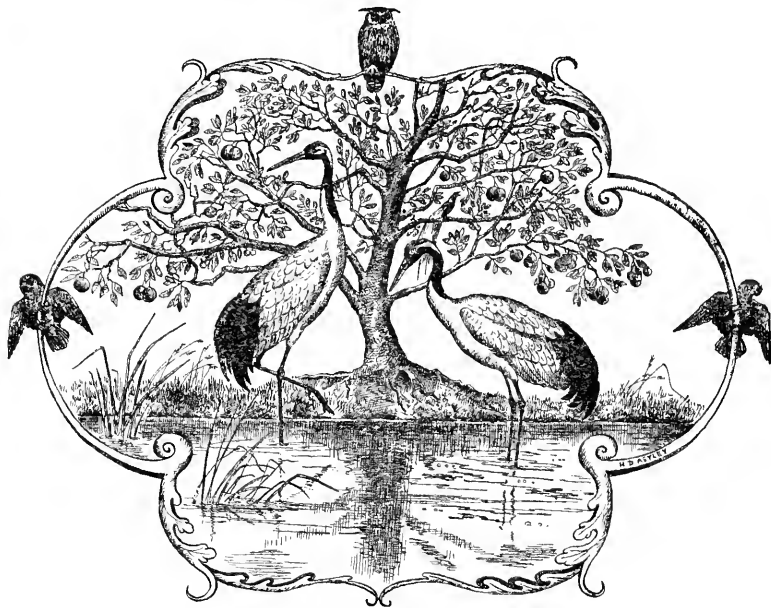
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Edited by J. LEWIS BONHOTE.



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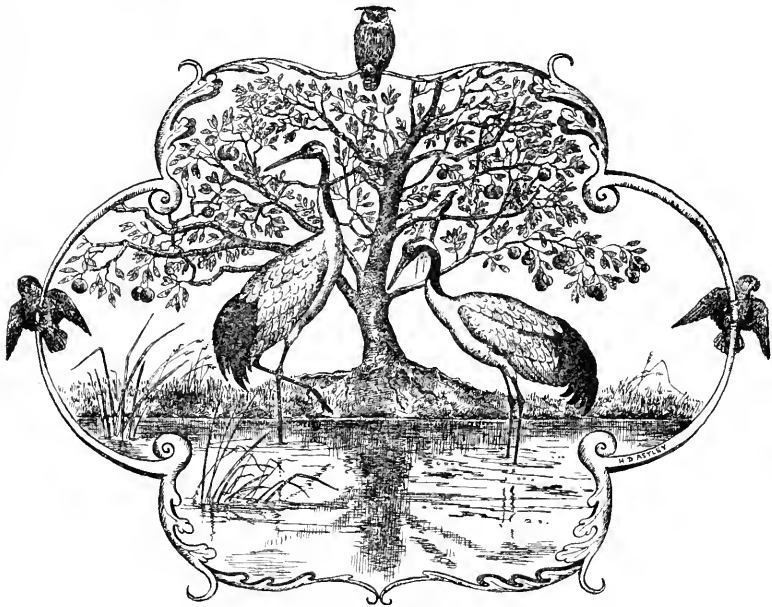
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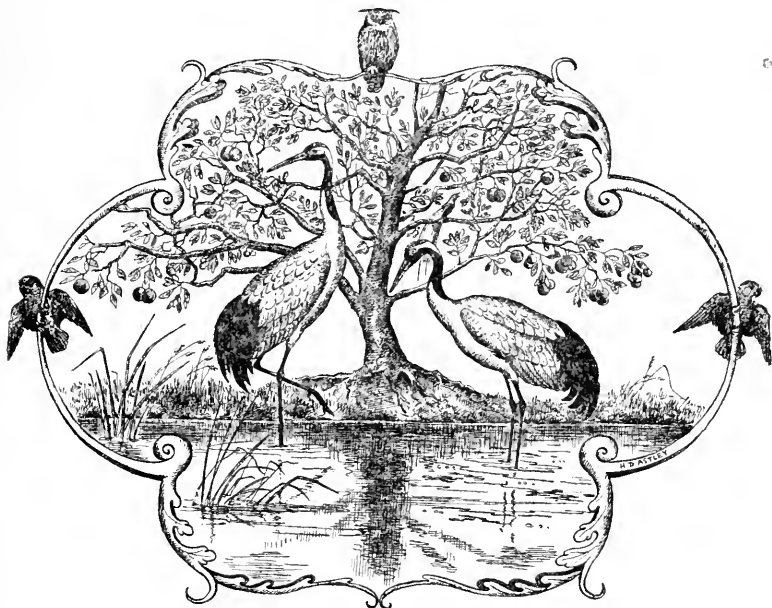
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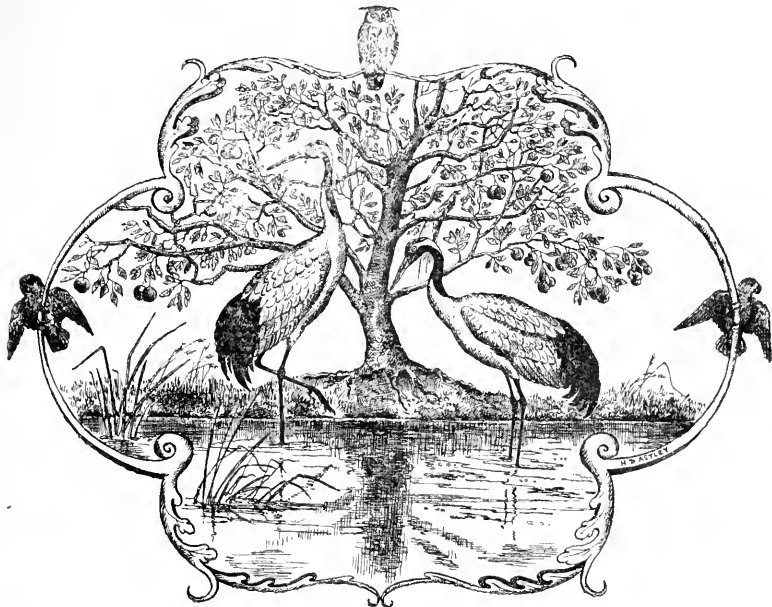
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THIRD SERIES,
Vol. II. No. 9

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JULY,
—1911.—

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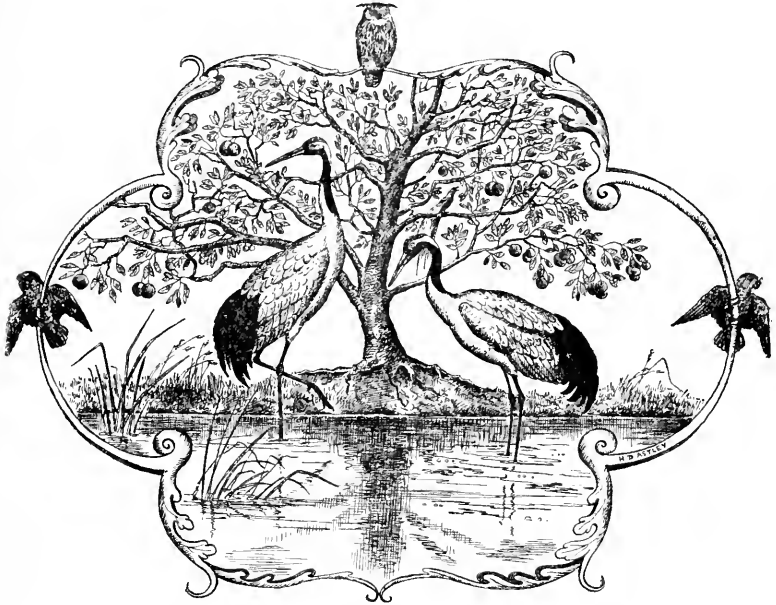
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THIRD SERIES,
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AUGUST,
-1911.-

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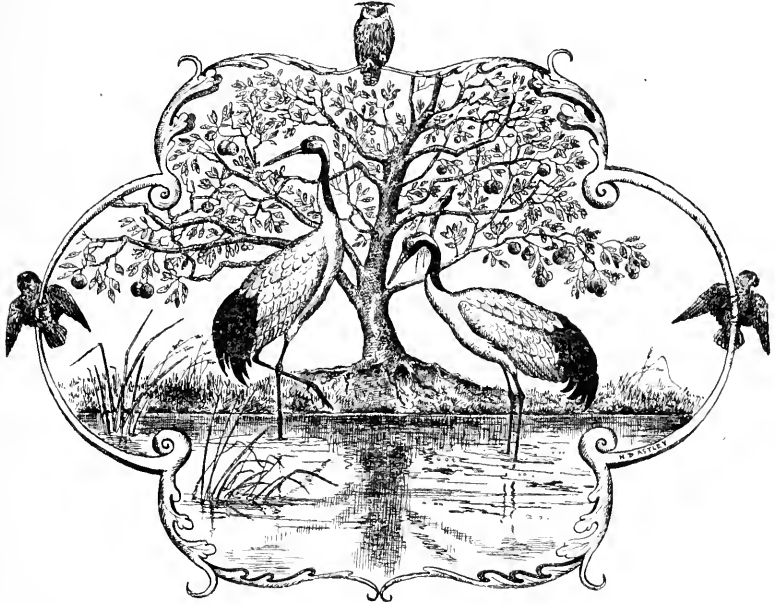
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SEPTEMBER,
-1911.-

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OCTOBER,
-1911.-

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Dr. HETLEY, Beanford Avenue, 114, Church Road, Norwood, S.E.
The Hon. Mrs. MCLAREN MORRISON, Kepwick Park, Northallerton, Yorks.
Mr. E. W. H. BLAGG, Greenhill, Cheadle, Staffordshire.
-

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Mr. RICHARD HEYWOOD, Narborough, Norfolk.
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What offers for clutch of five Waxwing's eggs, guaranteed true clutch laid this summer. PHILLIPPS, 26, Cromwell Grove, Hammersmith.

For Sale.—Cock Napoleon Weaver, 12'6; two pairs Zebra Finches 7'6 pair; from outdoor aviary.

Lady A. DAWNAY, Brampton House, Northampton.

For Sale.—Bronzewing Pigeons, pair, 20' : Senegal Turtle Doves, pair, 7'6; White Java Doves, pair 3'6; Bleeding Heart Pigeon, hen, 25'.

E. W. H. BLAGG, Cheadle, Staffordshire.

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Wanted.—Pair Diamond Finches.

Lady A. DAWNAY, Brampton House, Northampton.

Wanted.—Plate of Manchurian Crane from Wolf's "Zoological Sketches." State price.

ROB. J. HOWARD, Shear Bank, Blackburn.

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For Sale.—About 100 Sketches of Birds by Joseph Wolf. £3 10s. od. or exchange Parrakeets. OAKBY, 34, High Street, Leicester.

For Sale.—*Phasianus reevesi* ♂, 2nd year, £2 10s. *Phasianus versicolor* ♂, 1 year old, £1. *Phasianus versicolor* ♀, 1 year old, 15/-

Mrs HAIG THOMAS, Moyles Court, Ringwood.

For Sale.—All thoroughly acclimatised in large open-air aviaries:—Bearded Tit, hen; Pope and Common Cardinals and Saffron Finch, cocks; Snow Bunting, ? sex. PHILIP GOSSE; Beaulieu, Hants.

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Wanted.—Two Golden ♀s, pure bred, 1910 or 1911 birds; one Amherst ♂, pure bred, 1910 or 1911 bird. State price and where obtained.

Mrs. HAIG THOMAS, Moyles Court, Ringwood.

Wanted.—Following hens: Saffron Finch, Malabar Mynah, Rose Pastor, Diamond Dove. PHILIP GOSSE; Beaulieu, Hants.

Wanted.—Hens only: Gouldians, Pintail Nonpareils, Bichenos.

HETLEY, Church Road, Norwood.

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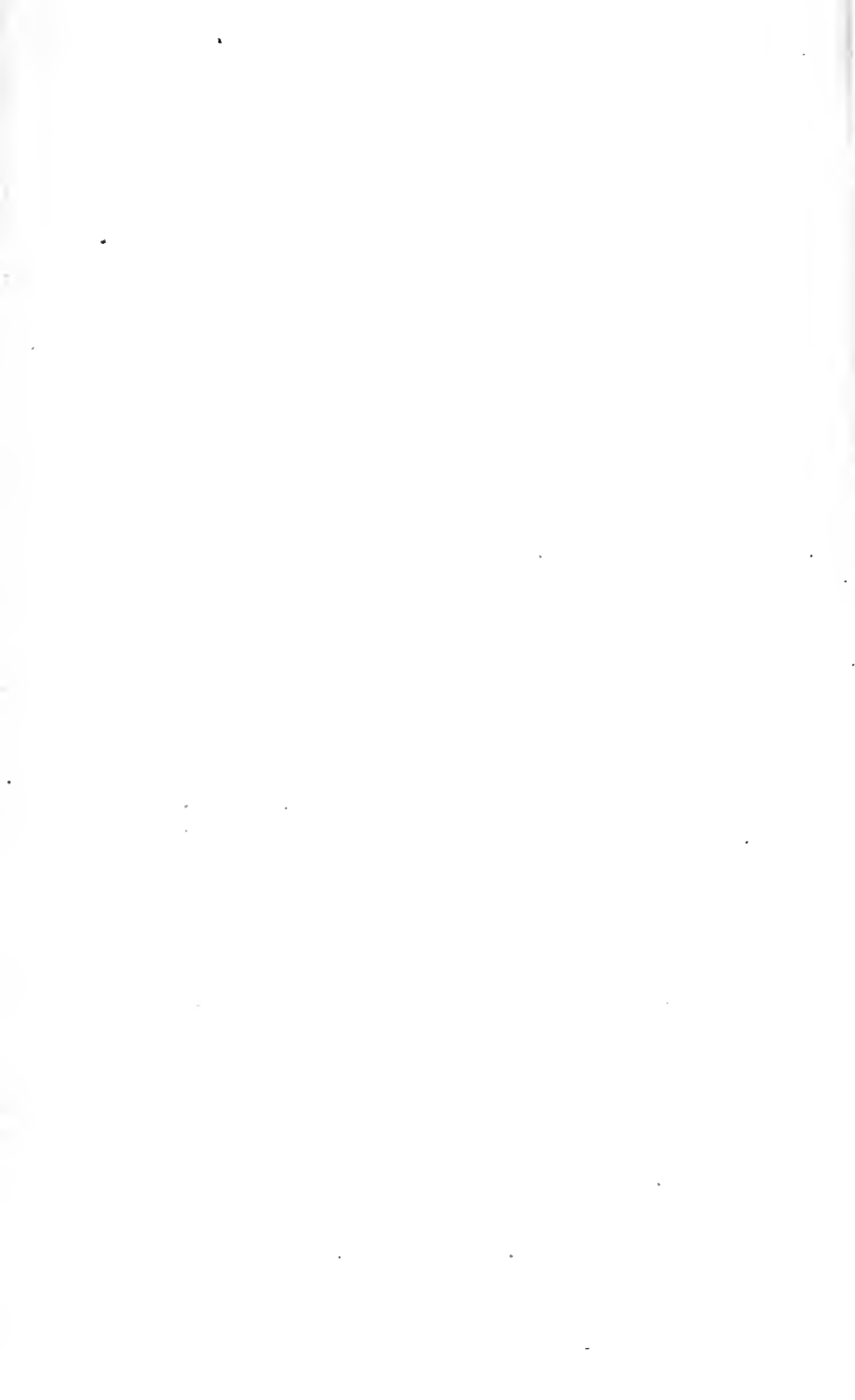
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