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THE STUDY OF BRITISH AND
FOREIGN BIRDS IN FREEDOM
AND IN CAPTIVITY

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PHYLLIS BARCLAY-SMITH, F.Z.S.

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CONTENTS

	PAGE
TITLE-PAGE	i
CONTENTS	iii
ALPHABETICAL LIST OF CONTRIBUTORS	v
LIST OF PLATES	xi
OFFICERS FOR THE YEAR 1939	I
LIST OF MEMBERS	3
RULES OF THE AVICULTURAL SOCIETY	22
THE SOCIETY'S MEDAL	25
MAGAZINE	I
INDEX	413

ALPHABETICAL LIST OF CONTRIBUTORS

ABRAHAMS, C. N.

An Abnormal Cordon Bleu, 157.

A Supposed Hybrid Whydah, 203.

Breeding the Tri-coloured Parrot Finch in South Africa, 229.

ALLISON, NORMAN G.

Breeding of the Gold-breasted Bunting, 314.

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

Breeding Results at Delmonden Manor, 47.

Aviculturists or Fanciers, 63.

Breeding of the Black-crested Finch, 331.

Breeding of Mealworms, 374.

BARCLAY-SMITH, MISS P.

Tenth Annual Report and Bulletin of the Avicultural Society of New Zealand,
140.

The Avicultural Society of South Africa, 309.

Review—*The Handbook of British Birds*, 307.

Review—*Birds of our Country and of the Dominions*, 308.

Editorial, 311.

Care of Birds in War-time, 313.

Aviculture in War Time, 344.

BEEVER, G.

The Need of a System of Pedigrees for Pure-bred Birds, 173.

B. K.

Review—*Birds as Animals*, 169.

BOOSEY, EDWARD.

The Management of Parrakeets, 379.

Breeding of the Blue-fronted Amazon Parrots for the First Time in Great
Britain, 393.

CARR, V. A. V.

Breeding British Birds, 305, 360.

CASSIDY, JAMES.

Flycatchers and Humming Birds of Canada, 52.

CHAWNER, MISS, F.Z.S.

Leckford Aviary Jottings, 28.

DAVIS, GODFREY, I.C.S., F.Z.S.

Colour in Avadavats, 110.

The Ring-necked Parrakeet, 129.

Food and Breeding of Avadavats, 142.

On Indian Grey and Black Partridges, 148.

On Bulbuls, 196.

The Grey-necked Bunting, 324.

DELACOUR, J., F.Z.S.

- Breeding Results at Clères, 2.
- The Fire at Clères, 141.
- The first Nesting in Captivity of the Australian Sheld-duck, 159.
- M. C. Cordier's Collection, 267.
- The Red-flanked Blue Bush Robin, 275.
- The Crested or Rheinart's Argus, 311.
- The Birds at Cleres in 1939, 347.
- Parrots and Parrakeets at Clères, 390.

DERSCHIED, DR. J. M., F.Z.S.

- The Preservation of Waterfowl and Aviculture, 90, 276.
- Gape Worms in Young Eiders and Goosanders, 273.

ENGLISH, W. L., M.B.

- Keas and Sheep, 64.

EZRA, ALFRED, O.B.E., F.Z.S., M.B.O.U.

- Breeding the White-headed Robin Chat, 304.
- Breeding the Black-winged Plover, 334.
- Successful Rearing of Zoe's Banded Fruit Pigeon, 366.
- Aviculture in War Time, 378.

EZRA, ALINE.

- Blue Alexandrine Parrakeets, 397.
- Establishing the Lutino Ring-necked Parrakeet, 401.

FALKNER, GUY.

- Tame Birds at Liberty, 29.

GODDARD, MRS.

- "Joey," the Stanley Crane of Seven Barrows, 62.

HACHISUKA, MARQUESS.

- Hybrid Herons in Japan, 132.

HAMPE, HELMUT.

- Breeding Experiments with the Red-faced Lovebird in 1938, 123.
- Breeding Experiments with Hooded Parrakeets, 188.
- Brotogerys Parrekeets, 402.

HARVEY, S.

- The Australian Bee-eater in Captivity, 294.

HEINROTH, DR. OSKAR.

- Kingfishers in Captivity, 33.

HIGHAM, WALTER E., F.R.P.S., F.R.G.S., F.Z.S., M.B.O.U.

- The Budgerigar in Captivity, 143.

HILL, W. C. OSMAN, M.D.

- Breeding of the Queen of Bavaria's Conure in Captivity, 388.

HOPKINSON, DR. E., C.M.G., D.S.O., F.Z.S.

- Breeding Records, 15, 133, 162.
- Meadow Pipit Bred in Confinement, 64.
- Rare Birds from Chile, 271.
- Review—*Australian Parrots*, 308.

HOUSDEN, JAMES B.

Two Beautiful Birds—Scissor-tailed Flycatcher and Resplendent Trogon,
322.

JONES, TERRY.

Kelp Geese, 302.

JONES, W. A.

Why are Mealworms Not Bred in England? 174.

KING, HAROLD T.

The Foreign Bird League, 201.

KUNTZ, PAUL.

Migration and Keeping of Evening Grosbeaks, 225.

LAIDLEY, J. C.

Breeding and Rearing of the Cackling Goose, 102.

Some Experiences in Waterfowl Breeding, 105.

Behaviour of Australian Sheld-duck, 201.

LAMBERT, PAUL J.

Where are the Versicolor Pheasants? 172.

A Plea for the Maintenance of a Stock of Rare Pheasants, 412.

LONDON, ALAN, F.R.C.S.

The Australian Ring-necked Parrakeets, 375.

LEWIS, J. SPEDAN, F.Z.S.

Courting Display of Napoleon's Peacock Pheasant, 233.

MARTIN, H. C.

The White-capped Tanager, 175.

MATTHEWS, MRS. FRANCES E.

Some Rearing Experiences of an Owner of a Small Collection, 367.

MAXWELL, P. H.

The Lesser Blue-winged Pitta, 170.

Birds in the Copenhagen Zoo, 373.

MINCHIN, R. R.

Australian Waterfowl in the Adelaide Zoo, 80, 172.

Royal Zoological Society of South Australia, Breeding Notes, 319.

MOODY, A. F.

Breeding of Australian Sheld-duck, 202.

A Scheme to Maintain a Stock of the Rare Species of Waterfowl, 374.

MORRISON, ALASTAIR.

Notes on Peruvian Waterfowl, 259.

N. B. K.

Review—*Birds*, 398.

KNOBEL, MISS E. M.

Bullfinches, 62.

NEUNZIG, RUDOLPH.

On the Care and Keeping of Barbets, 206, 251.

PAPE, MRS. A. M.

Breeding of Australian Sheld-duck, 202.

PATTEN, ROBERT A., B.V.SC.

Observations on the Red-sided Eclectus Parrot in Captivity, 288.

PLATT, ERIC.

Breeding of the King Parrakeet, 56.

PLATH, KARL.

Breeding Rare Parrakeets in the Chicago Zoological Park at Brookfield, Illinois, 182.

PORTER, SYDNEY.

Further Notes from Australia, 214, 335, 351.
The Norfolk Island Parrakeet, 406.

RAMPTON, ANTHONY.

Hand-rearing of Red-breasted Mergansers, 103.

SCOTT, A. H.

New Birds for Old, 5.

SCOTT-HOPKINS, CAPT. C.

By a Pheasant Enthusiast, 202.

SETH-SMITH, DAVID, F.Z.S., M.B.O.U.

The Early Years of the Avicultural Society, 11, 36, 124, 152, 191, 221, 263,
296, 327, 369.
Notes on Waterfowl in the London Zoo, 86.
Species or Varieties, 141.
The Little Widow Tyrant, 272.
The Collections of Mr. Shaw Mayer and Mr. W. J. C. Frost, 272.
The Masked Grassfinch, 343.
Breeding the Blue and Yellow Macaw in Edinburgh Zoological Park, 411.

SHERRIFF, A., F.Z.S.

Birds of Jamaica, 22.

SIBLEY, C. L.

Wild Waterfowl in Confinement in America, 73.
Behaviour of Australian Sheld-duck, 170, 273.
Nesting of Newly Shipped Geese, 342.
Breeding of Ruddy Flamingoes, 363.

SILVER, ALLEN, F.Z.S.

Breeding of Meadow Pipit, 141.
The Brown Padma or Rice Bird, 317.
Two Unfamiliar Seed-eaters, 342.

STEVENS, RONALD AND NOËL.

Fascination of Keeping Waterfowl, 65.

SWEETNAM, PREB. J. E., F.B.S.A.

The Records of a Rural Aviculturist, 58.

TAVISTOCK, MARQUESS OF, F.Z.S.

Desmarest's Dwarf Parrot, 123.

The Cloncurry Barnard, 274.

The Breeding of the Ultramarine Lory, 292.

Homing Budgerigars, 341.

Breeding of a Hybrid Barraband × Crimson-winged Parrakeet, 398.

VANE, E. N. T.

Breeding Bauer's Parrakeets in the United Kingdom, 42.

WEBB, C. S.

Blue-shouldered Tanager, 1.

A Collector in the Gold Coast Colony, 111.

The Toucan-like Barbet, 205.

A Collector in the Andes of Ecuador, 237.

WHARTON-TIGAR, MRS. N., F.Z.S.

Rarities Collected by F. W. Shaw Mayer and W. J. C. Frost, 299.

WINTLE, D. S.

Observations on the Breeding Habits of Smews in Captivity, 96.

A Newly Imported Pair of Musk Duck, 107.

WORMALD, HUGH.

Barrow's Golden-eye Duck in Captivity, 100.

Where are the Versicolor Pheasants? 142.

Breeding of Waders, 173.

YEALLAND, J. J.

The Swift Parrakeet, 310.

Importation of Parrots, 161.

LIST OF PLATES

*Blue-shouldered Tanager	to face p. 1
Kingfishers in Captivity	,, 33
*Barrow's Golden-eye Duck	,, 65
Baikal Teal, Speckled Duck, American Green-winged Teal, and Radjah Sheld-duck	,, 87
Black-banded Goose, Upland Geese, Barnacle Goose, and Ashy-headed Goose	,, 89
River Pru and Native Shelter, Gold Coast	,, 111
*Budgerigars	,, 143
White-capped Tanager	,, 175
*Toucan-like Barbet	,, 205
West Andean Scenery (2)	,, 237
Andean Goose	,, 260
*Red-flanked Blue Bush Robin	,, 275
Australian Bee-eater	,, 294
*Crested or Rheinhard's Argus Pheasant	,, 311
*Masked Grass-Finch	,, 343
*The Cloncurry Parrakeet	,, 375
Queen of Bavaria's Conures	,, 388
Blue-fronted Amazon Parrots	,, 395
Tui Parrakeets	,, 405

* Denotes a Coloured Plate.

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- FISHER, JAMES ; c/o Zoological Society, Regent's Park, N.W. 8. (Sept., 1937.)
- FLOYD, J. F. M. ; High Bridge Mill, Cuckfield, Sussex. (Jan., 1935.)
- FOOKS, F. E. ; Directeur, Parc Zoologique de Clères, Clères, Seine Inférieure, France. (Jan. 1926.)
- FOOKS, H. A. ; The Hermitage, 4 Alipare Road, Calcutta, India. (Jan., 1932.)
- FOSTER, H. F. B. ; Faskally, Pitlochry, Perthshire. (April, 1937.)
- FRAYNE, RALPH ; 28 Bramworth Road, Doncaster. (May, 1933.)
- FREIDLANDER, DR. H. R. ; 47 Wickham Road, Beckenham, Kent. (July, 1936.)
- FROST, WILFRED ; c/o Zoological Society, Regent's Park, N.W. 8. (July, 1908.)
- FROSTICK, JOHN ; 303 High Road, Streatham Common, S.W. 16. (April, 1933.)
- FURNER, A. C. ; Oakdene, Whitaker Road, Derby. (Oct., 1929.)
- GARCKE, MRS. C. ; Ditton House, Pinkney's Green, East Berkshire. (June, 1916.)
- GARDNER, ERIC ; (Executive Engineer) General Offices B.B. & C.I. Railway, Churchgate, Bombay, India. (March, 1935.)
- GARRETT, M. R. ; District Forester, Smithton, Tasmania. (June, 1934.)
- GARRETT, ROBERT ; Lannevan, Knock, Belfast. (April, 1933.)
- GARVEY, F. W. ; "Melbriar," Garstang Road, West Poulton, Blackpool. (Aug., 1937.)
- GHIGI, il Prof. ALESSANDRO ; Via D'Azeglio, Bologna, Italy.
- GILMAN, L. E. ; Snargate, Woodmansterne Road, Purley, Surrey. (Jan., 1936.)
- GLADSTONE, HUGH, M.A., F.Z.S., F.R.S.E., F.S.A.Scot. ; Capenoch, Thornhill, Dumfriesshire. (Dec., 1932.)
- GLEDHILL, HAROLD ; Mayfield, Argomeols Road, Freshfield, near Liverpool. (March, 1934.)
- GLENISTER, A. G., F.Z.S., M.B.O.U. ; The Barn House, East Blatchington, Seaford. (June, 1928.)
- GLOVER, PERCY H., F.Z.S. ; Broadlands, Fareham, Hants. (June, 1931.)
- GODDARD, H. E. ; Lerwick, Bannerdown, Batheastor, Somerset. (Feb., 1899.)
- GODDARD, MRS. ; Fernham House, Faringdon, Berks. (Feb., 1923.)
- GOLDER, H. G., F.Z.S. ; Hon. Secretary and Treasurer Norwich Alliance All England C.B.d., 37 Crown Road, Norwich. (June, 1931.)
- GOODALL, A. W. ; 29 Weston Crescent, Runcorn, Cheshire. (March, 1933.)
- * GOSSE, MRS. JAMES ; 9 Park Terrace, Park Side, South Australia. (July, 1923.)
- GOWLAND, MRS. C. H. ; Tadorna, Pensby Road, Barnston, Wirral, Cheshire. (March, 1938.)
- GRANT, FRANK ; Parklands, Stoughton Lane, Evington, Leicester. (Feb., 1935.)
- GROVES, Hon. MRS. MCGAREL ; Battramsley House, Lymington, Hants. (March, 1917.)
- GUBBAY, MRS. MAURICE ; 30 Hill Street, Berkeley Square, W. 1. (Feb., 1928.)
- GUILD, EASTHAM ; P.O. Box 56, Papeete, Tahiti. (May, 1936.)
- GULBENKIAN, C. S. ; 51 Avenue d'Jéna, Paris xvi^e Paris. (Dec., 1908.)
- GURNEY, Miss DIANA ; North Runceton Hall, King's Lynn. (July, 1927.)

- HACHISUKA, THE MARQUESS; Mita Shiba, Tokyo, Japan. (July, 1932.)
- HADDEN, NORMAN G.; Underway, West Porlock, Somerset. (Jan., 1939.)
- HAINÉ, Dr. J. E.; Elmton, London Road, Guildford. (April, 1935.)
- HALL, T. WALTER; 6 Gladstone Road, Sheffield. (Nov., 1926.)
- HALVERSON, A. W.; 5705 West Erie Street, Chicago, Ill., U.S.A. (April, 1937.)
- HAMPE, ALEX.; c/o Mrs. Hillmann, Luisenallee, 8, Koenigsberg I, Preussen, Germany. (Jan., 1927.)
- HAMPE, HELMUT; Braunschweig, Steintorwall, Nr. 11, Germany. (March, 1935.)
- HANKEY, ALGERNON A., F.Z.S.; 38 Beechwood Avenue, Kew Gardens, Surrey. (June, 1923.)
- HANDLEY, W. H.; Kinmundy, Crofts Bank Road, Urmston, Manchester. (Oct., 1937.)
- HAPPE, PAUL; 44 Avenue Eng Plasky, Bruxelles, Belgium. (Aug., 1935.)
- HARMAN, Miss KNOBEL, F.Z.S.; "Lindeth," Peaslake, Surrey. (Sept., 1928.)
- HARRIS, CHARLES H.; 92 West End Lane, West Hampstead, N.W.6. (Jan., 1937.)
- HARVEY, P. T.; "Deanscroft," South Darent, Nr. Dartford, Kent. (Nov., 1926.)
- HAWKE, THE HON. MARY; Mill Lands, Henfield, Sussex. (Rejoined.)
- HEAL, C. H.; Stanley Villa, Paulton, Somerset. (Sept., 1932.)
- HEBB, THOMAS; Croft House, Old Aylestone, Leicester. (April, 1914.)
- HEDDLE, MAURICE J.; "Shanklin," 33 Park Road, Southend-on-Sea. (April, 1936.)
- HENDERSON, Miss OONA; Greystones, St. Mawes, Cornwall. (Sept., 1934.)
- HEY, G. L., M.A.; 87 Farley Hill, Luton, Beds.
- HIGHAM, WALTER E., F.R.P.S., F.R.G.S., F.Z.S., M.B.O.U.; The Oaks, Clayton-le-Dale, near Blackburn, Lancs. (Jan., 1934.)
- HILDICK-SMITH, Mrs. K.; 3 St. Miniver Road, Bedford. (March, 1937.)
- HIRST, ALBERT; 10 Talbot Avenue, Egerton, Huddersfield. (July, 1923.)
- HIRST, ARNOLD; P.O. Box 262 DD, Sydney, N.S.W., Australia. (April, 1929.)
- HIRST, ROBERT S.; Swincliffe House, Gomersal, near Leeds. (Rejoined.)
- HOLLAS, Mrs. K. E.; Parsonage Farm, Highworth, Wilts. (Oct., 1922.)
- * HOLLOND, Miss GLADYS M. B.; 5 Norfolk Crescent, Hyde Park, W. 2. (March, 1930.)
- HOLT, Miss ESTHER; Axholme, Noctorum, Birkenhead, Cheshire. (Jan., 1934.)
- HONE, Capt. T. N.; Highways, Bellingdon, Chesham, Bucks. (Nov. 1927.)
- HOOK, Capt. V. J.; Controller of Stores, BB, & Co. Rly., Mahaluxmi, Bombay, India. (Sept., 1935.)
- HOPKINS, W. E., F.Z.S.; 6 Queen Street, Scarborough. (July, 1933.)
- HOPKINSON, EMLIUS, C.M.G., M.A., M.B.Oxon., D.S.O., F.Z.S.; Wynstay, Balcombe, Sussex. (Oct., 1906.)
- HORNE, DOUGLAS PERCY; Pinefield, Church Road, Addlestone, Surrey. (Sept., 1928.)
- HORNER, Miss D.; Riccall, York. (Aug., 1931.)
- HOUSDEN, Major E. F., M.C., T.D.; Hillside, Harrow-on-the-Hill, N. (Jan. 1934.)
- HOUSDEN, JAMES B.; Brooklyn, 31 Cator Road, Sydenham, S.E. 26. (*Orig. Mem.*)

- HOUSDEN, DR. LESLIE; Caldecotts, Church Square, Basingstoke, Hants. (March, 1933.)
- HUDSON, Col. N.; 54 Hardy Road, Blackheath, S.E. 3. (Nov., 1935.)
- HUMPHRIES, WALTER JOHN; 32 Cedric Road, Crumpsall, Manchester, 8. (Feb., 1931.)
- HUTCHINSON, Miss ALICE; address unknown. (Aug., 1907.)
- HUTH, Mrs. MURIEL; 243 Goldhurst Terrace, N.W. 6. (Feb., 1935.)
- IMPARATI, Dr. Prof. EDOARDO; Ravenna, Italy. (Jan., 1932.)
- IRVINE, W. J.; 36 Ann Street, Belfast. (June, 1926.)
- ISENBERG, A. H.; 647 Runnymede Street East, Palo Alto, California, U.S.A. (Aug., 1926.)
- JAMES, RICHARD; 346 Eden Park Avenue, Beckenham, Kent. (March, 1937.)
- JARDIN ZOOLOGICO DE BUENOS AIRES; Buenos Aires, Argentine. (July, 1938.)
- JARVIS, Miss I. F.; The Old Manor, Salisbury. (Aug., 1930.)
- JEFFERSON, Miss D. D.; "Rest Dod," Combe-in-Teignhead, Newton Abbot, S. Devon. (May, 1932.)
- JERVIS, Hon. Mrs.; Pitminster Lodge, Taunton, Somerset. (Feb., 1936.)
- JOHNSON, F., F.Z.S.; "Silvanus," Sevenoaks Road, Pratts' Bottom, Farnborough, Kent. (Jan., 1933.)
- JOHNSTON, ROBERT PERCY; West House, Wigton, Cumberland. (March, 1925.)
- JONES, C. BUCKINGHAM; Dibrugarh, Assam. (Feb., 1938.)
- JONES, F. T.; The Fishing Cottage, Leckford, Stockbridge, Hants. (Oct., 1933.)
- JONES, S. B.; Plemont, Higher Road, Halewood, Liverpool. (Sept., 1934.)
- JONES, W. A.; 54 Stockwell Park Road, S.W. 9. (Feb., 1933.)
- KEATOR, BEVERLEY, R.F.D.; 2 Westport, Conn., U.S.A. (June, 1924.)
- KEMP, ROBERT; 5 Rose Hill, Lostwithiel, Cornwall. (March, 1926.)
- KERR, J. ERNEST; Harviestoun, Dollar, Scotland. (March, 1927.)
- KEWLEY, Mrs. M. A.; Old Court House, Whitchurch, Aylesbury, Bucks. (Sept., 1910.)
- KEYWORTH, J.; 206 Askern Road, Bentley, Doncaster. (Sept., 1938.)
- KING, HAROLD T.; 41 Compton Road, Sherwood, Nottingham. (Rejoined.)
- KINSEY, ERIC C.; Manor, California, U.S.A. (Aug., 1936.)
- KNIGHT, RONALD D.; White House, Portsdown Road, Leicester. (March, 1932.)
- KNOBEL, Miss E. MAUD, F.Z.S., M.B.O.U.; 86 Regent's Park Road, N.W. 1. (Aug., 1916.) (*Hon. Mem. Hon. Secretary and Treasurer.*)
- KRULIS-RANDA, Dr. Otakar; Prague 2, Lazarska 7. (May, 1936.)
- KUNTZ, P.; 289 Edmonton Street, Winnipeg, Manitoba, Canada. (May, 1930.)
- LIDLAY, J. C.; Lindores, Fife, Scotland. (April, 1929.)
- LAKE, GEORGE D.; Audrey, Burghfield Common, Mortimer, Berks. (Sept., 1937.)
- LAMBERT, Miss LESLEY DOUGLAS; Beeston Hill, Leeds. (Jan., 1937.)
- LAMBERT, J.; Nawton, Yorkshire. (March, 1936.)
- LAMBERT, PAUL; Nawton, Yorkshire. (Sept., 1929.)

- LANGHAM, SIR CHARLES, Bart. ; Tempo Manor, Co. Fermanagh, Ireland. (July, 1932.)
- LAUDER, P. ; Spange Hawe, Ewhurst, Surrey.
- LAW, DR. SATYA CHURN, F.Z.S., M.B.O.U., M.A., B.L., Ph.D. ; 50 Kailas Bose Street, Calcutta. (1919.)
- LAX, J. M. S. ; Southfield, Crook, Co. Durham. (Jan., 1930.)
- LEACH, C. F. ; Vale Lodge, Leatherhead, Surrey. (June, 1914.)
- LEE-BOOKER, J. R. ; Chingozi Estate, P.O. Mlanje, Nyasaland. (Dec., 1935.)
- LEGENDRE, M. ; 25 Rue La Condamine, 17^e, Paris. (June, 1928.)
- LEGH, The Hon. Mrs. PIERS ; St. James's Place, S.W. 1. (July, 1938.)
- LENDON, ALAN, M.B., B.S., F.R.C.S., F.R.A.C.S. ; 66 Brougham Place, North Adelaide, Australia. (Feb., 1937.)
- LESLIE, CLEMENT M. ; 22 Meadowside, Dundee. (Jan., 1932.)
- LEWIS, E. H. ; Waikiki Bird Park, Honolulu, Hawaii, U.S.A. (Sept., 1928.)
- LEWIS, J. SPEDAN, F.Z.S. ; Leckford Abbess, Stockbridge, Hants. (Sept., 1924.)
- LIBRARY INTERNATIONAL INSTITUT D'AGRICULTURE ; Villa Umberto I, Rome, 10.
- LILFORD, THE LADY ; Lilford Hall, Oundle, Northants. (Jan., 1898.)
- LINDSAY, Mrs. EDWIN A. ; 146 Harley Street, W. 1. (July, 1935.)
- LODGE, GEORGE E., F.Z.S., Hawkhuse, Park Road, Camberley, Surrey. (May, 1923.)
- LOSKY, R. F. ; Chiclayo, Perú. (Jan., 1930.)
- LOUWMAN, P. W. ; 4 Teylingerhorstlaan, Wassenaar, Holland. (Aug., 1936.)
- LOVELACE, THE COUNTESS OF ; Wentworth House, Chelsea Embankment, S.W. 3. (May, 1906.)
- LOWE, Rev. J. R. ; The Vicarage, Coln St. Aldwyn, Fairford, Glos. (June, 1927.)
- LUPTON, Miss E. M. ; Beechwood, Elmete Lane, Roundhay, Leeds. (Aug., 1933.)
- LYON, Capt. the Hon. MICHAEL ; Glamis Castle, Glamis, Forfarshire. (May, 1927.)
- McCANCE, DAVID ; Strand Town, Belfast. (July, 1932.)
- McCLURE, DAVID O'LOAN ; 3 Knutsford Drive, Cliftonville, Belfast. (Jan., 1936.)
- McDOWALL, KENNETH OF LOGAN ; Port Logan, Wigtownshire. (Sept., 1938.)
- McLINTOCK, Miss M. H. ; The Grove, Catton Grove Road, Norwich. (July, 1927.)
- McMILLAN, Dr. A. ; New Romney, Kent. (March, 1930.)
- McMILLAN, ERNEST ; "Rosetiles," 8 Rosepark East, Dundonald, Co. Down. (Feb., 1937.)
- McWAYNE, CHARLES A. ; 211 Merchant Street, Honolulu, Hawaii, U.S.A. (June, 1937.)
- MACK, WILLIAM ; 5 Furnival Chambers, St. George's Terrace, Perth, Western Australia. (Feb., 1931.)
- MACKIE, PHILIP C. ; LEEDS. (Jan., 1926.)
- MACKLIN, C. H., M.R.C.S., L.R.C.P., F.Z.S. ; 23 Church Street, Ampthill, Beds. (May, 1923.)

- MAIRAU, E. (Ingénieur Agronome I.A.G.); 41 Rue de la Ruche, Bruxelles, Belgium. (July, 1929.)
- MALONE, Mrs. M. L'ESTRANGE; West Lodge, Malton, Yorks. (Dec., 1902.)
- MALISOUX, IVAN; Beez, Namur, Belgium. (Feb., 1936.)
- MANCHESTER PUBLIC LIBRARIES; Charles Nowell, F.L.A. (Chief Librarian), Central Library, St. Peter's Square, Manchester, 2. (July, 1913.)
- MANFIELD, H.; c/o Zoological Gardens, Adelaide, South Australia. (June, 1937.)
- MARESI, POMPEO M.; 36 W. 9 Reimer Road, Scarsdale, New York, N.Y., U.S.A. (June, 1924.)
- MARSH, E. G.; Stoke Bishop, Drake's Avenue, Exmouth. (Sept., 1935.)
- MARSHALL, L. F.; 65 Fitzroy Avenue, Harborne, Birmingham 17. (Sept., 1937.)
- MARTEN, L. H., O.B.E., F.Z.S.; Tilton, near Battle, Sussex. (June, 1930.)
- MARTIN, A.; The Nash, Kempsey, near Worcester. (Oct., 1930.)
- MARTIN, H. C.; Las Cãnas, 44b Coper's Cope Road, Beckenham, Kent. (Jan., 1935.)
- MASON, Miss EVA INGLIS; Peppercorn Cottage, Burton, Christchurch, Hants. (Aug., 1934.)
- MASURE, RALF H.; 5514 Blackstone Avenue, Chicago, Ill., U.S.A. (Aug., 1935.)
- MATTHEWS, Mrs. W. M.; Sarsdenfield, Camberley, Surrey. (May, 1935.)
- MAXWELL, C. T.; 1 Sharderoft Avenue, Herne Hill, S.E. 24. (Dec., 1908.)
- MAXWELL, P. H.; Ebberley Hill, St. Giles, near Torrington, N. Devon. (Oct., 1929.)
- MAXWELL-JACKSON, Miss M.; Percy House, Scotton, Knaresborough, Yorks. (Jan., 1913.)
- MAYER, F. W. SHAW; Wulfruna, 88 Concord Road, Homebush, Sydney, Australia. (Aug., 1922.)
- MEERSCHAERT, FRANÇOIS; 372 Chaussie de Jette, Bruxelles, Belgium. (April, 1938.)
- MEESER, F. C. S.; P.O. Box 4993, Coronation Building, 23 Simonds Street, Johannesburg, South Africa. (July, 1937.)
- MERCK, Dr. WOLFGANG; Johnsallee, 42, Hamburg, 13. Germany. (March, 1935.)
- MERTENS, MARCEL (Inginieur); 10 Rue de Vergnies, Bruxelles, Belgium. (April, 1938.)
- MEYER, JOHN D.; Miami Rare Bird Farm Inc., Overseas Highway, Kendall, Florida, U.S.A. (Sept., 1938.)
- MIDDLEMOST, H. EDWIN; Foxholme, Birchencliffe, Huddersfield. (Dec., 1934.)
- MILLER, S. P.; Northend, Gloucester Road, Teddington.
- MILLIGAN, H.; Upper Manor Farm, Leckford, Stockbridge, Hants. (March, 1937.)
- MILTON, STANLEY F.; 75 Portland Avenue, Gravesend, Kent. (March, 1937.)
- MOODY, A. F.; Lilford, Barnwell, Peterborough. (July, 1926.)
- MOORE, ROBERT T.; R.R. No. 1, Box 28a, Pasadena, California, U.S.A. (July, 1928.)
- MORRISON, A.; St. Mary's Ridgway Road, Farnham, Surrey. (Jan., 1932.)
- MOUNTAIN, Capt. WALTON; Groombridge Place, Kent. (Feb., 1923.)

- MOWBRAY, LOUIS S., O.M.Z.S.; Curator, The Government Aquarium, Bermuda. (Aug., 1935.)
- MULICK, JITENDRO, F.Z.S.; Marble Palace, Calcutta, India. (Aug., 1933.)
- MURPHY, JOHN (District Commissioner); Kabarnet, via Eldama Ravine, Kenya Colony. (Oct., 1932.)
- MUSEUM OF COMPARATIVE ZOÖLOGY (rejoined); at Harvard College, Cambridge, Massachusetts, U.S.A.
- NAETHER, Professor CARL; University Park, Los Angeles, California, U.S.A. (June, 1934.)
- NELSON, RICHARD; 735 Holderness Road, Hull. (April, 1925.)
- NEWMAN, T. H., F.Z.S., M.B.O.U.; Verulam, 46 Forty Avenue, Wembley Park, Middlesex. (May, 1900.) (*Hon. Mem.*)
- NEWMARCH, C. T., F.Z.S.; Gamage's Ltd., Holborn, W.C. (Aug., 1915.)
- NICHOLSON, ALFRED E.; Blenheim, Forthview Terrace, Blackhall, Edinburgh, 4. (Feb., 1925.)
- NICOL, HAMISH, F.R.C.S., F.Z.S.; Hillside, Christchurch Road, Hampstead, N.W. 3. (Jan., 1926.)
- NIGHTINGALE, F. B., F.R.I.B.A.; 73 Albert Bridge Road, S.W. 11. (Dec., 1933.)
- NORCROSS, HERBERT; Normanhurst, Mount Road, Middleton, Lancs. (March, 1930.)
- NORDHOFF, CHARLES B.; Papeete, Tahiti. (Aug., 1937.)
- OATS, R. C.; 15d Causeway Head, Penzance, Cornwall. (Sept., 1935.)
- OBERHOLSER, HARRY C.; 2805 18th Street, N.W. Washington, D.C., U.S.A. (Oct., 1903.)
- OGILVIE, Mrs. BRENDA; Bonlay Tower, Colinton, Midlothian. (May, 1927.)
- ORNAMENTAL PHEASANT SOCIETY; Secretary: J. F. Lambert, Nawton, Yorkshire. (March, 1938.)
- OSTREHAN, CLEMENT; Kington Rectory, Worcester. (Jan., 1928.)
- PAGE, L. W.; Wych Cross, Reigate Road, Reigate, Surrey. (June, 1938.)
- PALMER, CHAS. S., F.Z.S., F.B.S.A.; Flat 11, Manor House, Honar Oak Road, S.E. 23. (May, 1938.)
- PALMER, G. E., F.Z.S.; 83 Park Street, Camden Town, N.W. 1. (March, 1926.)
- PAM, Major ALBERT, F.Z.S.; Wormleybury, Broxbourne, Herts. (Jan., 1906.)
- PAPE, Mrs. A. M.; Forest Lodge, Binfield, Berks. (Oct., 1937.)
- PARTRIDGE, W. R.; Larches, near Fladbury, Pershore, Worcestershire. (April, 1934.)
- PATTERSON, A. J.; Ripon, Ruxley Lane, Ewell. (Jan., 1933.)
- PEARSE, Mrs.; Channel View, Bembridge, Isle of Wight. (Rejoined.)
- PETERSON, Mrs.; Applehill, Kelling, near Holt, Norfolk. (July, 1929.)
- PHILLIPS, GEORGE; Moorings Hotel, Overy Staithe, Burnham Market, Norfolk. (Jan., 1939.)
- PHIPPS, Mrs.; Hailey Manor, Witney, Oxon. (Jan., 1935.)
- PICKERING, ROWLAND H. E. U.; Thunder Hall, Ware, Herts. (Feb., 1936.)
- PICKFORD, RANDOLPH JOHN; Etherley Lodge, Nr. Bishop Auckland. (Feb., 1903.)
- PIKE, L. G., F.Z.S.; King Barrow, Wareham, Dorset. (1912.)

- PITT, W. S. ; Wildwood, Silverdale Avenue, Walton-on-Thames, Surrey. (March, 1934.)
- PLATH, KARL ; 2847 Giddings Street, Chicago, U.S.A. (July, 1924.)
- PLATT, E. ; Poppleton Thatch, Hale Road, Hale, near Liverpool. (Jan., 1938.)
- POLAK, Dr. A. C. ; Kon. Wilhelminastraat 15, Amersfoort, Holland. (Oct., 1937.)
- POLTIMORE, Lady ; Court Hall, North Molten. (Jan., 1926.)
- POPHAM, Mrs. LEYBOURNE ; Hunstrete House, Pensford, near Bristol. (July, 1937.)
- PORTER, SYDNEY, F.Z.S. ; The White Gates, Stenson Road, Derby. (April, 1920.)
- POTTER, BERNARD E., M.B., M.R.C.S., L.R.C.P., F.Z.S. ; 17 Portland Place, W. (March, 1914.)
- POTTER, Dr. H. RADFORD ; The Mount, Basingstoke, Hants. (July, 1934.)
- POTTER, W. H. ; Whetherill, Fitzillian Avenue, Harold Wood, Essex. (July, 1926.)
- POVOA, COUNT ; 108 Rua do Sol, Ao Rato, Lisbon, Portugal. (May, 1935.)
- PRINCETON UNIVERSITY LIBRARY ; U.S.A.
- PYCRAFT, W. P., A.L.S., F.Z.S., M.B.O.U., etc. ; British Museum (Nat. Hist.), Cromwell Road, S.W. 7. (Nov., 1904.) (*Hon. Mem.*)
- PYE, Miss L. ; High Street, Haslington, Crewe. (March, 1938.)
- PYMAN, Miss E. E. ; West House, West Hartlepool. (June, 1919.)
- QUINCEY, R. S. DE Q. ; The Vern, Bodenham, Hereford. (April, 1913.)
- RAMPTON, S. C. ; South Lake, Woodley, Berks. (Dec., 1935.)
- REEVE, Capt. J. S., F.Z.S. ; Leadenham House, Lincoln. (March, 1908.)
- REVENTLOW, AXEL ; Zoological Garden, Kobenhavn F., Denmark. (Jan., 1928.)
- RIPLEY, S. DILLON ; Litchfield, Connecticut, U.S.A. (Sept., 1937.)
- RISDON, D. H. S. ; "Remura," 130 Green Lane, Northwood, Middlesex. (Jan., 1934.)
- ROBERTS, N. A. ; Roughlee, Worsley Road, Worsley, near Manchester. (Jan., 1938.)
- ROBERTS, Miss IDA ; Beaumaris, Montpelier Street, Hobart, Tasmania. (Jan., 1923.)
- ROBINSON, Miss ELSIE ; Snaprails, Sandhurst, Camberley, Surrey. (Sept., 1929.)
- ROBINSON, Mrs. T. E. ; P.O. Box 2314, Bishop Trust Buildings, Honolulu, Hawaii, U.S.A. (June, 1935.)
- ROBINSON, JOHN H. ; 23 Cavendish Street, Ramsgate. (Sept., 1927.)
- ROGERS, H. E., F.Z.S. ; Zoological Park, Emswood Road, Mossley Hill, Liverpool. (June, 1919.)
- ROGERS, Miss MILLICENT C. ; Ingham New Hall, Ingham, Norwich. (Oct., 1936.)
- ROTHSCHILD, JAMES DE ; 46 Park Street, W. 1. (March, 1923.)
- ROTHSCHILD, LIONEL DE ; 18 Kensington Palace Gardens, W. 8. (Nov., 1913.)
- ROUSE, R. F. ; Mountlands, 64 Westfield Road, Edgbaston, Birmingham. (Nov., 1932.)

- ROWE, ROY L. ; 332 Warren Road, San Mateo, California, U.S.A. (Nov., 1937.)
 ROY, ANANTO KUMAR ; 59 Upper Chitpore Road, Calcutta, India. (March, 1934.)
 RUDKIN, FRANCIS H. ; R.I., Box 31, Fillmore, California, U.S.A. (May, 1902.)
 RUMSEY, LACY ; 23 Rua de Serpa Pinto, Villa Nova de Gaya, Oporto, Portugal. (April, 1919.)
 RYAN, B. J. ; Executive Engineer, P.W.D., Jaipur State, Rajputana, India. (Aug., 1926.)
 RYAN, Sir G. E. ; 6 Stanhope Terrace, W. 2. (June, 1931.)
 SAINT, Dr. PAUL ; 54 Upper Brook Street, W. 1. (May, 1938.)
 SARABHAI, AMBALAL ; The Retreat, Shahibagh, Ahmedabad, India. (Jan., 1934.)
 SCHMIDT, PAUL ; Senta, Yugoslavia. (March, 1934.)
 SCHUYL, D. G. ; Kralingscheweg 332, Rotterdam, Holland. (Jan., 1914.)
 SCLATER, W. L., M.A., F.Z.S. ; 10 Sloane Court, S.W. 3. (Aug., 1904.)
 SCOTT, A. H. ; Blissford Pool, Fordingbridge, Hants. (March, 1934.)
 SCOTT-HOPKINS, Capt. C. ; Low Hall, Kirby Moorside, Yorks. (July, 1928.)
 SEPPINGS, Lieut.-Col. J. W. H., F.Z.S. ; c/o Lloyd's Bank, Ltd., Cox & King's Branch (G.3), 6 Pall Mall, London, S.W. 1. (Sept., 1907.)
 SETH-SMITH, DAVID, F.Z.S., M.B.O.U. ; Zoological Society, Regent's Park, N.W. 8. (Dec., 1894.) (*Hon. Mem.*)
 SEYMOUR, Mrs. ; Kilbees Farm, Winkfield, Windsor. (Rejoined.)
 SHAKESPEARE, WALTER ; Sefton, St. George's Hill, Weybridge. (Aug., 1926.)
 SHEARING, A. P. ; The Aviaries, Foxwarren Park, Cobham, Surrey. (Dec., 1931.)
 SHERBROOK, WILLIAM ; The Old Vicarage, Tadworth, Surrey. (April, 1931.)
 SHERRIFF, A., F.Z.S. ; Edge Hill, 8 Ranulf Road, N.W. 2. (March, 1923.)
 SIBLEY, C. L. ; Sunnyfields Farm, Wallingford, Conn., U.S.A. (Jan., 1934.)
 SILVER, ALLEN, F.Z.S. ; 18 Baneswell Road, Newport, Mon.
 SIMPSON, ARCHIBALD ; Northwold, The Crescent, Bardsey, near Leeds. (Feb., 1901.)
 SIMPSON, H. W. ; 6 Barry Road, Stonebridge, Willesden, N.W. 10. (Nov., 1924.)
 SIMPSON, Mrs. M. K. M. ; 98 Pittencrieff Street, Dunfermline, Fife. (May, 1937.)
 SIMSON, Capt. RUPERT, O.B.E. ; Rickham, Bray, Berkshire. (July, 1932.)
 SISSONS, H. P. ; 8 Potter Street, Worksop, Notts. (April, 1927.)
 SLADE, G. J. ; Shenley, 21 Wilton Crescent, Southampton. (Feb., 1915.)
 SMITH, A. ST. ALBAN, F.Z.S. ; Ringwood, Ringlet, Cameron Highlands, Pahang, F.M.S. (Feb., 1929.)
 SMITH, Mrs. D. N. ; The Friars, Rye Close, West Worthing. (June, 1934.)
 SMITH, H. B. ; 3 Claremont Road, Redruth, Cornwall. (Oct., 1927.)
 SMITH, PAUL H. ; 11 Parkhill Road, Hampstead, N.W. 3. (June, 1927.)
 SMITH, W. PROCTOR, F.Z.S. ; Moorlands, Broad Road, Sale, Manchester. (Nov., 1917.)
 SMITH, Mrs. WIKOFF ; Morris Avenue, Bryn Mawr, Penna, U.S.A. (Jan., 1935.)

- SOUTHOFF, GEORGE DE, C.M.Z.S.; 9-11 Via S. Spirito, Florence, Italy. (1921.) (*Hon. Mem.*)
- SOUTHPORT CORPORATION, CURATOR OF; Hesketh Park, Southport. (Jan., 1904.)
- SPALDING, MRS. PHILIP; c/o C. M. Cook, Ltd., Honolulu, Hawaiian Islands. (March, 1935.)
- SPENCER, HENRY; 19 Langcliffe Avenue, Harrogate. (Sept., 1928.)
- SPRAWSON, EVELYN, M.C., D.Sc., M.R.C.S., F.Z.S.; Cranford, Welcomes Road, Kenley, Surrey. (June, 1923.)
- SPURWAY, N. B.; Meadow Court, Stoughton Drive South, Leicester. (April, 1923.)
- STARK, J.; Woods Cottage, Haddington, Scotland. (Jan., 1924.)
- STEPHENS, JOHN; Kingswood Chase, Hindhead, Surrey. (Sept., 1932.)
- STEVENS, R.; Walcot Hall, Lydbury North, Shropshire.
- STEVENS, N.; Walcott Hall, Lydbury North, Shropshire.
- STEWART, JOHN; The Hermitage, Elstead, Surrey. (Rejoined.)
- STEYNE, ALAN N.; American Embassy, 1 Grosvenor Square, W. 1. (Sept., 1932.)
- STIGAND, MRS. PEARSALL; Antica Casa Colonica, 19 Via Augusto Baldesi, San Gervasio, Florence Italy. (Dec., 1932.)
- STILEMAN, GERALD R., F.Z.S.; Down House, Soberton, Hants. (Rejoined Feb., 1932.)
- STILEMAN, MRS. G. R.; Down House, Soberton, Hants. (July, 1937.)
- STOKES, Capt. H. S., F.Z.S., M.B.O.U., M.C.; Longdon, Rugeley, Staffordshire. (Oct., 1922.)
- STROMBI, Miss DORA A.; East Bank House, Brechin, Angus. (April, 1930.)
- SUGGITT, ROBERT; Suggitt's Lane, Cleethorpes, Grimsby. (Dec., 1903.)
- SWAN, J. C.; 73 The Drive, Hove, Sussex. (Nov., 1933.)
- SWEETNAM, Rev. Preb. J. E., F.B.S.A.; The Rectory, Enborne, Newbury, Berks. (Feb., 1931.)
- SWINBURNE, Dr. S. C.; "Wychwood," Hawkhurst, Kent. (June, 1937.)
- SYKES, JOHN; Whitehouse Cottage, Inveresk, Musselburgh, Midlothian. (Jan., 1912.)
- SYSONBY, LORD; Great Tangley Manor, Guildford, Surrey. (June, 1938.)
- TAKA-TSUKASA, PRINCE NOBUSUKE, F.Z.S.; 1732 Sanhome, Kamimeguro, Meguro-ku, Japan. (Feb., 1914.)
- TANNER, Dr. FRANK L.; Vanvert House, Guernsey. (Jan., 1914.)
- TARONGA ZOOLOGICAL PARK TRUST; Mosman, Sydney, Australia. (Aug., 1913.)
- TAVISTOCK, THE MARQUESS OF, F.Z.S.; Barrington House, Lindfield, Sussex. (1912.)
- TAYLOR, F. W., J.P.; 34 West Sunnyside, Sunderland. (April, 1933.)
- TEAGUE, P. W.; Lybrook, Broadway, Worcestershire. (June, 1930.)
- TEBBITT, MICHAEL; 8 Malpas Drive, Pinner, Middlesex. (July, 1937.)
- TENNANT, Hon. STEPHEN; Wilsford Manor, Salisbury. (April, 1926.)
- THIN, Miss JEAN; Aston Somerville Hall, Broadway, Worcestershire. (March, 1938.)
- THOM, ALFRED A.; Whitwell Lodge, Whitchurch, Salop. (June, 1913.)
- THOMAS, F. E.; "Edendale," Creswick Road, Springfield Park, Acton, W. 3. (Oct., 1931.)

- THOMASSET, BERNARD, C., F.Z.S. ; Seend, near Melksham, Wilts. (July, 1896.)
- TODD, HORATIO, J.P., M.P.S.I., F.C.S. ; Bromleigh, Neill's Hill, Belfast. (Aug., 1924.)
- TONG, RUDDY ; P.O. Box 216, Macao, China. (March, 1935.)
- TRANSVAAL MUSEUM ; The Director, Transvaal Museum, Pretoria. (Jan., 1921.)
- TRAVERS, Mrs. J. ; Windmill Cottage, Mayfield, Sussex. (Dec., 1903.)
- TUMA, F. L. ; Riegrovo nab 34, Prague 2, Czechoslovakia. (May, 1933.)
- TURNER, A. GEOFFREY ; Hungerford Park, Berks. (July, 1934.)
- TURNER, H. B. ; Malverleys, near Newbury. (April, 1928.)
- TURNER, WALTER ; 476 Pitt Street, Sydney, N.S.W.
- TYEBJEE, ABDE AMIRUDDIN SHALEBHOY ; Malabar Court, Ridge Road, Malabar Hill, Bombay. (Sept., 1934.)
- TYSER, Mrs., F.Z.S. ; Dudbrook, near Brentwood, Essex. (Jan., 1934.)
- UPPINGHAM SCHOOL ; the school library, the Old School House, Uppingham. (Nov., 1920.)
- VALENTINE, ERNEST ; 7 Highfield, Workington, Cumberland. (May, 1899.)
- VANE, E. N. T. ; Ridgeway, Joel Park Estate, Joel Street, Pinner, Middlesex. (March, 1937.)
- VENNING, H. C. ; Willett, Bicknaller, Taunton. (Jan., 1927.)
- VIERHELLER, GEO. P. ; St. Louis Zoological Park, St. Louis, Mo., U.S.A. (March, 1928.)
- VOY, Miss HILDA ; Oak Hill, Haslemere, Surrey. (Sept., 1936.)
- VROOM, Mrs. DOUGLAS E. ; 255 So. Burrey Glen, West Los Angeles, Calif., U.S.A. (Rejoined.)
- WACHSMAN, A. E. WRIGHT DE BERRI ; Maitai, Murray Road, Beecroft, N.S.W. (Aug., 1914.)
- WALKER, Miss H. K. O. ; Chesham, Bury, Lancs. (Feb.,) 1895.
- WALLER, H. ; Kittsbury, 64 St. Julians Farm Road, West Norwood, S.E. 27.
- WALTER, Mrs. AUSTIN ; The Nunnery, Penshurst, Kent. (July, 1938.)
- WARRE, Captain GEORGE F. ; 47 Lonsdale Road, Barnes, S.W. 13. (Feb., 1936.)
- WARRE, Mrs. PHILIP ; Coppid Hall, Stifford, Essex. (June, 1935.)
- WAUD, Capt. L. REGINALD, F.Z.S., M.B.O.U. ; Bradley Court, Chieveley, near Newbury. (May, 1913.)
- WEBB, C. S. ; Thirlmere, Beachborough Villas, Shorncliffe Road, Folkestone, Kent. (March, 1928.)
- WEBB, PATRICK B. ; Barney's Brae, Randalstown, Co. Antrim, N. Ireland. (Aug., 1929.)
- WEBBER, LEONARD C. ; H.M.A.S. *Australia*, c/o G.P.O., Sydney, N.S.W., Australia. (June, 1935.)
- * WEBER, ORLANDO F., Junr. ; 22 East 82nd Street, New York, U.S.A. (Jan., 1937.)
- WESTMACOTT, Captain G. R., D.S.O. ; Rodmell Farm, near Lewes, Sussex. (Feb., 1933.)

- WESTMACOTT, Lady ; Hotel Vendôme, Place Vendôme, Paris, 1^e. (Dec., 1928.)
- WESTON, CLIFFORD ; Hall Leys, Oadby, near Leicester. (Jan., 1938.)
- WHARTON-TIGAR, Mrs. N., F.Z.S. ; 10 Charlcott Crescent, N.W. 1. (July, 1932.)
- WHITBURN, Mrs. C. M. S. ; Amport St. Mary's, Andover, Hants. (July, 1934.)
- * WHITLEY, HERBERT, F.Z.S. ; Primley Hill, Paignton, S. Devon. (Sept., 1923.)
- WHITMORE, G. E. ; 168 High Street, West Bromwich, Birmingham. (July, 1935.)
- WHITTINGHAM, W. NEVILLE. (Feb., 1928.)
- WILDEBOER, Dr. H. G. ; Burnbrae, Holderness Road, Hull. (1924.)
- WILKINS, A. ; Rendcombe, Chesham, Bucks. (April, 1930.)
- WILLFORD, HENRY ; San Souci, Havenstreet, Ryde, Isle-of-Wight. (Nov., 1907.)
- WILLIAMS, SIDNEY, F.Z.S. ; 19 Beechdale, Winchmore Hill, N. 21. (Oct., 1905.)
- WILSON, AND., F.Z.S. ; 233 Argyle Street, Glasgow, C. 2. (April, 1927.)
- WILSON-JONES, Mrs. KATHLEEN ; Lanivet, near Bodmin, Cornwall. (Jan., 1934.)
- WINTER, DWIGHT ; Center and Negley Avenue, Pittsburgh, Pa., U.S.A. (1922.)
- WITTING, R. C. ; 20 Bucklersbury, E.C. 4. (July, 1937.)
- WOOD, Dr. CASEY, F.Z.S. ; McGill University Library, Montreal, Canada. (Sept., 1922.)
- WOOD, Mrs. MURIEL ; 8 Lambolle Road, N.W. 3. (July, 1927.)
- WORKMAN, WILLIAM HUGHES, F.Z.S., M.B.O.U. ; Lismore, Windsor Avenue, Belfast. (May, 1903.)
- YAMASHINA, THE MOST HON. THE MARQUIS ; 49 Nampeidai-Machi, Shibuya-Ku, Tokyo, Japan. (July, 1938.)
- YEALLAND, JOHN ; Armendy, Sterrebeek, Wesembeck-Ophem, Belgium. (July, 1934.)
- ZIPP, W. C. H. ; P.O. Box 6899, 430 Commissioner Street, Kensington, Johannesburg, Transvaal, South Africa. (April, 1937.)
-

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- PENNEY, W. K. ; "Mount Cooper," Anzac Highway, Plympton, Adelaide, South Australia.
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- JAQUES, ALAN ; Balwyn Road, Balwyn, E. 8, Melbourne, Victoria, Australia.
- MOORE, V. ; 375 Upper Heidelberg Road, Ivanhoe, Melbourne, Victoria, Australia.
- TUCKER, W. A. ; Rosebank, Canterbury Road, Blackburn, Victoria, Australia.

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EDWARDS, H. C. ; Dental Surgeon, Wanganui.

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GEARY, WALTER ; Mere Mere, Hawera.

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GRAY, S. J. ; 19 Bridge Street, Rongotai, Wellington.

- HASTINGS BOROUGH COUNCIL ; P.O. Box 218, Hastings, Hawke's Bay.
 HENLEY, J. ; 18a Hauraki Street, Birkenhead, Auckland, N. 5.
 HUGHES, Miss K. ; " Jubilee " Private Hotel, Currie Street, New Plymouth.
 HAYE DE LA, Miss E. ; Hatuma, Waipukurau R.D., Hawke's Bay.
 HOWARD, F. H. ; 11 Parson's Street, St. John's Hill, Wanganui.
 HUTCHINSON, G. ROWLAND ; P.O. Box 770, Auckland, C. 1.
- JENNER D. ; Motumaoho, Morrinsville.
 JONES, Mrs. E. ; 337 Victoria Street, Hamilton, Waikato.
 JUST, A. W. ; 60 College Street West, Palmerston North.
 JONES, L. J. ; c/o E. C. Jones, Ltd., 174 Manchester Street, Ch. Ch.
- KING, W. ; 11 Main Street, Gore.
- LENNIE, Mrs. D. B. ; Mangorei Road, New Plymouth.
 LUCAS, Mrs. N. O. ; 23 Kolmar Road, Papatoetoe, Auckland.
 LILBURN, J. D. ; " Drysdale," Hunterville.
- MAYZE, Miss M. ; Matron, Mental Hospital, Auckland, W. 3.
 MITCHELL, J. ; Gordon Road, Mosgiel.
 MORRIS, Mrs. BEATRICE ; St. George Street, Gosford, New South Wales, Australia.
- MARCEAU, L. ; " Bellevue," 1 Alfred Street, Auckland, C. 1.
 MATHORNE, W. ; 5 Broadway, Dunedin, C. 1.
 McMULLIEN, Miss N. ; Awararua Street, Ngaio, Wellington.
 MCKAY, D. ; P.O. Box 53, New Plymouth.
 McNEILL, C. ; P.O. Box 267, New Plymouth.
- NATHAN, Mrs. C. ; 19 Arney Road, Remuera, Auckland, S.E. 2.
 NESBIT, J. ; Ohai, Southland.
- O'SHAUGHNESSY, W. F. ; 27 Monro Street, Seatoun, Wellington, E. 5.
- PARKER, Mrs. T. ; 1 Oakley Avenue, Hamilton, Waikato.
 PAUL, J. T. ; 150 St. David Street, Dunedin.
 PORTER, E. ; 4 Arney Crescent, Remuera, Auckland, S.E. 2.
 PORTER, E. C. ; 61 Hutt Road, Petone, Wellington.
 PRISCOTT, J. ; Hood Street, Hamilton, Waikato.
 PORT, W. J. ; Mabel Street, Levin.
- RAE, W. McD. ; 37 Arun Street, Oamaru.
 RANSTON, Dr. H. ; Trinity Methodist College, Auckland, C. 3.
 REID, GEO. ; " Grassington," Rotherham, North Canterbury.
 ROBINSON, J. W. ; Exeter Street, Abbotsford, Dunedin.
 RONDON, R. ; Matata, Bay of Plenty.
- SMITH, J. R. ; 115 St. Andrew's Square, Christchurch.
 SMITH, J. ; 5 Dunbar Road, Dominion Road, Auckland, S. 2.
 SOWMAN, C. ; 24 Connolly Street, Lower Hutt, Wellington.
 SPENCER, Miss H. M. ; 11 Dilworth Avenue, Remuera, Auckland, S.E. 2.
 STARR, D. ; 11 Avon Street, Frankton Junction, Waikato.

STRANG, A. R. ; Frankleigh Park, New Plymouth.

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Wellington.

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VALLANGE, P. K. O. ; c/o Dalgety & Co., Ltd., P.O. Box 7, Dunedin.

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Rules of the Avicultural Society

As amended, November, 1930

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 January and end on the 31st of December 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 the manner hereinafter provided, and shall consist of a President, one or more Vice-Presidents, a Secretary, an Editor, a Treasurer, an Auditor, a Scrutineer, and a Council of eighteen members. The Secretary, 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 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 shall object to any candidate, the name of such candidate shall be brought before the Council at their next meeting, and the Council shall have power to elect or to disqualify him from election.

5.—Each Member shall pay an annual subscription of £1, to be due and payable in advance on the 1st of January in each year. New Members shall pay, in addition, an entrance fee of 10s. ; 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 Secretary before the 1st of December, so that their names may not be included in the "List of Members", which shall be published annually in the January 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 or the Publishers. Members whose subscriptions shall not have been paid as above by the first day in November in any year shall cease to be Members of the Society, but may be re-admitted, at the discretion of the Council, on payment of the annual subscription.

8.—The Secretary, 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 November number of the Magazine preceding the retirement from office of the Secretary, Editor, or Treasurer, the Council shall publish the names of those members whom they have nominated to fill the vacancies thus created; and these members 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 Secretary on or before the 15th of November.

The Council shall also publish yearly in the November number of the Magazine the names of those members 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 November 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 fifteen Members proposing them, must reach the Hon. Secretary by the 15th of November. The names of the four candidates will then be printed on a voting paper and sent to each Member with the December number of the Magazine, and the result of the voting published in the January 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 Secretary, Treasurer, 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 fill temporarily 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. Secretary, Editor, or Treasurer) the appointment shall be confirmed by the Council at its next meeting.
- (iii) 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 to or alter the Rules ;
- (ii) To expel any Member ;
- (iii) To re-elect the Secretary, 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 another Member of the Executive.

It shall be lawful for the Secretary or Editor to pledge the Society's credit for a sum not exceeding £50.

Should a Member wish any matter to be brought before the *Council* direct such matter should be sent to the 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 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. No medal can be given for the breeding of hybrids, or of local races or sub-species of species that have already been bred.

The account of the breeding must be reasonably full so as to afford instruction to our Members, and must appear in the AVICULTURAL MAGAZINE before it is published or notified elsewhere. It 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.

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 recipient*] for rearing the young of [*name of species*], a species not previously bred in captivity in the United Kingdom."

The Council may grant a special medal to any member who shall succeed in breeding any species of bird that has not previously been bred in captivity in Europe.

PETER JONES

of

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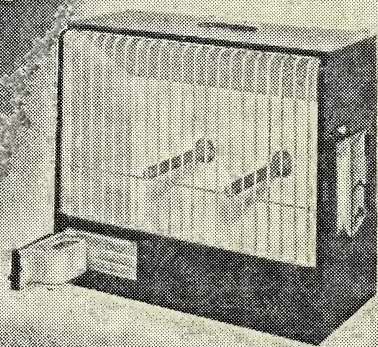
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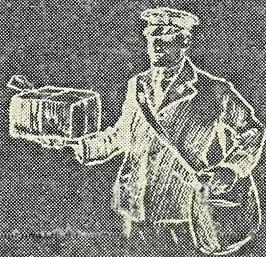
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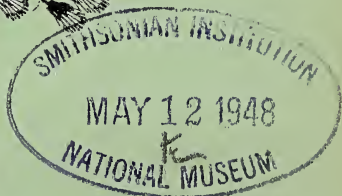
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AVICULTURAL MAGAZINE



CONTENTS

	PAGE
The Blue-shouldered Tanager (<i>with coloured plate</i>), by C. S. WEBB	1
Breeding Results at Clères, by J. DELACOUR	2
New Birds for Old, by A. H. SCOTT	5
The Early Years of the Avicultural Society, by DAVID SETH-SMITH	11
Breeding Records : Summary V, by Dr. E. HOPKINSON	15
Birds of Jamaica, by A. SHERRIFF	22
Leckford Aviary Jottings, by E. F. CHAWNER	28
Tame Birds at Liberty, by GUY FALKNER	29
List of Members.	

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Blue-shouldered Tanager
Compsocoma somptuosa cyanoptera Cab.

AVICULTURAL MAGAZINE

THE JOURNAL OF THE
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JANUARY, 1939.

THE BLUE-SHOULDERED TANAGER

(*Compsocoma somptuosa cyanoptera*)

By C. S. WEBB

The Tanagers in general are noted for their brilliant coloration, and when the term "outstandingly beautiful" is applied to a member of this family, it means that the bird is a living gem. I think this can truly be said of the Blue-shouldered Tanager. It is found in the forest of the sub-tropical zone, and does not range to such high altitudes as most of the other large Mountain Tanagers. My specimens were obtained between 5,000 feet and 6,000 feet. Those that I saw in their wild state were always fairly near the ground in low trees or bushes, apparently searching for insects. Their diet, of course, consists of fruit also, but they are undoubtedly more insectivorous than most Tanagers.

I once saw a party of eight in a clump of second-growth behaving more or less like Tits, clinging to the branches upside-down, and searching under the large leaves for grubs. They are not very wary of man, and also become very tame immediately after capture. Their flight is rather weak for a Tanager, and they seldom fly more than a short distance before alighting again, and being anything but skulking in their habits they are not difficult to detect or watch.

My Indian hunter, who was an expert with the blow-gun, had little difficulty in stalking these unsuspecting birds, and in obtaining several for my collection. This method of capture is a very effective one, and is much quicker than relying on traps or nets.

Blue-shouldered Tanagers range from Central Peru to Venezuela, but there are several races, and the one dealt with here, *C. s. cyanoptera*, is confined to the Western Andes of Ecuador and Colombia.

There is no difference in the coloration of the sexes. The local Ecuadorian name is "Curillo".

* * *

BREEDING RESULTS AT CLÈRES

By J. DELACOUR

Luck seemed to be against us in 1938; the impossibly cold and dry spring, and more still, the serious illness of Mr. F. Fooks during April and May, were a serious handicap to successful breeding. And to add to it, I had to make preparations for the International Ornithological Congress which took place at Rouen in May, so that I personally had very little time to spend with the birds at Clères.

The cold spring resulted in small clutches, and in the case of all the river Ducks, no eggs at all. Mr. Fook's illness, in depriving the birds of his experienced and assiduous care, caused the loss of several broods. However, quite a few were reared this last season, in spite of these unfavourable circumstances. Here is a list of the birds, with a few notes on them.

RHEAS.—We reared twenty Rheas, eleven Whites, eight Greys, and one Darwin's. All the eggs were first incubated by the males, then put into an incubator for a few days and hatched there. They were brought up in small houses fitted with electric brooders. For the first time, one Darwin's Rhea was reared out of two chicks hatched. This very delicate species must be treated with great care, and never allowed to eat any hard food or coarse greenstuff for the first two months.

Ostriches and Emus laid, but their eggs proved infertile.

CRANES.—A pair of Manchurian Cranes reared a fine female, hatched in April. They live in a 50 acre enclosure, where natural food is plentiful, in company with Darwin's Rheas, Pseudaxis Deer, and a few Waterfowl. The pair made up of a male Australian and female Eastern Sarus had two young in 1937, but failed to rear the only chick hatched rather late this year.

Two pairs of Demoiselles reared a brood as usual. The other Cranes did not lay.

SWANS.—The old pairs of Black-necked and Black Swans reared four young each, the former hatching in March. The American Whistling Swans showed no sign of nesting.

GEESE.—The season was a good one for Geese, and the following were reared : five Emperors, four Lesser White-fronted, two Blue Snow, two Ross's Snow, four Magellan, six Ashy-headed, eight Ruddy-headed, nine Andean, and four Blue-winged Geese. All, except the last-named, were incubated under broody hens.

SHELD-DUCKS.—A dozen Common Sheld-ducks, six Paradise, and ten South African were bred, as well as three hybrids, $\frac{3}{4}$ Rajahs \times $\frac{1}{4}$ Ruddy. Female Australian and Rajah Sheld-ducks seemed ready to breed in the early spring, but, as usual, did not lay. It is very doubtful whether these two fine species will ever be established in captivity unless through cross-breeding. The $\frac{3}{4}$ Rajah hybrids look like Rajahs in shape, size, and general colour, but the brown of their upper parts is lighter, almost mahogany red, and the band across the breast is wider and rather irregular. When we obtain the $\frac{7}{8}$ cross, I think that it will be extremely difficult to tell them from pure Rajahs.

TREE-DUCKS.—Only a very few Fulvous and Black-billed were reared, several broods of White-faced and Red-billed being lost.

SURFACE-FEEDING DUCKS.—Fewer than usual were bred, owing to lack of care ; just over a hundred, including Cinnamon, Brazilian, Chestnut-breasted Teal, Chiloe and American Wigeon, and only a few Mandarins and Carolinas. Several broods of Versicolors were lost.

DIVING DUCKS.—These suffered from the same cause ; some Scaup, Lesser Scaup, Tufted, Madagascar, and Common White-eyes, Red-crested Pochards, Red-heads and Common Pochards were reared.

My old Harlequin drake literally committed suicide by following Mandarin females on foot hundreds of yards from the water, up in the park, as they were looking for nesting holes. When I discovered it, it was almost too late and he died of exhaustion, never taking time to feed properly. His mate had died the summer before, after five years on the lake.

PHEASANTS.—We had a fairly good season with the rarer Pheasants, the worst failure being the loss of two Palawan chicks, rather late hatched as usual; we had no Germain's nor Grey Peacock-pheasants, but we reared the following: five Rheinart's and two Common Argus; four Bronze-tailed Peacock-Pheasants; seven Temminck's, seven Blyth's, and three Satyr Tragopans; one hybrid Yellow-necked \times Indian Koklass, six Cheer, twenty Amhersts, six Sœmmerring's, twenty-one Mikados, four Elliott's, two Horsfield's, two Edward's, six Bel's, seven White-crested Kalij's, four Versicolor Pheasants, six Sonneratt's, twelve Ceylon, and fifteen Red Jungle-fowl (the latter from wild-caught parents).

OTHER GAME BIRDS.—Some Wild Turkeys, Black-winged and Common Peafowl, as well as seven Black-winged \times Spicifer hybrids. Three newly-hatched Brush Turkeys were caught in October, only one of them being reared.

PIGEONS.—Numbers of Pigmy, Tambourine, and Diamond Doves, as well as Senegal and other commoner species were reared, also three Long-tailed Doves, six Bar-tailed, and one Snow Pigeon.

The most interesting record is that of the Red-eyed Dove (*Melopelia ceciliæ*), three pairs of which I bought in July; one young one was reared in September. It is a very attractive little Dove from Peru, new to aviculture, and this is its first breeding record. The nest escaped notice, in a large and thickly planted aviary, and we only saw the young one when it came out of the nest, looking just like a miniature of the parents.

Of the rest of the birds, the only nesting worth mentioning is that of the Courier's Water Tyrants, who reared two broods, as usual in the greenhouse.

NEW BIRDS FOR OLD

By A. H. SCOTT

The AVICULTURAL MAGAZINE devotes its pages almost entirely to foreign birds, but would it not gain if it were a little more catholic and comprehensive? I cull the following passage from the August number 1935: its author is Dr. Amsler: "As is well known," he writes, "a certain faction of the Canary Fancy is aiming at a red Canary." Come come, Dr. Amsler, as a member of the Red Canary Club, I protest. "Section" is surely the word you were looking for. *Faction*—"unscrupulous, turbulent, or self-interested party" (Fowler). We know there have been turbulent priests and turbulent politicians, but who ever saw a turbulent Canary-breeder? There is, I am told, a young man in Germany who has taken a vow that he will never marry until he has produced a red Canary. This may be reprehensible fanaticism; it is certainly not self-interest or turbulence. "We know," continues Dr. Amsler, "that in these pages the Canary is taboo." Be it so, I will avoid the vulgar bird. Foreign birds are aristocratic, Budgerigars are middle-class, Canaries are plebeians. British birds are gentlemen, and mix easily with all classes; they deserve a little more space than they get. For a number of years, some thirteen altogether, it has been my endeavour to breed British birds with new colours. Having at last, after much labour and great expense, partly achieved this object, and having bred more birds than I could retain, I advertised them last year in the AVICULTURAL MAGAZINE; white Sparrows, fawn, grey, and silver Sparrows; canary-coloured Greenfinches, blue Greenfinches, white Thrushes, and what not. I imagined that the Avicultural Society would be quite excited about it, and that persons of much greater scientific competence than myself would take up the idea. I was distinctly peeved when this advertisement, even when repeated, brought me no inquiry, not a single letter, not one post-card. The young man in Germany, I reflected, is very ill-advised to eschew happiness for the sake of an object which will not raise the slightest ripple of interest. But worse was to come. I wrote to a very great ornithologist, saying that I had this flock of white Sparrows, and asking whether he knew of any suitable island

or country without Sparrows, where I could send these and establish a new variety of birds in the wild state. He replied very shortly : " On no account release these birds." To him I think they were a sort of lapse from ornithological good taste, offensive in the way that abominable neologisms like " air-drome " would be to the late Fowler. [Let me, in passing, pay tribute to H. W. Fowler. Not only the final authority on our language, but a Stoic sage whom no calamity could shake, yet sensitive as a tremulous leaf to the least breach of taste ; who was a fit companion for Socrates himself, yet would make friends with the most ordinary man if he liked him ; who was too humane to put a worm upon a hook, yet when approaching sixty, sought successfully to reach the front trenches in the War. England will not see his like again ; not that England ever did see him, for he hid himself.]

The neologisms of Nature are all beautiful. Her most outstanding characteristic is infinite variety ; her evident object is the creation of endless new forms and colours ; when man intervenes to quicken the process by a million years or so, he is merely giving Nature a little help with her own job, and anyone who shudders at the idea of a blue Nightingale, or yellow Skylark, is a sentimentalist. It is human and natural to delight in novelty, and were it not so, the world would stand still.

My next step was more fortunate. I took a few of my dead and stuffed specimens to the Zoo and called on Mr. Seth-Smith, who was most kindly interested in the matter. It is, moreover, at his request that in spite of being, as I say, distinctly peeved, I write these notes for only such of the members as wish to know more about the breeding of our native birds in captivity. Such articles on this subject as have appeared in the AVICULTURAL MAGAZINE have emphasized and exaggerated the difficulties of the matter. In actual fact, it is easy to breed our native birds. How could it be otherwise when constant successes are achieved with foreign birds for which our climate is unfavourable, while their natural food may be unprocurable, and in many cases they would normally breed in our December ? What, then, are the causes of failure and the conditions of success ?

We are assured at the outset of the first essential, namely, vigorous stock. The average novice in bird-breeding begins with Canaries, and usually purchases from a dealer the " surplus "

birds of other breeders ; that is to say, in many cases, the old hens, the non-feeding hens, and the sterile hens discarded by their owners. Where, alas, is the citizen of Roman virtue, the Christian, observant of the Golden Rule, who never puts into circulation a bird that will cause sorrow and trouble to its possessor? What wretchedness has been caused to the ignorant—and to the expert also—by the inane degenerates to be found so frequently among Canaries. With the wild bird we have never this fundamental difficulty to fear. Here is a creature equipped with all its vital instincts unimpaired, and if we respect those instincts, success will certainly follow. The first relevant fact about most wild birds is that they conceal their nests carefully. It should therefore be necessary to go bird-nesting in our own aviary, and it has happened occasionally that a bird has reared its young unknown to me in an aviary where I have sat daily for an hour or more, so well was the nest concealed and so careful were the parents not to visit it till I was gone. To provide such opportunities for privacy may be a counsel of perfection, but it is definitely insufficient to put up a mere bunch of heather in which only the actual nest is out of sight.

Then there is the question of society or solitude. Sparrows will hardly breed in single pairs, and love the stimulus of a chattering crowd, while Bullfinches prefer the company, in isolation, of their own devoted spouse. Greenfinches, I think, like a certain amount of social life. I have bred over four hundred of these birds in various conditions, and find the best results in large aviaries with two or three pairs ; or a single cock with two hens, when the trio have been long acquainted, will do very well. Greenfinches, however, are accommodating birds, easier to breed than even hardy Border Canaries. Much has been written in this journal and elsewhere of the difficulties of rearing their young to maturity, losses of 95 and 100 per cent being mentioned. This difficulty is real in a sense ; that is to say, the young Greenfinch must have his natural food, and will otherwise get enteritis and die. Since I have provided an unlimited amount of chickweed, etc. (for which if necessary I send out a man in a car to ravage gardens and allotments far and near), I have had little trouble with these birds. The average breeder, with a small stock, can easily himself grow all he requires. It is not only Greenfinches, moreover, which need natural food in

abundance. Bullfinches are particular also, though the complaint usually made is that the hen lets her young die at about ten days, and this too is true if proper food is not provided. Bullfinches require plenty of insects for their young. I learned this from once watching a pair in my aviaries feeding their nestlings on chunks of earthworms gouged out of the bodies of large specimens provided for a pair of Thrushes. This diet was clearly "Ersatz" for insects. Since then I have always let them have mealworms, live ant-eggs, etc., and I see them catch many gnats, etc., in their aviaries. Greenfinches eat no live food at all. It is stated in that great new work, *British Birds*, published by Messrs. Witherby, that the young of the Greenfinch are fed chiefly on "insects and their larvæ with a few macerated seeds", but unless the authors have absolute proof of their statement, based on the examination of crop contents, it should be corrected. It is a mistake due to repeating the error of earlier writers.

My Greenfinches have, in several of their aviaries, access to a wide selection of insects provided for other species. I have sat for countless hours in these aviaries, and have seen some surprising events, but I have never seen a Greenfinch touch an insect or any live food, either specially provided, or on the wing, or on the ground. As the authorities are so unanimous on the point, I endeavoured to put it to the proof so far as proving a negative is possible. I managed to get four young Greenfinches fostered by Sparrows. I say "managed", because anyone who has tried to use wild Sparrows as foster-mothers well knows that it is next to impossible to do so. I succeeded in this solitary instance by waiting till both parent Sparrows were absent, and then swiftly substituting four newly-hatched Greenfinches for the four Sparrows' eggs which were due to hatch. A Sparrow knows and ejects an unfamiliar egg or an unfamiliar youngster, but though this pair manifested the utmost surprise and a most comic excitement at finding four hatched in less than five minutes, they did adopt them. The young failed to thrive on Sparrow diet, mainly insects, of course, "with a few macerated seeds." They died; two on the second day, a third on the third day, and the fourth on the fourth day. Conversely young Sparrows placed under Greenfinches died, or languished till removed. Is not this conclusive? From the interchange of wild nestlings, which I used to practise as a

small schoolboy, much may be learned without the infliction of death. I tried at that remote period to see if Robins would rear a Thrush as they rear Cuckoos ; but the young Thrush grew thinner and thinner, till it was removed. A single experiment is insufficient, but it is likely that the young Cuckoo has a special gift for obtaining his wants. Having reared two Cuckoos by hand, I can certify that the human baby itself has not a greater power of making itself intolerable until its wants are gratified.

Among the other leading instincts of most birds there is the impulse to hunt. A mere gnat seems able to excite in Chaffinches and many other Finches all the excitement which is caused by a rat to a dog, or a rising salmon to a fisherman. A cement-bottomed aviary, fitted up with dead branches, attracts no insects, and provides no sport. Some breeders have done fairly well with small aviaries, but to obtain success, consistently and easily, a large aviary with a varied bottom of woodland, arable, and meadow—all to scale—is far better. Some breeders, after losses due to quarrels and mutual interference, are all for quiet little aviaries, housing one pair of birds. That is a counsel of despair, for a small aviary, by limiting exercise, reduces at once the breeder's chances. Whether we keep birds or mammals, plenty of exercise is the first condition of success. In a large aviary that is suitably planted, suitably sheltered, and thinly enough populated, almost any British birds can doubtless be successfully bred by anybody who knows accurately on what his birds feed when wild. It must be remembered that adolescent birds, two or three months old, do not always eat what they will eat when adult : I observe on a large chickweed patch outside my aviaries, at certain seasons, numbers of adolescent Greenfinches and Chaffinches, but scarcely any adults at all.

Pursuing a special object as regards colours, I have not tried to breed any great number of species, but my collection has included Sparrows, Greenfinches, Goldfinches, Chaffinches, Robins, Hedge-Sparrows, Bearded Tits, Blackbirds, Thrushes, and Starlings. Most of these birds have been "sports", albinos, cinnamons, etc. Some "pairs" proved to be two hens, so naturally they got no further than eggs. I have twenty-two aviaries. A sample census for one of the eight large ones (31 × 20 × 15 ft.) is as follows, for one summer. A pair of Thrushes, a pair of Bearded Tits, two pairs of Greenfinches, one of Chaffinches, and two of Sparrows.

These birds all built and laid peaceably, though now I usually exclude Sparrows from mixed collections. The Bearded Tits built unwisely, inside the shelter, and their eggs were attacked by mice, but that was the only casualty or failure. In former seasons I have sometimes lost heavily through mice, but have dealt with them successfully this year and last. Many aviaries have been required for Greenfinches and Sparrows, as there are several colours of each; and those of each colour must of course be separate. The Greenfinches are nearly all in single pairs or trios, but have other species to keep them company. It may be mentioned that birds with a show-bench career behind them usually took a whole year, often two, and in one case three years to recover their reproductive instincts, whereas I have had wild birds caught in March that bred in April. "Humanitarians," please note!

As regards new colours, a fairly full account of my results appeared in *Cage Birds* (30th September), and I will give here only a brief summary. I lost years through trying to breed albinos from pink-eyed white birds which in some cases were not true albinos. Even when a bird is a true albino, success is hardly possible unless at least two unrelated specimens are used. Pink and red-eyed birds will not stand in-breeding. As regards the birds I now have, they would be much more numerous but for a heavy loss last December, when a record snowstorm and gale crushed to the ground all the largest of my aviaries, and set free or killed about fifty birds, including all but two of the twelve white pink-eyed Sparrows, the pair of white Starlings, and all but one of the blue Greenfinches, which died later. I was left with only three yellow Greenfinches, one pink-eyed cinnamon, some silver, cinnamon, and fawn Sparrows, a cinnamon Chaffinch, and two albino Thrushes. There remained also, however, normal coloured individuals carrying the necessary factors for further progress, including two lutino-bred cock Greenfinches, and during the spring I was able to buy three or four more "rare-feathered" birds of various kinds. By the end of the season I had about sixty-four with the new colours. These included two albino Thrushes, some thirty Sparrows, mostly silvers as these breed true, about twenty-four Greenfinches, of which five were lutinos (now reduced to three vigorous ones) and the rest pale yellow with cinnamon suffusion in the wing tips, golden fawn, silver grey, and just one of a pale slate-blue from which

I hope to recapture the lost colour. There were also three cinnamon Chaffinches, one a cock, doubtless the only one in existence, and two clear yellow Chaffinches. The Greenfinches are mostly descended from a yellow sport, a lutino, and a slate-blue, procured in 1932. Another yellow, a fawn, and a silver-grey were added later, so no extreme inbreeding has been necessary in most cases, and the stock is very strong. Three dozen or more silver Zebra-Finches were also bred this year. These, as has already been mentioned by M. Delacour, were first bred in a Californian aviary and recently imported into England. Perhaps a "faction" of foreign bird breeders may be interested in them, and in the white variety which I also keep, but somehow our own familiar British friends please me better than any. If anyone will give me a yellow Wren, or an all-blue Blue Tit, I will give him a handful of new Zebra Finches in return !

* * *

THE EARLY YEARS OF THE AVICULTURAL SOCIETY

By DAVID SETH-SMITH

As one looks at the forty-five bound volumes of the AVICULTURAL MAGAZINE one's memory goes back to the early days of the Society and one feels a little proud to have been associated with it from the start, though personally I cannot claim to have had anything to do with its actual foundation.

One day, in November, 1894, I called upon Mr. J. B. Housden at his home in Sydenham to see his very fine collection of birds. I remember how delighted I was with his Crested Pigeons which had reared numbers of young ; with his splendid pair of Eagle Owls which would attack any intruder, as they had a nest, and with his many other birds, amongst which were several well-known prizewinners. I remember also that Mr. Housden asked me if I had heard of the new Magazine of which the first number was then in proof. He had a proof in his pocket which he kindly gave to me. It was, I thought, just what was wanted by the large number of persons who were interested in the keeping of foreign and British birds. I myself had kept a few and was about as keen as one could very well be on birds of all kinds, and the various lovely foreign

species that one came across at bird shows such as that held every year at the Crystal Palace, were an immense delight. But what we wanted was a Society which all those of my way of thinking could join, with a journal of its own. Here it was in its infancy and I asked Mr. Housden to put me up as a member, which he kindly did, and my name appeared as a candidate for election in the number for December, 1894. So, though not entitled to call myself an Original Member, I am indeed one of the earliest.

Commencing as it did in November, the first volume finished with the number for the following October, and for many years November was the month in which the Society's year started.

Brighton was the birthplace of the Society and its Magazine, for there lived two very keen foreign bird keepers, Dr. C. S. Simpson and Mr. H. R. Fillmer, to whom the credit of founding the Society belongs. They were ably helped by others in London and the provinces, foremost amongst whom must be mentioned Dr. A. G. Butler, who held a post in the Entomological Department of the British Museum but studied birds as his hobby; Reginald Phillipps, whose small garden in West Kensington was completely wired over as an aviary; the Honourable and Reverend F. G. Dutton, rector of the charming village of Bibury in the Cotswolds, and a great authority on Parrots; Mr. H. T. T. Camps, another Parrot expert; and our old friends Mr. John Frostick and Mr. Housden, both of whose names are still upon our list.

In the first number of the Magazine the objects of the Society were explained. It was felt that there was a large and increasing number of people scattered all over the country who were greatly interested in birds and bird-keeping, but who, by reason of their living so far apart, could never meet to compare notes or form themselves into ordinary Societies which exist for and by the holding of meetings. Now a Society was offered which held no meetings, but kept together by means of the post.

“One of our chief objects,” we read, “will be to endeavour to bridge over the gulf that exists between the lover of birds and the scientific ornithologist—we believe that each has much to learn from the other. We want to infuse a little science into bird-keeping and to interest the cabinet ornithologist in the habits of birds.”

The first volume, edited by C. S. Simpson and H. R. Fillmer, contains articles on both British and foreign birds, the objects of

the Editors being to provide articles on these in fairly equal proportions, a policy that might with advantage be followed at the present time. The chief contributors to the first volume were A. G. Butler, Horatio R. Fillmer, Reginald Phillipps, and C. S. Simpson, though amongst others who helped with their writings were three well-known ornithologists—J. Lewis Bonhote, E. G. B. Meade-Waldo, and W. H. St. Quintin. Bonhote was, at that time, an undergraduate at Cambridge and was one of a small band of keen ornithologists there. His first article was on the Spotted Flycatcher.

Meade-Waldo and St. Quintin were of the very best type of country gentlemen, the one living in the south, the other in the north. They were naturalists through and through, their chief delight being in the observation of Nature. Both were great on Bird Protection and they were first-rate aviculturists. They corresponded almost daily, their letters being full of the most interesting observations. I have often thought that if those letters could have been published we should have had a volume as interesting and instructive as *White's Selborne*.

Meade-Waldo spent a good deal of time in the Canary Islands and Algeria, and on several occasions brought home birds. So we find him writing on the Teydean Chaffinch, the lovely blue Chaffinch of the Teneriffe, and in Volume II on the Moorish House Bunting (*Fringillaria saharæ*) and the Desert Trumpeter Bullfinch (*Erythropsiza githaginea*), all of which he succeeded in breeding at home.

The name of O. E. Cresswell first appears in Volume I. He owned a lovely place in Herefordshire where he kept numbers of rare Parrakeets and Doves.

In Volume II the name of the Rev. Hubert D. Astley first appears with delightful articles on "The Nesting of the Storm Petrel" and "The Blue Rock Thrush", the latter illustrated by a wash drawing of the bird by the author. Astley was a great aviculturist and a very delightful personality, with the means to indulge very thoroughly in his hobby. In this volume appears for the first time the name of the Rev. C. D. Farrar, Vicar of Micklefield in Yorkshire, who writes on "Breeding in the Open Air". Subsequently he became a very regular contributor, some of his articles causing considerable controversy among the members.

He called upon me once and I found him quite delightful, though we had often quarrelled through the post.

In Volume II we find also articles by Bonhote on British birds, Fillmer on the Grosbeaks, Reginald Phillipps on the nesting of the Rosy-faced Lovebird, and St. Quintin describing his success in breeding Kestrels. Dr. C. S. Simpson found it necessary to resign the Secretaryship on account of pressure of other duties. He had been largely responsible for setting the Society going and editing its Magazine, and now handed over the secretarial duties to Mr. H. R. Fillmer who had, up to then, acted as Treasurer.

With Volume III (November, 1896) appear the first coloured plates, three in number, depicting the Pine Grosbeak, the Ornamented Lorikeet, and the Diamond Dove, all drawn by F. W. Frohawk and hand-coloured. A series of articles on "The Fringillinae" is commenced, the species dealt with being the Pine Grosbeak (A. G. Butler), Bullfinch (Albert Rettich), Yellow-throated Rock Sparrow (E. G. B. Meade-Waldo), the Chaffinch (J. L. Bonhote), Black-headed Siskin (V. Castellan), Siskin (T. Marshall), Green Singing Finch (W. T. Catleugh), Lesser Redpoll (G. C. Swailes), Alario Finch (H. R. Fillmer), Brambling (J. L. Bonhote), Saffron Finch (A. G. Butler), and Linnet (J. H. Verrall).

In these early volumes, besides many excellent articles the Correspondence columns were well filled. There was a system of printing queries and the answers to them where these were of general interest to aviculturists, and here again is something that might be revived.

Volume IV, which commences in November, 1897, contains hand-coloured plates of the Chinese Quail and Chinese Spectacle-bird (*Zosterops simplex*), both by Frohawk, and of the Golden-shouldered Parrakeet and the White-eared Grassfinch by P. J. Smit. Of the true Golden-shouldered Parrakeet (*Psephotus chrysopterygius*) six specimens were imported in 1897, and I am not aware of the arrival of any since. They were all immature birds and only one (in the pair acquired by the London Zoo) proved to be a male. Mr. Reginald Phillipps acquired a couple of hens and contributes a long and very interesting article. Of the White-eared Grassfinch (*Paphila leucotis*) Phillipps also contributes an excellent account. The bird is much like the Masked Grassfinch but more beautiful,

and I have not seen any since those days. Smit's plate is extremely good. He was an artist of great ability, as his father had been before him, and it was a loss to the Society when he took up his abode in South Africa.

In this volume Mr. George E. Bouskill records the successful breeding for the first time in this country of the Golden-crowned Parrakeet of New Zealand, for which he received the Society's medal, as did also Mr. R. A. Todd for breeding the Long-tailed Grassfinch.

The Society had now got into its stride and was able to produce an excellent magazine, full of very useful matter.

(To be continued)

* * *

BREEDING RECORDS : SUMMARY V

By Dr. E. HOPKINSON

(Continued from page 308)

As this has carried on into another year, it will be as well to repeat here the Introduction which preceded Part I on p. 190 of last year's volume :—

Since the appearance of *Records of Birds Bred in Captivity* in 1926 much more material has accumulated and here an attempt is made to provide a summary of all the records to date on the lines of Part III of the original work, that is, indicating the values of the various records by change of type. These values must necessarily differ as the sources of error are many—from simple mistakes in identification and observation down to downright misstatements, as I fear many of the recent claims for success with British Birds must be considered. We are all familiar nowadays with the advertisements of aviary- (or cage-)bred Britishers, and I think nearly every possible British cage-bird has so appeared ; at any rate I have seen most, "A.B., C.R., etc.," even Nightingales and Long-tailed Tits, but surely the biscuit must be awarded to the advertiser (in January) of "Linnets : cage-bred, 1s. each, or 9s. a dozen if a quantity are taken". Could anybody breed even white mice or cockroaches, keep them six months, and then sell

them at *gd.*? This sort of thing had naturally made one suspicious of all records, but that cannot be helped, and I am sure we can be certain that there are plenty of good records for a great number of birds including British. Here the compiler gives his opinion of the values and hopes with help from others to amplify the records later on.

Towards an ideal record of the future successful breeders could give much help by telling us in each case:—

How many young birds left the nest?

How many of these lived to moult?

How many survived a year or longer?

Did any of the young breed again?

Except for Canaries, Budgerigars, and a few other species, I am afraid the answer to the last question would be “*none*” for the cage-birds proper, that is excluding Ducks, Game Birds, and the like. I fear too that in most cases the answers to the other questions would not be too encouraging.

No details are given here but perhaps I may mention that *Records* is still obtainable at 15s. by anyone sufficiently interested and that the publishers are Messrs. Witherby, High Holborn, London. It is on this that most of the present effort is based. Some fifty pages of additions appeared in the Magazine in 1932–3 and those of more recent date are included here. Any information I have is at the service of anyone really interested.

The figures with each entry, and the letters for the hybrids are those of the original book. Capitals indicate that the species (or hybrid) has certainly been bred: large capitals that the record is self-sufficient, small ones that the actual breeding can be (at least in my opinion) taken as certain, but that further detail is desirable. When a name appears in ordinary print, it means that the record is not entirely satisfactory, when brackets enclose an entry it is considered at best doubtful, and when a query (?) is added real doubt is indicated, and more queries, more doubt.

PIGEONS

428. Wedge-tailed Fruit-Pigeon, the “Kokla”. *Sphenocercus sphenurus*. U.K., 1917.

429. LILAC-CROWNED FRUIT-PIGEON, *Ptilopodiscus coronulatus*. U.K., 1923 and 1924.

BLACK-CAPPED FRUIT-PIGEON, *Ptilinopus melanocephalus*. U.K., 1932 ; Berlin later.

430. NICOBAR IMPERIAL PIGEON, *Muscadivora insularis*. Zoo, 1905, 1906.

431. RED-CROWNED WART-PIGEON, *Alectranas pulcherrima*. France, 1917.

432. SNOW PIGEON, *Columba leuconota*.

449. BLUE ROCK PIGEON, *C. livia*. The source of the domestic Pigeon.

Hybrids :

Domestic Pigeon × Wood-Pigeon and a further cross (a, b).

Domestic Pigeon × BARBARY DOVE (Whitley ; Podmore).

Domestic Pigeon × Turtledove (Podmore).

Domestic Pigeon × Eastern Turtledove. Japan.

447. STOCK DOVE, *C. ænas*, and *hybrids* with the female DOMESTIC PIGEON. U.K., 1937.

433. 434. GUINEA PIGEON (Triangular-spotted Pigeon). Both races, *C. g. guinea*, the northern, and *C. g. phæonota*, the southern, have been often bred ; also *hybrids* with the female DOMESTIC PIGEON (Whitley, 1929, 1930, etc., but never recorded).

435. BARE-EYED PIGEON, *C. corensis* Jacq. (*gymnophthalma*, Temm). Also *hybrids* : BARE-EYED × SPOT-WINGED PIGEON.

440. SPOT-WINGED PIGEON, *C. maculosa*.

438. PICAZURO PIGEON, *C. picazuro*. France and U.S.A.

436. OLIVE PIGEON, *C. arquatrix*.

441. WHITE-CROWNED PIGEON, *C. leucocephala*.

442. PORTO RICO PIGEON, *C. squamosa*.

439. (Splendid Pigeon, *C. speciosa*. Only a *hybrid* record (France) with the female SPOT-WINGED PIGEON (a).

445. Red-billed Pigeon, *C. flavirostris*. U.S.A.

443. RUFOUS PIGEON, *C. rufina*.

444. BAND-TAILED PIGEON, *C. fasciata*. U.S.A.

ARAUCANIAN PIGEON, *C. araucana*. France, 1922.

446. CANARIAN PIGEON, *C. junoniæ*. U.K. about 1898 and later.

Bolle's Pigeon, *C. bollei*. U.K., 1888.

437. WOOD-PIGEON and *hybrids* with the female Domestic Pigeon and further crosses (Podmore).

448. WHITE-THROATED VIOLET PIGEON, *C. halmaheira* (late *albigularis*). U.K., 1909 to 1913.

450. PASSENGER PIGEON, *Ectopistes migratorius*. First bred in the London Zoo in 1832 and after that fairly often in the U.K., Germany, and America. Now extinct, the last survivor having died in 1914 at the Cincinnati Zoo, where it had been bred 29 years before (*AUK.*, 1915).

Two examples of *hybrids* with the female Barbary Dove are mentioned in the *P.Z.S.*, 1849, but where or how bred is not stated.

CUCKOO-DOVE, *Macropygia umchall*. First, France, 1926 ; U.K., 1927.

451. CAROLINA (or Mourning) DOVE, *Zenaidura macroura carolinensis*. U.S.A., before 1909 ; U.K., 1934.

SOCORRO MOURNING DOVE, *Z. graysoni*. U.S.A., 1924 ; France and U.K., later.

452. MARTINICAN DOVE, *Zenaida aurita*, and *hybrids* with the hen PEA-DOVE (a). U.K., 1914.

453. PEA-DOVE (Zenaida Dove), *Z. zenaida*.

454. BRONZE-NECKED DOVE, *Z. auriculata*.

455. VENEZUELA DOVE, *Z. vinaceo-rufa*. One record : U.S.A.

GALAPAGAN DOVE, *Nesopelia galapagoensis*. First, U.K., 1933 ; since elsewhere.

456. WHITE-WINGED DOVE, *Melopelia asiatica*.

459, 460. MADAGASCAR TURTLEDOVE, *Homopelia picturata*. Both races, *H. p. p.* and *H. p. aldabrana*, have been bred.

Seychelles Turtledove, *H. rostrata*. Has been bred in S. Africa *teste* Decoux.

457. TURTLEDOVE, *Streptopelia t. turtur*, and *hybrids* with the hen BARBARY DOVE and further crosses (a, b, c).

458. ISABELLINE TURTLEDOVE, *T. turtur isabellina*.

461. BARBARY DOVE. Commonly bred, and the following *hybrids* are on record :

a. Barbary × Necklace Dove.

b. BARBARY × SENEGAL PALM-DOVE. Whitley ; since 1917.

c. (Barbary × Domestic Pigeon ?).

Barbary × Turtledove *teste* Allen Silver.

(What are Mr. Whitley's "Dark-brown Barbaries", which have never bred, though he has had them for years ? And what are his "lighter-brown Barbaries", which do breed regularly, all the young

being either the same colour as the parents or normal Barbary colour with an occasional white : NEVER any intermediate shades ?

How they originated the owner does not know, but he thinks the original stock came from East Africa. *Note made at Paignton a few years ago.—E.H.*)

462. Half-collared Dove, *S. s. semitorquata*. May have been bred, but the West African race (next entry) is the commonly imported one, and the records of "Half-collared" must always (or practically always) mean this.

463. RED-EYED DOVE, *S. semitorquata erythrophrys*, and hybrids with the hen Turtledove. Zoo, 1911.

465. Double-collared Turtledove, *S. bitorquata*. France.

466. DECEPTIVE TURTLEDOVE, *S. decipiens permista*. U.K., 1910. (*S. d. decipiens* not yet on record as bred.)

467. Oriental Turtledove, *S. orientalis*. U.S.A.

468, 469. CAPE TURTLEDOVE, *S. capicola*. Three races have been bred : *S. c. capicola*, *S. c. damarensis*, and *S. c. tropica*.

470. VINACEOUS TURTLEDOVE, *S. vinacea*, and hybrids with the female common TURTLEDOVE. U.K., 1909, 1921.

471. INDIAN TURTLEDOVE, *S. decaocto (douraca, Gray)*. *S. d. decaocto*, Palestine to India. *S. d. xanthocykla* (No. 464 the Burmese Collared Turtledove).

The typical race has been bred in America, but for the other I have only a *hybrid* record, but believe it has been true-bred as well.

Hybrids :

Burmese T. (*xanthocykla*) × "Half-collared Dove" (464 a).

Indian T. × "HALF-COLLARED DOVE" (471 a), i.e. in each case = *erythrophrys*.

Indian T. × Double-collared T. (Japan).

472. RUDDY TURTLEDOVE, *Oenopopelia tranquebarica*. *S. t. t.* the INDIAN RUDDY T. Bred by Newman. *S. t. humilis*, the BURMESE RUDDY T. (OR "DWARF TURTLEDOVE"), often bred.

Hybrids : DWARF T. × BARBARY DOVE. Zoo, 1904 and elsewhere.

473-5. SPOTTED TURTLEDOVE, *Spilopelia chinensis*. The three races, *S. c. chinensis*, the Chinese, *S. c. suratensis*, the Indian,

and *S. c. tigrina*, the Malay, commonly known as the "NECKLACE DOVE", have been bred, and the *hybrids* :

a. Necklace \times Barbary Dove.

b. NECKLACE \times SENEGAL PALM-DOVE. U.K., 1915 onwards.

476, 477. PALM-DOVE, SENEGAL PALM-DOVE, *Stigmatopelia s. senegalensis* often bred and *hybrids* with the hen Turtledove (a) are also on record (1910); the INDIAN PALM-DOVE, *S. s. cambayensis*, has also often been bred.

478. BAR-SHOULDERED DOVE, *Geopelia humeralis*.

479. PEACEFUL DOVE, *G. placida*, and *hybrids* with the hen ZEBRA-DOVE. U.K., twice or more.

480. ZEBRA-DOVE, *G. sinica* (late *striata*).

481. MAUGE'S DOVE, *G. mauei*. Zoo, 1868.

482. DIAMOND DOVE, *G. cuneata*.

483. SCALY DOVE, *Scardafella brasiliensis*.

484. INCA DOVE, *S. inca*. U.S.A.

485. PICUI DOVE, *Columbina picui*.

486. PASSERINE DOVE, *Chamepelia passerina*.

487. PIGMY GROUND-DOVE, *Ch. minuta*, and *hybrids* with the female Talpacoti Dove.

488. BUCKLEY'S GROUND-DOVE, *Ch. bucleyi*. Zoo.

489. TALPACOTI DOVE, *Ch. talpacoti*, and a *hybrid* with the female Cordillera Dove is on record (1937).

Red-winged Ground-Dove, *Ch. rufipennis*. U.S.A.

(Cordillera Dove, *Metriopelia melanoptera*. A *hybrid* record only with the male Talpacoti Dove.)

490. GEOFFROY'S DOVE, *Claravis geoffroyi*. Zoo, 1876, and again more recently.

491. CAPE DOVE, *Aena capensis*.

492. TAMBOURINE DOVE, *Tympanistria tympanistria*. First : U.K., 1906.

493. BLUE-SPOTTED EMERALD DOVE, *Turtur afer*.

494. GREEN-SPOTTED EMERALD DOVE, *T. chalcospilos*. First : France before 1883 ; since then elsewhere.

495. AUSTRALIAN GREEN-WINGED DOVE, *Chalcophaps chrysochlora*. First : U.K., 1906.

496. INDIAN GREEN-WINGED DOVE. *Ch. indica*. First : Germany before 1880 ; and *hybrids* (*C. indica* \times *chrysochlora* and \times *natalis*, *teste* Page).

497. (Christmas I. Green-winged Dove, *Ch. natalis*.) Hybrid record only ; see above.

498. BRONZEWING PIGEON, *Phaps chalcoptera*, and hybrids (both ways) with the BRUSH BRONZEWING.

499. BRUSH BRONZEWING, *Cosmopelia elegans*, and hybrids as above.

500. HARLEQUIN BRONZEWING, *Histriophaps histrionicus*. First success : Zoo, 1866.

501. PARTRIDGE BRONZEWING, *Geophaps scripta*.

SMITH'S BRONZEWING, *G. smithii*. First : France, 1922.

502. WHITE-BELLIED PLUMED PIGEON, *Lophophaps plumifera leucogaster*. Zoo, 1895, the first success.

503. AUSTRALIAN CRESTED PIGEON, *Ocyphaps lophotes*.

Lemon Dove, *Aplopelia larvata*. Bred freely at liberty at Woburn before 1914, teste Tavistock.

504. RUFIOUS DOVE, *Leptotila reichenbachii*.

505. VERREAUX'S DOVE, *L. verreauxi*. France and U.S.A.

506. BRONZE-NAPED DOVE, *L. chalcochenia*. U.K., 1904.

507. WHITEBELLY DOVE, *L. jamaicensis*. First : U.K., 1903.

SENNETT'S BUFF-BELLIED DOVE, *L. fulviventris brachyptera*.

U.S.A.

WELLS' DOVE, *L. wellsii*. U.K., 1926.

508. RUDDY QUAIL-DOVE, *Oreopeleia montana*.

509. CUBAN GROUND-DOVE, *O. chrysis*. France before 1870 ; U.S.A. recently.

510. HOARY-HEADED GROUND-DOVE, *O. caniceps*.

512. Venezuelan Ground-Dove. *O. linearis venezuelensis*. Zoo, 1911, 1912.

511. MOUNTAIN WITCH DOVE, *Geotrygon versicolor*. Zoo, 1904.

513. BLEEDING-HEART PIGEON, *Gallicolumba luzonica*.

514. BARTLETT'S BLEEDING-HEART, *G. crinigera*, and a hybrid with the common BLEEDING-HEART (Ezra, 1936).

PAPUAN GOLDEN-HEART, *G. rufigula*. Ezra, 1936.

515. WHITE-BREASTED GROUND-PIGEON, *Pampusana jobiensis*.

STAIRS' GROUND-PIGEON, *P. stairi*. U.S.A., one record.

516. GREY-HOODED GROUND-PIGEON, *P. rubescens*. U.S.A., 1922 or 1923 ; since then in France and England.

BUFF-HOODED GROUND-PIGEON, *P. xanthonura*. U.S.A., 1926, and *hybrids* with the female *jobiensis* (No. 515), also in the U.S.A. (1927).

517. WONGA-WONGA PIGEON, *Leucosarcia melanoleuca*. *Hybrids* with the hen Domestic Pigeon are recorded from Australia.

PHEASANT-PIGEON, *Otidiphaps nobilis*. California, 1930. *O. n. n.* U.K. 1935, and 1936 (Whitley), *O. n. cervicalis*.

518. BLUE-HEADED QUAIL-DOVE, *Starnenas cyanocephalus*.

519. NICOBAR PIGEON, *Calenas nicobarica*.

520. CROWNED GOURA, *Goura cristata*.

521. VICTORIA GOURA, *G. victoria*. France, 1881.

521A. D'Albertisi's Goura, *G. scheepmakeri*. France, 1903.

* * *

BIRDS OF JAMAICA

By A. SHERRIFF

Before leaving England I consulted the Zoo Library as to what books there were obtainable on the birds of Jamaica or the West Indies and was fortunate to find that a new handbook had just been published by the Academy of National Science of Philadelphia, of which J. S. Bond was the Editor. This was most helpful, particularly as it gives the local names, together with the English. Where Latin nomenclature is given it will be that quoted in the above book.

A few words are necessary here on the avifauna generally of the West Indies.

It appears that the birds of these Islands generally belong to North American or the Arctic rather than to South American or Neo-tropical families. There are exceptions, and Trinidad and Tobago are not included as being West Indian Islands.

We left London on 7th January by the *Rangiliki* and, with the exception of the ubiquitous Seagull, saw no bird until a couple of days prior to our arrival at Jamaica.

Incidentally, the Gulls have given me much cause for thought. About thirty or forty followed the ship from England and a day after passing the Azores there were still six or so left, but the next morning they had disappeared. As I wrote on the *Hansa* bound for Southampton, there were still a few Gulls about, yet we were fully

800 miles from New York. What happens to them? Do they sight a returning ship in due course and leave this ship? Do they fly through the night or roost on the rigging?

Before reaching Jamaica, the first bird to be recorded was the Frigate Bird (*Fregata magnificens*).

The tail of this bird is forked, but whilst in flight it merely appears as long and pointed.

Outside Kingston Harbour the Brown Pelican (*Pelecanus occidentalis*) was seen in numbers and, to watch their heavy flight about fifteen feet above the water and then to see them drop suddenly into the sea after fish is a sight to be remembered. They appear to be common all round the coast of Jamaica.

The next bird to attract attention on entering Kingston Harbour is the "John Crow". This is the local name for the Red-headed Turkey Vulture (*Cathartes aura*). During 1,000 miles of motoring over most of Jamaica we never failed to see "John Crow". They are rigidly protected in the West Indies for they act as scavengers, but it is a little difficult to understand how they all obtain food, for there appear to be thousands of them.

I was fortunate enough to obtain a cinematograph record of six or seven, which were about to deal with a puppy lying in the road, presumably killed by a car. They did condescend to move a few yards away as I approached with the camera, but were quite unconcerned. On another occasion, motoring back from Port Morant to Kingston, I had to apply brakes suddenly in order to avoid two of them, which were engrossed in fighting in mid-air, from crashing through the wind-screen.

We came across them high up in the mountains and their graceful soaring flight appears quite effortless.

Whilst returning from Montego Bay over the mountains I saw through field-glasses a bird of similar size to the Turkey Vulture, but the under parts were white, as were the wings except for black tips to the primaries. I have been unable to trace what it could have been and wonder if it was an albinistic variety of *Cathartes aura*; it was in company with about a dozen of them.

It may be as well to give here some few details of the climate and vegetation of Jamaica.

The island is situated in the Caribbean Sea, about 18 degrees latitude north and about 600 miles east of the American Continent.

The temperature at Kingston appears to average between 75–80 degrees, but drops as higher ground is reached. At Newcastle, about 19 miles from Kingston and about 4,000 feet up, the temperature was under 60 degrees, and I was told that in the early mornings might drop to 50 degrees. I was a little surprised, therefore, to see a Humming Bird, the Red-billed Streamer-tail, of which more anon.

The wet season on the south part of the island is September, October, and November, though the north side gets considerably more and at more varied times.

It is impossible to give more than an outline of the vegetation, and the beauty must be seen to be believed. Suffice to say it is tropical and dense in most parts, with a profusion of flowers, Bougainvillia, Hibiscus, Flame of the Forest, Poinsettia, and many others of which I did not know the names. The tree-ferns alone are worth seeing, to which must be added bananas, oranges, limes, pineapples, and numberless other fruit trees.

I fear, however, that I have digressed, and probably the first bird on land to draw attention is the Smooth-billed Ani (*Crotophaga ani*), known locally as the Blackbird. It is an awkward clumsy looking bird with glossy black plumage and a large beak. It is ubiquitous and quite fearless. There were hundreds on the golf course at Constant Spring and as it is insectivorous, must do a lot of good. Rather like a large Starling in the way it hops around the grass looking under tufts for food. The nesting habits are peculiar, several hens apparently using one nest, the eggs being laid in layers. Mr. Bond states that one nest of twenty-one eggs and another of twenty were found in the West Indies.

After the Ani comes the Northern Mocking Bird (*Mimus polyglottus*). This bird is very common and on account of its song is known locally as the Nightingale. It reminded me, in flight, of a large hen Shama.

The song is attractive, though presumably made up from the songs of other birds. The general colouring is brownish grey and the wings have a certain amount of white.

We went from Kingston one morning up to Newcastle, where are stationed part of the West Indies garrison. Just beyond Newcastle the altitude is over 4,000 feet, and here two English ladies provide visitors with tea and other refreshments. Their cottage is situated

off the road and in tropical vegetation. But the temperature can drop into the "fifties"—was barely 60 degrees when we arrived—which after Kingston we noticed considerably.

The Misses Paine had made a practice of putting food out for the birds and in the short time I saw many, though was unable to identify them all.

The most striking was the Orangequit (*Euneornis campestris*). The cock is violet blue with a deep red patch on the throat. The hen is olive, becoming brown on the wings and tail. About $5\frac{1}{2}$ inches long, this genus is restricted in the West Indies to Jamaica.

It is a lovely bird and two cocks were soon fighting over the food placed for them.

In company with the *Euneornis* was the Antillean Bananaquit (*Cæreba flaveola*).

This is a pretty bird, slightly smaller than the Orangequit, and it is interesting to watch how quickly it climbs the bushes, inserting its beak into the flowers for nectar. It is easily recognized by the black upper parts, golden yellow under parts, and white superciliary stripe.

Of several Finches present I was able to recognize only three: The Jamaican Euphonia (*Pyrrhuphonia jamaica*), the Yellow-backed Finch (*Loxipasser anoxanthus*), and the Black-faced Grassquit (*Tiaris bicolor*).

The last is a cousin of the Cuban Finch (*Tiaris canora*) and around Mandeville I saw a number of the Yellow-faced Grassquit (*Tiaris olivacea*). These appear to be very common throughout the West Indies. And last but not least, the Red-billed Streamer-tail (*Aithurus polytmus*).

Known locally as the Doctor Bird (why, I could not discover), this Humming Bird is most striking and beautiful in flight. When I say "in flight" I mean whilst hovering, for it is next to impossible to follow them when they move away to another spot. The streamers, confined to the cock, are nearly twice the length of the bird, which is almost 4 inches long. The head is black and the rest of the body appears green, but it is difficult to give exact details owing to the marvellous iridescent reflections from the plumage.

This Humming Bird is quite common in Jamaica and I recognized it in many other parts, often whilst perched.

There were numbers in Hope Gardens, about 7 miles out of Kingston, and also in Castleton Gardens about 30 miles from

Kingston on the road to Port Antonio. Incidentally, Castleton Gardens are well worth a visit from anyone going to Jamaica. The plants, trees, tree-ferns, and flowers are beautiful though not all are indigenous to the island.

Of the other two Humming Birds found in Jamaica, the Mango Humming Bird (*Anthracothorax mango*) is the easiest seen on account of its size.

I took many photographs of them at Constant Spring, where the favourite flower appeared to be the Hibiscus, and they seem to prefer open situations.

The third, the Vervain Humming Bird (*Mellisuga minima*), is the second smallest bird known, the smallest being the Bee Humming Bird (*Calypte helenæ*) from Cuba.

On many occasions I mistook this bird for a large bumble bee, and once it moved it was impossible to follow where it had gone. The only thing was to wait patiently in the hope it would return.

At Nassau, in the Bahamas, I saw quite a few Bahaman Woodstars (*Nesophlox evelynæ*), and here it was possible to watch how part of the flower was lifted by the beak before the bird could insert this to obtain the nectar. I am very pleased to have seen Humming Birds in their natural state and with time and patience it should not be too difficult to learn quite a lot about their habits.

In Montego Bay the Greater Antillean Grackle (*Holoquistus niger*), known locally as the Ting-Ting, is very common and also very bold. They will come up to a table for a piece of cake or biscuit much as Sparrows will come to a bird tray in this country. The plumage is glossy violet black, becoming greenish on the wings; in fact, they are very similar to the Glossy Starlings, though they appeared to me as being of a slighter build. The iris is yellow, but the most striking feature is the keel-shaped tail, which is most apparent when the bird is in flight.

Just outside Montego Bay I saw the Belted Kingfisher (*Megaceryle alcyon*). This bird is a winter visitor to the West Indies.

The upper parts are ashy blue, but the distinguishing feature is a broad white collar around the neck.

Apparently they are equally at home in fresh or salt water whilst seeking food, for two we saw were diving for fish in the shallows which surround most of the coast. Near here we came across on two separate occasions a bird which I have taken to be the Snowy

Egret (*Egretta thula*). It is classed as very rare in Jamaica, but I do not think I have confused it with the American Egret (*Casmerodius albus*), also rare, on account of the size.

The latter should be considerably larger than the birds we saw. As the name implies it is white and I had an excellent view of it on the second occasion. It was walking along the road near Montego Bay, and I managed to take some few feet of film but the bird does not show up too well on account of the whiteness of the road. It allowed me to approach within 30 yards and then flew away only to settle on the road again a little farther off.

On several occasions we came across a small bird climbing round the branches of trees, apparently seeking insects. It was about 5 inches long and striped black and white longitudinally. I believe this to be a migrant Warbler called the Black and White Warbler (*Mniotilta varia*). The quick movements were reminiscent of a Treecreeper. The local name is Ant Bird.

I saw in a private house in Kingston several of the pretty little Ground Doves (*Columbigallina passerina*). They are only about 6 inches long, and I was tempted to bring some back, but we were returning via New York and it would have been very difficult.

In the same aviary as the Ground Dove were several White Crowned Pigeons (*Columba leucocephala*). Known locally as Baldpates, they are about the size of a London Pigeon and, as their name implies, have a white patch which extends over the head. This patch tends to greyish in the hen.

I think the above is all I have to tell of the birds I saw in Jamaica, but I was amused to see the House Sparrow happily enjoying himself in Havana. It was introduced into Cuba in the late part of the nineteenth century, and seems to thrive, particularly in the towns.

Thirty-six hours before arriving at New York, and just after we had left the Gulf Stream and reached cold weather, a small bird came on to the ship. It was just dusk and the ship was fully 300 miles from land. The bird was exhausted and we succeeded in catching it, but in spite of all efforts to persuade it to take food it died the next morning.

Slightly smaller than our Blue Tit, the upper parts were greyish blue with some green on the wings, the under parts were white and the abdomen yellow, the beak was yellow, and there were rectal bristles, but I have not discovered what it was nor any reason for it

being so far out to sea in the cold weather and at a time (10th February) when migration should not yet have commenced.

Since writing this I have received from a friend in Peru a small consignment of birds together with a few photographs. I hope to give some account of these in the next publication.

* * *

LECKFORD AVIARY JOTTINGS

By E. F. CHAWNER

The young Sandhill Cranes have got their red caps and to all appearances are full grown. They stand as high as their father and quite dwarf their mother, who is a rather small specimen of her kind. Possibly she belongs to another "race". They are as grey as their parents, which is rather remarkable, for usually this species is brown until the first moult; both the old birds were brown when they first came to us, and it was quite six months before they changed colour. The youngsters have not yet found their voices so their sex is still uncertain.

The Pheasants are all in perfect plumage. Considering all things we have bred a fair number of Pheasants, Mikados, Edward's, Firebacks, and all the four species of Tragopans. Unluckily cocks greatly predominate.

The pair of tiny Galapagos Ground Doves with which we started have increased and multiplied and now number seven. They are very tame and we have to "watch our step" when we enter their compartments for they run about close to our feet hoping for pieces of pea-nut. Like all Doves they are very pugnacious and as soon as the young are fledged they are driven off by their parents. Though called "Ground Doves" they do not always nest on the ground; the first nest was on the ground in a corner of the house, but the succeeding ones were all fairly high up. The pair of Australian Crested Ground Doves also went to nest after dropping eggs galore about their aviary. They hatched two, but only reared one. They, too, appreciate pea-nuts. The cock displays alike to friend or fancied foe with grunts and pecks. He attacks a cock Swinhoe Pheasant in the next compartment and pecks his head through the wires, blissfully unconscious that the Pheasant takes

it as a friendly act and holds his head close up to allow the Dove to tickle it.

A very fine pair of Lidth's Jays are new arrivals ; they are in perfect plumage and absolutely fearless, fairly mob one for tit-bits. Pea-nuts are much appreciated, a bird will carry off three at a time and either peck them to pieces then and there or hide them for future consumption. Pea-nuts seem to be the passport to the friendship of most of our birds. Even the beautiful Grey-necked Crowned Cranes come running with outstretched wings as soon as a possible pea-nut bearer comes in sight.

Since the above was written our collection has been enriched by the arrival of a pair of rare Hooded Cranes. We have only (but what an "only"!) to acquire three more species before we realize our ambition and have pairs of all the family, viz. : the Wattled, the Grey-necked and the Whooper. Don't we wish we may get them !

* * *

TAME BIRDS AT LIBERTY

By GUY FALKNER

It occurred to me that, perhaps, some of the members of the Avicultural Society might like to have an account of some of my birds here at full liberty. They are all full-winged. About four years ago, while in Tokyo, I saw a miserable little dirty object in an absolutely minute cage—just big enough to hold what afterwards turned out to be "Oscar", my Japanese Starling. I bought him and he travelled across America with me, and also some other birds. He was not tame when I bought him, but quickly became so and was allowed loose on the boat, and also on the train crossing America. He is, I think, the tamest bird I have ever owned. I once took him to stay at Mr. Ezra's, and let him out directly I got there ; Mr. Ezra thought he had gone for keeps as at that time he did not know the bird, but *I* did. He returned, as he always does, directly I whistled to him, from some high trees at the back of the house. I can take him anywhere in the car and let him loose and he will never go far—always flying back when whistled for. So fond of me is this extraordinary little creature that at night when the electric light is on and he is running about the room and flying on to the

pictures, he will fly from a brightly lighted room into a *completely dark* room to find me if I call him. To anyone who knows a bird's fear and helplessness in the dark this will give some idea of what a very abnormal creature he is—I know no other bird which would do so. He will go for walks and comes exploring the garden, and woe betide any other bird who comes near him. Exploring nests and spearing young birds, or feeding them with any rubbish he has in his beak, is one of his favourite pastimes. He is keen on nest-building, and builds them of any old rubbish he can find, and in any situation ; one day it may be an old boot, the next day an open drawer, etc. He is a great talker, and very clear—some of his sayings are perhaps more “pithy” than pure ! He loathes strangers and immediately flies at them and pecks them. One friend of mine he loathes like the devil, and if he sees his car in the yard will fly on to the car and peck it, screaming the whole time until he is literally tired out. I never feed this bird myself, and he hates mealworms strangely enough, so that it is not “cupboard love” and is a real attachment. Just as a dog never leaves one—so it is with “Oscar”. He is about as big as a Starling, black head, white cheeks, white rump, dark grey almost black wings and tail, and the rest a pale French grey with a yellowish black bill and yellow feet and legs. He is very fond of the cook, but if I am about will leave her at once, and he nearly went mad this year when he saw me after nine months' absence. He flew straight on to my shoulder and a spate of words poured out of him, singing and chattering—it made me feel a beast for having left him so long. One cannot keep him out of the house and all windows would have to be shut to do this for he knows every window that is likely to be open. When he dies, which I hope will not be for many years, I shall, I am certain, never see one like him again, he really *has* to be seen to be believed !

Another very charming bird which I have had for nine years is a Hangnest. He is bright orange and black and about as big as a Blackbird, with a very sharp blue beak and blue legs and feet. He is very affectionate and good-tempered and a most intelligent bird. He will open a cigarette box and give me a cigarette and then a match, and does several other tricks. He spends most of the summer flying about the garden, and only uses his cage to feed and sleep in. This bird appears to have no natural song, but

is a wonderful whistler and one would think it was a human being whistling if one did not know. He is an ill-tempered bird with other birds, and is a "killer". He believes that all wives should be murdered and does so promptly, so now he is a widower and will remain so. He has a very charming swift flight which is difficult to describe, but if he is pleased or excited he makes a peculiar sort of "clapping" with his wings when flying. This is very noticeable when he has been let out of the house first thing in the morning, and, perhaps, does not see me until lunch time. Directly he sees me, or hears my voice, he will come like a shot out of a gun, and one can hear him coming by his peculiar flight. He can, and very often does, fly absolutely silently. His favourite food is greenfly, of which he gets plenty in the summer, going over the roses far more thoroughly than any "spray" ever does!

Another very nice bird is an exceptionally tame Formosan Magpie. These birds are not very common, I think, and I have hopes of them breeding some time. They are very lovely, about as big in body as a Jackdaw, black head, neck, and chest and the rest is bright Rickett's blue with a deep orange-red bill, legs, and feet and a wicked straw-coloured eye. The bird I am writing of is very fond of undoing one's bootlaces and is always playing with bits of string, stick, or stones. They are a lovely sight in flight with their long blue tails, white-tipped, streaming out behind them. The hen is a very tame bird and loves to be picked up and nursed, and have her head scratched. The cock is not quite so tame, and is *absolutely* wild if a stranger is about.

The last bird I shall write about is a very large "bluish" Green Glossy Starling from Kenya. This bird, like the Hangnest, is a killer, and I have given up all idea of ever finding a hen that he will not immediately do his best to kill. I do not exactly know which Glossy Starling he is, there are so many of them, but he is certainly the biggest one I have ever clapped eyes on. He is extremely tame, having been hand-reared, and has complete liberty some time during the day, but as he fights with the Hangnest they cannot be let loose together. He is very affectionate and will follow me about and come when called and what is more important *go into his aviary when told to!* One very curious thing happened to him and I am glad to say I have two witnesses of this, or I feel I should be looked upon with grave suspicion as it sounds like an

American fishing story ! One day this summer he was on top of the aviaries when a gale got up, he was blown away, and was missing for four days ; well, I thought, that's the end of *that*. Twice he was reported as having been seen a long way from home. One day I was motoring and got out to speak to a friend on the road. My friend was talking to me when he suddenly said, "Don't move, but turn round slowly, a Kingfisher or something like it has flown on to a post behind you." I turned round and it was my Starling. I can only conclude that it was most extraordinary luck that he had either heard my voice or seen me and came straight to me. He was very soon put in the car and taken home. Since this experience I have never let any of my birds out in a high wind, and certainly "Jumbo", as the bird is called, never comes out of his aviary when it is very windy ; I think it has taught him a lesson he won't forget. I am afraid this has been a long-winded affair, all about four birds, which probably, with the exception of the Japanese Starling (which happens to be an extremely rare bird in spite of his dull plumage), everyone who reads this has kept. I may say that all my birds have a good insectivorous mixture which I make myself, or rather my cook makes, various fruit *ad lib.*, and minced raw beef or mutton twice a week, and most of them seem to survive this diet for a great many years, so I conclude it must agree with them.

* * *

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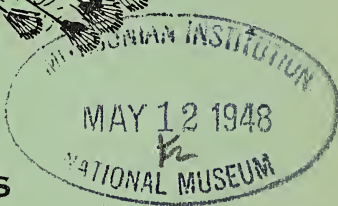
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CONTENTS

	PAGE
Kingfishers in Captivity (<i>with plate</i>), by Dr. OSKAR HEINROTH	33
The Early Years of the Avicultural Society, by DAVID SETH-SMITH	36
Breeding Bauer's Parrakeets in the United Kingdom, by E. N. T. VANE	42
Breeding Results at Delmonden Manor, by Dr. MAURICE AMSLER, F.Z.S.	47
Flycatchers and Humming Birds of Canada, by JAMES CASSIDY	52
Breeding of the King Parrakeet, by ERIC PLATT	56
Records of a Rural Aviculturist, by Prebendary SWEETNAM.	58
Notes	61
Correspondence	63

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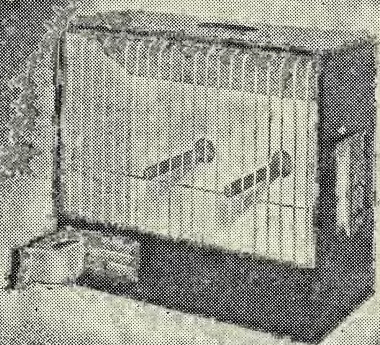
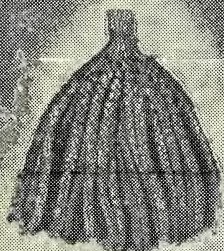
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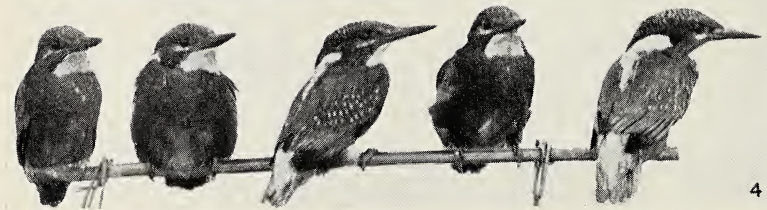
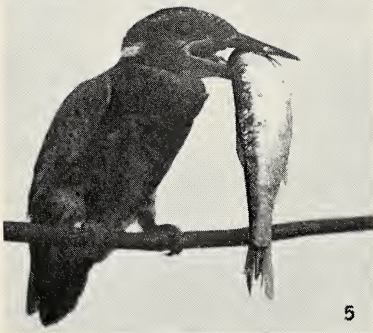
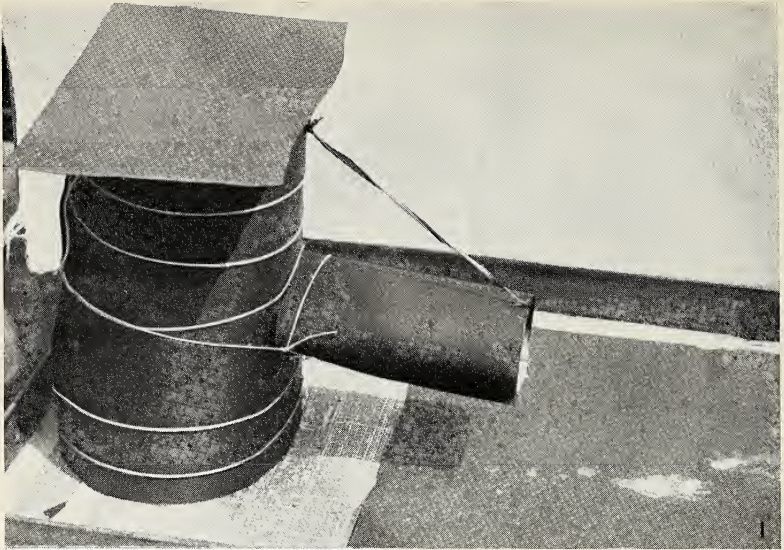
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KINGFISHERS IN CAPTIVITY

1. The covering of the flower pot. 2. Kingfisher about 5 days old. 3. One week before leaving the nest. 4. One day after leaving the nest. 5. Grown-up, two weeks later.

Frontispiece.]

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KINGFISHERS IN CAPTIVITY THEIR REARING AND BREEDING

By DR. OSKAR HEINROTH

When, with my first wife, I was writing and illustrating the four-volumed work, *Die Vögel Mitteleuropas* ("The Birds of Central Europe"), we naturally also had to rear and keep the indigenous Kingfisher (*Alcedo atthis ispida*). We came into possession of some young birds about five days old (see illustration No. 2), taken from a hole in the earth, which were already somewhat stiff. Unfortunately through overheating the incubator into which we first of all put them, they came to grief. They were completely naked, consequently without any down, their skin was rose-coloured, the upper mandible, as in the Woodpecker's, was somewhat shorter than the lower, and the eyes and ears were still closed. Later a friend brought us a nest dug out in the neighbourhood of Berlin, full of young birds, the age of which it was naturally not possible to estimate with any exactitude. They were within a week of leaving the nest, but still had the characteristic feather-sheaths of Kingfishers, which gives them the appearance of hedgehogs. In order to provide them with the most natural conditions possible we put them in a flower pot and then placed this inside a cardboard case with a tube (see illustration No. 1), so they remained in darkness and were calm.

They soon arranged themselves in such a way, as photograph No. 3 shows, that always one of them lay with its beak towards the tube entrance. If we opened the roof of the covering so that the light penetrated, they at once cowered down nervously ; but if we darkened the entrance of the tube by holding a hand in front of it we immediately heard a " Ruerr ruerr ruerr " note like that of the Black Woodpecker, and the foremost bird was ready to take the small fish which we inserted with forceps. Then he shouldered his way back and made room for his next brother or sister. At every feed a circular movement took place in order that every single bird should obtain food in turn. It was the same with excretion which took place from the flower-pot nest out through the tube, as can be seen by the white flecks on the paper lying before it. When digging out the original nest-hole it was found that the fluid excrement had drained as far as about the centre of the entrance tunnel, which of course in nature was much longer.

These young birds had already attained their maximum weight of 35 gm. ; in other species of birds also the same phenomenon occurs, that before leaving the nest they are as heavy, or even heavier than the adult birds. Small fish were taken if one touched one side of their beaks. Their eyes were already partly open, but looked quite dim-sighted and the birds blinked a great deal. The six birds consumed, in about two to three hourly feeds, a daily total of 150-160 gm. of small fish. Shortly before leaving the nest their voices turned to a " Zipp ", which sounded like a sneezing bird cough. Gradually our charges became accustomed to being fed from above which was naturally more convenient for us. The scales and bones of the fish were ejected as castings.

Three days before the birds flew the feather-sheaths fell off and the youngsters now looked complete Kingfishers. They left the nest through the tube one immediately after the other as if shot out of a gun, and immediately perched methodically on surrounding objects. From the beginning they struck the fish now offered them on a branch in order to place them in the right position, that is to say head foremost, for swallowing. Also they immediately became hostile towards each other. A few days later they plunged into a tub after living fish like true Kingfishers. Unfortunately they soon became wet so that we were afraid of their drowning, and we therefore kept them in cage without water. As is well known,

one frequently has the same experience with Dippers (*Cinclus*) and also Diving Ducks (*Fuligulinae*) which are reared from the egg.

Besides the familiar "Tit-tit" or "Zih-ih", which was also heard in the room when the birds were in flight, we sometimes noticed a peculiar creaking, grunting noise, which certainly indicated angry excitement, if one put one's hand in the cage. In a room which they knew well these young foster-children of ours were quite tame with us and liked to perch on us; yet if we took them into another room they became, like many stupid birds, quite changed—blustered about and dashed against the window panes, a thing they so easily learnt not to do in the bird-room. They like best to take their food in flight from our hands.

To keep Kingfishers requires great care, it is not sufficient to feed them once or twice a day, they must be attended to every two hours and care must be taken that they do not get dirty and contract disease of the feet. As they seldom clean their beaks it is necessary to rub these up and down with a wet rag.

A grown Kingfisher requires on an average 20 gm. of fish and a number of kitchen cockroaches (*Blatta germanica*) or mealworms a day. If he is left hungry for long he will swallow 10 gm. of fish straight off, but then has had enough for a time. In photograph No. 5 is shown how large a fish may be for a Kingfisher to gulp straight down; the tip of the tail of the prey then of course still protrudes for some time out of the bird's beak.

In 1932 Herr Carniel, of Vienna, succeeded in breeding Kingfishers in a very large flight room with running water as well as a pool. He obtained some young birds as they flew from their nest-hole, a pair of which mated after they had killed their brothers and sisters; for these birds are (especially during the breeding season) exceedingly hostile towards strangers. A full report of this is given in the *Gefiederte Welt* ("Feathered World") of 1932, and I will here only briefly repeat the results. The male and female first perched on the ground together and demonstrated their affection for each other by symbolic nest-building; then they suddenly selected a mound of earth of about the height of a man, in which, taking turns to dig, they excavated a tunnel. The earth was loosened with the beak and thrown out behind with a kicking movement of the legs. Male and female took equal shares and did the same with the incubation, in fact each bird sat for about $2\frac{1}{2}$ to

3 hours. Towards the end of the incubation period the male remained longer on the eggs than the female, and in one case two turns of brooding were made successively, whereby the male then almost exclusively undertook the rearing of the first chicks. The length of the incubation period, so far as this can be determined from the conduct of the adult birds, appears to amount to eighteen days. During the first days the young were only fed on quite small fish. They flew on the 29th day, at first being very disturbed and wild, and after a further week became quite independent. If they were left with their parents they would be murdered after a few months.

* * *

THE EARLY YEARS OF THE AVICULTURAL SOCIETY

By DAVID SETH-SMITH

(Continued from p. 15)

Volume V, which commenced in November, 1898, begins with an article on the breeding of the Chinese Painted Quail by E. G. B. Meade-Waldo. I had myself very nearly succeeded with this delightful species, but Meade-Waldo was the first actually to rear young. Both he and I found no difficulty with this species when given a good-sized run in which the grass was allowed to grow, and to my mind a pair of these diminutive Quails with their brood of six or seven fluffy chicks, little larger than big bumble-bees, is the most attractive sight in a garden aviary.

Both the Rev. C. D. Farrar and the Rev. H. D. Astley describe the breeding of the Virginian Cardinal, the latter referring to a pair of birds which had full liberty in a large garden.

A special show of British and Foreign birds and hybrids was held at the Crystal Palace on October, 1898, which was notable in consisting of British and foreign birds and hybrids only, and marked "the emancipation of the exhibiting aviculturists from the bondage of the Canary 'fancy' to which they had hitherto been subject". The different groups are reported on by various authors. Parrots by F. G. Dutton, Foreign Finches by C. S. Simpson, Doves and soft-billed birds by Hubert D. Astley, and British birds by myself. Several Swallows were shown in one class and on this subject

I made the following remarks : “ Swallows always look miserable and sadly out of place in cages, and it is satisfactory to find that the judge did not encourage the capture of a bird so perfectly adapted to a life in the air and so hopelessly miserable in captivity.” This was followed by further protests by other members, and it is satisfactory to find that Swallows are rarely seen at bird shows nowadays.

In March, 1899, appeared an interesting article by Meade-Waldo on “ The Ages to which Birds attain in Confinement ”. He believed that, under favourable conditions of food and surroundings, they would live longer than in the wild state, where, as they get old, they are beaten by the vigorous younger members of their species. He mentions a pair of Trumpeter Bullfinches which he caught himself in the island of Fuertaventura in February, 1888. These bred at intervals until 1897, when they must have been ten years old ; “ then they suddenly took it into their heads to go ahead in a most amazing manner. They had four nests and reared no less than *twenty-two* young ones, hatching every egg and rearing each young—this latter operation being rendered much easier for the parents, by the young of each nest going up and feeding their younger brethren while in the nest, and after they had left.”

The chief contributors to Volume V were A. G. Butler, C. D. Farrar, H. R. Fillmer, Reginald Phillipps and myself, but I must not omit to mention an important article by W. H. St. Quintin on the subject of Eider Ducks in Captivity. He found great difficulty at first in arriving at the best diet suited to these birds, but after many trials, came to the conclusion that barley meal, mixed with Spratts' poultry meal, moistened so as to form large pellets, or balls, with a small quantity of fresh ox or rabbit liver daily, was sufficient to keep them in the best of health when once they were accustomed to it. For the young, however, he found earthworms essential—in fact they would look at nothing else, though by degrees they could be trained to the diet that answered for the adults. An interesting observation was that the duck never left the nest during the twenty-eight days of incubation and in one case became quite grown over by a mass of chickweed.

O. E. Cresswell remarks on the similarity of the note of the Australian Bar-shouldered Dove (*Geopelia humeralis*) to that of the Cuckoo. The wild Cuckoos were evidently taken in and used to

fly close to the aviary of one of these birds and, in the early spring, reports appeared in the press of the much too early arrival of the Cuckoo in the Hereford district !

The first arrival of the Derbyan Parrakeet in the Zoological Gardens is recorded. Previous to this the species was only known from an example which lived in the Knowsley aviaries prior to 1850. The species has become comparatively common in more recent years. Meade-Waldo records the successful breeding in his aviaries of the Scops Owl (*Scops giu*). He found the species difficult to start in confinement as they require "the most astonishing supply of insects and other tender food", but after a time they seemed to get hardier and, with proper food, thrived. They became very tame with those they knew, but the sight of a stranger would transform them at once into what appeared to be broken-off pieces of wood with its rough bark. "This is done," he says, "by quickly, and almost imperceptibly, drawing all their feathers tight to the body, standing very upright, drawing the shoulder of the wing next to the supposed enemy half across the breast, elevating the ear-tufts, and almost shutting the eyes." Two pairs nested and reared young and it was found that the hen did not commence to sit until the completion of the clutch, differing from the generality of Owls ; and the incubation was the shortest period for any Owl, namely twenty-four days.

There are four coloured plates in Volume V, depicting the Rufous-tailed Grassfinch, the Blue Sugar-birds, the American Siskin (*Chrysomitris tristis*), and the Princess of Wales's Parrakeet, all by P. J. Smit and reproduced by the chromo-lithographic process. Volumes VI and VII are edited by Mr. O. E. Cresswell. By the end of 1899 the membership was 263 and the subscription only 10s. a year, but in spite of the small membership and income, the Society managed to produce a magazine that was very much alive, a fact that is evident from the number of contributors and extent of the correspondence. Volume VI contained four coloured plates depicting the Sacred Kingfisher and Masked and Long-tailed Grassfinches by myself, the Spotted Panther Bird (*Pardalotus punctatus*) by Norman B. Roberts, and the Bearded Tit by F. W. Frohawk, all being hand-coloured lithographs.

There are many valuable articles in this volume, such as that on "Wild and Tame Hoopoes" by H. D. Astley, "A Naturalist's

Notes on Ecuador” by Walter Goodfellow, “The Feeding of Parrots” by the Hon. and Rev. F. D. Dulton, and “Notes on the St. Vincent Parrot” by Mrs. H. L. Thompson, who had spent five years in the island.

Meade-Waldo’s experience with Gouldian Finches was a much happier one than that of most people who have kept these birds. He writes : “Without pretending to have discovered how to manage these little birds, I may say that since I procured one pair, five years ago, I have found them the hardiest and most prolific of small birds. I put them out in the perfectly open aviary in April, where they moult, and commence to breed in the end of August or beginning of September, and I bring them in about the middle of November—not that they appear to feel the cold at all. Last autumn the original old pair hatched two clutches of six and reared them all. When rearing their young, I cannot detect that the old birds eat anything but hard seed, although at other times they are very fond of grass seed and of pulling out the young shoots of grass on the lawn and eating the succulent ends.”

This and subsequent volumes contained many articles by the Rev. C. D. Farrar, a very successful aviculturist and most entertaining writer. Mr. Fillmer made a proposal to extend the scope of the magazine by throwing it open to papers on rare or foreign mammals, reptiles, and fishes, discussed from the point of view of the keeper of living animals. He further suggested the removal of the ban on Canaries, considering their exclusion “unscientific and absurd”. This led to a good deal of discussion in the correspondence columns, almost all the writers being opposed to the idea.

Volume VII, which commenced in November, 1900, contains two hand-coloured plates, one by Goodchild of Bouquet’s Amazon Parrot, the other of the Cape Sparrow (*Passer arcuatus*) by myself. Bouquet’s Parrot is one of the rare island forms of *Amazona* (formerly *Chrysotis*), inhabiting the island of Dominica, and is dealt with, together with the other rare Parrot of that island, *Amazona imperialis*, which was then known as *Chrysotis augusta*, by Canon Dutton.

There are several valuable articles in this volume, notably by St. Quintin and Meade-Waldo. In reporting upon the breeding season of 1900, St. Quintin describes the nesting of his Snowy

Owls, then more than nine years old. The first egg was laid on 26th May, and the first young bird appeared on 29th June. Two fine young, one of either sex, were safely reared. He writes: "I hope that, if any of my fellow-members acquire any of these fine birds they will be careful in regard to food. With Eagle Owls one can take great liberties, either as to quantity or quality. But it is not so with the far more delicate 'Snowies'. They must have what falconers call 'castings' at every meal, that is fur and small bones. The only easily obtained food that seems to suit these birds perfectly is rabbit, and it must be fresh and not tainted in the least or the Owls will go amiss. They will not eat birds in confinement, at least that is my experience, though when at liberty it is otherwise; and they are said to feed on Ptarmigan, etc., and sometimes even on fish." Meade-Waldo also contributes a good article on Owls which were great favourites of his, and he stresses the great importance of giving only perfectly fresh food with the fur or feathers. "The health of the individual can always be gauged," he writes, "by the condition of its castings, viz. the indigestible portion of its last meal which is ejected the following day. The healthy castings should consist of the fur or feathers and bones *alone*, tightly wrapped. If sloppy, or with portions of undigested meat, the bird is not well."

St. Quintin describes the breeding of the Roller in captivity in the number for October, 1901. The birds nested in a large hollow log, and young were heard calling for food on the 2nd July. The birds were kept well supplied with mealworms, gentles, and such beetles as could be collected, as well as their ordinary mixture of rabbit, chopped up with the fur and small bones, mice and hard-boiled egg.

With Volume VIII (commencing in November, 1901) my term of editorship began, and we were able to enlarge the size of the magazine. Seven coloured plates, six by Herbert Goodchild and one by Astley, were published, those by Goodchild being particularly successful. They figure the Parrot Finch, European Bee-eater, August Amazon, now known as the Imperial Parrot, Brown's Parrakeet, Blue-winged Siva, and St. Lucia Parrot (*Amazona versicolor*). Several photographic illustrations and a black-and-white drawing of the Australian Crane by Frohawk are included. The list of contributors to this volume is a long one, and space will only allow of my mentioning a few of the more important articles.

Astley writes on the nesting in captivity of the Australian Crane, Bonhote on the breeding of the Spotted Eagle Owl, Canon Dutton deals with rare Amazon Parrots, Farrar describes the breeding of the Many-coloured Parrakeet and of the Cat Bird, Dr. W. T. Greene treats of the Hawk-headed Parrot, and Mrs. Johnstone describes the breeding of the Black-headed Conure and Barnard's Parrakeet. But the most prolific writer of all was the late Reginald Phillipps, who was a tower of strength to the Magazine at the time and his success in the breeding of the Australian Blue Wren (*Malurus cyaneus*) was an outstanding achievement. Every Australian, or visitor to the eastern states of that country, must know this exquisite little bird, of which the cock, when in colour, is a perfect gem. It is rare enough in European aviaries and not too easy to import, but Reginald Phillipps was lucky enough to obtain a cock and two hens.

I mentioned in the previous article that Phillipps's aviary consisted of his whole back garden, enclosed with wire netting. It was not a large garden, no more than the ordinary plot allotted to small houses in a West London street, but planted thickly with shrubs and grass it made a very good flight for birds. The back room on the ground floor was known as the bird-room and communicated with the flight, while from a semi-basement window below a good view of the flight could be obtained. Mr. Phillipps had noticed one of the hen Blue Wrens carrying hay to a spot amongst some Virginia Creeper stalks, just such a place as an English Wren might have selected, but thought no more of it until, on the 26th July, hearing some unfamiliar baby voice, he searched. On a long thin cane, fixed horizontally in the aviary, he beheld a tiny mite, of a very light brown colour, being assiduously attended to by a pair of Blue Wrens, one on either side, who every few seconds disappeared and returned with some invisible speck which it dropped into the open mouth of the youngster. I had the pleasure a short time after of seeing this young bird with its parents. It was successfully reared and for four years regularly developed the seasonal breeding plumage of the male of this species. On its death in 1906 Mr. Phillipps sent me its body, and it now reposes in my cabinet.

(To be continued)

BREEDING BAUER'S PARRAKEETS IN
THE UNITED KINGDOM*(Barnardius zonarius)*

By E. N. T. VANE

Dr. Hopkinson, in his "Breeding Records" published in the November issue of the Society's Magazine, states that he has no record for Bauer's Parrakeets in the United Kingdom; consequently my experience with these birds may be of interest to others, and in any event will give a definite instance of successful rearing of the species in England.

Having disclosed the end of my story at the commencement may have removed most of the interest and displayed my lack of the author's craft. But to continue, I have kept Bauer's for some three years. The first pair I had were fine large birds, always in excellent health and condition and ever ready for a good scrap in the true Broadtail tradition; in my opinion they are the most handsome of the more soberly clad Parrakeets. This particular pair appeared to live in a state of armed neutrality, explained by subsequent events which proved them to be two cocks. I should have discovered this earlier, but they had been selected as a true pair by an eminent authority; moreover, to all outward appearances they were a cock and a hen. One is far more massively built and has a distinctly larger and wider head, while the other is slimmer generally and always perches in a more upright position, which accentuates the difference. However, they are both cocks, as one is the father of several fine youngsters, and the other, in spite of his feminine appearance, has been feeding and mating with a young hen; but owing to "summer" being in March this year, the pair of them fell into a moult in the "autumn" in May, thus effectively postponing breeding operations for this season.

All my Parrakeets are kept in 21 ft. flights, one pair to a flight. The floors are of grass which is returned annually, and in addition a number are kept vacant and limed and salted whilst resting for a few months. I would like to rest them more, but accommodation has to be found for the young stock and, further, so long as I have an empty aviary I find it almost impossible to say

“No” when Opportunity knocks with the offer of some greatly desired pair of birds which will never recur, so the flight being temporarily rested becomes temporarily occupied. My latest aviaries are movable, which overcomes the latter temptation, and in any case those on fixed sites have only been in their present position for two years, and some of them are less than a year old. Wire netting of $\frac{1}{2}$ in. mesh covers the whole of the floor of the aviaries underneath the top layer of turf, to exclude rats, stoats, etc. My grandfather clock nest-boxes are constructed with a protruding base about 4 inches wide all round the foot, with an aperture about 6 inches square in the middle, the boxes therefore stand in the flight and are braced to the sides; but the important point is that the whole of the nest is in direct contact with the earth. The drinking bowls are placed close to the foot of the nest, and in replenishing these care is taken to soak the surrounding earth thoroughly, particularly in dry weather. The nest-box is filled with earth, turf, and peat mould to about 4 feet of its height, and the remaining 2 feet is left for the birds to climb down the netting inside. An inspection trap is provided for emergency only (but it is sometimes used when I am totally overcome by worry or curiosity, if I know the birds well) just above the level of the nest proper. I find the hen digs down a long way into this before she is really satisfied and will start her clutch.

“Nothing venture, nothing win,” is quite a suitable axiom for an aviculturist, so in my optimism I decided to open the nests early so that there would be plenty of time for a second round. The weather was fine and warm, in fact it was too dry if anything, and although no first nest had been started here was I already thinking about the second. Had the Bauer's been thought readers I fear they would have formed a very low opinion of my mind, but it would have been “the pot calling the kettle black” as they were in the nest the day it was opened, and very pleased to be there, too, judging by their behaviour. Within ten days the first egg was laid, and this was still in March.

As I always feed and look after my birds personally, they knew me well and took scarcely any notice of my presence, yet strangers always annoyed the cock. His disturbed manner was not so much nervousness as real anger; he would fly up and down the aviary and cling to the wires whistling out his defiance fiercely.

The Bauer's call is quite musical in the open, but very penetrating, and when he keeps on with his repeated single note for twenty or thirty times without stopping everyone in the neighbourhood knows something is wrong. He was far more effective than a watchdog, and I used to wonder if the Twenty-eight Parrakeet, his near relative, was named thus because he kept on calling twenty-eight times in succession. I only examine the nests when I am certain no objection is likely to be taken, and after seeing an egg I refrain from any further interference unless something is obviously amiss. In this case I have no doubt the birds would not have resented my inquisitiveness, but I did not try the experiment; certainly I could not help, so why risk doing harm. I am confident that, in spite of the many cases I have read about where eggs are inspected daily and even soaked to assist incubation, it is best never to look in. Unless you have been blessed with the gift of patience by nature it takes years to reach this stage of aviculture.

Everything proceeded according to plan—the cock had been feeding the hen before the nest was opened, and immediately this had been inspected by both and duly approved they were seen to pair. Having once seen the first egg it was not very difficult to curb my impatience and curiosity as there was absolutely no cause for anxiety. Every evening regularly about six o'clock the cock used to alight on the nest platform, put his head inside the hole, and call his mate off to feed and take exercise. She put in some ten minutes of physical jerks and he had a nice meal all ready for her, so that everything was obviously going along nicely.

About the middle of April the unmistakable hissing of young Parrakeets was heard; I first noticed it about eleven o'clock at night, when feeding my dogs. The hen was still brooding closely, being very little in evidence, and the cock did not start feeding the young direct, at least I never saw him enter the nest for another week or more. The hen then came off more frequently, and they were both busy providing for the family. Incubation had taken about three weeks, but I cannot be more definite than that.

When eventually a stealthy inspection was made, there were two youngsters with the quills of their feathers just sprouting and one unhatched egg. This was left until the young were fledged and flown, as I would not put my hand inside the box. In the middle of this visit both the parents came out of the shelter where they

had been feeding and caught me red-handed, but they were not in the least perturbed, and did not even rush in after my hasty exit to discover what damage I had done to their precious offspring ; they just finished their meal and usual exercise before settling down once more.

Their food throughout the year consists of a mixture of sunflower, hemp, oats, groats, mammoth canary, and white millet, with a few peanuts and continuous supply of sweet red apples. During the breeding season this is augmented by a liberal supply of seeding grasses, wild green food such as milk thistle, dandelion, groundsel, chickweed, and spinnach beet. As a matter of fact they would eat almost anything and took potato, carrot, and even tomato ; they also collected earthworms from around the drinking bowl and broke them up, apparently to feed to the young. Having noticed this I supplied mealworms, which they ignored. Perches were renewed fairly frequently, as the birds when breeding soon stripped off all leaves, buds, and bark. Millet sprays were used at the rate of one per day ; sprouted sunflower, hemp, and oats were supplied daily together with soaked stale brown bread squeezed dry, and they consumed a large quantity of these two items. Millet sprays are not supplied out of the breeding season and very little canary or white millet is taken. The birds seem to prefer sunflower, hemp, and oats, so when replenishing their feeding bowls I always put the three favourite seeds in first and then cover them over with canary and millet ; neither do I refill the bowls until some of the less favoured seeds have been taken, to vary the diet so that it should not be too fattening. Of course, when breeding they have an unrestricted choice of anything they fancy.

The two young birds, which were only slightly smaller and a little duller in coloration than their parents, left the nest together on the same day. They could be easily distinguished by the lighter shade of the beaks and the nestling down which still showed through their plumage ; they were quite strong on the wing from the first but not so expert in alighting. Although they are now seven months old they are still with their parents and are most difficult to pick out ; at least many of my friends to whom I have pointed out the difference fail to see it, but the yellow on the young birds' bellies is washed over with bottle-green, which is fading away.

My hopes of a second nest were frustrated, as the cock started to

moult in June and was soon joined by the hen; this is the reason that the young have been able to remain in the same flight as the old birds. They are quite a happy family, and will insist on roosting in the open without any cover; they hang on the wire netting in close formation of fours. I have not been too insistent in stopping this folly as yet, but they must change their site soon, as they will be separated for the good of their health.

I have not included a description of the Bauer as it must be familiar to most, but the contrast between the yellow front and dark green back which is set off by the black head and yellow collar make a very attractive bird and I should not like to be without them. At present I have three pairs.

They are most difficult to sex with certainty, but in the adult birds this may be done by the underside of the wing. A cock is entirely black, but the hen has about seven or eight feathers with white spots on them which form a bar when the wing is extended. Young immature birds, however, seem to possess this bar to some extent whatever the sex. I have proved that the birds with smaller heads and slimmer appearance are not always hens, as mentioned earlier, and the so-called hen, which turned out to be a cock when examined, had no bar of white. Further, this indication of sex has held good in all the Bauer's I have examined so, although it may not be infallible, it has never failed me yet.

Perhaps many of the details here recorded appear unnecessary, but I remember that when I first started keeping Parrakeets innumerable difficulties were encountered which were never referred to by the experts in their books. They had forgotten all about them when they found out that they were not due to extraordinary behaviour, but were normal procedure. Perhaps, therefore, in the hope that they may be of some little assistance to a few, if not all, who may read, I may be forgiven for alluding to them. Those who are wearied by these superfluous incidents will in any case most probably never get so far as reading this apology which I offer to conclude my notes on "Breeding Bauer's Parrakeets in the United Kingdom".

BREEDING RESULTS AT DELMONDEN MANOR

By DR. MAURICE AMSLER, F.Z.S.

The year 1938 has been a quixotic one for breeders of birds and plants alike.

The summer-like weather of March deceived most of us and those who keep their more delicate birds in a sheltered room during the cold months were tempted to turn them out into their aviaries too early.

The birds were equally deceived and very quickly began to think of nesting, only to receive a nasty shock when the glacial period came—April and May.

My own experience was a great number of infertile first clutches.

These climatic conditions affected not only the small Passerines but also the eggs of some of the game birds, which at first showed a low fertility, a condition which greatly improved as the spring frosts ceased to trouble us. November was one of the warmest on record and tempted me to leave the more delicate birds in the unheated aviaries till too late a date, with the result that I had a few casualties. Fortunately these were only among the commoner Waxbills which I keep to fill the voids of my somewhat sparsely populated aviaries. A hen Painted Finch (*Emblema picta*), however, was accidentally overlooked and not spotted until after the thaw which followed Christmas. This little bird, which almost always roosts on the ground in the open flight, had perfectly withstood a constant frost of several days, as low as 20° F. and a foot of snow. When I caught her up she seemed none the worse for her arctic surroundings.

The happiest days in the avicultural year are those when the birds which have been caged for the winter are liberated in their spick and span breeding quarters, and to me the most disagreeable task is the catching-up when the short dark days return.

Softbills are easily trapped by means of a few mealworms—and some of the seed-eaters will at once succumb to millet-spray, sunflower seed, or apple, but always there will be a few wary customers who must be caught by means of that abomination—the net. May I again remind all bird-keepers only to use a net in which the ring has been well padded with a *thick* covering of

tow or cotton-wool. If the bird comes in contact with a hard wooden or iron ring he runs a great chance of being killed outright.

As to actual breeding results :—

Two pairs of Red-headed Parrot Finches laid and incubated in April, eggs all clear. A second attempt in warmer weather resulted in two broods of strong youngsters. What a pity these birds are so difficult to sex. I am ashamed to admit that this is quite beyond me. Even if one has time to cage birds separately, song on the part of any particular bird merely denotes that it is a male ; its absence unfortunately does not prove that one has a female.

I must admit to having sought the aid of a breeder who is much cleverer than I am. In 1937 all my young stock was sent to him and was correctly sexed—early this year I again sent him my young birds, only four or five on this occasion, and he was mistaken in every case but one !

Three-coloured Parrot Finches (Goodfellow's sub-species) always disappoint me in the early months of the year—they build feverishly for a few days, then just as one expects eggs the nest-box is found empty and the nest entirely demolished.

Both pairs behaved in exactly the same way and did so last year ; but in July, very much to my surprise, one pair produced four young. A neat globular nest had been built in a *Lonicera nitida* and the hen had been sitting for a few days on a clutch of six. One day I noticed that there were three Parrot Finches in the neighbouring aviary and stupidly did not realize what had happened until the morrow when I found the nest deserted and the eggs cold. I soon trapped the truant and replaced her in her lawful home ; she at once returned to the nest and hatched out five young, of which four were fully reared. In November three more young left the nest and successfully weathered several frosts before being brought into warmer quarters.

The hen of this pair is something of a matriarch, if that term can be applied to an old hen. I bought her from Mr. Mayer in July, 1933, and she was then apparently quite an adult.

The other pair did not mend their evil ways and produced no young.

Cuban Finches and Green Avadavats both produced young from nowhere—by which I mean that I did not know that they had a nest or were sitting. The former species cannot abide any curiosity

on the part of their owner, so it is perhaps as well that my aviaries are thickly planted and that they can breed in secrecy. Two species of Niltava, the Lesser and Rufous-bellied, both disappointed me ; in each case I had the misfortune to lose the male during the breeding season—though it must be admitted that I saw no signs of nesting.

Orange-headed Ground Thrushes reared two broods of two young ; on each occasion the chicks were true pairs—the sex being recognizable to an experienced eye before they leave the nest.

This is, I think, the ninth successive season these birds have produced young in my aviaries. They have never reared more than five or less than two—but, alas, the old cock was picked up dead this autumn. At the age of over nine years I thought that a verdict of death from natural causes was justifiable without the intervention of the Coroner in the person of Mr. Hicks. Diamond Doves as usual went on nesting until the severe frosts of December either froze their eggs or killed the callow young. The Jobi Island or White-fronted Doves have been less prolific this year and I have to blame a pair of Tragopans for killing at least two squabs of this species shortly after they left the nest. All keepers of Doves will have bred Doves which left the nest a little prematurely ; these flutter around on the ground for the first few days, and it is possible that Pheasants look upon the ground floor of their aviary as their own particular domain. A pair of the rather new Dwarf Cardinals or Black-crested Finch (*Lophospingus pusillus*) arrived here in May. In the June, 1938, number of the Magazine, Dr. Hopkinson quoting the B.M. Catalogue says “ the hen is similar to the male only slightly smaller ”. This is incorrect, the difference in size is not noticeable ; but the sexes are distinguishable at a glance, the “ blacks ” in the male are a very dark brown, whereas in the female the dark areas are a rusty brown, moreover she lacks the black bib which is quite a feature in the male. These appear to be inoffensive and in a quiet way very attractive little birds—one member has already had a partial breeding success with this species. My own pair only got as far as a nest built in a *Weigelia*, it was a very small cup-shaped affair of such exquisite workmanship that any Chaffinch might easily have been roused to jealousy. I have now obtained a second pair. Shammas were disappointing ; one pair built but did not lay—the other laid but the hen is so fond

of waiting for my approach that the eggs must have been chilled many times over and were consequently all clear. She made no further attempt. It is only in exceptional cases that the male of this species can be trusted to feed the young, and it is therefore a safer plan to cage him inside the aviary as soon as the eggs hatch. Blue Robins were rather disappointing ; I had two cocks and one hen of the commoner Eastern variety and a cock and two hens of the Western. The Eastern hen was a very old bird and did no good. She has since died and was reported to be " in a healthy condition, death due to old age ". One of the Western hens was inclined to sneeze and sputter ever since her arrival here two years ago, so I mated her to a spare Eastern cock ; the latter soon began to feed her and I expected great things, but both her clutches of eggs were perfectly clear. Meantime the season was becoming advanced and a beautiful Western hen properly mated to a fine cock of the same species showed no sign of going to nest.

Finally in desperation I took away her mate and put him in the aviary with " Sneezzy ".

Things began to move at once, and within a fortnight there were three eggs in the nest-box (previous nests had consisted of four and five eggs).

Of these three eggs two hatched and both the chicks were fully reared, but only by taking the risk of giving the parents their liberty. This is, of course, a dangerous proceeding with valuable birds, but a very fascinating one nonetheless ; also barring accidents you can be almost certain of rearing all the young—whereas in my aviaries I always know that all my young Bluebirds will, after the first few days—either gradually die, or disappear.

During the liberty period, the hen's sneezing became alarmingly pronounced, so I trapped her and gave her four drops of Aniodol (*interne*), a French remedy in great favour at Clères.

At first I thought she was about to expire, so picked her up and put her in her aviary, but after an hour or so she appeared to have completely recovered, and marvellous to relate I have not heard a sneeze from that day to this.

I had treated this hen for gapeworm with other remedies on several occasions with no apparent result, and I cannot imagine one dose of medicine curing any chronic disease unless it were parasitic.

By great good fortune I have been able to exchange one of these young Western hens for a cock of the same species, so now have two pairs of these rare birds, and a recent importation has enabled me to buy an Eastern hen for one of my Eastern cocks, both of which were bred here in 1937.

In the matter of game birds I am still much of a tyro and am not sufficiently bitten to indulge in incubators and electrically heated brooders.

The species reared here this year were Edward's, Peacock Pheasants, and Amhersts (twenty of the latter).

A lovely pair of Sonnerat's Junglefowl were late-comers in immature plumage and also a pair of Satyr Tragopans, the male of which arrived with a broken wing. By dint of a piece of surgery of which I am very proud he has made a complete recovery. So much so that he has been the death of several small birds, including the Jobi Doves mentioned earlier in these notes. The latest Pheasant arrivals here are a pair of Mikados.

I see Miss Chawner complains of a great excess of male birds in the Pheasants reared at Leckford. I have had the same experience here, always cocks when I wanted hens—but an exception must be made in the case of the Edward's. Both in England and on the Continent a great proportion of the birds reared have been hens; here again I was in the same quandary. I wanted a cock for an unmated adult hen, and never bred a single one, nor could I find one for sale after much advertising and writing.

There is a somewhat risky method of getting over this trouble, which I shall adopt with very careful supervision.

The two hens are kept in adjacent runs with a communicating door, and the cock is occasionally driven through so that his time is about equally divided between the two hens.

I have tried running two hen Edward's with one cock in the same aviary, with dire results to the newly arrived hen, but the above method of sharing one cock with two separately caged hens has been successfully tried by Professor A. Ghigi, with such strictly monogamous birds as Polyplectrons.

In this particular instance I believe he shared a Grey Peacock Pheasant (*Chinqui*) between his lawful spouse and a hen Germain, and that both hens laid fertile eggs.

As this is so, I see no reason why any monogamous species

should not be treated in like manner when one has an excess of hens—providing always that at the first introduction, someone stands by armed with a net, in case the feathers begin to fly ; in most cases one will not have to wait long if the experiment is to be a failure. The best time to bring the cock and the new hen together is, of course, at feeding time.

* * *

FLYCATCHERS AND HUMMING BIRDS OF CANADA

By JAMES CASSIDY

The Eastern Kingbird is a large, dark grey (almost black) and white Flycatcher. Frequently during times of excitement the orange crown-patch, which is seldom seen under ordinary conditions, becomes vividly visible, the front and under parts show as pure white, and the head and tail, except the latter's white tip, become black.

The nest of the Flycatcher is no careless conglomeration of chance materials, but a selection of weed stalks, grasses, and waste vegetation, carefully constructed and well lined, with plant-down rootlets, and fine grasses, the construction being placed in bushes or trees, sometimes in orchards or near cultivated fields and never far from water. The bird likes to be near human abodes and is possessed of a fine spirit, which enables it to keep away Hawks or Crows, as it never has the slightest hesitation in challenging them vigorously, emphatically flying at them, its agility and conveniently small size enabling it to strike its large enemy in any quarter, while rendering it safe from attacks of birds of heavier build and less quick movements. Its loud cries give notice of the struggle and bring watchers readily.

Mr. A. P. Taverner has given an amusing description of the dodging of Hawk or Crow, to avoid the attack of this gallant defender of his home and rights. He tells how after it has "driven away the intruder as far as it sees fit, and demonstrated its

pre-eminence within its own territory, it comes back chattering with excited triumph, and with a flirt of tail resumes its isolated outlook on some upstanding twig, as if to await the applause of its mate and the surrounding community”.

If it appear to be something of a braggart after it has driven away intruders and would-be wreckers of its home, yet the proper and able defence of its own is at least commendable, although maybe, unstressed by modesty of subsequent behaviour. The Kingbird has not only gallantry and courage, but grace and a natural simplicity.

Another name applied to it is that of “Bee-Martin”. The suggestion implied by this term is that the bird captures honey-bees. There is a slight measure of truth in this accusation, but a careful examination of 624 birds’ stomachs by the U.S.A.’s Department of Agriculture showed that twenty-two of the entire number contained a total of sixty-one bees, of which fifty-one were drones, eight workers, and two indeterminates. Of honey-bees there were actually none. Many destructive insects and a fraction of wild fruit and berries were also found.

The most difficult of the Flycatcher family to distinguish apart from their near relatives is possibly the small greenish variety known as Eastern Phoebe. Its upper parts are of uniform dull olive green, a dull white below, devoid of distinctive colour-marks—these are features of this little bird. Its name “Phoebe” is due to its note, which is “Phoe-be”, quickly uttered with a strong accent on the first syllable. It is also distinguished by the sideways sweep of the tail, and the absence of bars on the wings. It loves to haunt buildings, including bridges and culverts, as well as barns, etc. Its nest is just a structure of mud, moss, and grasses put together under bridges or the overhangs of buildings or ledges of rock.

All over Eastern North America, Canada, and West through the Prairie Provinces and northward in the woodlands the Phoebe’s little homes are found. The bird is such a friendly mite, frequently plastering its nest under the family porch. The little creature comes close to man if a welcome be afforded it. Its confidence is quickly gained and may be retained by uniform kindness.

We now turn from consideration of a few members of the Flycatcher family to that of the Trochilidæ, or Humming Birds.

“There is only one family of Humming Birds in Canada, represented in the East by a single species, in the far West by three,” writes Mr. Taverner. This lovely little creature is so tiny that its entire maximum length is covered by $3\frac{3}{4}$ inches. Its bill is about one-eighth of the length of its body and is spine-shaped. The colours of the bird have a brilliant metallic sheen.

The Ruby-throated Humming Bird is the only one East and in the Prairies. As it flies it emits a buzzing sound as of insects. The male bird shows a lovely rich metallic bronzy green above and on its sides. Its under parts are dull white with a throat patch, singularly suggestive of a bib, of beautiful rosy red. This last is almost missing in the hen bird and the youngsters, a few spots, widely scattered, of ruby being shown. The nest of this beautiful little creature is a delightful structure, covered with bits of lichen cemented together with cobweb saddled on the top of a branch.

Although the structure of the Humming Bird is that of a true bird its methods of flight resemble those of an insect, since it can fly backwards, forwards, sideways, up or down, or it can remain stationary in the air quite easily. It is impossible to measure with any degree of accuracy the rapid vibration of the wings by the tuning-fork method applied to insects. It is not surprising that, the method of flight being thoroughly different to that of other birds, the wings themselves should differ from the usual type. They are long, narrow, and inflexible, and the lower part of the breast-bone is immensely deepened to give the necessary support to the great muscles that move the wings. It has been computed that “in proportion to its wing-spread a Humming Bird has a breast-keel nearly three times larger than that of a Pigeon, a bird of average flight, or forty times larger than that of an Albatross”.

If one should inquire what is the economic status of this little bird, the reply is that in all probability it does good out of all proportion to its size, as it adds to its nectar such substantial food as minute pollen-eating forms of insect-life and even minute gnats.

Another of the Humming Bird family—but this time we must look to the West of North America—is the Calliope Humming Bird. It is a tiny bird even amongst the small Humming Birds.

The male of the species is a very brilliant fellow, with his gleaming violet gorget, long and outstanding on either side, his rainbow-tinted bronzy green above, his dusky white below, and his rose-violet throat feathers. He is unmistakable and a lovely sight to look at. It has been said that the gorget is like the half of a many pointed star on a white ground, easily recognized as a distinguishing mark when it faces the observer.

The female is, by comparison with her mate, a homely little Hummer with rufous flanks.

The nest, as with the ruby-throated bird, is a wonderfully complete structure of lichens and cobwebs on a branch.

From British Columbia to New Mexico, in Canada, Southern British Columbia, part of the Alberta foothills and on the coast, north to Wrangel, Alaska, the black birches, which abound in the interior valleys of British Columbia, exude a sweet thick sap, which these tiny creatures much appreciate. The branches of the tapped trees are black with the exudation, and clouds of Calliopes and other Humming Birds get to work eagerly on the desirable nectar. Here is a word-picture of such a muster by Mr. A. P. Taverner :—

“They are peppery, pugnacious little midgets and never meet each other without a battle of elfin fury. They dash together, squeaking in fine, high tones, almost above the limit of the ear to hear, tower into the air, exchange stroke and parry with their rapier-like bills, and then descend to opposite sides of the bush under examination, only to meet and engage shortly. None seem to be seriously damaged by the encounter, but they never learn to bear or forbear, and a sap-running tree is a centre of rapidly buzzing wings, thin angry squeaks, and dashing forms, mixing in constant fray, from which come flashes from gleaming throats of kaleidoscopic brilliancy. Were Humming Birds as large as their courage, their haunts would not be safe for anybody.”

To conclude this brief paper on a few of the Humming Birds of Canada's only family it is advisable for the sake of clarity to state that these tiny birds, with brilliant flower-like coloration, insect-like flight, and wonderfully varied form, are a typically American order. Strange indeed are some of the forms they exhibit, including “crests, ruffs, fans, and muffs, exaggerated tails, long plumes, and enormous sword-like and fine awl-shaped bills, but their most

striking feature is the brilliant metallic coloration that gleams on various parts of the body.”

The tongue of the Humming Bird is an example of apt design for the work it is intended to do. Like that of the Woodpecker it protrudes. It is of exceptional length with its sides “curled over towards the middle to form a double tube, frayed over into a brush-like tip that makes a most efficient organ for sucking liquids”.

It is, perhaps, scarcely necessary to state that the nectar is spiced and flavoured with innumerable small insects which are presumably necessary to the well-being of the bird. The insects are minute.

* * *

BREEDING OF THE KING PARRAKEET

(*Aprosmictus cyanopygius*)

By ERIC PLATT

Deciding to try to breed these birds, a pair were placed in an aviary measuring 26 ft. long by 12 ft. wide and 6 ft. 6 in. high ; the flight was turfed throughout.

Two nest-boxes were introduced in the flight in March, one being a small barrel which was placed on the floor of the flight and the other, a small grandfather clock type, 4 ft. 6 in. high and 18 in. square, was half-filled with decayed wood.

Almost immediately the cock was observed trying to drive the hen to nest and the birds mated each morning and evening. The hen entered the grandfather clock nest-box, but eventually laid her first egg on the floor, which fortunately was not broken.

A pot egg was then put in the nest-box and to my delight the hen laid her second egg in the nest ; the dummy egg was then taken away and the first egg replaced. After this the hen laid each evening until she had laid a full clutch of six eggs, commencing to sit after she had laid the third egg. About this time mice were noticed in the flight and the hen deserted the eggs. These being eradicated,

the hen immediately went to nest again, but died after laying her second egg, egg-bound.

Fortunately I was able to secure another hen and the cock immediately paired with her, but seemed to treat this second hen very roughly, chasing her all over the flight, and at one time I was afraid that he would kill her.

However, after some three to four weeks this hen entered the nest-box and to my delight laid an egg, but then dashed my hopes by laying three soft-shelled eggs. She sat the good egg for a month and then once more I was disappointed as she deserted the nest and I found a young chick dead in shell.

Disappointed, but not downhearted, I decided to give them another try and to overcome the previous difficulty, in addition to the usual liberal supply of grit that all my birds have, I decided to give this pair lime water in the drinking water.

Again the hen went to nest, and at this juncture I would state that, in my opinion, the cock bird is the deciding factor, as he gave her no peace until she entered the nest-box, only allowing her off for short periods. This time she laid three eggs and allowed me to inspect the nest through an inspection hole in the side of the box.

After twenty-four days of sitting I heard the sweetest music to the aviculturist, squeaking in the nest-box, and to my joy discovered that she had hatched two youngsters which grew very rapidly, leaving the nest fully feathered in exactly five weeks from the time of hatching.

Again Nemesis stepped in and one of the youngsters broke its neck by flying straight into the netting when it was six weeks old.

During the whole time the birds had unlimited supplies of green food, consisting of oats in the ear, chickweed, and apples, but took chiefly to the chickweed, of which they consumed enormous quantities.

At the time of writing the remaining youngster, a cock, is just getting his red beak and is a very fine specimen.

RECORDS OF A RURAL AVICULTURIST

BY PREBENDARY SWEETNAM

As the "records" don't amount to much, the emphasis is on the "rural".

During the years when, with very little spare time, I tried to keep and breed birds in the surroundings of a town I always yearned for the opportunities which I imagined would be mine if ever I migrated to the country.

On the realization of that hope I forthwith set about adapting a large barn as a vermin-proof shelter, capable of accommodating the many and various species I anticipated being now able to attend to.

The concrete foundations for the correspondingly large wired flight were laid at the same time. Those foundations are now grass-grown, and the projected flight has never been erected.

The reasons for this neglect are twofold.

First, I soon discovered that if the life of a "Country Parson" is in many ways much less exacting than in a town, it involves a number of fresh interests—professional and otherwise—the pursuit of which eat up one's time just as effectively. The life of the country-dweller may be less strenuous, but it is a complete fallacy to imagine it is less full of interest and activity.

In practice I have found that, so far from increasing my stock of birds, I have gradually reduced them by eliminating species which require special attention, and retaining only those which are, if necessary, capable of surviving the attentions of an intelligent gardener.

The other reason is more worthy of being recorded in an avicultural publication, for I have found by experience that the smaller foreign hardbills, in which my chief interest has always lain, so far from requiring a large flight, thrive just as well and breed all the better without one.

I am satisfied that for the great majority of such birds the most satisfactory arrangement consists of a large, airy, and well-lit shelter with a flight-cage large enough to allow the birds access to fresh air and rain, but not sufficient to accommodate shrubs or other nesting sites. This means that all the inmates of one's aviary are obliged to construct their nests under cover, and so avoid the

mortality which is liable to occur, from thunderstorms and so forth, to birds nesting in the open.

I need hardly add that such an arrangement would not meet the requirements of either insectivorous or Parrot-like birds, though it is quite satisfactory for Doves. In practice I have had my best breeding results with hardbills housed in an attic, and for that reason now keep most of my best breeding pairs in such an "aviary", using the converted barn only as an overflow from there.

The original attic has been adapted by substituting glass for part of the tiled roof, throwing out a smallish flight-cage from the window, and carrying up the domestic central-heating system.

Given an abundant supply of fresh green food, including a good piece of turf, and keeping a bath in the flight-cage in all weathers, I find the birds housed in this rather primitive "aviary" thrive exceedingly and keep in health and condition at least as well as those outside, while the breeding results are considerably better.

The additional convenience in tending the birds in such an aviary in bad weather need not be emphasized.

One other apparent advantage of such an arrangement is liable to prove just the opposite, unless breeding pairs are separated for some months during the shortest days of winter. Otherwise the comparative comfort and genial temperature of their aviary is liable to induce excessive breeding so that the stamina of the parents is reduced and, of course, such young as are reared are almost certain to show the effects of that "night starvation" from which a certain much-advertised beverage is supposed to provide a remedy!

Apart from the question of available time, I have suffered another disillusionment about the avicultural advantages of the country over the town. It has always been my ambition to keep birds at liberty or semi-liberty, but such experiments as I had previously attempted had not been encouraging owing to the depredations of cats, catapults, and other urban nuisances, coupled with the restricted garden space.

But I find that in a locality which abounds in such rural pests as gamekeepers, Owls, and stoats I have only got out of the frying-pan into the fire and, so far, have only succeeded with "Joey" my (talking) Senegal Parrot, who never wanders very far afield

and generally returns at dusk to his cage in the kitchen ; and to a limited extent with Doves. Several red squirrels which I optimistically released very soon succumbed to the onslaughts of their grey brethren from the adjoining park.

As any attempt to justify the reference to "records" in the title of this rather desultory article would refer mainly to the breeding of such "small fry" as Painted, Parrot, and white Zebra Finches (which I have found just as prolific as the normals), and must be somewhat of a bathos in comparison to the breeding records which have appeared in recent numbers, I will mention only one rather unusual bird which, more by accident than design, I have bred this season.

This is a hybrid between a cock domestic Fantail Pigeon and a hen white Barbary (generally referred to as a "Javan") Dove. Strangely enough there appears to be no previous record of the breeding of this hybrid and, stranger still, the offspring of two pure white parents does not carry a white feather. At five months old it is slate grey, with lighter grey on the throat and the tips of the tail feathers, and a suspicion of iridescent bronze on the neck. Presumably this surprising colouring is due to a "throw back" to some distant ancestor of the father. In size it is about midway between its parents, and more Dove than Pigeon-like as regards shape, bill, and feet.

Though this is the only youngster reared by this strangely assorted pair, they have produced another fertile egg in a later nest, so I have hopes of securing a "mate" for my solitary specimen before long.

Until recently I had hopes of handing down to posterity *Columba sweetnamensis* (or the "Parson Dove")—a species of Dove with the flocking and indoor-roosting habits of the domestic Pigeon. Such a species would, no doubt, be much appreciated by all who have attempted to keep Doves at liberty for, though odd pairs may survive for some time, sooner or later they fall victims to marauding Owls, while the young are treated by their parents as "non-Aryans" and forcibly deported to another locality, which as likely as not will be outside one's own grounds.

Though I always have some survivors flying about during the spring and summer, I find they never increase their numbers as do Pigeons and if I did not catch up and confine them while the trees

are bare of leaves I doubt if any would survive the prying eyes and tearing beaks of their natural enemies.

However, my hopes of thus achieving avicultural fame were considerably damped when, at a recent meeting, I ventured to mention the existence of my avian prodigy to certain august members of the Council.

Apparently *Columba sweetnamensis* is never destined to appear in ornithological lists, and my chances of obtaining fertile eggs from the progeny of *Columba* and *Streptophalia* are about on a par with those of the enterprising individual who aspired to produce a breed of cattle capable of subsisting without food. Misfortune dogged his steps, for just as success seemed within his grasp and he had got the ration down to a straw a day—the animal died !

* * *

NOTES

All members of the Avicultural Society will sympathize with the President, Mr. Alfred Ezra, in his loss of seven rare Duck and a Burmese Peacock, in exceptional and deplorable circumstances. Four young boys gained entrance to Foxwarren Park and killed seven Ducks with an air-gun ; they then fired at a Burmese Peacock and, as the pellets failed to kill it, they stabbed the bird with an iron bar. In the Juvenile Court the boys admitted their guilt, and the eldest, aged 13, described as the ringleader, was remanded for three weeks with a view to being sent to an approved school. The other three were placed on probation.

* * *

The Crystal Palace show of cage birds has always been a great event to aviculturists and when the disastrous fire destroyed the historic building two years ago it was at first feared that the most important of bird shows would come to an end. Thanks, however, to the enterprise of Mr. S. A. Legg, the Secretary, the show was not discontinued but held in London, and now, for the third time since the fire, aviculturists and bird fanciers have gathered in their thousands to admire the cream of the cage-birds of the country.

This year, the show opened in the Horticultural Hall, Westminster, on the 19th January with a remarkably fine entry. There was such a display of Budgerigars as has never before been got together, including the newest varieties that have been produced. British birds included some very interesting species which bore evidence of great skill in management, while the foreign birds included a number of the greatest rarities.

* * *

Specially noteworthy in the Parrot classes were a fine team of Grass Parrakeets shown by Mr. Norman H. Dixon, consisting of Bourke's, Elegant, Turquoise, Rock, and Splendid. Mr. Ezra showed a fine pair of Queen Alexandra's. Amongst the rarer foreign Finches were Painted Finches (*Emblema picta*), Crimson Finches, Melba Finches, Star Finches, Parrot Finches, and Peters' Spotted Firefinches.

* * *

In the Tanager and Sugar-bird classes Mr. Ezra's pair of Paradise Tanagers attracted most attention amongst a large entry which included Green-spotted,

Orange-breasted, and other rare Tanagers, Black-headed, Purple, and Yellow-winged Sugar-birds.

In the Humming Bird and Sunbird class Mr. Ezra had two entries, a pair of Alice's Pigmy Emerald and a Garnet-throated Humming Bird. Mrs. Wilson sent a magnificent pair of Malachite and a very fine Van Hasselt's Sunbird, Mr. Bernstein a Mariqua, and Dr. Macklin an Amethyst-rumped Sunbird.

* * *

Of special interest also were Mr. Ezra's Dwarf Hermit Thrushes and Lt.-Col. Appleby's Jackson's Coral-billed Thrushes ; Mr. Ezra's splendid pair of Formosan Blue Pies, Mr. Proutfoot's Mot-mot, and Mr. Shute's Fire-tufted Barbet.

Amongst a number of rarities from the Foxwarren collection were a beautiful cock Regent Bird, a pair of Yuhinas, and two pairs of very rare Woodpeckers, while Mr. Bernstein showed a Buffon's Touraco, Viscount Tredegar a Cock-of-the-Rock, and Mrs. Gowland a fine pair of Massai Robin Chats and a Sacred Kingfisher.

* * *

Miss E. Maud Knobel writes :—

On 30th December I went down to Peaslake in Surrey to spend the New Year with my sister. I had hardly been in the house more than half an hour when my sister exclaimed "there is such a lovely red bird out here". I went to the window and there on a Canadian Maple was perched a most lovely Bullfinch. His bright salmon breast looked brilliant in the winter sunshine. While I looked, he was joined by another, and another, and another, until I counted sixteen. Two were wonderfully bright-coloured birds, then there were some not so bright, and the rest were hens. They stayed about half an hour and then they were gone. My sister has been at Peaslake about a year and a half and only once before has she seen a Bullfinch in the garden. It was really a very lovely, and I should think an unusual, sight.

* * *

Mrs. Goddard sends the following account of "Joey", the Stanley Crane of Seven Barrows :—

Mrs. Cottrill (a friend of mine), when visiting South Africa in 1928, purchased (as chicks) seven Stanley Cranes that had been caught on the Veldt. Only three survived the journey home from Cape Town. All had to be treated for cramp on the voyage, eventually all succumbed but "Joey". This bird (although christened "Joey") proved to be a female, and was given its freedom on reaching Seven Barrows, which is situated on the Berkshire Downs. She grew into a very handsome specimen, and became absurdly tame. The second year after reaching home "Joey" laid an egg (under the table of the office in the stable yard), which caused great excitement, and inspired Mrs. Cottrill with the desire to obtain a husband for "Joey". In due time a second Stanley was presented by Sir Abe Bailey, which was hoped might be a male bird, but unfortunately it has proved itself to be another female. In cold, windy weather the two Cranes will walk into the office or engine room for shelter, standing close to a stove. The second bird, shortly after arrival, flew into a wire fence and broke a leg, which was duly set, and it is now as sound as a bell again. Last autumn "Joey" had an accident and broke her wing, so badly that it was feared she would never fly again ; however, the vet. very cleverly strapped the wing to the body of the bird and she now flies as well as ever she did. Each year she lays her egg (under the table) but never attempts to incubate. Both birds are full-winged and feed with the Pigeons in the yard, they also follow the race-horses on to the Downs at exercise. They are obliged to be shut in at night on account of foxes, as they live in the centre of the Craven Hunt. Both "Joey" and her companion chase the stable lads, and have been known to peck a piece out of the breeches of one boy, so that one cannot be surprised that the lads fly before them. They are a very handsome couple, and look most attractive walking about the grounds. I should be interested to know whether "Joey" is exceptionally old for a Stanley in captivity ?

CORRESPONDENCE

AVICULTURISTS OR FANCIERS

Mr. A. H. Scott's "leg-pull" at my expense in your January number, gave me cause for a very hearty laugh, but in self defence I think that my literary effort in question was one of several which was published without my being allowed to see the proofs.

Be that as it may, I contend that the bird "faction" might appositely be allowed except by a prude.

I suggest that breeders of foreign and British birds are aviculturists or ornithologists—but that those who are interested in the reproduction of domesticated stock such as Canaries, Budgerigars, and poultry are "fanciers".

I have bred, exhibited, and judged dogs for forty years and do not in the least mind being called a "dog-fancier", but I do insist that this body of men and women called fanciers is turbulent and self-interested. You have only to stand near the benches after the judges have awarded the Cards to acquire a very good interpretation of both adjectives!

MAURICE AMSLER.

DELMONDEN MANOR,
HAWKHURST, KENT.

KEAS AND SHEEP

I had hoped to have some anatomical material with reference to this question, but I have not managed to get same. I must therefore depend on readers' general knowledge and powers of observation.

In general one may compare the bird's beak, and the method of use by the individual bird, with certain human tools. A pincer or tongs action is usually present.

Anyone watching a Crow-like bird will see the beak used as a navy uses a pick-axe.

To see a Vulture clipping flesh and gristle along the edge of a rib, one is at once reminded of a particularly sharp and efficient pair of scissors.

Hawks, Owls, and such predatory birds have not as efficient a pair of scissors as the Vulture, and tend more to tear skin and muscle, but the scissors action is certainly present. My Little Owl makes short work of cutting the head off a mouse, but usually after she has cracked and broken all the bones.

Note that in all these birds the lower mandible is as long as the upper, falling short of it only by the curved tip to the upper beak, and also that both upper and lower beaks have a sharp cutting edge.

Various other human activities may be thought of, nut-crackers, sieves, as in certain Ducks, Flamingoes, etc., stabbing instruments as Herons and Bitterns and so on. (There is an interesting section in Mr. W. S. Berridge's *All About Birds*.)

In the Parrot-like birds the only sharp part is the actual front edge of the lower beak, which acts as a gouge or chisel. This chisel action is very marked in the Black Cockatoos. Now anyone using a chisel or gouge to pare a piece of wood will find that a bench or rigid support is very necessary. The bird which shows this fulcrum or bench action best is the Hyacinthine Macaw. The smooth, or slightly chased and roughened lower surface of the upper mandible is (except while climbing) solely to hold twigs, nuts, and food in general, while the lower beak cuts, crushes, almost, one might say, masticates edible things.

It is very obvious that there is no cutting action at all associated with the massive and seemingly solid upper beak. My Hyacinthine Macaw has a curious habit of wedging a small pebble, with a match-stick or a little twig, to use as a whetstone to keep an edge on the lower beak.

Notice also in the Macaw and most Parrots that the lower beak falls far short of the upper beak in length.

The function of the upper mandible in the Parrots is purely of a passive nature, the curve being merely an adaption to hold food and to use as a hook in climbing. Nothing of the scissor effect of the Raptores is present.

The Kea has a similar hooked upper mandible, which at first sight looks a fearsome weapon.

Observation shows, firstly, that the Kea uses the hooked upper beak to climb with, as do most Parrots, and secondly as a support or fulcrum, against which the front sharp edge of the lower beak acts.

The actual cutting edge present in the Kea is somewhat less than a $\frac{1}{2}$ in. in width. Surely an inefficient weapon with which to dismember a sheep? The lower beak is shaped rather like the back edge of an ordinary pen-nib.

Further, the beaks of the Keas are no harder or stronger than are the beaks of what we call "soft-billed" birds; there is just as marked a difference between the nails of the Kea and the talons of a Hawk.

From my observation of Keas I am satisfied that a Kea could not pick up a sheep's skin, let alone tear a way into its vital organs. Anatomically it is not fitted for the job which, if it belongs to any bird, is an Eagle's business.

Apart from small objects which the upper beak will accommodate, Keas attack boards and anything they wish to destroy on an edge, and just nibble away, turning anything into sawdust. I cannot believe that a sheep would wait.

And Keas are mild creatures and timid; they are not savage.

W. L. ENGLISH.

HIGH STREET,
HASLINGTON, CREWE.

MEADOW PIPIT BRED IN CONFINEMENT

Allen Silver told me in October that he had recently awarded a prize (I think a First), to an aviary-bred Meadow Pipit. This is an achievement which must be put on record, for it is the first record of success anywhere, as far as I know.

The breeder is Miss E. Barbara Hall, of Burton, Christchurch, Hants, and I hoped that we should have an account of the events from her pen. As she says "No", but "will you make it public?" I do the best I can by copying her letter to me. I have probably left out a lot, and can only hope that, if I have, the omission will induce Miss Hall to give us her own account.

"The Meadow Pipit Mr Silver told you about was bred by me and reared in the natural way by the parents, and is close-ringed. I had four Meadow Pipits and one Tree Pipit in a mixed aviary 29 by 11 feet, grassed down, planted with trees, and with a small pond and a thatched shelter. Round one of the posts I fixed pieces of Virginia cork, for the purpose of collecting grubs, and the Pipits made a beautiful nest of dry grass in this. Although I constantly saw the hen with her beak full of grass, I did not discover the nest, which had four eggs in it, till just before hatching, about the end of June. All four eggs hatched, but unfortunately three of the young (when just showing feathers) were taken, I expect, by a wood-mouse, which I caught afterwards. I looked at the fledgelings every day, as the parents were very tame, and I intended ringing them.

"There are a lot of other British soft-bills in the same aviary, and all are fed on 'Mosquito', gentles, and always pears. The Tree Pipit was so interested in the rearing operations, that I thought he must be one of the parents, but to my sorrow he died, and then I saw the two Meadow Pipits carrying grubs, so the young must have been pure Meadow. They built a second nest in the open after the first young one had flown, and laid three eggs, but soon deserted."

E. H.

[The Editor accepts no responsibility for opinions expressed in Correspondence]

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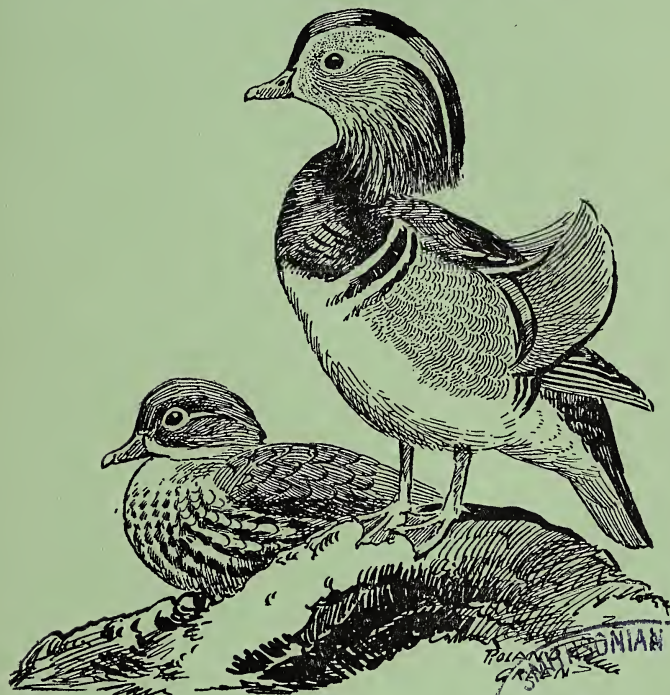
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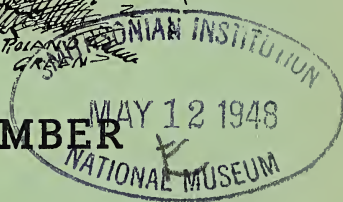
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AVICULTURAL MAGAZINE



WATERFOWL NUMBER



CONTENTS

	PAGE
The Fascination of Keeping Waterfowl (<i>with coloured plate</i>), by R. and N. STEVENS	65
Wild Waterfowl in Confinement in America, by C. L. SIBLEY	73
Australian Waterfowl in the Adelaide Zoo, by R. R. MINCHIN	80
Notes on Waterfowl in the London Zoo (<i>with plates</i>), by D. SETH-SMITH	86
The Preservation of Waterfowl and Aviculture, by Dr. J. M. DERSCHIED	90
Observations on the Breeding Habits of Smews in Captivity, by D. S. WINTLE	96
Barrow's Golden-eye Duck in Captivity, by H. WORMALD	100
Breeding and Rearing of the Cackling Goose, by J. C. LAIDLEY	102
Hand-rearing of Red-breasted Mergansers, by A. RAMPTON	103
Some Experiences in Waterfowl Breeding, by J. C. LAIDLEY	105
A Newly Imported Pair of Musk Duck, by D. S. WINTLE	107
Notes	109
Correspondence	110

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MARCH, 1939.

THE FASCINATION OF KEEPING WATERFOWL

By RONALD and NOËL STEVENS

The keeping of waterfowl is in vogue. We seem to be falling under the spell which influenced the Chinese in their love for the beauty of form and colour that so characterizes these birds.

Not so many years ago the average garden pond was merely the Moloch mouth for old tin cans, or else it was mother's warning to the children. To-day, however, it is graced by bullrushes at one end and a weeping willow at the other. In other words it has been tidied up and beautified to form an outward and visible sign of the owner's pride in his ducks that float upon it.

Nine people out of ten start keeping waterfowl because they are attracted by their unquestionable decorative value. This is quite all right, because these exquisite little ducks really do add enormously to the amenities of a garden. It is the custom now to take guests to see them after luncheon or tea. The basket of stale bread is taken off the hall table and presently everyone is standing at the water's edge throwing in his offerings.

That these birds swim and spend so much time upon the water is, in itself, a great attraction, for they are thus compelled to show themselves off to the best advantage. In the world of birds everything is so perfectly ordered that criticism seems almost presumptuous. We have nothing to say against those birds which

through their shyness allow only occasional glimpses of their glorious colours and beautiful forms. No doubt it is all for the best, all the same we cannot help feeling grateful to the waterfowl for being so very frank about their attractions. Their reflections in the water and statuesque poses at the pond's edge attest to their being natural showmen. Another point strongly in their favour is that most of them are very small, many of them are, for ducks, tiny.

Apart from the decorative value of waterfowl is the vast amount of interest they provide. This of course is the fundamental motive of some people for keeping them. Nevertheless the "nine out of ten" group, who keep these birds because they like to have something pretty and amusing, nearly always absorb varying amounts of ornithological knowledge from them, and become very useful people for beginners to approach.

Whatever the reason for keeping waterfowl all people who have them are agreed on their irresistible charm. When intelligently fed, they become most appealingly tame. In fact certain species seem to have a natural fondness for man which has nothing to do with cupboard love.

This hobby also gives us a fine opportunity to "play with water". Who has not, some time in his life, experienced some rudimentary excitement in making a pond, either by digging one out or damming up a stream? Whether it is done on a large or a small scale the pleasure is there just the same. It is fun to plan it all out. When the work commences one becomes absorbed in it, and by the time it is finished further ideas are already calling for recognition. Friends are particularly unrestrained in their suggestions, their well-meaning advice usually having to be turned adroitly by optimistic references to future development. If you are prepared to spend money, a landscape gardener may be called in. His scheme would probably be an ambitious one, and, if allowed, would materialize into a most enchanting water-garden which would be a luxury, but by no means a necessity, as a background for waterfowl.

There are still very many places where these birds could be introduced. Up and down the country there are beautiful gardens and meadows where ponds could be so easily constructed even if they do not already exist.

When a pond is made, or an existing one prepared, the exciting moment arrives when you realize that all is ready for the reception of the lovely birds that are to give it the breath of life. And how they do change it all ! They make the water ripple and shimmer where before it was flat and lifeless. Their most welcome call notes transport you in thought beyond your garden to the wild places from whence such creatures come.

As it is possible to buy sixty or seventy different species of waterfowl the choice of what to keep can be most pleasantly bewildering. In no other family of birds has nature spent more imagination in colour and design. With few exceptions they are all equally easy to keep in health. All they need is to be fed once or twice a day on wheat or split maize, and they do not have to be driven into a house at night. So it is simply a matter of taking your choice. Some are more expensive to buy than others, of course, but the loveliest species are not always the most costly.

Anyone who intends going in for waterfowl would probably like to be told that, broadly speaking, the ducks are divided into two groups. There are those which feed on the surface of the water, or just under it, and are known as Surface-feeding ducks, and there are the others which instinctively dive to the bottom of the pond to seek their food, these are called, equally appropriately, Diving ducks.

If it is the intention to make a modest beginning with two pairs of ducks on a little pond then have a pair of Surface-feeders and a pair of Divers. Feeding time will show up their differences in character admirably. It will be seen that even when corn is thrown into very shallow water at the pond's edge, which incidentally is the best place to feed all ducks, the Divers will, quite needlessly, make every effort to submerge for it. While the Surface-feeders swallow their food in a quiet and orderly way, the Divers give a shocking exhibition of table manners. In their efforts to get under the water they fling their legs into the air and turn their toes up. It is amusing, but throw some corn into the water where it is deep, then down they go, gracefully and with scarcely a ripple, to enjoy the feast on the bottom. Now, you will say, it is the Surface-feeders' turn to be laughed at, but if you appreciate humour which thrives on the misfortunes of others you are going to be disappointed. They know very well that their friends' submarine evolutions

create upward currents which bring nice plump grains to the surface. So at the troubling of the waters they swim purposely over the spot to snatch at the food which comes up to within their reach.

Of the Surface-feeding ducks the best known and most admired is the Chinese Mandarin Duck. It is a glorious creature even if a bit grotesque. Certainly no other country but China could produce it. The Chinese regard it almost as a national emblem. They used to carry a pair of these birds in a wicker cage at the head of their wedding processions as a symbol of conjugal fidelity. The Mandarin drake is an overdressed, ostentatious little gentleman. His conceit is appalling, but if he does show off an awful lot he certainly gives full value for money, for he is beautiful and a dazzling ornament to a pond.

Not so comic, but equally good to look at, is the Carolina Wood Duck from North America. As a matter of fact there are many people who prefer him to the Mandarin. The ducks of both species are comparatively plain, as are all the females of the Northern Hemisphere species, but the Carolina has an advantage over the Mandarin Duck in that she has a musical, reedy call, while the other bird only sneezes. As for the voices of the males of the two species, the Carolina can only whisper and the Mandarin just thumps when he does not sing. Yes, it is a song, but so utterly insignificant that it is hardly worth mentioning. Even so, to execute it, he has to throw out his chest in the finest prima donna manner. "Appearance—good. Voice—indifferent." That is our judgment, and it is a pity we cannot let him know it.

For those who prefer something not so exotic-looking as the two species described the European, American, and Chiloe Wigeon would undoubtedly appeal. The first two should not be kept on the same pond as they would probably interbreed. The well-known whistle of the European bird, "Whee-oo," is delightful to listen to. The American's is different, the Chiloe's more so, and his is perhaps the most joyful of all duck calls. The Chiloe Wigeon is an absolute optimist. Male and female are much alike, as are most of the sexes of the Southern Hemisphere species, and they keep their lovely colours all the year round. The Chiloe Wigeon is so lively and so full of the joy of living that it is impossible to resist lingering to watch him. Male and female are devoted to each other. Note

the duck's approach to her mate. With tip-tilted bill she invites him to another jubilation. She sets the tempo with little strangled mutters and then—imagine a “Hip-hip, hip-hip, hip-hooray!” the final hip-hooray uttered with all the airiness of sleigh-bells—and you've got it. When on your way back to the house, his calling in the distance sounds as if he is snatching at, and transmitting into sound, the most joyous messages which are passing over his head, through the ether.

Whenever we see a flock of European Wigeon the thought comes, “Would not a single American drake among them look an absolute king!” and the reverse would be equally true. Comparing these birds is rather like comparing apples and oranges.

If a very small pond of only a few feet square is all that can be allowed for ducks a pair of European Teal would be as attractive as anything to put on it. They are perfect miniatures of ducks, only weighing 13 oz., and it is impossible to be too eulogistic of the subtle blending of their colours. Looked at from a distance a Teal drake does not look anything extraordinary, but examined in the hand or, at any rate, at close quarters, any gathering criticisms are immediately sobered into reverent admiration, so lovely is he. Except for the beetle-green speculum in her wing the little duck is entirely lacking in bright colours, but her lovely plumage patterning in subtle tones of grey makes a perfect foil for the drake's beauty. From a human point of view, however, these little birds are rather disappointing. They are tamed only with difficulty, so that it is not easy to live close enough to appreciate them. When kept with other ducks they are still more shy and consequently are uncertain breeders. Now the American Green-winged Teal is almost exactly the same bird in appearance, but it has a much more confiding character and is a free breeder. So if its higher price is no objection obviously this is the bird to keep.

Smaller still is the Hottentot Teal. It is absolutely tiny. If one were put in a cage having bars 2 inches apart it would get through easily! Imagine then how small its ducklings are! It is still rather expensive to buy because of its scarcity and so, as yet, is not widely kept. Let us hope that this most delightful little duck will be more easy to obtain in years to come.

There are very many different kinds of Teal and Teal-like ducks as well as other Surface-feeders of varying sizes, shapes, and

colours, and character. Space will not allow their enumeration and description as a few chosen Diving ducks have yet to be dealt with. But before passing on to the Divers some small appreciation of the Shoveler family really ought to be made. They are the Common Shoveler, the Argentine, the Australian, and the African. The last two are not beautiful, as we humans are apt to assess beauty. There are even a few people who would rule out all four species, and so raise a storm of protest from the great majority of the waterfowl-keeping fraternity.

Let us take the Common Shoveler of the Northern Hemisphere as the type. Put him on a homely, reed-fringed pond. Now take a look at him. His bill *is* rather alarmingly large, but he carries it gracefully and unashamedly, and now gently lays its spatulate end on the water's surface and swings it from side to side, sifting for microscopic forms of vegetable and insect life. Round and round he goes, rippling the water ever so gently. He is a very pretty patch of colour in the sunlight, but as he passes into the netted shade of the willows his rather crudely slapped-on red, white, green, and blue take on an enchanting subtlety. Before long we are mesmerized by the gentle rhythm of his movements into a sense of peacefulness. He becomes the pivot of our attention. The trees, the sky, the white clouds, and the pond beckon to us in vain while that little duck swims round and round.

And now for the Divers, the Tufted Duck is most people's idea of one. It is a good choice. The drake is very spick in his contrasting black and white, and with his rakish pigtail at the back of his head he is altogether an exceedingly pleasing little bird. The late Viscount Grey used to keep quantities of them on his ponds at Fallodon. We believe they are still there. Lord Grey grumbled good-humouredly at their prolificacy. There were flotillas of them everywhere, taking up more than their share of the water. All the same their owner had an affectionate regard for them as they were some of the tamest of his ducks. Incidentally, anyone who has the least interest in waterfowl should read Lord Grey's books in which he has written charmingly about the ducks at Fallodon. They are *Falldon Papers* and *The Charm of Birds*.

When you watch a group of Tufted in the spring listen for the voices of the drakes. Those who are unacquainted with this species really will have to listen attentively for that very soft, inward

chuckle. You will agree that never have you heard any living thing laugh so prettily.

Common Pochard, Scaup, Canvas-backed Duck, and White-eyed Pochard are all most attractive Diving Duck which would please a beginner. The Red-crested Pochard is uncommonly handsome, so is the Rosybill, but these two species seldom dive although classified with the Divers.

Any person who becomes really keen on his ducks will long to try keeping the Arctic species, such as the Longtail, Scoter, and Harlequin. These ducks have a tremendous fascination, but they do not breed readily in captivity and their young are not easy to rear. There are some waterfowl owners who are obsessed with the charm of these Northern ducks, and they go to no end of trouble trying to perfect captivity conditions for these very exclusive birds. We know of a pond that has been specially made to give an Arctic effect. Bold stones, a waterfall, a pebbly beach, and a sandy beach, sea-thrift, heather, and dwarf willows are its dominant features. Its bareness and severity are exactly what is required to delude one into thinking that a little bit of Iceland has dropped from out of the sky.

The Eider Duck, which for centuries has supplied the down for the eiderdowns of bedtime associations, is quite easily kept. The drake is a noble bird. His cold, clean-cut beauty is of a kind which one would expect would be sent down to us from the north. It is impossible to look at him without thinking of grey northern seas, of snow and ice, and the wasted glories of the Aurora Borealis. A charm of waterfowl is that they bear so very markedly the stamp of their native countries.

Within the last few years a most peculiar Diver has appeared in a few British collections. It is the North American Ruddy Duck. It is a funny little thing that lives almost entirely in the water. Except when found on its water-girt nest it could almost be said that it is never seen on land. The female lays an enormous egg for her size and lays plenty of them. The drake is a rich brick-red when in colour, and he has a bill which is so intensely Cambridge blue that it looks as though it is electrically lit from inside.

In the spring and summer all day long the male shows off. It is a most remarkable display. He bobs his head like a bouncing ping-pong ball that is settling. Then he thrusts his bill into the

water and sends out a cloud of foam, tips his long spiny tail over his back, and croaks like a frog.

The courtship of waterfowl is always a delight to watch. It is difficult to tear oneself away from the water's edge when the spirit of gallantry is abroad the pond. Swans, as would be expected, are sedate about it and sometimes ostentatious. Geese mostly show off on land. The deer-like movements of Bar-headed Geese, and the perfect artistry of their poses, are worthy of a Balinese dance. A pair will act very prettily, but it needs the competition of numbers to whip up their best efforts.

Fun is definitely left to the ducks, and it is exemplified best of all by the Common, or Barrow's Goldeneye. These are Diving Duck which breed within the Arctic Circle. They have much similarity in appearance and are amazingly handsome. The Barrow's is larger and more impressive, and is much easier to obtain than the Common Goldeneye. They are easy to keep but are not reliable breeders. Both are famous for their water-throwing turns in their display performances. The Common does it by backward thrusts of his feet, but the Barrow's cups a measure on his tail and flings it into the air. Both are extremely vigorous water acrobats. It is difficult to choose between them but perhaps the Barrow's is the prize clown. His large, fluffy gollywog head helps him of course to this distinction. He provokes tremendous applause when he lays his head flat on the water and pulls faces. He really is a lovely thing. It is safe to say that where a pair of this species is numbered in a collection of waterfowl pointing fingers will single out the drake for appraisal almost immediately.

We are afraid we have been greedy with the space available in this valuable Magazine, so must bring this discourse to an abrupt end. It is hoped that these outpourings may hint at the vast store of enjoyment that is to be had through the keeping of ornamental waterfowl.

* * *

WILD WATERFOWL IN CONFINEMENT IN AMERICA

By C. L. SIBLEY

As compared with Europe, America has relatively few fanciers of wild waterfowl. This is rather surprising, for there are in America many beautiful estates with waterways well adapted to waterfowl keeping, and men with sufficient leisure and means to enjoy the hobby. There have been one or two outstanding collections in this country in the past, that of the late Mr. J. V. de Laveaga, of San Mateo, California, being one of the most complete and noted. Unfortunately, on Mr. de Laveaga's death, the collection fell into incompetent hands, and eventually most of the splendid and rare items it contained were lost. Mr. Nion Tucker, of San Francisco, later had a most estimable collection, with many very desirable species but, because of a great increase in Mr. Tucker's business responsibilities, the collection had to be dispersed. Fortunately, most of the birds fell into good hands and have helped to increase several of the smaller collections in this country.

Our country is a large one, with many variations of terrain and climate, but the most ideal places for waterfowl are along the north-western coast line in Oregon and Washington, and along the eastern coastline from Virginia southward. Strangely enough the largest collections are outside of these favourable areas. Years ago, one of the successful American pioneers in waterfowl was the late Dr. Whealton, who had ideal conditions at Chincoteague Island, Virginia. To-day that whole section of country cannot boast a really good collection. In the north-west, Mr. A. G. Elder has a good collection, largely Geese and Swans, in Washington, and in the same state Mr. Adolph Kietz has had some good breeding successes with various birds in his collection. A very good collection of Ducks is that of Mr. S. M. Batterson, in Oregon. There are many smaller collections scattered over the country, and people here are now beginning to learn that wildfowl on a lake or pond or stream prevent the monotony which may very well possess an unadorned body of water after a while.

The writer has gathered together a quite decent collection, but the Arctic winter climate of New England, where the birds

are kept at two places, has made it necessary to acquire a third place in Florida where tender sorts may be wintered.

Represented in American collections to-day are nearly all the species known in Europe, but their numbers are not so extensive. Of the Swans, eight species may be found: Mute (and its subspecies, the so-called "Polish" Swan), Black, Black-necked, Whooper, Whistling, Trumpeter, Bewick's, and Coscoroba (if one may be so bold as definitely to place this large *Dendrocygna* among the swans!). Of that number I know of the following having been bred: Mute (and Polish), Black, Black-necked, Whooper, Trumpeter, and Coscoroba. The Bewick's has been represented by very few specimens, and the Whistling has thus far only been bred as a hybrid with the Whooper and the Mute. Strangely, the American Trumpeter Swan has been much more extensively bred in Europe than in its native land, but that seems to have been true of European waterfowl in America and other American species in Europe. The Barnacle Goose (*Branta leucopsis*), of Europe, shows itself most amenable to breeding in confinement in America, yet I am told that it is not too commonly bred among European collections. Similarly, the American Emperor and Ross's Snow Goose have bred well in Europe, yet they have only been bred sporadically here. With us the European form of the White-fronted Goose is a ready breeder, yet our American White-fronted is a difficult species. One can't help wondering why birds breed more readily, apparently, away from their own habitat.

Of the Geese, the Canada of our own country is by far the most common, and breeds exactly as well as a domestic sort. The Lesser Canada, Hutchins, and Cackling are all fairly common in collections, and are all bred in the better handled of these. The White-checked Goose is not common, but is bred by at least one fancier here, and several pairs have gone to Europe. The tiny Richardson's Goose is, so far as I know, only represented in the collection of the writer by a pair, which have not yet bred. The Lesser Snow and Blue Geese nest easily, the Greater Snow breeding also, but only in one or two collections. The American White-fronted is rather difficult as we have already remarked, but is now being bred by one or two fanciers. The large and handsome "Greater White-fronted" or Gambel's Goose is not, so far as we know, represented in American collections. This fine

Goose is not plentiful in a wild state and our laws against trapping wild waterfowl for propagation purposes are so stringent it is hardly probable that this Goose will soon be seen in American collections. Of late years the Ross's Snow and Emperors have started to breed quite well, and there are more of them now in American collections than ever before, although they cannot yet be considered common. The Pacific coast Black Brant is rare in confinement, while the Atlantic Brant, quite similar to the European form, is less common than it was a few years ago. No one has ever yet bred the Brant in America, and one has to depend on wild-caught birds, so that the stringent government regulations against trapping have cut down the supplies of Brant available to fanciers.

Of foreign species Greylag, Pinkfoot, Barnacle, Bean, European White-fronted are all quite well represented in America, and we believe that all have been bred. The little Lesser White-fronted is represented, but there are not above five pairs in the country, surely, although it has been bred. The Egyptian Goose (or Sheld-duck) is very common, and easily bred, and its close cousin, the Orinoco, is in most collections and is being bred in several. Both forms of the African Spurwing are found, but only the *gambensis* form has been bred, so far as I know. The Cereopsis is quite well established with several fanciers successfully rearing it. This fine Goose would be more generally kept if its disposition were better. Both the Magellan and its close relative, the Barred Upland or Chilian Goose,¹ are kept and they have not been so much interbred as is the case in Europe. One is conscious on looking at European Upland Geese that the Barred and the Magellan have been bred together for so long a time that one hardly sees a bird which appears to be wholly a pure-bred Magellan or a pure-bred Barred and there are all manner of gradations between the two. The pure-bred Chilian is a really handsome bird, both the male and female being quite distinctly different from the Magellan. Of the other *Chloephaga* the Ashy-headed and the Ruddy-headed are most commonly found. Both have been bred. The Andean is represented in one or two collections, but young, while hatched, have not yet been successfully reared. The Kelp Goose has not thus far been successfully kept, and only a very few specimens have been imported. There is doubtless some method

¹ Also known as the Black-banded Goose (*Chloephaga inornata*).

which might be worked out to keep this interesting Goose in health, but thus far no one has discovered it. The Blue-winged Goose is represented in two or three collections, and has been found to breed readily. This is not a particularly handsome bird but is rather interesting. Not more than four specimens of the Hawaiian Goose are in America. This bird is increasing in its native islands, but a strict ban prevents any from leaving Hawaii. One can only hope this will be lifted sooner or later for this is an interesting Goose, in spite of the viciousness of the males. The little Australian Maned Goose is represented in several places and breeds fairly well. There are not more than three or four Semi-palmated Geese in America, but one of these, a female, has laid, the eggs infertile.

The handsome Bar-headed Goose is imported in large numbers and is in many zoos and collections, but it has not been bred readily, not more than one or two fanciers having done so.

During the last two years, quite a few of the Siberian Red-breasted Geese have been brought in, but in only one instance has it nested, then producing infertile eggs, the female dying soon after. This lovely species will sooner or later be bred here, as it has been in England, for several good pairs are distributed about in excellent hands.

The wild Chinese Goose was not represented in America at all until a pair was imported the past autumn. The domestic form of this Goose is a common farmyard Goose in this country, being noted for its great egg-laying ability. If this is shared by its wild relatives, one can hope that the solitary pair of these now in America may prove the seed which makes this distinctive Goose an inmate of more American collections.

When one comes to the Ducks, nearly all species known to captivity are represented. All the Tree Ducks are represented in America, and the following are known to have nested: Black-billed, Black-bellied, Grey-breasted, Fulvous, White-faced, Javan, and lastly Eyton's, which nested for the first time this past year. Probably there are no true pairs of the Spotted (*guttata*) in this country, and there is no record of the Wandering having been bred.

All the Sheld-ducks are now represented in America, but only the Common, Ruddy, Paradise, and African have been bred,

although a few years ago a pair of Radjahs laid eggs. When one says "all the Sheld-ducks" he omits, of course, the Japanese bird about whose status there still must be some doubt.

Of the perching Ducks, both the Indian and the South American Comb Ducks are represented, although one can find no record of either having nested. The Muscovy, in its ugly domestic form, is a common farmyard Duck, and during the last year or two the true wild and slenderly beautiful Muscovy has been imported. One can't say if it has bred. The White-winged Duck (*Asacornis*) is represented in several collections, but has not yet been bred. There are to-day no Cotton Teal or Pigmy Geese in America. One wishes they were a bit less difficult to transport.

Both the Carolina and the Mandarin are as popular and prolific in America as elsewhere. It is most fortunate that these gaily attired species thrive so well under so many and various conditions.

Of the Mallards several species are found. The Black or Dusky Duck and the common wild Mallard are commonest, of course. The New Mexican Duck (*A. diazi*) and the Florida Duck (*A. fuligula*) are quite commonly found, the latter breeding rather well. The Philippine Mallard is not now represented in American collections, but at one time was. The Yellow-billed Duck, the Australian Mallard, and Meller's Duck are all found in the better collections and are all readily bred, both pure and as hybrids. One great fault of the entire Mallard family is that in mixed collections the males all have a strongly developed roving eye. *Anas sparsa* is not now in America, nor is the Bronze-winged or the Crested Duck. All three of the Wigeons are quite commonly kept and all breed readily. The Falcated is represented in several collections, but is not as commonly bred as it should be, for some unaccountable reason. The Gadwall is common in every collection, large or small, and recently I learned of a pair of Fanning Island Gadwalls in a small collection. These are extremely rare.

The common Pintail, and also its close Chilian relative are quite often kept and breed easily. The Bahama Duck is popular and breeds as easily in America as elsewhere. Its relative, the Red-billed Duck, is now to be found in two or three collections, and was bred, I think for the first time, this past season.

Of the Shovelers, only the Common and the Cape species seem to be in American collections. Among the Teal, the Common

Teal of Europe (*crecca*) is quite uncommon, and rather difficult to breed. Its place is taken in most collections by the American Green-winged Teal, which in the mind of the writer seems a better and more finished bird. The Formosan or Baikal Teal is freely imported, and found in all collections because of its low price and hardiness and beauty, but only in one or two collections is it being bred. The Chestnut-breasted can hardly be called common, being limited to two or three of the larger collections. Its close relative, the Grey Teal, cannot have more than four or five representatives in American collections. This Teal is so like the female Chestnut-breasted that it is often confused with the latter. The dome-like forehead and smaller size help to identify the Grey bird. Several collections contain the Chilian Teal and it breeds freely. Last spring two pairs of the closely related Sharp-winged Teal (*oxyptera*) were brought over, and if this species is as prolific as the Chilian, one may expect it to be found in more collections in a few years. It is larger, and softer in colour than the Chilian, and altogether a more attractive bird. The Neck-laced Teal, once represented and breeding in America, is now found in only one collection. The Brazilian Teal is present in several collections and has proven adaptable and a good breeder. There seem to be two forms of this bird, one appreciably larger than the other. In connection with this species, we have a very amusing situation at our Florida farm. A Brazilian Teal female has fallen violently in love with a huge Spur-winged gander of the *gambensis* race, and follows him humbly and dutifully about the grounds wherever he may go. However, let any other female, Goose, Duck, or Swan, come near her adored Spurwing, and this tiny Brazilian becomes a fighting Amazon. She routs by her very fury such birds as a Magellan Goose, a female Black Swan and even the lawful spouse of the object of her adoration, not to mention many other smaller and less formidable females which happen, innocently, to stroll closer to her inamorata than she thinks permissible.

Garganey Teal are brought over to America by the importers in large numbers, but they must be wild-trapped birds for with many people the Garganey is reputed difficult to breed. We find it equally as good a breeder as our native Blue-winged and Cinnamon Teal but it may be because our stock is hand-reared.

The Versicolour Teal is represented in two or three of the

collections I know, but is not common, although it breeds quite well. Last spring a pair of Puna Teal was brought over, but unfortunately, during the terrible hurricane which swept New England in September, one was lost, so that there is only one Puna Teal, a female, in American collections. This bird has paired with a male Versicolour, and it will be interesting to see if the two sorts breed together. The lovely little Marbled Teal, once represented in the de Laveaga collection and breeding there, is no longer found here, nor can I find it listed among European collections. This lovely little bird should be reintroduced.

Of the diving Ducks, the Red-crested Pochard, the Rosy-billed Duck, the Canvas-backed Duck, and the American Redhead are all quite commonly found, and all breed well. The common Pochard of Europe is scarce, the American Redhead taking its place in our collections. The Tufted Duck, the White-eyed Duck, and the Madagascan White-eye are all found, but they are not commonly bred except the Tufted. Nearly every collection has the Common or Greater Scaup, and the very good Lesser Scaup, but they are mostly wild-caught birds and only one or two are breeding the Scaups, and the closely related Ring-necked Duck, a lovely and satisfactory little bird. Only two fanciers seem to have been successful in breeding the Bufflehead, although several have at different times bred the American Golden-eye. The Bufflehead needs rather special conditions to do well, and some collections do not include it as the conditions there are not suitable.

There are, so far as I know, no Steamer Ducks in American collections. This interesting and curious species should be brought in more frequently so that fanciers can learn how to maintain it in health. The Scoters, Longtails, Barrow's Golden-eye, and Harlequins are all kept at times in American collections, but none have proven dependable breeders, and the usual method of replenishing the stock is by hatching and rearing from wild-taken eggs. Since this is now forbidden by law, these species can be expected to become rarer in American collections.

Of the Eiders, only the common American Eider is represented, so far as I can ascertain, and this is not being bred at the moment, the birds already in collections being merely maintained. An expedition is planned to visit the breeding grounds of some of the rarer species of the sea Ducks and to obtain eggs for hatching.

If this project goes through, a more interesting picture of American waterfowl collections may be presented.

Of the Mergansers, only a small number of the Hooded seem to be included. I cannot find where the Red-breasted or the Goosander are now represented in any American wildfowl collections. The Smew has been brought over, but I doubt if any are now alive in this country. All in all, there are some very serious gaps in our American waterfowl collections and one can only hope that more people will become interested and make a serious attempt to introduce, maintain, and breed some of the many species we now lack.

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AUSTRALIAN WATERFOWL IN THE ADELAIDE ZOO

By R. R. MINCHIN, *Director*

We have been asked to contribute a few notes on the waterfowl that are being, or have recently been, exhibited in our Gardens, and we are confining our remarks to the Australian species only. It is feared that this article will be of little value owing to the fact that the amount of breeding which takes place here amongst the *Anatidae* is almost nil. The reason for this we are at a loss to understand unless it is that the birds are not kept in large enough enclosures and have insufficient areas of water. Most of our Ducks and Geese are accommodated in fair-sized yards each with a cement pool about 9 feet in diameter. Numerous low shrubs are growing in the rear part of the yards in that portion that is farthest from the public. Even such birds as Paradise and Ruddy Shelducks, which are provided with boxes and artificial rabbit burrows, show no inclination to lay, although each have an enclosure to themselves. On the other hand, a pair of Egyptian Geese that are kept in a similar yard have reared several young during the last four seasons, and all our birds appear to be in good condition and the majority live to a ripe old age.

We are particularly anxious to breed some of our Australian

ducks so if any reader could give any suggestions as to what we might do, we would be exceedingly grateful.

However, despite the lack of information on the subject of breeding, we trust that the article will be of some interest in showing what kinds are kept and their status in captivity, etc. It may be stated that our native ducks and geese are extremely difficult to secure, and as an instance we might mention that over a period of years we have made concentrated efforts to obtain the Pink-eared Duck (*Malacorhynchus membranaceus*), but so far have been quite unable to get even a single specimen, although the species cannot be regarded as rare in the natural state.

Of the twenty species of *Anatidae* known to inhabit Australia, fifteen have been possessed by this Society during the last twelve months.

BLACK DUCK (*Anas superciliosa*).—This is probably the commonest of our ducks, but owing to its drab colouring it is not much sought after by aviculturists. It may be seen almost any day on the Torrens Lake a few hundred yards from the city and at times numbers of them alight on the Flamingo pond in the Zoo. They are also permanent residents on the small lake in the Botanic Gardens where, judging by the extraordinary array of hybrids, they cross freely with the Mallards (*A. platyrhynchos*) and various breeds of domestic ducks that the authorities choose to support. On two occasions within recent years, a wild pair have nested on the thatched roof of a shelter provided for the Flamingos in the Zoo.

GREY TEAL (*Anas gibberifrons*).—Commonly seen in favourable localities, usually in large flocks. Like the Black Duck, it is not greatly sought after as a captivity bird because of its sombre colouring. It is, however, an elegantly shaped little bird, well deserving of a place in a collection of waterfowl.

CHESTNUT TEAL (*A. castanea*).—Seven specimens are on exhibition and all were captured in Tasmania. The female closely resembles the Grey Teal but the colouring is darker.

WANDERING TREE DUCK (*Dendrocygna arcuata*).—Very rare in captivity and ours are certainly the only ones in South Australia.

PLUMED or EYTON'S TREE DUCK (*D. eytoni*).—Even less frequently seen than the last-mentioned bird and considerably more difficult to procure. Some two years ago we accepted an offer of five Wandering Tree Duck and on going to the aerodrome to take

delivery of them we were delighted to see that three of the birds were Eyton's, these being the first we had seen for many years. Since then we have been able to obtain two more from the same trapper who informs us that they are by no means common. This is one of the most desirable of Australian Ducks and their long side plumes are a most conspicuous feature of their plumage.

MANED GOOSE OR WOOD DUCK (*Chenonetta jubata*).—Fairly frequently seen in captivity and we are never without one or two pairs. During the last breeding season the writer motored to a point on the River Murray some 150 miles from Adelaide and was fortunate enough to catch ten birds whilst still in the stage when they were unable to fly. It would be quite useless to attempt to catch them in any part of the river where the banks are lined with reeds or rushes for the birds would take refuge therein and never be found. Consequently we adopted the technique of locating a pair with young on a stretch of the stream where the banks were void of vegetation. Two persons in a boat—one rowing and the other at the prow—then singled out a young one and after it had dived a dozen times or more it was an easy matter to make a capture with a landing net. These young birds thrived on a diet of bran mash mixed with a liberal quantity of finely-chopped grass and the amount which they could consume was truly amazing.

AUSTRALIAN SHELD-DUCK (*Casarca tadornoides*).—This bird's status in captivity is about equal to that of the Maned Goose, and it is plentiful in a state of nature. Just before Christmas, 1938, the writer completed an 800-mile motoring tour through the south-eastern portions of South Australia, and many of them were observed on the lakes and swamps. Their habit of not infrequently nesting far from water must account for the loss of a good many young ones, for we are told that they may often be found wandering up and down and trying to negotiate the wire-netting rabbit-proof fences erected by sheep farmers. This, we understand, is the only Sheld-duck that has not bred in captivity.

RADJAH SHELD-DUCK (*Tadorna radjah*).—Until five years ago when we obtained two males, it is doubtful whether this species had been exhibited in the collection for over twenty years. However, since 1934 we have secured three or four more and they have proved hardy and are a most attractive species that is rarely met with in confinement in Australia. The most recently acquired

birds were probably not more than three months old on arrival here and they would certainly have died of starvation had they not been given earth-worms. After several meals of this diet they would boldly approach a man with a spade and seize the worms almost from under his feet.

AUSTRALIAN SHOVELER (*Spatula rhynchotis*).—Three specimens are at present in the Gardens and the species may be regarded as rare in captivity. When in full colour it is a most attractive bird but is not quite so easy to cater for in captivity owing to the fact that animal food forms a large part of its diet. The capture of two of our birds recalls a rather amusing incident. Whilst motoring with two friends in a lonely part of the countryside we came upon a small swamp some 300 yards from the road. Seeing some ducks my friends decided to investigate, and wading into the water, they managed to catch a young Shoveler which tried to hide in the reeds although it was perfectly capable of flying. Unbeknown to them, they disturbed another one which flew past the motor in which the writer was sitting, and landed in a field some distance away. After a stealthy approach and by keeping my eye on the spot I was fortunate enough to capture the bird which was squatting in the hopes of not being observed. Imagine my friends' surprise when, after they had proudly exhibited their catch, I exhibited mine! One wishes that all bird trapping were as easy as this, but if it were it would doubtless lose its charm.

AUSTRALIAN WHITE-EYED DUCK (*Nyroca australis*).—This bird's status in captivity is about on a par with that of the last mentioned, but if anything, it is less frequently seen. The writer has observed numbers of them on a private artificial lake which is several hundred acres in area and situated not very far from Adelaide. Only the male possesses the white eye which is conspicuous through field-glasses even from quite a long distance.

AUSTRALIAN PIGMY GOOSE (*Nettapus pulchellus*).—The only three that the writer has ever handled came into our possession last year. They arrived from Darwin by 'plane and were excessively thin, and although they were offered all manner of foods they refused to eat sufficient to keep them alive so that all were dead within a month. They are wonderful little birds and we hope to try them again if we are so fortunate as to come by them. It is doubtful whether there are any in captivity in Australia at the present time.

CAPE BARREN or CEREOPSIS GOOSE (*Cereopsis novae-hollandiae*).—Of all the Australian *Anatidae*, it is with this bird that we have had most success in breeding. Up till three or four years ago we allowed several pairs the run of the whole grounds and under those conditions many young were reared. However, because of the damage they did to the flower beds we were forced to confine them to a smaller space and since then they have not bred so freely. The Cape Barren is a moderately common bird in captivity although it is doubtful whether it is as common in the wild state now as it was in former times, despite the fact that it and the Black Swan are the only wholly protected waterfowl in the State.

MAGPIE or SEMIPALMATED GOOSE (*Anseranus semipalmata*).—In former times this Goose ranged as far south as the State of Victoria but we believe that it must be many years now since they were recorded from there. Our several specimens all came from the Northern Territory. They are not usually kept by aviculturists, but most of the Australian zoos exhibit them. Although the Blue-winged Shoveler is known in certain localities by the uncomplimentary name of "Stinker", it is felt that none of our waterfowl more richly deserves that title than the Magpie Goose, for, especially on a warm day after rain, the writer has smelt them from a distance of at least ten yards and if the birds are handled nothing less than soap and water will remove the odour from the hands.

BLACK SWAN (*Chenopsis atrata*).—Of all our waterfowl this must surely be one of the most abundant, and providing one had the time to spare it would be by no means an impossible task to collect a hundred young birds in one breeding season. We lay special emphasis on their large numbers because not so long ago a well-known writer of natural history articles made the statement in a London illustrated paper that there were probably more Black Swans in captivity in Europe than there were in the whole of Australia! On the artificial lake where we have observed the White-eyed Duck we have also frequently seen Black Swans literally in hundreds, and the last time we were there at least a dozen nests were found without even looking for them.

MUSK DUCK (*Biziura lobata*).—Our experience with these birds in captivity is limited to two or three young specimens and which we have been unable to keep for any length of time. Several years ago a bird of about a month old came into our possession.

It was thriving well on a diet of meal-worms, earth-worms, and other insects when it died as a result of being bitten inside the mouth by a centipede. The last individual we had was another youngster which died suddenly after having been fed on meal-worms, earth-worms, and minced raw fish. It was fed several times per day and ate its food quite readily. The method of giving the bird its food was to place it in a shallow tub of water and allow the duck to dive for it. Phillips records in his *Monograph of the Anatidae* that a Musk Duck lived for some six years in the Berlin Zoo. It would be interesting to know the diet on which the bird was fed, but no reference is made thereto. Almost certainly there are none in captivity in Australia although it is common in a state of nature. However, it does not congregate in large flocks but is usually seen singly, in pairs, or in small flocks of several individuals. They are interesting birds and Neville Cayley in his *What Bird is That?* informs us that: "An old drake will often amuse himself by throwing out jets of water on each side with a rapid back-kick of his feet, accompanied by a deep-toned note, or will place his bill on his tail or throw back his head and, with pouch inflated and tail spread, spin round and round in the water."

The following five species are the only ones which we have *not* possessed during the last twelve months and they complete all members of the family that are recorded from Australia:—

BLUE-BILLED DUCK (*Oxyura australis*).—This is the nearest relative of the Musk Duck and almost certainly none are being kept in captivity in Australia. We have observed them on several occasions, the first being some fifteen months ago when we obtained an excellent view of a pair on a lake near the town of Ballarat in Victoria.

GARGANEY TEAL (*Anas querquedula*).—We have exhibited this species, but it is extremely doubtful whether they were captured in Australia, for the bird has only been recorded from this country on about three occasions.

WHITE-QUILLED PYGMY GOOSE (*Nettapus coromandelianus*).—We have not heard of the Australian race having been kept in captivity here.

FRECKLED DUCK (*Stictonetta naevosa*).—A rare species inhabiting the inland districts. We have never seen a living specimen.

PINK-EARED DUCK (*Malacorhynchus membranaceus*).—Not uncommon in the natural state, but, as previously stated, we have not been able to secure it. However, this and the Freckled Duck we hope to add to our collection in the not distant future.

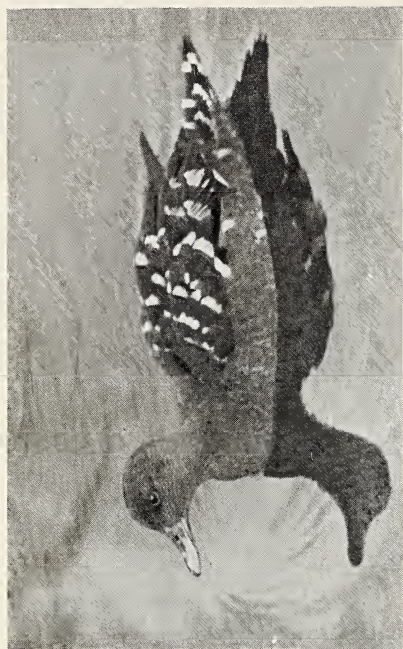
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NOTES ON WATERFOWL IN THE LONDON ZOO

By DAVID SETH-SMITH

The Editor's idea of devoting one number of the magazine to waterfowl seems to me a particularly happy one because these birds have been gradually growing in favour with those aviculturists who have the opportunity of keeping them, for they realize what a large, diverse, and beautiful group they are. I was always particularly interested in the *Anatidae* and one of my very first contributions to the pages of this Journal dealt with this subject (June, 1896). At that time there were few who kept waterfowl to any extent, and the only book on the subject was one by the Hon. Rose Hubbard which gave a great deal of good practical advice on the subject. I had myself quite a small outdoor aviary, but in it I made a pond where I kept, first, a pair of Mandarins, and later, a pair of Carolinas. These latter are the ideal ducks for the beginner with little space. They are naturally tame and will breed in a very small enclosure, and no ducks are more beautiful. But though, as a rule, they breed more freely than Mandarins, the young are less easy to rear under Bantams, which is the system generally adopted by Duck-keepers.

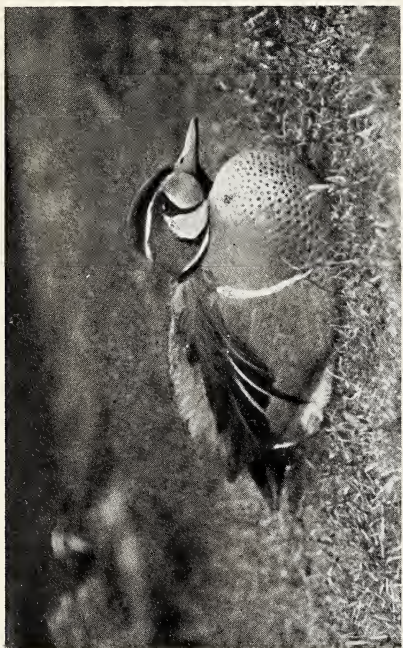
The practice of taking the eggs and hatching them under silkies or other light hens is very necessary where many ducks are kept together on a large pond because the ducklings are so very apt to stray right away from their mother and be killed by a peck from some other duck. They are the most independent little creatures and as soon as they become strong are apt to go scuttling away after flies and gnats right across the pond where their parent has no chance of protecting them if danger threatens. They may go blundering in amongst another brood whose mother gives them short shift. But where just one pair of ducks is kept



SPECKLED DUCK (*Anas sparsa*)



RADJAH SHIELD-DUCK (*Tadorna radjah*)



BAIKAL TEAL (*Anas formosa*)



AMERICAN GREEN-WINGED TEAL (*Anas carolinensis*)

Copyright—D. Selt-Smith.

in a small enclosure with a pond of small dimensions there is a lot to be said for allowing the duck to hatch and rear her own brood. Young Carolinas, reared by their mother, never get wet, whereas those hatched by a hen, if allowed to enter the water soon after hatching, will often become saturated and die as a result. Carolinas and Mandarins are, like Muscovies, true tree-nesting Ducks and must be supplied with nesting-boxes in an elevated position. In 1910 we drove newly-cut elm stakes into the ground on one of the islands in the Zoo Three Island Pond and on these we placed suitable boxes with ladders leading to them. Those elm stakes took root and now form a small elm forest on that island.

When I became Curator at the Zoo in 1909 I was very anxious to work up a really fine collection of waterfowl, but this was difficult with only the one pond. There was then a piece of waste ground at the western corner of the South Garden and I managed to persuade the Council to allow me to develop this as a place for waterfowl. We dug a pond with two islands and plenty of surrounding grass and we formed some eight or ten paddocks for Geese, each separated from the next by a thick hedge of euonymus, the object being to prevent the different pairs of these quarrelsome birds from seeing one another.

In 1910, and up to the time of the War, the Zoo possessed the finest collection of the *Anatidae* that it has ever had, and we reared quite a number, including the first Andean Goose to be hatched in this country. During 1910 we bred three species of Sheld-duck, Wigeon, Shovelers, Australian Wild Duck, Snow Goose, Maned Goose, Tufted Duck, Wild Muscovy, Andaman, and Chestnut-breasted Teal. Of these last I had brought two pairs from Tasmania in 1908 which were the first to be seen in Europe for many years. I had come across them in the collection of Mrs. Roberts, a very keen aviculturist living in Hobart, and as they appealed to me very strongly, their owner had allowed me to take them. They were placed in a very unsuitable aviary in the Zoo and one pair died before I took charge there in 1909 when I was able to give them attention and they went to nest at once, or rather as soon as their southern nesting season came round, which was in the winter. Some died of rickets because we had to rear them in a warm shed, but two or three were reared. The following spring they went to nest again and from then onwards

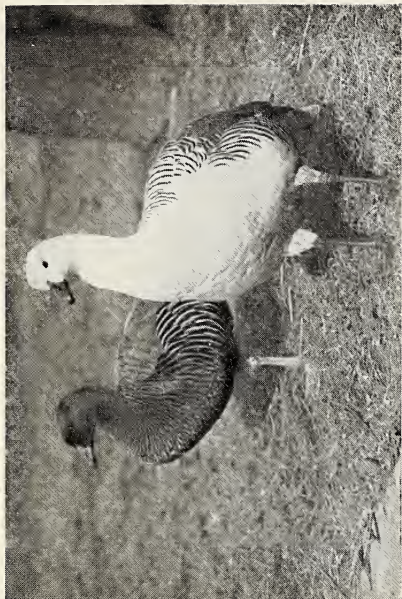
we reared a large number. In fact for many years all the Chestnut-breasts in Europe were the descendants of that original pair. About that time we reared at the Zoo a number of the closely-allied Andaman Teal, a rare species which seems to have completely died out in Europe now.

Wigeon do not, as a rule, breed freely in captivity, but we had a full-winged duck that nested every year amongst the wall-flowers in one of the flower beds, and the head gardener had to be restrained from planting out that bed until she had hatched her brood. When she came off with her family she would march them round to the gateway of the enclosure and wait there until someone came and opened it to allow them access to the pond.

A very attractive and striking duck that one rarely sees in collections nowadays is the Speckled or Black Duck of South Africa which is dark grey in colour, heavily spotted with white on the back. It is spiteful with other ducks, due, no doubt, to its solitary habits in Nature, for it is said to be found only in pairs in the rivers. It is of the Mallard type, in all of which, with the single exception of the Mallard itself, the sexes are alike. By "Mallard type" I mean those ducks that were formerly the sole occupants of the genus *Anas* and could at once be recognized as such. Now a new school of systematists has lumped together the Wigeon, Pintails, Gadwall, Teal, and Mallard, all under the generic term *Anas*, which, to me, seems about as sensible as it would be to place the Grass Parrakeets in the same genus as the Rosellas! Fancy placing that little gem, the Ringed Teal, with the Mallard! To the ornamental duck enthusiast the Teal will always be regarded as a distinct and particularly fascinating group.

The Baikal Teal was imported in considerable numbers with Mandarins before the War, but they seem to be rather scarce at present. When first received they are as wild as hawks though they soon settle down. The American Teal are particularly delightful, especially the Cinnamon and the Blue-wing. The Green-wing is just like our Teal with the exception of a horizontal white band on its sides.

Geese are great favourites of mine and most of them are good breeders and make excellent parents, but the pairs must be kept in separate paddocks. In Nature each pair requires a fairly extensive territory and will not tolerate trespassers, so this has to be taken



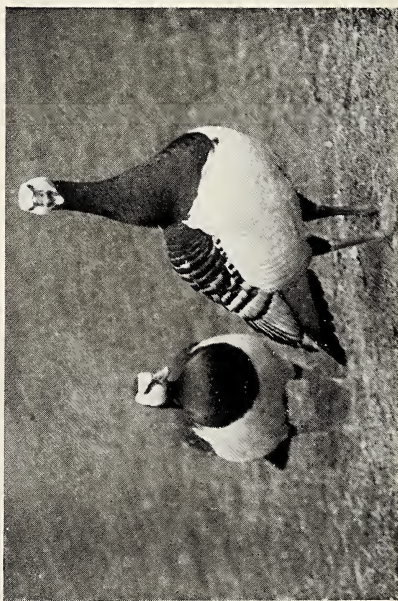
UPLAND GESE (*Chloephaga magellanica*)



ASHY-HEADED GOOSE (*Chloephaga poliocephala*)



BLACK-BANDED GOOSE (*Chloephaga inornata*)



BARNACLE GOOSE (*Branta leucopsis*)

Copyright—D. Seth-Smith.

into consideration when keeping them in captivity. The *Chloephaga* group are some of the most charming. *C. magellanica* is the one most often seen in this country, the ganders with pure white breasts. The closely allied Black-banded goose, *C. inornata* or *dispar*, is striped over the breast and neck and the two cross freely to the danger of producing a hybrid race. The females of both are reddish brown more or less striped, but that of *C. inornata* is distinctly darker in general hue than the other. The Ashy-headed (*C. poliocephala*) is a particularly beautiful and charming species, but decidedly rare as also is the smaller Ruddy-headed (*C. rubidiceps*). Of the European Geese none is more satisfactory than the Barnacle, which we found to be a good breeder.

Except that they are more aquatic, the Sheld-duck are much like the Geese in many respects, in fact the Egyptian and Orinoco Geese are intermediate between the Geese and Sheld-ducks. Of the latter one of the rarest and most beautiful is the Radjah Sheld-duck of Australasia.

Our success with waterfowl at the Zoo came to an end when the late Secretary developed his schemes of popularizing the Zoo, first by the building of the Mappin Terraces which cut right into our Western Duck Pond, and then by the creation of a hill for baboons which swallowed up the whole of that corner of the Gardens.

Now the Zoo has reverted to its former condition so far as ducks are concerned, with one over-crowded pond and, as for Geese, there is no room to keep them at all, though a few have found a home at Whipsnade. But though, from lack of accommodation, the Zoo can no more go in for serious waterfowl keeping and breeding, this has developed considerably with private aviculturists. Thirty years ago the only collections of any importance in the country were those of the Duke of Bedford, at Woburn, and of Mr. St. Quintin, at Scampston, in Yorkshire, but now the splendid collections in the possession of Mr. Ezra, Mr. Spedan Lewis, Major Pam, the Messrs. Stevens, McLean, Wormald, and Laidley, in Britain, and M. Delacour and Dr. Derscheid across the Channel, will ensure the interest in these fascinating birds not only being maintained but increased.

THE PRESERVATION OF WATERFOWL AND AVICULTURE

By Dr. J. M. DERSCHEID

For about ten years I have devoted most of my time and work to the various problems concerning the preservation of the fauna and flora in all the countries of the world, and naturally I have a special interest in the preservation of birds, as these have always been my great favourites.

During the time when I was European Secretary of the International Committee for Bird Preservation, I had exceptional opportunities to get in touch with a great number of societies and organizations directly connected with this question all over the world. I must admit that I have always been amazed to find how strongly many of these organizations are opposed not only to the shooting of birds for sport, but even to their capture alive and to their being kept in captivity.

In several countries, and even in some colonies, stringent measures have been enacted to that end by the authorities, generally as a result of the propaganda and pressure of these societies, such action being most of the time instigated for reasons of a humanitarian and sentimental character. In many cases, drastic measures have been taken to prohibit the export of live birds from a country, even in limited numbers, although no restrictions were made against shooting the same kinds of birds in large numbers for pleasure or profit. A typical instance of this is the case of the Australian Sheld-duck (*Casarca tadornoides*) since several years. Elsewhere, such regulations were the only steps taken to protect some species of birds which were in fact far more seriously threatened from quite different causes ; for instance, the New Zealand Duck, which it is forbidden to export dead or alive from its native country, although it is probably doomed there to complete disappearance as a species, due to " mongrelization " with the dominant European Mallard, introduced—alas !—by the Acclimatization Societies with the approval of the Government.

As a matter of fact the disappearance and eventual complete extinction of a species of bird in its native country is very often due to factors quite beyond human control, even when due to human influence, and still more often out of proportion with the

influence of the most active Nature Preservation Societies. What can they do, for instance, to remedy the disastrous introduction in remote countries of unnatural enemies of the local avifauna (rats, European foxes, mongooses, etc.), or, still worse, dominant competitors, such as Mynahs, English Sparrows, European Starlings, and so on. I equally doubt if the "conservation" bodies will ever become strong enough to oppose the ever increasing land reclamation schemes, forest destruction, and extensive plantations, which must sooner or later supersede the original marshes, woodlands, savannahs, and prairies, the true haunts and breeding grounds of most of the bird life.

It is a matter of stupefaction to me that in face of these unsolvable problems, so few interested people think of turning their minds towards another way of preserving the various species of birds threatened with extermination, viz. *maintaining them and increasing their numbers by methodical breeding in captivity*. Half a century ago this would have sounded like Utopia, but nowadays I am convinced that it is quite possible, at least for some groups of birds, on account of the great progress already made in the technique of aviculture. This applies without doubt to most species of Gallinaceous birds, Ducks, Geese and Swans, and Parrot-like birds.

This would not be completely unprecedented in the history of the rescue of wild species by Man. Botanists will tell you how Buddhist priests managed for centuries to keep alive around their shrines in China and Japan what is probably the oldest kind of tree in existence, *Ginko biloba*, a unique botanical type completely extinct in its original habitat; the same applies to a number of shrubs and plants which have only reached us thanks to the horticultural skill of nature lovers in the Far East. Among large mammals, there is no doubt that in South Africa the survival within the fences of a few farms of fine species like the white-tailed gnu, the blesbok, the bontebok, the mountain zebra, is exactly a parallel case, and this is true also of the European bison, completely destroyed except for some good specimens in captivity, and for the Père David's deer (from China), a species of which the very last herd in existence is still thriving and increasing . . . under the English sky, at Woburn Abbey!

Exactly the same good work can be done to preserve rare and interesting kinds of birds, and in fact it is already done, but on

much too small a scale. I have a faint idea, for instance, that as I write these lines there must be perhaps as many specimens of Elliot Pheasants (*Syrnaticus ellioti*) alive in the aviaries and zoos of Europe, North America, South Africa, and Australia, as at liberty in their native country in China. It is still more interesting to note that most of these captive birds have been aviary-bred for a number of generations, being the progeny of a very few imported pairs, and still they do not show the slightest symptoms of degenerating under these new conditions. I even venture to say that the Elliot Pheasant, as a species, is much more in danger of complete extermination at liberty in China than in our aviaries.

In view of these indisputable facts, one will admit that one of the highest goals of aviculture must be to contribute to the preservation of species by the establishment of permanent breeding stocks, kept and increased under methodical control and scientific technique.

The main results of such a far reaching undertaking would be the following :—

(1) *A better and deeper knowledge* of the species of birds, their habits and needs, and probably better enlightenment as how to preserve them at liberty by a complete understanding of their natural requirements. Except perhaps for some groups of Passerine birds, our systematic knowledge of the avifauna of the world is nearing perfection, and very few new species and varieties of birds remain to be discovered and described. Their anatomy is still more an unploughed field, and what has been done in that direction has been made possible by morphological material provided mostly by captive birds which have died at the zoos and in private collections. By far the most promising field of investigation remains in the study of the live bird, and although a good deal of this can be done by field-naturalists, there is no doubt that much more can be learned from the birds kept under control or in semi-liberty, directly under the eyes of the observer. As I want to confine myself to-day more specially to waterfowl, I might emphasize as a good instance that the best and most complete essay on the classification of that group published in recent years has been written by our friend Jean Delacour, mostly as a result of personal observations on all the species of waterfowl so successfully kept and bred by him in his wonderful collection

at Clères. Let us think also of the remarkable scientific contributions made by Dr. Heinroth, Dr. K. Lorenz, and many others, all based chiefly on captive birds.

(2) *A reduction in the demand for wild caught birds* on the market. There is no doubt that as soon as a species is freely bred in captivity its commercial value drops quickly, and sooner or later it no longer pays to face the heavy expenses and risks of importing such birds from distant foreign countries. I have already referred to the case of the Elliot Pheasant. This species has been reared so freely for several years in Continental Europe, and a little more recently in England and the United States, that its present price is already below the actual cost of the transport of any bird of that size from Shanghai to Europe; the same applies of course to Golden, Lady Amherst, and Silver Pheasants and I should think that it is no longer a profitable proposition to import from China either Brown or Blue Crossopitillons (Eared Pheasants), at least in the U.S.A. where both species are bred in large numbers, and are quite cheap in consequence.

No matter how low their price is in Australia, no European bird dealer would to-day think of importing a consignment of ordinary Budgerigars, as it would certainly not pay in comparison with the home-bred birds, and the same is true (at least here in Belgium) for the Cockatiel, and even (to a lesser extent) for the Common Rosella and the Red-rumped Parrakeet.

Although the various Love-birds are bred by a number of fanciers every year in Belgium, I may draw your attention to the fact that a number are still regularly imported by our dealers. It is amusing, however, to note that most of these imported Love-birds come either from Australia or from Japan via Singapore (being naturally in both cases aviary-bred birds).

In the special case of waterfowl the competition on the market between home-bred, "hand-reared" birds and those imported from their natural country of origin, is still more to the advantage of the first-named as it is a well known fact among the prospective buyers that the imported (wild-caught) waterfowl are nearly always very shy breeders, and consequently the hand-reared birds fetch a much better price. One can therefore realize that as soon as a prosperous breeding stock of any kind of bird is established and well maintained in Europe or elsewhere, the incentive—for

local bird catchers—to take a toll of the native avian population for sale to travellers, ship crews, or export agents, is much lessened. This may not make much difference in the countries where most of the birds are netted or snared chiefly for the pot (the case of most Pheasants in Indo-China and the Himalayas, and, I believe, waterfowl in India), but it might become a most beneficial factor where rare species are concerned, especially those restricted to small sized islands.

(3) *The possibility of reintroducing a species* to its former native haunts, when it has been exterminated there. I shall never forget my first visit to Mr. Blaauw's world famous collection of waterfowl and other birds at Gooilust—some fifteen years ago—when I had my first opportunity of admiring his fine breeding stock of Trumpeter Swans (*Cygnus buccinator*), a wonderful species which I had then thought practically extinct. Mr. Blaauw told me then that he was not only slowly but regularly increasing the strength of that stock, but that he had had much satisfaction in sending some of the Trumpeter Swans bred at his place to the United States Federal Government, with the object of restocking some American National Parks with this species, formerly living there, but then practically extinct. It is interesting to note in this respect that years have passed since that time, and that owing to most rigorous measures of preservation, the small wild stock of Trumpeter Swans are still holding their own in the remotest districts of the United States and Canada, but in no way better than the little breeding stock of captive birds in Europe (now concentrated since Mr. Blaauw's death in the best possible hands at Woburn Abbey).

One will perhaps object that in the example mentioned above we have the case of a most valuable kind of bird, already so reduced in numbers in nature as to be on the very eve of disappearing for ever, and, on the other hand, kept in captivity under the most favourable conditions and with no regard to trouble and expenditure. As a reply, let us remember that, a quarter of a century ago, the American "Wood Duck" (which we call Carolina Duck) was also considered by the best authorities to be quickly approaching extinction, at least in most parts of its former distribution area. With their acute sense of business, the Dutch waterfowl breeders lost no time in realizing that there was here a new market open to their productive activities, and they set at work at once, breeding

and rearing Carolinas by thousands and tens of thousands, to be sent at a most remunerative price to the duck's native country, for restocking purposes. Nowadays, instead of being a vanishing species, the restored Carolina Duck is again plentiful enough to be listed as a game bird with regular open seasons even in very "conservationist" States.

Such success in the case of the Carolina Duck had a far reaching effect in showing to the Americans themselves what could be done to produce in large numbers wild birds born in captivity nearly as easily as if they were domestic fowls. Of all the countries in the world the U.S.A. have certainly evolved the most up-to-date principles and methods of safeguarding their wild fauna and flora, probably because nowhere else has there been such brutal and wanton destruction of beasts, birds, and trees as on their territory during the nineteenth and beginning of the twentieth centuries. At the present day the "Conservation Departments" in many of the States have special farms where their staffs rear every year California Quails, Bobwhites, Mallards, Wood Ducks, Black Ducks, as well as the introduced Pheasants, Hungarian and Chukar Partridges, etc. These are all reared and released of course to restock shooting grounds and to provide sport for an ever increasing number of game licence holders, who would otherwise direct their attention and guns at the poor remnants of the original avifauna of the country.

On the other hand it seems a great pity that the American authorities have not yet understood that exactly the same methods could be used to tear out of the grip of destruction the last individuals of wild species of birds in immediate danger, as is the case of the Trumpeter Swan.

A still more striking example of this is the Sandwich Island Goose, a monotypic kind of bird actually reduced to a few pairs haunting the ash-clad summits of the Hawaiian volcanoes. There these rarities are strictly protected by law, and nobody is allowed to disturb them, less still to carry away a few live Geese, even with the object of propagating them methodically. The annoying point is that we are not at all sure that the gradual disappearance of the Hawaiian Goose has been due to human interference of this kind, neither can we hope to see them increasing greatly in numbers under the strictest laws within the limited area of a

National Park which is open to all sorts of introduced vermin. When we think that American money has been freely offered to subsidize the sending to the South Seas, during a number of years, of a ship and an expedition with the sole object of raking over all the islands and collecting bird skins for museum purposes, we may express the wish to see the Federal Government taking, in the very near future, adequate measures to ensure by artificial propagation the future of the Hawaiian Goose as a live species, rather than as dusty specimens in glass cases.

In a later issue of this magazine, I hope to convince the readers that careful propagation of nearly all species of waterfowl in captivity or semi-liberty not only has already been made possible by the progress of our avicultural knowledge, but will also prove in future years the simplest and surest way to preserve disappearing species from complete destruction.

(To be continued)

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OBSERVATIONS ON THE BREEDING HABITS OF SMEWS IN CAPTIVITY

By D. S. WINTLE

(Curator of the Walcot Waterfowl Sanctuary)

When Messrs. R. and N. Stevens moved their collection of waterfowl from Worcestershire to Walcot in Shropshire, they brought with them a pair of wild-caught Smews which had been in their possession for about two years prior to moving. Late in the autumn of 1935 these Smews were turned loose on a lake of about 14 acres.

They were fed on small strips of rabbit flesh and in addition to this they were given either bread scraps or soaked dog biscuit. Of course they found a considerable amount of natural food for themselves such as small fishes, water snails, and freshwater shrimps.

Throughout the winter the male Smew lived in company with two male Common Goldeneyes. The female passed her time in solitude. However, at the end of April the two birds began to take notice of each other and met several times a day to perform

their respective displays. The male throws back his head over his mantle, raises his crest forward in Cockatoo fashion and at the same time utters a peculiar catarrhal sound. He repeats this performance again and again. The female usually follows behind him or swims round him with her neck upraised and her bill pointing downwards. While doing this she swims in a series of jerks after the manner of an infuriated Swan and frequently utters a muffled nasal quack.

During May the pair of Smews were never far away from one another and their conjugal association became a closer one. Early in June, however, the Smew duck was so active that her drake, wearying of her endless energy, gave up keeping her company in favour of resting under a shady tree or preening on a sunny bank. While he rested thus, the little duck spent her time diving first up one side of the lake and then down the other. This lake, incidentally, is about half a mile long. Presumably she was searching for grit, water insects, fish, and weeds with which to build up her ovaries. She never came up to the surface for more than a second at a time and as soon as she had replenished her lungs with air down she went again. The bubbles which marked her whereabouts showed she was searching round the roots of reeds which grow in rather deep water. She set about her task with amazing speed. All the time she appeared to be in a tremendous hurry, her business was urgent and there was not a moment to spare. It was generally her custom to have a short break in the middle of the morning and a longer one in the afternoon. During these rest periods she would seek the company of her mate and after a greeting he accompanied her to the lake shore, where she preened and dried her feathers. This was most necessary for her endless under-water activities soon told on the condition of her plumage so that after several hours of continuous diving she became very wet indeed, even though she periodically sat up and shook herself to throw off some of the water from her feathers.

On the morning of 14th June, 1935, the Smew duck was nowhere to be seen. I was pretty certain that she was either laying or had commenced to sit. However, in the afternoon she was diving in her usual hurried manner at the end of the lake farthest from the island. As she followed the same procedure for the next few days I decided that she must have a nest somewhere near that

end of the lake and therefore made a thorough examination of all the tree-roots and rabbit holes in that area. This search revealed nothing, so one afternoon I concealed myself in a shrubbery and waited in the hopes that she would let the cat out of the bag and show me where she had her nest. I waited for several hours and the only thing she did was to run up the bank opposite to where I was in hiding and go underneath some thick shrubs, but in a very few moments she returned to the water. Time was precious and there were many other nests to be found so, knowing that there was nothing in those shrubs that she had visited, I decided to search for her nest without waiting for her to give me any clues. The following morning I went straight to the boathouse, took out a canoe, and paddled over to the large island. While beaching the canoe I noticed one little "fluff" of down on the bark of an oak tree which had rotted at the bole. This down was a pale silver grey in colour like that of a Carolina Wood Duck. I knew that there was no Carolina Duck nesting near the oak tree in question, so I lay on the ground and examined the cavities formed by the decayed wood. To my surprise I nearly put my nose on to the Smew duck. She looked snug as she sat surrounded and almost covered with down. Rather reluctantly I put her off her nest and took her eggs. Never before had I come up against such a cunning little bird, and I felt almost sorry when I discovered her secret.

In the nest were six eggs, white in colour, being in size and shape similar to those of a Carolina Wood Duck. At a guess I should say that the eggs had been incubated for about a week. Having got them safely ashore I placed them under a broody bantam.

The period of incubation for Smews is thirty days. All six eggs hatched. In the down the ducklings are very similar to Common Golden-eye ducklings. The head and neck are black and there is a white patch under the chin which continues down the throat and spreads over the under parts. The flank, back, rump, and wings are also black. On either side of the rump is an oval white patch, there is a similar patch on each shoulder. The legs and bill are black, being well formed and closely resembling those of the adult bird.

We find Smew ducklings exceptionally easy to rear for they are strong and active from the time they hatch. They are eager to feed and require no coaxing at any time. They take readily to

small shreds of fresh lean raw beef and they will also eat the biscuit meal mixture which we feed to all our ducklings. It is worth noting, however, that we once attempted to rear a Smew duckling (which hatched from an egg taken in Lapland) entirely on biscuit meal, but this diet proved unsuitable as a sole means of nourishment. Young Smews are fully fledged at ten weeks old. From the six which hatched we reared five and so far as we know they are all alive to-day.

In 1936 the Smew duck again nested in June and commenced sitting about the 14th of that month. Her nest was found on the same island as she used in the previous year, but this time she chose a rabbit hole and made her nest about 10 feet from the entrance. There were seven eggs in the clutch but all proved to be clear. The reason for this may be that the male was an old bird, for he sickened and died early in July of that year, having been in captivity about five years. He was in adult plumage when he was caught.

Fortunately we had another Smew drake, a bird which we had reared by hand from an egg gathered in Lapland in 1936. This drake paired with the duck in the spring of 1938, and once again she nested on the same island at about the same time of year. Under a tree-stump there was a small rabbit hole, only about 3 feet deep. She made her nest at the bottom of this and laid eight eggs. According to our usual practice these were placed under a bantam. Four ducklings hatched, all of which were reared, their sexes being one male and three females.

A few weeks after we had taken her eggs the Smew duck contracted a form of abdominal dropsy. Our efforts to save her were in vain and after a short illness she died. So ends the history of the only Smew duck which has ever been known to breed in captivity.

We have every reason to hope that before long we shall have Smews breeding once again at Walcot. A 1938 duck of our own rearing has been placed on the lake and she should breed in June, 1940. Also we have other strings to our bow. In addition to a well-established wild-caught female Smew (adult) obtained from a Continental trapper, we have two other wild-caught females (one a 1938 bird) which a kind friend caught on his lake and sent to us.

BARROW'S GOLDEN-EYE DUCK IN CAPTIVITY

By HUGH WORMALD

I do not think that this magnificent Northern species has ever been recorded in a wild state in the British Isles, though there seems to be no reason why it should not occur occasionally like the Harlequin, but unless an adult male was seen, the chances are that it would be overlooked, since females and immatures would be very difficult to distinguish from Common Golden-eyes.

In a mixed collection of pinioned wild fowl, the adult Barrow's Golden-eye drake always seems to attract more attention and admiration than any other bird. The most noticeable difference in this and the common Golden-eye is that in Barrow's the white patch at the base of the bill is crescent shaped, and in the common Golden-eye, round or nearly so. The head is rather larger and the iridescence much bluer, and not so bottle-green as in the Common Golden-eye.

The birds do not become adult until the second year, they are very shy breeders in confinement.

Adult males begin displaying as soon as they have attained full plumage in November. At the beginning of the season they seem to "show" to any sort of duck, but once paired they spend their time courting their own duck and driving off other ducks. It is amusing to watch a drake driving other ducks away as they attack from under water, the bird takes deliberate aim, then dives with hardly a ripple and torpedoes the enemy; they will continue to do this for quite a long time, and it seems to get on the other ducks' nerves, since if the target happens to see the torpedo coming he flaps along the top of the water in a tremendous hurry! Personally, I have never seen any damage done to the target, but a friend of mine last autumn had an immature pair of Barrow's and had to part with them, because the drake would spend all his time torpedoing the other ducks and taking out bunches of feathers, which apart from making the other ducks wild, caused my friend to fear serious casualties.

When courting the drake swims about with head held erect, opening and shutting his bill from which hardly any sound seems

to come, then stretches his neck out along the water with the bill slightly raised and the lower part of the neck submerged, then throws his head right back so that the back of the head touches his back, at the same time kicking a jet of water into the air with his foot, this action makes the bird's body bob like a cork. J. G. Millais, in *British Diving Ducks*, depicts the Common Golden-eye making the "kick", but shows the foot right out of the water scooping up a jet of water like a spoon—in this, I think he is wrong, since I have never been able to see the bird's foot above the surface of the water during the "kick". The Common Golden-eye duck has a reciprocal courtship and "kicks" too, but I have never seen a Barrow's duck "kick".

In Iceland the nest is placed in clefts in the lava rock, but our breeding duck always uses a box, sometimes on the ground, and sometimes a raised box four or five feet up against the trunk of a tree. She first went to nest when two years old on the 4th May, 1931, and has bred regularly every year since, laying the first egg between the 2nd and 15th of May, the clutch being seven to eight eggs. In 1937 she did not lay until the 23rd May, and only four eggs, and I feared that she was getting old. However, in 1938 she laid on the 28th April, and a full clutch of eight eggs. I have never been able to persuade her to lay two clutches in a season as most ducks will.

This seems strange since the two birds mate every day when she comes off the nest to feed during incubation. The eggs are large and much bluer than other duck's eggs; incubation lasts thirty days.

When first hatched the ducklings are perfectly beautiful, brilliant black and white like little dominoes. When about a week old, and beginning to grow, the black becomes rather rusty and they lose their looks! They are not very easy to rear and must have some form of animal food and I do not think they can be reared on meal only.

In the first plumage the sexes are alike, but the drakes very much larger than the ducks, the drakes assume a certain amount of adult plumage during the first winter and spring. One bird which we reared in 1937 had assumed almost adult plumage by the end of May, 1938, but this was an exception; now he is fully adult and I hope will breed this spring.

BREEDING AND REARING OF THE CACKLING GOOSE

(*Branta canadensis minima*)

By J. C. LAIDLEY

Two Cackling Geese were a pair out of six I bought and imported four or five years ago from U.S.A., I forget exactly how long ago. Anyway they showed no signs of breeding and I had rather lost interest in them until last year when I found the Goose on a nest. A nest made right in the open and the Gander of course sitting close by. The bird was laying and had laid two eggs. They were small, indeed exactly the size of a double-yolked hen's egg. I hunted the country and got two such hen eggs and substituted them for her own eggs. The following two days she laid two more eggs and not being able to get another large hen egg I gave her one more ordinary hen egg and one Barnacle egg, fortunately having a Barnacle laying at the same date, i.e. 13th June, when she laid her last and fourth egg.

Barnacle take twenty-four to twenty-five days to hatch so I had to remove the hen eggs on the nineteenth day of incubation in case she hatched those. I was rather afraid she would then desert, but she stuck to the one egg of the Barnacle and hatched and reared it in due course. Her own four eggs were put under two bantams. One proved to be a clear egg, one had a dead chick in shell, and the others hatched. We gave one gosling to each bantam.

Having in the past killed, through lack of knowledge, a brood of Lesser Snow thinking they could live on grass alone, and finding, too late, that one only was saved, that their diet when very small needs to be a mixed one of weeds, annual meadow grass seed heads, clover, etc., we gave the two bantams and their two young a very large range and only at night before shutting them up gave them a little biscuit meal, very little indeed, and plenty of grit. They were slow to start growing, but after ten days they shot ahead and are now fine birds, a true pair. In size a little larger than Red-breasted Geese of the same year with whom they share an enclosure. In the down stage they are slightly darker and lack the olive golden gloss that young Canada have when newly-hatched, though otherwise resembling them. I might add that, as far as

I could see, the Goose, when sitting, sat the full incubation period of the Barnacle eggs without coming off her nest, which was in this case twenty-five days and which was the same period as it took the two Cackling to hatch. They are most attractive little Geese, tame and friendly.

* * *

HAND-REARING OF RED-BREASTED MERGANSERS

By ANTHONY RAMPTON

Unfortunately, I lost my own notes on this subject and I have had to rely for information on a letter which I wrote to Dr. Derscheid at the time, a copy of which he has very kindly returned to me. It will be understood, therefore, that details are lacking, and the account is neither as full nor as particular as would be desirable.

In the summer of 1937 we obtained some Mergansers' eggs from Iceland through the courtesy of Messrs. R. and N. Stevens.

Inasmuch as we had a lot of other eggs setting at the time we had to use old cross-bred Rhode Island Reds which, as we thought at the time and as it subsequently turned out, were much too big and clumsy for the purpose. Sixteen eggs hatched, two died in the shell, and two others were trampled on by the hens. Fertility was good. We had few books to refer to and the greatest help was undoubtedly Heinroth's *Birds of Central Europe*.

We did not know whether the ducklings expected to be hand-fed, that is to say, whether in the wild state the parent fed them from her bill, but indications seemed to point that way. Moody makes a similar reference to young Harlequins apparently desiring to be hand-fed. At first we pushed pieces of freshly caught pike in front of them, and although they showed every desire to feed they seemed not properly to understand the meaning of it. It was almost entirely by chance that we happened to have some minnows at hand and although we did not think the ducklings would be able to eat them, we threw some on the ground in front of them. They were eaten avidly although some of them were well over 2 inches in length and the ducklings were still only two days old.

In the second and third weeks the weather became bad, the ducklings got wet and, in spite of all we could do, began to die

off one by one, the cause of death in those that were analysed being pneumonia. At the end of this debacle four survived. They seemed healthy although they were not keen on going into the water and would eat their food only when it was thrown to them on the grass.

In a way it was fortunate that the others did die, as we afterwards realized that we should never have been able to feed the whole twelve. Our minnow-traps (wire gauze fly traps baited with bread) we had to keep working all day and we calculated that these traps—four of them—had by the end of the season accounted for some fifteen thousand minnows. The Mergansers had them all. Naturally, we were anxious in these circumstances to get them on to an artificial diet as soon as possible, and just as soon as they started to feather we tried them with meat dipped in cod-liver oil. It proved useless at this stage and only by the second week in September, that is to say, when they were fully grown and ready to be sent away, were we able to get them on to meat. Meat and strips of raw pike, when we could catch it, remained their diet for perhaps a month more, until we could change them to a diet of biscuit meal, such as we use for our other Sawbills.

I doubt whether any conclusions can be drawn from our experience with these Mergansers. We should not be prepared to say that a stock of live minnows is necessary for success, but it would appear that until well accustomed to an artificial diet, any food given to them must be moving; but that so long as it is moving, they can be persuaded to eat practically anything. In the early stages, when occasionally our stock of minnows did run out, we had to resort to pike, and tough as it was, they would eat it, provided it was dangled (skin and all) in front of their noses on the end of a knife. On the other hand, they had little use for dead minnows.

Some time we want to do the same thing with other fish-eating birds. In fact, at that time we tried with a number of Slavonian Grebes, Red-throated and Great Northern Divers, but none of the eggs hatched.

SOME EXPERIENCES IN WATERFOWL BREEDING

By J. C. LAIDLEY

When starting to keep waterfowl on a pond or lake I have always found the primary question is what kinds will be best suited to the conditions one is giving them—a most difficult question, which can only be answered by the birds themselves. For though everything may look right some species will not nest. We enclosed in here once six acres of water, marsh, and wood, it looked ideal and some thirty kinds of waterfowl ranging from swans and geese to duck were put on it ; only Barnacle and a few Shoveler laid. Adjoining this enclosure was one other, a smaller one of some three acres, so the birds were allowed to go from one to the other and then all kinds went to nest. The answer was easily seen for in the large enclosure the water was open and more or less of rectangular shape, whereas in the smaller pen the water was well broken up into bays and channels, affording far more privacy. Waterfowl in the nesting time do require privacy. For the same reason they should not if possible be disturbed in the early morning or evenings, for at these times they like to wander about hunting for nesting sites, slugs, and worms. For the latter reason fertility is better and more eggs will be laid in a wet spring than in a dry one.

Geese require plenty of grass and prefer open ground to nest in. It is easy to kill young geese by feeding artificially ; if their eggs are taken and set under hens the young thrive best when allowed loose during the day with their foster-mother, for they range about and choose all sorts of weeds as well as grass to feed on, indeed, I do not think during the first few weeks they can live on grass alone.

If one can spare the room a collection of waterfowl to my mind looks most beautiful when they are kept in groups. All the various Sheld-duck on a water to themselves show better than when mixed with the smaller duck, likewise the geese look better apart from duck which they are apt to dwarf.

Given good weather most kinds of duck or geese will bring up their own young if sufficient natural food in the shape of duck weed and insects is available ; if not it is a good idea to have at

various places in the shallow water little enclosures made of wire netting with a mesh sufficiently large to enable the young to swim in and at the same time to keep the old ones out. They can then be fed with biscuit meal, etc., and if these enclosures have been fed just outside during the nesting season the duck will be accustomed to go to them for food, so will take their broods there when hatched.

If it is decided to take all the eggs and rear them under hens it is a good plan to allow three or four eggs to be laid and not touched before lifting them, these can then be substituted by eggs as like the ones taken as possible and an egg added each day for the one taken till the clutch is completed. Otherwise ducks are very apt to desert the nest and stop laying. When setting eggs it is best to keep the species separate, for not only does the incubation period vary in different kinds, but some grow faster than others and may require slightly different feeding and treatment. I am inclined to think too that if mixed broods are reared and grow up together it tends towards hybridization.

One sometimes finds that young ducks are difficult to start feeding; it is a good plan then to sprinkle a little food on their backs for they will pick it off each other and so learn to feed. It is not difficult to rear young ducks but, and it is a large but, it is surprising how many unfortunate things can happen! A weasel or stoat in a few minutes will kill the best brood, or a rat dig into a coop at night, or a heavy shower and some adventurous duckling sticks it out too long and when thoroughly cold and draggled cannot reach the coop and warmth of his foster-mother in time, and so on. A hot sun is dangerous and there should be some places near each coop where the young can get shade. When rearing artificially we find most species of duck do best when kept entirely off water for the first few days, and gradually introduced to it in increasing sizes and time they are allowed to stay on it; all depending on the weather for naturally on a cold day they chill more readily. Young geese are different, they, when very young, will not go on to water when reared artificially, so do best of all when they can wander along a water edge feeding on the small rush tips and weeds.

Incubation of the eggs is often not attended to with the care that is needed. Ducks in nature come off the water to their nest,

so the eggs are frequently damped and are, as we all know, often laid on very wet ground ; obviously, therefore, the eggs should be moistened daily with warm water and kept clean.

I do not know much about the nesting of geese in a wild state, but here in captivity it is customary for Greylag, Canada, Bean, Cackling, Cereopsis, to name a few, to sit without coming off their nests the full period of incubation. So if the eggs are set under hens it is obvious they should never be allowed to get cold. The actual period of incubation varies according to weather, dryness or dampness of eggs, and closeness of sitting. It must, therefore, be considered that a species that should, say, take twenty-three days may take twenty-five and so on.

Waterfowl are a fascinating hobby, possibly because of the many difficulties to be overcome !

* * *

A NEWLY IMPORTED PAIR OF MUSK DUCK

(*Biziura lobata*)

By D. S. WINTLE

About three months ago we were lucky enough to receive from Australia a pair of Musk Duck. This was made possible through the kindness of Mrs. Tyser, of Brora, Sutherland.

Prior to their dispatch we posted to the sender in Australia a diagram of the type of crate in which we wished the birds to travel. We also sent him a list of instructions about the feeding and general care of the birds on board ship. The feeding instructions were handed to the ship's butcher, who took charge of the birds during the voyage. A few words about the above two points may interest aviculturists who are contemplating a shipment of waterfowl to or from distant lands. Our specification for the crating was as follows : Size of crate, 2 ft. square. Floor composed of small-mesh wire-netting, well strained. About 2 inches beneath the floor a sliding tray made of three-ply wood. Front of crate composed of laths placed $1\frac{1}{2}$ in. apart. In front of these a frame to hold a metal feeding-trough.

With regard to care and feeding we emphasized most strongly that the birds were to be kept dry. Many ship's butchers have in

mind "nice weather for ducks" (referring, of course, to times when it rains cats and dogs) so that the first thing they do is to imitate a downpour by turning a hosepipe on to the wretched birds! The result of such treatment is a speedy death from pneumonia. We instructed that no water pans were to be placed in the crate, nor were the birds to be taken out of it and given a swim in the butcher's bath. Some butchers haven't forgotten the days when they required a celluloid swan (generally pink, but nothing to do with mice, we hope!) in their bath to comfort them after a vigorous hand had soaped their face and, worse still, their eyes!

While captive in Australia these Musk Duck had been fed chiefly on raw fish dipped in pollard. Knowing this we requested that the birds should be given their fish in a dry trough. After the feed this could be cleaned and then filled with water so that they could drink. Unfortunately the fish must have been given to them in a trough full of water, which soon became greasy with fish oil. Of course the Musk Duck, after feeding, dipped their heavy bills in the greasy water and then preened their feathers. After six weeks of such treatment the plumage of the birds became frayed and sticky, and was not waterproof when we received them. In view of this we are keeping them off water until they moult. In every other respect both birds were in wonderfully good condition when they reached us, and the gentleman who cared for them on board ship is to be congratulated on the way he looked after them. No other person has, so far as we know, set out from Australia with a consignment of Musk Duck and delivered all of them in good health either to the Continent or the British Isles.

Since the birds arrived here they have been kept in a small room carpeted with sacks. They always have access to a drinking trough and once a week they are given a large shallow pan of water in which they may paddle and so keep their feet from cracking.

The daily diet of our Musk Duck consists of a generous helping of fresh raw beef, a small trough of biscuit meal containing 10 per cent of fresh blood, and a handful of tepe (sun-dried shrimps and small fishes). They will not eat grain nor will they touch duckweed.

The natural diet of the Musk Duck is said to consist of fresh-water shellfish, seeds of water-lilies, and other aquatic plants,

mussels, leeches, aquatic worms, mud crabs, and frog spawn. Their bills, which are ponderous-looking tools, appear to be constructed for the purpose of dealing with soft sloshy foods.

The Musk Duck belongs to the sub-family *Oxyurinae*, or often called Spiny-tailed Ducks. Members of this family are essentially diving ducks, and have large feet, legs which are set far back, small wings and long stiff narrow tail feathers, closely resembling those of a Cormorant.

The most unusual characteristic of the Musk Duck is the lobe on the lower mandible. This is not very well developed in the case of the two birds we have received, one shows a small amount of lobe, the other possesses practically no lobe at all.

It is not possible to give a very comprehensive account at present of the two specimens under observation as they are kept in such an artificial manner. However, later on when these birds are well established on one of the lakes here I hope to write an account of their habits in natural surroundings and ask our Editor if she will print it.

* * *

NOTES

On the night of 15th February, a disastrous fire broke out at Clères, destroying the greater part of the Chateau and most of its contents, including many beautiful and valuable works of art collected by Monsieur Delacour from all parts of the world and the whole of his library which contained many rare ornithological works. The animals and birds in Monsieur Delacour's collection were in no way affected by the fire, those birds which were in any danger being safely rescued. Monsieur Delacour is himself on an expedition in French Indo-China, for which he left Europe last November.

The destruction of the Chateau of Clères which is famous all over the world and which has been a source of delight to all aviculturists and naturalists who have been fortunate enough to visit it, is nothing less than tragic, and a loss that will be shared with Monsieur Delacour by his friends in every country. Many members of the Avicultural Society have written desiring that sympathy should be expressed to Monsieur Delacour in the Magazine and there is no doubt that every single member will join in offering him the heartfelt sympathy of the Society as a whole in this great calamity and irreparable loss.

* * *

Dr. Nikolaus Vasvari is making a study of the food ecology of the Barn Owls of the world and has found great difficulty in procuring material. He is particularly anxious to secure the castings of these Owls in the wild state from the Sudan, East Africa, India, and Australia, but will be glad to receive them from any part of the world. Members of the Society who are able to assist Dr. Vasvari by sending him pellets, or who know of other aviculturists or naturalists who would be

willing to do so, are asked to communicate with him at the Royal Hungarian Institute of Ornithology, Budapest 11, Herman Otto Ut 15, Hungary, or with the Editor of the *Avicultural Magazine*.

* * *

The Editor acknowledges with much gratitude the drawing of the Mandarin drake and duck on the cover of this number, which was specially made and presented by Mr. Roland Green ; also the permission to use the coloured plate of Barrow's Golden-eye Duck, and the loan of the blocks for the printing of it from Messrs. Ronald and Noël Stevens.

* * *

CORRESPONDENCE

COLOUR IN AVADAVATS

I have been long trying to find out why Avadavats lose their red colour in captivity and, indeed, sometimes become black. Some years ago (I do not remember how many) I wrote a letter to the Magazine and I believe I said then I thought the colour was due to heat and moisture ; and also I believe sunlight, because when one keeps Avadavats indoors, even in India, the red fades to a nasty yellow.

I thought at one time it is food, but it is not, because for the last three years, since my transfer here, I have kept some Avadavats, and fed them only on the ordinary plain seed "Kong" and "Cheena", that is the tiny Indian millet and yellow millet, and far from any tendency to go black, some of them have shown a tendency to become albinos. Some have got white feathers about the head ! In season mine have become a lovely deep red, and I have compared them with newly caught birds and there has been no perceptible difference. Any that I have kept in the house and not exposed to air and sunshine, namely those I have not had out on the lawn in the morning and evening "to sun", have gone yellow. I am now convinced, for what my conviction is worth, that Avadavats get and retain their red plumage in the same way that tomatoes get theirs ! Indeed there is an extraordinary similarity between the nasty yellow of an unripe tomato and the nasty yellow of an Avadavat whose red plumage has lost its colour owing to the birds being kept indoors. I am not joking and am quite serious. Tomatoes will not ripen unless they have sunshine, heat, and moisture. Nor will Avadavats in captivity get or retain their red plumage without sunshine, heat, and moisture.

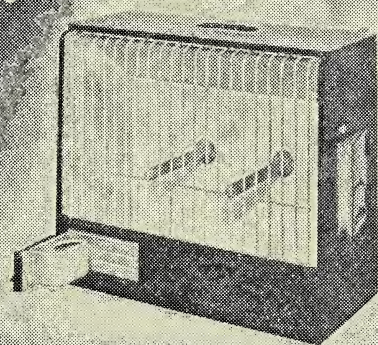
Hence the success of greenhouse aviaries for small tropical birds. I believe they have been successful !

GODFREY DAVIS.

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CONTENTS

PAGE

A Collector in the Gold Coast Colony (<i>with plate</i>), by C. S. WEBB . . .	111
Desmarest's Dwarf Parrot, by the MARQUESS OF TAVISTOCK . . .	123
The Early Years of the Avicultural Society (III), by D. SETH-SMITH. . .	124
Breeding Experiments with the Red-faced Lovebird in 1938, by HELMUT HAMPE	128
The Ringed-necked Parrakeet, by G. DAVIS	129
Hybrid Herons in Japan, by the MARQUESS HACHISUKA.	132
Breeding Records : Summary VI and VII, by DR. E. HOPKINSON	133
Notes	139
Correspondence	141

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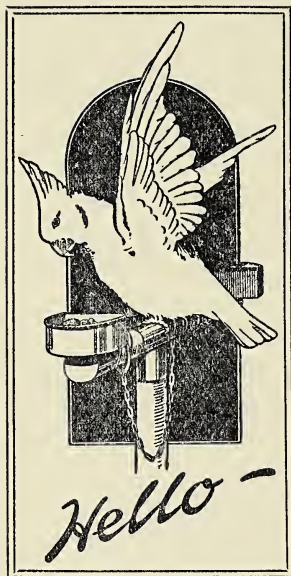
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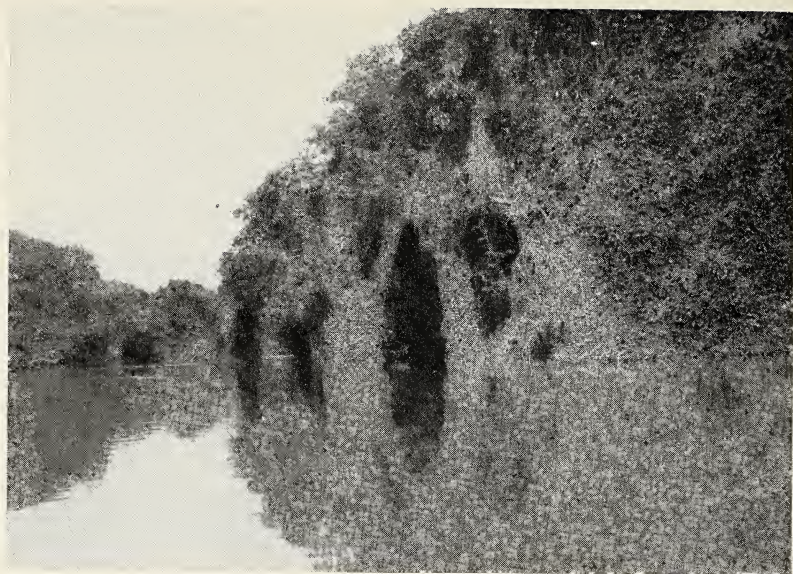
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APRIL, 1939.

A COLLECTOR IN THE GOLD COAST COLONY

By C. S. WEBB

At the beginning of 1937 I visited the Gold Coast with the idea of collecting some of the gems of the bird life of the forest and savannah regions. As in the Cameroons the country is divided into three natural zones—forest, savannah or park-like country, and semi-arid. Unfortunately the latter is rather too far from a railhead for collecting live specimens without entailing tremendous expense and trouble in transportation, so, much to my regret, I was unable to include this in the itinerary. On arrival at the port of Takoradi one is impressed by the entire absence of hotels—a state of affairs that applies to the whole of the Gold Coast. In many cases, however, permission can be obtained to stay at the Government Rest House, which is very pleasantly situated at Seccondee.

My niece accompanied me on this trip, and we both thoroughly enjoyed our brief stay at Seccondee thanks to the hospitality of the local District Commissioner and other Government officials. As our destination was Ashanti we only remained on the coast sufficiently long to make certain arrangements, purchase stores, and select suitable servants for the interior. The trains provide no catering arrangements, neither do the stations en route, and so the journey to Kumasi, which takes all day, would be extremely

unpleasant if one did not discover the "joke" beforehand, and lay in sufficient supplies for the trip.

This journey through forest, resembling somewhat that of the Cameroon, is very hot and uncomfortable and after a while becomes rather monotonous. In an endeavour to keep cool I travelled with the electric fan switched full on and as a result spent two days in Kumasi Hospital suffering from muscular rheumatism. This was not as boring as it might have been for I was able to get an occasional glimpse of the local bird life, and was highly amused one day at a little comedy acted by a party of Pied Crows (*Corvus albus*). They had gathered together in the shade of a small tree, when there was a sudden commotion and I noticed that they had "treed" a large lizard. Two of the Crows were chasing it among the branches and the rest had spaced themselves evenly on the ground below watching the proceedings intently, knowing full well that sooner or later the lizard would have to jump for its life. They frequently changed position according to the movements of the prey overhead and after several minutes of this comic procedure the lizard was "cornered" and was compelled to jump. There was an immediate scrimmage of Crows on the ground and one emerged with the lizard in its beak and flew off, with the others in hot pursuit.

From Kumasi we went about 35 miles north by road to the outskirts of Mampong—a native town in the forest. Actually most of the virgin forest in Ashanti has disappeared owing to the extensive growing of cocoa by the natives. It happened that just prior to our visit the price of cocoa rose so suddenly that the natives were getting far more money than their limited requirements necessitated, which made them very independent and unhelpful.

As in all cocoa-growing countries the climate is very hot and humid, and any physical exertion in the Gold Coast forest, such as scrambling through undergrowth or climbing trees, is sufficient to bring forth streams of perspiration and quickly makes one feel quite exhausted. Changing into something dry was my chief form of recreation, but it only meant a few minutes' comfort.

Our first captures were some Grey-headed Negro-finches (*Nigrita canicapilla*); an Allied Hornbill (*Lophoceros semifasciatus*); a Black-and-white Casqued Hornbill (*Bycanistes subcylindricus*)—a large quaint-looking species which has only quite recently been

located as far west as the Gold Coast; and some Red-headed Parrots (*Poicephalus gularis fantiensis*)—a subspecies which is rare in captivity. But trapping was exceedingly difficult and bird life comparatively scarce.

My chief interest here, as in Cameroon, was new species of Sunbirds, but at that season (February) they were feeding almost exclusively on the flowers of Bombax trees. These trees grow to a great height and there are usually no branches within 50 feet of the ground, also the trunk and branches are covered with hard thorny spikes, so that it needs a great deal of enthusiasm, in such an enervating climate, to make an attempt to reach the top. In a previous article I described the capture of a Buff-throated Sunbird (*Chalcomitra adelberti*) in a Bombax tree, and in a similar way I managed to get a specimen of the exquisitely coloured Superb Sunbird (*Cinnyris superbus*).

In the same district we were also successful in getting a pair of the quaint-looking White-crested Hornbills (*Tropicranus albocristatus*)—birds unlike any other Hornbills with their white crests looking like bonnets, and their very long graduated tail-feathers. They appear to be more insectivorous than any other species inhabiting the forest.

Owls were not uncommon and a pair of Fraser's Eagle-Owls (*Bubo pennis*) was obtained. These fascinating birds with their lovely large brown eyes and their soft barred plumage are very handsome and become very tame, making charming, intelligent pets. Equally beautiful, though small by comparison, was a pair of W. African Wood Owls (*Strix woodfordii nuchalis*), with large black eyes and reddish-brown plumage, spotted with white. An Owl could often be located in the day-time when it was roosting, if it had been seen by an inquisitive Bulbul (*Pycnonotus*), for the latter would set up a chattering alarm note which would quickly bring more Bulebuls on the scene. As the chattering increased other birds, especially Sunbirds, would arrive to see the cause of the commotion. Eventually the Owl would resent all this unwanted attention and fly off seeking a quieter spot, but usually followed by Bulebuls, so if the Owl only flew a short distance the "mobbing" would start afresh.

In Ashanti the Twi natives have a legend concerning this unfriendly relationship between Bulebuls and Owls, and the native

name for both is the same except that a suffix is added for that of the Bulbul. The legend runs: "In early times there was a Bulbul who, being a hard-working fellow and careful with his money, accumulated more wealth than he could conveniently manage, so he looked round to find someone capable of looking after his hard-earned savings. His choice fell on an Owl, who was not only wise but was also big and strong. The Owl agreed to take care of the money, but some time later when the Bulbul required some of it, the Owl made the excuse that he had none with him because he had hidden it away. Again and again the Bulbul tried to get his money, but each time the Owl made fresh excuses and finally admitted that he had squandered it all. This so incensed the Bulbul that he told all his friends, who gathered together and mobbed the Owl furiously. So, from that day Owls have always been afraid to come out in daylight, or if any dare do so they are immediately chased by Bultbuls, who have never forgotten or forgiven a gross injustice to one of their forefathers."

Hawks were quite plentiful at Mampong and perhaps the most conspicuous was the African Harrier (*Gymnogenys typicus*). These long-legged Hawks, with bare yellow skin on the face, were often seen clinging to clumps of parasitic plants on the high trees, apparently searching for food—perhaps young birds or small arboreal mammals. They are also fond of palm-nuts, i.e. the outer oily husk, which seems an extraordinary diet for a Hawk. Another peculiarity is their flexibly jointed legs which bend partly backwards as well as forwards. I obtained a fine specimen which was fed for a while on palm-nuts and flesh and then on the latter only. It appeared to be perfectly healthy on a carnivorous diet, but there is no doubt about their fondness for palm-nuts when at large, for these Harriers are only found in districts where palm-nuts flourish. This, of course, only applies to the forest race (*G. t. pectoralis*).

A rather rare Hawk which I obtained was the African Little Sparrow-Hawk (*Accipiter minullus zenkeri*). This, as its name implies, is very diminutive, but is nevertheless very handsome with black head, slaty black upper parts, whitish breast, and chestnut flanks. Like all Sparrow-Hawks these birds are exceedingly quick, have incredibly sharp claws, and are adept at catching birds. Sparrow-Hawks and Goshawks frequently got caught in my nets when

darting through some gap in the trees, but quite as often they were caught through swooping at a bird that had already become entangled in a net. They are so keen-sighted that they are nearly sure to detect the struggling of a captive bird unless it is released almost at once. Few aviculturists nowadays are interested in the smaller hawks, but apart from this I dislike catching them as they invariably badly damage the nets with their powerful legs and claws, which necessitates hours of tedious labour repairing them. It is also a tricky business trying to disentangle a Sparrow-Hawk from a net, and to avoid a painful experience it is essential to catch the culprit by the legs (avoiding the claws) and to retain hold of them all the while.

Squirrels are very common in the Gold Coast, especially the White-spotted (*Funisciurus leucostigma*) and Gambian Tree Squirrel (*Heliosciurus gambianus*). The latter must take a heavy toll of young bird life and eggs, judging by the behaviour of a pair that I had in captivity. These were hand-reared by my niece and caused us constant amusement by their playful antics. Although given complete freedom they never ventured far away and always turned up when we were having our meals and when it was time to sleep. Their one drawback was that they could not be trusted with birds, and I had two birds killed before realizing that they were very carnivorous by nature. In fact Gambian Tree Squirrels are very much like mongooses in habits and appearance, the tail being rather thin and straight and never arched in the typical squirrel fashion. In diet they are practically omnivorous and are especially fond of eating the brains out of a dead bird. After I reached England one climbed up to a Sparrow's nest and, although it was attacked viciously by the cock Sparrow, it took out the eggs one by one and ate them.

When one thinks of the abundance of these squirrels in the Gold Coast forest it makes one wonder how the smaller birds survive. Only those species with protective nesting habits such as Tinker-birds and Barbets, etc., which nest in small holes in trees, or species large enough to protect their eggs and young can be immune from the depredations of these creatures.

I noticed that the western form of Grey-headed Negro-Finch (*Nigrita canicapilla emiliae*) had quite different call-notes from those of the race found in the Cameroon (*N. c. canicapilla*). It must be

very unusual for two races of the same species only separated by a short distance to have completely different call-notes.

Finches and Waxbills were not much in evidence in the Gold Coast forest and one missed the Black-capped Waxbills (*Estrilda nonnula* and *E. atricapilla*) of the Cameroon forest. The most interesting seed-eaters at Mampong were the western race of the Blue-billed Weaver-Finch (*Spermophaga hæmatina hæmatina*) and the Green Twin-spot Waxbill (*Mandingoa nitidula schlegeli*). The former was by no means common and the latter very rare. Another rare but beautiful seed-eater was the Crimson Seedcracker (*Pirenestes ostrinus*). This glossy crimson and black bird I found to be one of the most elusive of the West Coast birds. In Cameroon after weeks of hunting in the most suitable localities—overgrown boggy places in the more open parts of the forest—I only captured one pair, and in the Gold Coast I was even less fortunate, for I only got one specimen. It is strange that it is so rare compared with the other thick-billed Finch—the Blue-billed Weaver-Finch—which is somewhat similar in habits and appearance. About 50 miles north of Kumasi the forest gives way to savannah country which becomes drier and drier as one proceeds northwards, and then the semi-arid belt with its stunted thorn-bush growth is reached. It might be imagined that any tropical forest would be a paradise for birds, but it is the drier regions where they are far more plentiful. To be sure of seeing an abundance of bird life, both in variety and numbers, it is only necessary to visit some stream or river, with its usual fringing luxurious vegetation, running through some dry region.

In seeking such a spot I went northwards from Mampong through the savannah country, and found that, being the end of the dry season, the usual annual fires had swept the country leaving it quite barren. The charred leafless trees, and the ground covered with the ashes of burnt grass and shrubs, presented a picture of complete desolation. There were hundreds of square miles of this eyesore and one wondered what could have happened to all the bird life. On reaching the River Pru, about 120 miles north of Kumasi, a veritable oasis came into view. The trees and bushes bordering the water being of a totally different kind—mainly evergreens—and not being interspersed with dried grasses, had entirely escaped the fire. This offered a natural sanctuary

to all the birds of the surrounding countryside and I have never gazed on such an animated scene. Thousands of Weaver-birds were twittering in the trees and large flocks of them were bathing in shallow water. Mixed up with these were Whydahs, Orange-cheeked Waxbills, Bar-breasted Firefinches, and Cordon-bleus in great numbers, and other birds such as Spectacled and Fairy Flycatchers, Coppery and Beautiful Sunbirds, many species of Kingfishers, etc., were plentiful. The natural beauty of the river combined with such a dazzling display of bird life in the bright tropical sunlight presented a picture almost impossible to describe.

This appeared to be the ideal place for collecting although I was well aware that living in proximity to the river would have serious drawbacks, such as exposing oneself to the attacks of the dreaded tsetse flies and mosquitos. The natives themselves prefer to make their villages as much as two miles or more from a river and carry all their water this distance rather than tolerate the blood-sucking tsetse flies—carriers of sleeping sickness.

The only available place that we could occupy was the Government Rest House at Prang—some two miles from the river—so, having obtained the necessary permission, we made the long tiring journey from Mampong by night with all our birds a fortnight later.

Our first project was to get some quarters built near the river, for we had decided to risk the dangers of dwelling where insect pests were most numerous. To offset this we were able to enjoy the beautiful river scenery and to be right among the bird life and so save constant journeyings to and fro, which in the heat of the Gold Coast was in itself a big consideration.

Fortunately the native chief of the district was very friendly and helpful, and having learnt our requirements he immediately ordered about a hundred natives to commence building sufficient grass huts to house us, our servants, and the birds. With two natives beating tom-toms furiously to spur the others on, the huts sprang up like mushrooms. Every native had an appointed task and while huts were being erected some natives were cutting grass, others poles, and a few making string from the inner bark of trees for binding the thatch, and some of the old men, well experienced at the job, were making grass mats for walls. Thus in two days everything was completed.

Soon after my first journey through the savannah country the first heavy rain of the season fell and the charred stumps of trees soon burst into a wonderful green, and from the ash-covered soil a profusion of plants sprang up in an incredibly short space of time. It was as if the whole countryside had been suddenly thrust from winter into spring. Although all this was very pleasing to the eye it only meant extra work for me, as many of the birds left the riverside foliage and returned to their savannah haunts. If I had come to the district a few weeks earlier it would have saved me miles of trudging, especially when trapping Sunbirds. There were some lovely species here not found in the forest zone, such as the Coppery (*Cinnyris cupreus*), the Splendid (*C. coccinigaster*), the Beautiful (*Nectarinia pulchella*), and the Senegal Scarlet-breasted Sunbird (*Chalcomitra senegalensis*)—all exquisite birds with metallic plumage. Specimens of all these were obtained, but the Splendid Sunbirds, which rival in beauty the Superb Sunbird of the forest, were by far the hardest to trap. They were rather uncommon and showed a preference for feeding on the flowers of the highest savannah trees rather than on the flowering shrubs of the riverside. I have always regarded Sunbirds as the quickest of all birds in detecting anything in the nature of traps, nets, or bird-lime, and these Splendid Sunbirds were certainly no exception. They were so elusive that after many weeks of tree-climbing I only managed to get three specimens.

The Coppery Sunbirds, which look like miniature Tacazzi Sunbirds, were very plentiful and to see a lot together on a flowering tree was a wonderful sight.

Beautiful Sunbirds were common for a while, but after the first few heavy rains they all disappeared—returning northwards to their real home—the semi-arid belt. This species is found right across Africa in the zone immediately below the desert. As with the Malachite Sunbird the male has elongated central tail feathers and has an eclipse-plumage. The Green-headed Sunbird (*Cinnyris verticalis*), which is also found in the forest, prefers to remain in thick vegetation and in the savannah country is only found along the edges of rivers and streams where there is plenty of cover.

A Sunbird with entirely different habits to any of the foregoing is the Violet-backed Sunbird (*Anthreptes longuemarei*). I rarely

ever saw this species feeding on flowers, and the specimens that I captured were in company with Glossy Starlings, Amethyst Starlings, Golden Orioles, and other fruit-eating birds, usually in a wild fig tree. They live mainly on fruit and insects and occasionally nectar, consequently the usual liquid food given to Sunbirds in captivity does not suffice. It is better to treat them as one would Sugarbirds or Fruitsuckers.

To facilitate the trapping of the birds in the riverside foliage, I hired a native canoe which enabled me to set nets in the overhanging creepers and branches. Many of these creepers formed natural archways through which Malachite, Pigmy, and Shining Blue Kingfishers could be seen darting to and fro, making a most delightful scene.

The peacefulness and beauty of this river with its lovely reflections and varied bird life never ceased to make me glad that I was miles from civilization.

The Pigmy Kingfisher (*Ispidina picta*), although found sometimes along streams, is really an insectivorous bird and is met with in any type of vegetation, often miles from water, whereas the Malachite Kingfisher (*Alcedo cristata*) and the Shining Blue Kingfisher (*Alcedo quadribrachys*) are both fish-eaters. Adult insect-eating Kingfishers such as the Pigmy and the Forest Kingfisher (*Halcyon senegalensis fuscopileata*) may with patience be taught to eat artificial food, but the fish-eaters, unless taken as nestlings, are almost impossible to establish. Being particularly keen on getting some of the latter, especially that gem of a bird the Shining Blue Kingfisher, I searched the banks of the river in my canoe for likely nesting holes, and was lucky to find one frequented by a pair of these birds. Unfortunately the breeding season only commenced just prior to our departure so I was compelled to make a chance excavation in the hope of finding young. With the aid of a cutlass the end of the tunnel was soon reached, so I proceeded to scoop out the earth from the nesting chamber with my hands. At this stage I got a nasty shock for I found that it was occupied by a large snake which turned out to be a Black and Yellow Cobra—a very venomous species.

It is quite probable that this unwelcome intruder had devoured the rightful occupants, but as a slight compensation for this I captured the snake alive and added it to the general collection.

In the excitement of this little episode I failed to notice that my canoe was drifting down-stream, so I had the pleasant task of swimming after it fully dressed. The heat was so terrific that I frequently swam the river with all my clothes on in preference to using the canoe, merely so that my wet clothes would create a cool layer of air round my body and thus provide temporary relief from the roasting sunshine.

The riverside vegetation sometimes referred to as gallery forest contained some interesting Robin-Chats (*Cossypha albicapilla* and *C. niveicapilla*) and a very curious bird known as the Oriole Babbler (*Hypergerus atriceps*). The English name of the latter is not a very fitting one for, except that the Oriole Babbler has yellow and green in its plumage, it has little resemblance to any Oriole and is even less like a typical Babbler. It is not gregarious and therefore does not indulge in community babbling, but it has a variety of calls, the usual one being a whistle up and down the scale uttered in a quick lively manner. Others reminded me very much of the notes of certain Bush-Shrikes. The markings are rather unusual, for the head is black, with each feather laced with silver, while the upper parts are olive green and the under parts yellow, with a black breast-band.

One day while trying to capture one of these rare birds I caught five Weaver-birds (*Ploceus cucullatus*) that had flown into one of my nets set in a creeper overhanging the water. Not requiring anything so common I released them one by one while standing in the canoe, but the last one, in its eagerness to escape, dashed down a bit too low, struck the water, and started flapping its wings rapidly in an endeavour to reach the shore. A second later there was a big splash but no sign of the Weaver-bird—a large fish had taken it. I thought then that this would indeed be a paradise for some of our English anglers who often sit for hours waiting patiently for something to happen.

Every afternoon in February a large flock of Carmine Bee-eaters (*Merops nubicus*) arrived in the vicinity of the river and remained there for several hours performing aerial acrobatics while catching flying insects, but often they swooped down at the water, just touching it with their bills presumably to catch flies, as I have never known Bee-eaters to drink. They certainly do not in captivity. I have rarely seen any birds more attractive either in colour or

flight than Carmine Bee-eaters. They are clothed in a garment of pale blue and red on the back, with a rosy red breast and blue and black head. They are also among the largest of the family and have the central tail feathers about 7 inches long. Like all Bee-eaters, their short legs and long pointed wings make them well adapted for flight. In the dry season when grass fires are sweeping the country these birds are attracted long distances by the sight of the rising smoke, for they know that where there's a fire there's a feast. As the flames advance they hover close by, swooping on the flying insects—mainly grasshoppers—as these are driven from cover and safety by the heat. Having captured a tit-bit they usually make for somewhere to perch so that they can bang it hard with a sideways swing of the bill to ensure killing it. This habit is continued in captivity even with artificial food, and they rarely eat a piece of meat without “killing” it first on the perch.

Bee-eaters and Kingfishers and, I suppose, all other birds that tunnel into banks, run equally well backwards or forwards—a trait brought about no doubt by necessity. One of the greatest problems in the Northern Territory was getting a fresh daily supply of flesh for my Hawks, Owls, and Kingfishers. In Prang the natives only killed a beast once or twice a week for local consumption, and in that climate meat would not remain fresh for 24 hours, so in between times I had to purchase the skinny native fowls at 1s. 6d. or 2s. each. It took several of these bony creatures to satisfy our carnivorous birds for one day, and as often as not, even fowls were not procurable. On many occasions my house-boy spent hours cycling round to native villages trying to purchase domestic pigeons for bird food. When his efforts were unsuccessful I had to get busy quickly trying to catch common birds such as Weavers and Doves with my nets. Even the feeding of our insectivorous birds was a bit of a worry for, although we had plenty of dried flies, ants' eggs, and biscuit meal, it was very difficult getting a constant supply of eggs, the latter when hard-boiled being, of course, a very necessary ingredient. As there were no Europeans living in the district there was no demand for new-laid eggs, and those that were brought to the local market were usually from outlying villages where they might have been accumulating for any period up to a month before being deemed

sufficient to merit the long journey to market to sell them. On an average nine eggs out of every dozen were rotten and this even applied to the eggs presented to us by the local chief. For our fruit-eating birds, bananas had to be brought from the forest zone about 100 miles away.

In spite of these and many other difficulties we got together a fine collection, including Tinker-birds, Barbets, Robin-Chats, Golden Orioles, Sunbirds, Starlings, Flycatchers, Oriole-Babblers, Kingfishers, Eagle-Owls, Owlets, Hawks, Touracos, etc., and a number of small mammals. In the Northern Territory I had to do all my own trapping and as the collection grew and grew our duties became more and more strenuous. Weakened by a recurrence of a very bad dose of malaria that I had at Mampong in the forest zone, I felt that I had reached the limit of endurance when the time came for us to leave on the 120 mile journey to Kumasi. My niece, who had withstood the effects of roughing it in a hot humid enervating climate with bad food and too much hard work, had the misfortune to develop an attack of malaria on the day that we were leaving for the railhead. She had to travel all night on a lorry with a temperature of 104° over terribly bumpy roads. During this nightmare we encountered a very bad storm which blew a large tree down across the road, and it took twenty natives with cutlasses, working in the light of our head-lamps, nearly an hour to clear away the trunk and masses of branches.

After one day's respite at Kumasi we caught the train to the coast and my niece had to be carried to the train from the hospital. We soon forgot all the hardships and rejoiced to think that we were able to introduce quite a number of new species to England. We look back on the Gold Coast as being a wonderful country for birds, but definitely not one in which to take liberties with one's health.

DESMAREST'S DWARF PARROT

(Cyclopsittacus desmaresti)

By the MARQUESS OF TAVISTOCK

A few brief further notes on this species new to aviculture may be of interest.

As previously recorded, the four birds imported last year did well for a time but, as the summer went on, showed signs of failing health. One died and proved to be badly infested with tapeworms of a tropical genus, which must have been present in the Parrots on arrival.

The three survivors were caged and given medicine, and after a time they began to improve considerably in appetite and plumage, and were then returned to the aviary. While indoors they began, for the first time, to eat seed—mainly hemp, sunflower, and spray millet—in addition to their former diet of fruit and a little bread and milk.

During the early part of the winter the worst specimen of the three was again noticed to be infested with worms, and had to be taken in for a second course of treatment which, we hope, has been successful. It is now once more with its companions in the aviary. Given a decent start, which mine have not had owing to the wretched parasites already mentioned, there seems little doubt that Dwarf Parrots would prove by no means difficult to keep.

They are clearly not delicate as regards temperature for, except during periods of *very* severe and snowy weather, my birds spend most of their time in the open flight. Even the rough-plumaged specimen that had to be brought in a second time, has taken no harm through being returned to the aviary in mid-winter, after being kept for some weeks in a birdroom at a temperature of about 75°.

As I have already recorded, this *Cyclopsittacus*, though a small Parrot in appearance, is in its voice and all its movements and manners, a Lorikeet. The flight, in an aviary, is like that of Lorikeets, rather heavy and clumsy, but it is possible that at liberty a considerable degree of speed may be attained.

The three birds are good friends, and the pair (?) seemed pleased to see their third companion on its return, and made no attempt to attack it. It has, however, happened that Desmarests

have attacked and killed in a travelling-box one of their number which got itself wedged in a hole in a partition. The claws and beaks of my birds occasionally require cutting, but this abnormal growth may be partly due to disturbances in health consequent on parasitic infection.

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THE EARLY YEARS OF THE AVICULTURAL SOCIETY (III)

By DAVID SETH-SMITH

(Continued from page 41.)

A new series commenced with the volume for 1903, which contained no less than twelve coloured plates, one by Astley and all the others, hand-coloured lithographs, by Grönvold and Goodchild, and of excellent quality. The first depicts the family of Blue Wrens (*Malurus cyanens*) in the aviary of Reginald Phillipps, who continues his exhaustive account of the breeding of the species to which I referred in my previous article.

Astley writes on the Hooded Siskin (*Chrysomitris cucullata*) of which he contributes a nice coloured plate. He discovered at Santa Cruz birds which were termed "Mista Canaria", which he found were hybrids between the cock of this species and the hen wild Canary. The Hooded Siskin, with its brilliant orange dress, inhabits Central America and is now, as then, a rare and much sought after cage bird, especially desirable for hybridization with the Canary.

Bonhote contributes a series of articles on the birds of the Bahama Islands which he had visited, and publishes a good photograph of an Osprey which he reared from the nest and brought home.

Mrs. Johnstone supplies a very interesting account of the nesting of the Satin Bower Bird in her Suffolk aviaries. Five of these birds, all in the green plumage, were kept in a large aviary and, in the spring, a typical bower was constructed amongst some rhododendron bushes. "All five birds assembled here, and the curious rolling trilling song of the cocks was continually heard, and their love dances watched with much interest by the hens which never helped in the building of the bower or of the decoration thereof." The two interesting points here are: (1) the fact that all five birds agreed, and (2) that young cocks still in their green plumage constructed the bower.

Then a nest, formed of loose twigs and resembling that of a Crow, was built in a rhododendron bush about 36 feet away from the bower, and only visited by the pair of birds to which it belonged. The cock bird kept guard on the nest and attacked any other bird that might approach, but he did not feed the hen when on the nest. He was thought to be the oldest of the party, but was still in green plumage though the back of his neck was pencilled with purple. Two young were hatched after an incubation period of three weeks, during which they were fed by the hen upon mealworms, gentles, and cockroaches, the latter being first favourites. Snails were never touched, and earthworms only occasionally, while the soft food that was the staple diet of the old birds was completely ignored as food for the young. The young birds left the nest at four weeks, when they looked very much like young Thrushes with violet-coloured eyes. They were fed all day by their devoted mother, but she was unable to supply their growing needs in the way of live insect food. The great mistake had been in leaving other insect-eating birds in the same aviary which took a great deal of the food needed by the young ones. So both died, and thus complete success was not achieved.

W. H. St. Quintin contributes an interesting note on Tragopans in captivity. It is now well known that these birds always make their nests, or take possession of those of some other bird, at some considerable height from the ground. St. Quintin writes: "In the last three seasons I have had six clutches of eggs laid by four different individual Tragopans, (two Cabots and two Temminck's). In each case the eggs were laid in a Pigeon's nest, or on a platform resembling one, from eight feet to fourteen feet from the ground. Each of these clutches contained only two eggs." He also points out the high state of development of the chick at hatching.

A note in this volume records the fact that among the more noticeable additions to the Zoological Society's collection during 1900 was a female Lyre Bird (*Menura superba*) of which no specimen had been exhibited since 1876. I can remember that bird quite well in the Western Aviary, which *was* an aviary in those days. I cannot find the record of its death, but am under the impression that it lived for three or four years and upon dissection proved to be a young male! No specimen has reached this country since.

We turn the pages to a beautiful plate by Goodchild of the Blue-breasted Waxbill (*Estrilda angolensis*), which is dealt with by Reginald

Phillipps, while the next two plates, which are by Grönvold, and of superb quality, depict the West African or Black-necked Crowned Crane (*Balearica pavonina*), of which Mrs. Gregory writes an interesting story. Then comes a coloured plate of the Blue-bearded Jay (*Cyanocorax cyanopogon*) with an article by A. G. Butler followed by one of the Black-headed Sibia with an accompanying article by Phillipps.

St. Quintin supplies a valuable article on Waders, which he considered "the most charming of pets". His Waders' aviary was 73 feet long and 31 feet wide, with a lean-to shed at the north end, and a pond with a stream running through it near the opposite end, about 21 feet by 10 feet. Yews and hollies, kept low, afforded shelter on the east, and it was found necessary to board up the sides to a height of eighteen inches to provide additional shelter and prevent the occupants, when newcomers, "from fretting up and down against the wire netting." He found that the majority of species, especially if full-winged, were quite indifferent to any frost, even in East Yorkshire. During the summer certain birds other than the Waders were also kept in the aviary, the most attractive being some half-dozen Pratincoles which "charmed everybody by their agile flight and lively movements, running along the gravel, chasing flies which visited the food dishes, or hovering like Terns before the door if they thought I had some mealworms".

St. Quintin was a most experienced aviculturist, and so his recipe for the food of Waders is worth taking note of. He writes: "My Waders scarcely ever see a mealworm, but they manage to capture a good many insects which find their way into the aviary, especially in spring and summer. Twice a day a flat dish is put in, containing Spratts Poultry Meal and crissel, scalded and mixed with a little insect food (dried corixae and ants' cocoons, I believe), and made into a crumbly mass with ground oats. Another dish contains some finely chopped sheep's heart, liver, or rabbit, but the former is the best."

It was in November, 1902, that the Varied Lorikeet (*Ptilosclera versicolor*) was introduced into this country for the first time, and it is the subject of an excellent coloured plate by Goodchild in the July (1903) number, to which Reginald Phillipps contributes an article. A very beautiful coloured plate of *Turnix tanki*, the Greater Bustard Quail of India, brings back memories of some of the most interesting birds I ever possessed. These are not really Quails at all, but belong

to the group known as Hemipodes in which the female is considerably larger and more brilliantly coloured than the male and, when nesting time comes round, does all the courting. I was able to watch the display of the hen-bird and to note the way she presented food to the cock and produced her booming call-note ; and was able to describe the incubation of the three eggs by the cock in the incredibly short space of twelve days, after which he led his brood from the nest like a barn-door hen, while their mother not only took no interest in them, but wandered off and continued to call for another mate.

One is apt to hear the remark that the seasons are changing for the worse, but one cannot imagine a worse breeding season than that of 1903. It was particularly bad in the southern and eastern half of England when, as Meade-Waldo tells us, "the almost unprecedented deluge continued almost without intermission from the 9th to the 21st of June." For forty-eight hours the maximum temperature was 48° and the minimum 28° F., with a rainfall of 1·23 inches. This practically annihilated the nests and eggs of many birds. Tits in nest-boxes were starved and perished from the cold, as did Wrynecks, Nuthatches, and even Jackdaws and Stockdoves. Young Barn Owls starved, owing to their parents being unable to hunt for food in the continuous rain, while House Martins lost all their nests. In an aviary a Chinese Painted Quail was drowned on her nest, and a couple of young Pintailed Sand Grouse a fortnight old perished.

The late A. J. Campbell, of Melbourne, well-known as the author of that extremely useful book, *Nests and Eggs of Australian Birds*, contributed a delightful article on Honey-Eaters in which he describes the aviaries of his friends, Mr. and Mrs. Horne, and their niece, Miss Bowie. I had the pleasure of visiting these charming people, with Mr. Campbell, at a later date, and was delighted by the tameness of the numerous Australian birds in their aviary in a Melbourne garden. There were few aviculturists in Australia then, but there are many now.

This volume, of which we were all very proud at the time, ends with an account by St. Quintin of his success in breeding Ruffs and Reeves for the first time in confinement in this country.

(To be continued)

* * *

BREEDING EXPERIMENTS WITH THE RED-FACED LOVEBIRD IN 1938

(*Agapornis pullaria*)

By HELMUT HAMPE

My breeding experiments with *Agapornis pullaria*, about which I wrote in the AVICULTURAL MAGAZINE, 1937, page 148, and 1938, page 58, were continued in 1938. On 6th February, after successfully wintering in an unheated room, the old female was placed with her new mate in her old garden aviary. There I saw the female, for the first time, on 27th March, again at the entrance to the hole in the clay wall, and a month later she began to peck at the hole. On 16th June, however, she began to make a new hole about 10 cm. away from the old one. When, on the next day, I closed up the old entrance hole with a thin layer of mud, and removed the existing perch from the new hole, the hen took up with the old hole again and worked so diligently that by July last she could reach the already existing nest-hole. In the preceding year she had taken over this hole, made by the female which had died on 1st February, 1937, without further ado and without pecking much at it. This year, however, she was not satisfied until after I had closed the hole with mud, and had thus given her opportunity of satisfying her building impulse.

In 1939, therefore, I will close up the hole from the beginning, and think that the female will then soon begin with the work of pecking it out. That the true nest-hole already exists evidently does not worry her, for in freedom when the birds have pecked through the side of an anthill they will probably also find more or less ready-made holes which they can use for laying their eggs. The birds are satisfied when they have only made the entrance hole.

From 15th July the female slept at nights in the hole, and on 28th July there were five eggs in it, of which one measured 21×16 , and three 20×16.5 mm. On this occasion also the bottom of the hole was thinly covered with pieces of willow leaves, which the female had brought in in all parts of her small feathers.

On 15th and 16th August, a young one, which was covered with whitish down, hatched out. It died, however, a day later. The remaining eggs, which this time were all fertilized, came to nothing.

At the end of August the female concerned herself more often with the hole and at the beginning of September also several pairings took place. But soon after the commencement of the moult, the mating instinct came to an end.

So nothing remains but to postpone once more the hope of a complete breeding result. So far as I am concerned, in 1938 at least, I have gone a step farther in the fact that for the first time in years of experiments a young one was produced. Eventually perhaps success will be achieved.

[This is an extremely interesting experience as the Red-faced Lovebird, although known to aviculturists for a very long time, has apparently never yet reared young in captivity though there are a few records of eggs having been laid. Its nesting habits have always been rather a mystery.—ED.]

* * *

THE RING-NECKED PARRAKEET

(*Psittacula manillensis*)

By GODFREY DAVIS

The garden from which I write is in Larkana, in Upper Sind, and it is full of trees. Some of these trees are old and have holes in the trunks and branches and already pairs of Ring-necked Parrakeets can be seen clinging to the outside bark and discussing nesting sites. The garden seems full of Parrakeets, and at almost any time of the day their voices can be heard in some part of the garden; either they are flying swiftly and calling as they fly, or they sit in the shade among the leaves, chattering to or among themselves.

Though very common in India and a curse to the cultivator, whose crops they constantly despoil, they are very lovely birds, particularly in the early morning before the light is too harsh and bright and the soft velvety smoothness of their plumage shows at its best. Now at the end of January it is cold in the mornings, and from 8 to 9 o'clock the Parrakeets sun themselves, perching upon the dead branches of trees or upon any branch which stands out exposed to the light. One can stand beneath the branches and look up and see the bright beady eye, the shining red upper mandible, so like a ripe red chilli, one of their favourite foods, and the lovely pink and black ring round the neck of the male and the

long and elegant tail, and the feathers upon the head and breast, as smooth as a dove. And one sees them as one rides in the morning along the dusty country roads, if roads these sandy cart tracks can be called, feeding upon grain which has fallen from the laden carts, paddy or rice in the husk, and in its season, corn. As the birds fly up at one's approach, one sees the full beauty of the male, the lovely green, the swift flight, the long and slender tail.

And when taken young from the nest they make most charming pets. In this part of India young are generally available in March, though in South India they nest earlier, in January or February, and basketsful of half-fledged young can be seen in the bird market in Bombay. One rupee would be a very good price for a fledgeling Ring-necked, and eight annas more for a fledgeling Alexandrine, the so called "Hill-Parrot" of the Indians, because it comes from the hilly country in the west and central India, with the distinguishing red mark upon the wing. Both the Ring-necked and Alexandrine are the easiest things to rear upon a simple paste of parched gram flour mixed with water to the consistency of putty. If little bits of this be broken off, rolled into a pellet between finger and thumb, and then put into the fledgeling's beak, the young of both Ringnecks and Alexandrines will thrive upon this simple diet. And when I read in the AVICULTURAL MAGAZINE of young Australian Parrakeets being fed upon a chewed-up mixture of brown bread and apple (and is there raw egg too?), I wonder whether a plain diet of parched or toasted gram flour and water would not do. But fledgeling Malabar Parrakeets will not thrive on this. I once lost two out of three on this diet, though the third I saved and it grew into a lovely bird, on a simple diet on which Dr. Amsler fed with such success his Blue Mountain Lorikeets, ground rice, milk, and honey sugar, made as rice mould is made for the table, and about which he once wrote in the Magazine years ago. Though it may be necessary to keep Ring-necks in large aviaries if they are to breed, they do keep in beautiful condition in comparatively small wire cages. For instance, only the other day upon a station platform, I saw a cock Ring-neck in lovely plumage and very tame and friendly in a strong wire cage with rounded top, not more than a foot in diameter and eighteen inches high, at least that is what I judged it without measurement. But it was not one of the small dome-shaped cages made of hoop iron with a sheet-iron floor,

which one sees, alas, so often hanging in the bazaars, but a cage of strong galvanized wire with a clip-on bottom, after the style of the Chinese bird cage. Probably also the owner let the bird out of its cage, as tame Parrakeets commonly are.

When the young fledgeling can feed itself it is still fed largely on gram, but the gram is not roasted or parched as when it is to be made into flour. The gram, which is a sort of pea, is soaked overnight in water, and fed in the morning to the birds ; they are also often given fresh fruit, guava, and mango in season, ripe red chillies and green vegetables, such as Wali-sang, a sort of country scarlet runner, and indeed the wild flocks play havoc in the vegetable gardens and orchards. Particularly do the birds love the half-ripe mangoes when they are of the consistency of an apple three-quarters ripe. I have often thought how hard it is for Parrots to be fed largely on hard seed, seeing how small a part hard seeds must fill in the dietary of a wild Parrot throughout the year. When no cultivated crops or fruits are available the Ring-neck feeds upon wild fruits or seeds, the wild fig or the seeds within the husks of the tali tree. They are purely vegetarians and fresh vegetarians at that, for choice, and they also drink something stronger than water when they can get it. They join the noisy throng of Mynas and Rosy Pastors and Bulbuls and Sunbirds on the silk cotton trees when in February the lovely scarlet flowers appear and offer free drinks of nectar to the birds. In captivity, or perhaps I should say domestication (because the Ring-neck is essentially a pet and should be made much of and not kept, a mere captive, in a cage), the Ring-neck when hand-reared, as he should be, is both affectionate and talkative, and a good listener, too ; too affectionate sometimes, when he not only postures, as he does to his wild mate on a branch of a tree, but regurgitates his food. Above all, he is a bird that can be kept with a good conscience, for while ever so much good can be said of him when he is tame, ever so much bad can be said of him when he is wild, and it is a pity that an ordered and supervised transport cannot make him more easily available to bird lovers at home. I shall miss him when I retire, though I like to think I shall be able to keep and breed a pair in an orchard in England ; and Mynas and Doves and Bulbuls and Grey Partridges, and lots of other birds. How rarely do dreams come true.

HYBRID HERONS IN JAPAN

By the MARQUESS HACHISUKA

Kofu is an old provincial town, the capital of Yamanashi province in Japan. There is a public park called Yuki Park, which is situated in the centre of the town, with a small zoo attached to it. Here many Herons of local species and other water birds are kept in a small flying cage. In 1936 a Night Heron (*Nycticorax n. nycticorax*) and a Little Egret (*Egretta g. garzetta*) mated, and three eggs were laid ; however, only two hatched, and the chicks reached maturity. I saw these curious hybrids when I visited the park during the summer of 1938. There is a remarkable difference in plumage between them, although the shape of the body is similar, being intermediate between the two parents ; their bills are somewhat less pointed than those of the Egret, and not as heavy as the Night Heron. They perch quietly on a tree with their necks well tucked into the body, resembling the Night Heron, but the hinder part is more elongated like the Egret. The colour of the bill is black, and the legs a pale ashy white ; the iris is pale flesh colour, an intermediate colour between the silver eyes of the Egret and reddish brown of the Night Heron. They have no ornamental plumes behind the head. The darker bird in the cage appeared somewhat larger, so it may be a male. Its head is white, gradually becoming blacker towards the neck. The rest of the body is black, but the back of the wing-coverts is ashy white. The whiter bird looked smaller, most likely a female. It is whitish, but has asymmetrical black feathers on the back. We recall that Dr. Kuroda recorded in "Tori", about ten years ago, a similar hybrid in the Fukuoka aquarium in Kyushu, so the present record forms the second ever to have been reported from Japan ; and to my knowledge it has never been known in any other country.

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BREEDING RECORDS : SUMMARY VI

By Dr. E. HOPKINSON

(Continued from page 22)

BIRDS OF PREY AND OWLS

BRAZILIAN CARACARA, *Polyborus tharus*. Germany; one record.

522. BALD EAGLE, *Haliaeetus leucocephalus*. U.S.A.

BLACK KITE, *Milvus migrans*. Zoo, 1929.

523. JACKAL BUZZARD, *Buteo rufofuscus*. U.K., 1906; one record.

LAMMERGEYER. Sofia Zoo since 1916.

524. KESTREL. U.K., 1895, 1896.

CONDOR. Berlin Zoo, 1927.

AMERICAN BLACK VULTURE, *Coragyps atratus*. U.S.A. and Germany.

525. EAGLE OWL, *Bubo bubo*.

AMERICAN EAGLE OWL, *B. virginianus*.

526. SPOTTED EAGLE OWL, *B. maculosus*. U.K., 1901.

527. SNOWY OWL. U.K., 1898 and later.

528. SCOPS OWL.

529. WHITE-EARED SCOPS, *Otus leucotis*. U.K.

Boobook Owl, *Spiloglaux boobook*. Australia, 1926.

530. (Tawny Owl, *Strix aluco*).

531. Little Owl. Germany.

532. BURROWING OWL. Zoo, 1905.

533. JARDINE'S PIGMY OWL, *Glaucidium jardinii*. U.K., 1915.

534. BARN OWL. U.K. and abroad.

DUCKS AND GEESE

As a Summary of the *Anatidae* records appeared in the Magazine as recently as 1935 (pp. 280-6), it will be sufficient here to refer readers to that and add the corrections and additions called for, to thank those who have provided the information, and to ask for more.

Swan hybrids : p. 281. First entry after . . . GOOSE add "and".

For entry 545a read :

WHITE-WINGED WOOD-DUCK, *Asarcornis scutulata*. Bred in France in 1936 (Schuyl) : see *L'Oiseau*, 1937, 171 ; a first success. There is also a *hybrid* record with the female domestic Duck.

553. GREY LAG-GOOSE. *Remove the brackets* : they have been bred from eggs laid in captivity, *teste* both Moody and Stevens.

558. BAR-HEADED GOOSE. *Add after* (Shelduck) *a second hybrid record* : BAR-HEADED × American White-fronted Goose, *A. albifrons gambelli* ; one hybrid reared in Sweden about 1936 *teste* Lönnberg.

Add : Eyton's Tree-Duck, *D. eytoni*. Bred by Sibley, U.S.A., in 1938, a first, *teste* Dr. Derscheid.

577. RUDDY SHELDUCK. *Delete the last entry* (× Falcated Duck). The skin of the bird recorded by Sclater as this cross, is that of the female *Pseudotadorna cristata*, *teste* Kuroda.

After 584 add : Florida Duck, *A. fulvigula*. Bred by Stevens (U.K.) recently.

(Luzon Duck) the *hybrid* was recorded as Luzon Duck × Australian Wild Duck, but the female parent may have been a Bahama Duck *teste* Stevens.

611. MARBLED TEAL. *Remove the ?*, this Duck was repeatedly bred at Lilford in former years *teste* Moody.

Cape Teal, *N. capense*. Bred by Mclean and Wormald, 1938 ; *teste* Derscheid.

HOTTENTOT TEAL, *N. punctatum*. Bred by Stevens, 1937 (*A.M.*, 1938, 105). Ezra bred hybrids HOTTENTOT TEAL × CAROLINA DUCK in 1934 and 1935 (*and see A.M.*, 1936, 229).

595. BAIKAL TEAL. *Add* : and hybrids (Baikal Teal × Wigeon ?).

For Red Shoveler, 1934, read :

RED SHOVELER, *Spatula platalea*. U.K. (M. and Wormald) 1934, first success ; since by others.

NEW ZEALAND SHOVELER, *S. rhynchotis variegata*. Delacour in France, 1935 ; *teste* R. and N. Stevens *in lit. September, 1935*.

616. AMERICAN POCHARD. U.S.A., 1924, later U.K. and elsewhere.

Madagascar White-eyed Pochard, *add* : U.K., 1935.

(S. African Pochard, *Nyroca erythrophthalma*.) A hybrid with the female White-eyed Pochard was reared by Schuyl in France in 1937, *teste* Dr. Derscheid *in lit.*

619. Lesser Scaup. *Remove the brackets.* It was bred by Mclean and Wormald in 1933 *teste* Stevens.

624. Golden-eye . . . Ezra, 1932. *For these two entries read :—*

624. GOLDEN-EYE. Blaauw, Holland, 1908.

BARROW'S GOLDEN-EYE, *C. islandica*. U.K., 1934 (M. and Wormald).

Buffel-head. U.S.A. (Sibley), *teste* Stevens *in lit.*

WHITE-BACKED RIVER-DUCK, *Thalassornis leuconotus*. U.K.

(Ezra, 1932, 1933, and ? later).

RUDDY DUCK, *Oxyura j. rubida*. Bred by Sibley, U.S.A., several times *teste* Stevens.

Smew. Bred by Stevens, 1926 and 1938, *teste* Derscheid.

SUMMARY VII

IBISES

625. SACRED IBIS, *Threskiornis aethiopicus*. And *hybrids* see below.

626. Glossy Ibis, *Plegadis falcinellus*. Bred at the Zoo in 1895, but ? were not the birds bred then hybrids?

628. WHITE IBIS, *Eudocimus albus*. Zoo and New York Zoo.

629. (Scarlet Ibis, *Eu. ruber*. *Hybrid* record only.)

630. BLACK-FACED IBIS, *Theristicus melanopis*. Two records : France before 1885, and Holland, 1916.

Ibis Hybrids

GLOSSY × WHITE-FACED GLOSSY IBIS (*guarauna*).

Bred at the Zoo in 1895 and following years.

(Scarlet White Ibis, *teste* Page ; but ?)

Sacred Ibis hybrids

Threskiornis m. stictipennis × *T. a. bernieri*. Bred at the Zoo in 1887 *teste* Low's Zoo List, 1929, p. 492.

Black-headed Ibis × Spoonbill. Bred at Berlin Zoo in 1899, and the cross the other way has also been reported.

STORKS AND HERONS

AMERICAN WOOD-STORK, *Mycteria americana*. Bred at the Milwaukee Zoo in 1932.

631. HAMMERHEAD, *Scopus umbretta*. London Zoo, 1910, a first (and ? since).

632. GOLIATH HERON. Amsterdam Zoo regularly some years ago.

GREAT BLUE HERON, *Ardea herodias*. U.S.A.

633. Little Egret. India and France.

634. Snowy Egret, *Leucophoyx candidissima*. U.S.A.

635. Cattle Egret, *Bubulcus ibis*. Giza Zoo at semi-liberty.

636, 637. NIGHT-HERON. U.K. and U.S.A., and *hybrids* with the female LITTLE EGRET are on record in Japan.

BOAT-BILLED HERON, *Cochlearius cochlearius*. Berlin Zoo, 1937.

638. Sun Bittern. Zoo, 1865, *teste* Astley.

639. KAGU. Bred in Australia in 1920 (*A.M.*, 1921, 28, 41).

641. BRAZILIAN CARIAMA, *Cariama cristata*. Zoo, 1911; Berlin, 1914. (N.B.—*No. 640 was accidentally omitted in the original list.*)

642. CRESTED SCREAMER, *Chauna torquata* (late *cristata*). Zoo, 1904, a first; also bred there later and also elsewhere.

643, 644. WHITE STORK, *Ciconia ciconia*.

CRANES

645. COMMON CRANE.

646. CANADIAN CRANE. U.K.

SANDHILL CRANE, *Grus mexicanus*. U.S.A. before 1932; U.K., 1938.

647. MANCHURIAN CRANE. U.K., 1918, and elsewhere.

648. SARUS CRANE.

649. AUSTRALIAN CRANE, *G. rubicunda*. U.K.

650. WHITE-NECKED CRANE.

651. (Wattled Crane. *Hybrid* record only.)

652. DEMOISELLE CRANE.

653. STANLEY CRANE. U.S.A. before 1917; U.K., 1936.

654. (Crowned Crane, *Balearica pavonina*. Has been bred, *teste* Page, but ? where.)

S. AFRICAN CROWNED CRANE, *B. regulorum*. Calcutta, 1934, a first.

Crane Hybrids

Common Crane × White-necked Crane, *teste* Lowe.

Common Crane × MANCHURIAN CRANE. Woburn, 1936.

Canadian Crane × Manchurian Crane. Lilford, *teste*

Seth-Smith.

Canadian Crane × White-necked Crane. *Ditto*.

Canadian Crane × Wattled Crane, *teste* Cosgrave, A.M.,

1912.

Australian Crane × Burmese Sarus (*sharpii*). France.

Demoiselle × Stanley Crane. Berlin Zoo, *teste* Russ.

STANLEY × WHITE-NECKED CRANE. Woburn,

1920.

BUSTARDS

655. GREAT BUSTARD. One record : Austria.

656. LITTLE BUSTARD. One record : U.K., 1915.

WADERS

657. SOUTHERN STONE-CURLEW, *Burhinus magnirostris*. Australia and U.K.

“DIKKOP” (Cape Thickknee), *B. capensis*. Pretoria Zoo, 1931 and 1932.

WATER DIKKOP, *B. vermiculatus*. U.K. (Ezra, 1934, and I think later).

658. WATTLED LAPWING, *Lobibyx novæhollandiæ*. Holland, 1900, 1908 ; Zoo, 1910.

659. Cayenne Lapwing, *Belonopterus cayennensis*. “Has been bred,” *teste* Finn.

CROWNED LAPWING, *Stephanibyx coronatus*. First, Frankfort Zoo, 1927 ; London Zoo, 1929, first for U.K.

BLACK-BREASTED PLOVER, *Zonifer tricolor*. Zoo, 1934.

BLACKSMITH PLOVER, *Hoplopterus armatus*. U.K., 1936.

660. Avocet. Zoo, 1907, 1908.
 661. Redshank. Zoo, 1907.
 662. RUFF. U.K. two records.

GULLS

663. BLACK-HEADED GULL and *hybrids* with females of the Silver and Herring Gulls.
 664. LAUGHING GULL, *Larus atricilla*. U.S.A.
 666. HEMPRICH'S GULL, *L. hemprichii*. Zoo, 1912.
 667. SILVER GULL, *L. novæhollandiæ*.
 668. GREAT BLACK-HEADED GULL.
 665. DOMINICAN GULL. Australia and N.Z.
 669. (Lesser Black-backed Gull. A hybrid record only with the female Herring Gull.)
 670, 671. HERRING GULL.

GANNET TO PENGUINS

672. GANNET. Booth, Brighton, 1880 and 1881.
 CORMORANT. St. James Park.
 673. FLORIDA CORMORANT. New York Zoo.
 674. Common Pelican, *P. onocrotalus*. Giza Zoo; or was it the next?
 675. Brown-backed Pelican, *P. rufescens*. Giza? (*see above*). A *hybrid* between these two recorded in the Giza Zoo Report, 1908.
 676. Brown Pelican, *P. occidentalis*. New York Zoo.
 AMERICAN WHITE PELICAN, *P. erythrorhynchus*. Washington Zoo, 1929, 1930.
 677. KING PENGUIN. Edinburgh, 1920 on; Germany, 1931.
 678. BLACK-FOOTED PENGUIN. Zoo, New York, and elsewhere.

RAILS AND CRAKES

- (Kaffir Rail, *Rallus cærulescens*. U.K.)
 SOOTY RAIL, *Limnopardalis rytirhynchus*. U.K. (Whitley, 1927, and following years).
 679. PECTORAL RAIL, *Hypotaenidia philippensis*. France, U.K., and U.S.A.
 BLACK CRAKE, *Limnocorax flavirostra*. U.K., 1930.

680. CAYENNE RAIL, *Aramides cajanea*. France and U.K.

681. YPECAHA RAIL. Holland, 1893; U.K., 1908.

682, 684. WEKA RAIL, *Gallirallus australis*, and a hybrid Black Weka (*brachypterus*) × Weka. Zoo, 1904.

CAYENNE CRAKE, *Laterallus viridis*. U.K., 1927. *L. leucopyrrhus* was bred in France in 1936.

Black-and-White Crake, *L. leucopyrrhus*. France, 1936.

684. Corncrake. U.K., 1915.

685. White-breasted Waterhen, *Amaurornis phœnicurus*. U.K., 1923.

686. BLACK-TAILED WATER-HEN, *Microtribonyx ventralis*. Zoo, 1909, and other years.

687. MOORHEN.

688. GREEN-BACKED PURPLE GALLINULE, *Porphyrio madagascariensis*.

689. BLACK-BACKED PURPLE GALLINULE, *P. melanotus*.

690. EDWARD'S PURPLE GALLINULE, *P. edwardsii*. Paris, 1924.

AMERICAN COOT, *Fulica atra americana*. U.S.A.

Add to Part II after No. 160 :—

Hybrids: Borneo Munia, *M. fuscans* × Bengalese were bred in France in 1931,

and the MADAGASCAR WEAVER (No. 207) was bred in the U.K., 1928 (Ezra).

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NOTES

Subscriptions of members of the Avicultural Society are due on the first of January in each year, and the majority observe this Rule. However, though it is now the fourth month of the year many have not yet paid. It is hoped that this will in all cases be remedied within the next few weeks. The Editor feels that when it is pointed out that it is very hard on the Society's Secretary and Treasurer to have to spend summer days indoors writing letters and acknowledging subscriptions, all readers will make an effort in future to send their subscriptions early in the year. Editors come and Editors go, but the invaluable Secretary and Treasurer has carried on year after year of unremitting work to the great benefit of the Society, and it is to make that work at least less arduous at a time of year when she would wish to enjoy some relaxation that the co-operation of members is most earnestly solicited.

The Avicultural Society of New Zealand is to be warmly congratulated on its *Tenth Annual Report and Bulletin*, and also on the increase in membership. As the Hon. Secretary and Treasurer states in his report, "The greater our membership the more useful we can be and, while we cannot hope to attain the numbers of the parent body in England, we do at the present time have the satisfaction of knowing that we are the second largest Avicultural Society in existence in the British Empire." The members of the Avicultural Society of New Zealand may be assured that the parent body in England watches their progress with the greatest interest and feels justly proud of its active offspring across the seas.

* * *

Dr. Derscheid in his article "The Preservation of Waterfowl and Aviculture" in the March number of the AVICULTURAL MAGAZINE pointed out the value of co-operation between aviculture and bird preservation. The need of this is further evidenced by the new Editor of the *New Zealand Report and Bulletin*, the Rev. H. Ranston, who in his foreword states, "One of the objects of our Society is the study of and the conservation of our New Zealand birds both at liberty and in captivity. . . . As things are in our bushlands, some species of our natives are doomed to sure extinction unless expert bird keepers are allowed to breed them under suitable aviary conditions." It is hoped that this matter will be given the earnest consideration of the authorities and of aviculturists in New Zealand, for in this country, perhaps more than in any other, the avifauna has suffered so greatly from unfortunate introductions and unwise interference with forests and other vegetation.

* * *

The *New Zealand Report and Bulletin* contains much interesting and informative matter well put together, but space does not permit reference to all the articles and notes which appear. Of particular interest, however, is an account of the breeding of Spinifex Doves by M. E. Fitzgerald. It is a pity that the Latin name is not given for, though everyone in Australasia undoubtedly knows what a Spinifex Dove is, the name does not convey anything to many aviculturists outside that area. If the Latin name *Lophophaps plumifera* had been added those who are not acquainted with the common local name of Spinifex would immediately realize that it was the Plumed Ground Dove, by which name it is more generally known. The inclusion of the Latin name of any species is strongly advocated, for this is the international means of identification and greatly adds to the value of any article.

Dr. F. D. Pinfold contributes an informative article on *Psittacosis* in which he explains the means of infection and symptoms of this disease. He states that the disease can be controlled by scrupulous attention to cleanliness and concludes by stating, "I firmly believe that the public imagination and a brainless officialdom in certain parts of the world have magnified the risks and dangers from this disease, an uncommon and fairly localized disease, to the detriment of the real bird lover the world over."

* * *

CORRESPONDENCE

THE FIRE AT CLÈRES

I have greatly appreciated the sympathy expressed to me by the members of the Avicultural Society in the painful loss that I recently sustained of many cherished possessions in the fire which has entirely destroyed the contents of the Chateau at Clères. The loss of the Zoological Library and of all my notes and correspondence on birds is particularly deplorable. For the second time in some twenty years the ruin of my home has been recorded in the AVICULTURAL MAGAZINE, and our older members will remember that of Villers-Bretonneux in 1918, when not only the Chateau but the aviaries, birds, and gardens were destroyed by heavy shelling and fighting.

In the present case, fortunately, the grounds have not suffered, and all the animals and birds are safe in their usual quarters. Even the buildings known as the Tower of Justice and the Manor House are untouched. Although it is feared that a complete restoration of the Chateau to its previous state will not be possible, there is little doubt that the outside can soon be repaired and recover its normal aspect and the Manor House turned into a new residence.

I naturally intend to maintain the live collections at Clères and even to increase them as a compensation for the loss of irreplaceable treasures.

The cordial sympathy shown to me on this sad occasion by ornithologists and aviculturists the world over has been a great encouragement and I take this opportunity to thank them and express my deep appreciation.

J. DELACOUR.

CHATEAU DE CLÈRES,
SEINE INFÉRIEURE,
FRANCE.

SPECIES OR VARIETIES

Many aviculturists, together with the public generally, seem to have but a vague idea of the meaning of these two words. One meets a traveller from, say, Africa or Australia, who says that in his travels he met with many varieties of Sunbirds or Honeyeaters. These were not *varieties* but *species*. Varieties in Nature are rare; it is true that a few species are variable, the Ruff being a case in point, and one sometimes sees a white or pied Blackbird or a pale-coloured Greenfinch. These are varieties, but Nature does not produce them to any extent. It is only when Man takes a hand in managing a species that varieties begin to appear.

Take as an example the Budgerigar. There is only one species, and I believe there are one or two records of a yellow variety occurring in Nature; but by careful breeding and selection under domestication, a number of varieties have been produced.

So let us not talk about the many *varieties* of foreign birds in our aviaries, or the many *varieties* of wild birds we have seen during a country walk. They are all good *species* unless we refer to some that, for some reason or other, are abnormal.

D. SETH-SMITH.

ZOOLOGICAL SOCIETY OF LONDON,
REGENT'S PARK, N.W. 8.

BREEDING OF MEADOW PIPIT

I am sure my friend Dr. Hopkinson will not mind my correcting a slight error in his report which appeared in the February issue concerning Miss Halls' success. The bird was not judged by me, but by another friend, Mr. John Frostick. I was merely the instrument of information.

ALLEN SILVER.

"Birdsacre,"
Llantarnam, Mon.

WHERE ARE THE VERSICOLOR PHEASANTS ?

Although I have not kept any Pheasants since 1913, I have been reading the AVICULTURAL MAGAZINES for the last three years, in nearly every one of which somebody extols the beauties of Golden and Amherst Pheasants; I grant that they are gaudy "Eye-catchers", but to my mind do not compare in beauty to the Versicolor Pheasant—of which I can find only one brief reference, to the effect that four were reared by M. Delacour last year.

What has happened to these lovely little Pheasants? They were comparatively common in the years before the War, but I personally have not seen a pure one since the War, and of all the true Pheasants they are surely the most beautiful. While on the subject of Pheasants, I was shown a most amazing hybrid the other day, which if I had not seen I should hardly have believed, as I should not have thought it was a possible cross. The bird was a three-year-old cock Amherst \times Monal! In shape exactly half-way between the two parents, in colour a uniform deep steel throughout, each feather highly metallic, but no brilliant colouring, a small patch of dirty white on the lower breast. The owner was contemplating presenting it, as a skin, to the British Museum, as I understood that they were sceptical about the bird! Even did the owner not know the breeding of the bird, anyone acquainted with Pheasants would know what cross it was immediately on seeing the bird.

HUGH WORMALD.

HEATHFIELD,

DEREHAM, NORFOLK.

FOOD AND BREEDING OF AVADAVATS

I have often wondered on what the little flocks of Avadavats and Silverbills one sees so often in desert country feed as there is little grass or grass seeds, until one day I saw a flock of Silverbills alight on the tall pampas grass, called locally "Sar" grass, which grows freely by water channels in this sandy country. The plumed heads of this pampas grass bent from the vertical to the horizontal even under the light weight of these little birds, and when I picked some heads of this giant grass, growing as it does some 20 feet high, I found it full of tiny seeds. On these seeds the tiny birds feed and sustain life. Also they use it when soft to line their nests. I send herewith a little for you to see.

Another point on Avadavats. I have bred Avadavats in a small cage 24 inches long by 14 inches high by 14 inches wide, with a square box 6 inches by 6 inches with the lower 3 inches of the front closed in, hung on one end of the cage, but the hens were constantly troubled with egg binding. I gave them tiny white snail shells crushed up for grit and they ate this greedily, but still the eggs were soft-shelled and passed only after great difficulty. Then in despair I put a pair into a much bigger cage, 40 inches long by 20 inches wide and 26 inches high, and the hen then started to lay eggs in the nest-box in that cage without any difficulty. I came to the conclusion that lack of wing exercise was the cause of egg binding in my hen Avadavats.

GODFREY DAVIS.

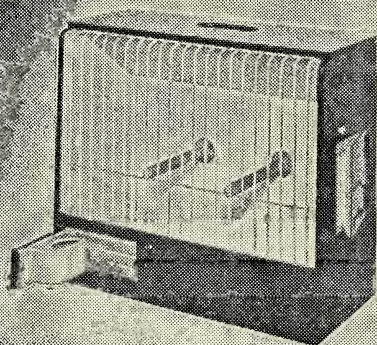
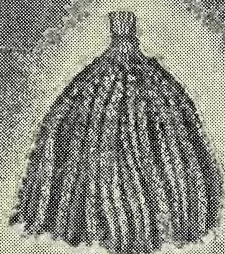
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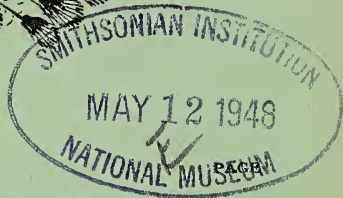
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AVICULTURAL MAGAZINE



CONTENTS

The Budgerigar in Captivity (<i>with coloured plate</i>), by WALTER E. HIGHAM	143
On Indian Grey and Black Partridges, by GODFREY DAVIS	148
The Early Years of the Avicultural Society (IV), by D. SETH-SMITH	152
An Abnormal Cordon Bleu, by C. N. ABRAHAMS	157
The First Nesting in Captivity of the Australian Sheld-duck, by J. DELACOUR	159
Importation of Parrots	161
Breeding Records : Summary VIII, by DR. E. HOPKINSON	162
Review	169
Notes	170
Correspondence	172

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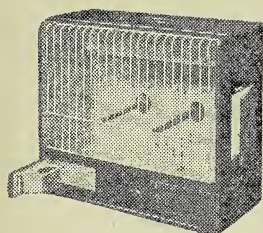
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MAY, 1939.

THE BUDGERIGAR IN CAPTIVITY

By WALTER E. HIGHAM

Our new Editor, Miss Barclay-Smith, has asked that I should write an article on the Budgerigar and, as there appears to have been little said about this lovely little Grass Parrakeet in these columns in recent years, perhaps some comments may now not be out of place.

I have spent the greater part of my life photographing wild birds in my leisure hours. This still is my main hobby.

However, about nine or ten years ago I underwent such a severe operation that the doctors handed me an ultimatum, telling me that climbing trees, descending cliffs, meals at all hours, etc., did not blend with my physical condition.

I was so depressed with my general outlook that as a means of "taking my mind off myself", my wife took me to a well-known seaside resort, and, of all places, we wandered on to the amusement park.

There she was the lucky (or unlucky) winner of a Budgerigar which was handed to her in a paper bag!

Being rather horrified with our position, we hastened to the nearest bird shop to obtain a cage. The assistant told us that unless we bought a second, the bird would pine away for want of a mate and so "like lambs for the slaughter" we were persuaded to purchase a mate.

From that period I went, in small stages, from the owner of a pair of very mediocre birds to last year, when my stock ran into over 2,000 birds of over thirty different types or varieties.

Without any doubt at all, to-day the Budgerigar is one of our most popular cage birds. And when one considers why, the reasons are not very difficult to find.

Firstly, the birds themselves are very attractive indeed ; their colours now being so numerous, those who desire an odd bird or a pair have a wide choice, and can easily suit their own particular taste or fancy. Then, again, these birds are extremely hardy and their feeding and keep are particularly simple. The recent publicity on the wireless of the talking "Budgie" has created a tremendous demand for young birds suitable to be trained as talkers and, lastly, there are few birds that breed more prolifically or are easier to rear. These points as a whole must encourage a beginner when he considers the "pros and cons" as to what variety of bird life he shall commence with.

I do not propose to start now by giving readers a brief account of how to manage a stud of Budgerigars ; there are several adequate books dealing with this subject already on the market. To any readers wishing to start keeping these birds I suggest they first of all buy one of these books, secondly, join the Budgerigar Society, and, thirdly, buy a copy of *The Book of Budgerigar Matings*, issued by that Society.

What I intend to do is to give one or two tips which existing breeders may not have tried, and one or two remarks which are probably not covered in the text-books.

Firstly, in regard to feeding, there is a considerable divergency of opinion as to the ideal Budgerigar mixture. Many breeders do not trouble to mix their own seeds, being content to buy some mixture ready prepared. However, the larger breeders, and also a lot of the thorough smaller breeders like to know exactly what their mixture is and consequently mix their own. Picking up the two most recent books on Budgerigars, I find that Watmough's *Cult of the Budgerigar* recommends equal parts of millet and canary seed with the addition of a quarter part of oats or groats, and maybe a few handfuls of linseed to each stone of mixture at certain times.

As against this, Frudd's book, *Incomparable Budgerigars*, recommends for breeding purposes : one-third Mazagan Canary seed (not too large, but of a good quality), one-third best white millet, and one-third Indian millet. In cold weather a few groats may be

given separately, but as the season advances this heating food should be cut out and green food substituted. Some of the earlier books have very divergent views to these. I myself, having had thousands to feed, have tried out quite a few experiments, and, when I was in Toulouse visiting Messieurs Bastide and Blanchard, I noticed that their birds were fed on practically nothing but a poor quality yellow millet. On my return home, after my first visit to Toulouse, I started my feeding experiments and, after six years, I am of the very definite opinion that yellow millet, as a staple food, is very good indeed. My seed mixture this last season has been : yellow millet half, a good pearl white millet quarter, and a quarter bold Spanish canary. During the coldest winter months a small quantity of groats is added. My percentage of millet is far higher than that generally recommended, but after several visits to the Toulouse establishments and the knowledge of the condition of my own stock, I shall need quite a lot of convincing that I am not on the right lines.

I give you herewith Watmough's figures for canary seed and millet :—

	Proteids (Albuminoids).	Fats or Oils	Carbo- hydrates.	Salts or Minerals.
CANARY SEED.	13·5	4·9	51·6	2·1
MILLET SEED.	11·3	4·0	60·0	3·0

Round about a month before the breeding season I commence giving my birds cod-liver and halibut oil, the mixture consisting of one part halibut oil to nine parts cod-liver oil. The approximate amount of this mixture added to the seed is one teaspoonful to every pint of seed. It is important that the seed should be very well agitated to make sure that the oils are evenly mixed with it.

The birds when feeding break the seed husk to eat the content, and in doing this they are forced to consume some of the oil which is on the outside of the husks.

Another tip in this direction is the treatment of birds suffering from gastric troubles such as enteritis.

It has been my usual course to administer bismuth carbonate, or some similar alkali, when a bird is suffering from this type of ailment. Often a bird is so ill that any shock such as forcible feeding with a fountain-pen filler, or any similar method, would probably prove fatal. I administer the bismuth in the following

way. I soak the seed in cod-liver oil, then put the seed into the bismuth powder and the bird then consumes the bismuth in the same way as she gets her halibut and cod-liver oil, as I have already detailed.

Up to the present the cages used for the housing of Budgerigars has left much to be desired in the way of sanitation.

The pet "Budgie" cage, the breeders stock cage, and even the exhibitors training cages—in fact, every type of cage—suffers from one and the same fault—the birds walk about, eat and play amongst their excreta. It does not need much imagination to realize that this is far from ideal.

During the last season I have experimented with a new type of cage bottom. We use in each cage a wire tray constructed of $\frac{5}{8}$ -inch square mesh. The wire used is 16 s.w.g. galvanized, and the whole is stiffened round the edge by an outside wire made of something like 14 s.w.g.

This wire tray is suspended about $\frac{3}{4}$ to 1 inch from the main tray or bottom of the cage. It is easy to suspend the wire tray, and the most simple method is to nail on a small wood flange round the sides of the cage, resting the wire tray on top of this.

A word of warning must be given, however, to see that the wire tray is electrically welded, or, if this is not the case and solder is used, great care must be observed to see that no loose particles of solder are left on the tray, as this would probably prove fatal if any of your birds consumed it.

If anyone has any doubts about the efficiency of this method, I suggest he or she try out the idea on one cage only.

Put in clean perches in this cage and put also clean perches in one of the older type. At the end of the month examine the two sets of perches and I think the answer will be obvious.

In this issue there is a frontispiece of four of the more recent arrivals in the land of the "Budgie". This plate in no small measure faithfully represent the varieties in question. The bird on the top right is the Opaline Dark-green. The one below is a fine example of a cock Whitewing Cobalt. The bird depicted not only well illustrates the variety but shows to advantage the points of a modern show Budgerigar. This bird faithfully represents the type set down as the ideal by the Budgerigar Society. Note the shape of the head, the body, and the general carriage. Note also

the shape and position of the wings. The third bird from the top is a typical example of the Yellow-wing Dark-green, whilst the lowest bird represents the "Yellow-faced" or "Golden-faced" variety Cobalt in a very natural attitude.

The Whitewings and Yellow-wings originated first in Australia, in fact, though the varieties are fairly new over here, these birds have been bred "down under" for several seasons. The Opalines funnily enough appeared in both Australia and Great Britain about the same time and, as both want to claim the distinction, we had better say the origin was a double one.

The Golden-faced variety, which is the more recent arrival of the four, as far as I know originated in Great Britain. For those who are interested in the genetics of these birds, the Whitewings and Yellow-wings breed normally, the Opalines are sex-linked and the Golden-faced birds are dominants.

It is an interesting point that whenever a new variety arrives, whether it be in this country, Germany, or Australia, more often than not, the same, or similar, variety breaks out from unrelated stock, round about the same time.

Some keepers of our birds are content with their small lean-to aviary, others have palatial garden aviaries, adorned with expensive decorations. Some have one pet bird in a cage, others hundreds of show birds caged up for the show season. Some people breed birds just for the excitement and hope of breeding something no one else has yet bred. Others pair up their birds to breed the finest show bird that has ever been benched. Some like to see the birds flying about a sheltered outside aviary, whilst one or two have even tried to develop a stud of homing Budgerigars, birds that can leave their pens like Pigeons.

Others are using our bird as a means of furthering their knowledge in animal genetics. It has been proved that the Budgerigar lends itself admirably in this direction.

All these different spheres attract thousands of enthusiasts all over the country and it is amazing to think that fifty years ago it was more common to see one on a fair ground perched on a fortune-teller's finger than anywhere else, and coupled with this any colour, other than the original green, was the exception, when one realizes to-day the dozens of varieties we now possess.

ON INDIAN GREY AND BLACK PARTRIDGES

(*Francolinus pondicerianus* and *Francolinus francolinus*)

By GODFREY DAVIS

These two Partridges of India are not true Partridges at all but Francolins, but the Grey is one of the most charming of pets and a great favourite among the poor. The chicks are easily obtained, for in the dry and sandy country which they inhabit they are very common and chicks a few days old are often caught by the boys who take the village herds of cattle and goats and sheep to graze in the scrub jungle. When taken young the chicks are easily reared upon bajri, the lesser millet, and white ants which abound in the jungle, but it is useless taking them when they are half or even quarter grown. Chukor, the handsome Partridge from the Baluchistan hills, can be easily tamed when taken adult, but not so the Grey or the Black Partridge. Instead of a tame and confiding bird one has a timid and frightened captive which, if one has any pity, one frees.

The chicks are easily reared upon bajri which is a common grain, a tiny grey-green seed upon which all young game birds thrive. Indeed, I had failed to rear some Guinea-fowl chicks upon a careful diet of hard-boiled egg and lettuce, and they all died when about three weeks old, of what I can only think was "staggers", if there be such an illness among Guinea-fowl chicks, because these unfortunate chicks literally could not stand, their legs giving way beneath them. Our cook, Peter Fernandez, who owns the Bulbuls, took charge of the next clutch of eggs when the hen was killed by a jackal, when on her nest which she had concealed from us, and put them under a broody hen. He and the hen between them reared the chicks only on bajri and broken rice and chopped onion tops, which Peter Fernandez said were very good, and on chopped lucerne. These chicks, now grown up, strut about the garden and the neighbouring plain with a fine disregard of my humiliation. But bajri must be a very good and tasty seed for the Grey Partridge, when grown up, will eat little else. Juwari, or the greater millet, or the dari of commerce, they merely throw out of their food jars. Even Black Partridges are fonder of bajri though they will take juwari more readily than the Grey; also, in the hot

weather, my *Mali*, or gardener, who looks after the birds, will soak dal or lentils in water overnight to give to the Black Partridges to cool their blood. The Grey Partridge in winter is given pellets of channa or parcher gram flour mixed with water about which I have written, but neither Grey Partridges nor Black Partridges are given water in winter. It is said it gives them colds and it is true that when these birds are given water in winter they are apt to get a cold or "snuffles" which is really difficult to cure. But they are given a green food of which they are very fond. It is like a wild yellow clover and is called "Sinji" and grows in all cultivation. Of this Partridges are very fond and will pick off the leaves through the bars of their bamboo cages. When this Sinji fades the leaves give the scent of a hay-field. Black Partridges will also eat the yellow blossoms of an oil seed called Jambu or Sirieh, which is even now growing among the wheat in the fields. A field of Jambu looks like a field of mustard; it is a lovely rich yellow and with it grows another oil seed called, Sirieh; this is a pale sulphur yellow, but both are rich in oil. The oil is extracted in small mills in the houses of the oilmen and the shaft of the mill is pulled round in a circle by a blindfolded bullock. Only a few days ago I heard the loud, clear, ringing calls of Grey Partridges behind the Circuit House where I was staying and there were two pairs of Grey Partridges, with their domed bamboo cages gaily decorated with blue beads, set down in a patch of yellow Jambu and Sirieh flowers, while there were also two Black Partridges, each in its own domed cage. One Black Partridge was one of the finest birds I have seen and one was much smaller, and when I asked why one was so much bigger than the other I was reproved, though unintentionally. The big Partridge, I was told, was the Partridge of a rich man. Still, I noticed it had only red Juwari in its food jar. Its cage was, however, bigger and it certainly got more attention than its poorer brother, and more exercise and probably white ants, for the finding of white ants takes time.

It is surprising the size the Grey Partridges grow in their comparatively small cages. Generally the cages measure 12 inches square and two are joined together with a communicating door between. The framework is of light wood, generally only five inches high, and through this framework the thin bamboo strips are drawn and fixed somewhat in the shape of a tall inverted pointed

basket, so that the birds, if frightened, should not hurt their heads if they jump upwards; and the bamboo framework is given a concave inclination so that the bird, if frightened, jumps not only upwards, but towards the highest part of the cage, the centre of the dome or basket. In front of the framework in each cage is a small door through which the tame Partridge enters and leaves its cage. It is all very simple and ingenious and is the outcome of generations of loving care of a people to whom the ways of the wild things are familiar. And as Partridges when wild do not sit about in the open, so each cage or pair of cages is fitted with a cover of some fine textured cloth so that a shaded light only enters the cage and the bird feels safe and protected, as in the protective shrubbery of the fields. And this much care is taken of the birds, even by the poorest.

Only a few days back, when I was going with a friend to see his date garden by the Indus, we passed some poor travelling *lohars* or smiths who had set up their simple forge by the wayside under some trees. Near by was a Partridge cage and next to it what they call a Tāāt or Khoṭra or dusting cage, a bigger domed cage, some 2 ft. by 2 ft. with no bottom and which is placed on sandy ground for the Grey Partridge to take his dust bath. So he goes from his cage proper to his dusting cage and when I asked whether it was not difficult to get him back again, again I was reproved. "Does the Partridge not regard his cage as his house and will one not return gladly to one's house?" And yet again when I once asked a tall Mohammedan who was followed along the country road by his tame Partridge which followed like a dog, whether he was not afraid to lose the bird, he pointed to the cage he was carrying, in one compartment of which was the hen, and said, "Would a gentleman Partridge ever leave his lady?" How superior, I thought, were the morals of Partridges to men! The birds are the objects of constant care and pride; their cages are really their homes. Only this morning I watched a coolie digging in the local park while his fine cock Partridge, which appeared to me as big as a Grouse, wandered and scratched and pecked near by where the hen was in her cage upon the ground. Seeing my admiration he stopped his work and whistled through his teeth, whereat the Partridge answered with his loud ringing call. The hen was also a fine bird, and she should be, said the coolie, because her mother was an Irani or Persian lady!

While the Grey Partridges, with their warm and modest colouring of browns and greys, almost autumn tints, and their soft friendly murmurings as they are petted, always remind me of some friendly hen, the Black Partridge is a dashing fellow and far more like a Pheasant in his ways. Moreover, he loves the damp, salty ground of the river banks and the cover of the thick Tamarisk or lai bushes or tall Sar grass of the jungle. He does not like the dry sandy country and the cultivation, as does the Grey Partridge, and with the bold chequered patterns in black and white and his jet black breast he approaches nearer to the decorative plumage of the Pheasants. He also can be tamed if caught when he is very young and I have two fine cock birds now which, when let out of their cages in the morning, will rocket up in the sky and come floating down on widespread wings. Yet in two hours they will come back willingly to their small cages. The hen of the Black Partridge also partakes more of the ways of a hen Pheasant than does the hen Grey Partridge, which, but for her smaller size and the absence of a spur, resembles the cock bird. Moreover, the Black Partridge is rarely tamed as is the Grey. He is used chiefly as a decoy. He is taken out in his covered cage to the fields and calls his harsh, challenging cry, translated by the pious Muslim as “ Khuda tera Khudrat ”, “ God, thy glory.” And when the wild cocks come to his challenge they, poor things, are shot. They are fed in captivity much as the Grey Partridge, but being bigger eat more of the greater millet or Juwar. They will peck the yellow petals of the Jambu flowers and the tender shoots of vetch or gram or Sinji. But while the hen Grey Partridge will lay readily in captivity or I should more truly say, in domestication, she will, when among friends, sit like an old hen under a basket, the Black Partridge is a more difficult proposition. He will take two or even three wives in captivity, but the only man I know who bred them kept them in the breeding season in a wired enclosure. And the poor Indian is right when he prefers the Grey Partridge to the Black ; he prefers the more modest and the more faithful creature. And I myself think I shall always remember the Grey Partridges’ clear ringing call coming in the early morning over the awakening fields.

THE EARLY YEARS OF THE AVICULTURAL SOCIETY (IV)

By DAVID SETH-SMITH.

(Continued from p. 127)

Volume II of the New Series, commencing in November, 1903, contains only eight coloured plates, as it was found impossible to stand the heavy expense of one every month, but all are of first-rate quality and there are several good black-and-white illustrations as well. The volume commences with a beautiful plate of the Rufous-bellied Niltava (*Niltava sundara*) with a short article on the species by Russell Humphrys.

St. Quintin writes on the nesting in confinement of the Waxwing, a unique event, which was unfortunately not quite successful, though young were hatched on two occasions.

In the previous volume Dr. Geo. Creswell had written on "The influence of diet on the avian death-rate", and given as his opinion that the use of egg in food mixtures was the chief cause of septicaemia in captive birds. This resulted in a considerable amount of correspondence which is continued in the volume under notice.

Needless to say, the experience of the majority of aviculturists was hostile to a discontinuance of this item of diet for insectivorous birds.

Frank Finn writes a good article on the Carolina Duck, which is illustrated by a coloured plate by Goodchild. He remarks on the close resemblance of the female to that of the Mandarin Duck, and the curious fact that hybrids between the two are unknown. Close observation has shown, however, that the relationship is not nearly as close as would at first seem apparent. Hybrids between the Carolina and other species are not rare, but for some unknown reason the Mandarin refuses to interbreed with any other species. Finn concludes by urging aviculturists to do all they can by breeding the Carolina Duck to save a lovely species "from the fate which awaits it", but if he were alive now he would be pleased to hear that on account of protection in the U.S.A. it has considerably increased.

This volume contains several good articles on wild birds, which,

to my mind, add greatly to the value of the Magazine. The Rev. F. R. Blathwayt writes on rambles amongst the Highland Lochs, and describes the nesting there of the Black-throated Diver and others ; W. H. Workman tells of " A Naturalists' ramble in Algeria ", and of " Birds by an Irish Stream in Winter " ; while Captain Boyd Horsbrugh gives " Some Field Notes in South Africa ", and Russell Humphrys describes a ramble in Ceylon.

There is an excellent coloured plate by Goodchild of Guilding's Amazon Parrot (*Amazona guildingi*) with an article by Canon Dutton describing his experience with this rare species, peculiar to the island of St. Vincent. Since the devastating hurricane on that island this Parrot was thought to have been exterminated, but several " only survivors " have turned up since.

The White-throated Ground-Thrush (*Geocichla cyanonota*) is the subject of a beautiful coloured plate by Grönvold, with an exhaustive article by Reginald Phillipps.

St. Quintin's article on the Great Bustard, which follows, is of considerable interest, as he had much experience in keeping this species. He found that the male does not get his spring plumage, pectoral bands, and whiskers until the third summer and, until that time, does not expand his pouch. He had kept this species for years but, although many eggs had been laid, these were invariably infertile, until June, 1901, when a young bird was hatched, the only one in captivity in the British Isles before or since. Appearing during a spell of cold weather, the young bird unfortunately died, but the story, by Arthur Moody, who was for many years at Scampston, is worth reprinting, since the event appears to be unique.—" June 16, 1901 : The sitting hen Great Bustard has hatched off, but I am sorry to say that the young one is dead. She was due to hatch to-day, but I thought I had better keep an eye on her a day or two before, so on Thursday and Friday I just went near enough to the nest to see her sitting, and of course thought she was going on well, as I could see no difference in her behaviour. However, I took the precaution on Friday evening of putting a board near her nest with a little meal, some ants' eggs, and meal-worms upon it. I was going to do the same on Saturday morning when the old bird came rushing from a different place and, on going there, I found the young bird very weak and almost unable to stand, with its eyes shut and looking very bad. By its emaciated

appearance, I should say it had been hatched two or three days, and was suffering from want of food. I put all kinds of things round it and climbed into a beech tree to see if the old one would feed it, but she did not, though I watched for some time. She picked a little of the flowering grass and dropped it near the young bird, but it was too far gone to eat. I thought the best thing was to cram it with chopped mealworms, which I did several times, and to leave the old one to brood it until evening. But it died about 5 p.m."

T. H. Newman writes on his experience in breeding hybrids with various Doves of the genus *Turtur*, which all proved to be fertile. The genus has since been altered in name, in fact split up into several genera and some of his fertile hybrids were not merely between two species of the same genus but between two genera, e.g. *Spilopelia* and *Streptopelia*.

It has often been said that hybrids between genera are sterile, and this might be so if we knew exactly what constitutes a genus. Man has, for his convenience, distinguished certain groups as genera, perhaps because one group possess a ring on the neck and others do not, but nature evidently regards the Turtle Doves, whether ring-necked or not, as a very closely-related group.

A coloured plate of the Bahama Amazon Parrot (*Amazona bahamensis*) by Goodchild is perhaps rather too vividly coloured, but a charming plate for all that. Bonhote, who writes on this bird, had spent some time in those islands, and knew the species well. He does not give it a particularly good character, considering that, "apart from its beautiful coloration, it has but little to recommend it."

An account appears of a rare Lorikeet obtained by Mrs. Johnstone, which proved to be Weber's Lorikeet (*Psittuteles weberi* Büttikofer) from the island of Flores. At the time of its arrival, there was no specimen in the British Museum, and, so far as I am aware, no other living specimen has reached Europe either before or since.

Meade-Waldo contributes an attractive article on "Nesting Boxes for Wild Birds". He writes, "The boxes we use and which are almost always occupied year after year, are made by our own carpenter, out of $\frac{3}{4}$ in. oak plank for small birds, and 1 in. plank for large birds. Those for small birds are usually 5 to 6 inches

square inside, 8 to 9 inches deep, with a lid fastened by a *leather* hinge, the lid sloping and slightly projecting over the hole, which should be near the top of the box, at the side or in front, it does not matter which. The hole should be round, and $1\frac{1}{4}$ in. to $1\frac{1}{2}$ in. diameter. I find an admirable way to attract Tits, Nuthatches, Wrynecks, etc., is to nail a piece of stout bark across the hole so as to make the hole too small for any bird ; and then the incoming tenant chips the bark away to the size required. This has the effect of keeping out House Sparrows ; but boxes placed low and away from houses and out-buildings, are not much troubled by these 'undesirables'." The article is illustrated by photographs, one of which shows a box made of oak and put up in 1872.

Miss Alderson, writing on the breeding of the Rufous Dove (*Leptoptila reichenbachi*) gives a very useful hint which applies to other species of Doves and Pigeons as well. The dangerous time for the young birds is just as they leave the nest, and Miss Alderson says "it is essential to have a wooden crib (made of 11 in. high floor-boards) on the aviary floor under the nest. The crib of course filled with a good bed of straw and hay. If you neglect this simple precaution, you will probably find your young birds dead or with a broken wing on their first descent from the nest, for they are very fragile little creatures, and their small bones are soft, and if startled by other birds they may lose their hold and fall heavily, with fatal results".

Doves were more popular as aviary birds in 1904 than they appear to be to-day, and Miss Alderson had many species which she kept very successfully. I myself had a good many then, and in the volume under notice I have recorded the breeding of the attractive little Scaly Dove (*Scardafella squamosa*). But amongst my most interesting birds at that time were some Tataupa Tinamous, (*Crypturus tataupa*) whose nesting habits were strange as they were interesting. Their story as well as portrait by Grönvold of adult (and chick) is in this volume.

The Tinamous are a large group, inhabiting Central and South America and, although superficially resembling the gallinaceous birds, are, in reality, more closely allied to the *Ratitae*. In their breeding habits they are polyandrous, a fact that I was able to confirm, though it had been previously proved by M. Delaurier with the Martineta Tinamou (*Calopezas elegans*). The female

Tataupa is considerably larger than the male, and having paired and produced a clutch of eggs for him to incubate, she goes in search of a second mate and repeats the process, in this respect resembling another group of which I have had some experience, the Bustard Quails.

St. Quintin writes on Ravens' breeding in captivity. The young birds grew up somewhat rickety, a condition he found to be due to their having been fed principally upon the flesh of rabbits. "It did not occur to me at the time," he writes, "but as a falconer, I ought to have remembered that, though rabbit flesh is a good change of food, especially in hot weather, Hawks cannot work hard upon it, and, if fed too freely upon this meat, will rapidly lose condition and stamina."

A. E. L. Bertling writes on the hatching and rearing of Brush Turkeys at the Zoo, an event that has been repeated since, and which is now an annual occurrence at Whipsnade. The hatching of Crested Screamers (*Chauna cristata*) at the Zoo is also recorded, this being, probably, the first occasion upon which this species bred in Great Britain, though they have done so again since then. The incubation period was six weeks, the young, which somewhat resemble goslings, being clothed in yellowish down.

Grönvold supplies a drawing of the young of the Painted Quails (*Excalfactoria*) showing the difference between *E. chinensis* and the Australian *E. lineata*, both of which had been bred in my aviary. A. G. Butler writes on the Orange-billed Tanager (*Saltator auranti-rostris*), of which a good coloured plate by Grönvold appears. This is followed by an excellent article by that fine old zoologist, Dr. Albert Günther, on the breeding in captivity of the Red-backed Shrike. After his retirement from the British Museum, Dr. Günther found great pleasure in the study of aviculture, and the breeding of this Shrike in his aviary at Kew was a great achievement.

An account by G. C. Porter of the breeding of the Red-faced Lovebird (*Agapornis pullaria*) is particularly interesting, since the appearance in our last number of a similar account by Helmut Hampe. In Mr. Porter's case the birds nested in a small box, with half a coco-nut husk cemented inside, but exact details are lacking. The owner discovered two young birds, practically reared, dead on the floor of the aviary. I must admit that I had completely forgotten this case, but so far as I know, it is still true that the young

of this well-known species have never been reared to maturity, though Mr. Porter seems to have come nearer to success than anyone else.

(To be continued)

* * *

AN ABNORMAL CORDON BLEU

By C. N. ABRAHAMS

One of our latest rare acquisitions is a beautiful little Waxbill, which we have called, or rather styled, the Orange-Cheeked, or more correctly the Tangerine-cheeked Cordon Bleu. It is a perfect little Cordon Bleu in every respect, except that the cheeks, beak, legs, and feet are tangerine colour, instead of the blood-red cheeks and pinkish-blue beak and feet of the common Cordon.

It is the same size and has the same graceful shape of the lovely little Cordon, with the same pretty song and chirp or call-note. It also boasts the same pretty love dance or courting display, bobbing up and down on the perch, with a long straw in the mouth, as it edges closer and closer to its mate, uttering forth its fascinating little song, so characteristic of the Blue Waxbill family.

The back and wings are mousey-brown, which colour also extends over the head and back of the neck. It has a rich blue upper breast and flanks, and an equally rich blue tail, gracefully running to a sharp point, slightly curved upwards, thus giving a pleasing finish to a neat little bird. The blue extends well up the sides of the face, on which are painted two perfect orange or rather tangerine-coloured patches, the same size as those prominent red cheeks of the well-known Cordon. A significant contrast against the clear-cut fawn-coloured lower breast and under parts are the two orange-coloured legs and feet. The blending of these delicate colours on such a spruce and alert little figure is a rare sight. Truly a delight to the eyes of ornithologist and aviculturist alike.

Now, may I ask the question. What is he? Is he a freak, or a hybrid, or a new species? If the latter then all credit and honour goes to my wife for her keen observation and alertness in discovering him. She does the doctoring and nursing, finds pleasure in personally supervising the feeding and attending to the wants of

all the birds on the place, and it was during one of her rounds that she picked out this fascinating little chap. Perhaps the effort would be better appreciated were it known that there are some three to four hundred small birds, including dozens of Cordon Bleus, Orange-cheeks, and others all mixed together, flying about in a fairly large aviary.

If a freak, then it is a marvellous specimen. For why should the bird be so evenly marked and the lines so clear-cut and distinct? For instance, why should it have two orange cheeks? It might easily have had only one, instead of one on each side of the face, so symmetrically placed. The blue of the breast could easily have run irregularly into the fawn, and a pink instead of an orange beak, and so on.

If considered a hybrid, between an Orange-cheeked Waxbill and a Cordon Bleu, as one may easily imagine, then it could easily have shown some evidence of the maroon rump or greyish-white breast of the Orange-cheeked Waxbill, or the red cheeks and pinkish-blue beak of the Cordon, but none of these possibilities are present. Up to the present it is a problem to us all in South Africa, aviculturist and ornithologist alike. Neither the South African Museum, Cape Town, nor the Pretoria Museum, Transvaal, can place it. In reply to my letter, Dr. Austin Roberts says of it: "The bird you describe is not known to me, but may nevertheless be one that has been described. I don't like to venture an opinion about it, without seeing the bird itself. There are occasions when pigments do not develop correctly, of which we have three cases in the Black and Crimson Bush Shrike, in which the crimson has turned out yellow."

To this I can only remark that the bird has passed through one moulting season, while with us and there has been no change in the colour of his plumage and every marking is the same. There in the aviary he is, a bright-eyed perky little chap, and a puzzle to everybody who has seen him. Again the common question must be asked, What is he?

He originates from the wilds of Senegambia, West Africa. It is this thought that lingers in my mind, when trying to decide whether he is a hybrid or not. If he had been bred in captivity, it would perhaps have been an easy matter to say whether he is the result of a cross between an Orange-cheek and a Cordon Bleu.

I shall be glad if you could find space in our Magazine for these few words, and hope they will be of interest to fellow members. We are just hoping that the eye of some interested member will fall upon these notes, who perchance can give us some information on the subject.

In the meanwhile it has been named after its "discoverer" and known in our home as the "Una Waxbill" (Una Buyskes Waxbill).

[This is undoubtedly an uncommon variety of the Cordon Bleu (*Uraeginthus bengalis*) in which the red pigment is imperfectly developed.—ED.]

* * *

THE FIRST NESTING IN CAPTIVITY OF THE AUSTRALIAN SHELD-DUCK

(*Casarca tadornoides*.)

By J. DELACOUR

Of the four species of *Casarca*, three have for several years, bred freely in captivity: the Ruddy, Grey-headed (South African), and Paradise (New-Zealand) Sheld-ducks. All are very handsome, but extremely quarrelsome, which is a great drawback. The Australian Sheld-duck, perhaps the most beautiful of all, however, had so far seemed badly disposed to nesting under artificial conditions. I have not heard of its having laid eggs, either in Europe, in America, or in its native country, where it is known under the name of "Mountain Duck". Although closely related to the others, particularly to the Paradise Sheld-duck, it has a much longer neck, is more slender in shape, and, a very important point, proves quite peaceful in a mixed collection, both with the members of its own species as well as other Ducks and Geese. In short, its behaviour is much more like that of the two Sheld-ducks of the genus *Tadorna*, the European and the Radjah. In voice and display, on the other hand, it closely reminds one of the other *Casarca*.

For a long time, the Australian Sheld-ducks were seldom brought over, and considered decidedly rare in European collections. The first to arrive after the war, a male and two females, came six or seven years ago to Mr. Laidley, who kindly let me have them. They lived for a few years, but never laid. Four years ago Mr. Goodwin brought me another pair from Australia, and the last three years a certain number have arrived, so that the species is now well distributed in the collections of live waterfowl. At present, we keep three pairs : the oldest pair in the garden, where they peacefully live with many different Geese, Radjah Sheld-ducks and smaller ducks ; and two pairs on the lake, where they have been for two years and also prove harmless.

Every year, in January or February, these birds come into breeding condition, but so far nothing has happened, and in April they go into moult.

This winter, in spite of the severe frost in December, they again looked like breeding, and finally the female in the garden started laying in a nesting-box half-buried in the ground on 2nd February. Six eggs were laid at two-day intervals, the last on the 14th. The colour of the down of the female covering the eggs is very light grey. Mr. Fooks put them under a broody hen, and on 20th and 21st March two eggs were chipped on the thirtieth day, and three on the thirty-first, and finally five ducklings were hatched on the thirty-second and thirty-third day of incubation, the sixth egg being infertile.

The young look very lively. They resemble other Sheld-duck chicks in shape and markings, but the latter are pale greyish brown, therefore quite different from those of young Paradise Sheld-ducks, which are black ; they are decidedly lighter in colour than Ruddies and South Africans. They are also more slender in build, and have yellowish-grey feet and legs.

I hope to be able to report later on the full and final breeding in captivity of this interesting bird.

IMPORTATION OF PARROTS

HOW THE LAW STANDS IN NORTHERN IRELAND

The following statement has been received from the Government of Northern Ireland :—

Inquiries have been received from time to time from bird fanciers and others regarding difficulties arising out of the proposed importation of birds of the Parrot family into Northern Ireland either from Great Britain or abroad, one recent example being that of a Cockatoo which was “ held up ” at Stranraer in Scotland.

The Government of Northern Ireland wishes to point out that in 1930, with a view to preventing the spread of psittacosis, regulations were made (and still exist) whereby as a general rule the importation of Parrots and certain birds of the same species is prohibited, whether for sale or otherwise. There are, however, two exceptions to the rule. Firstly, the case of any Parrot which is proved to the satisfaction of the local Medical Officer of Health to be required for purposes of medical or veterinary research. Secondly, the case of a Parrot which is consigned to a person for the time being specially authorized by the Ministry of Home Affairs to import birds otherwise than for sale.

In the latter case, the Ministry issues a permit to the importer, provided he furnishes the following documents :—

(a) a declaration to the effect that the bird has been three years continuously or since birth in Great Britain, and has not been in contact with any birds suffering from disease ;

(b) a further declaration to the effect that the bird is not for resale, and

(c) a certificate from a duly qualified veterinary surgeon to the effect that the bird is in good health.

NOTE.—The word “ Parrot ” includes any of the birds commonly called Parrots, Parrakeets, Love Birds, Macaws, Cockatoos, Cockatiels, Conures, Caiques, Lories, and Lorikeets.

31st March, 1939.

BREEDING RECORDS : SUMMARY VIII

By Dr. E. HOPKINSON.

(Continued from page 139)

GAME BIRDS

691. RED GROUSE.
 692. WILLOW GROUSE.
 693. (Ptarmigan. A ? *hybrid* record only.)
 694. BLACK GROUSE. Zoo, 1840 ; Scotland, 1899. (Also a ? *hybrid* with the domestic hen.)
 695. (Capercaillie. A ? *hybrid* with the domestic hen.)
 696. (Canada Grouse, *Canachites canadensis*, ditto.)
 697. Ruffed Grouse, *Bonasa umbellus*. U.S.A.
 698. Prairie Chicken, *Tympanuchus americanus*. France and U.S.A.
 699. FRENCH PARTRIDGE.
 700. GREEK PARTRIDGE.
 701. Barbary Partridge. France.
 CHUKAR, and *hybrids* with the next U.K.
 ARABIAN CHUKAR, *A. melanocephala*. U.K. (Whitley, 1927, 1928).
 702. HEY'S SEESEE, *Ammoperdix heyi*.
 703. BLACK FRANCOLIN, *Francolinus pintadeanus*.
 GREY FRANCOLIN, *F. pondicerianus*. U.K., 1927.
 704. Clapperton's Francolin. (Abroad.)
 705. SPOT-BELLIED FRANCOLIN, *F. spilogaster*. Zoo, 1920 ; Shore Baily, 1927.
 Double-spurred Francolin, *F. bicalcaratus*.
 706. BARE-THROATED FRANCOLIN, *Pternistis leucoscepus*. U.K., 1905.
 707. PARTRIDGE.
 708. Mrs. HODSON'S PARTRIDGE. France.
 709. MADAGASCAR PARTRIDGE, *Margaroperdix madarensis*. France, 1890 ; U.K., 1931 and since.
 710. JUNGLE BUSH-QUAIL, *Perdicula asiatica*.
 711. ARGOONDAH BUSH-QUAIL, *P. argoondah*.
 712. ROULROUL. U.K., 1926.
 713. COMMON QUAIL.

714. RAIN QUAIL, and *hybrids* with the hen Stubble Quail (Zoo, 1909).

715. HARLEQUIN QUAIL. U.K., 1906 and abroad.

716. STUBBLE QUAIL. U.K., 1906, and Australia.

717. SWAMP QUAIL, *Ypsilophorus ypsilophorus*. U.K., 1905.

718. NEW GUINEA SWAMP QUAIL, *Y. plumbeus*. U.K., 1922.

719, 720. PAINTED QUAIL. Both races, *chinensis* and *lineata* have been bred.

721. Stone Pheasant, *Ptilopachus petrosus*. France, 1878.

722. CHINESE BAMBOO-PARTRIDGE, *Bambusicola thoracica*. France, 1868 ; U.K., 1932.

FORMOSAN BAMBOO-PHEASANT, *B. sonorivox*. France, 1929.

FYTCH'S BAMBOO-PARTRIDGE, *B. fytchii*, U.K., 1932.

723. HORNED TRAGOPAN, *T. satyra*. Vienna, 1868 ; U.K., 1912. The Western Horned Tragopan (*melanocephalus*) has also been bred, *teste* Ghigi and Delacour (*A.M.*, 1930).

724. TEMMINCK'S TRAGOPAN.

725. BLYTH'S TRAGOPAN. France, 1891.

726. CABOT'S TRAGOPAN. France, U.K., and America.

Tragopan Hybrids

HORNED TRAGOPAN × TEMMINCK'S. France and U.K., and × Cabot's T., *teste* Page.

TEMMINCK'S T. × HORNED T. France, 1926 and 1927 ; and × Darwin's Koklass : France, 1888.

Blyth's × Temminck's T. One record abroad.

727. BLUE CROSSOPTILON, *C. auritum*. Abroad ; also *hybrids* with the female BROWN C., and a further cross.

728. BROWN CROSSOPTILON, *C. mantchuricum*.

729. MONAL. Also *hybrids* with hens of the Black-breasted Kalij, Silver Pheasant, and domestic hen.

730. RUFOUS-TAILED PHEASANT, *Acomus erythrophthalmus*. France (two records). Also *hybrids* with the Black-backed Kalij (?).

731. VIEILLOT'S FIREBACK, *Lophura rufa*. And a *hybrid* with a hen Kalij (? *species*) is also on record.

732. BORNEAN CRESTED FIREBACK, *L. ignita*. France, 1902.
733. SIAMESE FIREBACK, *Diardigallus diardi*. Also *hybrids* with the hen Silver Pheasant. Zoo, 1922.
734. BLACK-BACKED KALIJ, *Gennæus melanotus*. Also *hybrids* with hens of the White-crested and Black-breasted Kalij.
735. WHITE-CRESTED KALIJ, *G. hamiltonii*. France and U.S.A.
736. BLACK-BREASTED KALIJ, *G. horsfieldi*. France and U.S.A.
737. NEPAL KALIJ, *G. leucomelanos*. U.S.A. Also *hybrids* with the female *G. melanotus*. (France, 1927.)
738. Anderson's Kalij (*G. l. sharpii*. Oates). U.S.A.
739. SILVER PHEASANTS. Commonly bred. The following *hybrids* are also on record : × BURMESE SILVER PHEASANT ; × Black-breasted Kalij ; × Black-backed Kalij ; and × White-crested Kalij, all three *teste* Bartlett ; × COMMON PHEASANT, *teste* Bartlett and recently at Tokio ; × Golden Pheasant ; U.K., recently *teste* Seth-Smith.
740. BURMESE SILVER PHEASANT, *G. lineatus*. Commonly.
741. SWINHOE'S SILVER PHEASANT, and *hybrids* with the hen SILVER PHEASANT.
LEWIS'S PHEASANT. France. 1931 and on.
742. EDWARD'S PHEASANT. France, 1924 (a first) and since. Also *hybrids* with hens of SWINHOE'S SILVER PHEASANT (France, 1925) and the WHITE-CRESTED KALIJ (U.K., 1938).
743. BEL'S PHEASANT. First France, 1900 ; since then elsewhere. *Hybrids* with the Crested Fireback are also on record.
744. IMPERIAL PHEASANT. France, 1925 onwards.
745. CHEER PHEASANT, *Catreus wallichii*. France, U.S.A., and U.K.
746. Koklass Pheasants, *Ceriornis macrolophus*. France before 1882.
(Darwin's Koklass.) A *hybrid* record with the female KOKLASS. France, 1934.
Yellow-necked Koklass, *C. xanthospilus*. Two early records (in the eighteen-seventies) in France.
- 747-752. COMMON PHEASANT and many of the races commonly bred.

Pheasant Hybrids

COMMON × JAPANESE ; × Black-backed Kalij (*teste* Bartlett) ; × GOLDEN (offspring fertile *teste* Bartlett) ; × REEVES' (*ditto*) ; × DOMESTIC HEN (a "Pero").

JAPANESE PHEASANT × Black-backed Kalij ; × COMMON PHEASANT ; × Ring-necked Pheasant ; × Soemmerring's Ph. ; × Golden Ph. (these three bred in Japan) ; × AMHERST, bred in Tunis, *teste* Hachisuka.

MIKADO × ELLIOT'S PHEASANT, and a further cross with the hen Reeves' Pheasant, *teste* Delacour.

REEVES' PHEASANT × Common Pheasant, *teste* Vale ; × SILVER (Zoo and elsewhere) ; × Cheer Pheasant, *teste* Bartlett.

SOEMMERRING'S PHEASANT × REEVES', France ; × Common ; × Golden, both bred in Japan, *teste* Hachisuka.

753. JAPANESE PHEASANT, *Ph. versicolor* (and hybrids see above).

754. SOEMMERRING'S PHEASANT.

755. REEVES' PHEASANT, and hybrids, see above.

756. ELLIOT'S PHEASANT, *Calophasis ellioti*. France, U.S.A., and ? U.K.

757. MIKADO PHEASANT, *C. mikado*. France and U.K. Also hybrids, see above.

758. GOLDEN PHEASANT, *Chrysolophus pictus*. Commonly bred. And hybrids with hens of the COMMON, Silver, Reeves', and AMHERST PHEASANTS.

759. AMHERST PHEASANT.

Hybrids

AMHERST × GOLDEN PHEASANT. Commonly bred.

AMHERST × Common Pheasant, *teste* Vale.

AMHERST × JAPANESE × AMHERST hybrid. Tunis, 1931.

760. RED JUNGLEFOWL, *Fallus gallus*. Often bred.

761. SONNERAT'S JUNGLEFOWL. Zoo and elsewhere.

CEYLON JUNGLEFOWL, *G. lafeyettii*. Zoo, 1928 and elsewhere.

762. JAVAN JUNGLEFOWL, *G. varius*. U.K. and France about 1923.

Junglefowl Hybrids

JAVAN × RED JUNGLEFOWL.

SONNERAT'S × RED, and × Javan.

(Junglefowl are the ancestors of the domestic breeds and naturally interbreed with them.)

Domestic Fowl Hybrids

Domestic Cock × Common Pheasant, *teste* Bartlett.

Domestic Cock × JAPANESE PHEASANT, Japan, *teste*
Hachisuka.

Domestic Cock × Black-backed Kalij, *teste* Bartlett.

Domestic Cock × Guineafowl, *teste* Bartlett.

Domestic Cock × Turkey. Bred in Norfolk, *teste*
Hachisuka.

763. PEACOCK-PHEASANT, *Polyplectron bicalcaratum*.

764. Germain's Peacock-Pheasant. France.

PALAWAN PEACOCK-PHEASANT, *P. emphanum*. U.S.A.

BRONZE-TAILED PEACOCK-PHEASANT, *Chalcurus chalcurus*.
U.S.A., France, and Germany.

765. ARGUS PHEASANT.

Borneo Argus, *A. grayi*. U.S.A., 1932.

RHEINARDT'S ARGUS. First, Japan, 1928; since then in
France and U.K.

766, 767. PEA FOWL. Both races, *Pavo c. cristatus*, the
Common, and *P. c. nigripennis*, the Black-winged Peafowl, are bred.

768. JAVAN PEA FOWL, *P. muticus*. Not so commonly bred.

Peafowl Hybrids

COMMON × JAVAN. Easily crossed.

Peacock × Guineafowl. Two or more records.

Peacock × Domestic hen. Two records, France and
U.K. Hachisuka gives a photo of the last. (I had more details of
these hybrids, but have lost them. Can anyone supply them?)

769. GUINEAFOWL. Bred everywhere; *hybrids* with the
domestic hen and Peahen are on record.

770. HELMET GUINEAFOWL, *Numida mitrata*. France.

771. DAMARA GUINEAFOWL. Bred in S. Africa.

772. ABYSSINIAN GUINEAFOWL, *N. meleagris*. France, 1889 ; U.K., 1928.
773. PUCHERAN'S GUINEAFOWL, *Guttera pucherani*. U.K., 1911.
CRESTED GUINEAFOWL, *G. edouardi*. Italy, 1928.
774. VULTURINE GUINEAFOWL. France and ? U.K.
(Renshaw mentions a cross with the Common Guinea-fowl).
- 775, 776. TURKEY. Domesticates. Imported Wild Turkeys have also been bred.

Hybrids

Turkey × Domestic hen. Skins in the Nat. Hist. Museum.
Turkey × Peahen. U.S.A.

777. Ocellated Turkey, *Meleagris ocellata*. ? bred in America. Bartlett says that the cross with the hen common Turkey has been obtained and that the offspring are fertile, and Ghigi reared many young hybrids from a hen Ocellated paired to a Wild Turkey (*L'Oiseau*, 1934, 542).

778. SCALED QUAIL, *Callipepla squamata*, and hybrids with the hen CALIFORNIAN QUAIL.

779. PLUMED QUAIL, *Oreortyx pictus plumiferus*. U.S.A.

780. Montezuma Quail, *Cyrtonyx montezumæ*. France, 1911.

781. CALIFORNIAN QUAIL, *Lophortyx californianus*.

782. GAMBEL'S QUAIL, *L. gambeli*.

783. DOUGLAS QUAIL, *L. douglasi*. First : Zoo, 1910 and since then elsewhere. Also hybrids with the hen CALIFORNIAN QUAIL, Zoo, 1913.

784. WHITE-CHEEKED CRESTED COLIN, *Eupsychortyx leucopogon*. U.K., 1910 ; U.S.A. more recently.

785. CURAÇAO CRESTED COLIN, *Eu. cristatus*. U.S.A

786. BOBWHITE, *Colinus virginianus*.

787. CUBAN BOBWHITE, *C. cubanensis*. U.S.A. before 1909 ; U.K., 1911.

788. BLACK-BREADED BOBWHITE, *C. pectoralis*. U.K.

Marbled Quail, *Odontophorus g. marmoratus*. Panama, 1928.

789. INDIAN BUTTON-QUAIL, *Turnix maculosus tanki*. U.K., 1903.

790. TAIGOR BUTTON-QUAIL, *T. suscitator taigoor*. U.K., 1903.

791. VARIED BUTTON-QUAIL, *T. varius*. U.K., 1905. These three were all first bred by Seth-Smith.

792. MADAGASCAR BUTTON-QUAIL, *T. nigricollis*. Germany and France.

793. SMITH'S BUTTON-QUAIL, *T. sylvatica lepurana*. Germany, S. Africa, and U.K.

LITTLE BUTTON-QUAIL, *T. velox*. Australia, 1937.

PALLAS' SAND-GROUSE. Denmark, 1891.

794. PIN-TAILED SAND-GROUSE, *Pterocles alchatus*. U.K.

795. LESSER PIN-TAILED SAND-GROUSE, *Pt. exustus*. U.K.

796. BLACK-BELLIED SAND-GROUSE, *Pt. orientalis*. U.K.

CURASSOWS TO RHEAS

797. MEXICAN CURASSOW, *Crax globicera*. (Globose C). And hybrids with the female HECKS CURASSOW are on record.

798. (Heck's Curassow?)

799. Albert's Curassow, *C. alberti*. A ?? hybrid record only: This Curassow × domestic hen (? ?).

BANDED CURASSOW, *C. fasciolata*. U.S.A.

800. GUIANA GUAN, *Ortalis motmot*. France.

801. PARA GUAN, *O. spixi*. France.

802. MEXICAN GUAN, *O. vetula*. U.K., 1914.

803. SCALED GUAN, *O. squamata*. France, 1887.

804. GUIANA PENELOPE, *Penelope marail*. France 1845 and 1859; the cross with the next is also on record.

805. White-headed Penelope, *P. pileata*. France.

806. BRUSH TURKEY.

MALLEE FOWL, *Leipoa ocellata*. Several successes in Australia.

807. TATAUPA TINAMOU. France and U.K.

808. RUFIOUS TINAMOU, *Rhynchotus rufescens*. France and U.K.

809. SPOTTED TINAMOU, *Nothura maculosa*. U.K. frequently.

810. CINERESCENT TINAMOU, *Nothoprocta cinerascens*. U.K., 1924.

PARTRIDGE TINAMOU, *N. perdicaria*. U.K., 1929.

811. MARTINETA TINAMOU, *Calopezus elegans*.

812. EMU.

813. OSTRICH.

814-18. RHEA. The COMMON RHEA (both races) and Darwin's Rhea have been bred ; also *hybrids*, COMMON × DARWIN'S RHEA.

* * *

REVIEW

BIRDS AS ANIMALS. By JAMES FISHER. Heinemann, Ltd., London. 8vo. Price 12s. 6d. nett.

There has been a great advance in the study of birds during the last twenty years, especially in field ornithology, and in the present volume Mr. James Fisher gives a summary of our present knowledge.

The first chapter is devoted to a brief summary of the rise of the ornithological literature from the earliest times to the appearance of Newton's *Dictionary of Birds*, published in 1896. Then follows a short account of the evolution of birds with chapters on adaption, environment, habitat, migration, etc., with a useful bibliography at the end.

A work of this kind must of necessity be a compilation, and the difficulty is to separate the grain from the chaff. We should hardly describe Quail and Vultures as typical desert birds, and Persia and Afghanistan are not now included in the Indian region.

We are told that the Wrens of St. Kilda and the Shetlands have longer wings than the mainland birds, because they are exposed to such strong winds, but no mention is made of the race found in the Outer Hebrides, an equally wind-swept area, in which the wings are of the same size as in the mainland race.

Then we would hardly accept the peculiar distribution of two races of Stonechat in Africa without a revision of all the forms of *Saxicola torquata* inhabiting that continent. Holte Macpherson did not "discover" Fair Isle ; he has never set foot on the island !

There are a number of other minor points which require checking, but nevertheless the book will certainly be welcomed by all field naturalists.

B. K.

* * *

NOTES

THE AUSTRALIAN SHELD-DUCK.

In his account of the first nesting in captivity of the Australian Sheld-duck (*Casarca tadornoides*), published in this number, Monsieur Jean Delacour mentions that a very important point of this bird is that it "proves quite peaceful in a mixed collection, both with the members of its own species as well as other Ducks and Geese". By a curious coincidence within a day of receiving Monsieur Delacour's article the Editor also received a letter from Mr. C. L. Sibley, from Connecticut, dated 13th March, 1939, in which he states: "At the moment I have a pair of Australian Sheld-ducks (*Casarca tadornoides*) in Florida which appear to be on the verge of nesting. The interesting thing to me about them is that, while they have been almost universally described as the one member of the Sheld-duck family which is not pugnacious and ill-tempered, this pair of Australians is exactly, if not more so, as ugly in disposition as any pair of Ruddys, Paradise, or South Africans. A pair here in the north appears docile and gets on well with other waterfowl in its pond. Possibly the reason for the mistaken idea of the Australian's good temper, is that conditions have not been such, where it has been kept, as to bring it into breeding (and consequently pugnacious) condition."

It would be extremely interesting to receive further observations on the behaviour of this bird as those of Monsieur Delacour and Mr. Sibley vary so much in temperament.

* * *

THE LESSER BLUE-WINGED PITTA.

In a note on the Lesser Blue-winged Pitta (*Pitta cyanoptera*) Mr. P. H. Maxwell states that he regards this species as one of the most charming of aviary birds. Mr. Maxwell's specimen thrives on chopped raw meat, banana, and insectivorous food, though, in the wild state, the food consists principally of ants and other insects and snails. Mr. Maxwell's bird remains for long periods on its perch and then suddenly gives the most amazing hops and jumps. It seldom makes any vocal sound, but when it does this consists of an "odd sort of little whispering sound". He considers Pittas as more suited to a tropical aviary than to a cage, as is evidenced by the condition of those in the central aviary at the London Zoo. The sexes are alike and of colours too many and varied to be described here.

* * *

INSURANCE OF BIRDS TRANSPORTED BY SEA.

The following extract is made from the Annual Report for 1938 of the British Section, International Committee for Bird Preservation:—

"At the meeting of the International Committee in Rouen in May, 1938, Dr. van Tienhoven (Netherlands) drew attention to the danger existing in the possibility of dealers in birds abusing the facilities given by insurance by having valuable and delicate birds sent to them under very bad conditions. He gave several illuminating details of large numbers of birds which had died while being transported, and concluded by proposing that the Chairman of Lloyd's should be communicated with in order to draw the attention of the Underwriters to this state of affairs. This proposal was accepted and the President was charged with sending the letter.

"In June a letter was duly sent by the President, Monsieur Jean Delacour, to the Chairman of Lloyd's, Mr. S. J. Aubrey, stating that the International Committee had reliable information that certain animal and bird dealers take

advantage of the facilities given them by insurance to have valuable and delicate birds sent to them under very bad conditions. In reply a letter was received in which the Chairman of Lloyd's stated: 'You may be quite sure that the Underwriters at Lloyd's would be most anxious to put a stop to the malpractices to which you refer.' Subsequently Mr. Aubrey received a deputation consisting of the President of the International Committee, Monsieur Jean Delacour, Mr. Alfred Ezra, Mr. David Seth-Smith, and Miss Phyllis Barclay-Smith, who, on behalf of the International Committee for Bird Preservation as a whole, laid the case before him and discussed with him how best it should be dealt with. Mr. Aubrey expressed full sympathy with the aims of the Committee and his desire to assist in any way in his power, and undertook that the whole matter should be investigated. Details of instances in which large numbers of birds had died while being transported were supplied, and the matter, as promised, was fully investigated.

"As a result the Committee of Lloyd's offered to print and circulate to Underwriters the requirements in connection with the insurance of live birds which, in the opinion of the International Committee, would most effectively achieve the object in view. With the assistance of the information already collected by the International Sub-Committee on Bird Transport, conditions which it was felt should be required for insurance of live birds transported by sea were drawn up by Monsieur Delacour, Mr. Ezra, Mr. Seth-Smith, and Miss Barclay-Smith, and submitted to the Committee of Lloyd's.

"On receipt of these proposals a letter was received from the Clerk to the Committee of Lloyd's in which he stated: 'I now have to inform you that arrangements have been made for these suggestions to be brought to the notice of Underwriters generally, and it is trusted that these will assist in promoting the ends which your Committee have in view.'

"In this most satisfactory conclusion a most valuable step has been taken in checking an abuse which is greatly deplored by Zoological Societies, aviculturists and bird-dealers themselves—a step which will be acclaimed by all bird-lovers. The International Committee is greatly indebted to the Chairman and Committee of Lloyd's for their sympathetic co-operation and prompt action."

* * *

ENGLISH SKYLARK COLONY IN BRITISH COLUMBIA.

The following note has been received from the Press representative of the Canadian Pacific Railway:—

Each spring when they begin to pour forth their melody the Skylarks of Victoria, British Columbia, are news. For there is no other place on the American Continent where they live and breed. Brought to Victoria in 1903 by the British Columbia Natural History Society and released at the Uplands, a sea girt stretch of rolling parklike country studded with oak trees, there they have flourished. They were augmented by forty-nine additional birds in 1913, have bred, and are now numerically strong, a delight to all who hear them sing. They nest in and around the Cadboro Bay and Gordon Head districts as well as the Uplands.

In September, 1925, Professor William Lyon Phelps, Dean of American Literature, wrote to a correspondent in British Columbia: "Victoria, when I saw it in 1908, seemed to me more English than Warwickshire—it is a lovely spot; and probably the English bird knew what he was about when he went there."

This year during Spring Gardens Festival, 3rd-6th May, when hundreds of garden and beauty lovers from all parts of the country visit Victoria's spring-time gardens, special arrangements are being made for them to drive out and hear the Skylark's song.

* * *

CORRESPONDENCE

THE WATERFOWL NUMBER—AN OMISSION

When writing the article on Australian Ducks which appeared in the March number of the *MAGAZINE*, I left a blank space where I intended to insert the dimensions of our enclosures for Waterfowl and another blank space for the number of Egyptian Geese that our pair have reared during the last four seasons and intended, at the time, to fill them in when I had the opportunity of checking up on the actual figures. However, owing to a foolish omission on my part I posted the article without having filled in the missing data, and the only recourse left for the Editor was to fill in the blank spaces by saying that "Most of our Ducks and Geese are accommodated in 'fair-sized' yards", and that "A pair of Egyptian Geese . . . have reared 'several' young during the last four seasons".

As this information is somewhat vague I would like to say that the dimensions of our Waterfowl yards are 50 ft. by 20 ft., and that the number of young reared by our pair of Egyptian Geese during the last four seasons is twenty-seven.

R. R. MINCHIN.

ZOOLOGICAL GARDENS,
ADELAIDE.

WHERE ARE THE VERSICOLOR PHEASANTS?

I have read with interest Mr. Hugh Wormald's letter on this subject. In the first place I personally appreciate the beauty of this Pheasant, although I consider Mr. Wormald is bold indeed to state its beauty exceeds that of the Golden and Amherst Pheasants, but I admit it is only a matter of opinion. I consider the Amherst Pheasant is one of the most beautiful birds in the world, and running it close is the Mikado Pheasant. There may not have been much mention in this paper of the Versicolor Pheasant, but I rather imagine there are more in the country than Mr. Wormald imagines. There is a pair on my place, Captain Scott Hopkins has a pair, and Mrs. Cawley, of Alnwick, also possesses a pair, there are also a few other odd pairs about. There are quite a few reared every year, and I shall be very surprised if a few chicks are not running about on my lawn before May is out. I think I can give sound reasons for the drop in their popularity. For many years the average phasianist and certainly gamekeepers looked upon the Melanistic Mutant (*Phasianus tenebrosus*) as the Versicolor; the former was advertised and bought as the Versicolor. The result has been that the pure Versicolor has dropped out of favour. Two years ago I bought two sittings of Versicolor eggs and was assured they were pure, all the chicks were *tenebrosus*, much to my disgust. There is a similarity between the two Pheasants, but on close examination they are entirely dissimilar, but the fact that both males possess much green plumage is sufficient for many to label both Versicolors. A year or so ago a judge at one of the patronized O.P.S. shows labelled a Melanistic as Versicolor; since he has heard a good deal about this judgment.

In a recent issue of the *O.P.S. Journal* a magnificent plate of the Versicolor Pheasant was portrayed by a Japanese artist, and I must send a copy of this journal to Mr. Wormald, it may induce him to join that Society; I hope so. For his benefit I may state that since the publication of that journal there has been a steady and gratifying demand for the Pheasant.

As to the hybrid Amherst \times Monal, it is certainly a most intriguing cross, but about ten years ago the late Lady Dunleath reared one in Northern Ireland (Ballywalter Park to be precise). She kindly sent me a photo of the adult male. This bird lacked the long beautiful tail of the Amherst cock, but otherwise, judging from the photo, the Amherst blood was in preponderance.

PAUL J. LAMBERT.

NAWTON, YORK.

THE NEED OF A SYSTEM OF PEDIGREES FOR PURE-BRED BIRDS

Although I have never kept waterfowl owing to not having a suitable place, I read the March Magazine with great interest and in my own opinion it was one of the best numbers of the Magazine ever published.

Every article was distinct and there was no overlapping.

In his article Dr. Derscheid mentions certain species of Pheasants, which it is no longer necessary to import, as it has been found out that they can be propagated in Europe in the necessary numbers to render their extinction an impossibility.

One very serious point, however, has cropped up in recent years, not only in regard to Pheasants, but to many other species of birds. I refer to the hybridisation of closely related species. Take for instance the Golden and Amherst Pheasants. It is now almost impossible to get pure specimens.

Having judged Pheasants at about half a dozen shows in 1938, I came to the conclusion that not one person in a hundred can tell a pure-bred Golden or Amherst. They may have kept Pheasants twenty years, but how are they to know a pure one, when they have never seen one? They may have bought the birds for pure-bred ones, but the person who sold them was in the same position, as he did not know the points of a 100 per cent pure bird. Another difficulty is that show promoters select judges who know nothing about Pheasants, and the result is that Golden are judged on size. A Golden cock Pheasant is a small, light bodied bird with very thin yellow legs, and clear pinkish buff face. The ones that get the prizes under most non-Pheasant judges are heavy bodied, and have dark faces, a sure sign of Amherst blood.

Even Tragopans, Kaleeges, Hokis and Peacock Pheasants are being crossed. I have heard remarks at various shows that a similar state of affairs is found in African Love-Birds.

Unless some system of pedigrees and ringing is adopted it looks as if there will be very few pure-bred birds twenty years hence.

G. BEEVER.

GREEN ROYD,
FENAY BRIDGE, HUDDERSFIELD.

BREEDING OF WADERS

I am interested in the various letters on Waders, but I fear that Mr. Lambert is due for disappointment if he hopes to breed any—a few of us in pre-War days—St. Quintin, Bonhote, the Zoo and others kept Waders, but as far as I can remember none but Green Plover, Avocets, Ruffs, and Reeves ever nested, though I seem to remember that a Knot's egg was laid at Lilford.

I used to keep Curlew, Oyster-catchers, Bar- and Black-tailed Godwits, Avocets, Ruffs and Reeves, Redshanks (Common and Dusky), Green, Grey, Golden, and Ringed Plover, Knots, Turnstones, Dunlins, Curlew Sandpipers, Whimbrels, Sanderlings, Rednecked Phalaropes, and during the ten years I had Waders I never got any eggs except from Reeves—in fact we used to be very pleased if we could persuade the birds to assume full breeding dress. I entirely agree with Mr. Lambert that Waders are among the most interesting and nicest birds that one can keep, and I sincerely hope that he will prove me unduly pessimistic and breed many of them.

HUGH WORMALD.

HEATHFIELD,
DEREHAM, NORFOLK.

WHY ARE MEALWORMS NOT BRED IN ENGLAND?

A number of bird lovers who keep insectivorous birds are asking the question, why do we have to buy imported mealworms, why are they not produced in large quantities in England as they are in Germany and Holland? I should also like to know the reason why. In the event of another world war the supply would cease and cause a lot of suffering to our birds. It appears to me that a small limited company could be formed for this purpose, and could be made a paying proposition. I am certain plenty of bird keepers would subscribe.

The present importers would probably prefer to get their mealworms from a home supply. Quoting from a letter I have received on the subject from one of the large importers, he says :

“It is vitally necessary, as I see it, to go and see how it is done, and if such a person were required, I would volunteer.”

I should much like to know what other members of the Avicultural Society think about the matter.

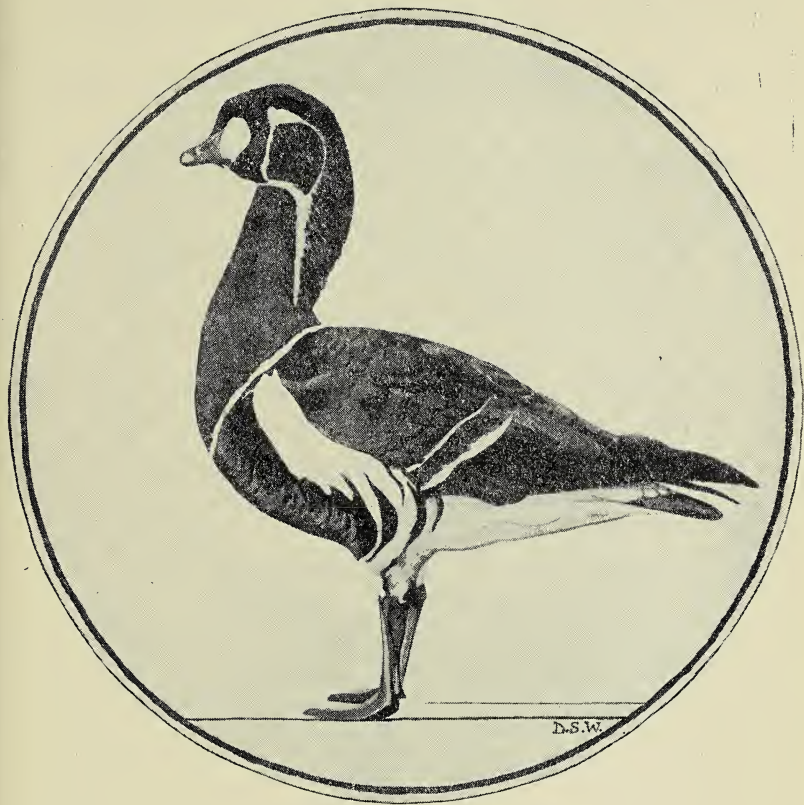
W. A. JONES.

54 STOCKWELL PARK ROAD,
S.W. 9.

[I have visited the section of the Aquarium in the Berlin Zoo where mealworms, flies, etc., are propagated for the reptiles, amphibians, and fish. The mealworms are kept in a warmed room on shelves, in wooden, ventilated boxes, in which are a series of trays. The mealworms in addition to meal are provided with paper and are in varying degrees of development in order to maintain a constant supply. I will endeavour to secure exact information of the method used for publication in the AVICULTURAL MAGAZINE.—ED.]

[The Editor accepts no responsibility for opinions expressed in Correspondence]

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AVICULTURAL MAGAZINE



CONTENTS

	PAGE
The White-capped Tanager (<i>with plate</i>), by H. C. MARTIN	175
Breeding Rare Parrakeets in the Chicago Zoological Park at Brookfield, Illinois, by KARL PLATH	182
Breeding Experiments with Hooded Parrakeets, by HELMUT HAMPE	188
The Early Years of the Avicultural Society (V), by D. SETH-SMITH	191
On Bulbuls, by GODFREY DAVIS	196
Award of Medals	199
Notes	200
Correspondence	201

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WHITE-CAPPED TANAGER
(*Stephanophorus diadematus*).

Specimen presented to the London Zoo by H. C. Martin in 1926 ; photographed by D. Selh-Smith, 1939.
Frontispiece.]

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JUNE, 1939.

THE WHITE-CAPPED TANAGER

(*Stephanophorus diadematus*)

By H. C. MARTIN

Of the not very large number of birds which I have kept and studied in captivity—since as a lad I first began bird-study and bird-keeping some 50 years ago—this lovely Tanager, by reason of his many charms, stands out, I think, my favourite. When I first went out to the River Plate, in 1903, I carried with me, a valuable contribution to a staff library, the two volumes of W. H. Hudson's book, *Argentine Ornithology*, hardly dreaming that I should really soon make acquaintance with this conspicuously beautiful species, the subject of one of the fine coloured plates and which, to my then inexperience, had seemed to me something almost ethereal, surely altogether too rare, too delicate, ever to be kept in a cage. But hardly a year later I was making my first journey of any length in the "camp", accompanying, by his suggestion, the good old pastor of the district of Rio Negro in Uruguay, himself a great nature-lover, on his periodical round amongst his widely-scattered parishioners. Near the end of our trip we stopped at the Estancia San Juan and then at the near-by old town of Colonia (that same San Juan and that same Colonia visited by great Darwin in 1833 : voyage of the *Beagle*), the point of embarkation for Buenos Aires and the return journey up river.

With eyes open all the time for birds, I still remember vividly, in particular, how at the Estancia I marvelled at seeing the numerous *palomitas*, pigeons in miniature, the smallest of the several kinds of doves so common in the country (at that time at all events), nesting, perfectly tame and quite unmoved, right under one's eyes on the rough excrescences and lower branches of some large trees round the house. But I did not imagine I should be so lucky as to see the "Cardenal impérial" (*Stephanophorus*) when, a day or so afterwards in the town, there at the hotel in an open wire cage, behold a lovely male in all his imperial blue, snow-white cap and scarlet diadem, tame and in perfect trim, though kept under conditions which aviculturists at home would judge but little suited to a Tanager. I seem to remember that when we inquired "*Con que lo alimenta?*" "What do you feed him on?" part of the reply was "*con flores*"—amongst other things—which I can quite believe, for I do not think the good host was "pulling the leg" of the "*gringos*"—because this bird is very fond of green food and loves to nibble flowering grass and chick-weed, while he simply dotes on crisp lettuce, preferring it almost to a meal-worm, and he will gnaw it away with his rather Bullfinch-like beak to the last scrap of stump. It has not occurred to me to try my present pets with rose-petals or geraniums, but these could hardly do them harm.

Actually, in the native bird-shops, these birds are fed chiefly on orange and banana, with sweet potato or scalded maize-meal, and some finely chopped beef: this latter they eat quite greedily but, except in small quantities, I do not consider it very good for them, though it takes the place of insect food when this, a considerable part of their natural diet, cannot be obtained.

During many years afterwards, at various times, out in pleasant Uruguay, I kept a few of these birds, purchased in Montevideo, and I now and then observed them wild in ones and twos near the river-bank in the neighbourhood of Fray Bentos. The bird is not common and I never had the good fortune, or good opportunity, to observe its nesting and other habits in freedom. Hence I cannot personally say anything scientific about these, but I am able to quote some passages from a recent article in an excellent, authoritative Argentine periodical, *La Chacra* (The Farm), devoted to farming, agriculture and country topics, which I believe will interest aviculturists. This article translated reads:—

“ We illustrate as our frontispiece a male example of the *Cardenal Azul* (Blue Cardinal), a beautiful bird of the River Plate which makes its appearance in Spring, migrating to warmer climes as winter approaches and fruits, its principal food, become scarce : it is a creature which, though it bears cold well, only lives comfortably in a warm climate.” (My experience does not quite bear this out since, with proper shelter, it winters admirably in England as I shall show further on, while I have a distinct recollection of watching a couple picking about on my garden path in Fray Bentos one very cold day indeed).

“ It is also known by the name of *Cardenal Impérial* or *Cardenal de la Sierra*, and in Uruguay it is called *Cardenal Patria* because it bears the colours of the flag of Artigas (the Liberator and national hero).

“ Every year it appears first in Uruguay, coming from Brazil, and then passes to the islands and river-banks of the Rio de la Plata, where it is seen singly or in pairs : these birds do not go in flocks and are not abundant, it being difficult to get them in the birdshops of the capital, because the catchers can rarely obtain them in number sufficient to meet the demand.

“ It nests in the woods, in high trees, principally fruit-bearers, where it makes a shallow nest, lined with dry grass. The female lays, as a rule, four white eggs with flecks of deep red.

“ During incubation the male remains hidden in the densest foliage, continuously singing to his mate. His song consists of a soft melody but does not give him fame as a song-bird, since it is rather for the adornment of their aviaries by reason of his strikingly beautiful plumage alone that amateurs acquire him.

“ They live very well in captivity and there have been persons who have succeeded in breeding them. The birds are some 17 to 19 centimetres long. They eat grains and insects but their favourite food is fruit, principally the orange, of which they leave only the skin and the membranous divisions of the core and segments.

“ They get tame very soon after being caged, to the point of coming to feed from the hand of the person who tends them. They do no damage in the fruit-gardens, despite the fact that they are fruit-eaters, possibly because they are not common

enough to be looked upon as harmful." (How unfortunate that this is too often the case with our own lovely Bullfinch, which they somewhat parallel).

It is true that they eat out an orange in the way described but it is another, much more abundant Tanager, the light blue *comehigos*, or "fig-eater", helped too by the lovely *siete colores*, as the little boys call him—the Seven-coloured, or Striated Tanager, often associating with it—that does serious damage at times to the oranges and figs, and is unhappily mercilessly shot in consequence. It is curious to discover sometimes that what one took for a full, ripe orange still hanging on the tree is just a shell completely hollowed out from above by these birds.

Returning from the Plate in 1926, and thinking that I would remain in England, though I had not yet decided on establishing a home here, I could not resist bringing over two male White-caps to keep wherever and whenever I could make them comfortable. Fate, however, decided that I should go back once more to the sunny South and thus, instead, I had the pleasure of presenting them to the Zoo, where only last month, over twelve years later, I saw one of them still in excellent condition, though showing signs of age, while the other survived till only a few months previously, no bad record for small birds in captivity and proof of their adaptability to cage life—and of the great care with which they have been looked after.

By a coincidence, just at the time that I learned of the death of the latter bird, I received two more nice males and, having another old favourite too in my small collection, I was happy to offer one of these also to the Zoo, so that there are still in the Bird House two males of these interesting birds in the large box cage which has so long been devoted to them.

I had been long trying to get some females when, early in 1936, a friend rather unexpectedly brought me over three, but owing to a change of residence, I was only able to accommodate one, parting with a second to another aviculturist and sending the third to the Zoo. Unfortunately, misfortune overtook both of these not very long afterwards, while the one I retained proved weakly and lived some ten months or so only, so that my hopes of breeding this bird were shattered *pro tem.*, but at least I had the pleasure of observing

the elegant display and quaint approaches of the male towards his mate, raising one foot at a time, as if it were a hand, to touch her.

Since the female is so seldom brought over I might say that her plumage is of a dull, almost slaty blue throughout and, but for a few hardly visible flecks, she completely lacks the snow-white cap of the adult male, while her frontal tuft is of a coppery hue instead of a rich red. In the old male the cap is of a pure glistening white and, when fully depressed, with the tuft or diadem which fronts it, forms a clearly defined "V" shape pointing down the neck, the tuft making a similar but narrower pattern along its middle. In the young male—I have by my side as I write a nice one, two years old perhaps, sharing a large cage with a Scarlet Tanager—the white cap is rather indistinct and blends into the blue of the neck feathers, nor has the rest of his plumage, though handsome, yet reached the full imperial blue of the adult.

My old bird lives now, with some small South Americans, in an outdoor aviary where he has been throughout this past, really severe winter, but of course it is furnished with an inside shelter, in which the lowest temperature I have observed has been about 43°. Yet he is in splendid health and feather and it is delightful, when one goes out to attend to the food supply, to see this beautiful gleam of blue come sailing down to discover what one has brought him, for these birds, like others of the Tanagers, are very confiding and intelligent. I have at the corner of the aviary what I call a little "feeding table" accessible by a small self-closing door, an arrangement which avoids one entering the aviary each time and which I can much recommend. At really cold times I shut him and his companions in the inner compartment by means of a sliding shutter, worked by a counterpoise, and, incidentally, it is amusing to see, when a mild day comes, how eagerly they all troop out the moment the slide is lowered, if but a bare two inches.

Although this bird lives very happily when kept indoors at a mild and even temperature, as at the Zoo, this is, as I have shown, by no means a necessity for he is really quite hardy and will do excellently under roomy, and as sunny as possible, out-of-doors conditions, provided that he has been long enough in England to have adapted his moulting period to our seasons, and that dry, draughtless and frost-proof shelter be at his disposal. It is to my mind a cruelty to expose birds from warm countries to the cold of

our winter, but this particular Tanager is not really "tropical", and in fact the climate in the River Plate can be at times extremely chilly. My small aviary is built against the house wall—there is to my mind nothing like a lean-to—from which it receives some warmth and when the weather is frosty a small electric stove in the adjoining shed helps to keep things comfortable.

I kept this old bird for some two years at first under ordinary sitting-room conditions and he has never been sick or sorry except for one occasion when he developed a cyst on the cheek which seemed to threaten the eye. Although I greatly dislike to handle birds I was thus forced to catch him, roll him in a handkerchief and gently excise it, using a diluted antiseptic; after a week or two no trace of the trouble remained and his plumage soon became perfect again.

I am more enthusiastic than *La Chacra* as to this Tanager's powers as a vocalist; for me he is one of the most agreeable bird musicians I know, his song being sweet and sustained and interspersed with some quaint and delightful chattering notes. When my older male was kept indoors he sang constantly, both by day and by artificial light—at one's bidding even, and, delighting in the rustling of a newspaper and the sound of voices or the wireless he would sing so vigorously in fact that we sometimes had, jokingly, to tell him to be quiet, as the combined noises were rather overpowering.

His junior too, here as I write, is chattering and warbling very prettily, but he has not yet attained the full power of song of the adult.

The feeding of these birds gives no special trouble: fruit is the natural staple—orange, banana, grapes, sweet apple or pear—in good-sized portions which I fix in a hook-on pan in such a way that they cannot pull them out, and at the same time always some food of a farinaceous kind, namely ordinary rice or semolina pudding from the table, chopped egg with dry crushed sweet biscuit, crumbled cake and so forth. As stated, they are very fond of lettuce and other green food and rejoice in a ripe cherry or privet berries in season, while they will also eat apple pips and certain seeds. They should have a few meal-worms daily or a scrap of shredded beef or, better still, spiders, small moths, beetles and flies which are part of their diet in the wild, and which one tries to procure for

them as far as possible in the summer. Saw-dust I consider better than sand for their cage-floors and I doubt in fact whether grit of any kind is necessary for these soft feeders, though I provide sand as well, "*por las dudas.*"

I have sometimes wondered what fruits these and other Tanagers lived on in the River Plate before the Spanish colonists introduced the prolific vine, orange, fig, loquat and other European kinds. As far as my knowledge goes the *monte*, i.e. the woods, seem to be singularly lacking in palatable wild fruits such as we have in England, though there is one tree at least, called *higuerón*, which bears quantities of little, rather tasteless "figs" doubtless attracting many birds.

Like all the Tanagers, White-caps are most energetic bathers and delight in soaking themselves till they can barely fly. My old bird promptly makes for the water-pan in the outer flight when he is let out on what the weather clerk calls "rather milder" days and thoroughly enjoys a good splash in spite of the, actually, quite chilly conditions.

I have not seen these birds offered for a very long time: they are not easy to get, partly on account of their scarcity and partly—I am glad to record from what friends overseas have written to me—because of the stricter enforcement nowadays of the close season laws. South American republics too, it would seem, are realizing the importance of protecting their fauna, and particularly the birds. Then, too, it is difficult to get them properly cared for on board ship and the trials of the voyage may often result in permanent sickliness. At all events the aviculturist who possesses one, or several, is fortunate, for altogether I know no small bird having more pleasing attributes combined with great beauty, or one more desirable as a pet either in a suitable covered cage indoors or flying free in a not over-large aviary.

BECKENHAM.

February, 1939.

* * *

BREEDING RARE PARRAKEETS IN THE CHICAGO ZOOLOGICAL PARK AT BROOKFIELD, ILLINOIS

By KARL PLATH, Curator of Birds

This is to be narrative, rather lengthy I am afraid, of a breeding experiment and its results amongst birds, rarely if ever before, propagated in American Zoological Gardens. The main inspiration of this idea was the magnificent collection of birds brought to the Chicago Zoological Park at Brookfield from Australia in May, 1934. This was secured from the Taronga Zoological Park Trust of which Colonel Alfred Spain is the Chairman, and came under the personal supervision of Charles Camp, overseer. The excellent care shown the birds during their long journey was very evident on their arrival—every one was in perfect show condition and possibly only a zoo man or a sincere lover of animals could really appreciate what this signified. It meant unending and faithful care every minute of the trip.

Mr. Edward H. Bean, the Director of the Brookfield Zoo, has had many successful results in breeding in the various departments and among those yet to be attempted was a plan to breed from the choice stock of the Parrakeets which formed an important part of this Australian collection. The plan finally materialized in the spring of 1938, when a row of breeding runs was built in a secluded part of the service yard away from the din and clamour of the public. It seemed pretentious to us at the beginning, but now that success seems assured, we could use again as many. The runs measure 6 feet across by 20 feet long and 7 feet high, and have an open shelter at the north end. The nest-box, which may be compared to a grandfather's clock in style, stands out in the open at the opposite end from the shelter and the roof above it is covered with burlap which admits rain, but protects from the sun's rays. The nest-box reaches nearly to the top and has an opening commensurate with the size of the birds. Below the opening is a small "porch". The box is filled about three-quarters full of earth and peat-moss with a piece of inverted sod on top. Rough bark was nailed on the inside, aiding the birds to climb up or down. Lord Tavistock, whom we know as one of England's most successful Parrot breeders, was most gracious in giving us these valuable

“tips”, and it speaks well for this type of nesting-box to mention that nine species of the Parrot tribe immediately “took” to it.

A record of accomplishment in breeding birds in captivity means more than the mere laying of an egg or even hatching it. It means that the youngster must reach an age where it can fly and feed itself without the aid of its parents. Concerning Parrots if a young bird is seen outside the nest for the first time it may be said to be a fact accomplished. If they are willing to breed they go about their business in their own determined way and usually the female is seldom seen during incubation. After the young have hatched both parents feed them in the privacy of the nesting cavity and we do not see the results of our hopes until they appear one by one ready for their battles with the world. Sometimes, of course, tragedy ensues—the female may die egg-bound, eggs may be infertile or the young may die from lack of attention—but we found these dismal happenings to be the exception.

Most of the pairs selected were put in the runs on 5th June, and they will be named in order of success.

Our hopes at first centred on the Bourke's and Turquoisines as they showed immediate interest, and it was not long before the females of each disappeared. The males, however, seemed to find the nest-holes companionable and spent long hours alongside warbling in a quiet, contented manner. We had placed a hollow log in the Bourke's cage; it was the only one used because of the difficulty in getting suitable ones. The female remained in seclusion until 11th July, when she appeared for a short time, then again retired until 2nd August. On that date the first youngster appeared—almost identical with its mother in appearance, and three days later a second one emerged. Shortly afterwards it disappeared, and there was no trace to be found of it. In the meantime the female again took to the nest while the male attended to the wants of his remaining offspring. One morning a tell-tale bunch of feathers showed there had been a struggle of some sort, but again no trace of the young bird. Later, both mice and a shrew were caught, and it is possible that the young birds either stunned or killed themselves flying about and, dropping down, were seized and carried away by these vicious marauders.

However, we have a cheerful sequel to record with the pair of Bourke's. By the end of October there were several intermittent

days of abominable weather, so it was decided to catch up the pair. To our surprise and delight, a youngster had made its appearance and was flying about. This made it urgent to remove birds and nesting-log to a smaller cage at once, so there would be no risk of the young birds hurting themselves in their wild flight. A quick scrutiny revealed three more young birds inside the log, and the next day all four were out and quietly inspecting their surroundings.

The Turquoise procedure was much the same as that of the Bourke's, with the exception that but one young bird appeared, and was seen only for a few hours on the day of its appearance. The mice had gained access and had several holes under the foundation in which we later found some of the bodies of the "victims". It is my belief that all the deaths were caused by the fright incurred by stray cats and squirrels scrambling over the tops of the runs. We will dismiss the experiment with the Turquoisines in this short paragraph—it was a keen disappointment not to have had success with them, but it is hoped they will live long enough so that we may try again this year.

The Cockatiel were the next to show results, for on 5th August, twenty days after we first heard voices in the nest, a fine young bird appeared, and three days later, another. Both parents incubated alternately—the male bird being on the nest during the day. Shortly after the second young bird emerged the female again went to nest, and after another long period a third appeared on 28th September. We had to see what had gone on in the nest, and inspection revealed the dried body of a callow infant. Cockatiel, of course, are not considered difficult, and breeding them would not be thought extraordinary.

Probably the greatest cause for joy came with the Queen Alexandra Parrakeets. Robert Bean, Assistant Director, was fortunate enough to secure the last of three pairs which were the first ever to come to America. They arrived on 14th July, in their original shipping cage, which had housed them for many weeks. This species is very elegant in form, and in its delicate pastel tints of green and pink forms a refined contrast to the garish colour schemes of most of the Parrot tribe. The pair was installed in one of the runs, and within two weeks we were fairly certain that they approved of the nesting site. The female was seen less and less frequently, and finally in September, after seeing the male fly

into the nest, we suddenly heard the welcome sounds of young birds being fed. They were much noisier than any of the other babies we had been hearing, and we could hear them every day until the first appeared twenty-six days later on 2nd October. It was so like the parents we could not be sure until we saw three birds feeding together. On the next day the second youngster was noticed sitting in the nesting hole. It differed from the others in having the forehead pink like the throat, instead of pale grey. The season becoming too late to risk further breeding it was deemed best to close up the nesting-hole, but before doing so an examination disclosed the female with four more eggs. A discarded nest-box was hastily sawed in half and prepared to hold its quota of earth ; it was then replaced on the lower half and put in the run alongside the occupied nest. Some handles had been fastened on so it could be moved whenever necessary with a minimum of shaking up. The female and the eggs were carefully put in the new nest, and she continued her incubation without a sign of impatience for many days. A sudden cold snap came on 23rd October, and forced us to take the family and the nest indoors to the exhibition cages. A newly-hatched "chick" was peering from under its mother's wing, so to avoid any chance of neglect on the part of the parents and the first-born already being able to feed themselves—we removed them to another cage. We await further developments from the second brood. This is the first record for America.

The gorgeous King Parrots have always been our favourites—the male especially, in vermilion and rich green, being outstanding in brilliancy. From the time of their arrival they were not happy in the wall-cages, and several were lost until they were removed to a large flight cage in the Perching Bird House, which they shared with a miscellaneous group ranging from Oyster-catchers to Bower-birds. Frequently the female was seen feeding on the raw meat which had been put there for the Kookaburras. She paid no attention to the various hollow logs placed for her disposal beyond a quick and indifferent investigation. But when released in the breeding run outdoors they showed immediate interest, and in due time presented us with two very husky progeny. They remained in the nest twenty-five and twenty-six days after we first heard their voices demanding food. There was a second brood of two which were still in the pin-feather stage when found

dead and desiccated, having been deserted by the mother. We noticed that the male did most of the feeding in this family. The young birds are like the female, but lack the pale green feathers which mark the wings in both sexes.

The gay Crimson-winged Parrakeets were in rough plumage when they were put out, and it was some time before they showed any inclination even to inspect the nest. Finally, by the 1st July, it was evident that the female had eggs in the nest, for she was not seen for long intervals. On the 28th July the welcome nest sounds were audible, but it was not until forty-six days later that the first young bird came out. It could fly like a veteran, but had the toes missing on one foot—whether this was a defect from birth or the result of an attack is difficult to say, as there was no sign of recent injury. A second bird came out four days later; it was smaller than the first, but both resembled the mother. It may take a year or more before we are certain of the sexes. These are among the most gorgeous of the family; the combination of scarlet, green, and velvety black being dazzling in the sunlight.

Our Swainson's Lorikeets were the surprise of the lot. Apparently always ignoring the nest-box they were to be seen every time we visited the runs. In fact, when Robert Bean brought in a fine pair of Barraband's on 5th August, we decided to remove them and give the run to the newcomers. The Swainson's were caught up and put in a small box while we proceeded to renovate the nest. When the top was taken off our plans were suddenly changed, for there were two downy young huddled in the hollow. When the incubation took place we do not know, but it is likely that whenever we appeared on the scene the male would in some way warn his spouse and she would immediately dash out to be on the spot.

Needless to say we left them in peace. Exactly fifty-two days later the first young bird left the nest, and the second came forth five days later. They were almost identical in colour with the parents—just a trifle duller and faint bars marked the paler orange breast. There were many days when we heard no sound at all from the nest before the young were seen, and we often were in doubt as to their being still alive.

This happy result gave us further ambition. In our regular outdoor exhibition cage we had nine more Swainson's. One had

laid an egg on the ground, so for encouragement we placed an old artificial woodpecker's log in a recess in the wall. It was immediately taken over by a pair—the male of which was most woe-begone in appearance and particularly bedraggled in his neck plumage.

It was not until the 3rd September that we first heard sounds of young birds, and they were most vociferous. They could be heard every day until the 14th October, when we first saw a young bird on the ground. It was not long before the other adults in the cage took a too-active dislike to the stranger, and we were fortunate in getting it out before any dire happening. For safety's sake the nest log and all was taken over to one of the runs. When the log was lifted from its recess another young bird flew from a hole which had been chewed out in the rear, and there was a third baby in the nest. A sudden drop in temperature to 36° reminded us that our abnormally warm fall was to come to an end, so that family was brought in for the winter. In the hour's interval before the birds were caught up a young rat got one, and two days later another was killed by one of the adults. So our total of young Swainson's to date numbers three, but all are doing very well. The young birds from the second pair did not appear as well feathered as the first lot on leaving the nest; it will be interesting to note the development of the last young bird whose parents lived under conditions quite different from the first pair which had the advantage of a long grassy flight.

There were pairs of other species which did very little or nothing—at any rate no young were reared. An unfortunate finish to our attempt with the Red-sided *Eclectus* came after weeks of hopeful watching. We were not over-concerned when we did not see the female for a long period, because we thought she was incubating eggs. Finally our curiosity forced us to look in the nest, only to find her a dead and dried corpse, possibly from egg-binding.

The Black Lories deceived us with their apparent earnestness, but time proved that they only used the box for sleeping. The Rosellas laid four eggs and the female incubated faithfully for too long a period when she must have realized the futility of her sacrifice. The eggs were clear. The Barraband's arrived too late for safe breeding, but showed no interest anyway. Perhaps the ubiquitous Budgerigar should not be mentioned in this company of blue-bloods, but nevertheless from three pairs—green, yellow, and blue—

we derived fifteen young in a wide and bewildering range of colours—three shades of green, yellow, grey, pale-blue, and white.

This test has proved that Chicago's summer climate appears as conducive as any for successful breeding, and it seems remarkable that birds should be willing to propagate their kind after four years of being on exhibition in cages which certainly gave them no chance for retirement. These results have been most encouraging, and stimulate further efforts in the future. The field is vast, and fortunately available subjects are numerous and varied.

* * *

BREEDING EXPERIMENTS WITH HOODED PARRAKEETS

(*Psephotus chrysopterygius dissimilis*)

By HELMUT HAMPE

At the end of 1935 I obtained a pair of Hooded Parrakeets which had already laid and brooded while in the possession of their former owner, but had reared no young. With me they also brooded without any result, but their behaviour was so interesting that it is worth while describing.

In the winter 1935-6 I placed the Hoodeds in a cage in my living room where they were allowed to fly about free for many hours each day. They were hostile towards the other Parrots in the room and they ruled the lot as they were very pugnacious. They had respect only for a tame Parrotlet which in a battle used to fly furiously on to their shoulders and so make them helpless. To sleep they either sat on one of the nest-boxes which were hanging in the cage, or, if the cage was open, on a shelf above one of the doors. Here they sat breast to breast close together and did not stir the whole night even when other birds were alarmed and fluttered about as, is well known, frequently happens with Australian Parrakeets. Not unless a bird flew directly on to them would they likewise start up in fright and fly off. Their need of sleep was very great; they went to rest much earlier than their relations and also woke up much later. They did no harm to the

carpets or furniture though they soon began to peck holes in the wall just above the carpet on the part which was covered with lime-colour. This was undoubtedly with the praiseworthy intention of making a nesting-hole. Later on this intention was fulfilled as I will fully describe below. During this winter, however, it was merely a playful occupation.

In freedom, the Hoodeds, as is already well known, breed in ant-hills, in which they dig out a nest-hole with beak and feet. In the garden aviary, in which I placed the pair at the end of April, 1936, I had arranged a mound made of clay with some sand and chalk of about the size of an upright sack of potatoes. In this I made some transverse furrows and little holes of about the size of a thimble. Sure enough, a week after being put in the aviary the birds, cock as well as hen, began to peck at these holes. When I covered all but one with clay they remained at this one and together deepened it with such industry that after about five weeks they could get right into and turn round in it. In the middle of June, when the hole was nearly ready, the moult began, as unfortunately generally happens with these birds, and the breeding impulse was past. Not till the middle of September did it arise anew and then the birds soon went again in the hole. As the season of the year was so advanced there could be no more hope of results, so I stopped up the hole and put the pair back again in my room where they were at once at home, but showed no signs of breeding.

On 2nd April, 1937, I put the Hoodeds, which had begun to moult in January and February, back in their garden aviary. Not till September, after the moult was finally ended, did they again develop the breeding impulse. This time they showed little interest in the clay mound; they only occasionally crept into it and the female spent a great deal of time pecking a hole in a beam. When I affixed a nesting-box, made out of a natural tree trunk, the female immediately entered it. On 12th September I brought the pair back again to my room where they began at once to peck a number of holes in the wall. I deepened one of these and put a perch underneath it. This was adopted by the birds and assiduously worked further. A row of bricks in the wall, which was otherwise entirely composed of plaster, I dug out myself, but the rest was removed by the Hoodeds alone. At first they pecked out pieces

of plaster with their bills and then let them fall to the ground, but when they could creep half-way into the hole they kicked the loosened plaster out backwards with their feet so that the pieces flew far out into the room. Both male and female worked about the same amount. The passage was so large that the birds could creep through it. Even after a few days the tunnel was excavated so far that the next room was reached. The comparatively thin wall offering no possibility for nest building, as in the clay mounds, I hung a nesting-box in front of the hole. I had removed one side from this box so that the Hoodeds could enter it direct from their tunnel. They were perfectly content with this arrangement and as soon as 30th September, that is to say only eighteen days after they had reached the room, the first egg lay in the box, and up to 6th October, three further eggs followed; they weighed 5–6 gr. and measured $21-22 \times 19$ mm. The female brooded perfectly, but unfortunately three of the eggs were infertile, despite the fact that I had seen several successful pairings taking place. The fourth egg soon expired. A second clutch did not follow although the birds still occasionally went in the hole or into one of the nesting-boxes hanging in the room.

In 1938 I put the Hoodeds, which again had begun to moult in the winter, in the garden on 20th June when the moult was nearly finished. This time they had another, larger aviary about 6 metres long in which was also a mound of clay. However, they did not take any notice whatever of this. When the birds developed the breeding impulse, which also on this occasion did not occur till September, they tried to bite holes in one of the solid walls of the aviary. A nesting-box, which I hung up on 18th September, was at once investigated and both birds crept in and out of it. From the 4th to 11th October the female laid four eggs which measured $21-22 \times 19$ mm. This time three eggs were fertile, but the young died in the shell. On 7th November after the female had sat closely for about four weeks I transferred the birds to the winter room. This year also they did not produce a second clutch. Naturally I shall continue my experiments in 1939 and hope eventually to be able to report complete results.

THE EARLY YEARS OF THE AVICULTURAL SOCIETY (V)

By DAVID SETH-SMITH

(Continued from page 157)

Volume III of the New Series, which commenced in November, 1904, contains eight coloured plates, as well as several black and white plates and text illustrations.

The first plate is a very beautiful one by Goodchild, showing the European and Himalayan Goldfinches. Bonhote writes on the former, which was even then increasing in numbers in this country as a result of protection. The Himalayan species (*Carduelis caniceps*) is dealt with by Frank Finn. The two species are much alike, but there is no doubt that our bird is by far the more handsome of the two.

Mrs. Johnstone contributes an article on the breeding of Fraser's or the Great-billed Touraco (*Turacus macrorhynchus*), which stands out as an event of particular importance in the annals of aviculture, for up to that time the nestling was apparently unknown. It was not reared, owing no doubt to the lateness of the season (September), but it formed the subject of an important article by W. P. Pycraft, who was able to compare the relationship of this group with the Cuckoos and the Hoatzin. St. Quintin writes an interesting article on the nesting of *Pterocles exustus*, the Lesser Pintailed Sandgrouse, with which he was very successful. He mentions a curious habit these birds have of supplying moisture to their young, and remarks :

“ Mr. Meade-Waldo was the first to describe this most interesting habit in the case of the former species [*P. alchatus*, the Greater Pintailed Sandgrouse]. It has been repeatedly observed in my aviaries, and now again with *exustus*. Whether the habit is common to all the species of this family remains to be ascertained, though in the case of the five *arenarius* Mr. Meade-Waldo observed this species also visiting the troughs and puddles about the village wells in Morocco, and flying off after soaking their breast-plumage, doubtless with the same object in view. The process is so extraordinary that perhaps I may be forgiven for again dwelling upon it.

The young no doubt are somehow able to make it clear to their male parent that they wish to drink and he starts off to the pan, and after sipping a little on his own account, steps in and stands motionless for a minute or two, watching. Then he sits down in the water, and goes through a shuffling movement, very like a bird that is dusting. After remaining in the water several minutes, he gets out and hurries off, loudly calling to the young who, if old enough, run to meet him. Then follows what reminds one more than anything of a mammal suckling its young: the chicks push their heads amongst the breast-plumage and under tail-coverts, evidently taking the water off the feathers by passing them through their bills, moving to fresh places as the supply becomes exhausted."

This habit has been discounted by certain ornithologists, who have done more collecting than observing, as a habit acquired as the result of captivity, but birds do not alter their habits to this extent in one or in very many generations.

A coloured plate of the White-fronted Dove (*Leptoptila jamaicensis*) shows this beautiful bird in the act of cooing. These Doves were at one time frequently imported, but I fear they have now become quite rare in Jamaica, as a result of the ill-considered introduction into that island of the mongoose, which, after doing some good in destroying rats, set to work to destroy the very interesting Ground Doves.

Reference is made to an account, published in the *Bulletin de la Société National d'Acclimatation de France*, of tame Swallows, by M. G. Pays-Mallier, who considers these the most intelligent, amusing, and interesting of all insectivorous birds. He made a practice every year of rearing some of the early broods from the nest, but allowed them complete liberty. During the summer months these tame birds might be seen flying at great heights, but always coming to a call and perching upon his finger without the slightest fear of any number of strangers present. He always carried a few mealworms to reward them for their trustfulness, and they remained tame until the time for their departure when they left with their wild companions.

A very fine coloured plate by Goodchild depicts a pair of Peter's Spotted Firefinches (*Lagonosticta niveiguttata*), a living specimen, the first apparently to be seen in this country, having been exhibited at the Crystal Palace in February, 1903.

In writing on the Smew in captivity, Bonhote refers to the existence of a society which was known as the "Ornithological Society of London", founded in 1873 with the object of keeping rare and foreign birds, more especially water birds, in confinement. Among its 200 members were the late Mr. Yarrell and Lord Lilford, and one of its privileges was the use of the waters of the Royal Parks for Waterfowl. This was probably the commencement of the interesting collection of these birds that has been maintained in St. James's Park to the present day.

Miss R. Alderson, who was an authority on the keeping and breeding of foreign Doves, gives an interesting account of the successful breeding of the Solitary Ground Dove, otherwise known as the Bronze-necked or Salvadori's Dove (*Leptoptila chloroauchenia*). A young bird was successfully reared in the early summer, but later nests were unsuccessful. "Late hatched birds," writes Miss Alderson, "never do well and the parents seldom look after them so thoroughly as in the case of the earlier broods."

Mrs. Johnstone writes on the Black Lory (*Chalcopsittacus ater*), which is illustrated by an excellent black and white drawing, by Grönvold. Mrs. Johnstone had received an example, collected by Walter Goodfellow in N.W. New Guinea, which was the first living specimen to be brought to this country, though a good many have arrived since.

Hubert Astley always wrote in a very charming way, and his account of his outdoor aviary on the Italian Riviera gives one a glimpse of palm trees and orange groves, with the deep blue of the sky and sea. An ideal site for an outdoor aviary, and one is not surprised to read that many young birds were reared. Senegal and Diamond Doves increased so greatly that the experiment was tried of liberating them in the garden. One can quite realize that "a pair of Diamond Doves in perfect condition, sitting cooing and preening their feathers in an orange tree, with the golden fruit hanging over their small grey heads, and the brilliant blue of the Mediterranean in the background, is worth seeing". And we can picture his delight in watching a cock Diamond Dove cooing in an orange tree on a level with his face as he stood on an upper terrace "when suddenly he shot out and went soaring up and away over the sea, coming down again with outstretched wings, rather after the manner of a Wood Pigeon". One must know this delightful

little Dove with long, graduated tail and bluish-grey dress with white spots, as well as its arrow-like flight, to appreciate the joy of such a scene.

A coloured plate of the Yellow-rumped Munia (*Munia flaviprymna*) was drawn from one of the first specimens of this species to reach Europe. Although the species was described by Gould in 1845, it remained almost unknown until the arrival of a single living example, sent to me by Mr. H. E. Pier, of Sydney, in 1904, the only specimen in the British Museum being one collected in 1856. Astley writes on Bourke's Parrakeet, a coloured drawing of which he has himself supplied, and also of that other lovely Parrakeet, *Polytelis* (or *Spathopterus*) *alexandrae*, the Queen Alexandra's or Princess of Wales' Parrakeet.

A. Trevor-Battye contributes a delightful article on Hey's Partridge (*Ammoperdix heyi*), which is illustrated by a charming drawing from his own brush, for he was a practised artist as well as a gifted writer. When in the Cairo Zoological Gardens in the spring of 1904, he was much struck with the elegance of these little Partridges and, through the kindness of Captain (now Major) S. S. Flower, the Director, was able to bring home a pair from which he subsequently reared some young. It is a lovely little Partridge, mostly of a reddish fawn colour, which inhabits the rocky desert country on both sides of the Red Sea, and is sometimes known as the Sand or See-see Partridge. Very few have been imported into this country, though it is not difficult to keep in a sunny and dry aviary with good shelter.

An account is given of the fourth International Ornithological Congress, which opened in London on 12th June, 1905, under the presidency of Dr. Bowdler Sharpe. It was very similar to those that have followed it, but it is interesting to look back at the names of the ornithologists who took part, some of which are with us to-day, though others have gone. That was, I believe, the first Congress at which there was a section on Aviculture, but only one paper was read, and that by myself, on "The Importance of Aviculture as an aid to the study of Ornithology". Excursions were made to Woburn, Tring, Cambridge (where Professor Newton informed the members that they had come to the place where the nest was made and the egg laid which hatched into the *Ibis*), to Mr. Bonhote's aviaries at Fen Ditton, and finally to the breeding site of

innumerable sea-birds on Flamborough Head and Bempton in Yorkshire.

Articles by myself on the breeding of *Turnix varia*, the Australian Varied Bustard Quail and the Australian Swamp Quail (*Synæcus australis*) bring back happy memories. The former proved of especial interest, as its habits were the same as those of *Turnix tanki* of India, which I had previously kept and bred. In this species the female is much larger and more brightly coloured than the male, who performs the duties of incubation and the rearing of the young, a process I was able to watch.

Butler writes on the breeding of hybrids between the Grey-winged Ouzel (*Merula bouboul*) and English Blackbird; T. H. Newman supplies an account of birds seen on a trip in the Mediterranean, and Major F. W. Proctor remarks upon the abundance of breeding Redpolls in Berkshire in 1905.

A very good coloured plate of the Golden-throated Barbet (*Cyanops franklini*), by Gronvold, is accompanied by an article on this species by Reginald Phillipps, while an equally successful coloured drawing of the Red-capped Parrot (*Pionopsittacus pileatus*) by Goodchild is followed by an article by Hubert Astley.

Concluding articles in this volume deal with the breeding of Gray's Bare-throated Francolin (*Pternistes leucoscepus*) by Sir William Ingram, Bart., illustrated by Collingham Ingram, who follows with an article on the Little Auk in Spitzbergen. The Rev. C. D. Farrar writes on the successful nesting of the White-throated Finch (*Spermophila albigularis*) and Captain Perreau contributes a delightful article on "A small aviary in the Hills in India".

(To be continued)

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ON BULBULS

By GODFREY DAVIS

In the garden at Larkana, Upper Sind, there were many Bulbuls as well as Parrakeets. They are white-cheeked Bulbuls with black crests and saffron yellow under their tails, not a pale yellow but a good rich saffron, and early in the morning they sun themselves upon the tops of the tamarisk or Lai trees, for it is chilly at nights and in the early mornings. They have the same cheery notes as have their cousins farther south, the Red-vented and the Red-whiskered, but not quite so loud and clear, because the White-cheeked Bulbul, though he has the same bright and busy ways, is more subdued in his calls and in his deportment and in his feathers too.

In the Deccan it is not usual for little boys to catch full-grown Bulbuls. They take them from the nest and rear them, but here in Sind little boys do catch full-grown Bulbuls and tame them in a few days. The way to tame them is to keep them hungry and then to feed them on boiled yams or sweet potatoes or what are called here *Lahori Gajar* or Carrots from Lahore ! These are sweet and when boiled and skinned make a very good diet for the local Bulbuls ; and they will fight on it and for it too, because Bulbuls are kept here mainly for fighting. But the fighting is not very serious and no one is really hurt, but as with the tame Partridges, it is believed if Bulbuls do not fight occasionally they lose interest in life.

On the Bombay side Bulbuls, the Red-vented and the Red-whiskered, are taken from the nest and reared by hand. Undoubtedly grasshoppers are the ideal food for rearing, not the hard-cased grasshoppers found in stony places ; these are indigestible, but the long and soft bodied green caterpillars which are found in the *dhub* grass that grows by the water channels and in almost every cultivated field. Particularly do these green grasshoppers damage the rice crops, but for Bulbuls food they are ideal. But they must be prepared for eating and so the little boys take the unfortunate insects, and the green is sometimes very beautiful, and they pull off the grasshoppers' long legs and the hard wings and wing cases ; then they pinch off the hard head and have left a soft, green body.

This is popped into the young expectant Bulbul's open beak. This sounds cruel, but mother and father Bulbul probably treat the grasshoppers in much the same way, but they beat them upon a branch to shake off the legs, and heads, and wings. Once up at Coonoor, in the Nilgiri hills, I watched a pair of Red-whiskered feed their young in a nest made largely of fallen pine needles, or what looked like fallen pine needles, and fine rootlets, which was built in a thick hedge like a thick, well-trimmed privet hedge. For the first week the parents seemed to bring only insects, small beetles, caterpillars, grasshoppers, and so on, but then they started to bring beakful of tomato from tomato plants that were growing wild nearby. And if grasshoppers are not available parched gram flour, called Satto, that is gram flour made into the consistency of putty, when made and fed as little pellets will do. But gram flour must not be continued when the birds are old enough to feed themselves because it is a very strong food and though good for Mynas even when they are grown-up, must, with young Bulbuls, be discontinued when they are grown-up. I once reared three Bulbuls on this "Satto" and grasshoppers, and they grew up into fine, strong birds but their plumage when they moulted through was black, the white spots on the tail feathers had gone and the red beneath the tail was edged with black. I could not understand this until I let one of them go and it remained about the garden, coming back again to its companions in their cage on the verandah until it moulted out again into the proper Bulbul plumage. This was the wild food of the garden, I thought, and it is the gram which made the Bulbuls black; and so it was because when I started to feed the other two on boiled carrots and plantain and sweetened rice mould and grasshoppers, they moulted through in due course in proper colours. And coming to more recent times, our cook, Peter Fernandez, a most proper man and an extremely good cook, has two Red-vented Bulbuls which he keeps with his wife and son in his quarters, and he feeds them only on wheat chappatis (that is unleavened bread, flat wheat-cakes prepared on a flat iron plate on a fire) dipped in milk, and milk puddings and plantains. They are in lovely plumage; the red beneath the tail is pure and clear and the white spots are on the tail, but they have had no gram flour since they were very young. They are in quite small cages and the hen last spring layed five eggs in her small cage. They were not

fertile because the cock Bulbul was so tame and jealous he fought the hen, but the fact that the hen layed these five eggs in a small cage in a small room inhabited by a family, seemed to me no mean achievement. In England she would probably have wanted a movable aviary 30 feet by 40 feet at least ! Indians, I think, are extraordinarily good with birds. As one explained to me, " They are our guests and not our servants," but as this gentleman kept his birds in his bungalow and his wife and children in the outhouses this appeared to me to be carrying avian hospitality to extreme lengths, but this is not usual. But anyone seeing the Indian, *Mali* (gardener), or *Bhaya* (watchman), with his tame Partridges must come to the conclusion the birds are his honoured guests. Bulbuls get extraordinarily tame. Two Red-vented Bulbuls we reared from the nest, when they grew up used to fly out from their cage every morning and every evening used to fly back and perch on the curtain-pole. Then at night when they were asleep, our good butler, Balthazar by name, would come with a small pair of steps, with great dignity mount them and reach up and take the sleeping Bulbuls and put them in their cage, safe for the night from rats. Indeed I have only had one tamer bird and that was a little crested Tit-mouse that was brought to me when I was in Belgaum in South India. The little boys had fed it on the ubiquitous gram flour but it had not suited it and it appeared almost in *extremis* ; but at that time the asters in my garden were much troubled by green caterpillars, so I gave the baby Tit-mouse to the *Mali* (or gardener), an old, old man. He put the little thing in the breast of his shirt and as he went along pulling green caterpillars off the asters, so he popped them into the baby's mouth. It thrived exceedingly on this diet and it was so tame that when I used to go on Circuit I used to take it with me in a small bamboo cage and when we reached a Circuit house, its cage would be hung on the wall of the veranda, the door opened and out my little bird would fly to return in an hour or two. This to my thinking is the ideal way of keeping birds. One should keep tame birds, not wild ones. One has then no captive in a cage but " an honoured guest ".

AWARD OF MEDALS

The Council proposes to award medals for the following first breeding records in the United Kingdom and Ireland :—

1. MOUNTAIN QUAIL, *Oreortyx pictus plumiferus*. Alfred Ezra, Foxwarren Park, Cobham, Surrey, 1938. Described *Avi. Mag.*, October, 1938, page 275.

2. GANG-GANG COCKATOO, *Callocorydon fingeratus* (late *galeatus*). The Marquess of Tavistock, Barrington House, Lindfield, Sussex, 1938. Described *Avi. Mag.*, September, 1938, page 258.

3. TAHITI BLUE LORY, *Coriphilus peruvianus*. The Marquess of Tavistock, 1938. Described *Avi. Mag.*, February, 1938, page 34.

4. BAUER'S PARRAKEET "Port Lincoln" *Barnardius zonarius*. E. N. T. Vane, Ridgeway, Joel Park Estate, Joel Street, Pinner, Middlesex, 1938. Described *Avi. Mag.*, February, 1939, page 42.

5. WHITE'S WARBLING FINCH, *Poospiza whitei* *Scl.* Allen Silver, 18 Baneswell Road, Newport, Mon. Described *Avi. Mag.*, April, 1938, page 98.

The Mountain Quail also bred in the New York Zoo about 1930 or before *teste* Crandall.

The Gang-Gang Cockatoo bred in France 1921 and since.

Bauer's Parrakeet bred in Germany in 1879.

So far as Dr. Hopkinson's records go the breeding of White's Warbling Finch as given above is the first ever to be recorded in any country.

If any previous breeding of any of the above species should be known to any member or reader they are requested to be good enough to communicate at once with the Secretary, Miss Knobel.

Mr. F. G. Thomas, of Acton, bred the Magpie Tanager, *Cissopsis leveriana*, in 1938, as described in the December magazine of that year, but this was bred in the Zoo in 1912 (see *Avi. Mag.*, 1912, page 342).

NOTES

A BREEDING REPORT

As the executive of the Avicultural Society of South Australia did not consider that their members were giving enough information about the breeding of their birds, a list of questions was drawn up, and it has been made a rule that as many of them as possible must be answered when medals are applied for. This list of questions has been forwarded to the Avicultural Society by Mr. R. R. Minchin, Director of the Adelaide Zoological Gardens, and is given in detail below. Dr. Hopkinson, who has recently returned from Australia, has also forwarded a copy of this list and writes: "Below is the 'Breeding Report' asked for by the Avicultural Society of South Australia, from members claiming Medals for the breeding of birds for the first time in Australia. What about our Society following this (to me) excellent example? What do members and the Council think?"

AVICULTURAL SOCIETY OF SOUTH AUSTRALIA

The following breeding details are desired for purposes of reference :—

Name of Breeder
 Name of Bird
 Scientific name

1. Give dimensions and style of cage or aviary in which breeding took place.
2. How long were parents in aviary before nesting?
3. Were the pair of birds which reared young the sole occupants of the aviary?
 If not, give approximate numbers and species of other birds housed therein.
4. Location of nest, state whether in open or under cover.
5. Type of nest.
6. Height from ground.
7. With what material was nest constructed?
8. With what material was nest lined?
9. Which of the parents built the nest, male, female, or both?
10. Number of eggs laid.
11. Description of eggs.
12. Give date of laying of first egg and period that elapsed between laying of subsequent eggs.
13. Period of incubation, state whether time given is exact or only your estimate.
14. Did incubation start with laying of first egg?
15. How many eggs hatched?
16. Did one or both parents incubate eggs?
17. Date of young hatching, state whether time exact or approximate.
18. Date of first young leaving, and dates of others doing so.
19. Describe young on leaving nest.
20. How long after leaving nest before young independent?
21. How many young reared to maturity?
22. Give *exact details of food* provided, both before and after young hatched.
23. For what food did parents show preference whilst feeding young?
24. Was feeding of young done by male, female, or both parents?
25. General remarks.

Signature

Date

THE FOREIGN BIRD LEAGUE.

The Secretary of the Foreign Bird League, of which the Marquess of Tavistock is President, has written, suggesting that it would be to mutual advantage if statements concerning the aims and membership of the League and of the Avicultural Society were exchanged in their respective magazines. He forwards the following note :—

Many members of the Avicultural Society are also members of the Foreign Bird League, but there are quite a number who are not, and possibly some have not yet heard of its activities. The League exists for the encouragement of the keeping, breeding, and exhibition of Foreign Birds, and gives medals for breeders, special prizes at the shows, and seeks to help and encourage aviculturists in various ways. One of its chief activities is the publication of a bi-monthly magazine, *Foreign Birds*, each issue of which includes a number of very helpful articles, as well as the latest Foreign Bird news. The annual subscription is only five shillings, for which six issues of the magazine are posted annually to all members, and new members joining now receive the back numbers for the year and any others available. A specimen copy of the current issue will be sent, post paid, for one shilling. There are many overseas members, and others will be welcomed. No proposer is required for members of the Avicultural Society, and all who are not yet members of the Foreign Bird League are invited to join. The secretary's name and address are—Harold T. King, 41 Compton Road, Sherwood, Nottingham, England.

A note giving particulars of the Avicultural Society will shortly be published in *Foreign Birds*.

* * *

CORRESPONDENCE

BEHAVIOUR OF AUSTRALIAN SHELD-DUCK

I read with great interest in the Notes of the May issue of the AVICULTURAL MAGAZINE that M. Delacour states that he has found the Australian Sheld-duck "quite peaceful in a mixed collection". I should be interested to know if, as I suspect, he refers to wild-caught birds? I have myself found wild-caught Australian Sheld-duck rather shy of other birds; but three years ago I had a pair of hand-reared birds, probably the first in Europe, and unfortunately the female died. I still have the male who is as pugnacious as a Paradise Sheld-duck male, though the female he is now paired with, a wild-caught bird, is nervous and timid. I think the question of temper or, better put perhaps, "bossiness" is only acquired when the bird is hand-reared. So much so is my male a boss that I can't even keep him in a pen with the smaller geese. I found much the same once with some wild-caught Magellan Geese, though as every one knows that a hand-reared or captive bred Magellan is a bird to be feared by most other water fowl. Captivity alters temperament in all waterfowl and changes dates of laying. Wild caught Barnacle here laid for two or three years between 6th to 13th June, but the eggs of hand-reared Barnacle, two clutches, were set by 1st May.

J. C. LAIDLAY.

LINDORE HOUSE,
LINDORES,
FIFE.

Referring to M. Delacour's note on the breeding of the Australian Sheld-duck (*C. tadornoides*) in last month's issue of this Magazine.

During recent years the species has been continuously represented in the collection at Lilford by one or more pairs since 1933. During that time one and all of the eleven imported examples received have proved moderately peaceful with other birds. It is only during the present season when a pair of those retained decided to go to nest that they developed the Sheld-duck family's pugnacious disposition, the female in this case proving quite as dangerously aggressive as the male.

As to the nest, six eggs were laid beneath an inverted box placed in an isolated shrubbery. During incubation, 30 days, the female frequently left the nest for lengthy periods; the eggs, however, on examination always proved warm so abundantly were they covered by a mass of grey down. The five young birds hatched are growing well and I hope may be reared.

A. F. MOODY.

LILFORD, BARNWELL,
PETERBOROUGH.

I am interested in this month's copy of the Avicultural Society Magazine Notes about the Australian Sheld-duck. I have a pair and a half of these birds, having lost one of the ducks this winter. I imported these duck last year. I do not find them at all ill-tempered. In fact I find that they are rather timid; though they are quite the biggest of my ducks, they seem to let themselves be bullied by most of the other ducks. I had to move my Ruddy and South African Sheld-duck to another pond, because they never left the Australians alone. They, poor birds, were really frightened and kept right away from the rest. I also have a pair and a half of Radjah Sheld-duck (*Tadorna Radjah*): these I find far more ill-tempered. They have only just been put on my water, as all through the winter I kept them in a small pen and shut them up at night, as they came straight from the tropics to England. Since they have been put with the other ducks, I notice that they are quite full of their own importance and give any other duck that is in their way a good peck! Also my Maned Geese set about the Australian Sheld-duck, in fact I must say that my Australian Sheld-duck seem very docile, and somewhat if one might call "Duck Pecked".

A. M. PAPE.

FOREST LODGE,
BINFIELD, BERKS.

BY A PHEASANT ENTHUSIAST.

After reading two articles in the May edition of this Magazine, written by two friends of mine, Mr. P. Lambert and Mr. G. Beever, I decided to ask the Editor if she could find a little room for me to talk to some of my Pheasant friends. As Mr. Lambert can testify, I am a very keen admirer of Pheasants, and I always used to lay claim to having the finest collection of these birds in England. But I think I must now surrender that title to Mr. Spedan Lewis. I cannot compete with him. I am very pleased that he has such a truly marvellous collection, as it has been so difficult, if not impossible, to obtain fresh blood in some of the rare species. I am now hoping to be able to do that.

I paid a visit to Leckford and was taken round the aviaries by Mr. Jones, and I enjoyed every minute of it. I found Mr. Jones a very keen and intelligent Curator, and I wish him the best of luck.

As regards my own collection. I certainly must claim to have a good one.

My favourites are the Peacock Pheasants and the Tragopan family. Of the former group I have the three usual species, Chinquis, Germain, and Bronze-tail. I should dearly like to have the Palawan, but I am afraid times are not what they used to be with me. I once had two pairs of these birds, and I gave the very high price of £65 per pair! That was, needless to say, some years ago. I also had two pairs of Bulwers at the same time. Of the Tragopan family, I have all but the Western. What wouldn't I give for a pair of these wonderful birds. I don't think they have ever been imported alive into this country. I have most of the other species of Pheasants, except the Hokis, which I do not think are suitable for aviaries and besides, I have not the accommodation for them. I have kept both the Brown and Blue, but not the White!

Mr. Wormald will be pleased to know that I have a very fine pair of Versicolors, in fact two pairs, both cocks were imported direct from Japan. I believe I know of one more imported cock for sale in this country. Versicolors are beautiful birds, but they have two snags. I have nearly always found them very timid birds, and the chicks are difficult to rear. I hope Mrs. Lambert will succeed in rearing some, if we are lucky enough to get fertile eggs.

That one word fertile haunts me! How many eggs do I get which are not fertile. I am afraid this is going to be a bad year for fertility. It may be a little soon to judge, but certainly the first clutches have not turned out well. And can one be surprised. For weeks now there has been, every day and all day, a biting north-east wind blowing, sometimes at gale force. It is a wonder to me that any eggs are fertile with such cruel weather. To call it spring is a farce.

My Peacock Pheasants usually prove the most fertile. Last year all three species laid fertile eggs. A curious thing has happened this year in my aviaries. I have never known so many Pheasants wanting to incubate their own eggs. At the present moment I have the following Pheasants sitting: Golden, Elliot, Swinhoe, Amherst, Monal, and Crestless Fireback, and very soon the Chinquis will want to sit. I have never heard of a Monal hen wanting to sit. And curious to relate that with the Elliot's it is my *cock* that sits, never his two hens. He is an excellent sitter too. I do not think I shall let him rear them. But I am rather counting my chicks before they are hatched! I have generally found Elliot's very fertile, and they are sturdy chicks. Alas, they are very low in price now, and seem hardly worth rearing, but they will be reared all the same. The only eggs I do not bother with are Silvers and Goldens. My tame Magpie benefits occasionally! I think I have probably exceeded my limit, so I must lay down my pen. I wish all lovers of Pheasants the best of luck with their breeding (of pheasants!)

C. SCOTT-HOPKINS.

LOW HALL,
KIRBY MOORSIDE,
YORKS.

A SUPPOSED HYBRID WHYDAH

When judging the South African and Foreign Wild Bird Show, staged by the Avicultural Society of South Africa, in Johannesburg last February, one bird in particular attracted special attention. It belonged to the Whydah family and most people believed it to be a cross between *Steganura paradisea* and *Vidua regia*. It is about the same size, with the same shaped body and head as the Paradise Whydah. Perhaps it is the unique tail which immediately attracts ones attention. It has not got the same short, circular feathers, rising rather high from the base of the tail, curving back a little lower down, which is so characteristic in the widely known Paradise Whydah.

It has four fairly long tail feathers, similar to those of the Red-collared Whydah, only they are even in length and very much prettier I fancy because each feather is slightly twisted, cork-screw-wise, reminding one of a lightly twisted paper streamer.

In summer plumage, the head, back, wings and tail are glossy black and a broad, light, tan-coloured band covers the nape. The breast, stomach and underparts are the same pleasing golden-brown colour as those of the Shaft-tailed or Queen Whydah. The legs, feet and beak are a reddish orange colour which is in keeping with that of the Shaft-tailed Whydah, except that the beak is somewhat larger. In winter condition it loses its beautiful long tail feathers, which are replaced by an insignificant ugly brown tail about two inches long.

The black from the back, wings and head, and the effective golden brown from the under parts all disappear, and the bird takes on that mixture of drab brown and black colour associated with the Paradise Whydah in winter garb, except that the black and dirty-white stripes at the sides of the head and face resemble the Shaft Tail Whydah in the off season.

In full colour it is a striking bird, immediately commanding attention, and one which has never before been seen in captivity in South Africa, as far as we can gather. It came from the outskirts of the district of Pretoria, Transvaal, and was entered for competition as a hybrid and as such was awarded first prize for the best hybrid on show.

Though not absolutely convinced in my own mind, my reasons for awarding the first prize to this bird as a hybrid are :—first, the appearance of the bird, shape, size, markings and colour, definitely give one the impression that it is a cross between a Paradise and a Queen Whydah. Secondly, it was in splendid condition and definitely the prettiest and most outstanding bird in its class. Also, I felt that the exhibitor should be given the benefit of the doubt and every encouragement for the expense and trouble he had gone to, to stage the bird in such a topping condition, rather than disqualify it for appearing in a doubtfully wrong class. After all, it was not the exhibitor's fault that the judge was technically not satisfied in his own mind. It is certainly a great rarity which we may never see again. Had the bird been bred in captivity the whole matter would have been cleared up, but the fact that it originated from the wilds keeps one thinking and leaves always a little doubt in the mind. It was probably this same thought, of the bird originating from the wilds, which dragged Dr. Roberts all the way from Pretoria to Johannesburg to see the bird. Dr. Roberts, as everyone knows, is a very keen ornithologist, always alert and keen to discover a new species. It did not take many words to excite his keen bird-sense and curiosity, and he lost no time before travelling to Johannesburg to see the bird for himself. After examining it very carefully and weighing up all the pros and cons, with his shrewd judgment, he eventually agreed that it was a hybrid between a Paradise and Shaft-tailed Whydah.

The proud owner of this unique bird is my good friend Mr. R. Cleugh, Father and, until last year, President of the Avicultural Society of South Africa since its inception. He paid a fancy price for this bird, but like a true bird-lover he says it is worth it. Ultimately it will be destined for the South African Museum, Cape Town.

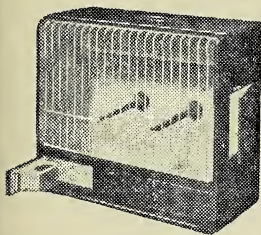
If a hybrid, it would be interesting to learn whether there is any record of such a breeding in captivity.

C. N. ABRAHAMS.

MA DEMEURE,
CLAREMONT,
CAPE PROVINCE,
S. AFRICA.

* * *

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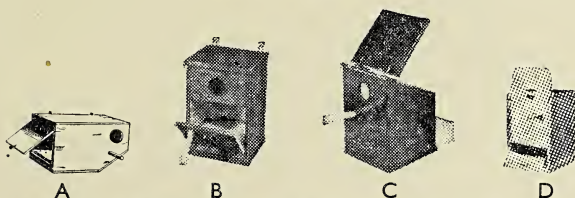
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MR. GOODFELLOW will be arriving early this month with a large collection of East African birds and I shall be glad to send a complete list to any members who are not already on my mailing list, on application.—W. R. PARTRIDGE, SOUTHMORE FOREIGN BIRD FARM, NR. FLADBURY, WORCS.

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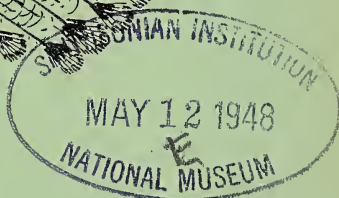
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THE ANNUAL GARDEN PARTY, to which all members are invited, will take place in the Zoological Gardens, London on Thursday, 20th July. Tea in the Fellows' Pavilion at 4.30 p.m. Members intending to be present are requested to notify the Hon. Secretary, 86 Regent's Park Road, N.W. 1.

AVICULTURAL MAGAZINE



CONTENTS

	PAGE
The Toucan-like Barbet, by C. S. WEBB (<i>with coloured plate</i>)	205
On the Care and Keeping of Barbets, by RUDOLF NEUNZIG	206
Further Notes from Australia, by SYDNEY PORTER	214
The Early Years of the Avicultural Society (VI), by DAVID SETH-SMITH	221
Migration and Keeping of Evening Grosbeaks, by PAUL KUNTZ	225
Breeding the Tri-coloured Parrot Finch in South Africa, by C. N. ABRAHAMS	229
Courting Display of Napoleon's Peacock Pheasant, by J. SPEDAN LEWIS	233
Notes	235

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Rule 1.—A short account of the illness should accompany the specimen. All birds to be sent as fresh as possible to Mr. C. H. Hicks, The Zoological Society of London, Regent's Park, London, N.W. 8.

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Toucan-like Barbet
Semnornis ramphastinus (Jard.)

AVICULTURAL MAGAZINE

THE JOURNAL OF THE
AVICULTURAL SOCIETY

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JULY, 1939.

THE TOUCAN-LIKE BARBET

(*Semnornis ramphastinus*)

By C. S. WEBB

The Toucan-like Barbet is an inhabitant of the sub-tropical zone of the Andes of Ecuador. It is found in forest between 4,000 feet and 6,000 feet, either singly or in pairs.

This Barbet is certainly quaint in its appearance with its gaudy colours and large, brightly coloured bill, but in spite of these it is by no means a conspicuous bird in its wild state, where the foliage and light and shade offer a natural camouflage. It is not at all common and has rather a restricted range, but its presence may be detected by its call-notes. In common with some of the Barbets of the Old World and some of the African Bush-Shrikes, the male and female join in a sort of vocal duet, the call of the male being followed instantly by the call of the female, and this is continued alternately so quickly and so perfectly timed, that it sounds exactly like the rhythmic call-notes of a single bird.

The large "toothed" bill has tremendous power, though what purpose this serves it is difficult to say.

The diet is mainly wild fruits and berries, although insects form part of the fare. In captivity these Barbets are particularly fond of cockroaches.

There is very little difference in the coloration of the sexes, but the male is slightly larger and has the black feathers of the crown elongated to form a nuchal crest.

ON THE CARE AND KEEPING OF BARBETS

By RUDOLF NEUNZIG

The multiplicity of species found in the bird world enables the aviculturist to display his or her preference for certain species, groups, or families. One prefers to keep the various species of Thrush, another the ornamental Finches, and a third excels with the Parrot group and so on. This is all to the good. Specialists are thereby created, who for the most part are quite successful in their various fields and so gain experience. I myself frequently choose birds which do not appeal generally to the aviculturist. They are said, perhaps, to be too dirty, too difficult to feed, too large or too small, do not sing, etc. It must be admitted, of course, that there are certain species of birds which can only be kept under special conditions. It is also a fact that many aviculturists are prejudiced against certain species. These include many Jays, Bulbuls, Woodpeckers, Barbets, and others.

It is, however, just these despised species, the outlaws of aviculture, which interest me most. It is always interesting to keep birds which are found only rarely in aviaries. Even more interesting is the possibility of making new observations, although this does not mean that we know everything there is to know about the life-histories and breeding habits even of the popular species in aviaries. It is a matter of regret, for example, that up to the present there is no detailed account of the breeding of the much-favoured Zebra Finch. A detailed breeding report should include exact data regarding incubation, development (weight) of the nestlings, and so on.

During the last few years I have confined my attention to the keeping of Bulbuls and Barbets. I give below descriptions of various species of the latter bird.

In my opinion Barbets, from the point of view of mentality, occupy a high position among aviary birds, and if obtained when young, can easily be tamed and afford interesting glimpses of their special character. Barbets resemble in many ways their South American relatives, the Toucans, and appear to have much in common with them.

The Barbet, whose habitat is the primeval forest, the wooded banks of streams, and other tropical places, possesses a character and behaviour which renders it very attractive to the aviculturist who approaches it with an unbiased mind and makes a careful study of the species. These birds soon learn to know their keeper, even though shy and wild at first. They learn to distinguish him quite well from other people and greet him in the manner characteristic of the species. They are distinctive, for the most part beautiful, birds whose character requires understanding. To be properly appreciated they must be kept in large cages or in aviaries. They require stout perches; thick branches and twigs are best, and these should be placed in the enclosure in natural fashion and more or less horizontally.

Sleeping-boxes, like those for Parrakeets, or of a half-open type, should always be provided. The birds like them at night. Many species of Barbet go to sleep in the summer months while it is still light and also wake up fairly late in the morning. Other species, for example the Yellow-breasted Barbet, *Trachyphonus margaritatus* (Cretzschm.), are early risers and go to rest late. At dawn already their rhythmic call can be heard in the aviary. Oort's Barbet, *Cyanops oorti* (St. Müll.), and the Blue-cheeked Barbet, *Cyanops asiatica* (Lath.), still sleep on. In between can be heard, also at an early hour, the alarm-clock-like call of Levaillant's Barbet, *Trachyphonus cafer* (Vieill.), a beautiful characteristic species. Only when it is quite light the low, solemn note, like that of the drum of a primitive people, of the Javan Great-billed Barbet, *Chotorhea javensis* (Horsf.), is heard in the peculiar rhythm of a world strange to us.

Each species has its peculiarities, which will be described at greater length when the individual species is dealt with. One often hears that Barbets cannot be kept with other species of birds, which is a somewhat sweeping statement. It is sometimes rather more difficult to keep together Barbets of the same species, even if they are a pair, than a Barbet with a bird of quite different species of the same size and strength. The Yellow-breasted Barbet, *Trachyphonus margaritatus*, and Levaillant's Barbet agree well with one another and also with other species of birds. Naturally it is not meant that small ornamental Finches and similar species can be kept with the Barbet but, for instance, Sunbirds, Bulbuls,

and the like can be put with them without any difficulty. There are exceptions even here. For example, a Blue-cheeked Barbet can be kept quite well with the *Timaliidae*, e.g. the Red-cheeked Scimitar Babbler, *Pomatorhinus erythrogeus*. Still larger Barbets mix best with large Jays = *Garrulax*, or with Raven-like birds, etc.

And now for the feeding of these species. This is not in general more difficult than that of *Chloropsis*, Tanagers, and other similar species, perhaps even simpler, as well acclimatized Barbets are quite robust. My Barbets, like all my insectivora, are given a food mixture consisting of Spratt's bird-food, dried ants' eggs, mealworm, musk, silkworm pupæ, meatmeal, mountain-ash grits, etc. The component parts are freshly mixed before each feed in varying quantities in order to obtain as great a variety as possible. One or other ingredient is sometimes left out or mixed in varying quantities.

The ratio of the various foodstuffs is not constant, as the food is often mixed quite casually. One cannot feed birds by chart. A true aviculturist usually does the right thing by instinct. He has to take into account the constitutions of his charges and other details of that kind. Neither can there be any hard and fast rule about times of feeding. A bird is a living organism, dependent on his environment and its influences, which alter daily or even hourly and thereby affect him. To this must be added the quality of the food. A bird eats less of a substantial food than he does of one poor in content.

To return to the feeding of my Barbets. The above-mentioned mixture is scalded with boiling water and then kneaded with fresh grated carrots, so that it forms a light, flaky mass. Cream-cheese made with skim milk is often added, together with the whey, as this contains mineral salts. In addition the Barbets are given sliced fruit or berries, according to the time of year. They are fond of apples, pears, bananas, cherries, plums, etc. It is absolutely essential that fruit be regarded as an extra, so that the Barbets are obliged to eat the mash. Newly introduced Barbets are often accustomed to fruit alone. They must be trained gradually to take the mash. Bananas, for example, can be spread with the mash, so that some portion is taken with the fruit. Small pieces of raw bullock's heart, or other easily digested meat, may be given now and then. There are Barbets, however, that will not eat raw flesh or mealworms.

The quantity of fruit must be reduced gradually and that of the mash increased, until the bird is fully accustomed to the latter food.

All Barbets soon accustom themselves to a sweet drink which I concoct with boiling water, oatmeal, and cooking sugar, to which is added syrup and sweetened condensed milk. The drink is given in the early afternoon, after which the fruit is entirely devoured. This drink is a favourite with many species of birds such as Bulbuls, Honey-eaters, Tanagers, Timalias, etc. A little levurinosé yeast may be added. This I always do in the case of the smaller Honey-eaters—*Meliphagidæ*—a good time before their moult, which it is supposed to aid. However, this is not always the case I have observed, although there is no doubt that the yeast preparation enriches the drink with strengthening properties. The amount of excretion from Barbets depends largely on the quality of the food. The better the food, the less the excretion.

I have also observed that the Yellow-breasted and Levaillant's Barbets live quite peaceably together. On the other hand, two Blue-cheeked Barbets only agreed at intervals. Certainly the supposed female turned out later to be a male. A pair of Oort's Barbets, however, failed also to agree at times. The last-named species had to be accustomed gradually one to the other, even when it was a case of the sexes. This can be done in various ways. I usually place the respective birds in neighbouring cages, so that they can see one another and become acquainted. When one sees them hanging on the separating wire trying to get to each other, the game is as a rule won, although not always. When both birds are together they must be watched carefully to see if they quarrel. In the case of Barbets, and many other species also, it is advisable to place a number of food receptacles in various places. If these methods are not successful, the birds should be placed in separate cages side by side, the dividing wall being replaced by glass which can be pulled out. After the birds have been separated for some time, the glass is removed and the birds left together. As soon as they chase one another, they should be separated again and placed in each other's cage. This process should be repeated daily, lengthening the period of time during which they are together, until they are fully accustomed one to the other. In this way I have familiarized the sexes of the most varied species of birds.

Barbets belong to the *Scansores*. Many species enjoy hammering

on branches and trunks. Others, like the Yellow-breasted Barbet, which nests in holes like our Kingfishers, make their holes themselves by hammering on stone or masonry walls. Yellow-breasted Barbets have been bred successfully in England (AVICULTURAL MAGAZINE, 1927, p. 226) and Levaillant's Barbets in France (*L'Oiseau*, 1928). Unfortunately detailed breeding data are lacking, neither is there anything known of further breeding successes. I might mention here that in the case of Yellow-breasted and Levaillant's Barbets the pairs maintain close contact, while in that of the Blue-cheeked Barbet and other species they tend to live more apart.

It is my experience that Barbets are seldom ill for any length of time. If mine became ill, they quickly died. The birds were usually in good physical condition, but showed a considerable enlargement of the liver, often accompanied by dropsy. Even well-acclimatized Barbets will become suddenly ill and die very quickly.

Up to the present I have kept ten different species of Barbet, of which six came from Asia and four from Africa. The smallest species in my aviary was the—

(1) CRIMSON-BREASTED BARBET, *Xantholema hæmacephalus hæmacephalus* St. Müll.

This first came to Germany in 1937. The three birds which came into my possession had unfortunately suffered very much on the journey. Two died very soon, but the third bird, still in juvenile plumage, recovered somewhat. It lived some weeks and then died suddenly. I have seldom regretted the death of a bird more than that of this little Barbet. He was a beautiful bird and became very friendly. That is not to say that I have not been as fond of other birds, or that I found them less charming.

These freshly introduced birds were apparently accustomed only to bananas. With great patience and trouble I tried to induce them to take a good mash with the addition of fruit. But the banana diet had undermined their health and the consequences were fatal. The surviving Barbet soon became a charming and lively bird. He was very gay and his call note, somewhat like the bark of a small dog, was frequently heard.

The species in question is divided throughout its area of distribution into several geographical races, differentiated according to size of beak and to a small extent by variation of colouring. The

Burmese race, *X. h. indica* Lath., inhabits Burma, Assam, East Bengal, and Siam. The race inhabiting India, *X. h. lutea* Less., distinguished by the less sharply defined colouring of the underside, is distributed over almost the whole of India, Ceylon, East and West Bengal.

The particular bird imported by me belonged to the race inhabiting the Philippines and Sumatra. The coloration of these birds, which are about the size of a small Bullfinch, but with a much shorter tail, is very pretty. The blood-red colour of forehead and crown is bordered at the back of the head by a broad black streak. The hinder part of the cheeks and ear-coverts is pale blue-green. The underside is whitish yellow, certain feathers being streaked with dark green. Legs and feet are coral-red.

Another specimen, which arrived later in Berlin, was extremely feeble and only lived a short time.

(2) OORT'S BARBET, *Cyanops oorti* (St. Müll.)

This Barbet, offered by dealers occasionally in recent years, is larger than the above-mentioned bird, but smaller than the more frequently imported Blue-cheeked Barbet, *Cyanops asiatica* L. The first two specimens of Oort's Barbet to arrive in my possession were charming birds and quite tame and would come to my hand. They were supposed to be a pair. However, it was an extremely difficult matter to accustom them to one another and I only succeeded in doing so after prolonged attempts. I placed them at first in a small aviary with a pair of Black-crested Yellow Bulbuls, *Otocompsa flaviventris* (Tickel). Later they were transferred to a considerably larger aviary in company with a pair of Long-tailed Sibia, *Sibia picaoides simillima* (Salv.), Orange-spotted Bulbul, *Pycnonotus bimaculatus barat* Robinson and Kloss, and Black Crake, *Limnocorax niger* (Gm.), respectively.

The two birds troubled very little about one another in general. Occasionally they chased each other in apparently harmless fashion and at night retired to separate sleeping-boxes. They entered the boxes at an early hour, in summer even while it was still broad daylight, about seven. Sometimes one of the Oort's Barbets passed the night in a Harzer nesting-box. Their sleeping position was rather like that of the Toucan, head under wing, tail erect. These birds sleep very soundly and only stir at a loudish noise.

Both birds called mainly in the morning, but also at feeding-time and in the late afternoon. The call of one was loud and strong, while the other replied in the same tempo, but in softer, clearer tone. The call is somewhat similar to that of the Blue-cheeked Barbet, but softer. These birds lived for two years in my aviary and then one morning towards the end of summer one of them did not come out of the sleeping-box, and on investigation was found to be dead. The bird was plump and lay in the box in the position already described. On the previous day it had been quite lively and seemed in good condition. The post-mortem revealed that the supposed female was indeed one. Later on she was replaced by another Oort's Barbet, apparently also a female. Neither bird could bear the other and they had to be kept entirely separated. The new bird, far from being tame and friendly, was extremely wild. A fourth bird similarly could not be kept with any of its own species. The two last-mentioned birds were smaller and more beautifully coloured than the first-named and came apparently from another region of the distribution area. The coloration of the green plumage of Oort's Barbet after moult in captivity becomes somewhat lighter with a slight bluish tinge. The red markings, too, become somewhat lighter, while according to my observation the red coloration of other Barbets does not change in captivity.

Newly introduced Oort's Barbets often require to be trained to take a mash, as during transport they are frequently fed solely on bananas, although this is not always the case. The transition to another diet must be effected gradually in order to avoid disturbance of the health of the bird. Tame Oort's Barbets are charming companions and grow very fond of their keeper and greet him joyfully with their own peculiar call. A single Oort's Barbet lived for some time with a tame Jacana, for which he had the necessary respect.

(3) BLUE-CHEEKED BARBET, *Cyanops asiatica asiatica* (Lath.)

The Blue-cheeked Barbet is the most frequently imported of the Asiatic Barbets. A few specimens appear every year on the market. Its distribution area is very great and is inhabited by several geographical races:—

(a) Blue-cheeked Barbet, *C. a. asiatica* Lath., with a black streak on the crown is found in Mussoorie, Kashmir, Nepal,

Sikkim, Assam, East Bengal, Burma, South and North Tenasserim, E. Kachan Mountains, Yunnan, the Shan States, and Siam.

(b) Davison's Blue-cheeked Barbet, *C. a. davisoni* Hume, with blue band on the crown, inhabits Burma and Siam.

(c) Red-spotted Blue-cheeked Barbet, *C. a. rubescens* Stuart Baker, resembles the Blue-cheeked Barbet, except that the plumage of the upper and underside is spotted red. It inhabits the higher mountains south of the Brahmaputra, Manipur, and the Lushai Mountains.

Apparently only the first-named race has been imported up to now. The Blue-cheeked Barbet is a beautiful cage and aviary bird. It is only seen to best advantage in a large enclosure. Like all Barbets its plumage is always smooth and neat. If these birds are very shy, they usually sit motionless, but ready to fly up at the approach of a human being. As soon as they think they are unobserved, or become tame, they are very lively, hop about, hammer on the tree trunks and branches, slip into the sleeping-boxes, or emit their rhythmic call. This call is a deep *kuruwuk*, *kuruwuk*, often repeated.

I kept a beautiful Blue-cheeked Barbet for several years. He was always in bright plumage and ate the usual mash and requisite fruit. He would never touch raw flesh or mealworms. In fact I must say that the above-mentioned Asiatic forms very seldom, if ever, eat raw flesh, still less living mealworms, in contrast to the African species I have kept. The Asiatics mentioned here seem to eat much more fruit and less meat and insects while the Africans prefer animal food with their fruit and berries. Perhaps this resembles their diet in their wild state.

Later on a second bird was added to the male Barbet already mentioned. This bird was smaller and duller in colouring, so that the assumption that it was a female appeared justified. At first both birds agreed very well. They only chased one another now and then in a harmless manner. In general they took very little notice of one another. However, one day in July the chase became more violent. I put it down to breeding instinct, as both birds disappeared at times during the day into the nesting holes. But one day I found the weaker bird mortally wounded on the floor of the nesting-box. It had been killed by its companion. The post-mortem revealed that it was a male. Strange to relate, I never

heard the typical call from the smaller bird. Unfortunately it is very difficult to distinguish the sexes in the case of a number of Barbets.

The Blue-cheeked Barbet lived in an aviary in company with a pair of Red-cheeked Scimitar Babblers, *Pomatorhinus erythrogeus* Vig., which they did not attack at all and which left the Barbets in peace also. I never gained the impression that the Blue-cheeked Barbets are aggressive with birds of the same strength. Like Oort's Barbet, they go to their sleeping-holes during the summer months in the full daylight of the late afternoon and only appear the next morning when it is quite light. The male each time greeted the new day with a repetition of his rhythmic calls, which echoed loudly through the house, but were quite pleasant to hear. He often called too at midday and again in the afternoon.

(*To be continued.*)

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FURTHER NOTES FROM AUSTRALIA

By SYDNEY PORTER

During my visit to Australia I had the good luck to be invited by Mr. Gebhardt to stay for a time at his homestead which is about sixty miles from the nearest railway station of Burra-Burra, in the north-eastern part of South Australia. Mr. Gebhardt is a member of the South Australian Avicultural Society and has many interesting birds, most of them of local origin and plentiful in the district, though to us at Home they would constitute great rarities.

There was a Bare-eyed Cockatoo which had been in Mrs. Gebhardt's possession for over twenty-seven years. This bird was a good talker, as in fact were most of the other Cockatoos, especially a Lemon-crest which had the most remarkable repertoire, being able to repeat whole sentences ; it could also give a very realistic performance of a baby crying and shrieking for its mother. There were two of these birds both in the most perfect condition. The only wild Lemon-crests I saw were in the National Park in New South Wales, though I saw dozens in captivity in various parts

of Australia. These are usually kept as pets on sheep stations in rather inadequate cages, but nevertheless they always looked in very good condition and were, in most cases, accomplished talkers, those belonging to Mr. Gebhardt being the best I heard. One of them would hold long unintelligible conversations which it had obviously heard from a distance. Often tame and talking birds of this species are very savage.

The wild birds which I saw were in the tall forest trees in a very beautiful gully. The noise they were making was nothing short of terrible and all the while they were displaying their handsome yellow crests. There were not a great many birds and I was rather surprised to find them living in a forest. In some parts of Australia they are found in huge flocks and do a considerable amount of damage to grain and fruit, but one can hardly expect anything else when Man has done his best to destroy the birds' natural food. There are a great many in the various Australian Zoos, in most cases pets whose owners have grown tired of them, and most can repeat the inevitable "Scratch Cocky", "Hello Cocky" or "Cocky Wants a Drink". As in the case of the African Greys and the Amazons which are always known as "Pollies", so the Cockatoos are seldom if ever called anything but "Cocky". To get back to Mr. Gebhardt's, there were many fine Parrakeets including Adelaides, Mealy Rosellas, and a perfect Blue Bonnet which had been in the owner's possession for, I think, eight or nine years. Mr. Gebhardt told me that he hand-reared many of this species and if he sold any to the dealers in Adelaide he only got 4s. 6d. a pair for them. What would such birds be worth in England now? Amongst the others I noticed Common Rosellas or, as they are called in Australia, Eastern Rosellas, which I think is the best name, Port Lincolns, Barnards, Bourkes, these latter were very prolific and I noticed quite a little flock of them. To continue with the Parrakeets, there were also Elegants, Turquoisines, Redrumps, Cockatiels, and Budgerigars.

Considering that Lagoon Station appeared, at least to a person like myself from over-crowded England, rather isolated, being about sixty miles from a railway station and only in touch with it by means of a car which called once a week bringing the mail and supplies, the aviaries were excellent, well made and consisting mainly of small breeding pens. The birds were also as well looked after as

any I saw in Australia. Mr. Gebhardt feeds his birds on a large amount of seed in the ear, which he grows himself, and this accounts no doubt for the fine condition of most of the birds. My host was a keen bird observer and had lived all his life in the Bush. I met old favourites around Lagoon Station ; one of them was our old friend the Galah. I shall never forget my first sight of these birds. It was on the way up from the railhead. We started at 5.30 in the morning from the hotel where I had been staying overnight. We left in a fourteen-year-old Dodge car, almost unrecognizable under a welter of sacks, packages, boxes, etc., to be distributed on the weekly round at the various sheep stations. At first sight it might have been just one huge pile of baggage, but on closer acquaintance one noticed the wheels, so that we could tell that it *was* a car ! My case was placed with other packages on the bonnet, just allowing the driver to see where he was going.

It was still very early morning when we passed through the " Salt " bush country. The land was as flat as the surface of the ocean, the sky, which looked like an inverted dome above the earth, was that pale celestial blue which betokens a fierce heat later on. In fact the thermometer did go up to 112° F. As far as the eye could see the earth was a monotone of the softest dove-grey with the " salt " bushes ; suddenly there rose up a flock of these old favourites, the Rose-breasted Cockatoos, or Galahs as they are called in Australia. Their upper plumage matched exactly with the grey of the bushes, but between the two greys, that of the birds and that of the vegetation, was a glow of the most beautiful pale rose pink. That flush of softest rose-pink between the greys was superb. Oh, how different our friend looked in his immaculate freshness to the poor soiled and half-poisoned creatures we see in stuffy living rooms at home. No bird, I thought on that sunlit morning in far off friendly Australia, could look more lovely and I felt glad that there were restrictions which prohibited these birds of the wide open spaces of Australia being used as articles of commercial exploitation and forced to exist for the rest of their lives under an inverted wire bell. As we sped on more and more vast flocks rose up as we disturbed them feeding on the ground, but my first sight will ever remain an indelible impression, a picture of the softest pastel blue, greys, and pinks. And as I write these notes the air is thick with Galahs, as flock after flock swarm around the dam to drink, every

available perch is crowded, fences, posts, wires, as well as all round the edge of the water, those birds which cannot find a space fly over the water and drink on the wing very much like a Swallow.

What a galaxy of old favourites I saw that day, hosts of Budgerigars rising in small warbling flocks from the ground. For a moment I almost felt like asking my companion if they had escaped from a nearby aviary, for a Budgie in the open, like a Canary, gives one the impression that it is an escaped bird.

As we sped along swift-winged Parrakeets flashed across our pathway, more old favourites again, Manycolours, lovely Barnards, Blue Bonnets, and when at last I reached the homestead and was sitting beside the dam amazed at the wealth of bird life around me, I heard one sound that made me feel strangely at home, the tiny thin "penny trumpet" song of the Zebra Finches.

Mr. Gebhardt's homestead was a bird lover's dream of heaven ; set far away from the noisy multitudes and nerve racking rush of the present day, in a country where the grey of the "Salt" bushes mingled with the sombre green of the "Bull Oaks", and where most of the landscape seemed sky. Even at sea there never seemed quite so much sky as there, and one realized the full significance of that well worn phrase, "the wide open spaces."

The sight of sights, and one for which I was wholly unprepared, was when a vast concourse of those most beautiful birds, Lead-beater's or Major Mitchell Cockatoos, streamed across my line of vision ; no spectacular play or film ever thrilled me as did that galaxy of colour which unfolded itself before my eyes. Vast streams of spotless white suffused with—I can never quite decide whether it is pale raspberry pink or pale pinkish salmon, possibly it is between both colours—like some vast floating scarf streamed between me and the dark vegetation. No words of mine can ever convey the ethereal beauty of those long strings of lovely birds. Every bird seems to take on an added beauty in its proper setting ; but no picture was ever framed to throw up its beauty as the setting threw up the beauty of these birds. Lovely as they had always appeared to me, here they seemed a hundred per cent more so. They had come to drink at the water and for many hours while I was staying at Lagoon Station I watched them in the evenings come to quench their thirst at the dam or the small pools near at hand.

Sometimes a flock settled on a dead tree making it look as though

it were covered with raspberry pink snow, but strange to say when the birds alighted in a " Bull oak " tree they seemed to vanish into thin air and they were quite invisible even at a few yards distance.

I used to watch the birds feeding on the fruits of a low spreading bush, the fruits were slightly smaller than " hip " berries, and had a small stone and were very sweet and pleasant to the taste. If I disturbed a flock when they were feeding they seemed very annoyed, wheeling round and round, sometimes turning back and hanging in the air, quite close and shrieking their anger at me. The noise was almost pleasant compared to that made by the Gang-Gang or the Lemon-crested Cockatoos. Mr. Gebhardt told me that he often took the young ones and hand-reared them, at one time having as many as fourteen ; but the birds, in spite of their very high price in England, fetch only 8s. 6d. each when sold in Adelaide.

The Leadbeater's Cockatoo is not common except in certain areas, and I saw very few in captivity in Australia, which is rather surprising as it is certainly the most beautiful of the Cockatoo family and to my mind one of the most beautiful of Parrots. For a few days I went out sheep driving with Mr. Gebhardt so that I could see something of the bird life in the surrounding districts, and when we camped at night near a dam or bore we were always rewarded by seeing some of these birds come down to drink. It was very noticeable that the birds, even though in flocks, were in definite pairs and if one lingered on to drink its mate would always wait for it on the top of a near-by tree. Often while he or she was waiting they would display their beautiful yellow, salmon, and white crest, in the same manner as a Lemon-crest, and when the other bird joined the one in the tree they would go through a mutual display in which they threw their crests forward and opened their wings and tail to show the beautiful salmon suffusion. At a small dam where we stopped for the night I saw my first wild specimens of that lovely Parrakeet, the Manycolour. Sitting with our backs to the setting sun we watched a male and female settle on a wire fence preliminary to drinking, and how vivid their colours looked in the sun's rays. Instead of flying down to drink they skimmed over the surface, scooping up the water as they flew in the manner of a Swallow, though later on they did settle by the water's edge and have a drink.

Afterwards I saw small flocks of these birds, often very difficult to tell at a distance, or on the wing, from the very much larger Barnards ; as the flight is so swift and the green so brilliant I often got confused with them. When once settled in the dark " Bull Oaks " it was almost impossible to detect them ; they kept perfectly still and quiet until one was almost under the tree, then they flew from the opposite side with their swift direct flight.

This is another very difficult Parrot when first caught, and unfortunately the mortality is very distressing ; in fact all the *Psephotus* Parrakeets are the same, the Blue Bonnets especially. I should not think that 10 per cent of these Parrakeets survive the first six months of captivity. I was amazed when in Australia at the very high mortality amongst all species of freshly caught Parrakeets.

Another lovely Parrakeet which is very common in its natural habitat, but very rare in our aviaries in England is the Barnard's. I saw my first wild ones on the way up the Lagoon Station and afterwards I became well acquainted with them.

On the way to Lagoon Station we called in at a homestead for tea where there was a most beautiful specimen of this Parrakeet. It was aggressively tame and could talk and whistle tunes and, though in a very inadequate cage, was in perfect condition.

These birds eat the cultivated fruits and nuts and are shot in large numbers ; one person who kept snakes as pets had a large aviary of these Parrakeets and also Rock Peblers which he fed to his snakes ! In flight these birds are exceedingly swift and as they flash past the sombre green of the trees they look particularly brilliant. So tame and familiar did the wild birds become around Lagoon Station that they would enter the open Parrot cages, whose rightful occupants had been let out, and eat the seed. Even if they were fastened up, " just to larn 'em," they returned the next day. I saw a good many of these birds in captivity, but I do not think any one bothers to breed them as they are so common ; only 1s. is paid for hand-reared birds.

There are seven distinct species of Rosellas, though in England they go under the heading of " Parrakeets " all except the one we call the Common Rosella. With one exception all these birds are very distinct, but showing the family characteristics such as the lacing on the mantle and scapulars, the violet outer tail feathers,

and the pale blue cheek patches. Two of the Rosellas, the Crimson, known in England as the Pennant's Parrakeet, and the Yellow Rosella, known as the Yellow-rumped Parrakeet, merge from one to the other, and in the districts between the ranges of these two birds is another Rosella which shows traces of both species, this is known as the Adelaide Rosella. As we get nearer the habitat of the Crimson Rosella, the Adelaide becomes redder until it at last merges into the Crimson, and if we go in the other direction the Adelaide becomes a paler colour until it, too, is indistinguishable from the Yellow. This species is very variable, even in one district some birds being very fine specimens and others looking like nondescript hybrids, the yellow ones which are suffused with brick red are the most beautiful, the suffusion usually being in the centre of the breast and on the forehead. Even birds from Adelaide itself are apt to be rather red. I obtained three very fine specimens with a strong brick red suffusion.

I saw a good many wild ones around the country districts of Adelaide and their habits seem very similar to those of the Crimson Rosella, though they seemed to frequent the more open lands and not so much the forested regions, although there were no thick forests like those in Victoria. The Adelaides didn't look half as brilliant in flight as did the Crimson, though at close quarters I think some of the Adelaides are the brighter coloured birds. I saw very few in captivity in Australia; for one thing they are very common around Adelaide and are not thought much of; their habitat is rather restricted and they do not seem to be sent away from the Adelaide district.

The Australian Bee-eater was very common around the dam and the homestead; in its actions it differs in no way from the rest of the Bee-eaters, which are very homogeneous in the habits. Taking up its position on point of vantage, usually on the dead limb of a tree or a wire fence or perhaps on a telegraph wire, the birds make short excursions after flying insects.

In Australia this bird has the appropriate name of "Rainbow" Bird, but this might easily apply to a good many of Australia's birds especially the Parrots. A family of these birds lived around the homestead and could be seen especially in the evenings on the wire fences when the old birds hawked for insects to feed the young ones. It is often found about the dams where, because of the sheep

and cattle, the flying insects are plentiful. It is often seen hawking over the water and it is surprising how many people mistake it for a Kingfisher.

(*To be continued.*)

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THE EARLY YEARS OF THE AVICULTURAL SOCIETY (VI)

By DAVID SETH-SMITH

(*Continued from page 195*)

The 1906 volume of the Magazine, being Vol. IV of the New Series, which commenced as usual in November of the previous year, is well up to standard, though it contained only six coloured plates. There are, however, in it some good black and white plates and text illustrations. It commences with a coloured plate of the Black-throated Lorikeet (*Trichoglossus nigrigularis*) with an article on the species by W. A. Harding. It occurs in the Aru Islands and this was one of the first imported into Europe; then there is an account by Mrs. Mitchell of the successful breeding of Forsten's Lorikeet (*T. forsteni*). Albert J. Salter writes on the breeding of the King Parrakeet (*Aprosmictus scapularis*), the birds having elected to produce their family on the ground in a corner of the flight close to a footpath. Two young birds were hatched though only one successfully reared.

Mrs. Howard Williams supplies an interesting article on the breeding of the Pileated Finch (*Coryphospingus pileatus*), for which she received the Society's Medal. The nest was built in a laurel bush, at the end of a shoot which had been topped and had sprouted out all round after the manner of a rhododendron when the flower has fallen. All sorts of odds and ends had been used to fill up the space between the young shoots, and on this foundation was built an open nest entirely composed of fibre from pieces of an old rope. There was no lining of any kind and the nest was tiny, barely two inches across, and shallow. Three white eggs, very large for the size of the bird, were laid, and all hatched in due course, though the period of incubation is not given. The

young were fed mainly upon mealworms and soft food and grew very rapidly. One died as the result of a storm, but the other two were reared.

In an article entitled "The Commonsense of Bird Protection" I tried to impress upon readers the great need for bird protection conducted on commonsense lines and by those "who are not swayed by mere blind sentiment". Reginald Phillipps contributes three articles on the Regent Bird (*Sericulus melinus*), the male of which is a remarkably handsome bird in his dress of gold and black. In his aviary in Kensington a pair of these birds were kept with such success that the male constructed his bower and his mate her nest in which she hatched and reared two young birds, a very fine achievement in aviculture.

Mrs. Howard Williams describes the breeding of the Pectoral Finch (*Munia pectoralis*), for which success the Society's Medal was awarded. The nest was made in a rush basket and no less than seven young birds were hatched and, in due course, left the nest in twos, with about two days' intervals between.

A medal was also awarded to Mr. Teschemaker for successfully breeding the Green Avadavat (*Stictospiza formosa*) for the first time. A letter appears, written by myself, recording the prolificacy of the Diamond Dove (*Geopelia cuneata*). "Two pairs were liberated into my largest aviary last April (1905) and quickly commenced to build their fragile nests in any branch that offered a platform for a nest no more than two inches in diameter. . . . I have recently caught them up for the winter and find their number has increased from four to seventeen." Walter Goodfellow was at this time a very successful collector of rare birds from various distant parts of the world, and amongst the treasures he brought home was a Lorikeet from the Mountains of Mindanao, in the Southern Philippines. It was new to science and, as he was collecting for Mrs. Johnstone, this bird was named *Trichoglossus johnstoniae* by Dr. Hartert at a meeting of the British Ornithologists' Club. It is one of the green type of Lorikeets with red on the head and closely related to those which have been placed in the genera *Psitteuteles* and *Ptilosclera*, genera which, as Dr. Hartert pointed out, only differed in coloration from *Trichoglossus* and should therefore not be separated. A good coloured plate of the species is given.

The late August F. Wiener was, in his day, a well known and

experienced aviculturist, in addition to being a very charming personality. Half a century ago he had a great reputation both in Germany and Great Britain as an authority upon cage birds, little inferior to that of his friend Carl Russ. In the early years of the century he came to live in London and, on the introduction of his friend and compatriot, Dr. Günther, was elected a member of the Council of the Zoological Society; and it was he who persuaded the late Mr. Czarnikow to defray the cost of building the first Bird House at the Zoo (now converted into a Tortoise House). But he considered that all captive birds thrived better in cages than in aviaries and so, when the house was first built it contained no aviaries but row upon row of comparatively small cages. In the volume under review Wiener writes a long article "On the size of Aviaries and Cages", in which he expresses his views that in the latter birds not only show to better advantage but actually thrive better than in aviaries. His article brought forth a good many letters in the Correspondence columns, the majority of the writers being decidedly in favour of aviaries where possible as opposed to cages.

The arrival at the Zoological Gardens of a living Humming Bird, a specimen of the Bolivian Violet-eared species (*Petasophora iolata*) is reported. It appears to have been the first living Humming Bird ever received at the Zoo, though not the first to reach England. It lived a fortnight. Another new arrival is recorded at the Zoo in the form of specimens of the Quail Finch (*Ortygospiza polyzona*), which was new to the collection though not to aviculture for, in a subsequent letter, Mr. Osbaldeston mentions a previous importation.

Another new importation recorded is that of the Bald-headed Starling (*Sarcops calvus*) of which Mrs. Johnstone received three specimens, collected by Walter Goodfellow in the Philippines. A beautiful coloured plate of the Greater Pintailed Sandgrouse (*Pteroclorus pyrenaicus*) by Grönvold accompanies an article by E. G. B. Meade-Waldo on Sandgrouse in general, a group that he had studied much both in the wild state and in captivity. He mentions the habit of this group of conveying water to their young, and as this has been considered by some ornithologists to be merely a habit acquired by captive birds, I would like to quote from him here. He writes:—

“The extraordinary method employed by the parent Sandgrouse, of conveying water to their young by saturating the feathers of their breasts, was first described by me in 1895, and since by Mr. St. Quintin in his interesting account of the successful rearing of the Lesser Pintailed Sandgrouse (*P. exustus*). I have had the good fortune to see the males of *Pterocles arenarius*, the Black-breasted Sandgrouse and *Pteroclorus alchatus*, the Greater Pintailed Sandgrouse, getting water for their young in a wild state, but, had I not seen it administered in confinement, would have considered them to have been demented birds trying to dust in mud and water when unlimited dusting ground surrounded them on every side. In very waterless districts where the only water procurable was from deep wells situated at great distances from one another, this method of procuring water must be most precarious, for I saw *P. arenarius* waiting by the wells and going to the muddy spots where the skins used to be laid before being loaded on to the camels, and where water was slopped over from the troughs where the animals drank. I also saw them fly over to the prickly Zareba surrounding the tent-villages and go to where there was a soft spot for the same purpose. I did see *P. alchatus* actually soaking themselves; they were much wilder and also in less arid places, but I repeatedly saw cocks pass over, their white breasts soaked in mud and water. Doubtless the whole group of Sandgrouse obtain water in this manner although I can only answer for the three species mentioned.”

Captain B. R. Horsbrugh writes on Aviculture in South Africa where there is “constant sunlight”, though the nights are often very cold and windy, and Collingwood Ingram gives an account of a visit he paid to a Guacharo Cave in Trinidad. This curious, fruit-eating bird called also the “Diablotin” or “Little Devil”, is known to science as *Steatornis caripensis* and is of great interest as it occupies a family all to itself. Superficially it resembles a Nightjar and lives by day in dark caves where it forms its nest upon a ledge. The young, which are very fat, are much sought after by the natives for food.

Mr. W. G. Perceval contributes some notes on birds in the Sudan, the most interesting, I think, being one on the habit of the young Egyptian Plover of burying itself in sand. He writes: “Recollecting a recent note of Mr. A. L. Butler in *The Ibis* that this

bird buries its eggs under the sand I started scratching up the sand at any place where there were a number of tracks or in any little hollows. From one of the latter, under about a quarter-of-an-inch of sand I drew a three-parts-grown Egyptian Plover ! ”

Reginald Phillipps writes a long article on the Violet-eared Waxbill (*Granatina granatina*), A. G. Butler records the breeding of the Tambourine Dove (*Tympanistria tympanistria*) and W. E. Teschemaker, the Black Tanager (*Tachyphonus melaleucus*) and the Red-headed Finch (*Amadina erythrocephala*). T. H. Newman writes on the Burmese Collared Turtle-Dove and points out the features by which this race differs from its allies, while Meade-Waldo contributes “ Some Remarks on Birds seen during the Cruise of the *Valhalla* R.Y.S., 1905, 1906 ”.

Thirteen medals were awarded for breeding species not previously bred in the United Kingdom.

(*To be continued.*)

* * *

MIGRATION AND KEEPING OF EVENING GROSBEAKS

(*Hesperiphona vespertina*)

By PAUL KUNTZ

For many years I have been banding Evening Grosbeaks, and I was particularly interested in their migration. The general belief that these birds are winter visitors, and migrate only when the cold weather approaches, left me sceptical. I came to the conclusion that these birds have no fixed migration.

To show that my contention is correct, I may point to the following facts :—

It has been proven beyond any doubt that species such as Cowbirds, Cat Birds, Song Sparrows, American Goldfinches, Purple Finches, and the most reliable of all the Baltimore Oriole, invariably return to the same locality. Returns are numerous. In one instance, immature male Baltimore Oriole, No. 691257, banded by me on 10th August, 1930, at 140 Luxton Avenue, Winnipeg, Canada, was taken alive from a cat by A. W. Gillman,

207 Bonner Avenue, North Kildonan, on 26th May, 1937. The distance from the place where this bird was reared and banded and finally came to grief is only two miles away.

Now about Evening Grosbeaks of which I collected some interesting data :—

During	1935	.	.	157	birds	banded
„	1936	.	.	100	„	„
„	1937	.	.	143	„	„
„	1938	.	.	126	„	„

There was not a single bird retaken the year after being banded. However, repeats during the season were numerous, some birds entered the traps four and five times daily, and kept it up for weeks. Some specimens, when released, did not bother to fly away, just waited a short distance from the traps ready to re-enter as soon as the coast was clear for another good feed. There were birds retaken after an absence of two and four years but, in proportion to the number banded, few and far between.

The following is a record of two birds, which is particularly interesting :—

A. 287801 : Evening Grosbeak, banded 29th March, 1932, at Mayville, Michigan, by Dr. H. A. Barbour, was trapped and released by me on 27th March, 1937, at Lot 54, East Kildonan, Canada.

A. 35-200461 : Evening Grosbeak, banded by me on Lot 54, East Kildonan, Canada, on 19th March, 1935, was trapped and released on 18th March, 1937, by M. J. McGee, 603 South Street, Sault St. Marie, Michigan.

As will be noted these birds were taken the same month but in a different year far away from their original banding station.

In my opinion, migration is solely dictated by the food problem. As long as maple and poplar seeds are plentiful, the birds stay. Climatic conditions have nothing whatsoever to do with their migration. These birds can stand 40 below just as well as 100 degrees in the shade. Occasionally a few pairs stay all year in the same locality to breed.

On 24th July, 1934, I observed two old birds feeding three young in a pasture road at Petersfield, Canada. They were one young male and two young hens ; the birds still had some down

feathers on their head and very short tail. They were quite fearless and could be approached within 10 yards without making any attempt to fly away. I also had ample opportunity to observe several pairs which have been kept for many years in my aviaries. The birds are immune to heat or cold and nest and breed regularly by the middle of July, when the temperature always hovers between 90 and 100 degrees in the shade.

The Evening Grosbeaks can safely be classed in the same category as the American Crossbills, erratic wanderers. As long as there is a plentiful supply of pine cones, these birds never leave their habitat. The only time they move is when there is a scarcity of pine cones, then they even come to town and invade our gardens.

The Evening Grosbeak always has been one of my favourites in my aviaries. When in full plumage they are beautiful birds. They soon become very tame and take sunflower seeds from the hand. They don't bother other inmates of the same aviary, though they snap at other birds, if they come too close. There is no harm done, they make a clicking noise with their powerful beaks, and that is enough for any other bird to move on. When feeding on the ground with a number of other birds, they don't bother, as they are too preoccupied cracking sunflower seeds.

To give an instance how tame and familiar the birds become to their surroundings :—

One morning, when entering their flight after feeding, I must have left the door partially open. As I was leaving home, I noticed my seven Evenings running about the garden. As there was no time to do anything in the matter, I opened the door to their aviary, sprinkled a good feed of sunflowers and hemp on the ground, hoping for the best. As there was running water in a fountain in their flight, I turned this on as well. Great was my excitement and pleasure on returning home, in the afternoon, to find all seven birds back in their aviary feeding contentedly, some of them splashing in the water. The breeding of this species is an easy matter as far as laying eggs and hatching young, but rearing their young is a different story.

The birds are poor nest builders ; the nest has to be provided for them—a small basket or large strainer filled with soft hay. One hen laid one egg on the ground of their flight. I put some grass in a small strawberry basket tacked 4 feet from the ground to the

wall and placed the egg in it. Next morning, the hen was sitting on the egg and incidentally laid another one.

The bird sat steady for twelve days. On the thirteenth, two young were hatched. They were strong and healthy chicks, all black with a fluffy down. They looked exactly like young Bullfinches. They opened their beaks wide, asking to be fed. To my amazement, the parents stood on the side of the nest and just looked, never made any attempt to feed them, though the young clamoured for food. The birds were provided with mealworms, earth-worms, all kinds of seeds, green food, and apple. I tried to feed them myself, but was not successful. After four days, I lost them. The only way I managed to raise some was the method adopted to raise Red-crested Cardinals.

I take a spin in the country, dig up a good-sized ant hill, fill a canvas sugar bag with earth, ants, eggs, as it comes along. The cap is securely tied, so the ants will not escape. Three times daily I throw a shovelful of the contents of the bag on the floor of the aviary. It is marvellous to watch how quickly the birds pick up the running ants. They don't pick up just one, they grab a beak-full, fly up to the nest and come back till there is nothing left. I also found out that all Grosbeaks are very fond of fine chopped raw meat; they eat it with relish. When feeding young, I also place a dish with this raw meat mixed with maggots. This also is fed to their young. Mealworms and earth-worms are hardly touched. Of course the birds get sunflower, canary, rape and a little hemp, green foods and apple, also lots of fresh running water, of which they are very fond.

The birds have only one nest a season, usually two or three eggs comprise the clutch, seldom four. They breed in the middle of June to end of July.

On 3rd August, 1938, I had three young leaving their nest; they were fed by their parents for another three days. They soon learned to crack seeds by watching the old ones, they also were given fine chopped hard-boiled egg.

I may point out that these birds are strictly protected, and can only be kept by Government permit.

BREEDING THE TRI-COLOURED PARROT FINCH IN SOUTH AFRICA

(*Erythrura trichroa*)

By C. N. ABRAHAMS

Breeding these pretty birds and the Red-headed species, has been one of our most cherished ambitions. Unfortunately, up to the present, we have had no success with the latter, but we have had some interesting experiences with the former. At the outset it seemed as though fate was against us, and we would be doomed to failure. The first pair we received, from a friend in Nottingham, England, arrived suffering from white diarrhoea. We did all we possibly could to pull them round, but unfortunately they were too far gone. Arriving here in the middle of our miserably wet winter, their chances were still further reduced, and we could not save them. Another pair was sent, but only one arrived. Misfortune befell them on board ship, and only the cock reached Cape Town. The hen is still at sea.

So we were left with a lone cock, until some months later when we received a mate for it. These were in one of the breeding aviaries, together with a pair of Gouldians, Hood Siskins, and Owl Finches. After some months had passed, a hurried nest was made of green seeding grass, in a 7 in. square nesting box, hung some 7 feet from ground level.

We had every reason to believe that they were in earnest, but time went on and nothing seemed to happen. In the meanwhile, the Gouldians became serious and ousted the Parrot Finches from their box. The Gouldians lost no time in building a beautiful dome-shaped nest in the same box, and soon were sitting very closely. After sitting for about three weeks, my wife reported that they had suddenly given it up. As I was ill in bed at the time and unable to assist, it was arranged that she should make certain whether or not the Gouldians sat on the nest at night. After satisfying herself on this point, next morning she removed the box and on examining the nest found one infertile Gouldian egg. Surprised to find that they had made their nest so high up in the box, my wife grew suspicious that something might be wrong. Thereupon she dug still further down into the nest and was amazed to find two eggs with chicks

dead in the shell, and two well-developed young Parrot Finches, both dead. The quills had already commenced to burst open.

Apparently the Gouldians had built their nest on top of the living young Parrot Finches and eggs, and all the fuss was over one infertile egg. There were many more nest-boxes dotted about the aviary, and lots of natural bushes, which makes their behaviour all the more difficult to understand. Needless to say, the Gouldians were promptly removed from the aviary.

The Parrot Finches went to nest again, but misfortune seemed to dog the hen as she was picked up dead early one morning, having succumbed to egg binding during a cold night ; so disappeared what we considered all hopes of ever breeding Blue-faced Parrot Finches. However, good fortune smiled on us once more, and it was during the 1937-8 breeding season that we met with the success which my wife had so much longed for.

A pair was sent to her from England, and fortunately on this occasion they arrived during the lovely warm weather of summer, which is a great advantage to new arrivals. After the usual three to four weeks' period of quarantine, they were liberated into a breeding aviary, which they had all to themselves. The aviary was well supplied with natural bushes, also a liberal supply of nesting-boxes and tins. Almost immediately they settled down. The cock was seen carrying straws, and for more than a fortnight we never caught sight of the hen. My wife, by this time, had become anxious and worried. Watching often and very closely without success, she was sorely tempted to make still closer investigation between bush and box, even going so far as to remove a suspected nesting-box for inspection, to see whether the hen was dead or alive. Afraid of interfering with the privacy of the birds, she wisely decided to trust to her nose and ears, since all else had failed.

The more cherished thought and hopes, of course, were that we would hear the sound of young voices crying for food, but these hopes we dared not even think about. They were secret thoughts. Thoughts we held entirely to ourselves, which were not disclosed to each other until long afterwards.

Some weeks had passed by now, and still there were no signs of the hen, dead or alive. Nor was there any other evidence, for which we were at all times prepared whatever it might be. There was no bad odour forthcoming, but at the same time, none of our secretly

cherished hopes of young voices were heard. Suddenly the cock bird started gorging on live food, in the form of termites.

Although these birds were nervous and terribly wild when first put into the aviary, the cock afterwards became so tame that as soon as he caught sight of my wife, through the glass window of the aviary house early in the morning, he would hop down to the shelf and literally tell her that he was waiting for termites. Afterwards he became so tame and bold that with one or two chirps as though to say "I'm coming" he would land on the glass paste-pot full of termites in her hand, as she was placing it into the centre of a dish of water on the shelf. This is the method we use to keep the Argentine Ants out of the termite pots. After filling himself on live food, he would immediately fly to the nest. This was the first bright spark of hope, and no surer sign that there were young in the nest. A few days after, to the delight of my wife, she excitedly reported having heard the faint voices of youngsters. Day by day the voices grew louder and louder, until on 19th October, 1937, our first baby Blue-face left the nest. On 21st October my wife proudly introduced me to four bonny youngsters, sitting together on the perch. They were all fine, strong, sturdy chaps, full of life and vigour. They were the usual dark green colour, with very conspicuous, luminous blue beads on each side of and at the base of their bright yellow beaks. Gradually the pretty blue beads disappeared and were completely gone in about six weeks. In the meanwhile the beak was changing from yellow to shiny black. The blue slowly commenced to appear on the face, the maroon tail became more rich in colour, and in due course they were a very pretty adult quartet.

What nervous, frightened young birds they were. At the first glimpse of anybody approaching the aviary house they would fly straight for the light, and strike the wire with terrific force. It was painful to see them dashing about, and made one reluctant to go near. However, after a week or two they seemed to become more sensible, and took cover in the bushes at the first sound of anyone approaching. In all there were four clutches of eggs, made up of four, three, three, and four. Fourteen chicks were hatched out during the one season, but only twelve were reared to full maturity.

As a result of this success, several friends have benefited, and to-day "Claremont" Blue-faced Parrot Finches are spread about

South Africa, from Claremont to Johannesburg. At this stage we agreed that they had bred sufficient for one season. We also thought that after rearing twelve youngsters in the same nest, the box must be in a very filthy condition, so we decided to remove the box.

In this we were greatly mistaken, firstly because the box we removed was empty, and not the one we made so sure they had nested in, and secondly when we did discover the right box we were astounded to find that the nest was spotlessly clean. Despite the fact that there was plenty of natural bushes available, attractively arranged, they chose a box about 7 inches square, tucked away in a dark corner of the house, behind the bushes some 7 feet from the ground. A very ordinary saucer-shaped nest was made, consisting of a few green straws on the bottom of the box, suggesting that nesting material was very scarce. The only reason we can give for such an improvised nest is that, in the circumstances, they were in a desperate hurry and did not have sufficient time when the original nest was built, so never bothered to add any new furniture to the home during later breeding operations.

During the breeding period they were certainly not in good plumage, in fact I've never seen a pair look so ragged, the hen was perfectly moth-eaten. The fact that she did all the incubating may also have something to do with the appearance of her plumage. The cock seemed to spend most of his time on a near-by perch, apparently on the watch, ready to sound the alarm and carry live food to the nest.

About three and a half weeks passed before the hen showed herself. She was extremely nervous and took cover immediately she caught sight of anyone.

The aviary was heated during the cold winter months, and is now stocked with Hartlaubs, Green Twin-spotted Waxbills, Gouldians, Green Avadavats, Masked Finches, and the Parrot Finches. After winter, all the bushes, boxes, etc., were taken out, the aviary burned out with a blow-lamp, whitewashed, and then restocked with bush and box. Despite all these changes and additions, it seems to have made no difference to this faithful pair. They started off this 1938-9 season exactly the same time as last, and up to date there are already 14 fine, strong youngsters on the perches, 4 from the first clutch, 4 from the second, 3 from the

third, and 3 from the fourth. This makes a total of 28 youngsters from one pair, of which 26 were reared to full maturity.

On this occasion they changed the site for their residence, and chose a similar box, in full view of everybody. This season they appear to have had more time to think matters out, and a beautiful deep, dome-shaped nest was built.

It has been most interesting and amusing to watch the youngsters, in the latter stages of their dormitory period, climbing on top of each other's backs, each trying to get a peep at the outside world through the entrance. This went on, much to the amusement of the family, until on the 19th October, exactly the same date as last year, the first youngster left the nest, followed soon after by the remaining three. They have been a great source of pleasure to us all. Now they are busy building again.

* * *

COURTING-DISPLAY OF NAPOLEON'S PEACOCK PHEASANT

(*Polyplectron napoleonis*)

By J. SPEDAN LEWIS

Two pairs of this species, commonly called the Palawan Peacock Pheasant, have been kept at Leckford for two or three years. Until last Sunday no one had seen either of the cocks display.

The bird is greyish-brown with a white face. The extent of this white seems to vary a good deal. The crest resembles that of the Burmese Peacock. The feathers, that compose it, stand up pretty tightly together in a fairly long tuft and this points rather forward over the bill.

I have never seen a skin of Schleiermacher's Peacock Pheasant, but I understand that the Napoleon is the most highly coloured of the genus.

On this background of greyish-brown with a little white there is a gorgeous decoration of metallic green. This colour is placed on the wings and tail. On the wings it is in several long bars which, to my eye at all events, look rather as if they had been painted upon the bird without attention to the individual feathers. On

the tail it is in numerous, large round spots. Speaking from memory I think that on the wings the green has a bluish gloss but that there is less, if any, of this on the spots on the tail.

It is obvious that in the display the wings and tail must be spread but there is nothing in the build of the bird to indicate that the tail would not be spread like the false tail of a Peacock, that is to say at right angles to the body.

On the 11th June one of our two cocks suddenly displayed repeatedly to his hen while I was standing with two strangers at the door of the shed in which both sexes spend much of the day, though there is good cover in their run.

At Leckford we take a good deal of trouble to get our Pheasants tame. A good many of the Tragopans will feed from hand. Many other species will not merely come right up to visitors, including strangers, but will stay there as long as bits of pea-nut are dropped for them.

Neither of our Palawans has become as tame as this and the cock, of which I am speaking now, has been decidedly the shyer of the two. He would not show definite alarm, as all of our Bulwers still do, but he would not come at all close and, unless pea-nuts were thrown from a distance and at the right time, he would generally, if out in the run, get behind the shed or hide otherwise.

On this occasion he showed no shyness at all. As soon as we came to the open door of the shed and I saw that the birds were inside, I threw in a nut hoping that they would begin to feed instead of leaving the shed by the little chicken-door at its other end.

Either this small excitement in a general way or possibly the hen's moving towards the nut seemed to excite the cock at once. He immediately drew himself up and, as it were, hunched his shoulders like a barn-door cock about to crow. The pose was not extreme but it was definite. He then spread a little the feathers of the tail that are normally carried closely together so as to form a straight mass on which few of the eye-spots can be seen.

He then suddenly spread both wings and the tail and twisted the upper face of the wings and tail so that they formed a single flat surface, absolutely at right angles, so far as I could judge, to the ground.

The hen took no notice. As she moved about the shed, the cock

displayed several times so that on at least three occasions we got the view intended for the hen and at other times we got both the view from the other side, where there is no colour at all, and also the view from straight behind the bird. One saw then how completely the two wings and the tail are twisted so as to be perpendicular to the ground.

When thus spread, the tail is so circular as to form with the wings a general impression, that to my own eye was almost comic, of forming an exact circle. The bird looks like a circular plate standing edgewise to the ground and lifted by an invisible stand an inch or two into the air.

The head was pointed downwards, though less extremely so than in, for example, Rheinhardt's Argus. The crest seemed quite unaffected but its normal angle to the head emphasized the way in which the head was bent downward and markedly, though not extremely, sideways towards the hen.

At the height of the display the cock gave a rather prolonged cry like a small groan. The sound was rather more poignant than the noise that a human being may make in an extreme yawn but not so much so as to be at all eerie or distressing.

* * *

NOTES

FOXWARREN PARK

More than a hundred members of the Society accepted the kind invitation of Mr. and Mrs. Ezra to a Garden Party at Foxwarren Park on the 27th May, when they were favoured with perfect weather. The majority travelled from Town in a charabanc, most generously chartered for the occasion by Mr. Ezra, others arriving in private cars.

Foxwarren Park is certainly one of the most lovely spots in Surrey, and at this time of year, the garden and surrounding country is in perfection, and when one adds to its natural loveliness the sight of the finest private collection of living birds in the country if not in the world, one realizes that here is a spot entirely unique.

THE AVIARY

On the arrival of the guests in the early afternoon, a move was made towards the aviaries. These consist of ranges of well-equipped shelters, each with its outer flight, these flights leading into much larger flights, planted with growing shrubs. The collection is a wonderful one, containing many of the rarest foreign birds that have ever been imported to Europe. Many were nesting, and we noted a sitting Blacksmith Plover. Rows of smaller aviaries contain single pairs of such birds as Kookaburras, Mynahs, and others, while behind the main aviaries are long ranges of very good Parrot and Parrakeet Aviaries.

PARROTS BREEDING

Here we noticed a splendid pair of Guildings Parrots (*Amazona guildingii*), which were incubating eggs, a most noteworthy event. A pair of Leadbeaters Cockatoos had three young ones in the nest, while another nest contained a fine young blue Alexandrine Parrakeet. The yellow variety of the Indian Ring-necked Parrakeet is becoming quite well established in the Foxwarren aviaries, and this year there are a number of yellows bred from yellow-bred birds. Crimson-wings and Malabars also had young.

WEAVERS AT LIBERTY

In the shrubbery outside the aviary we heard the chattering song of Weaver-birds, and Mr. Ezra tells us he has liberated a number of yellow Weavers which have settled down well and are busy building nests.

CRANES

The Crane Paddocks, which were visited next, contain a grand lot of birds, including a pair of the very rare Wattled Crane from South Africa. Two pairs of Stanley and a pair of Manchurian Cranes were nesting, while a pair of White-necks had two very healthy chicks.

THE BIRD ROOM

In the Bird Room, to which the party then wended their way, are very many gems of all kinds, some being the only ones of their species ever imported. Some time was spent here, and then a move was made to the house, where Mrs. Ezra and her daughters entertained the party to a sumptuous tea.

THE PARK

After tea, Mr. Ezra conducted his guests to the park, which is full of delights for the naturalist. Bennett's Wallabies were here in numbers, many with Joey's in their pouches, and in the distance a large herd of Indian Blackbuck, two of which, having been hand-reared, preferred the company of the visitors to that of their own kind, and became almost embarrassing in their attentions.

The birds here consist mostly of Cranes and Waterfowl, many of the former being full-winged. The sight of a pair of enormous Sarus Cranes on the wing is one to be remembered.

WATERFOWL

The Duck ponds contain a very choice collection, including Barrow's Golden-eye, Indian Cotton Teal, Tree Ducks and many others; and numbers were nesting. Full-winged Mandarins and Carolinas nest freely in boxes placed in trees, and already quite a number had hatched and taken their broods to the water.

Foreign Geese roam the Park, and three species at least, namely Bar-headed, Hutchins', and Ross's Snow Geese were sitting; while in a paddock a pair of Ashy-headed Geese had two healthy goslings.

MR. C. S. WEBB

There is always great excitement amongst keen aviculturists when Mr. Webb returns home from one of his expeditions, because he always brings a number of birds that are new to aviculture, and on his arrival from the Central Province of Tanganyika at the end of May, they were not disappointed.

The birds of Tanganyika are not well known to aviculture, but most of them are races of the better known species from West Africa. Some thirty species were represented in the collection, the majority being new to aviculture as sub-species, and several as distinct species.

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AVICULTURAL MAGAZINE



CONTENTS

	PAGE
A Collector in the Andes of Ecuador (<i>with plate</i>), by C. S. WEBB . . .	237
On the Care and Keeping of Barbets (<i>continued</i>), by RUDOLF NEUNZIG . . .	251
Notes on Peruvian Waterfowl (<i>with plate</i>), by ALASTAIR MORRISON . . .	259
The Early Years of the Avicultural Society (VII), by DAVID SETH-SMITH . . .	263
M. C. Cordier's Collection, by J. DELACOUR	267
Notes	271
Correspondence	273

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[Photos : C. S. Webb.

Transporting birds across "bridge", Rio Saloy, Western Andes, Ecuador.

Frontispiece.]

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AUGUST, 1939.

A COLLECTOR IN THE ANDES OF ECUADOR

By C. S. WEBB

In the winter of 1937-8 I went to Ecuador with my niece in search of some of the delightful birds confined to the Andes, which rarely find their way to aviculturists in Europe. I believe that, prior to my visit, Walter Goodfellow was the only Englishman to go to Ecuador to make a collection of live birds from the Andean region, and that was in 1914. Some of the older members of the Avicultural Society may remember seeing, or reading of, his wonderful collection, containing mostly specimens that were quite new to England.

Away from the towns and railways travelling conditions have not changed very much in Ecuador and to get to any of the forested regions of the western or eastern Andes it is still necessary to go on foot or by horse along the same old narrow trails that have been in use for generations. In these days one can at least reach Ecuador in comfort and if one chooses a line that includes many ports of call the voyage is most interesting. Besides the West Indies our boat called at the lovely harbour of La Guayra with its impressive background of high mountains. This is the port for Caracas, the capital of Venezuela, which is well-known to aviculturists on account of its famous bird-market. It is about twenty-three miles from La Guayra, situated at an altitude of 3,000 feet, and can be reached by car in a little over an hour. When I visited the market there were a number of the more common Tanagers on offer, including the Black-throated (*Euphonia nigricollis*), the Violet

Tanager (*E. violacea*), the Yellow-headed Hangnest (*Icterus chrysiocephalus*), a Black Cassique (*Cassidix oryzivora*), and a few Salvadori's Sugar-birds (*Coereba mexicana intermedia*). There were also a few Humming-birds which looked rather sorry for themselves as they were being fed on sugared water only.

From Puerto Colombia we made the journey to Barranguilla, a few miles inland, where there were a few birds for sale in the shops, including Yellow-winged Sugar-birds which looked remarkably well, and also some Military Starlings and Violet Tanagers.

After calling at the Dutch island of Curaçao and passing through the Panama Canal we called at Buenaventura on the Pacific coast of Colombia. Here I saw quite a number of privately owned birds and, besides some common Amazons, there was a lovely Lesson's Parrot (*A. lilacina*), several Red and Blue Macaws (*Ara chloroptera*), and a fine Yellow-backed Cassique (*Cassidus persicus*).

About 800 miles south of Panama, Guayaquil, the principal port of Ecuador, was reached and here we disembarked to make the journey to Quito the capital. The line for the first fifty miles traverses the flat coastal belt and then winds its way up the western slopes of the Andes to a height of 12,000 feet, after which it descends to the plateau in which Quito is situated at 9,500 feet, and about 300 miles from Guayaquil. Ecuador is one of the smallest and least known of the South American Republics, but it is the richest in bird life, due to the remarkable diversity in climatic conditions and vegetation.

The Andes traverse Ecuador from north to south, leaving only a narrow strip of flat country between them and the Pacific, and every kind of climate exists from desert, tropical (humid), subtropical (humid and dry), temperate (humid and dry), to the alpine regions of the great mountains which are perpetually covered with snow. In this respect Ecuador can boast of the fact that it has snow on the equator.

This extraordinary variety of climate with its corresponding types of vegetation make this part of the New World the most prolific in bird life, and its inaccessibility to the ordinary traveller rather adds to excitement of exploring the numerous mountains and valleys where bird life is extremely local.

The Andes on account of their great height create a natural division in the animal life, and so we find about 400 species and

sub-species of birds in eastern Ecuador that are not found on the western side, and nearly 200 in the west that do not occur in the east.

The very size of some of the families is sufficient to indicate a number of distinct zones and there are, for instance, 132 species and 16 sub-species of Humming-birds; but this enormous total is beaten by the Tyrants (*Tyrannidae*), which number 142 species and 18 sub-species. Altogether there are 1,357 species and 151 sub-species of birds in Ecuador in an area less than that of Germany.

We decided, first of all, to visit a small village called Santo Domingo de los Colorados at the foot of the western Andes, which is famous for its Indians and also rich in bird-life—being in the humid tropical zone. We were able to go about eighty miles by car from Quito, but then we had to resort to mules for three days, which provided a severe contrast in speed and comfort. Not having done any riding for a couple of years I found the wooden saddle anything but comfortable, especially as we had to ride for thirteen hours a day on the first two days.

Being the rainy season it was pouring down nearly all the way and the narrow trail was in a terrible state. It was very rocky in some parts, and in others so boggy that the mules sank to their bellies in the mud. One seemed to be completely hemmed in by mountains all the time, but the trail winds its way through the valleys, following the river on its tortuous course to the open plains. Waterfalls hundreds of feet high were a frequent sight and at short intervals streams were rushing wildly from the mountains into the river. Often these streams tore their way through deep gorges which were spanned by rudely made narrow bridges consisting of a few poles laid horizontally across and covered with earth. In some cases they were made of bamboo and in the heavy rains it is not an uncommon thing for the earth to get washed through the crevices between the poles so that the mules' feet sometimes go clean through the bridge. My niece had a hair-breadth escape crossing one of these gorges on a bridge that was only three feet wide, with no sides, when her mule put its foot in a hole and fell flat on its stomach; as it struggled wildly to regain its feet it seemed inevitable that it must go over the side into the raging torrent below. Fortunately it righted itself safely and it was

lucky too, that my niece managed somehow to keep on the mule's back, otherwise it would have been a disastrous affair.

The grandeur of the scenery surpassed anything that I had seen in the Himalayas previously, and acted as some compensation for the rough going and for the discomfort of being wet through to the skin. We were so late one day in reaching a hut along the trail where we intended staying the night that it was pitch dark before we reached our destination, so we just had to rely on the senses of our mules to guide us to safety. It was rather an awesome business crossing the narrow bamboo bridges without being able to see anything, and with the sound of water rushing far below.

Our pack-mules were laden with provisions, blankets, and bird-cages, and the transportation of the latter along the narrow forested trails was a problem owing to the mules constantly trying to pass one another, with the result that the loads jutting out from their sides were subjected to heavy crashes. The same thing happened when a mule passed too near to a tree. Also it was not uncommon for them to fall over when sliding down the sides of slippery boulders or when wading torrents studded with large rocks and holes.

Santo Domingo is noted for its nearly extinct tribe of Indians, who plaster their bodies all over, and even their hair, with a bright red paste made from the seeds of the achote tree. They are very shy and only a few speak broken Spanish, so conversing with them is difficult. They are a fine race physically and morally, but these attributes as well as their very existence are jeopardized through contact with the Ecuadorian degenerates now living in their midst.

Unfortunately it rained hard every day that I was at Santo Domingo and the surrounding country was reduced to a bog, otherwise I might have received some assistance from the local Indians.

I was particularly keen on getting a live specimen of the Umbrella Bird (*Cephalopterus penduliger*) known locally as the Pajaro toro (Bull bird) on account of its bellowing call-notes. This bird is one of the curiosities of the animal kingdom with its "bushy" crest and feathered wattle, over a foot long, hanging down from the neck. An Indian hunter told me that this appendage is inflated when the bird is calling.

In the plantations and second growth Tanagers were plentiful, especially the Yellow-backed Tanager (*Ramphocelus icteronotus*) and

the migrant Scarlet Tanager (*Piranga rubra*). The males of the former were the most conspicuous birds of the region, and in flight looked very handsome with their yellow backs contrasting with the velvety black of the rest of the plumage.

In spite of the rain and mud I managed to trap a number of interesting specimens by setting nets in the trees, though this was rendered somewhat hazardous by the wet and slippery nature of the branches. Two of the nicest birds that I got at Santo Domingo were a pair of Coronated Manakins (*Masius coronulatus*), which looked like very diminutive Cocks-of-the-Rock. The most handsome Tanagers were a pair of greenish-blue Tanagers (*Tangara labradoroides*).

I saw, on rare occasions, a rather pretty bird, *Arremon aurantirostris occidentalis*, which had an orange bill and black and white striped head. It is closely related to the Saltators, but does not appear to have a satisfactory English name. I believe that it was referred to formerly as the Orange-billed Tanager, but is now classed as a Pectoral Sparrow. I only managed to secure one, which was quite a handsome bird and not a bit Sparrow-like in its habits. A very distinct Tanager and one of the most beautiful—the Western Swallow Fruit-eater (*Tersina viridis occidentalis*)—was occasionally seen in the clearings where berries were plentiful. It has a wide gape like that of a Cotinga, and the males are a shining turquoise-blue with the forehead, throat, and sides of the face black. The female is quite unlike the male but is nevertheless very beautiful with brilliant green plumage.

A pair of Sclater's Orange-headed Tanagers (*Tangara lunigera*) was also obtained. They are very striking, with their orange plumage contrasting with a black face, wings, and tail.

Many other attractive birds were seen in the forest around Santo Domingo including several Barbets. The New World Barbets are not well known over here, but some that I saw were exceedingly handsome, especially the Bourcier's Barbet (*Eubucco bourcierii aequatorialis*), which is a gorgeous bird with a mixture of green, scarlet, silvery white, and yellow in its plumage. Swainson's Toucans (*Ramphastos swainsoni*) were also seen, and we were fortunate in obtaining a pair of young ones which were ridiculously tame and made most amusing pets. They are rare in captivity.

The everlasting rain and mud and the filthy conditions under

which we were living made us give a sigh of relief when we set off again on our mules for Quito. The return journey was even worse than the outward one as the heavy rain was continuous and we had to climb over 8,000 feet.

Not being able to obtain any porters, our bird cages had to be strapped to the mules and the journey was rather a nightmare, with the animals frequently falling into mud-holes and crashing into trees. All the birds survived the first two days, but the last one was too much for some of them. I never attempted to carry birds again by mules, and wherever I went I took porters with me.

Our next trip was to Lloa, a small Spanish village to the southwest of Mount Pichincha, situated at an elevation of 11,000 feet. While we were searching the surrounding country for some sort of a hut to stay in and use as our headquarters while collecting, we were offered the use of the local school, as there was no other accommodation available in the village. Fortunately the children were on holiday, though this did not mean that we were without company. Ecuador is noted for its fleas, but I never experienced anything like the massed attack by the inmates of that school-room. Luckily we didn't have to put up with that ordeal for long as we got the loan of a charcoal-burner's hut about 500 feet above Lloa on a steep hill overlooking the valley and facing Mount Pichincha.

At 11,500 feet we were in the temperate zone and the countryside was frequently enveloped in cold mist. The nights were particularly cold and anything less like the tropical conditions usually met with on the equator it would be difficult to imagine. In this region Humming-birds were particularly plentiful and it was an extraordinary sight to look out of the hut at daybreak when one's limbs were stiff with cold to see numbers of the fragile-looking Thornbill Humming-birds (*Ramphomicrom microrynchum*) flitting round the flowers through the cold grey mist in the most animated manner. Other Humming-birds common at this altitude were Bouquet's Puff-legs (*Vestiapedes luciani*), and a charming sight they were with their white "powder-puffs" displayed prominently on the legs. It is a common belief that Humming-birds are attracted only to red flowers, but in this region nearly all the different species were feeding on white blossoms.

After much searching I came across a Sword-billed Humming-

bird (*Ensifera ensifera*), a bird which I was particularly anxious to capture owing to its very unusual proportions. The beak is considerably longer than the body and it feeds almost entirely on the trumpet-shaped flowers of the scarlet brugmansia. These blooms are about the same length or a little longer than the bird's beak and it seems that the Sword-bill has evolved a bill (and tongue) sufficiently long to enable it to feed quite easily from its favourite food plant. During six weeks of strenuous mountaineering I captured five of these rare birds, but was unable to find a suitable artificial diet for their sustenance. The usual proprietary infants' food mixed with condensed milk and honey or glucose, such as is a recognized diet for Humming-birds in general, acted just like a poison to these specialized feeders and after having a good feed they would roll over dead. The last one I kept for three weeks by completely changing the diet and I was hopeful of solving the problem, but by that time the Sword-bills had completely disappeared as the brugmansias had finished flowering. Evidently they had gone to another district where, owing to different climatic conditions, these bushes were later in blooming. By changing about it seems that they can find their favourite food nearly all the year round. There is evidently something different about the nectar of the brugmansia flowers for I never experienced any difficulty with artificial food for any other Humming-birds.

The beautiful Scarlet-bellied Tanagers (*Pacilothraupis lunulata*) live in the wooded temperate zone and I caught several above Lloa. They are happier in the virgin forests where there is an unlimited supply of food, but the western Andes anywhere near Quito offer no such abode in these times. For miles and miles every tree has been chopped down for firewood or charcoal, and all that remains is bushy second growth. It is difficult to find a tree of sufficient growth and strength to bear one's weight, so that setting nets in between the branches is almost an impossibility. But fortunately the forest of the eastern Andes remains untouched and so between 11,000 and 12,000 feet Scarlet-bellied Tanagers are abundant.

To return to Lloa, another Tanager living at the same altitude but with entirely different habits was the Chestnut-capped Tanager (*Buarremon spodionotus*). It was not uncommon but always kept near the ground in low bushes, and was rather skulking in its

habits. In captivity they become quite tame and although not so showy as some of the other high mountain Tanagers are nevertheless very attractive.

The commonest birds on the hillsides above Lloa were-Guit-guits (*Diglossa*)—a genus closely related to the Sugar-birds, but with dull blackish plumage. Wherever I set nets I was sure to catch numbers of these birds, but not being of particular interest I liberated them all.

There were two kinds of very beautiful Ant-thrushes around south-west Pichincha, the Chestnut-crowned (*Grallaria ruficapilla*) and the Undulated Ant-thrush (*G. squamigera*). The former has a chestnut head and white under-parts striped with chestnut-brown and the latter is brown with yellowish fulvous under-parts crossed by numerous black undulations. They love to frequent the damp ditches dug along the sides of fields, which have a thick overhanging vegetation. In such places they can run along unhampered and unseen, and capture a plentiful supply of earthworms which are their principal food. The Grallarias or Ant-thrushes have short tails, long legs, and plump bodies, and they look very quaint as they hop about looking for food. Towards evening they may be seen perched on a stump or fallen tree uttering their rather monotonous call-notes. If disturbed they make for cover—always on the ground, either under some thick bushes or in a well-covered ditch. In captivity they show plenty of intelligence and are most amusing. To transport them to England I kept a plentiful supply of moss on the bottom of their cages and a stump of soft wood for them to stand on. These simple precautions prevented any foot-trouble which would have occurred if the birds were compelled to stand or hard perches on floors all the time.

Owing to the proximity of Quito to Mount Pichincha and to the growth of this city in recent years, most of the Tanagers described by Mr. Goodfellow as being found on the wooded slopes of the mountain are now almost non-existent in that area, owing to the destruction of the tree-life.

In an attempt to find a region untampered by man I made the journey to Papallacta—an Indian village situated at 11,500 feet in the eastern Andes. Leaving my collection of birds in charge of my niece in Quito I set off with a blow-gun expert, a muleteer, and some pack-mules.

Crossing the Tumbaco valley at about 8,500 feet I got my first glimpse of the Giant Humming-bird (*Patagona gigas*) which looked quite enormous on the wing. What it has in bulk it lacks in beauty for it is one of the dullest, although the largest of the *Trochilidae*. Having crossed this wide valley we started the long climb up to the Guamani Pass (14,500 feet); as we proceeded by easy stages it became colder and colder until I felt that I could no longer sit on a mule's back, so I tried walking for a change. I soon discovered that walking up a stiff incline at 14,000 feet, in competition with mules that were used to high altitudes, was no joke and in a few minutes I was gasping for breath. This was more unpleasant than being half-frozen so I quickly resumed my seat. In this treeless alpine zone, known as the "paramo" there was precious little bird life—the only two living things that I saw being a Black-rumped Ground-Tyrant (*Muscisaxicola alpina*) and a Red-rumped Ground-Tyrant (*Creomachus erythropygius*). As I sat almost frozen to the saddle I marvelled to think that even higher in the mountains lived a Humming-bird, the Hill Star (*Oreotrochilus*) and that it should choose such a bleak zone to live in permanently, rather than descend to the warmth of the lower levels.

Having reached the highest point of the pass we crossed a sort of no-man's-land with some of the wildest scenery imaginable. It was quite thrilling to think that I was passing over one of nature's greatest barriers and that I would soon be in a very different floral and faunal zone. The excitement grew when I saw a few small streams running eastwards instead of to the west. These quickly became torrents rushing wildly down, and I thought of their long course to the headwaters of the Amazon and then thousands of miles through Brazil to the Atlantic, whereas the rivers of the Western Andes have a very short course to the Pacific coast.

As we were leaving the paramo and passing into the forest zone the first bird I saw was a Scarlet-bellied Tanager which must have been at 13,000 feet, then came some Humming-birds and more Tanagers. At 12,500 feet we passed the dark cold-looking waters of Lake Papallacta where I saw a few Andean Teal (*Nettion andium*). We then descended to Papallacta—a village surrounded by mountains dominated by the picturesque and mighty Mount Antisana (over 20,000 feet). Papallacta is one of the most beautiful places I have seen, but the climate, although warm in the daytime,

was incredibly cold at night. I was fortunate in being able to stay in the substantial residence of the local "Jefe Politico" which was, far more comfortable than any of the Indians' huts. The latter were very picturesque with their long thatched roofs reaching almost to the ground, but the insides were dark, and wonderful breeding-places for vermin.

My blow-gun man very soon came in with an assortment of marvellous Humming-birds, including a Temminck's Sapphire-wing (*Pterophanes temmincki*), which reminded one of an enormous butterfly, with its shining deep-blue wings and silent flight. The body was metallic green and the total length $6\frac{3}{4}$ in. Another species of Humming-bird, the Shining Sunbeam (*Agleactis cupripennis*) was very common around Papallacta and was interesting to me because of the iridescent plumage, showing only when viewed from behind. Normally the back is a velvety blackish brown but viewed from behind it lights up into purplish crimson, with a coppery hue on the lower back and metallic green on the rump.

One of the most gorgeous species—the Comte de Paris Humming-bird (*Helianthea lutetiae*) was locally common, and it had an affinity for some crimson tubular flowers with yellow tips. These grew in great clusters but only in a few spots and it was here that I found the Comtes de Paris plentiful but elsewhere none were to be seen. The colouring of these birds was rather extraordinary, the head being velvety black, the forehead metallic green, the under-parts shining green with a metallic blue throat, the secondaries buff making a conspicuous patch in the wing, and the upper-parts brownish-black glossed with green. They are medium-sized birds with long straight bills and in captivity they seem to have a constant fear of one another. When I had several together in a large cage they were too busy watching every movement to seize an occasion to take a few sips of nectar from one of the feeding-bottles. I never once saw anything in the nature of an attack, but they all seemed to live in constant anticipation of one, and it was only necessary for one bird to hover to cause the rest to dive into corners on the floor, with their hearts beating rapidly as if the enemy were about to drop bombs. They were so stupid in this respect that I was forced to cage them singly.

Scarlet-bellied Tanagers were common here and I was able to capture all I wanted by setting nets in the trees where they fed.

I occasionally saw a few Orange-bellied Tanagers (*Poecilothraupis palpebrosa*)—a species very similar in size and appearance to the foregoing, but with the scarlet parts orange. Another most striking Tanager that I saw near Papallacta was Vassor's Tanager (*Procnops vassori*); I saw a small flock of these one day at close quarters, and the brilliance of their shining silky blue plumage was almost startling.

The return journey to Quito was by no means a picnic as the birds had to be carried by porters. Crossing the paramo we were subjected to a fierce freezing wind and so the cages had to be wrapped up tightly in sacks. It was a relief to descend to the warmer levels again both for our own comfort and the safety of the birds.

Around Quito the ubiquitous eucalyptus tree is very much in evidence and these are a great attraction to Humming-birds, especially the Violet-ear (*Petasophora iolata*) and the Trainbearer (*Psilidoprymna victoriae aequatorialis*). This was another instance of Humming-birds feeding on white flowers. In many of the gardens in Quito Violet-ears and Trainbearers can be seen flitting about all day long, the latter being particularly thrilling to watch as they dart through the air like arrows.

It is remarkable how most of the Andean Humming-birds remain at certain altitudes, in some cases within narrow limits. It would be difficult to say if this is brought about by the influence of climate, or vegetation, or both. Nearly all the mountain Humming-birds have favourite food-plants, but the plant-life is influenced by the different climatic conditions. Who can say, for instance, whether the Hill Star which lives at 13,000 to 14,000 feet confines itself to such a frigid zone on account of the climate or its favourite food-plant, which only grows at such altitudes?

The Hill Star Humming-birds are among the wonders of the bird world, for it is amazing that such small creatures which rely mainly on nectar for their sustenance should choose the cold wind-swept paramo region of Mount Pichincha and Mount Chimborazo. On the latter mountain Hill Stars are found within 500 feet of the snow-line. So isolated are these birds in their alpine retreats that the two mountains, although quite close to one another, have produced two distinct races. The capture of both these alive was a very uncomfortable and laborious business and the expense

entailed was out of all proportion to the prizes gained. Strange to say these birds were not affected in the slightest by the tropical heat when taken down to the coast.

Our last trip was to Chiriboga on the River Saloya. This was on the western slopes of the Andes, at 5,000 feet, in a region thickly forested and very precipitous—in fact too precipitous to be an ideal collecting ground. A road has been newly constructed following the course of the Rio Saloya, from where it will eventually be extended to Santo Domingo. This is a sporting course in the rainy season, for the road, being cut out of loose earth on the precipitous slopes rising from the river, is apt to give way under the weight of a car. This actually happened only three days before we went along there and the car and its occupants came to rest 1,000 feet below. Normally the roots of trees, bushes, and grasses hold the soil together but once the vegetation has been cleared the torrential rains get the upper hand.

The main idea of coming to this part was to make an effort to capture the Red Cock-of-the-Rock (*Rupicola sanguinolenta*). This magnificent bird even outclasses in splendour its eastern relative (*Rupicola rupicola*), which is well-known in captivity. The former has blood-red plumage, with the wings and tail black and the secondaries silvery grey. The crest is also much broader than that of its relative.

On this occasion we took all our birds with us and, having gone as far as we could by lorry, we proceeded on foot with fifteen porters along a narrow path through dense jungle. The going was bad for the path was blocked with the stumps of fallen trees, and swamps and slippery rocks were met with alternately and numerous small rapids had to be forded. Finally after marching for six hours we had to cross the Rio Saloya. This, like all the mountain rivers, is just a raging torrent especially in the rainy season. The only "bridge" was a long slimy tree trunk stretching from the bank to a pile of stranded drift-wood in the middle of the river, and another long trunk from there to the opposite bank. We managed to get all the birds over safely but some of our stores, which were left behind owing to an insufficiency of porters, remained on the wrong side of the river for a week. The reason for this was that our crossing of the river coincided with the commencement of a terrific storm and owing to the mountainous nature of the country

the river rose rapidly, and with a roar we saw our "bridge" and its supporting pile of tree trunks washed away in the mad torrent. While another "bridge" was being constructed our sole diet consisted of rice and potatoes. We commenced by capturing several Blue Sylph Humming-birds (*Cyanolesbia coelestis*), one of the most beautiful of the whole family, and conspicuous chiefly on account of its long blue graduated tail-feathers with metallic edgings. They are extremely temperamental and while they are becoming used to captivity they behave more or less like sulky school children. Sometimes they feign death, and while doing so they will occasionally open one eye to see if anyone is about. If they think all is clear they get up and fly round in the normal manner but if someone is in view the eye is closed immediately and the "dying" position is resumed. They are also very "finnick" about their food and once they have become accustomed to feeding out of a particular type of vessel, nothing will induce them to feed from any other. This is very curious for they will get as far as tasting the fluid, but the fact that it is not in the familiar pot seems to put them completely against having any more, and they will die of starvation rather than give in. I was thankful that all Humming-birds were not such a trial as these though, generally speaking, the mountain species are much more difficult to establish than those of the low country. Other beautiful Humming-birds that we added to the collection in this region were the White-booted Racket-tail (*Ocreatus underwoodi melanantherus*)—a very diminutive species—and the Hill Angel (*Heliangelus viola*); we also captured a pair of the very quaint-looking Toucan-like Barbets, which are rare and rather local.

Unfortunately heavy rain continued to fall and we had great difficulty in reaching the region where it was known that the Cocks-of-the-Rock resided. In the dry season they can be found in numbers in certain spots where the males have dancing grounds, and so normally the trapping of them would have presented no great difficulty. But we discovered that they give up their dancing displays during the rains and disperse throughout the forest. We saw and heard odd specimens but the drenching vegetation and swollen rivers were such a handicap that we had to abandon the idea, with regret. After my departure I heard that they all returned to their old haunts once the dry season had set in, so I hope

to return one day to try my luck when the conditions are favourable.

On our way back to Quito I saw several Rieffer's Grass-green Tanagers (*Psittospiza riefferi*) and managed to catch one. They are large Saltator-like birds with yellow feet and an orange bill.

Ecuador is a most interesting country for the ornithologist, but to anyone wishing to accomplish a certain task in a limited time it is most exasperating. The Ecuadorian people have no sense of responsibility whatsoever, and no sense of time. They cannot and will not understand why anything should be done on a certain day if it can possibly be left over to some future date. Consequently arranging for transport in the way of porters or mules was a business calculated to try one's temper to the utmost, for usually all the arrangements misfired. The people concerned seemed most surprised if you asked them why they had failed to turn up, as if it were the most natural thing to do.

My luck was not of the best in Ecuador and I had a series of rather disappointing adventures, but the final episode capped everything. This occurred when the collection was being transported from Quito to the coast. This was a two-day journey by rail, with a halt for the night at the half-way station. Having paid some fabulous sum for a truck to be attached to the passenger train and having made all arrangements with the heads of the railway departments for the journey, someone detached the truck and attached it to a goods train in the middle of the night, when we were sleeping at the halt. I awoke at 5 a.m. to find that my birds had gone. In an endeavour to overtake them I arranged for a motor trolley, but the goods train had five hours' start and so it was nearly 11 a.m. when we linked up. By this time all the Humming-birds were in a torpid state through being without food. Some of these I managed to revive but quite a lot succumbed. This was a bitter experience after months of hard work in difficult mountain country. Apart from such episodes the cost and difficulties of hunting out species which are interesting and new to aviculture in such an uncivilized region are out of all proportion to the recompense such as is forthcoming in these times.

ON THE CARE AND KEEPING OF BARBETS

By RUDOLF NEUNZIG

(Continued from p. 214.)

(4) JAVAN GREAT-BILLED BARBET, *Chotorhea javensis* (Horsf.)

The Javan Great-billed Barbet is one of the rarest appearances in the aviaries of zoological gardens or in the cages of aviculturists. It must have been brought to Europe for the first time about 1936. Three years ago I received a bird of this species not yet in full plumage. It is a little larger than the Blue-checked Barbet. Its beak is stronger and broader and its colouring is quite distinctive. It is chiefly dark green in colour, paler on the underside. The crown of the head is bright straw yellow, the neck feathers having narrow olive-green edges. Above each nostril there is a small red spot and on each side of the root of the lower mandible a lemon-yellow one. Chin and throat are scarlet. The eye area is black. The black extends back up to the temples and downwards along the yellow corners of the mandible and widening, frames the red throat. On each side of the black throat stripe is a red spot. The quills are black with yellowish outer edges. The lesser wing coverts are marine blue, as are also the underside of the tail feathers. Beak and feet are black. The iris is gold. The bird inhabits Java.

In its native state it is said to like the fruit of the fig-tree, somersaulting cleverly through the branches in order to obtain it. It pulls off the fruit with its beak, dashes it two or three times against a thick branch before it swallows it. If there is no branch against which to dash it, the fruit is crushed and pressed by the strong beak. According to Brehm, the Javanese call it Tschodok and Brehm names it from its call, the Mourning Barbet.

The Javan Great-billed Barbet I kept reminded me in character of the Blue-checked Barbet. It is perhaps somewhat heavier than the latter. It is plumper and displays less activity in the aviary. It becomes agreeably tame. A short time ago I saw at an importer's here three Javan Barbets which were very tame and took fruit from one's hand. They moulted in the autumn from the dark juvenile plumage, in which all the distinguishing colours were only faintly marked, into the beautiful adult dress. The very characteristic

call of this Barbet could be heard mostly in the mornings and late afternoons. It sounded like "tulung-tumpuk, tulung-tumpuk", and was often repeated. Like most Barbets it quickly learned to know and greet its keeper. It devoured a good mash with the addition of fruit and berries according to the time of year. It too refused meat or meal-worms. It lived with a pair of the pretty little Chestnut-capped Laughing-thrush—*Rhinocichla mitrata* (S. Müll.)—from Sumatra. The Laughing-thrushes avoided the Barbet, which hissed or clattered at them with its powerful beak if they tried to approach.

(5) YELLOW-CHEEKED BARBET, *Chotorhea chrysopogon* (Temm.)

One specimen of the Yellow-cheeked Barbet came to Germany for the first time in 1937. It is one of the largest representatives of the Barbets. In many respects it reminds one of the smaller relatives of the Toucan, the Green Arassari. It seems to be an intelligent bird, tame and friendly. Its beak is very long and broad, especially suitable for the picking and dividing of fruit. It is more powerful than that of the smaller Javan Barbet.

The Yellow-cheeked Barbet was put in a cage at first and accustomed to a mash with the usual additions. Meal-worms and small pieces of raw meat were refused by this bird also. It was not tame at first, but neither was it shy and later became quite friendly. When accustomed to its surroundings, it was put in a large aviary with a Fire-tufted Barbet and a pair of White-headed Woodpeckers, *Melanerpes candidus*, which had formerly been the sole occupants of the cage. The communal life of these four birds was not a success at first, in spite of the fact that there were sufficient sleeping holes and a great number of more or less thick branches and trunks in the enclosure. The White-headed Woodpeckers were aggressive and often flew at the Barbets, but soon the former came to respect the Barbets and left them alone. Now the Yellow-cheeked Barbets became the disturbers of the peace and would not agree with the Fire-tufted Barbets. Gradually, however, they became accustomed to one another, i.e. each had its sleeping-hole and avoided the other. Thus, apart from little squabbles, peace reigned in some measure.

In character the Yellow-cheeked Barbet resembled its relation from Java, which apart from size, it also resembled in shape.

It is like too, in voice and in the rhythm of call, except that the calls are louder and deeper and sound like a low, quick drumming.

A year later, two other Yellow-checked Barbets came to Berlin, but they did not live long. The bird kept by me died suddenly at the end of a year. Up to the end it was lively, though it must have been a very sick bird as was shown by the autopsy. It suffered from an advanced stage of liver disease.

These Barbets are a beautiful grass green in colour. Forehead and lores are dark scarlet, the upper part of the head is pale brown as far as the middle, from the middle to the back it is red, single feathers having a narrow blue border. Under each eye is a black spot, temples and ears are brownish black, while a dark blue horizontal line runs above the temples. A gold band, bordered below by an ultramarine-blue stripe runs from the corners of the mouth down the lower part of the ear-coverts. Chin and throat are smoke-brown, single feathers having yellow shafts. The underside is light grass green. The pinion feathers are brownish black, bordered with light yellow. Tail feathers are green, dark marine blue on the underside. The iris is brown, the broad and long beak black, the feet dark olive brown. Length of wing : 126-152 mm. Tail : 87-93 mm. Its habitat is Sumatra and Malacca.

(6) FIRE-TUFTED BARBET, *Psilopogon pyrolophus* (S. Müll.)

The Fire-tufted Barbet from Sumatra was imported into England in 1929 (AVICULTURAL MAGAZINE 1929, p. 10). The strongly developed forehead bristles give the bird a distinctive appearance. To this is added another peculiar arrangement of the feathers, namely the tuft formed of narrow green feathers over the eyes. The black forehead bristles have light red tips.

The Fire-tufted Barbet is doubtless one of the most beautiful of the Barbets. Its plumage is always smooth in good health, a characteristic of all Barbets. It is very lively and needs a large aviary to move about in. It is very graceful in all its movements and differs therein from the afore-mentioned larger species. It is slimmer, the tail is longer than that of the species described above ; and it is always nimble and quick.

Its food is similar to that of the other species. It dislikes meal-worms and raw meat. At night it usually sought a half-opened box in which to sleep. It sat there with tail erect and tilted slightly

forward, a sleeping posture it adopted even when spending the night on a branch. It got on with the Yellow-cheeked Barbet as far as that was possible for both of them. The heavier Yellow-cheeked Barbet would not suffer the former near it, especially at the feeding-dish. On this account several food receptacles were placed in the aviary. Without doubt the Fire-tufted Barbet is one of the most interesting, beautiful, and graceful of the Barbets.

Besides the above-mentioned six Asiatic species of Barbets, four African species, which in some respects differ from them, have up to now been kept in aviaries. The African forms I have kept seem to be more lively, energetic, and robust than their cousins from Asia. They are less sensitive to changes of temperature, low temperatures, and are in general more hardy. During low temperatures the plumage of the Asiatic forms was lankier and they appeared less lively, signs of a less healthy condition. In general during the winter they were kept at a temperature of 18–20° Celsius. However, in extreme cold it sometimes happened that the temperatures of the inner aviary dropped at night. The African species too were less difficult to feed. They liked more animal food, were fond of meal-worms and other insects and their larvæ, in addition to raw and cooked meat. One can therefore vary their diet more. Many species, as for example the Yellow-breasted Barbets and Levaillant's Barbet, will also eat seeds.

(7) PIED BARBET, *Tricholaema leucomelas* (Bodd.)

In the spring of 1937 I received from an aviculturist a Pied Barbet, which had already lived for eleven years in captivity. It was a pretty little Barbet, which always lived with a Red-breasted Barbet—*Lybius tridactylus*. The Pied Barbet naturally showed signs of age, which increased with time. It died of old age in its thirteenth year of captivity. It was very fond of meal-worms and small pieces of raw meat, fruit and mash. It could swallow quite large pieces of fruit without great difficulty. At night it retired to a sleeping hole with the Red-breasted Barbet.

(8) RED-BREASTED BARBET, *Lybius tridactylus* (Gm.)

The Red-breasted Barbet is a smaller Barbet, like the Pied Barbet, with which it is very friendly. Both have strong toothed

beaks. The Red-breasted Barbet is a very lively fellow, which gives a croak-like call now and then. It lived quite peacefully with the other inhabitants of the aviary, a pair of Ruby-throated Bulbuls—*Rubigula dispar*—and White-bearded Honeyeaters—*Meliornis novaehollandiae*. I may say that the smaller, more graceful, but more aggressive Honeyeaters ruled in the aviary. This Barbet, though strong-beaked, never attacked another bird, but only defended itself when the Honeyeaters became too oppressive. As far as possible, it tried to avoid these birds. Now and then it gave its peculiar triple call, to which it owes its scientific name. These Barbets are also very hardy and a German aviculturist kept one for eleven years.

Like the Pied Barbets they are very beautiful birds, although they lack the brilliant green colourings of the Asiatic species. Their greater hardiness is probably accounted for by the fact that as they will eat living insects, raw meat, etc., they are easier to keep for their diet can consequently be made more nourishing. Fruit and berries are not as important for them as for the other species.

The Red-breasted Barbet, like the Pied Barbet, has been seen only rarely in Germany and then as single specimens and is therefore difficult to obtain. The former is related to the Black-collared Barbet—*Lybius torquatus* (Dum.), imported at intervals recently from South Africa.

(9) YELLOW-BREASTED BARBET, *Trachyphonus margaritatus*
(Cretzschm.)

I have kept Yellow-breasted Barbets on many occasions and am always enamoured afresh by these beautiful and lively birds. The various pairs I have kept in the course of years were always alike in character and behaviour. The last pair has now been living in my aviary for five years. It is an advantage that in this species the sexes are easily distinguished, the male having a black spot on the crop, which is lacking in the female. The mates were very faithful to each other and resemble in this respect the ornamental finches. They always live peaceably together and usually with other species of birds also. As soon as they become accustomed to their surroundings and feel at home, they are always

lively and active. They are distinguished from the other Barbets by their somewhat slenderer and more graceful form and the comparatively long tail, which helps to give the bird a more slender appearance.

The typical plumage of the bird always appears again after each moult in its natural colouring and freshness. They moult regularly in midsummer. The red colouring of the under tail-coverts appears again in undimmed brilliance, neither do the yellow tones pale at all. During the morning hours especially, the series of rhythmic calls can be heard for a long time. As soon as it becomes light the "song" commences, soon followed by that of a second pair, and resounds through the whole house. Other Barbets often join in, a remarkable concert, which never sounds inharmonious, but always enchants the listener.

One pair lived quite peaceably for several years in company with a pair of Grey Sibia—*Sibia picaoides simillima*—and White-eared Bulbuls—*Pycnonotus leucotis*—but suddenly in the summer of 1937 the peaceable behaviour of the pair left much to be desired. The Yellow-breasted Barbets suddenly became hostile to the rare Grey Sibia. They persecuted them and injured the female on the head. She soon recovered again, as did the exhausted male. There was nothing to be done but to remove the Sibia. The smaller Bulbuls were not molested. Later a pair of the bold and cheeky Black-headed Sibia—*Leioptila capistrata capistrata*—were added, which were also persistently persecuted by the Barbets. There was nothing for it but to place the Barbets with the pair of White-eared Bulbuls in a smaller aviary, in order to give the beautiful Sibia more freedom of movement in company with other species.

The Yellow-breasted Barbets were always anxious to breed in summer, and then again during the months December to January. They often visited the nesting-boxes in the daytime. The male especially, hung on to the entrance-hole of the nesting-box and looked in with jerky movements of the head as if he were feeding young through the hole. Now and then he looked at the female and flew off, leaving the hole to the female which behaved in like manner. The same process was repeated with food in the beak. At this time the Barbets hammered a great deal in the nesting-boxes. They also struck the stone and "rabitz" walls. They

knocked such a large round hole in one of these walls, that they could slip into the next aviary. In their free state these birds nest in steep river banks and such-like places. They hammer and dig their nesting-holes in the earth and nest there like our Kingfishers.

The second pair kept at the same time behaved in like fashion. However, they did far less damage to the walls. Both lots could frequently be observed pairing, but it never resulted in egg laying.

The cleaning of aviaries in which Barbets, especially Yellow-breasted Barbets, are kept, has many "pleasant surprises" for the keeper. As one enters the aviary these birds will spurt their excrement with sure aim into the intruder's eye, so that one's eyeglasses are covered with an impenetrable mass of fluid excrement. It is pleasant to get a full complement direct in one's eye! It stings and twitches beautifully for a time. It is not an easy matter to free one's eye from it. In my opinion, therefore, the keeping of Barbets at least has a somewhat less pleasant side to it.

(10) LEVAILLANT'S BARBET, *Trachyphonus cafer* (Vieill.)

In the summer of 1937, a few pairs of the South African Levillant's Barbet, one of the most distinctive and beautiful types among the Barbets, arrived in Berlin. These brilliantly coloured birds are nearly related to the Yellow-breasted Barbet, but they are larger and more brilliantly coloured. When they fly, the glittering black, white barred and bordered wing feathers are especially striking. The female is smaller and duller in colour than the male bird. Both have a glittering black crest which is erected in excitement. It is considerably smaller in the female. The greenish, horn-yellow beak is very strong.

In character and behaviour they resemble closely the Yellow-breasted Barbet, but are still livelier than the latter. They are always in movement or busy. Any unfamiliar object is a matter of curiosity, and causes an up and down movement of the crest, while the tail is jerked first to one side then the other. The peculiar call of the pair is often to be heard in varying degree of loudness. These calls can be likened to the loud strokes of an alarm clock. Frequently, however, one hears a soft ascending and descending trill, principally from the female.

After the birds had become accustomed to their surroundings, they took up their abode in a large aviary in company with other

birds such as the Bengal Red-vented Bulbul—*Pycnonotus bengalensis*—etc. The nesting-boxes in this enclosure were immediately inspected. The Barbets were anxious to breed. They behaved at this time in exactly the same manner as the Yellow-breasted Barbets. First the male and then the female hung in feeding posture at the nesting-hole, looking at the other male. They too tried to strike the walls. In the wild they nest in the same manner as their relations, the Abyssinian Yellow-breasted Barbets. Wooden structures were also hammered. However, no brood appeared that year. It seems as if Levaillant's Barbets have a desire to breed the whole year through.

Later on in February the desire increased rapidly. The female often disappeared into the nesting-box for long periods. Now and then hammering could be heard. The male frequently flew to the box and brought food to the female. When meal-worms were given, the male took several in his beak and brought them to the female. However, on inspection of the nesting-box, no eggs were to be found. I assume that the Barbets ate them, as this was observed in the case of a late brood.

As already mentioned these birds live quite peaceably with other inhabitants of the aviary. But when one day the Yellow-breasted Barbets invaded the aviary through a hole knocked in the dividing wall, they were set on by the Levaillant's Barbets and doubtless would have been killed by these stronger relations, if the incident had not been observed immediately.

In May of last year the Barbets were again most anxious to breed. The female disappeared for a long time into the nesting-box. On inspection of the nesting-box on the 30th June, the female was found sitting on two eggs. Apparently the disturbance upset her, for she only brooded another four days. During this time the hen bird did most of the sitting, the cock relieved her several times during the day for short periods only. A few days later it was seen that the eggs were no longer in the box and the Barbets had apparently eaten them. The nesting-box was similar to that used for Budgerigars. So ended the dream of rearing Barbets. However, this species had been bred a few years previously in France (*L'Oiseau*, 1928).

Levaillant's Barbets are hardy and robust and their health is not affected by lower temperatures.

NOTES ON PERUVIAN WATERFOWL

By ALASTAIR MORRISON

Perhaps the least known of South American waterfowl are those to be found in the high Andes and, with the solitary exception of the Andean Teal (*Anas andium*), all the species are represented in Peru. Two years ago I attempted, amongst other things, to make a live collection of some of these waterfowl and perhaps a few notes on them may be of interest to members.

My activities were confined to the Department of Huancavelica, and Lake Junin in Central Peru. In the former I spent some four months collecting skins, working at various localities between 8,000 and 16,000 feet. At Lake Junin, a notable locality for waterbirds, I spent about the same period of time. The lake, situated at an altitude of 14,000 feet in the open plateau, is of no great size but is extremely shallow and bordered by immense reed beds. Ducks, Geese, Coots, Ibis, and other birds swarm there in remarkable numbers.

The environs of the lake are fairly well settled and perhaps the least common waterfowl in the locality is the handsome Andean Goose (*Chloephaga melanoptera*). This is one of the largest Chloephagas and a very fine bird, pure white save for a good deal of black in the wings, and with a pink bill and pink feet. The sexes are alike but the male is very much larger than the female. In the more out of the way parts of the high Sierra the Andean Goose is very abundant and I have seen them in fair sized flocks. I never saw them below 14,000 feet.

Though technically waterfowl, these birds never go near water save under exceptional circumstances. I have seen a bird settle on water when frightened by gunfire, but otherwise the only examples observed in water were adults with young on small lakes around Lake Junin. This, however, I regard mainly as a local measure of security, and not as a general habit. The goslings are easily hand-reared, and quite a number are reared thus by the natives, mainly, I am afraid, with the object of eating them when adult. It is interesting to note that my experience with these native reared birds is that there is always an excess of males, a disparity which appears usual among birds reared in Europe. These birds

are kept at semi-liberty and become ridiculously tame, always coming home in the evenings to sleep with the family and all the domestic animals. Curiously enough I never heard of a case of Andeans kept under these conditions becoming spiteful, as they nearly always do in Europe. Perhaps they always end up in a cooking pot before they have a chance of becoming truculent !

A bird which I was able to add to the known fauna of Peru was the South American Comb-duck (*Sarcidiornis carunculata*), a female of which was shot near Lake Junin. What this bird, essentially a species of the tropical lowlands, was doing at that altitude, I cannot imagine.

A very beautiful and distinctive species, probably related most closely to the Sheld-ducks, is the Crested Duck (*Anas cristata alticola*). This is a large, rather slender duck, greyish-brown in colour and with a long pointed black tail. The flanks are dappled with paler markings and the speculum is a beautiful coppery red. The iris also is red and the feathers of the nape are elongated to form a drooping mane. They are mainly to be seen in ones and twos on small lakes in the Puna zone. They do not appear to favour large tracts of water such as Lake Junin, although I have seen unusual concentrations of up to thirty birds feeding on the margins of that lake. They swim low down in the water, and their length gives them a most unusual appearance. All my birds became very tame and familiar, and its hardiness and beauty make it a most suitable species for avicultural purposes.

The common Chilean Pintail (*Anas spinipectus*), so widely distributed throughout South America, is found in the Andes as far north as Ecuador and is a common bird on Lake Junin. It is too ugly and common to arouse much interest. I did, however, bring one pair over with me, and found them the hardiest, easiest, and most fool-proof birds it would be possible to imagine.

The little Sharp-winged Teal (*Anas oxypterus*) is found in all suitable localities from 10,000 feet upwards, and is very adaptable, occurring with equal freedom on lakes and streams. In appearance it is not unlike the Chilean Teal but is altogether larger and more delicately coloured, a very smart and elegant little bird. It is a most hardy and satisfactory bird to keep, and the ducklings are easily reared. The Sharp-wing is found in the Andes from North Chile to Peru. In Ecuador and Colombia it is replaced by the



ANDEAN GOOSE
(*Chloephaga melanoptera*)

Andean Teal which differs amongst other things by possessing a black bill. It would be a most desirable introduction. Another Andean duck with which I failed to meet is the highland form of the Cinnamon Teal (*Anas cyanopterus orinomus*), which is only known to occur in South Peru (Lake Titicaca) and North Chile (Tara-paca). Though a larger bird than the lowland race, the male does not differ in appearance, only the female having some slight differences in coloration.

The finest of all the mountain ducks is in my opinion the Puna Teal (*Anas puna*), a bird which somewhat resembles the better-known Versicolor Teal. It is, however, very much larger, and I regard it as being considerably more handsome. It differs from the Versicolor by lacking the yellow spot on the bill, the white of the face is purer and cleaner, and it is more delicately barred on the back. Apart from the voice there is a noticeable sexual difference, which is almost invariable, in the colour of the speculum, which I am told is not the case in the Versicolor. In the male at all ages the speculum is green. In a few very old females it is occasionally similar but in the young female it is dull brown and becomes greenish with age.

The Puna Teal is abundant in the high Andean Lakes but I have never seen them at a lower altitude than Lake Junin. Outside of Peru it is found only to the south in Bolivia and Northern Chile and Argentina. It is a species that is naturally tame, even wild caught birds, and it has proved a most satisfactory species in captivity.

The list of Andean waterfowl must be brought to an end by the inclusion of two very peculiar species, the Ruddy Duck (*Erismatura ferruginea*) and the Torrent Duck (*Merganetta armata leucogenis*). The former is a member of the stiff-tailed lake ducks, of which only the North American (*E. jamaicensis*) has hitherto been kept in captivity. I think it is the biggest of the genus, a stumpy, short-necked bird with a relatively huge bill. The tail is composed of hard stiff feathers and is usually carried cocked up at a ridiculous angle over the back. It is a comic sight to see a party cruising about, looking for all the world like an array of little battleships. At times, however, particularly when feeding, the tail is depressed. The female is dull blackish-brown with a black bill; the male bright chestnut with a sky-blue bill and black head.

It is a very handsome bird and in bright sunlight looks quite red. The feet are relatively enormous and the bird is very clumsy on land. They are immensely strong and not particularly difficult to keep. Though their natural food consists largely of small water snails, and small crustaceans, they learn to take wheat in captivity. I brought back three females. The Ruddy Duck has a wide altitudinal range for I found it in all the high lakes visited, and also on a lake at 8,000 feet on the upper borders of the subtropical zone. Outside of Peru it is found in Ecuador and southwards to Tierra del Fuego.

A very striking contrast to the Ruddy Duck is provided by the Torrent Duck, perhaps the most highly specialized of all the Anatidæ. In shape they are extremely slender with very long legs and tail. The neck is long and slender, topped with a small head, and the bill is minute; the wings are adorned with a large spur. The male has a white head and neck, with narrow black streaks through the eyes and down the neck. The upper parts are black and the belly is a mottled grey. The female is mainly chestnut with blackish upper parts. The bill and feet are red in both sexes. They are about as big as a Chilean Teal but, of course, very much more slender. In fact so slim are they that the only example I possessed, a male, could pass through 2 in. mesh wire netting.

The Torrent Duck is well named for it is found exclusively in rushing mountain streams in the Temperate Zone. I have only seen it at altitudes of 10,000 to 13,000 feet, and it is not found in the Puna. It has, however, been recorded from well down in the subtropical zone by other observers. Closely allied forms are found from Colombia to Tierra del Fuego. They delight in the wildest rapids and scorn tranquil and sluggish stretches of water. In such places they may be seen perched on projecting boulders, sometimes sitting upright, almost like a Cormorant. When alarmed they jump into the water and slip buoyantly and easily downstream, treating the fiercest maelstroms with complete indifference. Sometimes they dive through rough water, but as a rule remain on the surface. They aid their progress when necessary by hopping actively from rock to rock, and one rarely sees them in flight, save when thoroughly alarmed. It is my ambition to bring home live examples of this curious duck. The one specimen I ever had only lived 24 hours but I think it had been injured in capture.

I doubt if it would thrive in an ordinary lake or pond, but would be most likely to do well when kept in clear running water with an abundant supply of natural food such as caddis flies, small fish, and other aquatic creatures.

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THE EARLY YEARS OF THE AVICULTURAL SOCIETY (VII)

By DAVID SETH-SMITH

(Continued from p. 225)

Six coloured plates and many photographic and text illustrations adorned Volume V of the New Series of our Magazine which commenced in November, 1906. The first plate figures the heads of six species of Quail of the genus *Coturnix* and was, perhaps, one of the most useful plates ever published in the Magazine for it shows the distinguishing characters of practically the whole genus. I was myself particularly interested in this group of birds at the time and in the accompanying article describe the breeding habits of the Rain Quail (*C. coromandelica*), the Harlequin Quail (*C. delegorguei*), and the Australian Quail (*C. pectoralis*) which had taken place in my aviaries. This is followed by directions as to the keeping and breeding of Quails, and as these birds seem to have rather gone out of fashion and to be little kept or understood at the present time, perhaps I may be allowed to quote here from what I wrote more than thirty years ago :—

“ To keep Quails of the group we are now considering successfully, they must have a fairly large run which is well turfed and in which cover is provided by low bushes or bundles of brushwood. Part of their enclosure should also be roofed over and sanded so as to provide a place for dusting and scratching. My new aviary, in which no less than three species of *Coturnix* have lived together and reared broods during the past summer, measures about 42 feet by 21 feet and is turfed and planted with trees and shrubs and has a pond in the centre, and the birds have access to a dry, well lighted shed. The aviary is tenanted by many birds including Ground Doves (*Geophaps*), besides the Quails and two species of *Turnix*. It is, therefore, not necessary that each pair of Quails, in order to breed successfully, should have a place to themselves.

“ As the nesting season approaches the males are apt to drive one another about, but no serious battles are likely to take place, and, in the case of the three species I have had under observation during the past summer, no cross-breeding has taken place as I feared it might with such closely allied forms as *C. coromandelica* and *C. delegorguei*.

“ The female generally selects for a nesting site a thick clump of grass under which she draws together a few blades of dry grass, the growing blades being

carefully arranged over her back so as to render her invisible from above when on the nest.

“The clutch varies somewhat with the species, six being the lowest number and thirteen about the highest for a single bird. The eggs are laid daily until the clutch is complete when, providing the surroundings are to the bird's liking and she is not disturbed in any way, incubation commences. At this time the male deserts the female entirely and seeks another mate, so that, if the enclosure is sufficiently large, it is well to have two females to each male. If, however, there is no other female present, it is advisable to remove the male as soon as incubation commences, otherwise he may worry the hen and cause her to desert her nest.

“A note should be made of the date on which incubation commences so as to be able to calculate the date of hatching. Incubation varies from sixteen to eighteen or nineteen days in the case of *Coturnix*, and probably depends slightly upon the temperature of the weather.

“A critical time arrives when the hen leaves the nest with her brood. If she should get frightened she may run some distance, calling her chicks, which will do their best to follow her, though some may be too weak to do so and promptly die from cold. My own plan, which has worked most successfully, is to confine the hen and her brood in a small run by themselves for at least a fortnight. The runs I use are about 6 feet long by 4 feet wide, about 12 or 18 inches high, boarded at the sides and wired over the top, and with one end made to open to facilitate the often difficult task of drawing the birds in. Part of the top is made to open for feeding. This run is placed upon a flat piece of ground on which is plenty of good grass, and care has to be taken that no space is left anywhere below the sides through which a chick could squeeze. Over part of the top brushwood is placed as a shelter. The hen and her chicks are then carefully and gently driven towards the run and when once in they may be considered perfectly safe from harm and easy to rear. In fact I cannot remember ever losing a young bird when once I had them safely confined thus. There is no fear of their being disturbed or robbed of their food by other birds, and there is no chance of their wandering from their mother or she from them and not being able to get to one another again.”

Mr. H. C. Martin contributes a very interesting article on the “Urraca” Jay which an Editorial footnote identifies as *Cyanocorax pileatus*. He describes his aviary in Uruguay and many of the interesting birds to be seen in that country. Dr. Albert Günther describes a further success in breeding the Red-backed Shrike in his aviary at Kew.

In my review of the previous volume I mentioned the discovery and naming of Mrs. Johnstone's Lorikeet which hails from the mountains of Mindanao, and in the present one Mrs. Johnstone describes the nesting of this rare species and the rearing of two young birds. The second plate illustrates the White-bellied Plumed Dove (*Lophophaps leucogaster*), and in the accompanying article is a text-figure of the display of this charming species, of which, later in the volume, Mrs. Connell records the successful breeding.

W. H. St. Quintin describes the breeding in his aviaries of the Pine Grosbeak. Of the species as an aviary bird he writes, “If

anyone wants a charming pet for a garden aviary, which will be tame with its owner and gentle to its fellow captives, and at the same time one which will never give him a moment's anxiety in time of bad weather, let me recommend the Pine Grosbeak. I have now kept several for nearly two years and know no hardy bird which shows itself better and is so lively without being restless and timid." Farther on he writes, "On the 28th May my man, Arthur Moody, saw the hen Grosbeak arranging some twigs in the fork of a yew in rather an exposed position, but to some extent screened by the upper branches of the bush. To his surprise she took up a small bit of a dry spruce branch which he tossed on the ground and carried it up and laid it with the others, and for some twenty minutes or so she picked up twig after twig as fast as he threw them down for her. . . . Pine roots and coarse bents were used as a lining, but no feathers or soft material." Three eggs were laid and two hatched, the young being successfully reared. "The hen Grosbeak would come on to the fingers of one's hand and take off the palm the fresh ants' eggs (pupæ), small caterpillars, and sawfly grubs which alone were given at first to the young."

J. H. Gurney describes the successful breeding in his aviaries at Keswick Hall of the Jackal Buzzard (*Buteo jakal*), one young bird being successfully reared.

E. G. B. Meade-Waldo contributes a very interesting article on the birds seen during the historic cruise of Lord Crawford's yacht, the *Valhalla*, in which he and Michael Nicoll travelled as naturalists.

Mrs. Johnstone writes on the nesting of Fraser's Touraco (*Turacus macrorhynchus*), this time successfully, the young bird being reared to maturity.

Hoopoes are such charming birds when seen in their natural state that many aviculturists would like to add them to their collections. To these I would draw attention to a note by Meade-Waldo, who writes, "Hoopoes in confinement are always difficult subjects. They appear to require much warmth, although they can support for a short time considerable cold; but I think that the heat that seems necessary for them is to an extent dependent on their bodily health. They want plenty of room, a *dry* compartment, *no* farinaceous food, any number of mealworms: you

cannot overdo them. The only really good Hoopoes I ever saw that had been long in captivity had practically nothing else. Such grasshoppers, leather jackets, etc., as can be provided, with yolk of egg, ants' eggs, etc. They require deep gritty soil to keep their beaks in order. They are very liable to split and curl, but with everything in their favour, even when kept in their native land and fed practically on their natural food, they are not easy to keep long, although they are delightfully tame, confiding pets." Reginald Phillipps, who had probably kept more Hoopoes than anyone, thought that mealworms could easily be overdone and that the chief cause of failure in keeping these birds was the difficulty in keeping them warm enough throughout the year. He says that his birds were not wholly insectivorous and partook of milk sop, rice pudding, stewed pear, and boiled cabbage; were fond of tomatoes and stewed onion, cherries and red currants.

A half-tone plate illustrates the two Australian species of *Munia*, *M. flaviprymna* and *M. castaneithorax*, with two specimens intermediate between these. When obtained these had been typical examples of the former, but, apparently as a result of the English climate, had begun to develop dark markings on the plumage characteristic of the latter, and it is suggested that the Yellow-rumped Finch (*M. flaviprymna*) is a desert form of the Chestnut-breasted Finch (*M. castaneithorax*).

The arrival at the Zoo of a collection of twenty Humming Birds from Venezuela is recorded. These were placed in glass cases in the old Insect House (now the Rodent House) and kept at a high temperature, but none survived for any length of time.

Another arrival about that time was a specimen of the New Zealand Kakapo (*Stringops habroptilus*), the curious, flightless Owl Parrot, now on the verge of extinction.

Another event at the Zoological Gardens at this time was the opening of the Small Bird House which served its purpose for many years and is now a Tortoise House.

One of the most noteworthy avicultural events that has taken place at the London Zoo was the breeding in 1906 of Avocets in the Waders' Aviary which is fully described by Mr. R. J. Pocock. Three young were hatched though two died at an early age. The article is illustrated by some delightful line drawings by Herbert Goodchild.

An account of the successful rearing, by hand from the egg, of chicks of the Australian Varied Bustard Quail (*Turnix varia*) is illustrated by charming line drawings by Grönvold. Frank Finn supplies notes on Teal, illustrated by a coloured plate of the Versicolor Teal, while many other excellent articles and much useful correspondence complete a first-rate volume.

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M. C. CORDIER'S COLLECTION

By J. DELACOUR

M. Cordier accompanied me to Indo-China last autumn. While I was collecting skins in North-West Laos with Messrs. J. Greenway and F. Edmond-Blanc, he went to Chapa, a hill-station in Tonkin, close to the Yunnan border. In 1929-1930 we had made there a remarkable collection of skins, obtaining over fifty new forms. Chapa stands at an altitude of 5,000 feet, and the neighbouring chain of the Fan-si-pan reaches 10,000 feet.

M. Cordier arrived on 12th May, with about 300 birds, many of which are new to aviculture and extremely attractive. The greatest part of them are now at Clères and at Foxwarren. As they inhabit quite a cold country, where frost and snow are not uncommon in winter, they should prove very hardy. Perhaps a few words on the more interesting species may prove of some interest to our readers.

GOLDEN-THROATED BARBET (*Cyanops franklini*)—one of the prettiest of the medium sized Barbets, with black, yellow, red, and grey markings on the head.

LONG-TAILED BROADBILL (*Psarisomus dalhousiæ*)—a marvellous bird, emerald green, with lovely blue, yellow, and black markings on the head and wings, and a long, narrow blue tail. A common forest bird in damp country, purely insectivorous, and difficult to keep, which had never been brought alive before.

FULVOUS PITTA (*Pitta oatesi*)—a large high-ground Pitta, of a beautiful pinkish chestnut, with green upper parts. First arrival.

ELLIOT'S PITTA (*Pitta ellioti*)—one of the handsomest of all Pittas; my pair, imported three years ago, build and nest every year, but destroy their eggs. The nest is dome-shaped, but wide open in front.

SCARLET-BACKED FLOWERPECKER (*Dicaeum cruentatum ignitum*)—a tiny bird, black above, with a broad scarlet band from head to tail ; buffish white underparts. Difficult to keep and first imported. They do well on mashed potato and banana, mixed with insectile food.

ANNAMESE YELLOW-BREASTED SUNBIRD (*Cinnyris rizophoræ*).

ANNAMESE YELLOW-BACKED SUNBIRD (*Æthopyga siparaja mangini*)—two common lowland species, very pretty and not brought over before.

DABRY'S SUNBIRD (*Æthopyga dabryi*)—one of the finest red Sunbirds, living at high altitudes in North Burma, Indo-China, and in China. It ought to prove quite hardy. I suspect this species to have an eclipse plumage. It will be interesting to find it out by observation in captivity.

DARK ROSEFINCH (*Procarduelis nipalensis*)—one of the most beautiful of all Finches, of slender and pretty shape ; the cock is dark scarlet and rosy pink. Lives at high level ; is new to aviculture.

CHINESE WHISTLING THRUSH (*Myophonus cæruleus*)—a small and pretty species.

LESSER ORANGE-HEADED THRUSH (*Geocichla aurimacula*)—a very small race of the well-known species.

INDO-CHINESE SHAMA (*Kittacincla interposita*)—very similar to the Indian Shama, but the hen is darker and better marked. Very fine songster.

BLUE-TAILED BUSH ROBIN (*Tarsiger cyanurus*)—a pretty migrant from North-East Asia.

PLUMBEOUS REDSTART (*Rhyacornis fuliginosa*)—an interesting water-side bird.

SPOTTED FORKTAIL (*Enicurus maculatus guttatus*)—a mountain species and the prettiest of the lovely genus. These delightful black and white birds have a very elegant shape and the most attractive ways.

SLATY-BACKED FORKED TAIL (*Enicurus schistaceus*)—a smaller species.

LARGE NILTAVA (*Niltava grandis*)—a fine and hardy species. Not a cage bird, but it does well in a planted aviary.

WHITE-GORGETED FLYCATCHER (*Anthipes leucops*)—a very attractive little brown bird, with a white throat, lined with black.

BLACK-AND-YELLOW FLYCATCHER (*Muscicapula xanthopygia*)—

a lovely black and orange-yellow little migrant from North-East Asia.

HALF-COLLARED FINCH-BILLED BULBUL (*Spizixos semitorques*).

CRESTED FINCH-BILLED BULBUL (*S. canifrons*)—two attractive olive-green Bulbuls, with a strong bill and a good voice ; perhaps the best of the family ; great leaf and salad eaters.

BLYTH'S BULBUL (*Xanthixus flavescens berliozii*)—a rare graduated-tailed Bulbul.

BOURDELLE'S BULBUL (*Ixos flavala bourdellei*)—a much brighter and better marked race than the Indian Brown-eared Bulbul.

The Babblers made up the best part of the collection ; they are particularly numerous and brightly coloured at Chapa.

YELLOW-NAPED YUHINAS (*Yuhina flavicollis rouxi*)—one of the nicest crested Babblers.

RIPPON'S YUHINA (*Yuhina diademata*)—a rare bird, brown and silky white, very handsome.

BLACK-CHINNED YUHINA (*Yuhina nigrimentum*)—a well-known and charming little species.

YUNNAN BLUE-WINGED SIVAS (*Siva wingatei*)—a rather brighter race than the Indian one.

RED-THROATED MESIA (*Mesia rubrogularis*)—the first importation of this very brightly coloured Mesia ; the male has a bright scarlet throat.

CRIMSON-WINGED BABBLER (*Liocichla ripponi*)—a most beautiful bird, of a fair size, yellowish-olive, with sides of the head and fringes on wings vermilion scarlet ; rare and new to aviculture.

RAMSAY'S BARWING (*Actinodura ramsayi*)—a very handsome crested Babbler, with a long tail.

WALDEN'S SIBIA (*Leioptila annectans saturata*)—a small and pretty Sibia, white underneath, with a black head, chestnut wings and back.

DESGODIN'S SIBIA (*Leioptila desgodinsi*)—a larger bird, silky white below, purplish grey above, with a black head.

LONG-TAILED SIBIA (*Heterophasia picaoides cana*)—a soberly-coloured, long-tailed species.

GOLDEN BABBLER (*Stachyris chrysa*)—a small golden-yellow Babbler, very difficult to keep.

SHORT-TAILED BABBLER (*Napothera brevicaudata stevensi*)—curious dark, greyish-brown bird.

WHITE-BREASTED SCIMITAR BABBLER (*Pomatorhinus hypoleucos laotianus*)—a large species.

LESSER RUSTY-CHEEKED SCIMITAR BABBLER (*Pomatorhinus erythrogenys minor*)—a small and bright race.

RUFIOUS-NECKED SCIMITAR BABBLER (*Pomatorhinus ruficollis saturatus*)—a small and pretty species.

CORAL-BILLED SCIMITAR BABBLER (*Pomatorhinus ferruginosus orientalis*)—a very pretty species, with bright russet upper parts and pale buff underparts, and coral red bill.

BLUE-WINGED LAUGHING THRUSH (*Garrulax squamatus*)—reddish-brown, feathers laced with black, and blue edges on the wings.

FOOKS' LAUGHING THRUSH (*Garrulax subunicolor fooksi*)—a bronzy brown bird, wing feathers lined with yellow.

GOLDEN-WINGED LAUGHING THRUSH (*Garrulax connectens*)—grey-brown body, greenish-yellow wings and tail, a chestnut cap.

RED-TAILED LAUGHING THRUSH (*Garrulax milnei indochinensis*)—crimson wings and tail, grey body, reddish cap, and white cheeks.

These four Laughing Thrushes are very beautiful, and remind one of a large Pekin Robin in their ways. The three first are new to aviculture, and of *G. milnei*, only one was brought home by myself in 1929; it is still alive.

SPOTTED-BREASTED LAUGHING THRUSH (*Garrulax merulinus*)—a bright orange-brown bird and an excellent songster.

PÈRE DAVID'S TIT (*Machlolophus rex*)—a pretty crested Tit.

CHAULET'S CISSA (*Cissa chauleti*)—the beautiful Golden Cissa of Annam, brought over once or twice before.

RACKET-TAILED MAGPIE (*Temnurus temnura*)—a strange black bird from Indo-China, whose tail feathers end in curiously cut rackets. A rare and local bird, never imported before.

* * *

In October, 1938, M. Cordier had brought for me from Guatemala twelve Ocellated Turkeys. With the exception of one adult pair, all had been brought up by him from the egg. Now six of these very rare and difficult birds are well acclimatized and live at Clères, and four at Leckford.

At the same time he brought over some rare small birds, of which I shall mention some lovely Humming-birds: *Lamprolaimia ramhi*, *Eugenes fulgens*, *Saucerottea devillei*, *S. feliciæ*, *Chrysuronia ænone*,

Chlorostilbon alicræ, *Colibri iolata*; and some Tanagers: *Ramphocelus icteronotus*, *R. passerini*, *R. sanguinolentus*, *Thraupis abbas*, and *Chlorophonia occipitalis*.

Since writing the above notes, a young Elliot's Pitta has been reared, and a pair of Shammas, which arrived at Clères on 10th May bred three young in the nest on 20th June in one of my tropical houses.

J. D.

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NOTES

RARE BIRDS FROM CHILE.

Mr. Alastair Morrison has recently returned from his second bird-collecting trip to South America: this time to Chile. He has brought a number of rarely imported live birds and a series of skins, etc. Here is a list of what he has brought, as far as I remember, and remarks of avicultural interest:—

STEAMER DUCK (*Tachyeres*). Several brought.

KELP GOOSE, *Chlephaga hybrida* (Molina). Two dozen or more. Very rarely imported and said to be bad doers. When *Aviculture*, vol. ii, appeared (1931), only three cases of importation were recorded: Zoo 1868, Berlin later, and a third brought to Holland by Blaauw more recently; all were single birds and none lived longer than a few months. We will hope this lot will do better; the ones I saw certainly looked strong and were feeding quite well. Anyhow their reputation for frailty seems to be based on very little evidence, if it is really the case that there have been only the three importations referred to.

MAGELLANIC PENGUIN, *Spheniscus magellanicus* (Forster). Four which have been taken by the Zoo, where this species has been at least once before.

SOUTH AMERICAN BLACK OYSTER-CATCHER, *Hæmatopus ater* (V.). A pair, which are, I believe, a first arrival.

BLACK-FACED IBIS, *Theristicus melanopis* (Gm.). Rare, but have been in the Zoo and elsewhere, and also bred in captivity.

PARTRIDGE TINAMOU, *Nothoprocta perdicaria* (Kittl.). Four, which have gone to Mr. Ezra. This Tinamou has been imported before and was bred by Shore Baily (*AVICULTURAL MAGAZINE*, 1929, 251).

CHILEAN PIGEON, *Columba araucana*. Very rare; once in the Zoo a long time ago (about 1876) and was bred in France in 1922 (*AVICULTURAL MAGAZINE*, 1933, 79).

BLACK-WINGED DOVE, *Metriopelia melanoptera* (Molina). Six, which Mr. Ezra took, as he also did the *araucana* Pigeons (2). The allied *M. ceciliæ* was imported by M. Delacour in 1938 and one pair nested and reared a young bird with him.

CURL-CRESTED ARACARI, *Beauharnaisius beauharnaisi* (Wagler). A single example of this new Toucan, which went to Mr. Ezra, as did all or most of the remaining birds.

D'ORBIGNY'S SLATY FINCH, *Xenospingus concolor* (D'O. & Lafr.). One; new.

BLACK-AND-WHITE SEED-FINCH *Sporophila luctuosa* (Lafr.). Also new.

YELLOW-BELLIED GROUND-FINCH *Pseudochloris auriventris* (Phil. & Landb.). Also new, I think, but Mr. Morrison brought some of the Peruvian *P. uropygialis* last year.

Three Finches of the genus *Phrygilus*, and some yellow Grosbeaks, probably *Pheucticus chrysogaster*, and a few other small seed-eating birds completed the collection.

The collector promises an account of his journey shortly, so that no more need be said here.

E. H.

THE COLLECTIONS OF MR. SHAW MAYER AND MR. W. J. C. FROST.

Two very fine collections of rare birds made by Messrs. Shaw Mayer and W. J. C. Frost arrived together on the 2nd July. Mr. Shaw Mayer was unfortunately taken ill on the voyage and had to go into hospital on arrival, but is now progressing favourably.

In Mr. Mayer's collection there were no less than nine species of Paradise Birds, including *Paradisea augusta-victoriae*, *Tricho-paradisea gulielmi*, *Parotia wahnesi* and *Astrapia rothschildi*, but perhaps the most striking of his specimens was a pair of thrush-like birds of great beauty—*Eupetes pulcher*.

A Monkey-eating Eagle (*Pithecophaga jefferyi*) which went to Mr. Whitley, is the second example of this fine species from the Philippines to reach this country.

There were a number of fine Pheasants including Bulwer's, Gray's Argus, and Palawan Peacock, as well as a magnificent Baud's Pitta.

Mr. Frost's collection contained four species of Paradisidae, including *Schlegelia wilsoni* and *Parotia sexpennis*; Rothschild's Grackle, Temminck's Blue Roller, several rare Rollers, a Maleo, Pied Java Sparrows (*Munia fuscata*), *Munia quincticolor* and Timor Zebra Finches (*Taeniopygia insularis*), in addition to a large number of other rarities.

D. S-S.

POPULAR WATERFOWL

Waterfowl are becoming increasingly popular with aviculturists who possess the right conditions for their maintenance, and it would appear that this is so in other countries as well as Great Britain. The Curator of the Auckland Municipal Zoo, Lieut.-Col. Sawyer, is very interested in this group of birds and has recently greatly increased his collection of importations from England and America, while his collection of native New Zealand species is one of the most extensive in the Dominion. Colonel Sawyer would be glad to get into touch with those interested in this group of birds.

THE "LITTLE WIDOW"

A Little Widow Tyrant (*Xolmis irupero*) that died in the Zoo Bird House recently had lived for four years in a cage. When it arrived, the intention was that it should live in the aviary in the Tropical House, but its appearance there had an extraordinary effect upon the other occupants who were, one and all, frightened almost to death by the appearance of this small but ghostly white apparition. Hiding in corners and under rocks or leaves, they refused to feed or to move while the Widow was there, so there was nothing for it but to remove her.

This beautiful little bird from tropical South America may be compared in size to a common Robin, but its plumage is of the purest white, relieved by very black eyes, primary wing-feathers, and tail tip.

* * *

CORRESPONDENCE

BEHAVIOUR OF AUSTRALIAN SHELD-DUCK

Since waterfowl are my favourites, I am much interested in the letters of Mr. Laidlay, Mr. Mood, and Mr. Pape regarding the Australian and the Radjah Sheld-ducks.

As reported to you before, the pair of Australians at our Florida place became very ugly and pugnacious as soon as they got into breeding condition. They were equally as nasty as a pair of Paradise or South African. These birds were wild-caught.

The pair which we kept at our place in the north made no effort to nest, and were (and still are) most peaceable in a mixed collection of waterfowl. These also were wild-caught birds. We have lately brought up the pair from Florida, and have them with several other sorts of ducks, and since they have got over the breeding fever, they get on perfectly well with the other Ducks in their pond.

Contrary to Mr. Pape's experience, our Radjah Sheld-ducks are most peaceful and very retiring in disposition. This may be because we have only two and I am rather sure both are females.

It is splendid that both Mons. Delacour and Mr. Moody have bred the Australian Sheld-ducks. I hope both rear the young to maturity. The award of medals for finest breeding is a splendid gesture that we might well copy in America. At the same time, it doesn't make so much difference who breeds a species for the first time, as that it is bred by *someone* and a new species perhaps started on the way to being available for many to enjoy.

Reverting again to the behaviour of the Australian Sheld-ducks, it seems to me that the difference in behaviour is in part a matter of the individual. We have Cereopsis Geese which are absolutely vicious, with humans as well as other birds. Yet we also have one bird, a female, which was not pinioned, and this bird flies about from one enclosure to another, and up on the lawns and anywhere she can find someone, and she is as gentle with other birds as any bird we have. Possibly it is because she was the smallest of a brood and got special attention when a gosling, but she belies the usual pugnacity of the Cereopsis. I've noticed with other sorts of birds also that individuals vary in disposition more than one would reasonably expect. A pair of breeding Ruddy Sheld-ducks here are absolutely peaceful, yet another pair we once had could not be allowed with even such large birds as Swans, and they accounted for quite a lot of deaths before we realized how very bad they were and got rid of them. Evidently that's the way it is with the Australian Sheld-ducks.

C. L. SIBLEY.

SUNNYFIELDS FARM,
WALLINGFORD, CONN.

GAPE WORMS IN YOUNG EIDERS AND GOOSANDERS

We are indebted to such pioneers in the art of keeping and rearing sea ducks, as Messrs. Moody and Laidlay, for the easiest way to feed successfully young Eiders and other sea ducks, viz. by allowing them a liberal amount of earth-worms at least during the first four weeks. However, I would like to give a word of warning to the Aviculturists intending to try the rearing of these birds in certain districts where gape worms are prevalent.

This month (July), owing to shortage of better food, I gave a good amount of earth-worms to a small pen of young Eiders and young Goosanders, all about a week old. Within two days, one third of the Eider ducklings had succumbed to what the post-mortem proved to be a severe attack of gape worms. Three

quarters of the young Goosanders were also badly affected, but up to now I have managed to keep them alive (as well as the remaining Eiders) by giving them daily some drops of "Aniodol interne" rubbed inside the windpipe by means of a soft long feather (Budgerigar tail feathers are quite suitable for the purpose). This cure for gape worms is well known to Pheasant breeders, and I hope will prove successful in the case of sea ducklings.

I must admit that the earth-worms were collected here in soil which had perhaps been soiled by Pheasants and domestic Turkeys, but the strange thing is that scientists consider that gape worms in Waterfowl belong to a species of *Syngamus* quite distinct to the species affecting Gallinaceous birds.

J. M. DERSCHIED.

ARMENDY,
STERREBEEK,
BELGIUM.

THE CLONCURRY BARNARD

Innumerable as are the obstacles placed in the way of private aviculturists anxious to secure a limited number of Australian birds, certain Continental dealers this summer have been importing, almost wholesale, the choicest and rarest treasures. I declined what in ordinary times would have been the tempting offer of White-tailed Black Cockatoos new to aviculture and the almost equally rare Funereal Cockatoo, but when Cloncurry Barnards appeared on the list I first refused the offer, but later succumbed. After all, even if a mad world is bent on quite unnecessary suicide and the voice of constructive reason falls usually on deaf ears, it is worth while to see a new Broadtail—before we make ourselves food for the crows!

And the Cloncurry Barnard really is a new Broadtail, so unlike the other races of Barnard's Parrakeet that it is a bit more than a good sub-species, especially if intermediate forms—and I have not heard of any—do not occur. It is a very lovely bird, very light in colour, as Barnards go, and with far less dark and blue shading and marking. The general plumage is a bright, rather pale green, with the usual Broadtail blue in wings and tail, but no red frontal band and practically no dark shading on the head and mantle. Across the lower breast extends a very wide band of uniform, rich buttercup yellow, which forms a striking contrast to the rest of the plumage. If my birds are a true pair which, from the shape, the head I hope they may be, the hen is as brilliant as the cock. This phenomenon has been observed in one other sub-species of Barnard—or at any rate in the case of certain individuals of one other sub-species—but as a rule hen Barnards are decidedly duller than their males.

TAVISTOCK.

BARRINGTON HOUSE,
LINDFIELD, SUSSEX.

[The Editor accepts no responsibility for opinions expressed in Correspondence]

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AVICULTURAL MAGAZINE



CONTENTS

	PAGE
The Red-flanked Blue Bush Robin (<i>with coloured plate</i>), by J. DELACOUR	275
The Preservation of Waterfowl and Aviculture, by Dr. J. M. DERSCHIED	276
Award of Medals	287
Observations on the Red-sided Eclectus Parrot in Captivity, by ROBERT A. PATTEN	288
The Breeding of the Ultramarine Lory, by the MARQUESS OF TAVISTOCK	292
The Australian Bee-eater in Captivity (<i>with plate</i>), by S. HARVEY	294
The Early Years of the Avicultural Society (VIII), by DAVID SETH-SMITH	296
Rarities Collected by F. W. Shaw Mayer and W. J. C. Frost, by N. WHARTON-TIGAR	299
Kelp Geese, by TERRY JONES	302
Breeding the White-headed Robin Chat, by ALFRED EZRA	304
Breeding British Birds, by V. A. V. CARR	305
Reviews	307
Notes	309
Correspondence	310

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THE JOURNAL OF THE
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THE RED-FLANKED BLUE BUSH ROBIN

(*Tarsiger cyanurus*)

By J. DELACOUR

The Red-flanked Blue Bush Robin is rather a rare bird in European aviaries, although it is a popular cage bird in northern China. I remember seeing many freshly caught specimens on the Peking bird market in October. The northern race of this Robin (*T. c. cyanurus*) is a common migrant there in the autumn, and is caught in numbers. It travels south and spends the winter in Indo-China. Every year, in the northern half of this country, it is met with in forests, always near the ground and often along roads and paths. Immatures are there much more numerous than adults. They are quite tame and easily approached. In their ways they remind one of Redstarts more than any other European birds, wagging their tails incessantly.

In the Himalayas a resident geographical race (*T. c. rufilatus*) is found at high elevation; it differs from the northern bird in having light blue instead of whitish buff highbrows, brighter and deeper general colours. This non-migratory race is depicted on the adjoining plate and has been brought over on a few occasions.

In south-west China and Tonkin lives a somewhat greener resident race (*T. c. practicus*).

In captivity Red-flanked Blue Bush Robins, purely insectivorous, are silent and unobtrusive. They require the same treatment as Redstarts and Chats. They can be kept in adequate cages and in aviaries. At present, I keep two specimens in densely planted

greenhouses, where they are doing well on good insectile mixture with numerous live insects. They are quite tame, but like the shade of leaves, just as they do in Indo-Chinese forests. They are very quiet and do not quarrel with other birds.

* * *

THE PRESERVATION OF WATERFOWL AND AVICULTURE

By DR. J. M. DERSCHEID

(Continued from page 96)

In the March issue¹ of our Magazine I tried to show the importance of establishing permanent breeding stocks of all kinds of Waterfowl in order to help to maintain the rare species on account of their scientific interest, and even the commonest for their utility, or value as game birds. Let us see how such an aim could be attained.

There are several aspects of the problem, owing to the amazing diversity of this group of birds. In short, it is evident that the starting point must be to secure a sufficient number of birds of a species, likely to become breeders, either by importing wild-caught adult birds, or by securing eggs fresh enough to be still hatchable under control. As a rule Duck, Geese, and Swans are large- or medium-sized birds, commanding everywhere the attention of even casual observers, and this is probably why the percentage of species already imported alive is I believe larger (in comparison to the number of kinds still to be caught and imported) than in any other order of birds, the Parrots excepted.

To give a very rough idea, I may mention that about 200 different species of Waterfowl (*Anseres*) are known to science, including perhaps ten kinds which became extinct in historical times. Something like 100 species have been already more or less freely imported alive and kept in captivity, often in great numbers. Some thirty other species have been received less frequently or in quite limited numbers, and another thirty so exceptionally that they have never had the slightest chance to become seriously established. One may estimate again at thirty the number of

¹ *Avicultural Magazine*, Fifth Series, Vol. IV, pp. 90-6.

species which, as far as I know, have never been received alive in Europe or North America, or even kept by amateurs in their own country of origin.

Every true aviculturist will understand that these species of Duck, Geese, and Swans which have never been imported, or only very seldom, have therefore a special interest for us. In several cases it seems not unreasonable to hope that these gaps will be filled in the near future, the attention of the bird collectors being naturally drawn more especially to these birds. Of course rarity in the natural habitat of the bird is often the chief obstacle, especially when combined with wariness and shyness of habits, and also lack of accessibility of the country. This is, for instance, the case of the Auckland Island Teal (*Nesonetta aucklandica*) which lives in a remote corner no longer connected by any regular ship line with the civilized world. A great pity, for it would be of special scientific interest to study fully in captivity the life (including embryology) of that aberrant flightless member of the Teal group.

Highly valuable research work could likewise be carried on on the famous "Steamer Ducks" (*Tachyeres*) of the Patagonian coasts, one form of which at least is also flightless in the adult stage. These birds, which are considered as being a modified type of Eider (a hypothesis contradicted by biogeography), are very seldom imported here; nearly always as isolated specimens which find their way chiefly to Zoological Gardens, and they have never been given a real chance of breeding in confinement under suitable conditions. I may add that their proper care is apparently not yet well understood.

The strange and probably very heterogeneous sub-family, *Merganettinae* (Torrent Ducks), is entirely made up of Ducks still completely unknown to Aviculture. The true Torrent Ducks (about six species of the genus *Merganetta*) are evidently well protected against capture by their habit of frequenting only the most torrential waters in the desert parts of the high South American mountains. They might also prove to be not at all too easy to keep alive in captivity. On the other hand, the Blue Mountain Duck (*Hymenolæmus malacorhynchus*) of the New Zealand Alps would, I am sure, be much more amenable to captivity. It would be a great achievement to breed a number of them in confinement, as in nature the species is rare, very local, and seriously

threatened by extinction on account of the gradual settlement of the country. A few odd Blue Mountain Ducks have already been kept even in barn-yards, without any special difficulty, by New Zealand amateurs ; but it seems evident that the most important step towards success in establishing a breeding stock would be of a diplomatic nature, viz. to persuade the New Zealand Government authorities to relax, for this special purpose, a little of their usual severity in enforcing their bird protection laws.

The last kind of so-called Torrent Duck, the New Guinean *Salvadorina waigiensis* (unknown in Waigiui I. in spite of its name), is still too little known to allow us to express any opinion about its eventual comportment in captivity. But here again we have one of these ornithological puzzles, making more desirable the establishment and careful study of the bird in captivity. Here our hopes of a successful importation of a live consignment must lie entirely on the skill, experience, and enterprise of some first-class bird collector, as probably we need no less than a Goodfellow, a Shaw Mayer, or a Frost to bring safely home such living treasure. As a rule Ducks are rather bad travellers on long trips, and require to be packed in specially constructed boxes and to receive *en route* selected food and intelligent care.

The Brazilian Black-capped Teal (*Heteronetta atricapilla*), never imported, would be another valuable addition to our collections, and its life history could perhaps throw some light on its still enigmatic affinities (although, of course, it has no relationship to the species mentioned above). Cuckoo-like in its breeding arrangements, this little Teal is said always to use the nests of other Ducks and to let foster parents rear its young, but much is still obscure in this story. I have been told that a single bird of this kind was being kept in captivity, two years ago, by a Brazilian who obstinately refused to part with it.

There are quite a number of other Ducks which never reach the hands of the European or American aviculturists, either on account of lack of enterprise by the bird collectors, or of actual inaccessibility of their country of origin (or sometimes by the effect of protection laws indiscriminately applied, this being more often the case in young Countries, Dominions, and Colonies freshly awakened to their duty towards Nature). Mention of these species will be made later on.

Progress in the Art of keeping Waterfowl in captivity

Waterfowl keeping is an extraordinarily ancient hobby and was practised in classic times by the Greeks and, probably with still more skill, by the ancient Egyptians. The Romans, too, had extensive collections of Ornamental Duck and Geese besides the farms where domestic waterfowl were raised in great numbers for utility purposes. According to Columella and other authors, the aviculturists of those days already knew quite a lot about their job ; for instance, among the species enumerated as frequently bred in confinement, we find the Common Teal, a bird which we know to be quite a shy breeder. Americans of pre-Columbian times must have been also attracted by this hobby (as they were by Parrot keeping), and certainly they managed to keep and even truly to domesticate the Muscovy Duck (*Cairina moschata*) before it was sent to Europe and other parts of the world in the sixteenth century. Indians and Chinese, since the beginning of historic times, have likewise always been fond of keeping Duck and Geese, and when we come to Japan, we find that in medieval times, according to old paintings, they were skilful enough to keep in their gardens and probably even breed in confinement the Crested Sheld-duck (*Pseudotadorna cristata*) from Korea ; a magnificent bird so rare that only three skins are at present known to science and it is feared that the species is now extinct, or very nearly so.

In recent years quite a number of people in western countries, and a few in U.S.A., have taken to the hobby of keeping and breeding waterfowl with a view to seriously studying their habits and requirements. Therefore real progress has been made even in the last few years, in evolving a scientific technique of keeping and even breeding these birds. Two or three examples could perhaps be given here of such progress. The introduction to the late Dr. John C. Phillips' monumental *Monograph of the Ducks* (written in 1922) includes two or three pages on "behaviour in captivity" which give us a fair view of the opinion of an expert on the matter some fifteen years ago. We find there such statements as the following :—

" . . . only a half-dozen species can be classed as among those that lay readily in confinement, and the great proportion of Ducks can either not be reared at all, or only with great

difficulty, as a sort of avicultural 'stunt' . . . then there is a large class of Ducks that simply do not keep healthy in captivity, and are short-lived when deprived of wild food. Such are Shovelers, Scaups, Canvas-backs, Golden-eyes, Eiders, and the fish-eaters. Ruddy Ducks only live a week or two. . . ."

This rather discouraging picture is of help in measuring the progress made during these years. Among the examples mentioned by Phillips, we can say that shortly after this was written, Hugh Wormald and Colin McLean, followed by a few other aviculturists in Great Britain, managed (with the help of Phillips himself) to start a good breeding stock of Canvas-backs (*Nyroca valisneria*) which is still flourishing. Out of the four known species of Shovelers two—the European Shoveler (*Spatula clipeata*) and its South American cousin *Spatula platalea*—are also strongly established and bred regularly every year. The Cape Shoveler (*Spatula capensis*) is a more recent addition to our stock, due to the enterprise of my friends, R. and N. Stevens, and has not yet been given a fair time to increase in confinement. The last one, *Spatula rhynchotis*, from Australia and New Zealand, is still very poorly represented, although it was successfully bred immediately after being introduced, a few years ago, at Clères by Jean Delacour. Difficult to rear, as the other Shovelers, at the early stages, this species will need some experienced hands to start it, but it appears to be quite a free breeder in confinement. This is one of the species for which the responsible Governments should take special measures, not in order to prohibit their keeping in captivity or exportation, but in order to give support to serious aviculturists ready to help in breeding them.

Phillips mentions the Ruddy Ducks as especially difficult to keep alive; elsewhere he says that "the Spiny-tailed, or Ruddy Duck family do not bear captivity". Since that time we have happily enough been shown that this was not the case, and we have kept Ruddies or "Stiff-tails" in captivity for many years in the best of health. The North American Ruddy Duck (*Erismatura jamaicensis*) has now for years been bred in confinement every season by some American aviculturists, and also by Messrs. Stevens at Walcot Hall. This allows us to be quite optimistic about keeping and breeding the other species of the genus as soon as a sufficient stock of wild caught birds is obtainable.

To the European ornithologist perhaps the most interesting species would be the White-headed Stiff-tail (*Erismatura leucocephala*), a fine European bird which seemed to have completely disappeared in recent years from its classical range, the Mediterranean basin, so that several authorities feared that the bird was extinct, or nearly so, as a species. It was comforting to hear a year ago that one of the most interesting observations made by Peter Scott during his trip to the Persian shores of the Caspian sea was the sight of hundreds of these fine little Ducks in that district.

The three other species of the genus are all black-headed (adult male), but they are similar to the preceding in having a bright blue bill. "Blue-bill" is, in fact, the local name given to the Australian Stiff-tail, *Erismatura australis*, a rare or rather very local species which has never been received alive in Europe. It would be fine if Australian ornithologists and aviculturists could help us to secure a small stock of this little known bird.

Its South American counterpart, *Erismatura ferruginea*, represented by the typical form in Peru, by another sub-species (*E. f. vittata*) in Argentine and Chile, and perhaps a third form in Ecuador (*E. f. æquatorialis*), is also very little known, and up to now, only the Peruvian bird has been imported alive, three specimens being brought eighteen months ago by Mr. Alastair Morrison. One of these succumbed to the hard weather of last December, but the two others (2 ♀ ♀?) are still in good health in my collection. However, I have never seen Ducks so slow to come into colour, and even if they would condescend to breed, a single pair is nothing to start a stock. When we come to the African Stiff-tail (*Erismatura macoa*), a close cousin to the preceding, we find that it has been brought alive only once; I believe two years ago, by a skilful aviculturist, Capt. B. Howard. We are without news about the results of this importation which we hope will be followed by others.

Another genus of the same group is made of the White-backed Ducks, birds whose English name is only surpassed in stupidity by their scientific name "Thalassornis"; the so-called white back is the least pronounced feature in their plumage, and no bird is so lacustrine in habit and so adverse to going to sea. . . . I do not believe that the typical form, *Thalassornis leuconota leuconota*,

from Central and South Africa has ever been brought alive to Europe, but in recent years the Madagascar sub-species, *Th. l. insularis*, has been received by several of us, and it is encouraging to know that it has been regularly bred during the last four or five years by Mr. Alfred Ezra, at Foxwarren Park. I have a suspicion that if the bird has not yet been bred in other large collections, it might be due to the difficulty in distinguishing the sexes, a point to which I intend to come back later on. A fresh consignment of these White-backs is expected from Madagascar next Autumn under the able care of Mr. Webb, and this might help considerably in settling the species as a regular breeder in confinement.

In the West Indies and part of South America, is found another Stiff-tail, the charming Masked Duck (*Nomonyx dominicus*), still practically unknown to aviculture. In most islands of the Caribbean Sea, where that little Duck was more or less abundant, the Mongoose has been introduced, and is said to be a terrible menace to the species; a really important field of work is therefore open to Waterfowl breeders in this respect. Last year my friend Sibley managed to secure a few eggs of Masked Duck and to hatch two youngsters, the first ever born in captivity. They were doing quite well, when they were swept out—with many other things!—by the hurricane which crossed New England on 21st September, 1938.

The last, and also by far the largest, member of the sub-family *Erismaturinæ*, the Australian Musk Duck (*Biziura lobata*), is also an exceedingly interesting bird, only imported from time to time, and then always in very small numbers, or as odd specimens. A great pity, as it has not yet been given any good opportunity to nest in captivity under proper care, although a few odd ones have proved to be good doers in living a number of years in public zoos. Six months ago a pair arrived at last at Walcot Hall, and it is to be hoped that Messrs. Stevens will be successful with these and that several other pairs will follow.

We have reviewed the various members of the Stiff-tail sub-family, as this is typically a group about which our predecessors, the aviculturists of last century, knew practically nothing, and where real progress has been made quite recently. In other groups, better known, some modern successes are also worth recording.

For instance, nearly all the members of the Sheld-duck sub-family (*Chloëphaginæ*) are good livers in captivity. There was only one exception, the Kelp Goose (*Chloëphaga hybrida*), a Patagonian bird said to be so exclusive in its diet of kelp and seaweed, and so delicate, that it could simply not bear confinement. Even such an experienced aviculturist as the late Mr. Blaauw had to give up trying to import this species, although he went so far in his attempts as to import at the same time large quantities of kelp from the Argentine. . . .

Last winter, however, Mr. Alastair Morrison succeeded in bringing back from South America many pairs of Kelp Geese in good health, indeed a fine achievement. From what I heard recently from Clères (where most of these birds went) they are doing splendidly on a diet which is not at all special, and we cannot see any reason why the Kelp Goose should not at last become well established in our collections. The five other members of the same genus (the so-called Upland Geese) are all also well established in Europe, although in the case of the Andean Goose (*Chloëphaga melanoptera*) it would certainly be worth while to strengthen the present breeding stock by a good fresh importation. The Ashy-headed and the Ruddy-headed Geese, which were so hard to obtain a few years ago, are now much better represented and are breeding regularly for a few fanciers.

Thanks to the true aviculturists interested in Waterfowl, and especially to those who take the trouble to publish their observations, every year we learn more about the correct method of keeping our Duck, Geese, and Swans, and every year the list of the species considered too difficult to bear captivity is shortened by such progress. The forward steps have been notably encouraging since ten years when we consider the most interesting group called Sea Ducks. Golden-eyes, for instance, are now much more extensively kept and sought after, and their proper management may be considered as well understood now, some individual birds having already lived in collections for more than ten years, sometimes breeding every year. This applies chiefly to Barrow's Golden-eye (*Bucephala islandica*), which is reared yearly by three or four breeders, either from eggs collected in Iceland or from eggs laid in captivity. The Common Golden-eye (*Bucephala clangula*) has also been found to do quite well even on small ponds with com-

pletely artificial food, and the late Mr. Blaauw used till his death to breed it every summer at Gooilust. Unhappily the maintenance of this species in our collections still lies nearly entirely on wild caught birds. Freshly caught Golden-eyes are among the most difficult birds I know to accustom to captivity, having very often to be fed by force for several weeks before eating by themselves. Here is a point where our friends, the Scandinavian ornithologists, could be of great help, by assisting us to secure fresh eggs of Common Golden-eyes for hatching purposes. Very large numbers of these eggs are taken every year from the nests, chiefly in Lapland and Finland, just as food, and the toll imposed on the wild stock would certainly not be heavier if a small percentage of these eggs could go to the aviculturists instead of being eaten by the Laps!! Exactly the same thing can be said of the Golden-eye's cousin, the Smew (*Mergus albellus*). We found by personal experience that it is extremely hard to obtain in Northern Europe fresh eggs of Smew for incubation purposes, the chief difficulty being apparently that the authorities in countries like Finland simply refuse, under any pretext, permission to take out some eggs, even although, in some districts, a great number of nests are robbed every year by the natives.

Our readers will have seen in our last March Magazine (p. 96) a detailed and extremely valuable report by Mr. Wintle on the successful breeding of Smew at Walcot Hall. This article, by the way, has provided us with information of high scientific value on the life history of that species, of which even the incubation period was still unknown to ornithologists. The large size (14 acres) of the lake on which the breeding of Smew occurred prevents us from saying that Smew will breed just as well on the more common type of pond, but from personal experience I can say that, once well established, Smews may be kept year after year in perfect health on small pieces of water. I am sure also that Smews born in captivity (if necessary several successive generations of them) will gradually become less exacting in the matters of size of enclosure and amount of natural food.

There are some other species of "Sea Ducks" which are a little more difficult to keep in captivity, a proof that we have still a lot to discover about their exact requirements. The American sub-species of Common Golden-eye (*B. c. americana*) and the

charming tiny Buffle-head (*Bucephala albeola*) are said to be moderately easy to keep in health, and both have already been bred by one or two fanciers in U.S.A. (see Sibley's article, p. 79). I have not found special difficulty in keeping the Buffle-head here on a small pond of slow running water, and there is probably no difference at all in the treatment needed by the American and by the European Golden-eyes, the two birds in fact being quite hard to distinguish. Two species already much more difficult to keep in real health for a long time are the Harlequin Duck (*Histrionicus histrionicus*) and the Long-tailed Duck (*Clangula hyemalis*). The Harlequin, which is, to my mind, the finest of all Waterfowl, is comparatively easy to cater for at first, even when newly hatched, although of course more delicate than Golden-eyes and all the fresh water species. But for some mysterious reason, after a year or two, or even three, in confinement, they seem to "go light" and die unexpectedly. They are also bad travellers and sometimes they die just as the result of one or two days journey or perhaps of the change in habits and surroundings. They are also, I think, sentimental birds, and I know of a fine little drake Harlequin, already in adult dress, which had formed a very strong attachment for the Black Scoter I had reared as its companion; when I had to separate them last Spring, the Harlequin died within three days, probably of broken heart. Another Harlequin in Delacour's collection took a liking to Mandarin Ducks, and used to follow them up and down hill for miles, till it apparently died of exhaustion.

Harlequins are naturally tame and should breed in captivity just as well as Golden-eyes, but *primum vivere*. . . . Before attaining that end, we have first to find out exactly what is right and what is wrong in our present day methods of keeping this species, and so bring it really into breeding condition. Exactly the same may be said of the Longtails, which are still probably one degree more difficult in management. Quite easy to accustom to captivity when wild caught (and far better than Golden-eyes in that respect), even adult birds which have been netted become tame in a few days. Every year we succeed also in rearing quite a few youngsters from wild collected eggs and so do two or three Waterfowl breeders in England, but nearly all Longtails, either hand-reared or wild caught, prove to be, alas, short-lived in captivity. Shortly after

the War it was considered very fine to succeed in keeping a Long-tailed Duck alive for just a few months ; we are already further than that and recently some of our Longtails have lived two years and more ; but still the proper method of management has not yet been discovered.

These difficulties are further aggravated in the case of the Scoters, a group I would describe without hesitation as among the hardest and most exasperating birds to try to keep and to maintain in good condition. This applies to wild caught and to hand-reared birds, and to Velvet and Black Scoters (the latter species only having been up to now hand-reared, as the few Velvet ever kept in confinement were all full sized birds when caught). The main problem with Scoters is that these high-sea birds so badly built for walking on the ground, most of the time develop a strange and obstinate aversion to water, quite often immediately after being caught, or when two to three months old when hand-reared. Feather troubles soon follow and generally the bird dies after lingering a few weeks or months in a miserable state. There are very few people indeed—among whom Messrs. Stevens, Jean Delacour, and the late Sir Philip Sassoon—who have ever succeeded in keeping Scoters in good health and feathers with any amount of success. However, I am convinced that this again is just a question of discovering the true cause of the trouble, and accordingly giving the birds the proper treatment they require.

Among the remaining Sea Ducks, it is a pity that the Eider group is still so poorly represented in our collections. The Common Eider of Europe is doing well on the ponds of quite a few aviculturists, although still unrepresented in most of the public Zoological Gardens. It breeds quite freely in confinement, but still most of the hand-reared young Eiders come from wild eggs. It would, however, be a wonderful sight if some enterprising amateur, with a large pond of clear water, would try to establish a true little colony of Eiders breeding for him. Among the sub-species of Common Eiders, up to now I failed to rear and establish here the Färoe Islands Eider (the smallest of all), all my eggs being rotten or too stale for incubation. However, Common Eiders reared here from eggs imported from Iceland proved to be slightly but decidedly smaller than my Eiders from Scotland, Holland, and Germany, and perhaps Hachisuka was right when he expressed

in his little *Monograph on Icelandic Birds* that the Icelandic Eiders belong to the Färoe sub-species *Somateria mollissima færoensis* rather than to the European typical *Somateria m. mollissima*. Among the other sub-species, Dresser's Eider from the east parts of North America has already been kept and hand-reared in the United States and Canada, but has not yet been sent over to European collections. The other geographical races are still unknown to aviculture and this is also the case with Steller's Eider (*Polysticta stelleri*), and Spectacled Eider (*Arctonetta fischeri*); both would be most interesting acquisitions, but they inhabit grounds far remote from civilization, the most likely place from where to obtain them being Northern Alaska!

From Greenland my friends C. McLean and H. Wormald received last year the two first young King Eiders (*Somateria spectabilis*) which have ever been imported alive. Unhappily both were males and both did not live long, but it is to be hoped that future importations may be more successful, the more so as there are countries like Spitzbergen, Greenland, and Northern Siberia where these birds are killed in tremendous numbers and their eggs taken by tens of thousands every year. Being a less maritime species than the Common Eider, especially at breeding time, the King Eider might prove an even better subject to establish in captivity.

(To be continued)

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AWARD OF MEDALS

The Council propose to award medals for the first breeding records in the United Kingdom and Ireland for the following two species (inadvertently omitted from the list published in the June number of the Magazine, page 199):—

1. MADAGASCAR WEAVER, *Foudia madagascarensis*.
2. MOUNTAIN BLUEBIRD, *Sialia corrucoides*.

both bred by Alfred Ezra, Foxwarren Park, Cobham, Surrey, 1938. Described *Avi. Mag.*, August, 1938, pages 220-1.

If any previous breeding of either of the above species should be known to any member or reader they are requested to be good enough to communicate at once with the Secretary, Miss Knobel.

OBSERVATIONS ON THE RED-SIDED ECLECTUS PARROT IN CAPTIVITY

(*Lorius pectoralis*)

By ROBERT A. PATTEN, B.V.Sc., Superintendent, Taronga Park Trust, Sydney

These beautiful birds have not been given as much publicity as is due to them. Some have referred to their melancholy habits, harsh noises, etc., and I am wondering if the disparaging remarks are due to the exhibition of them under unfavourable conditions, as it has been found here that, if suitably displayed, they make one of our most beautiful exhibits.

The glorious plumage of both the hen and the cock birds seem always to raise the old controversy as to whom has the greater appeal, the bright colour of the hen being in striking contrast to the duller feathering of most females of the Parrot Group.

However, it is more in reference to the breeding of these birds that I wish to record. As is well known, reports of their multiplying under aviary conditions are rather sparse, and the question was raised as to whether there was some particular reason as to why they did not mate, whether it was due to unsuitable housing, wrong class of food, insufficient flight in the aviary, and so forth.

In their wild state in New Guinea, reports that I have received have given the information that they were known to the natives under the name of "Kalanga" and were observed to feed heavily on paw paw fruit, bananas, sugar cane, and other foods in the Kokopo District.

However, it was not possible in Sydney to procure all these fruits except periodically at certain times of the year and consequently a varied diet was prescribed consisting of a mixture of sunflower seed, oats, hemp, millet and canary together with fruit such as apple and banana supplemented with plenty of lettuce, some occasional spinach, and a little of the dandelion plant.

Although the first birds were received here in 1933 and others were added to the collection from time to time, up to the end of 1937, no increase took place.

Towards the latter end of 1937, I fortunately succeeded in making a contract with a grower of lucerne in the famous Hunter River District of this State to supply this succulent food which is well known to be rich in Vitamin E and having a rich mineral content.

Feeding experiments were at first carried out with our herbivorous animals and a thorough check up of our foods was at the time under review. So encouraging were the subsequent results with these creatures, both in connection with increase in births and in their condition generally, that lucerne was introduced into a number of aviaries and, as a result, the Eclectus Parrots had added to their diet chart plenty of this succulent food, also a little parboiled maize.

Early in 1938, the plumage of these Parrots was noticed to be greatly improved and altogether it was apparent that they were more attractive in every way. Although it was observed that they only occasionally bathed in the pond provided, it was noticed that they took full advantage of rain showers and would delight in exposing themselves to all but exceptionally heavy squalls.

The aviary allotted to them faced due North providing the maximum of sunlight. It was rather spacious having a width of 12 ft., height 8 ft., and flight 25 ft., $\frac{1}{2}$ in. netting being used with galvanized piping supports and on the south side a well constructed shelter kept out the cold southerly winds. This allowed them plenty of freedom and it was noticed that they certainly took full advantage of it.

One pair of birds (hereinafter called A) was provided with a box, 12 in. by 9 in. by 9 in., and out of the right top-hand face a space 4 in. by 4 in. was removed to enable them to enter. This nesting box was placed inside the house or shelter away from the weather.

The other pair of birds (hereinafter called B) were given a hollow log 2 ft. 6 in. long, the hollow itself 6 in. in diameter, plugged at one end. This nesting box was hung in the open flight. Both nests were provided with an amount of earth and decomposed wood as found in most of our old gum trees in and around this locality.

From each of the nests A and B, two young cock birds emerged in April. However, it was observed that, although the hens looked

after the youngsters, all was not well with them, and they were weak and unsteady on their legs and unable to fly. On investigation they were found to have rickets. Unfortunately at this stage, one of the young birds died from each nest.

The other two were removed to the hospital and force-fed on boiled maize with the addition of cod-liver oil and a little malt extract combined with halibut oil. On this diet they made wonderful progress until old enough to participate in the adult food and developed into two lovely Parrots.

The adult birds now had cod-liver oil added to their diet. On 30th August, 1938, a very fine young cock left B nest and on 12th October, 1938, two more young—a cock and a hen—emerged from A nest. On 14th December, 1938, one hen emerged from B nest.

Towards the end of December it was decided to finish breeding and to take out the nests. In attempting to do so, we discovered that in A nest two more birds were just hatched. Consequently the nesting boxes had to be left intact to prevent any interference with the young. However, the nests were constantly under observation, and were finally removed to provide the adults with a well earned rest.

On 14th January, 1939, we experienced one of those shocking days of heat, which one reads of, but rarely encounters. The weather had been sultry and a heat wave had been forecast. Will we ever forget that day?—the temperature of Sydney rose beyond all records and the glass went up to 116° F. taking unfortunately in its wake the breeding hen from B nest. Fate was most unkind to this gallant little mother.

The young birds were removed and cared for in the hospital where we hand-fed them on boiled peas with a liberal amount of cod-liver oil for three weeks, when they were changed over to parboiled maize supplemented with cod-liver oil and banana.

These birds were gradually brought up together with the earlier arrivals and subsequently placed on the food supplied to the adults. We now have quite a fine collection of these Eclectus Parrots and we hope to release them in a special aviary when the warmer weather comes to hand.

It was confirmed that the number of eggs laid at each period was two of white colour. The sexes are quite clear in the nest—

the cocks showing green feathers and the hens red—from the time the feathers commence to form at approximately one month of age. The young birds stay in the nest for some two months from the time they are hatched. When they are getting their feathers it is noticed that, in the hen, the mandibles are at first a slaty grey colour. This gradually darkens and at six to eight months becomes totally black.

The cock bird, on the other hand, has the upper mandible a dull yellow ochre colour and, as time goes on, the base of the mandible turns to red, leaving the tip of the beak a brilliant orange. In both sexes the eyes are brown and the feet slaty grey in colour up to six months when the feet gradually become darker in colour.

I thought we had certainly lost one during their removal to a bright room to enable a photograph to be taken for record purposes for Dr. E. Hopkinson. One managed to escape from the keeper and disappeared in high trees outside the boundary of the Gardens. However, we were agreeably surprised to find a little later in the day that it returned to its companions and was once more in safe keeping.

From our observations, it would appear that the hen bird did all the incubation and, as the young were hatched, the male bird certainly fed the hen but we could not say definitely whether he helped in providing food to the young birds other than supplying the mother.

I am of the opinion that the Red-Sided Eclectus Parrots are very sociable, at least in a large aviary such as supplied to the ones in question and do not appear to fight or injure others in the enclosure. Altogether it can be stated that they are very striking and beautiful birds and are the medium of much favourable comment.

* * *

THE BREEDING OF THE ULTRAMARINE LORY

(*Coriphilus ultramarinus*)

By THE MARQUESS OF TAVISTOCK

The breeding of this Lory of necessity marks the apex of my achievements in rearing birds of the Parrot family, for the simple reason that for rarity and beauty, combined with need for very careful management, there is no species that I shall keep likely to be its equal. In my more despondent moments I am also tempted to wonder whether the summit of my achievements in aviculture may not also be my swan-song, for, in these days of international upheaval, what hope is there for the long survival of hobbies and cultural pursuits? Indeed, I am sure *X* only spared the young Lory to leave the nest because it amused him so much to see me too worried by "crises" to take a proper amount of interest in its welfare, or joy in its appearance!

As recorded in previous articles my hen Ultramarine or Goupil's Lory was only snatched back from the jaws of death by our discovery at the eleventh hour of the correct diet for this species new to aviculture—Allinson's Food, as for other Lories, but Allinson's Food diluted again with its own volume of water after it has been prepared as for infants and sweetened. The mixture is given fresh twice daily with a little marmite and tomato juice added and lime-water is given when breeding is in prospect. Pear, grapes, and apple are supplied and, when young are being reared, the insides of eight to twelve mealworms mixed with two to three teaspoons of honey and water. During the three years I have had her the hen Lory has shown herself extremely ready to go to nest, but her zeal to rear a family has not been equalled by her good fortune. Before we gave lime-water she had trouble with soft-shelled eggs and at all times she is liable to get egg-bound, although she sits dutifully after the egg had been laid in hospital. On two previous occasions the single egg was incubated for the full period and proved fertile, but failed to hatch owing to a dent in the shell. The cock sits, but not as much as a cock *C. peruvianus*, during the early stages of incubation. Later, when the young bird arrives, he is very attentive and both parents spend the night in the log.

The nest was a grandfather clock box with the base standing in a vessel of water and during incubation more water was poured into the peat some way below the nest-level through a funnel, the base of which pierced the wooden side of the box. On top of the peat was a layer of decayed wood. My hopes of breeding Ultramarine Lories were at a low ebb during the past winter. The hen had got rather badly egg-bound with a soft-shelled egg in the autumn and to discourage her from further efforts at reproduction I put her in a different compartment to her mate. For some reason he came out into the open flight much less this winter than last and although I could not see anything definitely wrong with him I expected his early demise.

In February, owing to disagreements between the young Tahiti Blue Lories, I had to put the Ultramarines together again, hoping that the absence of a nest would keep the hen from laying. However it did not—for she got egg-bound during the latter part of February and the egg laid in hospital was unluckily damaged.

We then gave her a nest and, although the pair were dropping a lot of feathers, another egg arrived safely on the 28th. The young bird was first heard on 27th March and emerged on 20th May—a very nice, well-grown bird. The time spent in the nest was considerably longer than in the case of the Tahiti Blue Lories I bred last year.

For part of the time a hen Blue-crowned Hanging Parrot shared the aviary with the Lories, but we removed her when the young bird arrived as the cock Lory rather resented her presence. On the whole, however, *C. ultramarinus* is a much more gentle bird than the smaller *C. peruvianus*, a spiteful little creature, of which it is afraid.

Ultramarine Lories have a gentle, squeaky, sibilant cry. The flight is rather slow and heavy, though less so than that of *C. peruvianus*, but they climb actively and spend a lot of time running over the roof of the flight, upside down. They occasionally play together, but less often than the other species. Now and again a small spider is eaten. The hen is, and remains, a very nervous bird, though her nerves do not affect her devotion to her egg or young. The cock, on the other hand, is quite steady with people he knows and will often let me go into the flight without rushing into the shelter for refuge. The sexes of *C. ultramarinus* are much

alike, the male being slightly the larger. The wings, back, and tail are a beautiful powdery blue of a rather unusual shade. The breast and abdomen are largely white with some ultramarine spots and markings; a broad band of the same colour crosses the upper breast, and there is ultramarine and turquoise on the crown. The young bird has the bill and feet black and the white areas on the breast and abdomen bluish black, with only a faint splash of greyish white and a trace of the same colour behind the eye.

* * *

THE AUSTRALIAN BEE-EATER IN CAPTIVITY

(*Merops ornatus*)

By S. HARVEY (Adelaide, Australia)

For many years I have always admired this most interesting and beautiful bird from coloured plates, not having seen a live specimen. People from districts where they are found invariably say that they cannot be kept in captivity, that they have tried but could not persuade the birds to feed. On these reports I had given up hope of ever having a Bee-eater in the aviary.

On 2nd January I received a phone call at about 6 p.m. from a Mr. Wheeler, saying that he had been out shooting with a friend and had seen a bird disappear into the ground. His companion, not knowing the nesting habits of Bee-eaters, would not believe that a bird had gone into the ground, so they dug at the hole where the bird had entered. After digging about 4 feet a nest containing four young Bee-eaters was found, they were well feathered; in fact, two were able to fly and were liberated. The remaining two were made comfortable in a box in the motor. Upon reaching home, Mr. Wheeler became worried about feeding the birds, so phoned me for advice. Taking me by surprise I did not know what to tell him to do, my first thought was that they could not be kept. I told him they were most difficult to feed, but to try hard-boiled egg and white ants (these being plentiful in his district). Half an hour later there was another ring, asking "would I take the birds if he brought them down to me, as he was unable to get them to feed". Needless to say I was only too pleased to have the



[Copyright: D. Seth-Smith.]

AUSTRALIAN BEE-EATER

(*Merops ornatus*)

[Ta face p. 294.]

opportunity to experiment with the keeping of these birds. I immediately filled a hot-water bag and made a cosy nest in a box, then mixed some Sugar-birds' food (Mellin's Food, condensed milk, and honey), and cut up some mealworms. By this time the birds arrived, looking rather sorry for themselves ; they were given some of the above mixture with the aid of an eye-dropper, and then tweezers were used to give them the pieces of mealworm, which were pushed well back in the throat. That night they were given two more feeds at hourly intervals and then tucked in beside the water-bag for the night. The next morning they were quite bright, and were fed in the same manner with the addition of hard-boiled egg to the menu. A few days later we added mince-meat moistened with water and rolled in dried flies. They were fed five times a day. After about a week they commenced to pick the food from the tweezers ; this made the feeding much simpler, as we only had to pick it out of the dish for them. Feeding in this way was continued for five weeks before they commenced to take food from the dish ; this was encouraged by blocking the dish up level with the perch.

Since the middle of January the Bee-eaters have been taken into an aviary 20 ft. \times 12 ft. \times 6 ft. 6 in. high for exercise when the weather was favourable. At first they were only left for a short time ; later they were left out all day and taken in at night. Since the beginning of April they have remained in this aviary altogether ; and always go in the house to sleep. They have become very tame and fly all over you on entering the aviary. They are extremely quick on the wing and are always looking for a mealworm ; if you throw a mealworm and the bird happens to miss catching it the first time, he flies down and catches it before it reaches the ground. There is no doubt about their being fond of bees. For some weeks numbers of bees have been flying over the aviary to some grapes near by ; quite a lot of these bees find their way into the aviary but are snapped up by the Bee-eaters immediately they are through the netting. It is very amusing to see the birds sitting on a perch watching the bees.

These birds are now nearly five months old, they are not fully coloured and there is no sign of the elongated tail feathers. They have never been seen to drink ; pellets about the size of a date-stone are ejected.

THE EARLY YEARS OF THE AVICULTURAL SOCIETY (VIII)

By DAVID SETH-SMITH

(Continued from page 267)

Volume VI of the New Series of the Magazine commenced in November, 1907, with a very nice coloured plate by Goodchild of the Double-banded Courser (*Rhinophilus bicinctus*) of which Captain Boyd Horsbrugh writes an interesting article. Sir William Ingram records the breeding of the Roulroul Partridge (*Rollulus roulroul*), though the young were not reared to maturity. This is a bird of the tropical jungle and its great beauty and natural tameness should appeal to the aviculturist who possesses suitable accommodation for its requirements. Sir William says, "the female constructs a curious domed nest which is cunningly concealed among the grasses and brushwood of the aviary. The dome is considerably flattened with a small and proportionately low aperture. It is constructed of dry grasses and fronds of dead palm leaves. Once the female has completed her nest the male keeps as far as possible from his partner's abode and leaves all the sitting to his mate. She seldom leaves the nest and then only for a very short time, always closing up the entrance during her absence."

A coloured plate by Herbert Goodchild of the American Bluebird (*Sialia sialis*) is accompanied by an article from the pen of C. William Beebe to whom the species was very familiar as a wild bird. "To write an essay on the Bluebird," he says, "is like attempting to describe the face of a dear friend; it is so familiar, so much of its charm has always been taken for granted, that it is difficult to translate into definite words and phrases." In years gone by this delightful bird which, "from its back reflects the colour of the sky and from its breast, the earth," was freely imported into Europe, but now it is rarely seen in aviaries owing to the prohibition of its export. It breeds very freely in captivity though requiring abundance of insect food in order to rear its young. It was generally known here as the Blue Robin and even in the wild state seems to be very robin-like in its choice of nesting sites. Beebe records that "in Reading, Massachusetts, a pair of Bluebirds built their nest in one of the signal balls near the railway station.

Here they successfully raised two broods of young, in spite of the fact that the ball was lowered fifty times a day for the passing trains. Every time it descended, the parents flew out and waited, perching nearby or flying about impatiently, until the ball was raised again, when they immediately returned to sit on the eggs or cover the young as the case might be”.

A. G. Butler follows with an account of the Bluebird in captivity. He had many nests but the great majority of the young died at an early age. There were probably too many cats in his neighbourhood to permit of his trying the method of liberating the parents to find their own insect food, so successfully adopted since those days of Dr. Amsler and others. Butler also contributes an article on the Superb Tanager as an accompaniment to a very good coloured plate of the species by Goodchild. Tanagers were favourites of his and he writes, “ if I had to restrict my avicultural studies to one group of insectivorous birds, I should certainly choose the Tanagers : they are not only about the most lovely of all cage-birds, but they are no great trouble to feed ; as a general rule are quite friendly after the first moult in captivity, and, if in good health to start with, are likely to live to a reasonably good age.”

Collingham Ingram, writing on Oriental aviculture, describes the method of feeding cage-birds in Japan. “ The Japanese,” he writes, “ who are really skilled aviculturists, rely almost entirely upon a specially prepared food which they seem to give with like success to Warblers, Tits, Buntings, Robins, Thrushes, and, in fact, to any bird that is either partly or wholly insectivorous. The same recipe is, I believe, used in almost all parts of Japan, and is as follows : A fresh-water fish (usually a carp) is first roasted over a fire and afterwards thoroughly dried and then ground into a fine powder which, by the way, is said to keep good for a long time. To one part of this ‘ fish-powder ’ is added two parts of rice-bran and a small quantity of pulp from the cooked leaves of a Japanese raddish. The whole is mixed into a soft paste with a little water and is then ready for use.” A beautiful coloured plate of the Olive Finch (*Phonipara lepida*) accompanies an article on the species by Reginald Phillipps who considered this “ an exceedingly nice little bird, neglected only because its merits are not known ”. Captain Stanley S. Flower writes on the Egyptian

Plover (*Pluvianus aegyptius*) which is also known as the "Crocodile Bird" from its reputed habit of entering the reptile's mouth and pecking food from between its teeth. Of this he writes: "personally I have carefully watched many hundred Nile Crocodiles, small, medium, and large sized, basking on shore; I have seen many birds, Herons, Storks, Ibises, Spoonbills, Geese, Ducks, Plovers, and Wagtails, close to and among the sleeping reptiles, but never yet have seen a bird try to enter a crocodile's mouth or peck food from it. It may possibly occur, but from my knowledge of the habits of reptiles I would agree with Dr. Anderson that a crocodile would not refrain from closing its jaws on a bird that entered its mouth, even out of consideration for any service the bird might be rendering it by catching vermin or cleaning its teeth."

The first arrival in this country of the Black-cheeked Lovebird (*Agapornis nigrigenis*) is recorded by Reginald Phillipps, while a fine coloured plate of the species by Goodchild appears at the end of the volume. The bird was discovered in North-West Rhodesia in 1904 and described by W. L. Sclater in 1906 (*Bull. B.O.C.*, xvi, p. 61), and living specimens reached London in April, 1908. It is a beautiful species which, like its near relatives *A. personata* and *A. fischeri*, breeds freely enough in captivity, but, although numbers were subsequently imported, it seems to have become rather scarce since those days.

The rare Abbott's Rail (*Rallus abbotti*), from Assumption Island in the South Indian Ocean, is the subject of a coloured plate by Goodchild. Two of these handsome Rails were captured by Messrs. Meade-Waldo and Nicoll during the voyage of the *Valhalla* and safely transported to the London Zoological Gardens where they lived for some years, probably the only specimens ever to leave the island.

In 1906 Dr. Hopkinson brought from the Gambia a cock White-bellied Amethyst Starling (*Pholidauges leucogaster*) which, apparently, was the first specimen of this very beautiful species to be imported to this country alive. It was presented to the Zoological Society where it lived for some years. It is the subject of a very fine coloured plate and an article by Dr. Hopkinson in the volume under review.

In December, 1907, at the request of the Council of the Zoological Society, I paid a visit to Australia with the object of getting together and bringing home a collection of Australasian

animals. During my absence, Dr. A. G. Butler kindly took over the editorship of the Magazine, and at the end of the 1908 volume appears the first of a series of articles on my Australian visit. C. Barnby Smith records the successful breeding in his aviaries of the Partridge Tinamou (*Nothoprocta perdicaria*), one of a group of highly interesting birds which one rarely hears of in private collections now.

T. H. Newman contributes a very interesting article on the nesting of the Partridge Bronze-wing Pigeon (*Geophaps scripta*), a charming species which failed to breed in my aviaries but did so as soon as it was transferred to those of Mr. Newman, and its breeding habits presented many points of especial interest.

An article on the breeding of the Ypecaha Rail (*Aramides ypecaha*) by Gerard H. Gurney completes another excellent volume.

(To be continued)

* * *

RARITIES COLLECTED BY F. W. SHAW MAYER AND W. J. C. FROST

By N. WHARTON-TIGAR

Two well-known collectors arrived in London at the end of June bringing many very beautiful birds, all well housed and in wonderful condition. It is not often that we have the thrill of seeing so many exquisite new arrivals all together, but Mr. Frost and Mr. Shaw Mayer travelled from the East in the same boat. This was fortunate because the latter was taken ill, just before reaching home, and had to be taken to hospital on arrival. Mr. Frost took charge of his birds and brought them with his own to the London Zoo. A short note on these collections appeared in the August number, but a more detailed account may not be out of place. Mrs. Frost accompanied her husband on this trip which perhaps may have contributed to the splendid condition of his collection. This included four species of Birds of Paradise, the lovely little Wilson's (*Schlegelia wilsoni*), the King (*Cicinnurus regius*), the Six Plumed (*Parotia sexpennes*), the type, and last but not least the Lesser (*Paradisea minor*). There were also two species of Crowned Pigeon (*Goura coronata*), and *Goura victoria beccari*, the big heavy crested race of the Victoria Crowned Pigeon. Of Parrot-like birds

there was a pair of Molluscan Crimson Wings and Edwards, Mitchells, the White-rumped and the Iris Lory, the last named a first importation rather resembling Desmarest's but more subdued.

Of the three species of Mynas, *Eulabes veneratus*, of Flores, is a very large kind not previously imported, and there were also examples of *E. intermedia*, of India, and *E. nigricollis*, of China.

There were several examples of Rothschild's Grackle (*Leucopsar rothschildi*), Bali, a lovely thing; and from Celebes a curious Shrike-Starling (*Scissirostrum dubium*), with yellow beak, grey body, and waxy-like streaks of crimson on the upper tail coverts. Another interesting importation was a baby Temmincks Blue Roller (*Coracias temmincki*), from Celebes, and there were also some very lovely Blue-vented Javan Kingfishers (*Halcyon cyanoventris*). Then there were King Crows, Javan and Sumatran Cissas, Red Mesias, Grey Longtailed Sibias, Scimitar Babblers, Yellow-headed Fruit-suckers (*Chloropsis icterocephala*), Fairy Bluebirds, and the loveliest little Van Hasseeti's Sunbird in finest condition.

There were quite a number of very taking Plover-like bird, the Nile Courser or Crocodile bird; a number also of a new and very attractive little bird from Timor (*Munia fuscata*), much resembling a dark form of Java Sparrow, having chocolate in place of grey, and a blue, instead of a red bill. Another new importation was *Munia quinticolor*, an almost red and white form of Nun. A very dwarf form of Zebra Finch from Timor (*T. insularis*) should also prove interesting and easy to breed. A Maleo, and some specimens of Salvadore's Pheasant, concludes this fine collection. Mr. Shaw Mayer's birds were superb—nine species of Birds of Paradise, in finest show condition, a sight not to be forgotten! Pride of place must, I think, be given to the Wahne's Six Plumed (*Parotia wahnesi*), perfectly exquisite. Comparing it with other Six Plumed, the long tail makes it more graceful, its head plumes are considerably larger, and the gorget is wonderful, shot blue on gold, in place of red on gold, and the larger nasal plumes are bronze in place of silver. The female is lovely, too, bright reddish brown, vermiculated with black. Almost equally thrilling was the arrival of the rare Rothschild's Bird of Paradise (*Astrapia rothschildi*), from N.E. New Guinea, and a near relative of the Princess Stephanie, which has a graduated tail instead of two long feathers. The Emperor of Germany's Bird of Paradise (*Paradisea guillemi*), the

Empress of Germany's Bird of Paradise (*P. augustæ-victoriæ*), the Lesser (*P. minor*), Count Raggi's Bird of Paradise (*P. raggiana*), the Lesser Superb (*Lophorhina superba minor*), a lovely Rifle Bird (*Ptiloris intercedens*), and some most perfect examples of the gem Hunstein's Magnificent (*Diphyllodes magnificus hunsteini*), completes this wonderful array. Next we come to Mr. Shaw Mayer's greatest triumph—the landing in finest show condition of a pair of Chestnut-backed Eupetes (*Eupetes pulcher*), a task often attempted by others, but never successfully accomplished. These are most lovely birds, the size and shape of a Mocking-bird, but distinctly a ground bird; the whole body is a beautiful shade of smoke blue, back chestnut, chin and upper throat snow white. The species appears to come between the Dippers and Forktails; it lives near water and has the habits of a Wagtail.

There were two most attractive new Mountain Honey-eaters found at an altitude of 6,000 feet. The large species especially, was a dream bird, with dark body and yellow cheeks which blushed crimson when the bird got excited! There was a pair of Dumont's Grackles (*Mino dumentii*), with yellow cheeks, and two species of lovely Pittas (*P. baudi* and *P. cyanoptera*), Blue-eyed Cockatoos, Green-winged King Parrots, Musschenbroeck's Parrot, and New Guinea Ravens.

Now we come to another triumph. The second importation of the Monkey-eating Eagle, one of the largest and rarest of birds of prey. This wonderful bird is now at Primley Park with Mr. Whitley. Two Owls came in this collection, the Pagoda and the Rose Owl, which is something like our own Barn Owl, but with rose-coloured breast, and a slight difference in the face—the Rose Owl appears to have a divided disc. Further, there were two species of Kingfishers, the White-breasted and the Collared Blue; a number of the Bornean Black Nuns (*Munia fuscus*), and some lovely Pheasants, Bulwers, Gray's Argus, Palawan Peacocks, Chinguis Peacocks, Roul-roul Partridges, Longbilled Francolins, Painted and Button Quail.

To conclude I will mention a most beautiful Javan Myna, with plumage like satin, and yellow wattles which flap in a fascinating manner. The bird chants and talks in an Eastern language. Our Secretary, Miss Knobel, is now the proud owner of this treasure, and is very pleased with her newly acquired friend!

KELP GEESE

(Chloëphaga hybrida)

By TERRY JONES

Some notes on the four pairs of Kelp Geese in Mr. Spedan Lewis's collection at Leckford may be of interest.

Mr. Lewis purchased three adult pairs from Mr. Morrison and was presented with an immature pair. They were brought down from London on 29th April this year.

Before they came we had hunted through the earlier *Avicultural Magazines* to find out how they should be fed in captivity and the result was not encouraging. Heer Blaauw seemed to be the only person who had kept any and his bird died when the supply of kelp gave out. We made inquiries from the chemist about dried kelp, which it was proposed to soak in salt water. Meanwhile the Geese arrived. On the voyage and while in London they had been fed on biscuit meal, kelp, and prodigious quantities of chopped lettuce.

They were released in a small grass run containing a shelter and I went off to find the head gardener. After a sympathetic chat and having duly admired his treasures, I broached the subject of lettuces and succeeded in getting fifteen. These were chopped up and were completely finished immediately. Next I tried biscuit meal soaked in sea-salted water, and this also was a success. Elaborate arrangements were made with the market gardener to supply thousands of lettuces, fortunately the drought killed them before they grew up. For the next few days the lettuce nightmare continued, then suddenly, realizing that they were Geese, they started grazing and day by day took less interest in their lettuce till finally we ceased to provide any.

The first night the Geese were shut up with two dishes of salted biscuit, and when they were released in the morning we found to our horror they had been bathing in their biscuit. As the day was warm and sunny we let them have a quick bath in a stream before the biscuit dried. They enjoyed it enormously and had to be fished out, soaked through, and shut in their run. The weather remained good and very quickly we got their plumage oiled up again by allowing them regular, but very short, swims and after

a week they could be allowed constant access to the stream and were no longer shut up.

The young pair were weak and at first were unable to flap their wings, but from the day they came their health has caused no worry. After they had been here almost a month the kelp arrived. It was in a wooden barrel and proved to be as finely pulverized as flour and smelt like a muddy sea-shore when the tide is out. We now give a small handful of this mixed with the salted biscuit, but it is probably unnecessary as the birds had already greatly improved before it came.

The Kelp Goose, to my mind, is by far the most attractive of the *Chloëphaga*. The adult male is white with soft yellow legs and feet and a black beak with a small flesh-coloured mark at the nostrils. It is about the same size as the Ashy-headed Goose, but, being very densely feathered, the bird has a more rounded and more kindly appearance.

The adult female is nigger brown, darkest on the flanks and palest on the head ; her rump, abdomen, and tail are white ; her wings and shoulders as in the other *Chloëphaga* ; her beak flesh and feet as in the male. Her flanks are marked with zig-zag lines, rather similar to the dark ones on the flanks of a female Magellan, except that hers are white.

The young female is similar except that her flanks are more finely barred, her abdomen dark and her rump and tail dark with splashes of white. The young male has a similar colour scheme to the male *dispar* and *magellanica* crosses one sees, except that his legs and feet are yellow. The webbing of the feet and flanges on the outside toes are very much more developed than in the other members of the genus. They have a curious habit of doing Penguin-like jumps from tussock to tussock or onto any perch or plank.

By nature they are completely fearless and at present gregarious, although individually they are constantly squabbling rather in the manner in which the individuals of a flock of feeding Starlings do.

* * *

BREEDING THE WHITE-HEADED ROBIN CHAT

(Cossypha albicapilla)

By ALFRED EZRA

I got a pair of these birds from the well-known collector, Mr. Webb, when he brought them from Africa in May, 1937. They were turned out in a large aviary with a good many other birds. Last year they nested but only partially reared their young. On the 30th May this year when the nest box, which was hanging on the wall of their sleeping quarters about nine feet off the ground, was examined, a nest was found containing two eggs about the size of a house sparrow's egg. Colour of eggs a dull grey heavily speckled with black spots. The nest was very simply constructed with a few short pieces of dried grass. One young was hatched out on 8th June, but the second egg had disappeared. The old birds were never observed incubating nor feeding the young one, but once or twice they were seen collecting meal-worms. The young bird left the nest on 22nd June. Colour of the young bird—head light brown, cheeks black and under part light brown heavily speckled with dark spots. Wings—black with faint brown lines across. Tail—light brown with the two central tail feathers black. Legs and feet dark grey. The young bird is about the size of an Amethyst starling, and about two-thirds the size of its parents. On 29th June the young bird was observed on the food tray eating insectivorous food. As far as I know this bird has never before been bred in captivity.

* * *

BREEDING BRITISH BIRDS

By V. A. V. CARR

Noticing the lack of material on British birds I approached the Editor and hence the result. My father has kept British birds, now, for over half a century, and long before the Buckmaster Act he had bred many species. Since then, however, he has gone into it a lot more thoroughly and the result is fifty-one breeding pens, nearly all single units situated in a spinney covering an area of about an acre. This site has its advantages and its disadvantages, the latter being : insufficient sunlight penetrating through the trees and the cursed danger of trees or limbs coming down on top of the aviaries and letting the inmates out. On the other hand, it is very sheltered and secluded and free to a certain extent of Hawks and other predatory birds hovering above. Because of these dangerous risks, I might add that the aviaries are none too spectacular or finished off in elaborate details—but for all that they have suited our purposes admirably.

Of the breeding of British birds in cages I know little so far, but another season we intend to try a few pairs that are several generations aviary-bred and see what success can be achieved. I have seen other fanciers breeding them in cages varying from 4 feet square to 4 feet long, and 18 inches wide, the birds including Siskins, Goldfinches, Linnets, and bigger birds such as the Song Thrush and Blackbird. These people ought to get greater praise than those who are fortunate enough to possess sufficient ground for bigger aviaries, as the amount of work and the varying foods to keep these birds in the fine fettle that is essential for laying of eggs must be enormous.

It is necessary to mention these facts to enable ornithologists to realize how important it is to have the proper accommodation in order to expect any success. The abode is of primary importance, and when one has made the conditions as natural as possible one can go into the feeding problems afterwards.

Some of the abodes we find most satisfactory are 3 feet wide, 6 feet long, 6 feet high ; half boarded up, including the top half, with two panes of glass at the bottom ends of the covered parts. They are eminently suitable for two pairs of birds and are quite inexpensive to construct.

Another type of structure we use is 4 feet wide, 6 feet long, and 6 feet high, protected in exactly the same manner as the above and this will easily contain two pairs of British birds.

Another type of aviary we use, measuring 6 feet by 6 feet by 6 feet, is all wire with a shelter shelf all round the top, containing easily three pairs of birds.

As regards suitable sites for British birds to nest in. The Hartz Roller Canary travelling cages (made of all wood, including the bars) are ideal, practically all species choosing them in preference to anything else. We have had Bramblings, Chaffinches, Hawfinches, Siskins, Redpolls, Canaries, and Greenfinches nest in these sites successfully and if a few leaves are placed around and a pane of glass placed on top, they will nest in such a place even if it is exposed to the elements. Hedges, constructed with wooden batons or wire netting, in the corners of the aviaries, and evergreen bushes placed on top, covered by glass, also attract different species with success.

This year we have had Bullfinches nest in evergreen bushes, in artificial bushes, in wooden boxes, ordinary Canary nest-pans, and in cup-shaped wire netting containers. Why there is this difference in opinion as regards where to nest I cannot quite fathom for they all have identical sites from which to choose.

Good bushes can be made by tying bunches of heather together and then ramming one's fist into the centre. With the aid of some evergreen, such as box, laurel or ivy an ideal site can be manufactured. But there is one thing that must be impressed and that is :—Do not in any way restrict light from getting into nesting sites as the parent bird is then unable to see the young birds' mouths when feeding.

They will nest in a dark spot as well as a light one, it is true, but they will not rear their young in a dark site.

Again, one must not expose nesting sites to any violent rain-storms, or the youngsters are likely to be drowned or deserted.

Protection round the sides of the bushes one arranges in the open is a good thing, but light must get in somewhere—either from the top, or, alternatively, from the sides.

(To be continued)

REVIEWS

THE HANDBOOK OF BRITISH BIRDS. Vol. III (Hawks to Ducks).
By H. F. WITHERBY, F. C. R. JOURDAIN, N. F. TICEHURST,
B. W. TUCKER. Price 25s. Published by H. F. and
G. Witherby, Ltd., 326 High Holborn, London, W.C. 1.

In his foreword to this volume the Editor writes "Owing to the peculiar fascination of ducks for ornithologists, aviculturists, and sportsmen alike these birds have been very fully studied and monographed"; a statement which not in the least overestimates the wealth of information contained in the following pages in which this most interesting group of birds is dealt with from many points of view. All the coloured illustrations of Geese have been painted by Peter Scott which in themselves alone make a great attraction. Maps showing the migration and breeding distribution of various species of duck are a most valuable addition and most interesting are the plates showing feathers from the nests of Ducks and Geese which are a useful aid to the identification of the nests of these birds. The assistance of Mr. Hugh Wormald on many points in the preparation of the volume is acknowledged and other members of the Avicultural Society who have contributed information are Messrs. J. Delacour, J. C. Laidley, A. F. Moody, C. A. Norris and D. Seth-Smith. It is certainly a volume no keeper of waterfowl should be without.

No less admirable is the section on the birds of prey, the drawings of birds in flight by G. E. Lodge and the diagrams by L. Tinbergen being particularly helpful guides to identification. The plate of the pellets of Hawks is a welcome addition. Storks, Herons, and Swans complete this excellent volume. No ornithological library whether public or private can be complete without this work, and every aviculturist interested in the birds contained in Volume III will find it of great assistance in many ways.

P. B-S.

AUSTRALIAN PARROTS. By NEVILLE W. CAYLEY. Price 15s.
Published by Angus and Robertson, Sydney.

This is a book which all aviculturists must get. A detailed description, illustrated with coloured plates, of each species dealt with ; full accounts of their history (with comprehensive references to early authorities), their wild life and their ways and needs in confinement. It was published last year, but better late than never ; this opportunity is taken to recommend it to all members of the Avicultural Society.

E. H.

BIRDS OF OUR COUNTRY AND OF THE DOMINIONS, COLONIES AND DEPENDENCIES, THEIR LIFE, EGGS, NESTS AND IDENTIFICATION. First Series, Birds A-C ; Second Series, Birds C-F. Edited by DAVID SETH-SMITH. Price 6d. per series. Published by Messrs. Hutchinson and Co., Ltd., 34 Paternoster Row, London, E.C. 4.

The presentation of Frank Finn's large work in a series of twenty-four consecutive pocket editions, edited and brought up to date by David Seth-Smith will no doubt meet with the great success it deserves. The first series contains two coloured plates and seventy-two photographic illustrations, and the second two coloured plates and fifty-five photographic illustrations ; both are undoubtedly amazing value. Many pocket books on the birds of the British Isles have appeared on the market but this is the first to include the far wider scope of the birds overseas.

P. B-S.

BIRDS. By GAYLE PICKWELL, PH.D. pp. i-xvi, 1-252, pls. 1-33. Price 15s. Published by McGraw-Hill Publishing Co., Ltd., London and New York.

This work, we are informed in the preface, is not intended as a manual for identification but as a guide to the general biology of North American birds. There are chapters on nests, breeding habits, food, feathers, migrations, and how birds are protected from their enemies. About a quarter of the book is devoted to

a general survey of the birds of the United States. A special chapter gives an account of the Cowbirds, based on Dr. Friedmann's book and the author's own experience. Finally the trio is instructed how to identify birds, find their nests, and attract them to the bird table or nesting box.

Although primarily for American readers this book should interest many bird-lovers in other parts of the world on account of the large number of admirable photographs.

N. B. K.

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NOTES

AVICULTURAL SOCIETY'S GREETING CARD

The Council has decided this year to publish a Greeting Card, the subject of which is the Red-flanked Blue Bush Robin, *Tarsiger cyanurus rufilatus*, from the painting by Roland Green shown on the frontispiece of this number of the Magazine. The cards, price 5s. per dozen inclusive of envelopes, and post free, may be obtained from the Editor, Miss Barclay-Smith, Park Lodge, Hervey Road, London, S.E. 3. PLEASE SEND CASH WITH ORDER. The name and address of sender can be specially printed on the cards at an *additional* cost of approximately 3s. per dozen, 4s. per fifty, and 5s. per hundred, according to the length of address. It is hoped that members will purchase these cards and bring them to the notice of their friends, for this is an excellent means of making the Society better known and all profits will help the funds.

THE AVICULTURAL SOCIETY OF SOUTH AFRICA

With the publication of the first issue of their magazine, *The Aviary*, the Avicultural Society of South Africa has at last, as the Editor states, fulfilled a much needed want. Through the medium of this Magazine members will become better acquainted with the workings of the Society, and it is hoped that the public in general will take a greater interest in the activities of aviculturists in South Africa. The first issue contains articles on the Zebra Finch (*Taeniopygia castanotis*) by W. Grei, giving useful information and advice on keeping, breeding, and buying these birds; on the Shama, by F. E. O. Mörs, with a detailed menu, varied for different days of the week, and an article entitled "Seven different varieties of Doves I have bred in Captivity", by W. A. Duncan, which should be of particular appeal to all those interested in this group of birds. It is a pity, however, that in the title the all too common mistake of confusing "species" and "varieties" is made (see letter D. Seth-Smith, *Avi. Mag.*, April, page 141), as in this case the author certainly intends to refer to species. A letter from the President, Mr. W. C. H. Zipp, outlines briefly the objects of the Society and states that it has gone ahead tremendously and members are continually enrolling. The publication of the journal, which is under the able editorship of Mr. Isidore Lopus, the Hon. Secretary, should certainly help the Society to make even greater progress, and best wishes for success to the magazine and congratulations on the enterprise in its publication are accorded by the Avicultural Society in the Mother-country.

INVITATION TO LECKFORD.

Mr. and Mrs. Spedan Lewis have kindly invited a party of members of the Avicultural Society, not exceeding thirty-six in number, to visit the collection, at Leckford on Saturday, 14th October. For any not coming by car transport will be provided from the railway station at Andover or at Winchester and Mr. and Mrs. Lewis will be ready for the first arrivals by 11 o'clock. Full particulars as to trains, etc., will be given in the October number of the Magazine.

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CORRESPONDENCE

THE SWIFT PARRAKEET

Although, according to A. J. North, in *Nests and Eggs of Birds of Australia and Tasmania*, the Swift Parrakeet (or Lorikeet), *Lathamus discolor*, lays only two eggs to each clutch, I have known instances among Swifts in captivity of clutches of three, and this year in Dr. Derscheid's aviaries a hen laid four, all of which hatched and were successfully reared.

I had not previously heard of these birds being double brooded, but this same hen nested again in a similar log close by before the first four young had left the nest, and laid three eggs, two of which hatched and the young are now nearly ready to come out.

There are two pairs in the one aviary (which seems the best way to breed them), but there is no doubt that all four eggs were laid by the same hen because the second went to nest a week or two later, laying three eggs; also, of course, it is easy to see when the hens are about to lay because the eggs are large for so small a Parrakeet.

According to A. J. Campbell, in *Nests and Eggs of Australian Birds*, the clutch is two or three in Australia ("stated to be four to six in Tasmania"), but if the young are fed largely on nectar from the flowers of Eucalypti, it seems likely that broods of more than two would soon make the nests uninhabitable.

The young of Swifts are gentle and steady—a pleasant change from the insane crashing about of most other young Parrakeets—and they are, to my mind, decidedly prettier than the parents, being a smoother and fresher green with the facial markings more delicately tinted, while the dark eye is an improvement on the yellow irides of the adult males and more brownish-yellow of the adult females.

The two mothers are aviary-bred (1938) birds and the two fathers were imported.

ARMENDY FARM,
STERREBEEK (BRABANT),
BELGIUM.

J. J. YEALLAND.

[The Editor accepts no responsibility for opinions expressed in Correspondence]

CANDIDATES FOR ELECTION

- MICHAEL BRATBY, Graythwaite, Hale, Cheshire. Proposed by Terry Jones.
GEORGE ERNEST SMITH, Woodthorpe Garage, Leigh Hill Road, Cobham, Surrey.
Proposed by Arthur P. Shearing.
EDW. J. WILMINK, Box 36, Campbellford, Ontario, Canada. Proposed by
E. Maud Knobel.
ALEXANDER MILLS WILSON, Middlemoor, Presteigne, Radnorshire. Proposed
by Ronald Stevens.

CHANGES OF ADDRESS

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AVICULTURAL MAGAZINE



CONTENTS

	PAGE
The Crested or Rheinart's Argus (<i>with coloured plate</i>), by J. DELACOUR	311
Editorial	311
Care of Birds in War-time	313
Breeding of the Golden-breasted Bunting, by NORMAN G. ALLISON	314
The Brown Padda or Rice Bird, by ALLEN SILVER	317
Royal Zoological Society of South Australia. Breeding Notes, by R. R. MINCHIN	319
The Scissor-tailed Flycatcher and the Resplendent Trogon, by JAMES B. HOUSDEN	322
The Grey-necked Bunting, by GODFREY DAVIS	324
The Early Years of the Avicultural Society (IX), by DAVID SETH-SMITH	327
Breeding of the Black-crested Finch, by MAURICE AMSLER	331
Breeding the Black-winged Plover, by ALFRED EZRA	334
Further Notes from Australia, by SYDNEY PORTER	335
Notes	341
Correspondence	342

THE AVICULTURAL SOCIETY

Founded 1894

PRESIDENT : A. EZRA, Esq., O.B.E.

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AVICULTURAL MAGAZINE

THE JOURNAL OF THE
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OCTOBER, 1939.

THE CRESTED OR RHEINART'S ARGUS

(*Rheinardia ocellata*)

By J. DELACOUR

The Argus form with the Peacock-Pheasants a specialized group of Pheasants ; all are remarkable for the fact that they lay a clutch of two eggs, never more, just like Pigeons. They are more arboreal than most Pheasants. All have brown as their dominant coloration, varied and elaborately patterned with different shades of grey, russet, black and white. The Peacock-Pheasants, however, also have metallic green or blue ocellae and markings on their wings and tails which the Argus lack, and are of a much smaller size. In both one finds a genus with display in the vertical way, spreading tails and wings in the same way as the Peacock (*Argusianus* and *Polyplectron*) and others with narrower and compressed tails which display sideways like a Silver Pheasant (*Rheinardia* and *Chalcurus*).

* * *

EDITORIAL

Aviculture is a bond which knows no political differences and is a link between the peoples of different nations which is hard to be broken. The Avicultural Society, though a British organization, is essentially international in its composition and has members of many different nationalities and in every part of the globe, brought together by a common interest.

A war has now broken upon us bringing untold misery and suffering—a war which no one wants and which we have done our

utmost to avoid. It is not a war against a country, but a war against a system which has already brought persecution, destitution, and despair to countless members of the German nation itself.

During the months it has been my privilege to be the Editor of the AVICULTURAL MAGAZINE I have considerably increased the links with other nations, by means of exchange of publications with scientific institutions and societies, and by requesting contributions from aviculturists in other countries. It is my sincerest hope that these new links, as well as the old, will hold, and though we are now inevitably cut off from the German aviculturists, I feel sure I am voicing the opinion of the majority of their colleagues in other countries in saying that the friendly regard for them will remain unchanged, and if they ever read these words they will know that no bitterness is felt towards them or towards the German nation. The present struggle is as surely for the salvation of Germany as against her leaders.

The bonds between the Avicultural Societies in the great British Commonwealth of Nations have always been close and sincere, but the immediate response to the mother country's need has united us even more surely. Backed by the Empire, Great Britain with her staunch ally, France, by keeping their pledge to valiant Poland, once more stand fast against the wreckers of the peace of Europe.

The future is uncertain and obscure, but in the end right must prevail. In the dark days that are before us we must never give way to the inclination to assume that there is no future at all and that all culture is lost for ever.

The AVICULTURAL MAGAZINE will continue so long as is possible, and it shall be my utmost endeavour that it shall not fail. Amongst the material in hand are some articles from German contributors and these it is my intention to publish, although I cannot submit the translations and proofs to the authors.

The efforts of the majority of people will be mainly concentrated on some form of national service, but continuous work without relaxation is not humanly possible. I hope, therefore, that members will endeavour to send me contributions for the Magazine, that they will continue to support the Society, and that we may strive not to lose the more beautiful and æsthetic side of life.

PHYLLIS BARCLAY-SMITH.

CARE OF BIRDS IN WAR-TIME

Many aviculturists who are called either to military or national service are finding it difficult to provide for their collections of birds, also those living in areas more vulnerable to air attack are anxious to transfer their rarer birds to safer quarters. An urgent appeal is made to all aviculturists to communicate with Mr. Seth-Smith, Curator's House, Zoological Gardens, London, N.W. 8, stating the number of birds they could take charge of in addition to their own collection, the species they are able to cater for, approximate charge, if any, best means of transport, nearest railway station, and any other details. Similarly those who are anxious for their birds to be cared for are requested to forward all details of their needs. Every effort will be made to avoid collections having to be split up and the proposed scheme of "transference" will be systematically organized in order to avoid birds having to travel greater distances than necessary.

Owners of birds are *earnestly requested not to have their birds destroyed* without inquiry as to the possibility of their being suitably cared for.

As far as can be ascertained the present stocks of bird foods are adequate and immediate steps are being taken as to the possibility of providing further supplies of insectivorous food in this country. We are in consultation with the Editor of *Cage Birds* and representatives of the Ornamental Pheasant Society, the Foreign Bird League, and other kindred Societies, in order that all may work together and that the closest co-operation in the efforts for the safeguarding of aviculture may be ensured. It is hoped thus that both the arrangements for the care of the birds themselves and for the supply of their food may be efficiently carried out, and that the needless destruction of what in many cases represents the work and efforts of years will be avoided.

This is a matter which concerns every member of the Avicultural Society in the British Isles and they are earnestly requested to come forward at once with offers of assistance and not to delay under the mistaken impression that there will be sufficient without their co-operation. In order to carry out the scheme effectively a complete register of offers of help is the first step.

BREEDING OF THE GOLD-BREASTED BUNTING

(*Emberiza flaviventris*)

By NORMAN G. ALLISON

In September, 1937, I obtained a true pair of Gold-breasted Buntings (*Emberiza flaviventris*), and during that winter they were housed indoors in a small flight. In the spring of the following year they were turned out into a fairly small aviary inhabited by a mixed collection of foreign and British Finches, but no attempt whatever was made at nesting.

Before continuing this rather interesting breeding experience, perhaps a rough description of this most attractive and inoffensive Bunting would be appreciated. The adult cock is a handsome fellow ; in size similar to the European Yellow Bunting, but of rather a slimmer type. His back is a rich chestnut, wings black edged with white and chestnut, and with a conspicuous white shoulder patch ; tail feathers black with grey edges and the outer feathers tipped white ; under-surface pure yellow with a distinct orange chest ; head, black with a fairly wide stripe of white extending from beak over centre of head, and also a white stripe over each eye and another below the eye crossing the ear-coverts. The hen is similar but her colour areas are more subdued, and the stripes on the head are considerably tinged with brown.

This particular pair are delightfully tame, readily taking mealworms from the fingers. They are partial to plain canary seed, eating little else, although insectivorous mixture has been provided.

In the early part of this year they were again turned out into the same aviary, although this is now situated in a London garden, ravaged with cats and strong winds, and entirely unsuitable for the successful breeding of foreign Finches. However, towards the end of May both birds were seen to be carrying small twigs and pieces of dried grass, but as far as I can tell the hen actually constructed the nest. This was built in a rack of dried grass about 4 feet high, and the hen laid her first egg on the 3rd June. She only laid two eggs, which were pale blue spotted and scrawled in a complete circle round the larger end with purplish-brown. The

first youngster hatched on the 14th June, the other following the next day. These were covered in white down. The next difficulty was to supply live food, which in London is not easily procured. At this period gentles seemed unobtainable so cut mealworms were offered, and also any other insects that could be trapped or scrounged. The supply, however, obviously was not large enough, for in addition to the Buntings every other bird in the aviary decided that live food was just what they desired, and on the 16th June both youngsters were found to be cold and badly in need of food and attention. In sheer desperation, therefore, I transferred them to a hen Border Canary, whose eggs were infertile. She kept them going for a further two days, but on Sunday, 18th June, both were dead. At this juncture, perhaps I should mention that so far as I could see the hen Bunting was feeding for at least two days from the crop, although the cock carried numerous live insects in the beak, which he fed to the hen on the nest.

The hen went to nest again in the same situation and laid her first egg on the 23rd June, followed by her second on the next day. These hatched on the 4th and 5th July respectively, so it will be seen that incubation lasts eleven days exactly.

After the failure of our first attempt, we decided that we would go all out to succeed in breeding probably the first Gold-breasted Bunting reared in this country. Arrangements were, therefore, made to procure a supply of live gentles every other day, and these were provided in a flat tin about four times daily, together with a plentiful supply of cut mealworms. Live ants' eggs were also provided, but these latter were ignored after a few days.

Towards the end of the first week I became very alarmed and extremely surprised to find that the hen Bunting, in addition to caring for her own youngsters, was also busily engaged in feeding four healthy Black-headed Siskin \times Canary Hybrids which were being reared by their mother hen Canary quite near to the Buntings' nest. It was a surprising sight to see the young Mules being fed with live gentles and cut mealworms, and at first I wondered how they would fare. However, they much appreciated this altered menu, but my consternation grew when it became apparent that the Bunting would only feed her own youngsters after she was quite satisfied that the Mules had had sufficient. These Mules were considerably older than the young Buntings.

I therefore decided on the 9th July to take the Canary away, together with her youngsters, and place them in a cage in the bird-room. I thought this arrangement would enable the Bunting to concentrate her efforts on her own youngsters, but I was disillusioned. Within an hour I found both babies thrown out of the nest. One was dead, but the other appeared to have a spark of life left, and by breathing on it in my hands I eventually succeeded in bringing it back from the Gates of Beyond. The hen Canary and her family were again returned to the aviary and the young Bunting to its nest where it continued to thrive, and I have a note that on the 11th July (seven days after hatching) its eyes were open and the breast had commenced to feather in addition to the wing quills breaking.

On the morning of the 15th July, i.e. eleven days after hatching, it was quite apparent that the hen Bunting had finished feeding, and I attribute this to the fact that the young Mules had left the nest and she was far more anxious about their welfare than she was of rearing this little rarity. My wife, deeply appreciating my keen disappointment and in sympathy with its sorry plight, volunteered to try her luck at hand-rearing. With some degree of persuasion it was fairly easy to get it to gape and then pop cut mealworms and gentles into its beak. No regular feeding times were decided upon, but whenever anybody passed food was offered. In order to give artificial heat the chick was placed in an ordinary Canary nest-pan with felt lining, which in turn was placed on a hot-water bottle in a cardboard box surrounded with pieces of flannel. This worked very satisfactorily and the chick thrived, although my wife found that a daily drop of cod-liver oil and water proved beneficial, inasmuch as this seemed to keep its motions in correct order. In addition, as it was seen that the hen Bunting had previously dipped cut mealworms into a jar of grit before feeding, we decided that we would follow Nature as much as possible, so at least once daily a few cut mealworms were dipped in a jar of sand and fed with the particles of sand adhering. It was noticed if this was not done several gentles passed completely through the chick still alive. When I first saw this I could hardly believe my eyes, but it was certainly a fact.

Apart from one or two scares in the shape of it refusing to feed, the hand-rearing did not present any great difficulty, and I am

happy to report that it is now (14th August) quite independent, and feeding lustily on my own insectivorous mixture and cut mealworms twice daily, the gentles having been discontinued. I believe it to be a cock, and in coloration he is a subdued edition of his mother. At twenty-one days he was running strongly on the bottom of an all-wire cage to which he had been transferred, and was attempting to pick for himself. At twenty-seven days he was eating and drinking.

The above is rather a detailed report of this hand-rearing, and is given for the benefit of any member who may be tempted to hand-rear Buntings, as I have no doubt that the method successfully adopted in this case would prove equally successful in rearing other Buntings. It will be interesting to know if this is the first instance of breeding the Gold-breasted Bunting in captivity in this country.

[Dr. Hopkinson writes : In AVICULTURAL MAGAZINE, 1930, 340, a Mr. Martin puts on record his breeding of *Emberiza flaviventris* in 1911 and says that a full account was sent to *Canary and Cage-Bird Life* at the time ; the one young bird reared was exhibited at Kettering Show when a year old.]

* * *

THE BROWN PADDA OR RICE BIRD

(*Padda fuscata*)

By ALLEN SILVER

On several occasions I have been asked whether I had ever seen this bird living, which I had not and I was pleased to be able recently (July, 1939) to do this and add it to my collection.

Most people know that Vieillot described and figured the Brown Rice Bird in *Oiseaux Chanteurs*, 1805, and that when vol. xiii *B.M.C. Birds* was compiled apparently five skins were in the collection, viz. : one E. Timor, one Semaio Timor, one Timor Coupung (Wallace Collection), one Gould (Timor Wallace), and one Timor (Forbes Collection), see p. 330 with the usual references of mention by ornithologists during the years 1805, 1817, 1849,

1850, 1861, 1863, 1870, 1874, 1879, the last Russ Stubenr (Magdeburg, 1879). Vol. i, p. 142, apparently refers to the instance (by a Mr. Beretta) of the species being on sale at 100 francs a pair. It was, however, a case of mistaken identity.

Figures of this species by F. W. Frohawk may be found in a *Monograph of the Weaver Birds* (1888), by Edward Bartlett, whom I knew many years ago as Curator of Maidstone Museum.

The description of the colour of the eyelids and bill in this work is erroneous, as these are livid and not the conspicuous pinkish feature as in *P. oryzivora*, the Grey Rice Bird or Java Sparrow. Regarding this Bowdler Sharpe was more careful and does not describe the colour of these areas.

The species differs from the other member of its genus in having a *leaden bill* shaded lighter at the cutting edges, darkest on top and at the lower sides of the under mandible, *eyelids leaden*. Feet dirty whitish with a smoky wash at sides. Eyes so dark brown as to appear black. Upper parts, dark snuff brown, lower throat, sides of neck, fore neck, and upper breast similar in colour. The white of the under-parts is separated from the brown of the chest by a band of black, the edges of these feathers being irregular and showing a little of the white under-parts between their tips. A white area is made up by feathers below the eye embracing the cheeks and ear coverts. Crown to nape dusky black merging into the brown of the nape. Chin and upper throat black; in both cases most dense near the bill. The plumage is close and has a noticeable sheen in good lights. Quills brownish black externally most brown. Tail blackish. Size slightly less than that of the Java Sparrow. Bill in the male not so swollen or broad as in that species, but there appears to be about the same sexual guides. The call note is very like, but quite distinguishable from that of the common bird. I have both flying in aviaries apart and can detect which are calling without looking.

It is to be hoped that Mr. Frost will contribute a few notes as to the kind of country (whether forest, open, or cultivated) in which the birds were observed and, if nesting, particulars of the site, nest, etc., about which little appears to be known.

My own pair already occupy at night a pailful of hay stuffed in an old empty wire cage but one can hardly expect such recent arrivals to think about house-keeping.

ROYAL ZOOLOGICAL SOCIETY OF SOUTH AUSTRALIA

BREEDING NOTES FOR THE YEAR ENDED 30TH JUNE, 1939

By R. R. MINCHIN, *Director*

Our records show that during the year ended 30th June last, 222 birds of 44 different species were reared in the Gardens and this does not include numerous Budgerigars and a few hybrids. Possibly the most outstanding achievement was the breeding of the Brush Wattle-bird (*Anthochaera chrysoptera*) which we understand is a first record, and only about the fourth species of Honey-eater to be bred in captivity.

The following, from our point of view, were the most interesting breedings :—

Egyptian Goose (*Alopochen aegyptiacus*). Six reared.

Senegal Blue-spotted Dove (*Turtur afer*). Fifteen reared.

Barred-shouldered Dove (*Geopelia humeralis*). Seven reared.

Plumed Pigeon (*Lophophaps plumifera*). Seven reared by one pair.

Talpacoti Dove (*Chamaepelia talpacoti*). Two reared.

Inca Dove (*Scardafella inca*). Seven reared.

Torres Strait Fruit Pigeon (*Myristicivora spilorrhoea*). One reared.

Bronze-winged Pigeon (*Phaps chalcoptera*). Two reared.

Namaqua Dove (*Œna capensis*). One reared.

Mourning Dove (*Zenaidura macroura carolinensis*). Five reared.

Australian Green-winged Pigeon (*Chalcophaps chrysochlora*). One reared.

Bourke's Grass Parrakeet (*Neopsephotus bourkii*). Eleven reared from two pairs.

Elegant Grass Parrakeet (*Neonanodes elegans*). Three reared.

Crimson-winged Parrakeet (*Aprosmictus erythropterus*). Five reared from two pairs ; two by one pair and three by the other.

Scarlet-chested Grass Parrakeet (*Neophema splendida*). Three pairs reared fourteen young.

Queen Alexandra's Parrakeet (*Northipsitta alexandræ*). Four pairs reared fourteen young. In all cases the male was allowed to remain with the hen during incubation and the rearing of the young. In the past three seasons we have reared forty-three of

these wonderful birds and it is our ambition to rear fifty in one season !

Turquoise Parrakeet (*Neophema pulchella*). Two reared.

Pileated Parrakeet (*Purpureicephalus spurius*). Three reared. The parents were housed in an aviary together with seven or eight others of their kind. No fighting took place as might have been expected, but no intruders were allowed near the log.

Red-collared Lorikeet (*Trichoglossus rubritorquis*). Two reared. In this instance also, several other Red-collareds, two Blue-mountains and a pair of Scaly-breasted Lorikeets were in the same cage, so the breeding pair by no means had the place to themselves. The food provided for our Lorikeets consists of bread and milk sweetened, and fruits such as pears, grapes, and apples.

Brown's Parrakeet (*Platycercus venustus*). Four reared. As is usual, these birds nested during our winter and the young have only been out of the log for about four weeks. The cock still feeds them occasionally and the hen has laid again and is incubating at the time of writing (10th July, 1939).

Brown Quail (*Synoicus australis*). Six reared.

Banded Rail (*Hypotaenidia philippensis*). Four reared. The parents were accommodated in an aviary some 35 ft. by 25 ft. wide and three other Banded Rails were in with them besides a number of Banded Plover (*Z. tricolor*) and several kinds of Ducks. A cup-shaped nest was built in some coarse grass growing near a cement pond. Four eggs were laid and when they hatched the young remained close to the nest for about ten days before they ventured forth into the open. Prior to nesting their diet consisted of raw mince-meat, grain, and green food in the form of lettuce. The young ate a little hard-boiled egg crushed up with biscuit-meal and chopped lettuce, but we think that the parents fed them mainly on flies which conveniently congregated around the meat dish. It was interesting to watch one of the old birds literally stalk a fly and having made a catch, return to the youngsters and hand it to them.

Brush Wattle-bird (*Anthochaera chrysoptera*). One reared. The nest was a cup-shaped structure placed some 9 feet from the ground in a banana passion-fruit vine which was growing over a trellis. We think that only one egg was laid, but even had we desired to do so, it would have been next to impossible to look into the

nest without making a disturbance. At any time these Wattle-birds are inclined to make a nuisance of themselves in an aviary by attacking the other occupants, but during the time that they were nesting they were furiously pugnacious. However, nothing could have been done to avert this as the aviary in which they bred is a very large affair made entirely of half-inch netting and measuring 46 ft. by 26 ft. by 24 ft. high, also it is fairly thickly planted with trees and shrubs, so it would not have been an easy matter to remove the smaller kinds of Honey-eaters that shared the aviary with them.

The staple diet of all our Honey-eaters is a simple mixture of one large teaspoonful of honey to one cupful of water and besides this they are given soft fruits such as pears and grapes. Brush Wattle-birds, together with others of the larger Honey-eaters will eat a little soft-bill food which is always before them and is also enjoyed by the Crakes and Masked Plovers which are in the cage. The actual mixture provided consists of :—

1 lb. Pea-flour.	1 lb. Oatmeal.
$\frac{1}{2}$ lb. Beef dripping.	1 lb. Dog biscuits (containing meat meal).
$\frac{1}{2}$ lb. Honey.	10 per cent. by weight wheat germ.

When the above are thoroughly mixed they form a dry crumbly mass containing a certain number of lumps which we remove by putting the lot through a mincing machine. It is extremely doubtful whether the Wattle-birds fed their young one on this item of diet, but they certainly eat a little of it themselves. As a matter of fact, it was so difficult to follow the movements of the old birds in this large aviary that we are unable to say exactly what the young bird was fed on, but it was certainly given insects for the parents were often observed catching them on the wing and returning to the nest. In such a large cage it would have been quite possible for them to have caught enough insects to feed a single young one. Meal-worms were given very sparingly as at that time we were short of them and other more valuable and newly imported birds were in greater need of them.

* * *

TWO BEAUTIFUL BIRDS
THE SCISSOR-TAILED FLYCATCHER
(*Muscivora tyrannus*)

AND
THE RESPLENDENT TROGON
(*Pharomacrus mocinno*)

By JAMES B. HOUSDEN

On my first visit to Mexico I found in New York Zoo gardens a friend whom I had known years before in London now in charge of the Bird House there. He gave me a great deal of information about the birds of Texas and N. Mexico, and told me to look out for two birds especially, the Scissor-tailed Flycatcher (or Fork-tailed Tyrant) and the Resplendent Trogon.

The first-named bird arrives in Texas about the middle of March, and returns to its winter home in Central America in October. I reached Southern Texas in March. There is no denying the beauty of this bird, which would well entitle it to the admiration of all bird lovers and is certain to be noticed wherever it goes. The long centre tail feathers it can open and close at will. Its appearance is most pleasing to the eye, when fluttering slowly from tree to tree uttering its twittering notes "Spee-spee". When chasing each other in play or anger these birds have a harsh note.

Extensive timber land is shunned by this Flycatcher : it prefers more open country, though it is often seen on the edges of woods. The first two I saw were flying in the open road and expanding the two outer tail feathers ; they looked very beautiful. Its social disposition is observed in the fact that several pairs will breed close to each other in perfect harmony, but they are rather noisy.

I was visiting a friend on the border of the city of San Antonio S. Texas, and found he had several pairs nesting in a mesquite tree. After dark they became very noisy and quite a nuisance ; he took a long pole and drove them away to another tree, and was amused when I told him I should like to have a nuisance of the same kind near my house in the Homeland.

Many years ago I bought a case of very beautiful birds at Stevens's Sale Rooms (the Resplendent Trogon). I think I had never seen anything more beautiful. Of all birds there are few which excite so much admiration as the male "Quetzal", the Mexican name. I tried in every way to get all the information I could before I went to Mexico. I visited the South Kensington Museum and found all the specimens there came from Mexico (they were old specimens). I was not successful in finding any of the Quetzals, but found a report from Vera Paz from a traveller in Guatemala. He writes: "My companions are ahead, and Filipe comes back to say that they have heard a Quetzal. Of course, being very anxious to watch one of these birds myself, I immediately hurry to the spot. I have not to wait long. A distant clattering noise indicates that the bird is on the wing. He settles—a splendid male—on the bough of a tree only a few yards from where we are hidden. It sits almost motionless on its perch, the body remaining in the same position, the head only moving from side to side. The tail is occasionally jerked open and closed again, and now and then slightly raised, causing the long tail coverts to vibrate gracefully. I have not seen all. A ripe fruit catches the Quetzal's eye and he darts from his perch, plucks the berry, and returns to his former position. A low whistle calls the bird nearer, the first Quetzal I have seen."

I have never been so fortunate as to meet with this beautiful bird in the wilds of Mexico or elsewhere; and I have only met one white man who has seen it in Santa Cruz. This gentleman I met in a most strange way. During the War I was serving in the army at Victoria Station; there I met with an officer who before the War was a butterfly collector in the West Indies, Mexico, and other parts of Central America, and learned he visited one of these parts every spring. I saw at his home near here his beautiful collection of butterflies. This is the only person I have met who has seen this bird (either white or coloured). He told me one afternoon he was very fatigued and lay down in the shade and went to sleep. He was awakened by the cry of a strange bird and saw one of the most beautiful birds in creation, a male Quetzal, which flew quickly away.

Some months since I saw a live Quetzal at the Zoo, brought home by a lady.

[It is with particular pleasure and interest that the above article is published, for Mr. Housden was one of the original members of the Avicultural Society, and one of those to whom the AVICULTURAL MAGAZINE owes its existence. Mr. Housden still maintains the active interest he has taken in the Society for over 45 years, and was present at the President's Garden Party in May last.—ED.]

* * *

THE GREY-NECKED BUNTING

(*Emberiza buchanani*)

By GODFREY DAVIS

In April last Nazir Mahomed, the local bird and animal "merchant", descended on me with a basketful of nestling Ring-neck and Alexandrine Parrakeets and a cageful of Buntings.

In March we had had the usual fall of spring rain and one of my peons who takes an interest in birds told me big flocks of Buntings would be coming in. They are returning on migration to more temperate countries; and here were some of the poor migrants. There were Black-headed Buntings for which, I suppose, one should not be sorry as the flocks commit such havoc in the grain fields, but in spite of that they are beautiful, if uninteresting birds, with their lovely deep yellow breasts, their black heads, and the upper plumage a deep orange chestnut. The hens were almost as modest in their colouring as hen Sparrows. But besides the Black-headed Buntings there were some other Buntings which I thought at first to be Grey-headed Buntings, but I found on consulting Blandford's *Fauna of British India* they were Grey-necked Buntings. According to Blandford the Grey-headed Bunting is a Himalayan species and is not generally found in the plains of India in winter. Moreover, the colouring given was not the colouring of my birds; and according to Blandford the Grey-necked Bunting is a winter visitor to the whole of the north-western portion of the plains of India, and that includes Sind, and our Indian birds probably summer in Turkestan and Persia. These Buntings were smaller than the Black-headed Buntings, were finer in build in every way, and seemed far less reconciled to

captivity. They squatted on the floor of the cage, their feathers puffed out, snapping with their beaks at other birds which came near. But they were pretty birds with their tawny reddish breasts, which Blandford describes as rufous, and a light yellow ring round the eye was most conspicuous, though Blandford calls it fulvous. He also says the birds have an indistinct black moustachial streak, but the colour of this appeared to me to be more of a dark olive, leaving two well-marked patches of yellow or I should say, I suppose, fulvous on the chin. But yellow or fulvous they were pretty birds with their grey necks and heads, a patch of rufous also upon the wing, reminding me of Redwings, and their slender tails, the outer feathers of which were white and reminding me in their slenderness of a Wagtail, but not, of course, as long. I therefore took those two Buntings from Nazir Mahomed and put them both in separate cages because I have found that wild birds do better if each one is in a separate cage (I am not, of course, referring to tiny things such as Avadavats which like company), rather than two or more in a larger cage where they worry each other with their movements. I use a very simple cage for taming the smaller birds. It is 22 inches long by 11 inches wide and 11 inches high with two perches resting upon the wooden bar 4 inches up from the wooden base of the cage and doors at each end and one at the side. It is an all wire cage with the usual wooden framework through which the wires pass; the bottom also is of wire with wooden bars, and there is a wooden base 2 inches high along the sides and at each end to protect the bird from the wind. It is a cage handy in size to move and to clean. When the tray is removed and the cage is placed upon the ground under the shelter of a wall or bush, protected from the wind yet accessible to the morning sun, I find a wild bird soon cheers up and if insectivorous may find insects on the ground on which the cage is resting, and, if a seed-eater, pecks at the seeding grass which protrudes through the wires at the bottom of the cage, when the cage is placed upon a patch of seeding grass.

So I treated my Grey-necked Buntings in this way, but one seemed ill with what, I suppose, the experts would call enteritis and which, I believe, comes from fright or shock or chills or improper food. So one of my peons caught grasshoppers and every morning dropped some of these, having been well pinched to keep them quiet, in the cages. The Buntings

would take them one by one, bang the larger ones on the floor of the cage as the Thrush bangs a snail on a stone, and eat them with every sign of satisfaction. The one that was not so well was given at first the tiny grasshoppers which could be swallowed at one gulp. It was also given maw or poppy seed which I find valuable in such cases. Both birds I found preferred paddy or unhusked rice and the lesser millet or bajri, a little grey-green seed about which I have written, to any other seed. I was told that Grey Buntings and the Black-headed Buntings were caught in nets under which bajri had been spread.

Soon the Bunting that was well began to sing. I think it must be the cock as its plumage is brighter all over than the other and when the sun shines on his breast, it looks almost red, though not the carmine of the Linnet.

His song was a typical Bunting song ; not, indeed, with the long-drawn note of the Yellow Bunting yet the same homely and not unpleasing sound. It reminds one of a hot summer day with the countryside drowsing in the summer sun. It is a short song of six notes, three, if I may say so, beginning his song and three ending it. In some of its ways the Grey-necked Bunting reminds me of a Chaffinch and of a Hedge-Sparrow, a Chaffinch in the way it erects its crest and of a Hedge-Sparrow in the way it moves and generally in its modest plumage and modest song, though it is somewhat daintier in its ways and has a slender tail. It seems essentially a bird of a temperate zone, a wanderer but for a brief space in Hindustan.

Blandford in his *Fauna* says little about these birds because perhaps it is so little known, but I have found them pleasant little birds ready to sing their homely little song time and again in the mornings and in the evenings, becoming tame in little more than a month and content with a frugal diet of bajri the lesser millet, and paddy, unhusked rice and grasshoppers. How useful are grasshoppers to the bird-keeper, but how difficult to catch as one grows old.

THE EARLY YEARS OF THE AVICULTURAL SOCIETY (IX)

By DAVID SETH-SMITH

(Continued from page 299)

Volume VII of the New Series (November, 1908, to October, 1909) commences with a good coloured plate by Goodchild of the King Bird of Paradise (*Cicinnurus regius*), accompanied by an article from the pen of Mrs. Johnstone. At that time Walter Goodfellow was collecting for this lady and was the first to introduce this species, as well as many others, to aviculture. Mrs. Johnstone noticed, what others have observed since, that when in an aviary the cock King Bird, when in colour, is very fully aware of his conspicuous appearance and “the instant he realizes he is being watched, there is a flash of crimson and he is gone”, but the brown-coloured hen “does not in the least mind being watched”. Curassows have not bred in the Zoo on many occasions, but in 1908 a male *Crax globicera* mated with a female of the so-called Heck’s Curassow (*C. hecki*), a bird with barred plumage which is undoubtedly only a mutation of *C. globicera*. Their nest-building, mating, and rearing a chick is described in an article by R. I. Pocock, which is illustrated with a line-drawing by Goodchild of the hen feeding the chick. Mr. Pocock concludes by drawing attention to the following facts connected with the nesting of these birds :—

1. The nest is built in a tree and consists of twigs.
2. The hen does not build it but leaves this task to the cock.
3. The latter takes no share in incubation, nor, so far as is known, in brooding or feeding the chicks. After making the nest his part in domestic affairs appears to be restricted to the expulsion of intruders.
4. The eggs, two in number, are white and rough.
5. The incubation period is twenty-eight days.
6. The wings of the newly-hatched young have distinct flight feathers which grow very rapidly.
7. The chicks leave the nest and follow the mother to the ground the first day after hatching.
8. She broods them on the ground for a few nights and at intervals during the day. After this they spend the nights perched by her side on a branch well above the ground, reaching their position by climbing.
9. They feed at first upon insect food and afterwards take to the diet of their parents.
10. For several weeks they do not peck food from the ground but take it from their mother’s beak, at ten weeks old they feed themselves and are also fed by her.

The late Heer F. E. Blaauw kept, for many years, a grand collection of living birds, as well as a few mammals, at Gooilust, Holland, and in this volume he describes the breeding of some of his birds in 1908. Wattled Plovers (*Sarciophorus pectoralis*) reared a pair of young, as did his Emerald Doves (*Chalcopelia chalcospilos*), the young of this African species "when still in the nest, feel a cold, wet day very much and often die if the sun is obscured too long". He found *Turtur humilis*, the Dwarf Turtle-dove, "the most prolific and most successful breeder of all the exotic doves." Ten chicks of *Gallus sonneratti* were successfully reared and proved to be five cocks and five hens. The first two clutches were reared under a bantam, while the Sonneratt hen herself hatched and reared the third. Amongst Waterfowl, for which Gooilust was celebrated, Golden-eyes, Orinoco, Ashy-headed, Ruddy-headed, and Sandwich Island Geese reared young.

An account, by Dr. O. Heinroth, of his successful breeding of the Nightjar is quoted from *The Field*. A pair of these birds "were kept in a large cage during the night and morning, but allowed the free flight of Dr. Heinroth's study or dining-room during the rest of the day. Pairing took place at the end of May and the male commenced to form a nesting-place on an peccary-skin rug in the dining-room, by twisting round and round and scraping with his feet. Eggs were laid on the 2nd and 4th June, the female sitting well, her place being taken by the male when she left to obtain food. Incubation lasted 16½ days, both eggs hatching successfully. The young were fed by both parents by the latter inserting their bills as far as the nostrils into those of the chicks. Both young were successfully reared as were a second brood of two, hatched in July". Surely an astonishing achievement. C. Barnby Smith contributes some very interesting notes on the Rock Ptarmigan (*Lagopus rupestris*), and the Harlequin Duck, while Sir William Ingram contributes an account of the first specimen of Prince Rudolph's Bird of Paradise to reach this country.

That some of the Birds of Paradise are capable of withstanding a considerable amount of cold is proved by Mrs. Johnstone's experience with a hen New Guinea Rifle Bird (*Craspedophora intercedens*) which escaped from its cage in the autumn of 1908 and was not recaptured for ten weeks. Mrs. Johnstone writes: "We have had 17 degrees of frost and cold, wet nights, and for

ten weeks this bird has lived in the woods and is apparently none the worse. After this I think we over coddle our Paradise Birds, and next year I believe they could be wintered in a cold aviary without heat. This bird was freshly imported and had been caged for months before it escaped.”

A coloured plate of the Waxwing and another of the egg of this species accompanies an article by W. H. St. Quintin. He never quite succeeded in breeding these birds successfully, but the egg figured was the first and is probably even now the only one ever laid in captivity. Mrs. Reid contributes an article on the breeding of the African Grey Parrot in captivity in Madeira. The nest was in a small barrel fixed on its side inside a box, open in front and high up in one corner of the aviary. On the bottom of the barrel was a good thick layer of sawdust and, before laying, the hen covered this with soft down which she took from her breast. “On the 3rd August the pair of birds were noticed to be feeding each other and very affectionate. I therefore began using much lime, old mortar broken up, and cuttle fish bone, which was grated all over their food. On the 6th a nice sound egg was laid ; on the 8th a second ; after an interval of five days a third. The hen sat steadily from the very first, only leaving the nest for fifteen minutes in the morning, generally bathing then, and for another ten minutes in the evening before sunset. The male bird fed her constantly and most regularly and was extremely good and devoted. On the 6th September a chick was hatched ; on the 7th another ; and the third chick did not come out till five days later, when I was beginning to feel sure the third egg was bad.” The birds’ normal food was Indian corn soaked for twenty-four hours, then well washed and given damp ; also hemp seed with a sprinkling of canary and millet and a spoonful or two of rice, tapioca, or any other milk pudding that was going, with plenty of ripe banana of which they were very fond. For the first fortnight the parent birds fed the young on soft food only, but later gave much hemp, some canary, or millet and ground monkey nuts. The youngest chick was neglected by the parents and died, when it was found to be deformed. The other two were very strong, healthy birds, but did not begin to come out of the nesting log until the middle of December.

It seems strange that the breeding of Grey Parrots is such a rare

event, but this may be partly due to the fact that males seem to be very scarce, and few people keep more than single individuals ; but under proper conditions there should be no great difficulty in breeding them in this country.

Hugh Wormald writes on the Californian Quail and illustrates his article with some delightful drawings of this lovely species in its various attitudes. He recommends this bird as "very hardy, readily tamed, easily kept, and an extraordinarily prolific breeder". But unless kept in a very large aviary the young are best reared by bantams, the best type, according to Mr. Wormald, being a cross between the Jungle Fowl and Silkie. A single hen Californian Quail in his aviary laid an egg a day from the 3rd April, only missing three days, until she had laid 144 eggs, very nearly all of which were fertile.

Aubyn Trevor-Battye gives a delightful account of his Great Bustards, birds of which he was particularly fond. He was a great naturalist as was his cousin Edmund Meade-Waldo, and they loved the country and its wild life. What can be more charming than Trevor-Battye's note on the Water Rail.—"If you put on your best protective resemblance clothes, have no white linen showing, sit down in the likeliest place and remain quite still, then you have a chance [to see one]. Should you be fortunate you will before long notice here and there a bit of grass or reed close to the water moving a little, and then may catch momentary glimpses of a small object threading about through the runs in the herbage. If you did not know the Rail and its ways you might easily take this for a water rat. As the day wears on the Rails begin to cry or call, and you will seldom have heard in the stillness of a summer evening a more startling sound. The voice of the Water Rail is amazing in volume and variety, out of any proportion to the size of the bird. It is quite impossible to attempt to phrase it syllabically. There are squeals, sometimes with a shiver in them, there are gurgles, and there are grunts."

W. E. Teschemaker records the successful breeding of the Cinnamon Tree Sparrow (*Passer cinnamomeus*) for the first time in the British Isles, and T. H. Newman supplies an excellent article, which is illustrated by a coloured and two black plates, on the breeding of the handsome Bartlett's Bleeding-heart Pigeon. An interesting account is given by Norman F. Cockill of the breeding

in an aviary in Calcutta of the Jungle Bush Quail (*Perdica asiatica*). I kept this species many years ago and found it very wild, and although several other species of Quail bred successfully in my aviaries, this failed to do so.

A good plate by Goodchild of the Verditer Flycatcher (*Stoparola melanops*) is accompanied by an article from the pen of E. W. Harper. R. I. Pocock writes on the Display of the Cock Ostrich as observed at the Zoo; Butler discusses the Pintailed Nonpareil (*Erythrura prasina*) and the difficulty of keeping it for any length of time. W. E. Teschemaker writes on the breeding of Pelzeln's Saffron Finch (*Sycalis pelzelni*), and the Rufous-necked Mannikin (*Spermestes nigriceps*). Reginald Phillipps describes the breeding of the Blue-breasted Waxbill and W. R. Fasey of the Blue-winged Grass Parrakeet (*Neophema venusta*).

I had edited the Magazine for $7\frac{1}{2}$ years and now felt obliged to resign from the post on taking up my duties as Curator at the Zoological Gardens, though some few years later I was persuaded to take it on again. The volume under notice is partly edited by me and partly by Frank Finn.

(To be continued)

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BREEDING OF THE BLACK-CRESTED FINCH

(*Lophospingus pusillus*)

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

This attractive little Finch was, as far as I am aware, first imported in 1937. A considerable number came over, suggesting that the species is not rare in its habitat—though possibly markedly local.

I pointed out in these pages that the British Museum description is inaccurate in that the sexes are described as similar.

In point of fact, the male and female are distinguishable to the most casual of observers. The male is a study in black, or very dark brown on a groundwork of grey; in the female the blacks

are replaced by a rusty brown, and she has no dark "chin" patch. The crest is equally well developed in both birds—but the above sexual colour distinctions apply to the crests also. In size this little Finch is about as large as a Great-Tit, but much resembles the Crested-Tit in coloration and outline. This especially applies to the female, but here the similarity ends; these birds have all the staid demeanour of a true Finch and never indulge in the acrobatics common to the *paridæ*. Last year my birds attempted to nest but I only discovered this on finding an exquisitely built cup-shaped nest built in a large *Weigelia* (now known as *Diervilla*). I had no idea that such *r  cherch  * building materials existed in my aviaries—the outer part of the nest was composed of a mixture of lichen and fine moss, inside this a layer of fine grass or hay, and finally a lining of very fine fibre of some sort. The whole nest was a minute affair about 2 inches in diameter externally, the cavity being little more than 1 inch across. This may be accounted for by the fact that these birds apparently only lay two, or possibly three, eggs. In the October number of the *Avicultural Magazine* for 1938 Mrs. Cholmeley describes a partial success in the breeding of these birds but it will be seen that I am not in agreement with her as to the colour of the eggs or of the young chick when first hatched. The colour of eggs, however, is known to vary greatly in the same species.

My birds spent last winter in a large cage containing a mixed collection, chiefly Grass Finches, and enjoyed a little heat, the temperature seldom falling below 45  . They were quite inoffensive in this cosmopolitan crowd and were turned out into a large and well planted aviary in April.

By 6th May a nest had been completed and contained two eggs, rather globular in shape, size 10 mm. by 7 mm. Their ground colour was a greyish white with the minutest of evenly distributed black spots; in addition to this there were a few larger black spots at the blunt end of the egg. Both birds took part in nest building, at least the cock pretended to do so, constantly getting in the way with coarse pieces of hay which did not appear in the composition of the nest. He reminded me very forcibly of the circus clown who tries to be so very helpful in clearing the arena for the next turn and who, in fact, only delays the other workers.

On this occasion the site chosen was a thick privet bush, and the nest was much as last year's, though possibly not quite such a fine work of art.

I never saw the male incubating, but when the chicks hatched at the end of twelve days he made up for any past deficiencies.

I did not inspect the young until a couple of days after the hatching ; they were by then very well grown and covered with black down, crops bulging with canary and millet seeds. During these early days the male became almost tame in his anxiety to get mealworms and finally I had to contrive a little feeding cage which he could enter, but in which the bars were too close for the larger insect lovers which shared the aviary with the Black-crests.

At ten days the chicks were well quilted and looked much like House Sparrows. Six days later both left the nest (3rd June).

4th June was a day of holiday and merry-making in my old home, but this year calamity overtook my little family.

An infuriated Thrush which could not get at the Black-crests' supply of insects savagely attacked the little hen as she was leaving the little feeding cage, and killed her instantly in front of my eyes before I could get into the aviary.

The cock, much too busy to notice or mourn his widowhood, simply redoubled his efforts to such good purpose that the two young, who could fly strongly from the first day, were feeding and independent within a week of leaving the nest. At sixteen days both chicks were drab counterparts of the hen with very short tails and no crests. Both these appendages quickly began to grow and at two months neither was distinguishable from an adult hen ; I feel certain that they are both of this sex.

Had the old hen been murdered a week earlier, when she was still brooding her young, these notes would never have been written. A very easy species to breed but I am not sure that success could be attained without the use of mealworms, or ants-eggs in season ; gentles were completely ignored.

BREEDING THE BLACK-WINGED PLOVER

(Stephanibyx melaopterus)

By ALFRED EZRA

Mr. Webb brought six of these very attractive Plovers in May, 1933. They were found by him in the Highland plains, below the Aberdare mountains at an altitude of 8,000 feet. According to Webb they were very partial to the paddocks where cattle are herded at night. A very good photograph of this bird appeared in the *Avicultural Magazine* of 1933 on page 194.

Two of the six birds were kept at the Zoo, and the other four came here, and were turned out in one of the large aviaries, which housed a good many other birds including some Avocets and Stilts. They were exceedingly wild, and one actually killed himself by constantly flying against the wire netting on top of the aviaries. The other three gradually settled down and this year have become almost tame. On 31st May two eggs were seen on a large stone at the side of the pond. There was no nest made, and it was only the hollow in the stone that prevented the eggs from rolling into the pond. On 9th June one egg disappeared, and this, I believe, was eaten by a pair of Madagascar Partridges. The Partridges were instantly removed into another aviary. On 28th June one young was hatched, and we caught the old birds up and put them with the young one in a small aviary about four feet square. The birds did not like being put into this small aviary, and kept trampling on the young one and taking no notice of it. We then turned them out in the large aviary again where they were perfectly happy and took great care of their chick. The old birds were seen continually taking bits of minced meat from the sleeping quarters, where the food is placed, to the outside flight to the chick. When fourteen days old the young one was often seen in the sleeping quarters, eating from the food tray. The young one was fed principally on meat and a few mealworms, and was no bother at all to rear. When born the young bird was identical to all other young Plovers. The colour of the chick when a month old was a greyish fawn on the upper parts, underparts dirty white, beak and legs slate coloured. The eggs were fawn coloured splashed with large black spots. I believe this is the first time this Plover has been bred in captivity.

FURTHER NOTES FROM AUSTRALIA

By SYDNEY PORTER

(Continued from page 221)

Of all the birds in Australia none are more charming than the Blue Wrens ; they are indeed the fairies of the avian world. Few birds I have ever met with on my travels possess such charm and beauty ; they have characteristics all of their own which put them apart from other birds. I had seen plenty of pictures of them and also stuffed specimens in museums but it was like comparing a mummy to a ballet dancer ; they couldn't be compared to that tiny dancing atom of intense turquoise blue which is such a familiar creature in Australia. In the public parks, in back gardens, or in the vast forest lands he is always the same, a dancing wraith-like creature of ethereal blue.

Like our own bird at home, but only half the size, and twice as active, he is always on the move with his long thin tail kept upright at right angles to his body.

The Colin MacKenzie Sanctuary near Healsville swarmed with these dainty little birds and I saw more fully plumaged males there than anywhere else. They were everywhere and very tame, so one was able to observe them at one's leisure. They are the embodiment of perpetual motion as they scurry through the low vegetation or dance along the ground, the cocks sometimes finding time to mount the top of a bush and sing their short trilling song very much like that of a Reed Warbler.

The dull coloured females are charming in a quiet way and have a very alert appearance with their long tails cocked up over their backs. I saw the birds feeding their young in January. These resemble the hen bird and it is three years, I think, before the male gets his plumage. He has an "undress" period when he goes out of colour and resembles the hen. Books tell us that after the cock bird has been in colour for three successive years he retains his blue plumage. According to friends who have kept these birds for years this is not so, and the male always has an eclipse plumage. Around Lagoon Station all the birds were in the eclipse plumage, and I did not see one male in colour. One would have thought that there would at least have been one over the period in which the bird is supposed to retain its coloured plumage.

By a pond in a district some miles from the homestead I made the acquaintance of the most superb of all the Blue Wrens, if not the most beautiful of the Australian birds, the Black-backed Blue Wren. Once when I was in Fiji I met with a tiny fish living in the hot pools on the coral reefs and I thought it was the bluest thing I had ever seen. From a distance it looked like a small brilliant blue electric light, it was the most intense "living" blue I had ever seen. But when I saw this tiny ball of brilliant blue feathers hopping and flitting in the low grey herbage I thought it was even bluer than my shining blue fish of the coral reefs in Fiji. Of all the birds I had ever seen this was the loveliest. It had a large moustache-like patch of wax-like egg-shell blue which stood out from the side of the head; the rest of the body varied from cornflower to delphinium blue with a thin black crescent on the breast and a broader one on the nape. There were a great many females and uncoloured males about and these, too, were lovely with their delicate grey-brown bodies and their long upstanding lavender-blue tails.

These birds live in small colonies or family parties in the low dense bushes, flitting one after the other in a ceaseless round of activity from one bush to another.

I saw the male of one species which I could not recognize; he was like a dull edition of the common bird, but with a brilliant blue moustache-like tuft which stood at an angle from the body, and his back was reddish chestnut. This bird was followed by a whole host of youngsters who seemed to harass the father in the most embarrassing manner, all crowding around him in his search for insects, and as soon as he got one, there was a "general post".

There are fourteen distinct species of these lovely Wrens in which blues of varying shades predominate in the plumage; some are marked with red, others white, and one with orchid-purple. When once established they are easy to keep in captivity and have in years gone by been bred in a London back garden!

Around the dam near the homestead at Lagoon Station, which by the way was a perfect Eldorado for birds, one saw odd pairs of that beautiful little wader, the Black-fronted Dotterel, running along the water's edge with great rapidity. One is almost sure to see a pair of these birds around any small dam or pool in the interior; usually one pair is in possession of such a small sheet

of water. These birds are often found at great distances inland.

The tiny Grebe, known as the Hoary-headed and locally as the Dabchick, is quite unlike our well-known bird. It has a longer neck and swims along with its hind parts held high; in fact, from a distance, it resembles in shape a miniature cygnet. I found it common on the smaller ponds and dams in South Australia where it was very tame. As soon as one approached, the birds dived, but if one settled down to watch them they soon became used to one's presence and resumed their usual activities. They are quite the prettiest of the smaller Grebes.

There was also another small species of Grebe to be seen on the ponds, the Black-throated. This is about the same size as the Hoary-headed, but not so rotund in build, and of a very dark colour with a white mark on the chin and sides of the face. This bird was also common and frequented the same ponds as its congener. I saw one pair with young which were heavily striped longitudinally.

Our old friends the Zebra Finches were everywhere; around the wells and dams there must have been thousands of them and even if not seen, one soon knew of their presence by the tinny trumpet-like song of the cock birds hidden in the low bushes. A great many of the birds I saw were youngsters, so it must have been just after the breeding season. Around the homestead they nest in all manner of places like our sparrows at home.

Around the house and farm buildings a pair of Pied Grallinas or Magpie Larks lived, and had their nest in a nearby tree. These birds have no connection with either Magpies or Larks and they are one of the most striking and conspicuous birds in Australia, at home either in the far interior or in a suburban back garden. Their nest is most extraordinary and resembles a thin and shallow bowl made of mud, strengthened with hair, and placed on a horizontal limb of a tree. So perfectly spherical is it that it looks as if it had been turned on a potter's wheel.

These birds are found around farms and their presence is looked on with favour by the farmers, as they are supposed to eat the snails which carry the liver fluke, a deadly parasite of sheep. The Grallinas have very loud, powerful, and musical voices and a very peculiar flopping flight. They are seldom found far away

from water where they can find the mud with which to construct their unique nests. The Pied Grallina is the size of a Jackdaw but slimmer and strikingly marked with black and white.

Another very noticeable bird, but rather an uncommon one, is the Chestnut-crowned Babbler which I saw when we were driving sheep near Mr. Gebhardt's place. The Australian Babblers are very conspicuous birds which the proverbial blind man in a dark room could hardly miss. If one is to judge by the number of names in the vernacular, these birds must have made an impression on the Australians, "Happy Jack," "Happy Family," "Twelve Apostles," "Hopper," "Jumper," are but a few of the names these birds are known by and which give an indication of its character.

Exceedingly noisy and active, the birds spend most of their time bustling about the low herbage and on the ground in small flocks or family parties, being extremely loquacious all the while as if to call attention to their activities, as much as to say, "Hello, there, look how busy we are, keep out of our way, we haven't a moment to spare!" Not only is this bird of very striking demeanour but its plumage is equally obtrusive. Larger in size than a thrush, it has a big fan-shaped tail tipped with white which it is always displaying. In colour it is a rich brown conspicuously marked with white, the head being bright chestnut edged with white. This is the brightest of the four so-called Babblers of the genus *Pomatorhinus* which is confined to Australia.

Wood-Swallows were common in the Lagoon Station district and I saw several species both there and in the districts around Adelaide. Although possessing no brilliant colours they are extremely beautiful birds and their habits make them very conspicuous. Like Flycatchers, they take up their stand on the top-most branch of a tree or other point of vantage and make excursions after winged insects. They rather resemble large thick-set Swallows and their flight is very swallow-like though they are not related to these birds. They have a habit, when alighting, of jerking their large slightly forked tails up and down. The food of the Wood-Swallows consists entirely of insects taken on the wing. About Lagoon Station I noticed the White-browed, the most beautiful of these birds, whose plumage is a combination of soft greys, black, and white with a rich chestnut breast.

I also noted the Masked Wood-Swallow, a rather duller bird, and about Adelaide I saw the Dusky Wood-Swallow. Of these latter I saw a family party, the parents and young ; the youngsters obviously not long out of the nest. Once the Wood-Swallows were well-known birds to aviculturists in England but they never seem to come over now, very probably they get sent to foreign countries !

The Welcome Swallow was also noticed, a common bird in Australia and very much like the European one.

There were a good many species of Honey-Eaters in the district and one of the most conspicuous was the Spiney-cheeked, so called because of the white spine-like quills on the cheeks. The bright pink beak is a most conspicuous feature of the bird. It is a fine songster as indeed are many of the Honey-Eaters. One day when I was out in the bush I came upon a pair of these birds, and as there were a good number of other birds in the vicinity I sat down to watch them. The cock bird was a bit shy at first, but he was rather curious and generally eyed me over. Gradually he came closer and started to sing ; he came nearer and nearer, most obviously singing for my benefit, until he was but a few feet away and was by this time singing his best. This is the first time that a wild bird has sung for my benefit which he evidently did. The bird's whole demeanour was that he wanted me to appreciate his fine vocal efforts, which I certainly did. The song is almost exactly like that of the New Zealand Tui and in fact I have heard both birds singing together and have been unable to tell the difference. The Spiney-cheeked Honey-Eater was recently bred by Mr. Harvey and this is to my mind a great achievement. This Honey-Eater is not uncommon in the scrub regions of the interior, but gets rarer towards the coast.

We used to watch in the evenings the Bronze-wing Pigeons coming in to drink at the pools ; unfortunately these birds are very extensively shot and consequently are very shy. The Common Bronze-wing has a swift and noiseless flight in strange contrast to the loud clattering flight of the Crested Bronze-wing. They come in ones and twos, alight some distance from the water, watch for a time to see if all is well, then make little sudden advances, stopping every few yards, then take a hurried drink when they reach the water and are quickly off again.

Another very noticeable bird seen was the White-browed Tree-Creeper, a bird more than twice the size of the European Tree-Creeper. It is strikingly coloured and finds all its food on the trunks of the trees, where it is always seen actively engaged in searching the crevices in the bark for insects. I saw many of these birds and was surprised at their tameness.

On the scrub lands we saw odd specimens of the Grey Shrike Thrush, a rather sombre coloured bird with a very fine song.

Numerous Chats were seen ; we had hoped to see the wonderful Crimson Chat, one of the most brilliant of Australian birds ; it was found in the vicinity frequenting the flat bush-covered areas where it makes itself conspicuous by perching on the tops of the bushes. This species is largely nomadic and unluckily I missed seeing them while at Lagoon Station. The Chats which we did see were the White-fronted, a bird I had already seen on Swan Island off the Victorian coast. Other birds seen in the district were Sparrow-hawks, which were very common ; Stubble Quail, too, were seen, but these are difficult birds to study. One meets with them when out riding and they fly up with an explosive flight just from under the horses hoofs and hurtle themselves into the vegetation some distance away.

Unfortunately I didn't stay very long at this interesting place. I had to go back to Adelaide to catch a steamer to Sydney as I had some livestock with which it would have been impossible to travel such a long distance on the railway.

(To be continued)

* * *

NOTES

IMPORTANT NOTICE

CHANGES OF ADDRESS OF SECRETARY AND EDITOR

Until further notice the address of the Secretary, Miss Knobel, will be :

Lindeth Lodge,
Peaslake,
Surrey.

And the address of the Editor, Miss Barclay-Smith :

51, Warwick Avenue,
London, W. 9.

CANCELLATION OF EXPEDITION TO LECKFORD

The Secretary has received the following letter from Mr. Spedan Lewis :
" I am very sorry indeed but I am afraid that in present circumstances I must ask to be allowed to cancel the invitation to the Avicultural Society for the 14th October.

" If I am able to keep birds when the war is over, I will not forget that this invitation is outstanding."

SOCIETY'S GREETING CARD

It is regretfully announced that it will not be possible to publish the proposed Greeting card.

HOMING BUDGERIGARS

In the wild state Budgerigars are great roamers, flying in large flocks from one district to another as the grass-seed ripens. So they are by nature unsuited to naturalization in any one particular district. However, in a letter in *Cage Birds and Bird Fancy*, Lord Tavistock claims to be able to produce a " homing " strain. He says that " after many generations have been reared in confinement, our present day aviary strains yield a higher and varying percentage of stayers among old breedings. . . . The normal young Budgerigar, when free to do so, leaves his birth-place as soon as he is completely independent of his parents, or within the first few weeks of his independence, and only about ten per cent remain after a month, when their ceres begin to take on the adult colour and the danger period is past. Youngsters which have passed this test are the foundation stock for a strain of real ' homers ', for I find that *their* offspring yield about 50 per cent of stayers and there is little doubt that every succeeding generation will give improved results."

The other 50 per cent would partly account for the many escaped Budgerigars that one hears of, which are generally discovered being eaten by the cat or in a dying condition through lack of their accustomed supply of seed.

* * *

CORRESPONDENCE

TWO UNFAMILIAR SEEDEATERS

Early this year Mr. H. C. Otto Fockelmann kindly gave me two yellow Seed-crackers or Cuckoo Weavers (*Anomalospiza imberbis*) from East Africa. In earlier days this bird was included with the Serins as *Serinus* or *Crithagra imberbis*, both by Reichenow (*Die Vögel Deutsch Ost-Afrikas* and in the *B.M.C. Birds*, vol. xii, p. 355.) A characteristic coloured figure of it may be found among the Serins on pl. xii facing p. 288 in *Fremdländische Stubenvögel* (Karl Neunzig) under the term "Dickschnabelgirlitz" but the correct scientific name is used.

The genus is listed page 784 in *Systema Avium Æthiopicarum* (W. L. Sclater), pt. 2, 1930. I am afraid both are males. It is a silent statuesque bird sitting very upright when perched either on twigs or large leaves and an easy bird to photograph. In demeanour and form it has nothing in common with any Serin and in no way behaves in the fussy manner common to typical weaver birds of the Euplectes or Ploceus groups.

From the same source I obtained two (unfortunately both males) Sparrows (*Sorella emini*). This Chestnut Sparrow which is mainly clad in rich deep chestnut is a cheerful active species hailing from the Upper White Nile to Uganda and Kenya, etc. Full description of the species may be found on p. 332 *B.M.C. Birds*, vol. xii, and the genus is listed p. 726, pt. ii, in Sclaters systematic list of birds of Africa, 1930. I have remote hopes of obtaining females for both species.

ALLEN SILVER.

BIRDSACRE,
LLANTARNAM, MON.

* * *

NESTING OF NEWLY SHIPPED GEESE

A most unusual occurrence this year was the nesting of a pair of Greater Snow Geese within a week or two of their receipt by us from Mr. Spedan Lewis. I have never heard of such an occurrence with Geese before. They usually take a season or two to settle down before nesting. Possibly some of your other readers have had similar experiences with newly shipped birds. It would be most interesting to know.

C. L. SIBLEY.

SUNNYFIELDS FARM,
WALLINGFORD,
CONNECTICUT.

[The Editor accepts no responsibility for opinions expressed in Correspondence.]

NEW MEMBERS

MICHAEL BRATBY, Graythwaite, Hale, Cheshire.

GEORGE ERNEST SMITH, Woodthorpe Garage, Leigh Hill Road, Cobham, Surrey.

EDW. J. WILMINK, Box 36, Campbellford, Ontario, Canada.

ALEXANDER MILLS WILSON, Middlemoor, Presteigne, Radnorshire.

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The charge for Members' advertisements is ONE PENNY PER WORD. Payment must accompany the advertisement, which must be sent on or before the 20th of the month to MR. T. H. NEWMAN, 46 FORTY AVENUE, WEMBLEY PARK, MIDDLESEX. All members of the Society are entitled to use this column, but the Council reserves the right to refuse any advertisement they consider unsuitable.

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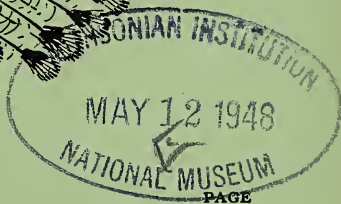
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SURREY.

AVICULTURAL MAGAZINE



CONTENTS

The Masked Grassfinch (<i>with coloured plate</i>), by DAVID SETH-SMITH	343
Aviculture in War Time	344
The Birds at Clères in 1939, by J. DELACOUR	347
Further Notes from Australia, by SYDNEY PORTER	351
Breeding British Birds, by V. A. V. CARR	360
Breeding of Ruddy Flamingoes	363
Successful Rearing of Zoe's Banded Fruit Pigeon, by ALFRED EZRA	366
Some Rearing Experiences of an Owner of a Small Collection, by FRANCES E. MATTHEWS	367
The Early Years of the Avicultural Society (X), by DAVID SETH-SMITH	369
Notes	373
Correspondence	374

THE AVICULTURAL SOCIETY

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Members are requested to notify the Hon. Secretary of any change of address.

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London, W. 9.

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FURTHER NOTICE





John Bale Sons & Danielsson, 154 London.

Masked Grass-Finch.
Poëphila personata.

Upper figure, ♀., centre, ♂., lower juvenile.

AVICULTURAL MAGAZINE

THE JOURNAL OF THE
AVICULTURAL SOCIETY

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THE MASKED GRASSFINCH

(*Poëphila personata* Gould)

By DAVID SETH-SMITH

The Masked Grassfinch inhabits North-Western Australia and has, from time to time, been freely imported and proved a comparatively hardy and very desirable aviary bird. It breeds freely, making the usual domed nest, either in a bush, nesting-basket, or box. It is less quarrelsome than either the Long-tailed Grassfinch (*P. acuticauda*) or the Parson Finch (*P. cincta*), though it will readily produce hybrids with either.

This species belongs to a group of closely related Grassfinches consisting of the Parson Finch of the eastern parts of Australia, the Long-tailed of the north and west, the White-eared (*P. leucotis*) from Northern Queensland and the Masked.

Years ago the only one we ever saw was the Parson Finch, but the importation of this has practically ceased for several years past. Then came the Long-tail in its two forms, the Yellow-billed (*P. acuticauda*) and its red-billed race (*P. hecki*). The very beautiful White-eared (*P. leucotis*) has been imported on very few occasions. It was the subject of a very fine coloured plate in our Magazine for 1898, illustrating an article by the late Reginald Phillipps. I have not seen a specimen since those early days. *P. personata*, though a very charming bird, is not so beautiful as its White-eared cousin of the north-eastern parts of Australia.

AVICULTURE IN WAR TIME

CO-OPERATION BETWEEN SOCIETIES AND THE TRADE

On the suggestion of the Editor of the AVICULTURAL MAGAZINE, a meeting was held on 21st September at Dorset House, London, by kind invitation of the Editor of *Cage Birds*, Mr. E. R. W. Lincoln, in order to discuss the whole question of aviculture in time of war. The meeting was largely attended by representatives of the Societies concerned, and by leading members of the trade in bird foods, etc. Unfortunately, Mr. Alfred Ezra, President of the Avicultural Society, and the Secretary, Miss Knobel, were unable to be present; and the Editor, Miss Barclay-Smith was prevented at the last minute from attending by being called for war work. The Society, however, was well represented by Mr. David Seth-Smith. Mr. E. R. W. Lincoln presided over the meeting, and the main points discussed were (1) the state of existing food supplies; (2) facilities of economic distribution of foodstuffs; (3) evacuation of valuable stocks to safe areas; (4) special activities to be undertaken by leading societies in time of war; (5) breeding mealworms and other live foods. A lengthy discussion on the first two items took place. Representatives of the trade stated that there were adequate supplies in the country for the next few months and that there were a number of seed-producing countries which would be able to maintain the supply providing transport was available. It was considered by the meeting that the distribution of stocks to retailers was a matter which should be dealt with by co-operation between leading firms in order to save petrol and to ensure that each district had adequate supplies; and representatives of the trade stated that they were already taking steps to prevent hoarding. In summing up it was agreed that there was at present no shortage of raw material, that there was a general desire not to interfere with the small trader, and that it might be necessary, in order to avoid overlapping, to pool transport. This question would be further discussed at subsequent meetings. In reply to Mr. Seth-Smith's proposal that some scheme for breeding mealworms on a large scale should immediately be put forward, Mr. Harris (representing Messrs. De Von and Co.) stated that the majority of imports of

mealworms was from Holland. The meeting then discussed the possibilities of breeding mealworms in Great Britain, but it was felt that it should not attempt to take steps which might harm the trade of dealers here and breeders in a neutral country.

The representatives of the Avicultural Society, the Foreign Bird League, the British Bird Breeders Association, and the Budgerigar Society reported on the steps being taken by them to secure volunteers to take charge of birds of those called for active or national service, and also for the evacuation of birds from areas vulnerable to air attack; these societies will all co-operate in this scheme.

The meeting concluded with a vote of thanks to the Editor and proprietors of *Cage Birds* for organizing the meeting and providing the room, and also for their offer of facilities for future meetings of a similar nature to deal with any emergencies that may arise.

CARE OF BIRDS IN WAR TIME

In response to the appeal in the October number of the AVICULTURAL MAGAZINE several offers of accommodation have been received and a register containing all details is being kept. Members desiring to take advantage of these offers are requested to communicate with Mr. David Seth-Smith, Curator's House, Zoological Gardens, London, N.W. 8, who will supply all particulars.

Warm thanks are expressed to the members of the Society who have thus come forward in order to help their fellow aviculturists.

THE MAINTENANCE OF COLLECTIONS

The spirit shown by Monsieur Jean Delacour, who, as he states in his article published in this number, is for the second time in a quarter of a century making every effort to maintain his collection (despite the fact that he is serving in the French army and having to contend with the greatest difficulties), is one that should animate every true aviculturist. The inclination to disperse collections instantly and without foresight is certainly one that should be curbed as far as possible, even though the difficulties may at the moment appear unsurmountable. In his letter in this number concerning the maintenance of stocks of rare waterfowl,

Mr. Moody puts forward an excellent suggestion which should certainly be acted upon. It is of the utmost importance that the trouble and work of years should not be lost for the lack of a little organization, and it is hoped that all breeders of waterfowl will act in concert together. The Editor will be glad to receive letters from those who are willing to take part in this scheme.

SUPPLIES OF LIVE FOOD

Dr. Amsler, in a letter, suggests that the question of the breeding of mealworms and other live food on a large scale should be considered. Though the meeting held on 21st September was of the opinion that this matter need not be further considered, it would be as well that full investigations as to the possibilities of producing a supply of live food should be made, in case the supplies from Holland should be, for any reason, unavailable.

In conclusion, the Editor accords warm thanks to those who, despite the calls made on their time in the present emergency, have so promptly responded to the request for contributions to the Magazine. Without their help the Magazine, and subsequently the Society, would surely die, but with it we can keep both alive in spite of the adverse odds we are at present facing.

It is particularly hoped that aviculturists overseas, who perhaps may have more opportunity and time for aviculture than those who are immediately concerned with the war, will do their utmost to help the Society and the Magazine through the hard days that are before us.

* * *

THE BIRDS AT CLÈRES IN 1939

By J. DELACOUR

The maintenance in war-time of a large collection of birds is a serious problem. Shortage of labour and food, and many handicaps of various sorts, necessitate careful supervision and planning, if one wants to take every chance to ensure their surviving.

As our older members may remember, it is the second time in a quarter of a century that I am facing such difficulties. In September, 1914, the Germans reached Villers-Bretonneux, in Picardy, killing and letting out a certain number of my birds, but the bulk of the collection was saved and, after the retreat of the enemy, kept in excellent condition for nearly four years. In March, 1918, unfortunately, their last offensive brought the Germans back to our grounds, when they were stopped first by British and French troops, and later on the Australians. Severe fighting took place for several months in the park, the result being complete destruction of the birds and everything else there was.

In the present tragic circumstances, Clères can be expected to be reasonably safe, and as far as one can foresee, the question of labour and food, difficult as they are, ought not to be an impossibility. Therefore we hope to preserve the collection, or at least the best part of it, and we are making arrangements accordingly.

All our gardeners and four bird-keepers have joined up since the beginning of the war; another one is soon going. But Mr. Fooks is fortunately staying at Clères, and is able to carry on with a reduced staff. By the doubtful privilege of age, I am remaining in the district, though on military duty, so that I can see my birds at frequent intervals.

For the moment we have decided to keep the whole of the collection, only thinning out gradually to a couple of pairs the more ordinary species of Pheasants, waterfowl, and small birds, or even suppressing the very common ones altogether.

I hope that other members will report in the Magazine on their position and plans as far as maintaining their collections is concerned.

BREEDING IN 1939

Breeding results in 1939 were rather interesting on the whole, several species being reared at Clères for the first time.

During the thirty years that I have been keeping Ostriches, we have never had anything but unfertile eggs, although females usually lay large clutches. This is generally the case in northern countries, but in North Africa, on the Riviera, and also in California, they often breed freely. This year, we have eight excellent young Ostriches, hatched in an incubator in August.

The parents were received three years ago from Senegal as very young birds, four months old about, and raised at home. Perhaps this has something to do with their stamina and fertility. Last year they produced some unfertile eggs, but last June they started laying good ones. As before, the cock, very spiteful and dangerous, scratched a large hole in the ground where the hen deposited her eggs, and several were broken. About twelve were removed and placed in an incubator. For the first lot, the incubation period was 53 days, the incubator being kept at a temperature of 36–37° centigrade, and cooled thirty minutes a day; two chicks were hatched, one dying in the shell, and another fertile egg being broken. The second lot was kept at the higher temperature of 38·5° centigrade, and cooled only 15 minutes a day, the six fertile eggs being hatched on the forty-second day.

Ostrich chicks are extremely quaint and amusing, round in shape, and looking rather like hedgehogs in their rough down; they have curious short jelly-like legs and swollen nape the first day. They proved very tame and sensible. Placed into a hut heated by a stove, as we always do for young Rheas, with covered-over run well supplied with sand and a grassy enclosure outside, they were first fed on biscuit meal mash, cut up green food, with plenty of grit. The first three days, they ate nothing but sand, and started on mash and green food the fourth day. They did splendidly from the beginning, and are now already quite big and strong.

Nine white and six grey Rheas were also reared. It is interesting to note that during the unusually cold winter of 1938–39, when the thermometer dropped at Clères to 5° F., all Ostriches, Cassowaries, Emus, and Rheas kept in perfect health, the last two species outside; Ostriches and Cassowaries in unheated wooden

shelters or barns, proving the complete hardiness of these large birds.

Cranes laid very well, but we were unlucky in several ways. Three Demoiselle and two Stanley chicks, several weeks old, died of gapes, so quickly that they could not be noticed in time and saved. The White Asiatics laid one unfertile egg, the first one since eighteen years that they have been at Clères. The Eastern Sarus paired up to an Australian, which had reared many young in the past, laid late, and did not hatch. One Manchurian was reared. A pair made up of a cock Grey-necked and a female Black-necked Crown Crane, long in the park, built for the first time a large nest of reeds in the middle of an extensive patch of rushes, laid the unusual number of three eggs late in August, and hatched them all by the end of September. They are doing well in a small pen, where they can be shut in at night. The male seems to be taking the greatest care of them. I hope that they will be reared, as it would be interesting to see what these hybrids will look like. The breeding pairs never showed any sign of bad temper towards other Cranes, Crown, Demoiselles, Sandbills, or Common, or waterfowl in the park during incubation, which both birds shared in turn.

Five Black Swans were reared, but three Black-necked chicks perished by accident. Rare Geese were raised : 1 Red-breasted, 5 Lesser White-fronts, 3 Greater Snows, 4 Blue Snows, 5 Ross's, 4 Emperors, 2 Cereopsis, 4 Ruddy-headed, 2 Ashy-headed, 6 Blue-winged, 4 Andean, 5 Maned (hatched late in August), as well as many Paradise, South African, Common, and 3-4 Radjah Ruddy Sheld-ducks, and 3 Australian Sheld-ducks, the latter for the first time in captivity, and also seven Comb-ducks, hatched in September. It is the first instance of their breeding at Clères. The seven eggs were laid in the same nest as eight Maned Goose's eggs, in a hut up in the park. They were almost round in shape, and glossy white. When the chicks hatched, they were brown above and yellow below, with two large yellow patches on the sides of the back ; the face is yellow, with a dark line over the eyes. I could not find out what the chicks were at the beginning, as the accounts in the *Catalogue of Birds*, the *Fauna of British India*, and other works, give a totally different description, according to Salvadori, "white" under parts, a *white* crescentic band over the nape, etc. . . . Some

twenty wild Muscovies were reared from one pair and two broods of Red-billed. Fulvous Tree-ducks, found newly hatched in the park, were caught with both parents and easily brought up by them in pens.

Many Ducks were reared from eggs collected round the lake and ponds : Carolinas, Mandarins, Chinese Spot-bills, Yellow-bills, Meller's, American Blacks, Chiloe Wigeons, Shovellers, Gadwalls, Pintails, Chilian Pintails, Cinnamon, Chestnut-breasted, Blue-winged Teal, Rosy-bills, Red-crested, Red-heads, White-eyes, Madagascar White-eyes, Lesser Scaup, and Common Pochards ; three Common Golden-eyes could not be raised, as well as one Ringed Teal. New Zealand Shovellers laid unfertile eggs.

Several Ducks were reared on the lake by their parents, including Red Shovellers, Versicolor, and Cinnamon Teal, Greater Scaup, and a few commoner species.

Among game birds, 23 Tragopans of four species, 12 Blue Crossoptilons, 20 Mikado, 7 Elliot's, 9 Soemmering's, 6 Bel's, 3 Lineated, 1 Horsfield's, 3 White-crested, 6 Edwards Pheasants, 10 Sonnerat's, and many Red Jungle Fowls, 6 Chinquis, and many Goldens, Dark-throated Goldens and Amherst's were reared, as well as Black-shouldered and Spicifer hybrid Peafowls.

Pigeons and Doves were disappointing, the more interesting young ones being Wonga-Wongas, Yubis, Talpacotis, and Snow Pigeons.

In the greenhouses, an Elliot Pitta and seven Indo-Chinese Shamas (two broods) were successfully bred. White-capped Redstarts nested several times without result, proving extremely spiteful during the season. A pair of Garnet-throated Humming Birds built a lovely nest in an hibiscus tree, but did not go any further.

Now, all the birds have been removed from greenhouses to bird-rooms, as it would have been very difficult to obtain coal to heat them during the winter. The rarer plants have been deposited at the Rouen Botanical Gardens, and I hope to be able to replant the houses when the war is over. It was very heart-breaking to me to close these houses, which were so attractive in every way ; this is the only noticeable difference that the war has made to Clères so far.

In a later article, I hope to say something of our rarer species which have not bred during the year.

FURTHER NOTES FROM AUSTRALIA

By SYDNEY PORTER

(Continued from page 340)

An all too short a time was spent in South Australia and I had several very interesting little tours with Mr. Harvey into the country districts and saw many birds which were new to me in a wild state. The chief amongst these was the Fire-tailed Finch, or, as it is known in Australia, the Beautiful Firetail. It is rather an uncommon and shy denizen of the scrub and heath-lands, and is easily located in the area where it lives by its distinctive call. It does not seem to be found in flocks like the usual run of Finches, but in pairs and small family parties. The country in which this bird lives was quite different to any other I struck when I was out there. The chief food of this bird is the seed of the "Bull Oak". I could never find the scientific name of this tree, but the seeds are contained in small roundish cones which are extremely hard and take a long time to open. The method adopted by the trappers is to burn a small area containing these trees which makes the cones open and shed their seeds. The birds are attracted by this and once located are easily caught. I saw very few of these birds in a wild state; for one thing, they are rather shy and my time was limited; no doubt had I been able to stay for some time in the district where they were found I could have seen more of them.

A good many people in Australia have at one time or another attempted to keep the birds but few are successful in keeping them for any length of time. When once apparently established they do well, but suddenly die off for no apparent reason. Some aviculturists have bred them, but no one seems very successful with them in the long run, though Dr. Cinner of Adelaide had been very successful with the Red-eared Firetail, a much rarer, and to my mind, a very much more beautiful bird than the so-called "Beautiful". This bird is restricted to a very small area in the extreme West of Australia. I consider it one of the most beautiful of Finches, but more of this anon.

One evening, sitting near a small pool which we called the Pool of the Honey-Eaters, we saw a good many birds, especially Honey-Eaters, which seemed to come in relays to bathe. The

commonest bird and to me the most beautiful of the Australian Honey-Eaters was the New Holland. During the whole time we were by the pool these birds came in to bathe and very lovely they looked with their strikingly marked black, white, and yellow plumage. There were a great many in the vicinity feeding on the strange cone-like flowers of the Banksias. Other Honey-Eaters seen were the Crescent, a smallish bird rather like a dull edition of the foregoing. The birds inhabit the scrubby heath-lands and get most of their sustenance from the eucalyptus flowers. The Lunated Honey-Eater is also a common bird, small, greenish in colour, with a white crescent-shaped mark on the nape, hence the name. The Singing Honey-Eater was also seen, though "Singing" is rather a misnomer as the bird has little song. A better name in the vernacular would be a translation of its Latin name, *Virencens*, or greenish.

The only Peaceful Dove I saw whilst in Australia was by the Honey-Eater's pool; it was very tame and fed only a few yards away from us on minute seeds which it procured from the dusty soil. These tiny Doves, in common with their near relations, the Diamond Doves, are common birds and often kept in captivity. Mr. Ward of Sydney had both white and fawn specimens which he bred true to colour in his aviaries.

We saw large numbers of Diamond Sparrows, which seemed to feed by the roadsides and upon approach would fly on to the telegraph wires. These birds were very timid and it was difficult to get close to them. At the pool we saw a Sacred Kingfisher, flying down and taking insects off the water, a most unusual thing for these birds which are not birds of the water as our European bird is. The Australian Sacred Kingfisher seems a much smaller and brighter bird than the New Zealand one, though they are supposed to be one and the same species.

The Crested Pigeon, or Crested Bronzewing as it is called in Australia, is a common bird in South Australia where I saw numbers, usually around water holes and dams where they came to drink. It is a very wary bird but should one sit around the water in the evenings the birds will approach quite close. The flight is extremely loud and noisy.

The Australian Crow is a large bird approximating the Raven of Europe. In the district around Lagoon Station it was very much

in evidence. It has an extremely loud and unpleasant call somewhat between the bleating of a sheep and the nocturnal calls of a cat. It is a very noisy bird and takes delight in making as much noise as possible. It is bold and fearless, often landing within a few feet to give one a thorough inspection. It is one of the few birds I ever felt a dislike for. It strikes one that it knows everything that is going on and is always gossiping with its friends about it. Whatever one is doing the bird is watching. It is reputed to kill and eat small birds and take eggs, but it seemed, as far as I could see, to be little feared by the other birds. It feeds mainly on insects and any scraps which it can pick up around the farm buildings.

In South Australia I saw three species of the *Psephotus* Parrakeets, Blue Bonnets, Manycolours, and Redrumps. These latter were very common around Adelaide, and I was told that they sometimes came into the gardens in the city. They are found in small flocks in the open country and one often disturbs them feeding on the roadway. They look singularly brilliant on the wing as their crimson rump patch shows up to advantage. As they fly they utter a soft musical call very different from the usual harsh notes of the majority of Parrakeets. Their food consists of the seeds of various grasses which they find on the ground; in fact, in Australia they are known as Grass Parrakeets, a name which really belongs to the *Neophemas*.

I found these birds very plentiful some distance from Newcastle, in New South Wales, where small parties could be seen feeding on the ripening seeds of a tall grass-like plant which is used for cattle fodder and which looked to me uncommonly like *dari*. I saw few, if any, of these birds in the aviaries of aviculturists in Australia, I suppose the reason being that they are too common. I saw a good number in the dealers' shops but I suppose these were for export.

Whilst in Melbourne I was asked to join a small party of bird-watchers who were spending some days on a low sandy island some seventy miles from Melbourne. Of course I gladly accepted and had a delightful time seeing many interesting species for the first time. What a rush I had catching the ship which was to take us to the nearest port! It was Foundation Day, a kind of Bank Holiday, when everyone starts on their summer holidays. The little steamer was crowded, there being over 2,000 on board, but it

was a good-natured crowd and everyone seemed happy. At a small resort some sixty miles away from Melbourne we disembarked and transferred to a specially chartered fishing smack. After quite a lengthy sail we landed. The island, long, low, and flat, and beloved of wading birds, reminded me of a favourite spot at home where I have spent pleasant hours, Scolt Head Island off the Norfolk coast. The sight of it and the thought of days of brilliant sunshine and bird-watching gave me a great thrill.

The largest and most outstanding bird we saw there was the Australian Pelican. These birds visited the island in the early morning and it was a magnificent spectacle to see these huge birds sailing majestically along in the clear early morning atmosphere looking like some pre-historic pterodactyl. It is an amazing thing how agile and light these huge birds are in flight. They are anything but laboured or heavy and they can soar to great heights with the utmost ease. Few birds present such a spectacular sight as a flock of Pelicans in flight.

Another bird which I was glad to see was the beautiful Australian Sheld-duck, a bird almost unknown to aviculturists outside Australia until very recently. A large flock of these birds came from the mainland and settled to feed on a certain marine grass which grows in the shallow water and which is also greatly relished by the Black Swans. We crept up to the birds hoping to watch them, but we underestimated their timidity and watchfulness, for when we were still a good distance from them they took flight and returned to the mainland from whence they had come, and we never saw them again. Evidently they were unused to have visitors on the island and thought it better to stay away until we departed. I regretted that the birds did not return as I always wanted to study this bird in a state of Nature. One of the most beautiful of the Sheld-ducks, the Radjah or White-headed, is found in Australia, but it comes from the tropical regions and though I saw no wild birds I saw several in captivity. All around the island were spectacular flocks of Black Swans, hundreds and hundreds of them. This was one of their favourite resorts and they came here to feed on the kind of marine grass previously mentioned which grows very profusely in the shallow waters. It was a strange sight to see the flocks feeding with their heads and necks under the water; they looked like a fleet of miniature galleons floating along. They were not as wary

as the Sheld-duck, but if one approached too close there was a mighty thrashing of the water and then a loud report like machine gun fire as the whole flock took wing. They made a magnificent sight with their black bodies and snow-white wings as they got up and gradually formed into the usual Swan formation. At night it was a sight to thrill any bird lover's heart to see string after string of these large birds pass across the paling evening sky. The Swans feed during most of the night as well as in the day, and their voices added greatly to the babble of bird sounds during the night. When encouraged the Swans will frequent quite small ponds and lakes and become very tame.

The vast shallow lagoon in the centre of the island was a sanctuary for thousands of waders, nearly all visitors from the Far North. Most were in the "off-season" plumage and many were hard to recognize. Perhaps the commonest was the Red-necked Stint, easily distinguished by its very small size even though it was lacking the nuptial plumage. This little bird was in countless numbers and quite the tamest of the waders except the Sharp-tailed Sandpiper, allowing one to approach within a few yards. This bird is a winter migrant from North-Eastern Siberia. It spends its time by the edge of the tide feeding on small crustaceans, etc. It leaves Australia for its Northern breeding range in February.

The Sharp-tailed Sandpiper was another very common bird which comes from the far North Pacific lands and spends its winter or rather southern summer in the Antipodes. As well as frequenting the mud flats it is to be found in pairs in the boggy and marshy places where few other waders are found. Like the Stint, it is a confiding bird and seems reluctant to take flight until one is nearly on top of it. The white rump and pointed tail serve to distinguish this bird.

The Oyster-catcher is another well-known wader found in small numbers on the island. These birds keep in small parties around the main shores and are wary and suspicious. In with one party we came across the very much rarer Sooty or Black Oyster-catcher, a bird confined to the Australian regions though sometimes occurring in New Zealand.

We were able to pick out and identify a bird very rarely recorded in Australia, namely the Wood Sandpiper, which had previously been unrecorded for Victoria. This bird is distinguished by its

large pointed wings, and larger size than most Sandpipers. It is a rare straggler from Northern Europe and Asia. The bird we had under observation kept more or less to itself and did not appear to consort with the other waders.

The Curlew Sandpiper was another common bird. It is a large Sandpiper with a slightly down-curved bill. These birds consorted with the other waders, especially the Stints, in the shallow lagoon in the centre of the island. Its home is in the far North of Siberia where it breeds, migrating to the South after the nesting season. Also fairly common was the Grey-tailed Tattler from Eastern Siberia, a near relation to the well-known Wandering Tattler of the U.S.A. This is a large Sandpiper-like bird found consorting with the other waders on the mud flats.

There were large flocks of those well-known and cosmopolitan birds, the Golden and Grey Plovers; birds not always easy to distinguish in their "undress" plumage, the best method of identification being their flight.

Perhaps the commonest bird of all and one which could be seen in huge flocks was the Bar-tailed Godwit. Another very cosmopolitan little bird found around the shores of the islands was the Turnstone, one of the prettiest of the waders and a most delightful aviary bird. The birds seen were rather drab compared to the brightly coloured specimens one sees in England when they are in their breeding plumage.

A large wader seen in the company of the others was the Greenshank; tall and slender and easily recognized by its pale grey colouring and green legs. The largest of all the wading birds was the Eastern Curlew, the most easily recognized of all the waders, apart from its large size, by its loud call with which I am very familiar with on the moors of Derbyshire where its Western representative breeds. These birds were extremely timid and they are the first to retreat amongst the waders as one approaches. The breeding range of this bird is Eastern Siberia, and it is a migrant to Australia during the southern summer.

The Common Sandpiper is also seen on the mud flats but it is less common than the others. Other waders were seen but it is difficult to identify all, especially the timid ones, if they have no outstanding characteristics.

The Caspian Tern was frequently seen and could easily be

identified by the ear long before one could by the eye, for it has an extremely loud and raucous voice, more like that of a Cockatoo than a Tern. This is the largest of the Terns and can be distinguished from the others by its large size and bright red beak. There were a number of young ones about, for the birds nest on the island. The young do not have the red beak but they possess the loud raucous voice of the adult.

Another Tern was the beautiful Fairy Tern, a near relation of the well-known Little Tern. The larger Crested Tern was seen, this is a well-known bird around the coasts of Australia. It is somewhat smaller than the Caspian Tern and has the beak a yellow colour and the feet and legs red, while the Caspian has black legs and feet. On the back of the head the black feathers are lengthened and form a crest but this is only occasionally displayed.

The island was a favourite haunt of the White-faced Heron and great numbers were seen wading about in the shallow waters. At one time I had over twenty under observation in a large straggling line, wading near the shore ; they must have been in an area where food was very abundant for with them were Black Swans, two species of Cormorants, Curlews, Godwits, Golden Plover, Stints, and Sandpipers. This Heron is a common bird around the Australia coasts and is not unduly wary, at least not on the island.

In the scrub near where we pitched our camp we found the Little Grass Bird, a small Warbler-like bird rather shy and difficult to observe owing to the rapidity with which it moved and its habit of frequenting the thick vegetation.

Two birds of prey were observed soaring over the thick scrub on the island, no doubt on the look out for the young of the White-faced Storm Petrel. One was the Swamp Harrier, a bird which could easily be confused with the other but for the fact that the Harrier has a very distinctive light band across the rump which is very conspicuous when the bird is in flight. The other bird was the Whistling Eagle, a small Eagle not much larger than the Harrier, which makes its presence known by its loud shrill whistling cry which can be heard from a great distance. This Eagle is found around the coastal regions of Australia and feeds upon carrion in the shape of dead fish, etc., as well as upon living food.

In the low wind-swept trees around our camp we heard at times the well-known and cheery call-notes of the Grey-backed

Zosterops, the commonest of the Zosterops in Australia and a bird I was very familiar with in New Zealand. I hardly know how the birds managed to exist on this rather bleak and wind-swept island, but this little bird seems to be able to adapt itself almost anywhere.

The beautiful White-fronted Chat was seen on the island, usually looking very conspicuous with its black and white plumage, sitting on the tops of the low stunted bushes, though when not disturbed most of his time is spent on the ground searching for the insects upon which this species mainly subsists. This bird is no relation to the Chats of the Old World, but is a small dainty Warbler-like bird.

Two Gulls were very common on the island, the Pacific Gull, a large black-backed type found about the coasts of South Australia, and the Red-billed or Silver Gull, a native of both Australia and New Zealand, where it is extremely numerous, being as common and familiar as the well-known Black-headed Gull in Europe.

There were many pairs of those beautiful little waders, the Red-capped Dotterels, on the dry sandhills on the island. I am sure that they must have had either eggs or young ones, for the several pairs which I had under observation always tried to lead me off the scent with the broken wing trick. Sometimes a pair would lead me on ; running with their incredibly quick mincing steps, they would mount one of the low sand dunes, utter their harsh cries, then lead me on to another hillock and repeat the performance. In the dry driven sand it was possible to see all their footprints, and by this means I had hopes of tracking them to their nest, but search as I might I never found one.

The island was one of the chief nesting grounds of the White-faced Storm Petrel. In some parts the earth was riddled with their burrows ; in fact, it was impossible to walk on the ground without its caving in and we had to rescue many young ones from being buried alive. There were young in all stages of development from tiny fluffy atoms of long grey down, only a few days old, to fully fledged youngsters nearly ready to fly. Some areas had been abandoned owing to the top soil subsiding ; this was mainly owing to the vegetation dying through excessive burrowing, the roots not being able to hold the soil. Sometimes the nests were not in the ground at all, but under dense tussocks of grass into which

the birds had burrowed. We went round at night to see the parent birds come in from the sea. They arrive about 9 p.m., stay until about 2 a.m., then depart again for the sea. It's wonderful how the birds on a pitch black night can find their own burrows amongst so many others. With the aid of an electric torch we watched them come in. They gave no indication of their coming as their flight is as noiseless as a snowflake, and if we kept the torch on continuously they would not come, so we had to keep flashing it at intervals on certain areas of the breeding grounds. The birds flutter in from the sea and with no hesitation shoot right into the holes. The White-faced Storm Petrel is a beautiful little bird, and one wonders how such a fragile feathered creature manages to survive the terrific storms which one encounters in those far southerly latitudes where the bird makes its home. Yet they seem as much at home on the most turbulent sea with the wind blowing the fiercest gale as a Humming-bird is around a flowering shrub. To see this tiny bird flying just under the crest of a mighty wave with dangling feet just skimming the water itself, in the teeth of a storm of hurricane intensity, is a feat that must be witnessed to be appreciated. Nothing gives me greater pleasure than those days spent in cargo ships in the far southerly latitudes watching the amazing flights of Petrels. I have watched them for weeks on end quartering the surface of the ocean but I have never yet seen them pick up anything in the shape of food. However, they must do this, for they live on minute forms of ocean life which they pick up as they skim the surface of the water. The best place for observing Petrels and Albatrosses is in the far south of the Indian Ocean, in those great watery wastes between South Africa, New Zealand, and the Antarctic. I can never imagine how these little, seemingly fragile birds, with legs too weak even to walk upon, can excavate such lengthy and copious burrows. Other birds seen on the island were the Little Pied and the larger White-breasted Cormorants.

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BREEDING BRITISH BIRDS

By V. A. V. CARR

(Continued from p. 306)

In these times of national disrapture, both in domestic affairs and business, one's first instinct is to turn to a more enlightening subject, and if one's tendencies lean that way, feathered creatures are much more near and dear to all of us. I suppose, speaking without any authority on the subject, the importing of foreign birds will be more or less suspended for a time at any rate, because of the difficulties of international transport. But, thank goodness, we have our own native birds to interest us and to my way of thinking there is as much, if not more, to know and learn about them. The range of our observations is so very broad—both in different families of Britishers, and different places. If one has the birds in captivity one can go, in the majority of cases, a few yards or miles to see the same species enjoying life, whether it be hot or cold.

The breeding of most of our native birds smaller than, and including, the Magpie, is also easy, providing one has a fairly good imitation of the bird's natural building site. For instance, it is no good attempting to breed Wheatears in bushes, or to breed Magpies in a hole in the ground. In my last contribution I outlined a few ideas of how one can best adapt a small (or large) aviary for breeding purposes, and I hope I achieved my object by pointing out a few simple hints which can be followed up and improved upon, if one has the idea of how to start.

After one has the aviary ready, I suppose the next thing is to stock it suitably with *pairs* of birds. This, then, leads us to the different sexes. As a general rule the male bird is always the best and brightest coloured, and a little larger than the female. But there are a few British Finches that are difficult to sex, and if one intends breeding at a later date it is imperative to know for sure that you are suitably accommodated.

I should say that the Goldfinch, Redpoll, Twite, and Linnet are very difficult for the inexperienced and only at close quarters can be sexed with any accuracy.

The hen Goldfinch has small brown feathers on the butt of

the wing, while the cock has black ones. Another certain means of identification is by the colour of the whiskers on the bird's mandible. On a hen bird these are a buff or straw colour, while the cock's are black.

Redpolls are difficult. As a general rule the cock bird has a faint pink on the surface of the breast feathers. In exceptional cases of aviary-bred birds the colour is sometimes very pronounced, whilst field moulted birds have a very beautiful red coloration—losing it when moulted in captivity.

The hen has little, if any, colour on its breast either noticeably so or under the surface. The bib of the hen bird is a lot larger, broader, and a denser black in comparison to the male.

Cock Twites, when field moulted, have a vivid red rump, but the hen lacks this. Again, when moulted in captivity, this disappears. Aviary moulted birds can only be sexed by the white on the primary wing feathers. On a male, these are very large and pronounced, the hen's being quite a bit less pronounced.

This also applies to Linnets, and so does the red coloration on the breast feathers, resembling the Redpoll, both aviary moulted and field moulted.

Every hardbill comes into its adult plumage the same year it is born—after its first moult—and then one can sex the birds. This does not apply to some softbilled birds, such as the Nightingale, Wheatear, Whinchat, Stonechat, Spotted and Pied Flycatchers, Dartford Warbler, Red-backed Shrike, and some species of Wag-tails. These come into colour in the spring, and it is necessary to keep these birds for half the year before one can tell with any assurance what is what.

The majority of the softbills I have mentioned (with the exception of the Shrike, this being to some extent a flesh eater) will do in a mixed aviary and will agree quite well with hardbills. But on no account place two cock birds in the same aviary for they will fight to the death. Robins, Redstarts, and Nightingales are the worst offenders in this respect, and they are not too particular as to whether they go for any other species, be it hard or softbilled.

As in other branches of aviculture, the feeding problem for rearing youngsters successfully is as great and very much the same. Seeds soaked and then allowed to sprout for a day or two can be given to both adult and young birds, in the former case

combining green food with the once hard seed, and in the case of the young birds giving them food more easily digested. It is interesting to note that only a few species of hardbills feed their young with seed and green food and nothing else. The others feed chiefly with insects, and the more live food a parent bird can get prior to and during the time of rearing, the better will be the youngster. Wrong and lazy feeding at this stage of our feathered friends, means a short life and not a very merry one.

A fairly good explanation to a novice of a hardbill and softbill is this : a hardbill feeds its young from its crop ; a softbill carries its food in its beak and gives it directly to its young ones without an intermediary process of semi-digestion in the crop. This "explanation" is about the best one to give ; but then certain hardbills carry the food to their youngsters in the beak. All species of Buntings, Chaffinch, Brambling, Siskin, Hawfinch, and Twite do this, although they are typical hardbills. But such is Nature, having very perverse habits at times.

So, if there is a hardbill that feeds its young as a softbill, it is essential that live food should be given to the parent birds whenever one thinks fit—but more particularly regularly when rearing young—if success is to be assured.

I know this live food required during the breeding season is a very difficult problem, more particularly if, as I am, the enthusiastic ornithologist is not an entomologist. I believe these people can breed anything they want almost, in this respect, catching female moths and "housing" them in linen cloths tied round birch or willow trees and then leaving them for a month or so until the caterpillars have reached a useful size. I have to content myself with gentles (thoroughly scoured in bran, sand, or sawdust), mealworms, and ants eggs (live). The latter are ideal and if collected from the nest and placed in a tin floating on a larger tin, the ants are unable to carry the eggs away.

(To be continued)

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BREEDING OF RUDDY FLAMINGOES

(*Phaenicopterus ruber*)

Mr. C. L. Sibley sends the following report :—

“ At the Hialeah race track at Miami, Florida, there are several lakes in the infield, and Swans, Storks, Scarlet Ibis, and other birds, including a flock of 265 Flamingoes, make their home there and add interest and colour to this, perhaps the most beautiful race track in the world. In spite of having been at home here for a goodly number of years, no nesting was attempted until in 1936 one egg was laid and a young bird hatched, but it soon died.

“ This year, 1939, a large number of birds nested, and at the present time (July) there are thirty-eight young in various stages of growth, some of them well along towards maturity. These are the *Phaenicopterus ruber*, from South America.

“ The birds are fed on a diet of boiled rice, shrimp, wheat, and cod-liver oil. Besides this, they doubtless get more or less food from the lake in which they live. The climate is exceedingly mild there, and evidently conditions agree well with the birds.”

A few weeks later Mr. Sibley reported further :—

“ A friend in Florida writes that he has visited the colony and has handled eggs and seen young birds from newly hatched chicks to those several weeks old. Earlier, about sixty nests were flooded and the eggs destroyed. Since Flamingoes lay only one egg, this meant an equal number of eggs spoiled. Even so, there are about 100 youngsters of various ages, I am told.”

This is apparently the first occasion that Ruddy Flamingoes have bred in captivity, though certainly the conditions at the Hialeah race track must be regarded as captivity in the widest term of the word. In the Berlin Zoo the birds succeeded so far as laying eggs, as was described by Dr. Georg Steinbacher in the following : “ Some observations on the breeding of *Phaenicopterus ruber* in the Berlin Zoological Gardens,” published in the March, 1938, number of *Beitrage zur Fortpflanzungs-biologie der Vögel mit Berücksichtigung der Oologie*. A translation of his observations is as follows :—

“ In a large flock of Ruddy Flamingoes, which were ringed in January, 1937, six birds remained in pairs up to April. Unfortunately, further observations could not be made, as the rings were bitten off by the birds, but some pairs certainly remained together longer. The fact of their remaining together after the breeding season permits one to presume that Flamingoes pair for life. In the case of these supposed pairs one bird was always larger than the other. Although Flamingoes live in large flocks, they are by no means peaceful, but fight a great deal among themselves. Whenever they are angry, the long pointed feathers on the back are erected and beaks loudly clattered. This clattering can also be heard when the Flamingoes are quiet, but desire to fly to another spot. It assists to stimulate them to flight. One bird starts, another joins in, and the clattering quickens until the birds begin to rise. As their wings are clipped they naturally do not get far. The warning note, on the other hand, which is heard when the bird is alarmed, is a nasal “ Aah aah ”, accompanied by the plumage being contracted and the neck stretched out. If the danger passes without serious disturbance, the birds often react by clattering. Each evening the Flamingoes endeavour, amid loud clattering, to make a general change of position. They run and flutter about for some time. These flights are similar to the restless flutterings of our small caged birds before darkness descends, and corresponds to the flight from the day feeding grounds to the more secure resting-places for the night.

“ Pairings were observed from the middle of May, but they were relatively rare. In most cases there was a prelude, during which the larger male pursued the smaller female closely and tried to cover her. The female finally ran in narrow circles, the male close behind, pressing at the same time his breast against the back of the female. He then covered the female, who stood still. During copulation the male balanced himself slightly with his wings.

“ On the 1st June, 1934, 6th July, 1936, and 5th June, 1937, respectively, an egg was laid. One egg measured 101.2×55.3 mm. and weighed 172 grams. Unfortunately they were always unfertile.

“ The first egg lay on a flat stone at the edge of the pond, where the bird had built a low circular wall of earth. The birds laid the other two in artificial nests of stone, which were placed in shallow water and which, after the egg was laid, were covered with clay

by the keeper. These nests were more or less circular with a diameter and height of about 40 cm., and with a shallow depression in the centre ; they were mostly in groups of three. They were each immediately taken possession of by a pair of Flamingoes, several pairs fighting for possession for some time. The Flamingoes busied themselves with the nests, smoothing the clay covering with their beaks and piling sand and mud on the outer edge of the clay cavity and smoothing it likewise. The development of the nest cavity progressed so well, that the bird now occupied itself by carrying nesting material from the water to the artificial nest in its beak. Then it took up position on the edge of the nest, head hanging down so that it reached the middle of the nest. At the same time it stamped quickly and firmly against the wall of the nest, welding it well together. Then it got into the nest cavity and turned on the spot, its downward-hanging head describing a circle over the wall of the nest. In this way the bird trod the inside of the nest firm.

“ Male and female brooded the eggs, the latter, however, longer than the former. The sitting bird was relieved by its mate approaching the nest. The birds greeted one another with clattering beaks, then the sitting bird rose up and waded away. The newcomer stood over the egg, straightened it with its beak and let itself carefully down on it. To all appearances it pushed its toes, as the majority of the birds do, under the egg. I have never seen a Flamingo with its legs hanging down to the right and left of the nest, as is described by old authors. The chief duty of defence of the nest is left to the male. In the numerous encounters which every pair of Flamingoes has to face with the others of the flock, the male is always much more active than the female. The male of a pair which tried to breed in 1936 proved an exception. He was abnormally peaceful. So it came about that the birds after laying were chased from the nest by a more belligerent pair. The former took another nest for a short time. The pair which had taken over the egg left it without a struggle to a third pair after one day and took another artificial nest. The third pair incubated the egg for some time.”

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SUCCESSFUL REARING OF ZOE'S BANDED FRUIT PIGEON

(*Carpophaga zoeæ*)

By ALFRED EZRA

A lovely pair of these rather large, but beautiful Pigeons was brought over about three years ago by the well-known collector, Mr. W. Frost, from North-West New Guinea. These birds were kept in a large cage for two weeks, after which time they were turned out into a large aviary containing a number of other birds. They showed no signs of nesting until this year, and although there were numerous nesting baskets and trays placed on the walls of the sleeping quarters in the aviary, this pair of Pigeons were continually fighting a pair of Snow Pigeons for possession of a nesting tray measuring about 1 foot square and $1\frac{1}{2}$ inches deep, which was hanging on the wall 9 feet from the floor. First the Snow Pigeons would place a few sticks on the tray and then the Banded Fruit Pigeons would place a few more. To give these Pigeons every chance of nesting the Snow Pigeons were removed and two days later the nest was completed, and on the 12th June, an egg was laid. This was a shade larger than a domestic Pigeon's egg. Both parents took turns at incubating, and on 3rd July the empty shell was found on the floor of the aviary. It was impossible to see the young one as the parents sat too tightly. The first time the young one was seen was when it was ten days old, and then only the head and shoulders could be seen. Four days later, on 17th July, the young one left the nest, being almost the size of the parents, but lacking the band across the breast. These Pigeons were fed on minced fruit, which was mixed with fine biscuit meal, which prevents the bird's feathers getting messed up. The fruit minced consists of bananas, oranges, apples, figs, dates, and dried pears, and to this is added boiled rice and mashed potato. The young bird is now as big as the parents and the breast band is as clear as that of the parents. I am pleased to be the first to breed this beautiful Pigeon.

SOME REARING EXPERIENCES OF AN OWNER OF A SMALL COLLECTION

By FRANCES E. MATTHEWS

A winter noted for its persistent night frosts, followed by such weather as is described by Longfellow when—

“The day is cold and dark and dreary
It rains, and the wind is never weary.”

made me decide to keep my more sensitive birds indoors until May. It may be foolish to do this as certainly the birds' plumage suffers, also nesting operations are delayed. But the gloriously warm burst at the end of May seemed to bring birds quickly into condition ; had they been turned out earlier this might not have been the case.

The adult Gouldians came out of their moult quickly, and look in fine form—though dilatory about going to nest. The young ones have donned their adult plumage at nine months, and look more lovely than their parents. The Shama hen went to nest at once, but, I imagine through the cock's fault, eleven eggs have proved unfertile.

As she was likely to nest again I told my trouble to a well-known aviculturist. He solved them by lending me his cock, showing that peculiar sympathy one meets with. The sprightly little hen is now brooding a large clutch of eggs. The Violet-eared cock's bright attire will be complete as soon as “bib and tucker” have been added, his wife was certainly dressed first. Though he can be heard daily trilling his lark-like song I fancy the Violet-ears will adhere to their original habit of nesting in the autumn.

Three months ago I was persuaded to buy two pairs of *Emblema Picta* Finches—quite recently imported. To my dismay one cock died at once, he arrived suffering from a severe moult. The other three were put out into a small aviary at the end of May. One hen laid almost at once—I think, five eggs. From this nest three nice young birds are on the wing (July). They are almost as big as their parents. I felt it was a great risk leaving two hens with one cock—that it might have been with him a case of “How happy

could I be with either, and the other dear Charmer away!"—that some tragedy might happen to "put her away". But this Painted Finch cock has altered my previous experience of these birds, and the opinions I have read. He has proved himself equal to the best traditions of Australian Finches. He is full of life and second to none in colouring and attractiveness.

He knows all about running his establishment peaceably. When he was on the nest, both hens were off, and all through the incubating period, and afterwards, one of the three was in the nest on duty. They all appear to have helped to feed the babies. These birds never roost on the ground. They go down a great deal, especially where the soil has been disturbed and seeds are to be found germinating, and possibly minute grubs. The cock samples all seeds, he does not confine himself to one kind. All good finch mixtures and especially the large white Italian millet and the spray are much liked. Fresh seeding grass and that which has dried a bit, finely pounded eggshell, cuttlefish, and the powdered charcoal are essential. Sometimes soaked seed has been taken. The cock very much believes in baths.

A finch-box was provided, but these birds (like many others) forsake these for a dome-shaped rush nest with a small opening. These we make at home. These are placed in the fork of a branch which is firmly fixed high in the covered aviary, or they can rest in a small basket hung high up—the latter plan has found greater acceptance.

I strongly recommend these birds for their tameness and attractiveness.

THE EARLY YEARS OF THE AVICULTURAL SOCIETY (X)

By DAVID SETH-SMITH

(Continued from p. 331)

With the volume commencing in November, 1909, a third series began under the editorship of Frank Finn who, however, resigned with the July number when J. L. Bonhote took it on. It commences with a coloured plate of the Abyssinian Lovebird (*Agapornis taranta*), a species that was practically unknown to aviculture at the time and has not become common since.

E. J. Brook describes the successful breeding in his aviaries at Hoddam Castle of the Black Lory (*Chalcopsittacus ater*), the first ever reared in confinement.

R. A. Holden gives an account of the breeding in his aviaries of the Spotted-backed Weaver (*Hyphantornis spilonotus*), a South African species that is rarely imported in the usual way. Young were hatched, but unfortunately, not successfully reared. "Many of the Weavers," writes Mr. Holden, "show a decided preference, when building, for branches which overhang water, and I imagine that *H. spilonotus* is no exception. My birds have for a bath a shallow earthenware dish, perhaps a foot in diameter, and one of the first nests was built directly over this. The dish was, from motives of curiosity, twice moved and on each occasion weaving was commenced directly above it."

The Duchess of Bedford gives an account of the nesting results at Woburn during 1909. Manchurian Cranes nested there for the first time and one young bird was hatched and was thriving when the account was written. Hutchin's Geese also nested for the first time and reared their young, and Pekin Robins (*Liothrix*), which had been at large in the Park for a year, bred.

Reginald Phillipps describes the successful breeding of the Quail Finch (*Ortygospiza polyzona*). He writes, "If there be but a blade of green grass in the aviary, under that bit of greenery he will build his nest—or nowhere. Oh, the number of nests my old male has had destroyed by the rain during these last three summers! Nevertheless, he has never given up; and now, at last, his perseverance has been rewarded, for three fledglings,

strong on the wing and stout of foot, have left the nest : surely his pluck is worthy of being immortalized in the pages of the AVICULTURAL MAGAZINE."

W. E. Teschemaker describes the successful breeding in his aviaries of the Blue Grosbeak (*Guiraca cyanea*). His attempts to breed this species extended over five years during which time his birds laid no less than twelve clutches of eggs, the twelfth time being successful. He came to the conclusion that to nest successfully, the species must have a fairly large aviary, in which there is likely to be trouble should any other species attempt to nest in their neighbourhood. The same writer also gives a long and interesting account of the successful breeding of the Giant Whydah (*Chera progne*) which he does not consider a difficult subject in a suitable aviary where there is plenty of long grass.

The year was a particularly successful one for Teschemaker and his collection must have been of absorbing interest and delight for besides those mentioned above, he successfully bred the Blackcap (*Sylvia atricapilla*), the Red-whiskered Bulbul (*Otocompsa jocosa*), and the Grey-headed Sparrow (*Passer diffusus*). Of the first of these he writes : "Just as the Blackcap is by far the hardiest of the Warblers, so it is, I think, very much the least difficult to breed. The fact that our member Mr. Suggitt reared a fine brood (only a fortnight after I succeeded) shows that the experiment is quite a feasible one : on the other hand the fact that both he and I and, I think, other aviculturists also have had many failures shows that the Blackcap is not bred every day."

A coloured plate by Grönvold illustrates a pair of attractive hybrids between the Crimson Finch (*Neochmia phaeton*) and the Star Finch (*Bathilda ruficauda*) bred in Hubert Astley's aviaries at his villa in Italy.

Flamingoes are from time to time reported on the coasts and open pieces of water in this country and there is little doubt that most if not all of these are escapes from zoos or private collections. Here is an account which I contributed to the volume under notice, of one that escaped from the Zoo : "On 17th November (1909) the water in the pond was drawn off for cleaning and a gang of navvies appeared with brooms and shovels. This rather scared the Flamingoes and one managed to clear the boundary fence, circled round two or three times in the air and then throwing out its

long neck forward and its long legs aft, headed straight away to the south and vanished out of sight. Nothing more was heard of it that day, but on the following morning a report was brought in that the bird was walking in Regent's Park. I at once summoned four keepers, and arming myself with a long net, set out in search of the truant. We soon discovered it walking in stately fashion on the grass.

“As we approached it became uneasy and hastened its steps, and before we had approached within 40 yards it extended its wings and commenced to run. With slowly flapping pinions it soon got under way and gradually rose from the ground, a wonderful object in the bright morning sunshine, its jet black pinions contrasting beautifully with its pink plumage. With neck and legs in a straight line it sailed away towards the lake and soon became a mere speck in the distance. We saw it wheel to the left over the lake and vanish from sight in the distant mist. We made in the direction in which the bird had disappeared, but did not have to go very far, for again our bird appeared heading directly for us and gradually approaching the ground; down it came gently to earth and sank upon its breast with expanded wings, exhausted.

“We picked it up without the aid of the net before it could recover, none the worse for its flight. We had had a beautiful exhibition of the flight of this majestic bird under the most advantageous conditions.”

T. H. Newman describes the successful breeding of the White-throated Pigeon (*Columba albigularis*), a rare species from New Guinea, which he considers “the most beautiful member of the finest group of typical Pigeons, to which the sub-generic name *Ianthoenas* has been given”. One egg only was laid in the nest, a habit common to several of the large fruit-eating Pigeons, and although late in the season it hatched and the young bird grew to be a fine specimen.

A beautiful coloured plate by Goodchild depicts a pair of Purple Sugar-birds (*Coereba coerulea*), while Frank Finn contributes an article on this species and its relative, the Yellow-winged Sugar-bird (*C. cyanea*), which is much more frequently imported.

Walter Goodfellow contributes a valuable article on Birds of Paradise, with which he was very familiar in their wild state. This was before the passing of the act prohibiting the importation of

plumage into this country and the massacre of the full-plumaged males was going on unchecked. He says: "The collector of Customs kindly gave me the returns for the first year (since the establishment of customs), which amounted to roughly 1,100 skins of *apodas*. These figures would include only those sent away in bulk. There would certainly be more taken out in personal luggage and not declared. . . . The *apodas* resort to the same dancing trees year after year, and at the commencement of the season (March) the owners of the trees are able, before the birds' plumes are quite mature, to estimate almost to a skin the number they will obtain when shooting commences. A chief once told me that the preceding year he was only one bird out in his calculations, more or less, I quite forget now. This really means that each year possibly not one full-plumaged bird escapes."

A very excellent coloured plate of the Cock-of-the-Rock (*Rupicola rupicola*) by Goodchild illustrates an admirable article by W. Frost on his experiences of this extraordinary bird in its wild state in British Guiana. He describes the nest which was "stuck to the face of a large overhanging boulder, fourteen feet up, on a small, sharply sloping ledge. . . . On close inspection the nest appeared to be built of fibrous material, probably from a palm, worked up with some gelatinous substance and plastered on the outside with dried lichen or moss; in shape, forming about two-thirds of a circle".

The boulders amongst which the Cocks-of-the-Rock are to be found "vary in size from that of a small cottage to, say, that of the Albert Hall. The whole formation of the range indeed reminds one of nothing so much as a gigantic stone wall from which the top courses have been dislodged, forming a heap of debris all along the foot, over and under and through which one has to struggle like a stray ant until one comes to the wall itself, running up sheer some hundreds of feet. Over all is the thick, dark, tangle of bush, the sort of trail that even the Indians shirk, although swarming with game.

"Near the top of the slope, close under the wall, we found the dancing places. . . . I found the birds danced fairly regularly every morning between eight and ten a.m. . . . During the time I remained on the range I watched perhaps some thirty or forty dances. They were always started by an old cock who, taking up a position on

a horizontal or slightly sloping branch, a fallen one preferably, at a height of from three to four feet, would start squawking overhead. Presently he would start jumping back and forth from his perch to the ground, giving a quick swirl with open wings and tail as he struck the ground and turned to regain the branch. One after another the other cocks would join in, sitting opposite the first and taking turns in the jumps, squawking the usual challenge. The excitement spreading, the rest would gradually fall into place until with seven or eight birds flashing up and down, faster and faster, it began to look something like a dance. I cannot say that I ever saw a hen anywhere near during the dance, though, of course, they may have been watching the game from overhead in the thick foliage."

Besides the coloured plates already mentioned are those of the Red-faced Mouse-birds (*Colius erythromelon*) and Petre's Tanager (*Spindalis pretrei*), while the letterpress contains much useful information that space will not permit me to mention.

(To be continued)

* * *

NOTES

BIRDS IN THE COPENHAGEN ZOO.

Mr. P. H. Maxwell sends the following note of his visit to the Copenhagen Zoo : The gardens were looking very beautiful when we visited them. The Bird House was a small pavilion-like structure with two large cages at either end depicting an African and another scene. These both were unoccupied when we visited it. The small birds are placed in cages at one side of the House and the larger ones on the other side with outside aviaries. The Humming-birds looked very attractive in their special small cage with tropical plants. In the House I saw such interesting birds as the Great Bird of Paradise and the Red Bird of Paradise, also a beautiful specimen of the Purple-throated Continga (*Continga cayana*) from Guiana and the Amazon, this bird is very seldom imported to Europe. There was a single specimen of the China Pitta. The other inhabitants of particular interest included two Blue-backed Manakins (*Chiroxiphia pareola*), a Paradise Tanager (*Calliste paradisea*), and Fire-Tufted Barbet (*Psilophon pyrolophus*), a Racquet-tailed Drongo (*Dissemurus paradiseus*). Among the larger birds in the House were some Tinamous with one young one, also some Vulturine Guinea Fowl. In various paddocks and cages about the grounds were Emus, Sarus Cranes, Flamingoes, Peacocks, a Cassowary and one American Vulture in the Mammal House. The Ducks had a beautiful shaded lake surrounded by trees.

CORRESPONDENCE

BREEDING OF MEALWORMS

I have just written a note to *Cage Birds* in answer to an article appearing in that periodical on "Live Food and Substitutes".

The gist of my letter is that there is at present no known substitute for mealworms, and I would like to suggest that the present time, when there is no competition from the Continent, would be a good time to start a "factory" on a large scale for the production of this indispensable larva.

From what I have heard of the German methods of breeding mealworms, it transpires that large numbers of men, women, and children are employed in their production.

It is obviously not a trade which requires much activity, and it seems to me that this might be a useful method of employing a number of disabled men and women who are already in this country, and possibly more who, alas! will be available before long. The ways and means of such an enterprise I should leave to those with more business acumen than myself, but the whole matter might be discussed if and when the Council meets again, and I would suggest that ordinary members of the Society be invited to be present in order that we might have their suggestions.

DELMONDEN MANOR,
HAWKHURST,
KENT.

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

* * *

A SCHEME TO MAINTAIN A STOCK OF THE RARE SPECIES OF WATERFOWL

I feel sure that we all deplore the effect which this war must have upon aviculture generally, and the keeping of waterfowl in particular. Quite apart from the graver issues which are at stake, it seems particularly hard that after all the work and endeavour put forward by Messrs. Stevens and others to procure and establish new species of the family *Anatidae* for collections in England, the keeping of waterfowl should have received such a set-back.

With so many species now available there never was a time when the beauty of waterfowl was more appreciated, or the study of this interesting group of birds more popular than it is to-day. That being the case, I only hope that some of us may be able to concentrate upon the things worth keeping, and keep the best species going. My own view is that all the British species, except the very rarest are not for the time being worth a moment's consideration, and can be picked up by whoever requires them at the end of the war.

Several foreign species which have been many years with us are comparatively safe, too, provided *that we do not all part with or keep the same*. With this end in view, I put forward the suggestion, if not too late, that waterfowl keepers get together, take a rough census of the material available, and try to lend a guiding hand.

LILFORD,
OUNDLE,
PETERBOROUGH.

A. F. MOODY.

[The Editor accepts no responsibility for opinions expressed in Correspondence.]

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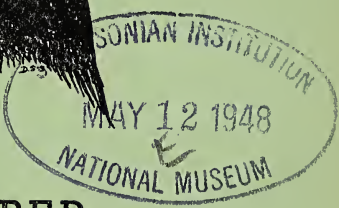
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AVICULTURAL MAGAZINE



PARROT NUMBER

CONTENTS

	PAGE
The Australian Ring-necked Parrakeets (Genus <i>Barnardius</i>), (<i>with coloured plate</i>), by ALAN LONDON	375
Aviculture in War Time, by ALFRED EZRA	378
The Management of Parrakeets, by EDWARD BOOSEY	379
Breeding of the Queen of Bavaria's Conure in Captivity (<i>with plate</i>), by W. C. OSMAN HILL	388
Parrrots and Parrakeets at Clères, by J. DELACOUR	390
Breeding of Blue-fronted Amazon Parrrots for the first time in Great Britain (<i>with plate</i>), by EDWARD BOOSEY	393
Blue Alexandrine Parrakeets, by ALINE EZRA	397
Breeding of a Hybrid Barraband × Crimson-winged Parrakeet, by the MARQUESS OF TAVISTOCK	398
Establishing the Lutino Ring-necked Parrakeet, by ALINE EZRA	401
Brotogerys Parrakeets (<i>with plate</i>), by HELMUT HAMPE	402
The Norfolk Island Parrakeet, by SYDNEY PORTER	406
Notes	411
Correspondence	411
Index	411

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AVICULTURAL MAGAZINE

THE JOURNAL OF THE
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THE AUSTRALIAN RING-NECKED PARRAKEETS (Genus *Barnardius*)

WITH SPECIAL REFERENCE TO THE CLONCURRY PARRAKEET
(*B. macgillivrayi*)

By ALAN LONDON, F.R.C.S.

My recent acquisition for the first time, after several years of endeavour, of a specimen of the Cloncurry Parrakeet, has prompted me to write the following review of this interesting genus of Australian Broadtailed Parrakeets. The most recent edition of the Australian Checklist recognizes four species, namely, the Twenty-eight or Yellow-naped Parrakeet, *B. semitorquatus*, the Port Lincoln or Bauer's Parrakeet, *B. zonarius*, the Mallee Ringneck or Barnard's Parrakeet, *B. barnardi*, and the Cloncurry Parrakeet, *B. macgillivrayi*. The members of the genus are widely distributed over the mainland of Australia, and Spencer's Gulf and the 138th meridian of longitude roughly divides the range of the two western or black-headed species from that of the two eastern or green-headed forms. The first three mentioned species are well known in captivity in England and all appear to have been bred there. Strangely enough, no member of this genus appears to have been bred by a member of the Avicultural Society of South Australia, although several hybrids between the species and with other Broadtails are on record. The reason is, I think, that although they are commonly kept in captivity in South Australia, it is seldom that an aviary is devoted to a pair of these birds. More frequently, they are kept as cage pets, making, as they do, quite good whistlers. To deal with the individual species in the order named above :—

THE TWENTY-EIGHT PARRAKEET, *B. semitorquatus*.—A typical example of a male of this species is a very large bird with a well-marked red frontal band and a uniform pale green abdomen. It appears to be confined to the south-western portion of Western Australia. The female is a smaller bird, especially as to the size of the head and beak and generally has only a little red obvious in the frontal region, also the black head is rather less intense in colour.

THE PORT LINCOLN PARRAKEET, *B. zonarius*.—A typical male as obtained from the Eyre's Peninsula or west coast district of South Australia is a smaller bird than the preceding, lacking the red frontal band and having a pale lemon yellow abdomen. In addition, the green coloration has a much bluer tinge than in the Twenty-eight. This I find is particularly noticeable in the females which otherwise I find difficult to sex with any degree of certainty, though other helpful points are the size of the head and beak and the intensity of the black head. This bird has a very wide range extending westward to that of the former, where over a wide area intermediate forms are encountered; also north-westward to the coast where the pale form, described by North as a distinct species, *B. occidentalis*, occurs. Never having seen this form in life, I do not feel disposed to offer any opinion as to whether its retention as a species is warranted. Skins that I have seen so labelled merely give the impression of a very faded Port Lincoln. In Western Australia all Black-headed Ringnecks are called "Twenty-eights" quite irrespective of markings or habitat, but I have never yet seen a typically marked Port Lincoln that possessed the "Twenty-eight" call note.

THE MALLEE PARRAKEET, *B. barnardi*.—This species has an extensive range through eastern South Australia, the interior of Victoria and New South Wales into Southern Queensland where the town of Windorah is said to be its northern recorded limit. Certainly it does not extend north of the tropic of Capricorn. It is a common bird in the Mallee districts of South Australia and the local form has a rather ill-defined narrow orange band across the lower breast and a good deal of dusky feathering on the head. A typical New South Wales bird on the other hand has a broader pale yellow breast band, a lighter coloured head, and the general breast coloration is a paler green. As a rule the species is easy

to sex, the females being generally duller and much greener on the back.

THE CLONCURRY PARRAKEET, *B. macgillivrayi*.—This species, which is practically unknown to aviculturists, was not described until 1900. As far as is known, it has a comparatively restricted range in North-Western Queensland, the southern limit of which is not known and no intermediate forms between this species and the preceding have been described. It is well portrayed by the coloured plate that appeared in the *Ibis* for 1902 which is reproduced in this number of the AVICULTURAL MAGAZINE. Good paintings also appeared in the *Emu*, vol. 29, plate 1, and in Gregory Mathews *Birds of Australia*, vol. vi. My efforts to obtain examples of this species may be of interest. When in Sydney in January, 1936, I learned from one of the leading dealers that he had recently had a small consignment of Cloncurrys for the first time; he was, however, unable to trace any of them for my inspection. Some months later, through the help of a friend in Sydney, several of these birds were brought down to Brisbane, destined for me. Having got so far, they came under the notice of a well-known English collector who happened to be in Brisbane at the time, and shortly afterwards became his property. Although they passed through Adelaide, I was unaware of the fact until later and missed the opportunity of even seeing them. I have since heard that they did not reach England alive. Nothing further eventuated until early this year when two more pairs were taken to America from Brisbane and more were promised to me. Then in March of this year I was surprised to learn that there was a specimen in the collection of Mr. Oscar Seppelt, a member of the Avicultural Society. Mr. Seppelt's collection was at that time being broken up and he was good enough to let me have the bird which had only been in his possession for a few weeks. He told me that he had made several previous attempts to obtain specimens direct from North Queensland and that this bird was the first to arrive alive, so the credit for the introduction of the species to South Australian aviculture must go to him. The bird under consideration is, I think, a male but I am by no means positive. At present, it is sharing an aviary with a pair of Barraband's and takes very little notice of two pairs of Barnard's Parrakeets in an adjoining aviary, nor for that matter, do they appear interested in it. It is

a smallish bird, about the size of an Eastern Rosella (*Platycercus eximius*), and the pale green body coloration and slightly bluish head are quite attractive. So far I have only heard it utter one call note which is identical with the alarm note of the Port Lincoln. The bird has probably been hand-reared as it is fairly tame and will accept food from the hand. Failing being able to obtain a mate I intend trying to pair it up with either a Port Lincoln or a Barnard's. It has always been assumed that the species is most closely related to the Barnard's, but my own impression is that it is possibly nearer the Port Lincoln; in fact for those who have not access to a coloured plate it might aptly be described as a small pale Port Lincoln with a bluish-green head and without any trace whatever of the red frontal band of the Barnard's.

* * *

AVICULTURE IN WAR TIME

THE IMPORTANCE OF MAINTAINING COLLECTIONS

BY THE PRESIDENT OF THE AVICULTURAL SOCIETY, ALFRED EZRA

I am delighted to see so many people are keeping up their interest in birds, and still have very good collections. So far there has not been much difficulty in getting most of the feeding stuffs, and I am hoping that we shall always be able to get something to keep birds going. Mealworms seem to arrive regularly from Holland, and gentles are always obtainable. My avairies were very full in August, and now I have taken over a good many birds belonging to my friends, so the aviaries are overflowing. I am determined to do all I can to keep my collection going, and I hope everybody else will try and do the same. It has taken us years to get such a beautiful lot of birds, and it would be a shame to have to destroy them. It may be a very long time before collectors will be able to get birds from abroad even after the war is over so we must try to keep all we can. I have never had so many birds as I have now—besides my aviary birds, I have over 200 Mandarin and Carolina ducks, all full winged and flying about from one pond to another. Any number of Chukor partridges in my garden, also jungle fowl, Tigrine doves, and some Silver Pheasants in the park. I sincerely hope all members will keep their birds, and also keep up their interest in the Society and help us all to keep things going through these difficult times.

THE MANAGEMENT OF PARRAKEETS

By EDWARD BOOSEY

There are some people who never seem happy unless a thing sounds—or unless they can make it sound—just as complicated as possible, in rather the same way as any doctor will tell you that many of his patients entirely refuse to believe that the medicine he gives them will do them the slightest good unless it tastes as unpleasant as possible.

Now with regard to the housing of Parrakeets, I am bound to confess that their successful breeding and keeping is not to be achieved by anything at all complicated or elaborate in the way of their accommodation. Actually their needs in this respect are simple, although it is essential that certain fundamental rules should be understood and observed. Thus, ornamental scroll work and eagles rampant in bronze to ornament the four corners of the aviary may be decorative, but they won't induce the inmates to breed successfully!

Firstly as to movability. Doubtless there are still champions of the fixed aviary, but I do not think even they would dispute the fact that quite large Parrakeets can be bred in quarters of very much more modest dimensions if these are movable than would be the case if they were on a fixed site. If movable aviaries are an impossibility, however, obviously the larger the space occupied by the fixed aviary the better, since the ground will take all the longer to become stale.

Alternatively, of course, an aviary with a washable tiled or concrete floor to the outside run could be tried.

We have had excellent breeding results here at Keston with any Parrakeets up to the size of a Rosella in aviaries whose overall dimensions are 15 feet by 5 feet by 7 feet, but I cannot too strongly stress the fact that these are moved annually, not on to entirely fresh ground each year, but to and fro alternate years, the vacated site being heavily limed and salted before it is occupied again twelve months later. This serves to clean and disinfect the ground and also encourages the growth of grass and discourages the more noxious weeds.

When we first tried this principle I was delighted with the breeding results, but at the same time wondered whether the alternate aviary sites would not gradually become stale and possibly lead eventually to infertility. As, however, some of these aviaries have now been in use from ten to twelve years, and the 1939 Parrakeet breeding results were quite as good, if not better, than any experienced before, I feel that one's doubts on this point can be finally allayed.

Roughly speaking, an aviary for Parrakeets should consist of a dry, well-lighted, draught proof wooden shelter, adjoining an outside wire flight. As Parrakeets in most cases intensely dislike driving winter rain and wind, it is important that they should be provided with somewhere to sit that is in the open air and yet fairly protected and under cover.

This is most easily achieved by roofing over the top and boarding down the sides of the one-third of the flight actually joining the shelter shed. In this way the birds can either sit completely protected in the shelter, or out of doors yet under cover, or again in the entirely open part of the flight. One very common error is to roof over the whole of the outside flight, and this is the greatest mistake in the world, as nothing is better for a bird's plumage than a good shower of rain.

To realize this one has only to compare the condition of the plumage of a Parrot that is kept indoors without being either sprayed or put out in a shower of rain, with that of one living under the aviary conditions already described. Such a caged bird may not actually appear in bad condition, but it usually entirely lacks the final bloom and gloss which characterizes the plumage of an outdoor aviary specimen.

Quite apart from the benefit to the birds themselves, it is well worth while keeping them as I have advised, if only for the pleasure it will afford their owner to watch the positive transports of joy in which members of the Parrot family indulge when taking a rain bath in the open. Roseate and other Cockatoos are particularly lovely as they fling up their crests, bristle their feathers and spread their wings, reminding one of great gaudy butterflies as they turn this way and that to make sure that the moisture shall penetrate to every part of their plumage. Among Grass Parrakeets Bourke's are by far the most enthusiastic rain bathers, and there are few

prettier spectacles than these chaste yet lovely little birds at such a time.

The actual design of the aviary will, of course, have to be modified according to the nature of the site upon which it is to be erected. For instance, if it can face south in a situation in which it receives natural protection—in the form of trees or hedges—from the prevailing wind, a single wooded shelter and an open run is really quite sufficient. If, on the other hand, the only available site is an exposed one such as a large open lawn or meadow, it is as well to have the shed double wooded and to board up that side of the flight which is going to get the full blast of the prevailing wind. Such details of construction, however, are really best left to the ingenuity of the individual aviculturist.

The wire run should be constructed of half-inch mesh netting, and I have often been asked why, for birds such as the larger Broadtails, such a small mesh is necessary, since obviously a bird such as a Rosella could be confined in wire of considerably larger mesh without any fear of its escaping. Actually, the answer to this is two-fold. Firstly, half-inch mesh netting will exclude such dangerous vermin as rats, stoats, and weasels, and secondly—and this is a point that is often overlooked—a person may erect an aviary primarily for Parrakeets and later on may want to house in it small Finches or Waxbills, which they would, of course, be unable to do if they had used anything but half-inch mesh netting.

Some of the larger Parrakeets, such as Bauers, etc., can bite through netting of this gauge, particularly as soon as it begins to get at all old. For these it is a good plan to tack a width of stout 1-inch mesh netting round the whole of the top of that half of the run where the perches are, as they usually sit on a perch and whittle away at the wire beside it. Incidentally, it may be of interest to mention in passing that, although both Brown's and Rosellas hardly ever damage wire netting, I have some cock Brown's × Rosella hybrids bred two years ago which are the most expert wire cutters, being quite as efficient in this respect as any Bauer ! They set about it, too, in an extremely methodical manner, but this only bears out my contention that hybrid Parrakeets, like mongrel dogs, are often unusually intelligent.

Black Cockatoos incidentally can only be confined in link mesh netting, such as is extensively used at the London Zoo.

The wire of the run of a fixed aviary should, of course, be buried in the ground and it is a good plan to dig a trench to bury it at least 18 inches deep turning it outwards at the bottom for another 6 inches. This tends to thwart anything trying to burrow into the aviary.

Much the best method of construction for a movable flight, however, is to have the bottom wired over in the same way as the sides and top. The grass will quickly grow up through this wire floor, and it has the great advantage of making an aviary entirely vermin-proof. Rats may, and frequently do, burrow round the aviary with the idea of gaining entrance underneath, but this is barred as soon as they come up against the wire netting. This, of course, means that none of the uprights of the run are, as in the case of a fixed aviary, let into the ground and particularly in a very windy situation it is sometimes advisable to drive iron stakes into the ground flush against two of the uprights, and bolted to them so that they can easily be removed.

The most important thing to remember about the perches is that these should never be allowed to clutter up the whole of the aviary, as this merely prevents the inmates making full use of its flying space. I just mention this because more than once I have seen aviaries so crammed with perches of every description as to make them far more suitable as quarters for some climbing animal rather than for a bird. Natural perches are, of course, best, the most suitable, perhaps, being hazel, as straight lengths can be cut for each end of the aviary while the twiggy branches may be nailed on to the back for the birds' amusement.

One of the bugbears of Parrakeet keeping is feather plucking, and I am convinced that this vice is more often started as an antidote to boredom than from any other cause. Now boredom doubtless chiefly assails caged birds, but even so those kept in aviaries should be provided with as many healthy diversions as possible, and one of the chief and best of these is a twiggy branch, preferably with the leaves on, of some non-poisonous tree such as hazel, oak, ash, lime, or any of the fruit trees. How often a fresh bough can be provided for the birds depends, of course, on how busy one is, but in any case the oftener they can be given this treat the better. Immediately a fresh branch has been put in the birds will be found dangling from it at every angle, busily

nibbling off the buds and whittling away at the bark, and a very pretty sight they make as they do so.

Generally speaking, most Parrakeets need the following diet. Seeds : canary, millet, hemp, sunflower, and monkeynuts ; members of the Broadtail family feeding chiefly on hemp and sunflower and monkey-nuts while members of the *Psephoti* such as Redrumps, Manycolours, etc., will eat a good deal of canary and millet. Grass Parrakeets need the same seed mixture as Budgerigars. Curiously enough, all the Broadtails are fond of monkeynuts, with the sole exception of the smallest, the Stanley, and I have never been able to induce any of our numerous pairs to eat these.

A perpetual supply of cuttlefish should be maintained, and it is also a good plan to give mineral salts in some form or other, the most convenient probably being the iodine nibbles that are sold commercially. Specially large ones are made for Parrakeets.

Apples are an important article of diet, and it is a mistake to suppose that just any old apple will do for the birds, as they are often extremely fastidious as to the quality of the fruit they will consent to eat ; and after all, particularly if you have a rare and costly pair of birds which are going to produce readily saleable broods, it is hardly reasonable to begrudge them a supply of really good eating apples.

Parrakeets may be supplied with any of the ordinarily recommended greenfoods, such as groundsel, chickweed, etc., and spinach beet may be grown in the garden for them. They are very fond of grass, and a turf should be provided at regular intervals for caged specimens, or those whose aviaries are bare of herbage. Most Parrakeets, particularly the Grass Parrakeets and *Psephoti*, are very fond of some of the flowering grasses, such as rye grass, which is one of the best, and one should take advantage of the supply of this during the few summer months that it is obtainable.

Incidentally, all Parrakeets will be observed to eat a much greater quantity of green food as the breeding season approaches in the spring than they did during the autumn and winter.

One of the most valuable of winter green foods, particularly for the Grass Parrakeets, is the little " poa annua " grass, which

grows as a solitary weed in gardens, and seems to bear flowering heads most of the year.

As to heating, this, fortunately, is quite unnecessary for the vast majority of Parrakeets, even the Hooded, which hails from tropical Northern Australia, being, in my experience, quite indifferent to cold and able to winter out successfully in any reasonably constructed aviary.

At one time, not so long ago, members of the Grass Parrakeet family were generally considered only half hardy, but I have made extensive experiments with this family, and have now proved that Bourke's, Bluewings, Elegants, Splendids, and Rock Grass Parrakeets are all perfectly hardy, at any rate if they are provided with a double wooded shelter into which they are shut each evening and an aviary in as protected a situation as possible.

I should just like to stress here that I do not share the belief of some aviculturists that it is important to let out birds that have been shut in over night in winter, as early as possible. For one thing, if the aviary is properly constructed, they should be perfectly happy in the shelter, and I am convinced that chills are usually contracted in the cold and perhaps fog of the early hours of a winter's morning. Personally, I would advise that all stock from the end of September until the spring should be shut into the shelter at dusk, and not let out again until between 9.30 and 10 the following morning, when the day has had time, if it is going to do so at all, to warm up a bit.

The only Grass Parrakeet I have failed to winter out with success is the Turquoise, but although these have been bred at Keston on several occasions, they do not really flourish here for some reason, usually dying off after a year or two, so I do not consider this part of the world any real test of their hardiness, as I know of other Turquoisines in different localities whose owners find no difficulty in wintering them in an unheated aviary.

Most Parrakeets are great bathers, and a fairly large enamel pie-dish provides a good bath for them. These are more to be recommended than earthenware vessels since they are much easier to keep clean.

Some people seem to experience very bad luck with their Grass Parrakeets in the unfortunate losses they sustain owing to their birds cracking their skulls against the wire of the aviary.

At one time it was considered essential—and we adopted the principle ourselves—to line the whole of a Grass Parrakeet's aviary flight with string netting, stretched taut, about 6 inches from the wire itself. As, however, it is a most tiresome business to keep string netting perpetually taut, and as we found it discouraged so many potential keepers of Grass Parrakeets, I decided to take my courage in both hands and tried first of all some Bourke's in an aviary without this inner lining of string netting. Since then I have dispensed with this precaution for all our Grass Parrakeets, and have so far had no cracked skulls as a result.

From various letters I have read, however, I have quite come to the conclusion that there is a very real need for a string netting lining if Grass Parrakeets are kept in unnecessarily large, all-wire, aviaries in a particularly exposed situation, since under such circumstances they are, if suddenly frightened, apt to dash up, forgetting that there is anything between them and the sky above, usually with fatal results to themselves. If, on the other hand, their aviary is no larger than that I have recommended for Broad-tails, they are far less apt to lose their bearings and when alarmed usually fly straight into the shelter.

Suitable nest boxes for Parrakeets are of various types, but personally I have found one of the best of all to consist of an oblong box with a hole towards the upper end and half a coconut husk fixed in the bottom of it, this being most easily done with clay or plaster of Paris. All the Broadtails I have tried rear excellent young ones in such boxes, and this season I tried the experiment of giving a pair of Redrumps three Princess of Wales's eggs in a box of this type, the result being the rearing of three of the finest young Princess of Wales I have ever seen.

Another nest box is the well-known grandfather clock type, filled to within 18 inches or so of the entrance hole with peat moss, having a 6 in. layer of decayed wood on top of the peat moss. Such a box is perhaps most suitable for some of the larger Parrakeets, such as Kings, Crimsonwings, Ringnecks, Rock Peplars, etc. Then again there are natural logs, which have many advantages, their chief disadvantage being that ones of suitable size and shape are so difficult to get hold of.

Bourke's, although they will breed in husk boxes, are particularly

fond of logs, and I am inclined to think these make the best nest box of all for Manycolour Parrakeets, who are apt to let their young ones die unless the nest box provided is entirely suitable, and even then are a somewhat tricky proposition to rear successfully.

The beautiful little Hooded Parrakeet, which nests in a wild state in burrows in termite ant heaps, was at one time considered impossible to breed unless it was given as realistic an imitation as possible of one of these ant heaps, which meant erecting a vast sort of pyramid of turfs, superimposed one on the other, with a hole burrowed in the side for the birds to nest in. This being an extremely tiresome business, I decided to try Hooded with the ordinary husk nest, but this, I must confess, they entirely ignored. Most hens, however, readily take to a natural log hung horizontally, and this would doubtless apply to the beautiful, but apparently almost extinct, Paradise Parrakeet as well.

Grandfather clock boxes, being very stoutly constructed, can be placed in the open run with no overhead protection; but it is as well to hang logs and husk boxes under slight overhead cover.

It should be remembered that, generally speaking, Parrakeets do not like the entrance hole of their nest box to face so that the sun can shine full into it during the hottest part of a summer's day.

Of the Grass Parrakeets, Bluewings and Elegants do excellently in husk boxes, but for some reason I am inclined to think that Splendids and probably Turquoisines are usually more successful in a miniature box of the grandfather clock type.

Incidentally, with regard to heated aviaries, which I have mentioned earlier, it might be as well to point out here that it is quite erroneous to assume that because a bird comes from the tropics it is necessarily delicate and needs a heated aviary, and vice versa. Indeed, some birds which come from very hot parts are able to stand even the coldest weather without heat, whereas others, such as the little Yellow-fronted New Zealand Parrakeet, which inhabits islands off the mainland whose climate is apparently sometimes almost as unpleasant as our own, is apt to get a chill the moment the weather starts to turn cold in the autumn. Nor did I find that these rare little Parrakeets really flourish, even if given a heated shelter. Indeed, the best winter quarters for

them consist of a large flight cage in a heated birdroom. I have bred them in large numbers, but found it, for some unexplained reason, impossible to keep them alive for more than a year or two.

In conclusion, it would perhaps be as well to say a few words as to the possibility or otherwise of keeping mixtures of Parrakeets together. Personally, I shall always consider that for the best breeding results, it is essential to give each pair of birds an aviary to themselves, but I know of at least one aviculturist who has a spacious enclosure in which he successfully manages to breed Ringnecks, Rock Peplars, and Bluewing-winged Grass Parrakeets.

Generally speaking, the old rule applies as to relationship, namely the less closely related the various species in an aviary are, the more likely they will be to live and even breed peacefully together. Some Lovebirds, such as Nyassas and Blackcheeks, can be successfully bred on the community system, but others, particularly Peachfaces, must always have a separate aviary to each pair. This, too, of course, is absolutely essential for members of the Broadtail family, as a cock Broadtail in perfect health and breeding condition is a very cantankerous gentleman indeed. This applies almost equally to the *Psephoti*.

For anyone who wants to keep Parrakeets merely for show, it is possible to house a number of cocks of various species in the same aviary, as long as no hens are in sight to provoke quarrels among these enforced bachelors. One important point to remember is that whereas two male Broadtails confined together in an aviary might, and probably would, fight to the death, a larger number of them similarly confined would be a much safer proposition, as then no one bird is able to vent its concentrated malice on another, since their quarrel would promptly be broken up by a third, so that in this way there is undoubtedly safety in numbers.

BREEDING OF THE QUEEN OF BAVARIA'S
CONURE (*Eupsittula guarouba* (Gmelin)), IN CAPTIVITY

By W. C. OSMAN HILL, M.D., Colombo, Ceylon

In December, 1936, I had the extreme good fortune to acquire, through the kind offices of Mr. John Hagenbeck of Colombo, what has since proved to be a true pair of that rare and exquisite Parrot, the Queen of Bavaria's or Golden Conure (*Eupsittula guarouba*). The birds, though having spent several months journeying the seven seas in a small box, arrived in almost perfect plumage and appeared to be in the best of health. They were quite typical in form, size, and coloration, but the one which I took to be the female had a few greenish and green-tipped feathers on the mantle, so that I took it that this was a young bird. These green feathers were soon lost, and apart from their behaviour I was quite unable to distinguish the sexes either by colour, head-form, shape of bill, or any other physical feature.

The birds were kept together for the first six months in a good sized ordinary wire Parrot cage. They proved very affectionate with one another and quite tame with human beings; whilst the female was frequently heard to mutter a few words in an unknown tongue.

Meantime a large aviary was under construction, with a flight of 18 feet, a height of 9 feet, and a width of 6 feet. The hindmost third was closed in at the top and sides with asbestos sheeting, and the covering on the roof was later extended forwards for another 3 feet. Two nest boxes were fixed high in the roof in the closed part of the aviary. These measured 18 in. \times 12 in. \times 12 in. each, and they had a hole in the front near the top.

After being let out into this aviary the birds remained very affectionate to one another, and also retained their tameness so much that they would walk right up to me if I went inside. Most of the time, however, the cage was kept locked and the attendant has never been allowed inside, feeding being done through a hatch in the rear.

The birds have been fed on a mixture of canary and sunflower, with a few monkey nuts, supplemented by various soft fruits, such as papaw, mango, etc.

Having found one of the nest boxes a few weeks after their



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[W. C. Osman Hill.

QUEEN OF BAVARIA'S CONURES

[To face p. 388.

entry into this aviary, the two birds spent most of their time in it, apparently only playing about. If they heard anyone outside the cage they would struggle with one another to see who should be first out of the hole, which only admitted one bird at a time. It frequently took ten minutes or longer before one bird eventually got out, and then the other followed, and both then clambered over the wires to meet their visitors.

No serious nesting apparently took place till about December, 1938. The nest was lined by a few chips of wood bitten off the inside of the nest-box. Babies were first suspected from the occurrence of a peculiar squawking noise on 21st March, 1939. With the aid of a torch I saw at least one half-grown youngster covered with dirty-white down crawling about in the bottom of the box. The parents made no fuss whatever, but returned to the box immediately after my examination.

One of the baby birds first peeped out of the nest hole on the 24th April. Its head was greenish yellow and peculiarly streaked. The bill was pure white. As I left Colombo for a holiday in England on the following day, I write the remainder of the story from notes received from Mr. F. E. Loos, an aviculturist of Colombo, who has shown deep interest in the birds, and is keeping a careful watch on them during my absence.

Apparently two youngsters eventually left the nest, one on 3rd May, and the other the following afternoon. Both babies had a scraggy appearance about the neck, due to the presence of a lot of pin-feathers. They were also streaked on the cheeks. In size they are almost as large as their parents. In general colour the youngsters resemble the parents, but the yellow is much paler, with none of the amber tone. The richest yellow occurs on the lower breast and abdomen. The forehead is yellow, but the cheeks have a dirty-greenish streaked effect. Neck, throat, and mantle are yellow, also streaked with green. The flight feathers are olive green, as in the old birds, but the rectrices are yellow. The cere appears to be naked and very swollen. The mandibles appear to be similar to those of the adult in shape and colour. This description agrees with that given of the young of this species by Finsch (*Papageien*, i, 455, 1867).

The accompanying photograph shows the two youngsters with their parents. The former are easily recognized by their streaky plumage.

PARROTS AND PARRAKEETS AT CLÈRES

By J. DELACOUR

I never have specialized in Parrots at Villers-Bretonneux or now at Clères. I do not keep either a large collection of rare Amazons, Cockatoos, Lories, and other Parrots and Parrakeets such as one can see at the London Zoo, or in the aviaries of Mr. H. Whitley or Dr. J. M. Derscheid, nor have I the wonderful colour varieties of Indian Parrakeets and the rare species of Mr. Ezra or the numerous breeding pairs of nearly all the Australians, Broadtails, and Grass Parrakeets which Lord Tavistock, Mr. A. Decoux and many others possess in Europe or in California.

The reasons are that the climate of Villers or Clères is not really suitable for the breeding of Australian Parrakeets, being too damp, and also I always felt that the best accommodation for Parrots and Parrakeets is indeed rather unattractive. The dullness of strongly built aviaries (the movable ones being much the best for breeding purposes, but far the worst to look at), and the impossibility of growing any shrubs inside, on the one hand; the ugliness of strongly built Parrot cages, on the other, have always prevented me from trying to keep a large series of these birds. There is no doubt that if one wants to keep and breed Parrots and Parrakeets under the best practical conditions, one must put aside to a degree the idea of making them an ornament to the garden, and be prepared to think only of the utility side of the question. As, however, I could not possibly do without Parrots and Parrakeets, some of the most beautiful, intelligent, and interesting of all feathered creatures, I have to content myself with a selection of four of the most attractive, from my own point of view.

I have tried to keep them to the best advantage so far as the artistic side is concerned, as well as their comfort, health, and happiness. I always try to maintain a good many Macaws, which are among the finest and most showy birds on earth, and with them some of the larger Cockatoos.

These big Parrots look awful in aviaries, I think, and do badly in them. None have ever bred to my knowledge in such accommodation.

The solidarity of Macaws' aviaries and their untidiness, due

to the frightful work of the bird's beak on their perches etc., make them an eyesore. Contrary to what many may believe, Macaws and other large Parrots are perfectly happy and do exceedingly well chained by one leg to a perch, though naturally, the ring and chain must be perfect. After having tried many sorts of supports, I have adopted a long fence made of concrete, imitating rough wood in a perfect way, on which each bird is tied at intervals of about three feet. The chain is long enough to allow the Macaw to reach his neighbour, preen him and play with him, without getting entangled. The top of the cement fence is hollow, and a piece of wood is fastened into it, in such a way that the birds' feet rest on wood and not on cold concrete. These pieces of wood do get broken off and are replaced whenever necessary. Suitable holes are made in the concrete and used as feeders and drinkers, and the whole affair looks neat and nice. In the climate of Normandy and of most parts of England, Macaws prove perfectly hardy. Their roosting fence at Clères is built under very high beech trees, where they can have some sun, but also a lot of shade and shelter. They always remain out in the rain, which they like and is very beneficial to their feathers, and they stay out of doors practically all the year round. Only during spells of hard frost and snow are they taken indoors, into an unheated room, very often for the night only. For thirty years or more, we have never lost one Macaw or Cockatoo through exposure to cold or wet.

There is now and then a specimen which cannot stand being tied up. In such a case, the best thing to do is to give the bird its liberty, either full-winged or with cut flight feathers. Nothing of course is finer than Parrots flying at large and I always have a few. But some individuals are impossible to keep in that way, as they stupidly lose themselves. Others prove spiteful to other birds and even to human beings, or too harmful to trees and fruit. There is a certain amount of individual selection to be made among the birds, and in any case, for one reason or another, I have found it impossible to keep more than half a dozen flying Macaws and Cockatoos at the same time.

Our chained Parrots are fed and watered twice a day, and get many tit-bits between their regular meals.

At the present time, we have 4 Hyacinth, 7 Lear, 3 Green-winged, 4 Red-and-Yellow, 5 Blue-and-Yellow, 1 Military and

7 Ambiguous Macaws, the last two and a Red and Blue flying, as well as an old Bodtini Amazon. A beautiful free flying Great Crested Black Cockatoo committed suicide last year, after a long life of freedom, by sitting on an electric transformer on the other side of the valley. All our Macaws are tame and gentle, and some talk well.

There are a few Grey and Amazon Parrots in cages, as pets, including Bodin's, Yellow-cheeked, Orange-winged, Red-fronted, and a pair of the rare Cayman Amazon Parrots, which are put out in an aviary during the summer and might, I hope, breed one day. I brought them over from their native island on Lord Moyne's yacht, *Rosaura*, two years ago. They are extremely susceptible to cold and must be put in before the first frost.

I have now only a few pairs of Australian Parrakeets, a dozen or so, of the most ornamental species, and also a few Cockatiels, Lovebirds, and Lorikeets. They share some of the Pheasant pens, living long and breeding now and then, although I must admit that our results are poor compared to those of our members who keep them in more suitable quarters, particularly movable or concreted aviaries. To avoid the rather dreary sight of a long row of unplanted aviaries, I devised the scheme of having alternatively one planted compartment with Doves, and one unplanted, with Parrakeets. The effect is quite pleasing. Of course most of the Grass Parrakeets, and to a point the Polyteline (Barrabands, Rockpeplars, and Queen Alexandra's), are harmless to vegetation and can be kept in planted flights; Hoodeds also are not destructive.

My oldest Parrakeets are a lovely pair of Queen of Bavaria, which Lord Tavistock sent some eighteen years ago to Madame Lécallier who gave them to me in 1928. They live in the open, and only last year, during the exceptional cold weather, were they taken indoors. They have laid and hatched several times, but unfortunately always in the autumn, and the young were never reared, though two lived to be fully feathered on one occasion. These magnificent golden-yellow Conures are very intelligent and amusing, but terribly noisy. It is a pity that they are so difficult to obtain. They inhabit Lower Amazonia, in the Para district. When I was there in 1937, I could not obtain any, and one old bird only was then to be seen at the local zoo.

THE BREEDING OF BLUE-FRONTED AMAZON PARROTS FOR THE FIRST TIME IN GREAT BRITAIN

(*Amazona aestiva*)

By EDWARD BOOSEY

A pair of Blue-fronted Amazons have successfully reared a brood of five young ones here at Keston this season.

The parents had been in Lord Tavistock's possession, but he finally decided to part with them, because although they produced fertile eggs and actually hatched them, that is as far as their breeding operations got, since they subsequently starved and finally murdered their offspring. Lord Tavistock believed that the cock was the murderer.

Now in spite of their sounding a pretty hopeless breeding proposition, I was anxious to give them at least one season's trial at Keston, because a hen Parrot that will lay eggs and sit properly and a cock that realizes the importance of fertile eggs—if a family is to be raised—are two birds by no means to be despised!

If, furthermore, as in this case, they are a mated couple here is an extra piece of good luck, since good breeding cocks of a seldom-bred species usually seem to have the misfortune to be mated to some idiotic hen, while a really good breeding hen of, say, the Cockatoo family, is as likely as not mis-mated to a useless cock, probably a "tame talking" specimen—who, when his wife obviously wants to pair, merely asks her in his Punch and Judy voice if she would like a cup of tea! I know just such a bird!

The Amazons arrived here in September, 1938, and were housed in one of the Parrakeet aviaries whose dimensions (15 ft. long by 5 ft. wide by 7 ft. high) are similar to those in which we breed our Broadtails. The aviary run was strengthened by the $\frac{1}{2}$ -in. mesh from which it was constructed, being covered with larger mesh wire. Curiously enough, Amazons, although in common with most Parrots they do a good deal of perch whittling, are singularly undestructive to the actual woodwork of the aviary; an advantage which is certainly not shared by the African Grey as an aviary bird.

In this aviary they passed the winter and were provided with a

nest-box at the end of the third week in March. This was of the grandfather clock type, with the entrance hole protected with a binding of zinc.

The hen, unlike most female Parrots, took to it at once, and thereafter was only very occasionally seen. We left them quite undisturbed and had no idea how many eggs they had, if any. Actually, unless the cock had been shut in the shelter, this would have been a difficult matter to investigate as he is an extremely ferocious bird, and looks really alarming when he bristles his feathers and glares at you with his brilliant orange eyes, muttering in a sinister fashion the while.

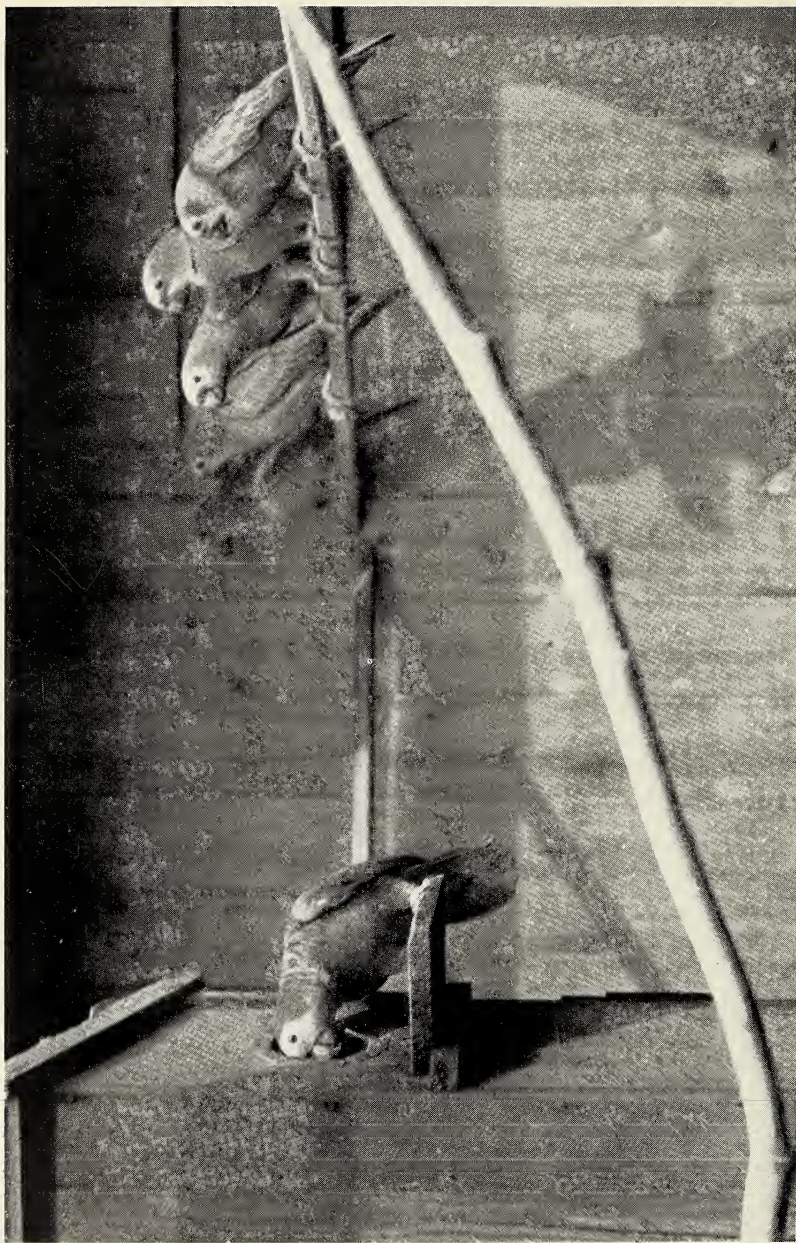
Incidentally, when he is given an apple he will, if you are standing close to the aviary, hurry down to it and tear it viciously to pieces just to demonstrate what he would like to do to your finger if you were unwise enough to put it within range of his beak !

As a result the hen might, for all we knew, have been merely incubating what Lord Tavistock aptly describes as the "abstract idea of eggs".

Eventually, however, the cock was observed to be paying frequent visits to the nest-box and disappearing inside it for quite long periods. We therefore concluded that the young must have hatched, and about this time I thought I heard the sound of a young one being fed in the nest. The brood were, however, singularly silent thereafter, and the sound may have been only an over-optimistic delusion on my part.

Although—since I knew he was reputed to be prone to infanticide—I felt it might be wiser to remove the cock to the next aviary I did not do so, as it seemed to me that if previous broods of young ones had been half-starved with the attentions of both parents, matters would only be made worse by the removal of one of them. At the same time I decided on a somewhat bold experiment, in order to test a theory I had long held, namely that the larger Parrots might fail to rear their young ones in confinement owing to their becoming weary of the hard labour of perpetually eating a sufficient quantity of small seeds to feed them with.

Lord Tavistock had given them bread-and-milk in addition to their ordinary diet, and I decided to give them this too, supplemented by the catholic diet that pet Parrots in cages seem to enjoy



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BLUE-FRONTED AMAZON PARROTS. MOTHER AND YOUNG

[The father, unfortunately, does not appear, as he had to be shut in the shelter to prevent his attacking the photographer.]

[Brian Armstrong.

so much. A little Senegal I had for twenty-one years was passionately fond of boiled white fish, and the menu I finally gave the Amazons consisted of boiled cod, scrambled eggs, boiled potatoes, and bread-and-milk. The potatoes, incidentally, were those left over from the table, so that they had a certain amount of butter on them. Of these, particularly scrambled egg and boiled potato, they consumed enormous quantities and were supplied with as much as they would eat of these various extras morning and evening, and they also had to be given a double ration of sunflower, hemp, and monkey-nuts. I should not, of course, have been so surprised at the quantity they were eating if I had realized that they had five young ones to feed, but even in my most sanguine moments I did not allow myself to hope that they would produce a brood of more than two or three at the most.

The Amazons proved to be extremely devoted parents, and they certainly had to work pretty hard as the young ones spend a very long time in the nest and the rearing of a single brood is a full-time occupation for the parents during the whole of the summer.

Actually the eggs must have been laid about the end of the first week in April, and the first young one left the nest on 20th July.

When at last we were able to catch both the parents feeding in the shelter, we took the opportunity of looking in the nest-box and I do not expect ever again in my avicultural career to have quite the thrill I had to find the nest completely packed with young Amazons, all obviously extremely healthy and flourishing.

Unlike a brood of Broadtail Parrakeets, which are usually much about the same age, the Amazons were all of different ages as in the case of Budgerigars, so much so that the two eldest were large and feathering well when the youngest was still quite a tiny nestling, the remaining two being at a roughly intermediate stage.

The young ones, when they left the nest, were extraordinarily brightly coloured, so that actually at a distance it was difficult to distinguish them from the hen; but their most characteristic feature was their very dark eyes which thus appeared considerably larger than those of their parents. It is difficult to sex them, although there is considerable variation in the areas of blue and yellow on the head in each of the five young ones.

Four of the nestlings are, I think, quite the finest young birds we have ever bred here and the fifth would have been equally

good had it not, owing to the large size of the brood, been forced to grow up almost buried under the four elder members of the family so that it must, as it were, only occasionally have been able to get its head up to the surface for air ! In this way it got slightly squashed and one of its legs is bowed outwards. Had the nest been larger or the brood smaller, this bird would obviously have been just as perfect as the others.

All five are excellent fliers, and I was surprised to find that they flew immediately they left the nest, as I had imagined that, any rate for a week or so, they would progress entirely by climbing about the wire netting.

They learned to feed themselves with extraordinary rapidity and two of them were seen at the food dish eating potato two days after they left the nest.

At first, whenever one went to look at them they "froze" as a setter does, remaining so still that I can quite imagine they would have been completely invisible against a background of green leaves.

They are now just getting to the playful stage and are fond of going back to and rummaging about in the nest-box. They are also, I think, starting to join in their parents' morning and evening chorus, which consists of the strange jumble of cries which most Amazons utter at such times, supplemented, in the case of the cock, by a most realistic imitation of a child being beaten by its cruel parent.

The latter really is almost too realistic, particularly the gradual crescendo of screams as the child sees its wicked father approaching with the dreaded belt ! I have no idea where he picked this up, but doubtless, like most of the Parrots that come into one's possession since the Parrot ban, he has a fairly long and varied career behind him, spent, apparently, in a variety of households.

* * *

Dr. Hopkinson writes :—"I have no record of success in breeding Amazon Parrots pure bred, but there are hybrid records, namely, Blue-front \times Green-check, White-front \times Blue-front and, I think, a third."

BLUE ALEXANDRINE PARRAKEETS

(Psittacula nipalensis)

By ALINE EZRA

When my father returned from India in 1923, he brought with him a beautiful cock blue Alexandrine Parrakeet and a hen Lutino Alexandrine.

The former was then unique, as it was the only known bird of this species in which the green tinge had entirely disappeared. After being acclimatized indoors for the first six months, the two birds were turned out in a large open aviary, where the blue cock lost no time in taking to his yellow wife. But, although they mated and laid for the next two years, all the eggs were infertile.

We then paired the blue cock bird with a normal coloured green hen, and in 1930, for the first time, they succeeded in rearing four strong young ones, though unfortunately all were green.

In 1934 our object was at last achieved. The year before, we had paired the blue cock bird with one of his green daughters, and though they failed to produce any live chicks, we decided to try this experiment once more. On the 14th and 15th April two eggs were hatched out, and on the 5th May one BLUE feather was actually discovered on the second chick! . . .

We were not absolutely certain, however, about this bird's colour until a week later, when he was simply covered with sky-blue feathers. It was certainly a triumph and the result of ten years patient efforts.

The blue chick grew into a very handsome cock bird and became even lovelier than Father.

We have now bred about half a dozen Blue Alexandrines, but only two have been reared. This year the nest contained two eggs, both of which hatched, one into a green and the other a blue bird. Alexandrines are poor breeders compared with ring-necked Parrakeets. They are unreliable parents and will often give up feeding their young when they are only a few days old.

As we now possess a good many pairs of blue-bred birds, we hope soon to establish this variety, of which the old blue cock bird is the only one ever seen in India.

We also have Lutino Alexandrines and hope to be able to establish these too, one day.

THE BREEDING OF A HYBRID BARRABAND × CRIMSON-WINGED PARRAKEET

By THE MARQUESS OF TAVISTOCK

The breeding of fertile hybrid Parrakeets is usually an undesirable pastime, but the infertile crosses between the various Polyteline Parrakeets, Kings and Crimson-wings are a different matter, being of exceptional beauty and intelligence and ideal birds for the show bench or for an aviary where a display of gay plumage is the first consideration.

Most of the crosses between the commoner species of the genera just referred to have now been obtained, but there remained one notable exception which promised great possibilities—Barraband × Crimson-wing.

Having an odd cock Barraband this spring I obtained a hen Crimson-wing for him, feeling pretty sure of successful results.

For a time they did not take much notice of one another, but towards the middle of May they grew more friendly. It became apparent, however, that the Crimson-wing was going to be one of those foolish birds which will not look at any kind of nest and insists on laying on the ground in the open flight, and in due course an egg arrived in a fairly hopeless and exposed position. An attempt to put some thick turf under the egg to protect it from the wire netting on the floor of the flight merely caused the Crimson-wing to desert and lay the rest of her clutch on the floor of the aviary shelter. The eggs were taken by my aviary attendant and put under a broody bantam which damaged most of them, including one fertile one, but succeeded in hatching another. I had recently lost a Crimson-wing chick through leaving it too long with the hen foster-mother. Young Pheasants may be able to live twenty-four hours and more after hatching on the egg-yolk in their bodies, but young Parrakeets, it would appear, need feeding almost as soon as they are dry. Accordingly I removed the little hybrid and established it in a flannel nest in the bird hospital where the temperature is about 85°. I intended to try and hand-rear the fragile little morsel of white fluff, but although it got on fairly well the first day, I did not like the look of it on the second as it did not seem to be digesting the food in its crop as quickly as it

should and appeared uncomfortable. A foster-mother seemed indicated, but the only one available appeared a doubtful proposition.

For many years I have had in my collection a fine hen Amboina King, a large, gorgeously coloured bird as brilliant as any cock. Her domestic career has been a stormy and unfortunate one. I mated her to a cock of the smaller Salwatty race. Several years ago they nested and produced one rickety offspring which, in spite of good care by the Amboina, died soon after leaving the log. The bereaved mother soon after fell upon her mate without warning and scalped him badly.

A year later they were reintroduced and seemed pleased to see each other, but the following day the Amboina again fell upon the Salwatty without warning and repeated her Red Indian tactics.

After that they were separated for two or three years, and when I introduced them for the last time I partly cut the Amboina's wing and kept it sufficiently cut to enable the Salwatty to get away from her if she turned nasty. The Salwatty was now master as, strange to say, he had always appeared to be, except when his wife elected to run amok without warning. He got his own back for the rest of his life by bullying her mildly and cursing her in unmeasured terms, but they never nested again, probably because the Amboina resented the handicap I had placed upon her as a punishment for her murderous outbursts. About two years ago the Salwatty died and the Amboina remained alone for I did not care to risk any weaker male bird with so fierce and untrustworthy a companion. Last winter I obtained an exceptionally fine male Australian King as a mate for a widowed hen occupying the aviary next the Amboina's. He made a very good impression on the Australian hen, but, what was more, I soon realized he had captivated the Amboina as well! At first he was not unresponsive and indulged in a little mild flirtation through the wire, but later when his proper wife began to contemplate domestic duties he realized that such conduct was unworthy of a married man and merely cursed the Amboina when she came near. As, however, is not unusual in such cases, even alas! in human society, his increasing coldness merely fanned the passion of the despised lady who started sitting about making lovelorn whinings and growlings which culminated about a fortnight before the hatching of the young hybrid in

two eggs being laid on the floor of the aviary shelter. The eggs, however, were not incubated and I thought that the hopeless venture was over for the year when to my surprise two more eggs appeared, the second arriving the same day that the young hybrid was hatched. Although the risk of failure seemed great I drove the Amboina into the flight, substituted the baby for one of the eggs and watched from a distance. In a little while she returned to her nest now reinforced with a thick layer of earth superimposed on the sand on the metal floor-tray of the aviary shelter. Would she kill the young one and come out again? No, all seemed to be peace and cautious inspection some hours later showed her sitting steadily. Next morning she was still sitting and the following day the baby was seen to have a full crop and to have grown considerably. In fact whatever her shortcomings as a wife no one could have discharged a mother's duties more admirably than did the Amboina. Under the care of its large and devoted foster parent the chick grew faster than I have ever seen a young Parrakeet develop, and on 23rd July made its first appearance in the outside flight, a strong flier, though, like all birds of its genus, a bit clumsy in its first venture. In appearance it is much more Barraband than Crimson-wing, having all the coloration of a young Barraband—red thighs and pink under-surface to the tail—and no red in the wing or blue on the rump. What will be its sex and what its future? Will it one day reveal glories now hidden? Will it prove to be a hen? Will the Amboina, repenting of her good deeds, scalp it when it dawns upon her that it is not as red as it should be? Time will show.

One interesting fact relating to the foster-mother's behaviour is this. Though she disregarded the "breeding-sequence" theories of the scientific ornithologists sufficiently to feed a young bird before she had incubated, she decided not to let the poor gentlemen down *too* badly, and brooded until her foster child actually flew, i.e. longer than he needed the warmth of her body and as long as she would have brooded if she had had to hatch her eggs.

ESTABLISHING THE LUTINO RING-NECKED PARRAKEET

(*Psittacula manillensis*)

By ALINE EZRA

We had been trying for eight years to breed Lutino Ring-necks, when in 1934 we succeeded in rearing two.

There were already quite a number of yellow-bred green birds here, and in a special mating aviary where young Parrakeets were turned out before being sexed, there were two wild-caught Lutinos and five green Lutino-bred birds, all of which were living happily together. This was very unusual, for in most cases Lutinos and greens will not agree together in colonies.

We did not know if any of the Parrakeets were cock-birds as none of them yet showed signs of a collar. But one day in May my father looked inside the nesting-box and was thrilled to discover two yellow babies.

Young Lutinos can be identified almost as soon as they hatch out, by their pink eyes.

Both these birds were reared with success, and after the moulting season in August, three of the seven birds which had been turned out together assumed male plumage.

Adult Lutinos are extremely pugnacious and will even attack human beings. In the last two years we have bred ten of them, most of which, so far as we can judge at present, are hen birds. They are all living together in one large aviary, and are a really beautiful sight.

In the wild state in India, Lutinos are still quite rare and the bird-catchers only secure one now and again. When my father was in Bombay last winter he was offered one for £40, a ridiculous price. Indians are very fond of these sports, especially the Princes, who frequently pay large sums for them.

As we now have twenty perfect Lutinos besides a great number of Lutino-bred birds, we may safely say that the yellow variety of the Ring-necked Parrakeet is established.

* * *

BROTOGERYS PARRAKEETS

By HELMUT HAMPE

Like many other American Parrots the *Brotogerys* Parrakeets also have loud, piercing voices, of which they make frequent use. In a room one cannot stand this screaming for long ; but even in the aviary it is so unpleasantly noticeable, that out of consideration for one's neighbours it is almost impossible to keep these birds. This is no doubt one of the reasons why the breeding of *Brotogerys* Parrakeets is only seldom successful. Another reason appears to be that birds like *Agapornis pullaria* require special nesting arrangements. For, according to an observation of C. A. Lloyd quoted by Chubb in his *Birds of British Guiana*, I, 1916, p. 319, members of the species *Brotogerys* lay their eggs in the deserted nests of Termites (wood-ants). It is interesting to note that in the few accounts existing of the breeding of *Brotogerys* Parrakeets, it is twice mentioned that the birds gnawed a hole in the ceiling of the room. The first mention is found in *Gefiederte Welt*, 1892, p. 78, and concerns 2 Canary-winged Parrakeets (*Brotogerys versicolorus chiriri*) belonging to Herr G. Graeff, which, however, did not breed, perhaps because they were two males. The second concerns the first breeding of the All-green Parrakeets (*B. tirica*) by Pastor Hintz (*Gef. Welt*, 1883, p. 205). In the large hole between the boards of the ceiling and the floor above, which the pair only left for feeding, there were in 1882 2 young of the first brood and 4 of the second and in 1883 again 2 young which remained a long time in the nest. In 1883 the pair began to breed for a second time, but nothing is known of the result.

According to E. Hopkinson (*Records of Birds bred in Captivity*, p. 86) the first successful breeder in England of the All-green Parrakeet was Lovell-Keays, who in 1914 bred 4 young. In *Gefiederte Welt* there are three accounts of the breeding of this species : in the volume for 1886, p. 306, G. Graeff writes that his pair reared 2 young in an aviary, after they had laid several times in the cage, twice each year. Von Prosch (1894, p. 214) got 7 young in two years, and a pair belonging to Charlotte Rieck (1932, p. 229) reared, in a cage only 80 cm. long, 5 of a first brood and 4 of a second. In all the pair had 5 broods each of 5 eggs,

then the male died. Two of the young also had begun to breed. Some of the fledglings were pecked to death by the mother. The eggs were laid every second day and brooded from about the third egg; the period of brooding lasted about 21 days and the young flew in about 5–6 weeks, as can be reckoned from the statements of Frau Rieck.

As N. Grasl reports in *Vögel ferner Länder*, 1931, p. 163, shortly before the Great War two blue *B. tirica* were fledged in the Schonbrunn Zoo, having been hatched by an ordinary Green pair unobserved by the keeper behind an ornamental cork screen. In the second brood the pair produced once again 2 blue and 2 green youngsters. Of the 4 blue ones, one was drowned and the other devoured by rats; the two remaining birds were sold to a lady in Budapest who raised 7 blue young from them, which unfortunately, with their parents, came to grief during the war. A coloured illustration, taken from a skin of one, was published in *Vögel ferner Länder*. Another blue All-green Parrakeet was described and figured in the *Revista do Museu Paulista* (Tomo XII, 1920, p. 81). A blue Tovi-Parrakeet (*B. jugularis jugularis*) is also known. It was shot in a flock of normal Tovi Parrakeets and wrongly described as *B. subcaerulea*, that is as a new species. O. Finsch (*Die Papageien*, II, 1868, p. 97 and Pl. 2) gives an account and a figure of this bird. Lord Tavistock was once offered (as already mentioned) a white Tui-Parrakeet (*B. st. thoma st. thoma*) ("Parrots" . . . in *Aviculture*, p. 142).

With regard to the Tovi Parrakeet Frau Hedwig von Prosch reports (*Gef. Welt*, 1879, p. 106) that it was not she, as was wrongly stated in *Gefiederte Welt*, 1874, p. 241, who had reared these birds, but that the rearing had been done by Frau Veronica Greiner in Vienna. In 1873 two and in 1874 three young were fledged, these having hatched out after a brooding period of about twenty-two days. They were ready to fly in about five weeks. K. Russ (*Die Papageien*, 1881, p. 186) and K. Neunzig (*Fremdländische Stubenvögel*, 1921, p. 656) also make the same statements, Neunzig, however, changes the name Greiner into Grimm. This explains why Hopkinson quotes both names separately. In reality the breeding of these birds has only once been successfully accomplished and that was by Frau Greiner. Later Ed. Schmalz, as is further reported by Frau v. Prosch, obtained another youngster, which,

however, was killed together with its mother by the father when it was eight or ten days old. One pair that Frau v. Prosch herself had for seven years, only laid ten to twelve unfertile eggs each year. Further breeding records of the Tovi Parrakeet are not known to me. On what the statement of Butler quoted by Hopkinson : " not infrequently . . . bred by German aviculturists " is founded, I cannot therefore say. Perhaps it is the result of an error that has evidently been repeated by Tavistock when he says on page 139 of his book : " The species has often bred in Germany." According to Hopkinson it has never been bred in England.

Apart from the fact that according to Tavistock (p.141) a female of the Tuipara Parrakeet (*B. chrysopterus tuipara*) in Mr. Seth-Smith's collection laid 4 clear eggs, then the last species successfully bred was the Orange-flanked Parrakeet (*B. pyrrhopterus*). This was achieved for the first time at the beginning of this century ; as is briefly stated by " Langjährige Vogelliebhaber " in *Gefiederte Welt*, 1902, p. 82, an acquaintance of his had fledglings which were growing well. As " Langjährige Vogelliebhaber " was a Dane, this breeding was probably carried out in Denmark. The first record of breeding in England is reported in 1925 (W. Lewis, *AVICULTURAL MAGAZINE*, 1926, p. 71). Five young flew, which were paler in appearance than the old birds and had no blue caps. Finally in 1935 R. R. Hood (California) succeeded in breeding these birds, as appears from a statement in *L'Oiseau*, Vol. VI, 1936, and also in *Vögel ferner Länder*, 1936, p. 74. The five eggs were laid on the 19th, 21st, 22nd, 24th, and 27th of June, and on 20th July, three, and on 21st July, one, young were hatched, of which two flew on 26th August, while the other two were reared by hand. The rapidly independent youngsters were soon neglected and persecuted by the old birds. Apparently a second brood was intended. The young were quite naked at first. During the breeding time the tame adult birds became very hostile towards their keeper and attacked him violently whenever he entered the aviary.

I myself have kept four *Brotogerys*, namely the Tui Parrakeet, the Canary-winged Parrakeet, the Tovi Parrakeet, and the Orange-flanked Parrakeet, but unfortunately not long enough to achieve breeding successes. I was the more sorry that I was prematurely obliged to give up keeping these birds on account of their



Stretching



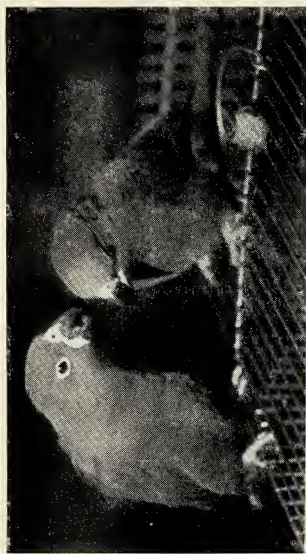
Bathing



Eating Apple



[H. Hampe.]



Screaming

TUI PARRAKEETS
($\frac{1}{3}$ natural size)

screaming, as they were very tame and amusing. Some were already quite tame when I received them from the dealer, and others were tamed in a short time. That *Brotogerys* Parrakeets are easily tamed is well known and often stated, and single specimens of these birds have proved themselves extremely pleasing and affectionate pets, which could quite well distinguish their owner from other people. If they are together with others, they are naturally less affectionate towards their keeper, as their social needs are satisfied by their kind. Both my Tuis, which I kept for a year, became in time somewhat aggressive towards me ; if opportunity offered to bite my finger or to drive away another bird, both were always united. Otherwise they did not agree very well, probably being two males. The larger of the two was very tyrannical and treated his little companion in very unfriendly fashion. Above all he would never allow the smaller bird to devour a titbit before himself. And if both received a piece of apple at the same time, the larger bird simply took away his piece from the smaller, while he let his own drop. The Tuis when they quarrelled not only pecked one another with their beaks, but also attacked with their feet.

At night they, like all my other *Brotogerys* Parrakeets, always slept in the nesting boxes ; they also often remained in them during the day. That they had no intention of breeding was shown by the fact that they made the box very dirty. Later the larger Tui paired with a Canary-winged Parrakeet, although he only took notice of her during the day. He only allowed her to sleep in the box with him at night when the smaller Tui was taken away. Both birds fed and stroked one another frequently, but it did not come to breeding. An apparently genuine pair of Canary-winged Parrakeets, which I placed for a whole summer in a very large garden aviary in a village, also failed to breed. Certainly they were often disturbed and handled inexpediently by their keeper.

As one can see from the bare skin round the beak, the *Brotogerys* Parrakeets are great fruit-eaters. Mine liked in addition raw meat, fresh maize cobs, boiled and roasted potatoes, biscuit, cake and that type of thing. They especially loved meal worms and fresh ant eggs, but were not particularly fond of green-stuff. Of cereals, they ate sunflower seeds, and if these were unobtainable,

canary seed and millet. When eating, the Tuis held the grains exclusively in the left foot, as did also the Canary-wingeds; only one was right-footed. The feet of the *Brotogeterys* Parrakeets are turned in quite considerably. This, of course, does not denote degeneration, as in the case of weak Budgerigars, but is an adaptation for walking on branches. The birds preen themselves in front, bathe often and thoroughly in a bowl of water and love sun-baths, although they do not spread their feathers.

My Tuis weighed 49 g., 45 g., 43 g. and 43 g., the Canary-wingeds 65 g., 64 g., 62 g., 56 g. and 55 g., and an Orange-flanked Parrakeet 64 g.

With the deepest regret the Editor has to announce that Herr Helmut Hampe, who was severely wounded in the Great War, died suddenly at Braunschweig on 22nd August, 1939. By his death aviculture has sustained a serious loss and his contributions to the AVICULTURAL MAGAZINE will be greatly missed.

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THE NORFOLK ISLAND PARRAKEET

(*Cyanorhamphus cooki*)

By SYDNEY PORTER

In 1934 I wrote a series of articles in the AVICULTURAL MAGAZINE about the *Cyanorhamphus* Parrakeets, and with the first instalment there appeared a very excellent and accurate coloured plate of a pair of Norfolk Island Parrakeets which was reproduced from a painting of a pair of these birds then living in New Zealand. In the articles I mentioned all the known species with the exception of the Norfolk Island, the one with which I was the most familiar. The articles were never completed, through illness and a protracted residence abroad, and consequently did not include the chapter about this very rare Parrakeet; so I will now endeavour to make good this deficiency.

For those not familiar with the *Cyanorhamphus* Parrakeets, and I am afraid, unfortunately, that few are, I might mention that they are entirely different from any other Parrakeets, not so much

from their outward appearance as from their anatomical structure and general demeanour. They range in size from the tiny Alpine Parrakeet (*C. malherbei*), as large as a Budgerigar, to the subject of this article, which is the size of a Pennant's Parrakeet.

The feet of the *Cyanorhamphus* Parrakeets are remarkable, they seem more adapted for a terrestrial existence than for an arboreal one, for they seem to resemble those of a gallinaceous bird except that they are zygodactyle, that is to say they have two toes at the front and two at the back. Yet I saw these birds on the ground very seldom in the wild state, the only exception was when I saw the Yellow-fronted Parrakeets feeding on the leaves of a small weed on the ground on the Little Barrier Island. For the most part they are birds of the heavy forest.

These Parrakeets are unique in the fact that they scratch in the ground like a true gallinaceous bird, this habit is especially noticeable in young birds which have just left the nest. In an aviary in which I kept a pair of Yellow-fronted Parrakeets I noticed a lot of small depressions in the earth into which one could put a golf ball. I thought that mice must have got into the aviary and were starting to make their burrows, but I was amazed one morning to find the pair of birds busily engaged in scratching out more holes with their feet, in the meantime sending up showers of earth behind them.

The Norfolk Island Parrakeets have long slender legs and delicate looking toes, and they skip with an agility unknown to most of the Parrot tribe. Both these and the other *Cyanorhamphus* Parrakeets which I have kept are able to run both up and down wire netting with the greatest of ease, without using their beaks, with quick jerky movements like those of a rat.

On Captain Cook's memorable voyage around the world he discovered a small and very isolated island, a thousand miles or so from New Zealand and over eight hundred from Eastern Australia, and on the island he discovered two remarkable Parrots, one the long-extinct Norfolk Island Nestor, a near relative of the Kea, and the subject of this article, which was named in honour of its discoverer.

It was my intention to visit Norfolk Island after staying in New Zealand, so that I could see something of the wild life of this bird. Unfortunately the company which ran a direct line

from Auckland to the island suspended the service just after I arrived in New Zealand, owing to it being so poorly patronized, so that to have got there would have meant going to Sydney and getting a steamer from there, which is a long and expensive journey. Some particulars of the island were given to me by a well known airman who, through a breakdown with his machine, was forced to spend a considerable time on the island. It is of comparatively small size, only a few square miles in extent, and is now quite thickly populated, there being over a thousand inhabitants. The advent of such a large population has only been during these last few years when, owing to the island being the nearest place to New Zealand where bananas could be grown successfully, there had been a great boom in land prices and a large influx of retired people from Australia and New Zealand, who hoped to supplement their incomes by banana growing besides being able to live in an almost perfect climate. Now instead of resembling a typical South Sea Island, it resembles a huge allotment garden where almost every acre is under cultivation. From this it will be seen that there is not much hope of the survival of this interesting Parrakeet. At the present state, in another generation or so, the bird will exist only as a few dried skins in museums like its interesting congener the Norfolk Island Nestor, which was exterminated by the convicts who inhabited the island in the early days of the last century, and who were responsible for the disappearance of many unique species of which we have little trace.

The following is a letter written to me by one of the inhabitants of the island regarding this bird.

“*Re* the green Parrakeet you mention, it is not at present very plentiful on this island, it is only found in the thick bush around Mount Pitt. It is very destructive on nearly every kind of fruit. It nests during October in hollow trees, especially in the stems of dead tree ferns, never on the ground. This Parrakeet or one like it was found on Lord Howe Island (this was *C. subflavinscens*, and is now extinct), but has long since disappeared. It is still very plentiful on Sunday Island (this is *C. n. cyanurus* which is quite distinct from *C. cooki*) in the Kermadecs where it usually lays from 7 to 11 eggs only about half of which are fertile.”

I heard that an American expedition which visited the island some years ago in search of this and other rare birds had slaughtered

every one seen. The person who informed me about the affair said that after they had departed not a Parrakeet was seen for years, and it was only during the last year or so that they had begun to make their appearance again. Fortunately the birds are now protected, and no further expedition it is hoped will be allowed to commit such wholesale destruction. A few more expeditions like this one would certainly sweep most of the small Pacific Islands clear of their endemic avifauna.

Usually one only gets an odd rare Parrot or at the most a pair at a time, but altogether I had thirteen of these Parrakeets, which I think is perhaps more than anyone has possessed before or is likely to possess again. I hoped at the time they came into my possession to let those members of the Society who had permits to import Parrots, have some of them at the cost of importation, to try their hand at breeding them. In fact, I did let one member have a pair and an old cock bird, but I got into serious trouble with the Ministry of Health for doing so and they (the Ministry) threatened to revoke my permit if I let any more birds go out of my hands, though I had always been under the impression that it was perfectly legal to dispose of birds to anyone who had a licence.

Unfortunately there were ten cocks and only three females, which left me with two hens and eight cocks, furthermore a mouse got into the aviary one night, frightened the birds, and the next morning I found both the hens dead with cracked skulls, thus ended my dreams of breeding these birds. On my next visit to New Zealand I was fortunately able to secure the only hen in the country but, though apparently in perfect health, it died on the voyage back to this country. I believe the only other known females are two in America, or at least they were some few years ago.

As mentioned before, the Norfolk Island Parrakeet is about the size of a Pennant's Parrakeet, and is of a bright grass green colour, the front half of the head, a spot behind the eye, and two large spots on the lower back are bright crimson. The red feathers of the head are sleek and glossy, and look rather as if they had been greased and brushed back. The flight feathers are bright blue, a round patch of closely set feathers on the back of the head are pure white on the basal halves, and cannot be seen unless ruffled by the hand, all the *Cyanorhamphus* have this peculiar characteristic.

The voice of this Parrakeet is singularly soft and pleasing, and is like the distant bleating of goats. Sometimes they converse in low undertones which reminds one of a person with a cleft palate speaking very quietly. They also have a loud whistle which is far from unpleasant.

They are remarkably intelligent, as indeed are all the members of this genus, and when tame are extremely inquisitive. They watch all one's actions with the greatest interest, and if one has been working in their shelter, as soon as the communicating door is opened they will go inside and examine anything that has been done. Though not destructive to woodwork they gradually chew up all plant life. Their diet is very simple, canary, millet, a little hemp and sunflower, also plenty of green food and fruit such as apple and pear.

Nearly all the species of this genus are liable to lutenism and cyanism, and in the museums of New Zealand many beautiful specimens can be seen. In the museum at Dunedin there is a specimen of *C. novea-zeelandia*, which is a beautiful sky blue ; there are also many specimens of a lovely golden yellow colour ; in the Invergargill Museum is a lutinistic specimen with uniform brown mottlings, whilst there are other species which have brown heads. What beautiful strain we could evolve if we could get hold of such specimens alive.

Pennant's Parrakeet is also found on Norfolk Island, where no doubt it was introduced from Australia. As the immature plumage of the Pennant somewhat resembles that of the adult Norfolk Island Parrakeet, but has more red in it, the inhabitants of the island believe that the two species interbreed.

This is quite erroneous, as the two species are so distantly related that a union between them would doubtless be sterile. The female resembles the male in plumage, but is much smaller and has a very much smaller head.

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NOTES

SECRETARY OF THE O.P.S. IN THE AIR.

Mr. Jerome Lambert, Secretary of the Ornamental Pheasant Society, a member of the Auxiliary Air Force, has shown his prowess by spotting two mines in front of a convoy. Warm congratulations are accorded to him and to his father, Mr. P. J. Lambert. Members may remember that an Auxiliary Air Force officer was mentioned on the wireless and in the Press for the above-mentioned deed. Mr. P. J. Lambert writes: "We are not carrying on the O.P.S. during war time, we are under suspension. Immediately the war is over we shall spring into life, we hope with renewed vigour." A hope which is certainly endorsed and carries the good wishes of all their fellow aviculturists. In the correspondence columns of this number Mr. Lambert contributes a letter on the importance of maintaining stocks of rare Pheasants, a matter which should receive immediate and serious attention.

GREETING CARDS

Though the Avicultural Society and the Ornamental Pheasant Society have both had to abandon their Greeting cards owing to the war, two kindred Societies have published bird cards which should be of interest to aviculturists. A charming painting of the Hobby with young by G. E. Lodge, reproduced in colour, is the subject of a card published by the Association of Bird Watchers and Wardens. This may be had at 5s. a dozen inclusive of envelopes, or 5d. each, from N. Tracy, Esq., The Black Cabin, South Wootton, Kings Lynn, Norfolk. All proceeds from the card assist funds of the Association which is doing good work in preserving rare birds in Britain, particularly the birds of prey.

The British Trust for Ornithology publishes a reproduction in colour of the Woodcock and young specially painted by Peter Scott which is most attractive and which should certainly find a ready sale. The price is 4s. 6d. per dozen with envelopes, post free, and the cards may be obtained from Mrs. J. B. Priestley, Billingham Manor, Chillerton, Isle of Wight. A leaflet giving a black and white reproduction of this card and all details of price was circulated with the November number of the AVICULTURAL MAGAZINE.

ACKNOWLEDGMENTS.

The Editor acknowledges with much gratitude the donation given by Professor W. C. Osman Hill to provide for the publication of the plate of the Queen of Bavaria's Conures which illustrates his article in this number, and to an anonymous donor for the cost of the plate of Tui Parrakeets which illustrates Herr Helmut Hampe's article.

The Editor also acknowledges the invaluable assistance with translations given by Miss Phyllis Thomas, of the Zoological Museum, Tring.

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CORRESPONDENCE

BREEDING THE BLUE AND YELLOW MACAW IN EDINBURGH
ZOOLOGICAL PARK

The breeding of any species of Macaw in captivity is an event worthy of record and most of the cases hitherto reported have been of hybrids between two species. I was therefore very interested to receive a letter from Mr. Lewis Newstead, Keeper in the Zoological Park at Edinburgh, telling me of the hatching and rearing of a couple of Blue and Yellow Macaws (*Ara ararauna*). Mr. Newstead writes under date 10th November, 1939: "The first two eggs were laid in

June, but were infertile, but the next nest contained three eggs laid while I was on holiday which I started on the 5th of August. I was away a fortnight and when I got back I discovered the three eggs. One hatched on 22nd August, the other on the 29th, the third being infertile.

"The birds are out in an open aviary with a mixed lot of Cockatoos and Macaws. You have seen our place and will remember that there is no heating. The nest is in an old tree-trunk and the young birds still keep out of sight but are getting nicely feathered.

"I had a pair of Red and Blue Macaws for years which laid every year up till the time they died a few years ago, but the eggs were always infertile."

D. SETH-SMITH.

A PLEA FOR THE MAINTENANCE OF A STOCK OF RARE PHEASANTS

I am fully in accord with Mr. Moody's suggestions in last month's letter to our Magazine. That rare waterfowl should be carefully nursed during the war period is indeed most important. I must make a similar plea for rare Pheasants. Pheasants that have their natural habitat in Malaya, many parts of India, Burma, Indo-China, and other countries, are perhaps safe for all time, as vast impenetrable forests and the nature of the country practically make the birds immune from serious diminution in numbers. If we turn to China we find a very different proposition; all great travellers tell us that Pheasants are not only on the decrease in that vast territory, but that many species are seriously threatened with extinction. If the world's stock of many Pheasants that come from China is not now carefully nursed, then it is *certain* that they will be lost for all time in our aviaries. The O.P.S. has suspended operations and activities for the duration of the war, but whilst one regrets this suspension, nevertheless under existing circumstances I am certain it was necessary if the Society hopes to renew activities with full vigour after peace is declared. Therefore I make an appeal to all members of the Avicultural Society who now keep Pheasants that come from China to preserve them at all cost, or if they are unable to do so then I do trust such members will get in touch with me as I shall be able to find them temporary shelter and food. There are in this country many hybrid Golden and Amherst Pheasants, and these should be at once sacrificed "for the pot", but pure Pheasants of these species will I trust be kept and bred from. Reeve's, Elliot's, the Crossoptilons must be mentioned in the same category. I am given to understand that even the Reeve's Pheasant, at present so common in our aviaries, is seriously threatened in its own home.

P. J. LAMBERT.

NAWTON,
YORK.

CORRECTION

NESTING OF NEWLY SHIPPED GESE

The Editor greatly regrets that an error was made in the letter under this heading contributed by Mr. C. L. Sibley in the October number. The letter should have read "A most unusual occurrence this year was the nesting of a pair of Greater Snow Geese within a week or two of their receipt *from us by* Mr. Spedan Lewis", the two words in italics were in error transposed in the letter published in the October number. Owing to the unsettled conditions at that time no proof was sent to Mr. Sibley or this mistake would not have occurred.

[The Editor accepts no responsibility for opinions expressed in Correspondence.]

INDEX TO SUBJECTS

[Figures in italics indicate that the reference is to a mention only in a List or Collection]

- Abbott's Rail, 298.
 Abyssinian Guinea-fowl, 167.
 „ Lovebird, 369.
Accipiter minullus zenkeri, 114
 A Collector in the Andes of Ecuador,
 237.
 „ in the Gold Coast Colony, 112.
Acomus erythrophthalmus, 163.
Actinodura ramsayi, 269.
 Adelaide Parrakeet, 215, 220.
 Adelaide Zoo, Australian Waterfowl
 in the, 80.
Æthopyga dabryi, 268.
 „ *siparaja mangini*, 268.
 African Grey Parrot, 329.
 „ Harrier, 114.
 „ Little Sparrow-hawk, 114.
 „ Sheld-duck, 76.
 „ Shoveler, 70.
 „ Spurwing Goose, 75.
 „ Stiff-tail, 281.
Agapornis fischeri, 298.
 „ *nigrigenis*, 298.
 „ *personata*, 298.
 „ *pullaria*, 128, 156.
 „ *taranta*, 369.
Agleactis cupripennis, 246.
Aithurus polytmus, 25.
 Alario Finch, 14.
 Albert's Curassow, 168.
Alcedo atthis ispida, 33.
 „ *cristata*, 119.
 „ *quadribrachys*, 119.
Alectoris melanocephala, 162.
Alectrenas pulcherrima, 17.
 Alexandrine Parrakeet, 130, 236.
 Alice's Pigmy Emerald Humming
 Bird, 62.
 All-green Parrakeet, 402.
 Allied Hornbill, 112.
Aloochen ægyptiacus, 319.
 Alpine Parrakeet, 407.
Amadina erythrocephala, 225.
Amaurornis phœnicurus, 139.
Amazona bahamensis, 154.
 „ *æstiva*, 393.
 „ *guildingi*, 153, 236.
 „ *imperialis*, 39.
 „ *lilacina*, 238.
 Amazons, Bodini, 392.
 „ Parrots, 41, 238.
 Ambiguous Macaws, 392.
 American Black Duck, 350.
 „ Black Vulture, 133.
 „ Bluebird, 296.
 „ Coot, 139.
 „ Crossbills, 227.
 „ Eagle Owl, 133.
 „ Egret, 27.
 „ Eider Duck, 79.
 „ Golden-eye, 79.
 „ Goldfinches, 225.
 „ Green-winged Teal, 69, 78.
 „ Pochard, 134.
 „ Redhead, 79.
 „ Siskin, 38.
 „ Starlings, 119.
 „ Vulture, 373.
 „ Whistling Swans, 3.
 „ White-fronted Goose, 134.
 „ White Pelican, 136.
 „ Wigeon, 3, 68.
 Amherst Pheasant, 4, 51, 165, 203, 350.
Ammoperdix heyi, 162, 194.
 An Abnormal Cordon Bleu, 157.
Anas castanea, 81.
 „ *cristata allicola*, 260.
 „ *cyanopterus orinomus*, 261.
 „ *fulvigula*, 134.
 „ *gibberifrons*, 81.
 „ *oxypterum*, 260.
 „ *puna*, 261.
 „ *querquedula*, 85.
 „ *spinicauda*, 260.
 „ *superciliosa*, 81.
 Andaman Teal, 87.
 Andean Goose, 3, 75, 87, 259, 283, 349.
 „ Teal, 245, 259.
 Anderson's Kalij, 164.
 Andes of Ecuador, A Collector in the,
 237.
 A Newly Imported Pair of Musk
 Duck, 107.
 Ani, Smooth-billed, 24.
 Annamese Yellow-backed Sunbird,
 268.
 „ „ -breasted Sunbird, 268.
Anomalospiza imberbis, 342.
Anseranus semipalmata, 84.
Anser albifrons gambelli, 134.
Anthipes leucops, 268.
Anthochera chrysopiera, 319, 320.

- Anthracothorax mango*, 26.
Anthreptes longuemarei, 118.
 Ant-thrush, Chestnut-crowned, 244.
 " Undulated, 244.
 Ant-thrushes, 244.
 Antillean Bananaquit, 25.
Aplopelia larvata, 21.
Aprosmictus cyanopygius, 56.
 " *erythropterus*, 319.
 " *scapularis*, 221.
 Arabian Chukar Partridge, 162.
 Aracari, Curl-crested, 271.
Ara ararauna, 411.
 " *chloroptera*, 238.
Aramides cajanea, 139.
 " *ypecaha*, 299.
 Araucanian Pigeon, 17.
Arctonetta fischeri, 287.
Ardea herodias, 136.
 Argentine Shoveler, 70.
 Argoondah Bush-Quail, 162.
Argus grayi, 166.
 Argus Pheasant, 166.
Arremon aurantirostris occidentalis, 241.
Asarcornis scutulata, 134.
 A Scheme to Maintain a Stock of
 the Rare Species of Water-
 fowl, 374.
 Ashy-headed Goose, 3, 75, 89, 236, 283,
 328, 349.
Astrapia rothschildi, 272, 300.
 Atlantic Brant Goose, 75.
 Auckland Island Teal, 277.
 Auk, Little, 195.
 Australia, Further Notes from, 214,
 335, 351.
 Australian Babblers, 338.
 " Bar-shouldered Dove, 37.
 " Bee-eater, 220.
 " Bee-eater in Captivity, 294.
 " Blue Wren, 41.
 " Crane, 40, 136, 349.
 " Crested Pigeon, 21.
 " " Ground Dove, 28.
 " Crow, 352.
 " Ducks, 172.
 " Green-winged Dove, 20.
 " " Pigeon, 319.
 " Mallard, 77.
 " Maned Goose, 76.
 " Musk Duck, 107, 282.
 " Pelican, 354.
 " Pigmy Goose, 83.
 " Quail, 263.
 " Ring-necked Parrakeet, 375.
 " Sheld-duck, 3, 82, 90, 170, 201,
 349, 354.
 " " Behaviour of, 273.
 Australian Sheld-duck, First Nesting in
 Captivity, 159.
 " Shoveler, 70, 83.
 " Stiff-tail, 281.
 " Swamp-Quail, 195.
 " Varied Bustard Quail, 195, 267.
 " Waterfowl in the Adelaide Zoo,
 80.
 " White-eyed Duck, 83.
 " Wild Duck, 88, 134.
 Avadavats, Colour in, 110.
 " Food and Breeding of, 142.
 " Green, 48, 222, 232.
 Avicultural Society, Early Years of,
 11, 36, 124, 152, 191, 221,
 263, 296, 327.
 " " Greeting Card, 309.
 " " of South Africa, 309.
 Aviculture in War Time, 344, 378.
 Aviculturist, Records of a Rural, 58.
 Aviculturists or Fanciers, 63.
 Avocet, 138, 266.
 Award of Medals, 199, 287.
 Babbler, Australian, 338.
 " Chestnut-crowned, 338.
 " Coral-billed, 270.
 " Crimson-winged, 269.
 " Golden, 269.
 " Lesser Rusty-cheeked, 270.
 " Oriole, 120, 122.
 " Red-checked Scimitar, 208.
 " Rufous-necked, 270.
 " Scimitar, 300.
 " Short-tailed, 269.
 " White-breasted, 270.
 Bahama Amazon Parrot, 154.
 " Duck, 77, 134.
 Bahaman Woodstars, 26.
 Baikal Teal, 88, 134.
 Bald Eagle, 133.
 Bald-headed Starling, 223.
Balearica pavonina, 126, 137.
 " *regulorum*, 137.
 Baltimore Oriole, 225.
 Bamboo-Partridge, Chinese, 163.
 " Fytch's, 163.
 Bamboo-Pheasant, Formosan, 163.
Bambusicola fytchii, 163.
 " *sonorivox*, 163.
 " *thoracica*, 163.
 Bananaquit, Antillean, 25.
 Banded Curassow, 168.
 " Plover, 320.
 " Rail, 320.
 Band-tailed Pigeon, 17.
 Barbary Dove, 17.
 " Partridge, 162.

- Barbet, Black-collared, 255.
 „ Blue-cheeked, 207, 209, 211.
 „ Bourcier's, 241.
 „ Crimson-breasted, 210.
 „ Davison's Blue-cheeked, 213.
 „ Fire-tufted, 62, 252, 373.
 „ Golden-throated, 195, 267.
 „ Javan Great-billed, 207, 251.
 „ Levallant's, 207, 254, 257.
 „ Mourning, 251.
 „ Oort's, 207, 209, 211.
 „ Pied, 254.
 „ Red-breasted, 254.
 „ „ spotted Blue-cheeked, 213.
 „ Toucan-like, 205, 249.
 „ Yellow-breasted, 207, 254, 255.
 „ „ -cheeked, 252.
 Barbets, 122.
 „ Care and Keeping of, 206, 251.
 Bar-breasted Firefinches, 117.
 Bare-eyed Cockatoo, 214.
 „ Pigeon, 17.
 Bare-throated Francolin, 162.
 Bar-headed Geese, 72, 76, 134, 236.
 Barnacle Goose, 74, 75, 89.
Barnardius barnardi, 376.
 „ *macgillivrayi*, 375, 377.
 „ *occidentalis*, 376.
 „ *semitorquatus*, 376.
 „ *zonarius*, 42, 376.
 Barnard's Parrakeet, 41, 215, 217.
 Barn Owls, 109, 127, 133.
 Barraband Parrakeet, 186, 392, 398.
 Barred Goose, 75.
 Barred-shouldered Dove, 319.
 Barrow's Goldeneye Duck, 72, 79,
 135, 236, 283.
 „ „ „ in Captivity, 100.
 Bar-shouldered Dove, 20.
 „ Godwit, 356.
 Bartlett's Bleeding-heart Pigeon, 21,
 330.
 Barwing, Ramsay's, 269.
Bathilda ruficauda, 370.
 Baud's Pitta, 272.
 Bauer's Parrakeets, 42, 199.
 Bean Goose, 75, 107.
 Bearded Tit, 9, 38.
Beauharnaisius beauharnaisi, 271.
 Beautiful Finch, 351.
 „ Sunbirds, 117, 118.
 Bee-eater, Australian, 220, 294.
 „ Carmine, 120.
 „ European, 40.
 Bee Humming Bird, 26.
 Behaviour of Australian Sheld-duck,
 201, 273.
- Belonopterus cayennensis*, 137.
 Bel's Pheasant, 4, 164, 350.
 Belted Kingfisher, 26.
 Bengal Red-vented Bulbul, 258.
 Bewick's Swan, 74.
 Bird of Paradise, Count Raggi's, 301.
 „ Emperor of Germany's, 300.
 „ Empress of Germany's, 301.
 „ Great, 373.
 „ Hunstein's Magnificent, 301.
 „ King, 299, 327.
 „ Lesser, 299, 301.
 „ „ Superb, 301.
 „ Prince Rudolph's, 328.
 „ Red, 373.
 „ Rothschild's, 300.
 „ Six Plumed, 299.
 „ Wahne's Six Plumed, 300.
 „ Wilson's, 299.
 Birds at Clères in 1939, 347.
 Birds in the Copenhagen Zoo, 373.
 Birds of Jamaica, 22.
 Birds of Paradise, 300, 372.
 Bittern, Sun, 136.
Biziura lobata, 84, 107, 282.
 Black Brant Goose, 75.
 „ Cassique, 238.
 „ Cockatoo, 62, 381.
 „ Crake, 138, 211.
 „ Duck, 77, 81, 95.
 „ Francolin, 162.
 „ Grouse, 162.
 „ Kite, 133.
 „ Lory, 187, 193, 369.
 „ Partridge, 148.
 „ Scoter, 285.
 „ Swan, 3, 74, 84, 349, 357.
 „ Tanager, 225.
 „ Weka Rail, 139.
 Black-and-White Casqued Hornbill,
 112.
 „ Crake, 139.
 „ Seed-Finch, 271.
 „ Warbler, 27.
 Black-and-Yellow Flycatcher, 268.
 Black-backed Blue Wren, 336.
 „ Kalij, 164.
 „ Purple Gallinule, 139.
 Black-banded Goose, 89.
 Black-bellied Sand-grouse, 168.
 „ Tree Duck, 76.
 Black-billed Tree-duck, 3, 76.
 Black-breasted Bobwhite, 167.
 „ Kalij, 163, 164.
 „ Plover, 137.
 „ Sandgrouse, 224.
 Black-capped Fruit-Pigeon, 17.
 „ Waxbills, 116.

- Black-cheeked Lovebird, 298, 387.
 Black-chinned Yuhina, 269.
 Black-collared Barbet, 255.
 Black-crested Finch, 49.
 " Yellow Bulbul, 211.
 Black-faced Grassquit, 25.
 " Ibis, 135, 271.
 Black-footed Penguin, 138.
 Black-fronted Dotterel, 336.
 Black-headed Buntings, 324.
 " Conure, 41.
 " Gull, 138.
 " Ibis, 135.
 " Sibia, 126, 256.
 " Siskin, 14, 315.
 " Tanager, 62.
 Black-necked Crane, 349.
 " Swans, 3, 74.
 Black-rumped Ground-Tyrant, 245.
 Black-shouldered Peafowl, 350.
 Black-tailed Water-hen, 139.
 Black-throated Diver, 153.
 " Grebe, 337.
 " Lorikeet, 221.
 " Tanager, 237.
 Black-winged Dove, 271.
 " Peafowl, 4.
 Blackbird, 9, 195, 305.
 Blackcap, 370.
 Blacksmith Plover, 137, 235.
 Bleeding-heart Pigeon, 21.
 Blue and Yellow Macaw, 391.
 " " Breeding of, 411.
 Bluebird, American, 296.
 " Fairy, 300.
 " Mountain, 287.
 Blue Alexandrine Parrakeet, 397.
 " Bonnet Parrakeet, 215, 217, 353.
 " Crossoptilon, 93, 163, 350.
 " Geese, 74.
 " Greenfinches, 5.
 " Grosbeak, 370.
 " Mountain Duck, 277.
 " Mountain Lorikeets, 130, 320.
 " Pies, Formosan, 62.
 " Rock Pigeon, 17.
 " Robins, 50.
 " Snow Geese, 3, 349.
 " Sugar-birds, 38.
 " Sylph Humming-birds, 249.
 " Tit, 11.
 " Wrens, 124, 335.
 Blue-backed Manakins, 373.
 Blue-bearded Jay, 126.
 Blue-billed Duck, 85.
 " Weaver-Finch, 116.
 Blue-breasted Waxbill, 125, 331.
 Blue-cheeked Barbet, 207, 209.
 Blue-eyed Cockatoos, 301.
 Blue-faced Parrot Finches, 230.
 Blue-headed Quail-Dove, 22.
 Blue-shouldered Tanager, 1.
 Blue-spotted Emerald Dove, 20.
 Blue-tailed Bush Robin, 268.
 Blue-vented Javan Kingfishers, 300.
 Blue-winged Goose, 3, 76, 349.
 " Grass Parrakeet, 331, 384.
 " Laughing Thrush, 270.
 " Shoveler, 84.
 " Siva, 40.
 " Teal, 78, 88, 350.
 Blyth's Bulbul, 269.
 " Pheasant, 4, 163.
 Boat-billed Heron, 136.
 Bobwhite, 95, 167.
 " Black-breasted, 167.
 " Cuban, 167.
 Bodin's Parrot, 392.
 Boddini Amazon Parrot, 392.
 Bolivian Violet-eared Humming Bird,
 223.
 Bolle's Pigeon, 17.
Bonasa umbellus, 162.
 Boobook Owl, 133.
 Bornean Black Nuns, 301.
 " Crested Fireback, 164.
 Borneo Argus Pheasant, 166.
 " Munia, 139.
 Bouquet's Amazon Parrot, 39.
 " Puff-legs Humming-birds, 242.
 Bourcier's Barbet, 241.
 Bourdell's Bulbul, 269.
 Bourke's Parrakeet, 61, 183, 194, 215,
 319, 380, 384, 385.
 Bower-birds, 185.
 Brambling, 14, 306, 362.
Branta canadensis minima, 102.
 " *leucopsis*, 74.
 Brazilian Black-capped Teal, 278.
 " Caracara, 133.
 " Cariama, 136.
 " Ducks, 3.
 " Teal, 78.
 Breeding, Bauer's Parrakeet, 42.
 " Black-crested Finch, 331.
 " Black-winged Plover, 334.
 " Blue and Yellow Macaw, 411.
 " Blue-fronted Amazon Parrots,
 393.
 " British Birds, 305, 360.
 " Gold-breasted Bunting, 314.
 " Hybrid Barraband × Crimson-
 winged Parrakeet, 398.
 " King Parrakeet, 56.
 " Meadow Pipit, 141.
 " Mealworms, 374.

- Breeding Queen of Bavaria's Conure, 388.
 ,, Ruddy Flamingoes, 363.
 ,, Tri-coloured Parrot Finch, 229.
 ,, Ultramarine Lory, 292.
 ,, Waders, 173.
 ,, White-headed Robin Chat, 304.
 Breeding and Rearing of the Cackling Goose, 102.
 Breeding British Birds, 305, 360.
 Breeding Experiments with the Red-faced Lovebird, 128.
 Breeding Experiments with the Hooded Parrakeets, 188.
 Breeding Notes for the Year ended 30th June, 1939. Royal Zoological Society of South Australia, 319.
 Breeding Rare Parrakeets in the Chicago Zoological Park, 182.
 Breeding Records, 15, 133, 162.
 Breeding Report, A, 200.
 Breeding Results at Clères, 2.
 ,, ,, ,, Delmonden Manor, 47.
 Broadbill, Long-tailed, 267.
 Bronze-naped Dove, 21.
 Bronze-necked Dove, 18, 193.
 Bronze-tailed Peacock Pheasants, 4, 166, 203.
 Bronzewing Pigeon, 21, 319, 339.
 Brotogeris Parrakeets, 402.
 Brown Crossoption, 93, 163.
 ,, Padda or Rice Bird, 317.
 ,, Pelican, 23, 138.
 ,, Quail, 320.
 Brown-backed Pelican, 138.
 Brown's Parrakeet, 40, 320.
 Brush Bronzewing Pigeon, 21.
 ,, Turkeys, 4, 156, 168.
 ,, Wattle-bird, 319, 320.
Buarremon spodiionotus, 243.
Bubo bubo, 133.
 ,, *maculosus*, 133.
 ,, *pensis*, 113.
 ,, *virginianus*, 133.
Bubulcus ibis, 136.
Bucephala albeola, 285.
 ,, *clangula*, 283.
 ,, *c. americana*, 284.
 ,, *islandica*, 283.
 Buckley's Ground-Dove, 20.
 Budgerigar, Golden-faced, 147.
 ,, Opaline Dark-green, 146.
 ,, Whitewing Cobalt, 146.
 ,, Yellow-wing Dark-green, 147.
 Budgerigar in Captivity, 143.
 Budgerigars, 215, 217.
 Buff-hooded Ground-Pigeon, 22.
 Bufflehead, 79, 135, 285.
 Buffon's Touraco, 62.
 Buff-throated Sunbird, 113.
 Bulbul, Bengal Red-vented, 258.
 ,, Black-crested Yellow, 211.
 ,, Blyth's, 269.
 ,, Bourdelle's, 269.
 ,, Crested Finch-billed, 269.
 ,, Half-collared Finch-billed, 269.
 ,, Orange-spotted, 211.
 ,, Red-vented, 196.
 ,, Red-whiskered, 196, 370.
 ,, Ruby-throated, 255.
 ,, White-cheeked, 196.
 ,, White-eared, 256.
 Bulbuls, 113, 131, 196, 209.
 Bullfinch, 14, 62, 306.
 ,, Trumpeter, 37.
 Bulwer's Pheasant, 272, 301.
 Bunting, Black-headed, 324.
 ,, Desert Trumpeter, 13.
 ,, Grey-necked, 324.
 ,, Moorish House, 13.
 Bunting, Breeding of the Gold-breasted, 314.
 Buntings, 362.
Burhinus capensis, 137.
 ,, *magnirostris*, 137.
 ,, *vermiculatus*, 137.
 Burmese Collared Turtle-Dove, 225.
 ,, Ruddy Turtle-Dove, 19.
 ,, Sarus Crane, 137.
 ,, Silver Pheasant, 164.
 Burrowing Owl, 133.
 Bush-Quail, Argoondah, 162.
 ,, Jungle, 162.
 Bustard, Great, 137, 153, 320.
 ,, Little, 137.
Buteo jakal, 265.
 ,, *rufofuscus*, 133.
 Button-Quail, 301.
 ,, Indian, 167.
 ,, Little, 168.
 ,, Madagascar, 168.
 ,, Smith's, 168.
 ,, Taigoor, 167.
 ,, Varied, 168.
 Buzzard, Jackal, 133, 265.
Bycanistes subcylindricus, 112.
 Cabot's Tragopan, 163.
 Cackling Geese, 74, 102, 107.
Cairina moschata, 279.
 Californian Quail, 95, 167, 330.
 Calliope Humming Bird, 54.
Callipepla squamata, 167.
Calliste paradisea, 373.
Calenas nicobarica, 22.

- Calopezus elegans*, 155, 168.
Calophasis ellioti, 165.
 „ *mikado*, 165.
Calypte helenæ, 26.
Canachites canadensis, 162.
 Canada Geese, 74, 107.
 „ Grouse, 162.
 „ Flycatchers and Humming Birds
 of, 52.
 Canadian Crane, 136.
 Canarian Pigeon, 17.
 Canaries, 306.
 Canary-coloured Greenfinches, 5.
 „ -winged Parrakeet, 402, 405.
 Canary, Hartz Roller, 306.
 Canvas-backed Duck, 71, 79, 280.
 Cape Barren or Cereopsis Goose, 84.
 „ Dove, 20.
 „ Shoveler, 77, 280.
 „ Sparrow, 39.
 „ Teal, 134.
 „ Thickknee, 137.
 „ Turtledove, 19.
 Capercaillie, 162.
 Caracara, Brazilian, 133.
 Cardinal, Dwarf, 49.
 „ Red-crested, 228.
 „ Virginian, 36.
Carduelis caniceps, 191.
 Care and Keeping of Barbets, 206, 251.
 Care of Birds in War-time, 313.
 Cariama, Brazilian, 136.
Cariama cristata, 136.
 Carmine Bee-eaters, 120.
 Carolina Dove, 18, 350.
 „ Duck, 3, 77, 86, 94, 134, 152, 236.
 „ Wood Duck, 68.
Carpophaga zoeæ, 366.
Casarca tadornoides, 82, 90, 159, 170,
 202.
Casmerodius albus, 27.
 Caspian Tern, 356.
Cassidix oryzivora, 238.
Cassidix persicus, 238.
 Cassique, Black, 238.
 „ Yellow-backed, 238.
 Cassowary, 348, 373.
 Cat Bird, 41, 225.
Cathartes aura, 23.
Catreus wallichii, 164.
 Cattle Egret, 136.
 Cayenne Crane, 139.
 „ Lapwing, 137.
 „ Rail, 139.
 Cayman Amazon Parrots, 392.
Cephalopterus penduliger, 240.
 Cereopsis Goose, 75, 107, 273, 349.
Cereopsis novae-hollandiæ, 84.
Cerionis macrolophus, 164.
 „ *xanthophilus*, 164.
 Ceylon Junglefowl, 165.
 „ Pheasant, 4.
 Chaffinch, 14.
 „ Teydean, 13.
 Chaffinches, 9, 306, 362.
Chalcomitra adelberti, 113.
 „ *senegalensis*, 118.
Chalcophaps chrysochlora, 20, 319.
 „ *natalis*, 21.
 „ *indica*, 20.
Chalcopelia chalcospilos, 328.
Chalcopsittacus ater, 193, 369.
Chalcurus chalcurus, 166.
Chamepelia bucleyi, 20.
 „ *minuta*, 20.
 „ *passerina*, 20.
 „ *rufipennis*, 20.
 „ *talpacoti*, 20, 319.
 Chat, Crimson, 340.
 „ White-fronted, 340, 358.
 Chaulet's Cissa, 270.
Chauna cristata, 156.
 „ *torquata*, 136.
 Cheer Pheasant, 4, 164.
Chenonetta jubata, 82.
Chenopsis atrata, 84.
Chera prognæ, 370.
 Chestnut Sparrow, 342.
 „ Teal, 81.
 Chestnut-backed Eupetes, 301.
 Chestnut-breasted Duck, 350.
 „ Finch, 266.
 „ Teal, 3, 78, 87.
 Chestnut-capped Laughing-thrush, 252.
 „ Tanager, 243.
 Chestnut-crowned Ant-Thrush, 244.
 „ Babbler, 338.
 Chile, Rare Birds from, 271.
 Chilean Goose, 75.
 „ Pigeon, 271.
 „ Pintail, 77, 260, 350.
 „ Teal, 78.
 Chiloe Wigeon, 3, 68, 350.
 China Pitta, 373.
 Chinese Bamboo-Partridge, 163.
 „ Goose, 76.
 „ Mandarin Duck, 68.
 „ Painted Quail, 36, 127.
 „ Quail, 14.
 „ Spectacle-bird, 14.
 „ Spotbill Duck, 350.
 „ Whistling Thrush, 268.
 Chinquis Peacock Partridge, 301.
 „ Pheasant, 203, 350.
Chiroxiphia pareola, 373.
Chloephaga hybrida, 271, 283, 302.

- Chloephaga inornata* or *dispar*, 75, 89.
 „ *magellanica*, 89.
 „ *melanoptera*, 259, 283.
 „ *poliocephala*, 89.
 „ *rubidiceps*, 89.
Chlorophonia occipitalis, 291.
Chloropsis icterocephala, 300.
Chlorostilbon alicæ, 271.
Chororhea javensis, 207, 251.
 Christmas Island Green-winged Dove,
 21.
Chrysolophus pictus, 165.
Chrysomitris cucullata, 124.
 „ *tristis*, 38.
Chrysotis augusta, 39.
Chrysuronia ænone, 270.
 Chukar Partridges, 95, 162.
Cicinnurus regius, 299, 327.
Ciconia ciconia, 136.
Cinclus, 35.
 Cinerescent Tinamou, 168.
 Cinnamon Ducks, 3, 350.
 „ Teal, 78, 88, 261, 350.
 „ Tree Sparrow, 330.
Cinnyris coccinigaster, 118.
 „ *cupreus*, 118.
 „ *rizophoræ*, 268.
 „ *superbus*, 113.
 „ *verticalis*, 118.
Cissa chauleti, 270.
 Cissa, Chaulet's, 270.
 „ Javan, 300.
 „ Sumatran, 300.
Cissopsis leveriana, 199.
Clangula hyemalis, 285.
 „ *islandica*, 135.
 Clapperton's Francolin, 162.
Claravis geoffroyi, 20.
 Clères, Birds at, in 1939, 347.
 „ Breeding Results at, 2.
 „ Fire at, 141.
 „ Parrots and Parrakeets at, 390.
 Cloncurry Barnard Parrakeet, 274, 377.
Cochlearius cochlearius, 136.
 Cockatiel, 93, 184, 215.
 Cockatoo, Bare-eyed, 214.
 „ Blue-eyed, 301.
 „ Black, 63, 381.
 „ Gang-gang, 199.
 „ Leadbeater's or Major Mitchell,
 216, 236.
 „ Lemon-crest, 214.
 „ Rose-breasted, 216.
 Cock-of-the-Rock, 62, 372.
 „ Red, 248.
 Cock Ostrich, 331.
Coereba coerulea, 371.
 „ *cyanea*, 371.
Coereba flaveola, 25.
 „ *mexicana intermedia*, 238.
 Collared Blue Kingfisher, 301.
Colibri iolata, 271.
 Colin, Curaçao Crested, 167.
 „ White-cheeked Crested, 167.
Colinus cubanensis, 167.
 „ *pectoralis*, 167.
 „ *virginianus*, 167.
Colius erythromelon, 373.
 Collection, M. C. Gordier's, 267.
 Colour in Avadavats, 110.
 Collections of Mr. Shaw Mayer and
 Mr. W. J. C. Frost, 272.
Columba ænas, 17.
 „ *albicularis*, 371.
 „ *araucana*, 17, 271.
 „ *arquatrix*, 17, 27.
 „ *bollei*, 17.
 „ *corensis*, 17.
 „ *fasciata*, 17.
 „ *flavirostris*, 17.
 „ *g. guinea*, 17.
 „ *g. phænota*, 17.
 „ *halmahera*, 18.
 „ *junoniæ*, 17.
 „ *livia*, 17.
 „ *leucocephala*, 17.
 „ *leuconota*, 17.
 „ *maculosa*, 17.
 „ *picazuro*, 17.
 „ *rufina*, 17.
 „ *speciosa*, 17.
 „ *squamosa*, 17.
Columbigallina passerina, 27.
Columbina picui, 20.
 Comb-duck, South American, 260.
 Comb-ducks, 349.
 Common Argus Pheasant, 4.
 „ Crane, 136, 349.
 „ Goldeneye Duck, 72, 96, 283,
 350.
 „ Peafowl, 4.
 „ Pelican, 138.
 „ Pheasant, 164.
 „ Pochard, 3, 71, 350.
 „ Quail, 162.
 „ Rhea, 169.
 „ Rosella Parrakeet, 93, 215.
 „ Sandpiper, 356.
 „ Scaup, 79.
 „ Sheld-duck, 3, 76, 349.
 „ Shoveler, 70, 77.
 „ Teal, 77, 279.
 „ White-eyes, 3.
Compsocoma somptuosa cyanoptera, 1.
 Comte de Paris Humming-bird, 246.
 Condor, 133.

- Continga, Purple-throated, 373.
 Conure, Black-headed, 41.
 " Queen of Bavaria's, 388.
 Coot, American, 139.
 Coppery Sunbirds, 117, 118.
Coracias temmincki, 300.
Coragyps atratus, 133.
 Coral-billed Scimitar Babbler, 270.
 Cordillera Dove, 20.
 Cordon Bleu, An Abnormal, 157.
 Cordon-bleus, 117.
Coriphilus peruvianus, 199, 292.
 " *ultramarinus*, 292.
 Cormorant, 138, 357.
 " Florida, 138.
 " Little Pied, 359.
 " White-breasted, 359.
 Corncrake, 139.
 Coroneted Manakins, 241.
Coryphospingus pileatus, 221.
 Coscoroba Swan, 74.
Cosmopelia elegans, 21.
Cossypha albicapilla, 120, 304.
 " *niveicapilla*, 120.
Cotinga cayana, 373.
Coturnix coromandelica, 263.
 " *delegorguei*, 263.
 " *pectoralis*, 263.
 Count Raggi's Bird of Paradise, 301.
 Courrier's Water Tyrants, 4.
 Courser, Double-banded, 296.
 " Nile, 300.
 Courting Display of Napoleon's Peacock Pheasant, 233.
 Cowbirds, 225.
 Crane, Black, 138, 211.
 " Black-and-White, 139.
 " Cayenne, 139.
 Crane, Australian, 40, 136, 349.
 " Black-necked, 349.
 " Burmese Sarus, 137.
 " Canadian, 136.
 " Common, 136, 349.
 " Crowned, 137, 349.
 " Demoiselle, 3, 136, 349.
 " Eastern Sarus, 349.
 " Grey-necked Crowned, 28, 349.
 " Hooded, 28.
 " Manchurian, 3, 136, 236, 349.
 " Sandhill, 28, 136, 349.
 " Sarus, 136, 236, 373.
 " S. African Crowned, 137.
 " Stanley, 136, 236, 349.
 " Wattled, 136, 236.
 " West African or Black necked, 126.
 " White Asiatic, 349.
 " White-necked, 136, 236.
 Cranes, 3, 236, 349.
Craspedophora intercedens, 328.
Crax alberti, 168.
 " *fasciolata*, 168.
 " *globicera*, 168, 327.
 " *hecki*, 327.
Cremarchus erythropygius, 245.
 Crescent Honey Eater, 352.
 Crested Duck, 260.
 " Finch-billed Bulbul, 269.
 " Fireback Pheasant, 203.
 " Guineafowl, 167.
 " or Rheinart's Argus Pheasant, 311.
 " Pigeon, 352.
 " Screamer, 136, 156.
 " Sheld-duck, 279.
 " Tern, 357.
 Crimson Chat, 340.
 " Finch, 61, 370.
 " Rosella Parrakeet, 220.
 " Seedcracker, 116.
 Crimson-breasted Barbet, 210.
 Crimson-winged Babbler, 269.
 " Parrakeet, 186, 236, 319, 385, 398.
 Crimson Wings, Molluscan, 300.
 Crocodile Bird, 300.
 Crossbills, American, 227.
Crossoptilon auritum, 163.
 " *manchuricum*, 163.
 Crossoptilon, Blue, 163.
 " Brown, 163.
Crotophaga ani, 24.
 Crowned Crane, 137, 349.
 " Goura, 22.
 " Lapwing, 137.
 " Pigeon, 299.
 Crows, Australian, 352.
 " King, 300.
 " Pied, 112.
Crypturus tataupa, 155.
 Cuban Bobwhite, 167.
 " Finch, 25, 48.
 " Ground-Dove, 21.
 Cuckoo-dove, 18.
 Cuckoo Weavers, 342.
 Curaçao Crested Colin, 167.
 Curaçow, Albert's, 168.
 " Banded, 168.
 " Heck's, 168, 327.
 " Mexican, 168.
 Curl-crested Aracari, 271.
 Curlew, Eastern, 356.
 " Sandpiper, 356.
Cyanocorax cyanopogon, 126.
 " *pileatus*, 264.
Cyanolesbia coelestis, 249.
Cyanorhamphus cooki, 406.

- Cyanorhamphus malherbei*, 407.
Cyanops asiatica, 207, 211.
 „ *a. davisoni*, 213.
 „ *a. rubescens*, 213.
 „ *franklini*, 195, 267.
 „ *oorti*, 207, 211.
Cyclopsittacus desmaresti, 123.
Cygnus buccinator, 94.
Cyrtonyx montezumæ, 167.
 Dabchick, 337.
 Dabry's Sunbird, 268.
 D'Albertisi's Goura, 22.
 Damara Guinea-fowl, 166.
 Dark Rosefinch, 268.
 Dark-throated Golden Pheasant, 350.
 Dartford Warbler, 361.
 Darwin's Koklass Pheasant, 164.
 „ Rhea, 2, 169.
 Davison's Blue-cheeked Barbet, 213.
 Deceptive Turtledove, 19.
 Demoiselle Cranes, 3, 136, 349.
Dendrocygna arcuata, 81.
 „ *eytoni*, 81, 134.
 Derbyan Parrakeet, 38.
 Desert Trumpeter Bullfinch, 13.
 Desgodin's Sibia, 269.
 Desmarest's Dwarf Parrot, 123.
 Diamond Dove, 4, 14, 20, 49, 193, 222,
 352.
 „ Sparrow, 352.
Diardigallus diardi, 164.
Dicaeum cruentatum ignitum, 268.
Diglossa, 244.
 Dikkop, Water, 137.
Diphyllodes magnificus hunsteini, 301.
 Dippers, 35.
Dissemurus paradiseus, 373.
 Diver, Great Northern, 104.
 „ Red-throated, 104.
 Diving Ducks, 3, 35.
 Domestic Pigeon, 17.
 Dominican Gull, 138.
 D'Orbigny's Slaty Finch, 271.
 Dotterel, Black-fronted, 336.
 „ Red-capped, 358.
 Double-banded Courser, 296.
 Double-collared Turtledove, 19.
 Double-spurred Francolin, 162.
 Douglas Quail, 167.
 Dove, Australian Bar-shouldered, 37.
 „ „ Crested Ground, 28.
 „ „ Green-winged, 20.
 „ Barbary, 17.
 „ Bar-shouldered, 20, 319.
 „ Bar-tailed, 4.
 „ Black-winged, 271.
 „ Blue-headed Quail, 22.
 Dove, Blue-spotted Emerald, 20.
 „ Bronze-naped, 21, 193.
 „ Bronze-necked, 18.
 „ Cape, 20.
 „ Carolina, 18.
 „ Cordillera, 20.
 „ Christmas Island Green-winged,
 21.
 „ Cuban Ground, 21.
 „ Diamond, 4, 14, 20, 49, 193, 222,
 352.
 „ Emerald, 328.
 „ Galapagan, 18.
 „ Galapagos Ground, 28.
 „ Geoffroy's, 20.
 „ Green-spotted Emerald, 20.
 „ Ground, 27.
 „ Half-collared, 19.
 „ Hoary-headed Ground, 21.
 „ Inca, 20, 319.
 „ Indian Green-winged, 20.
 „ Jobi, 49, 51.
 „ Lemon, 21.
 „ Long-tailed, 4.
 „ Martinican, 18.
 „ Mauge's, 20.
 „ Mountain Witch, 21.
 „ Mourning, 319.
 „ Namaqua, 319.
 „ Necklace, 18.
 „ Passerine, 20.
 „ Peaceful, 20, 352.
 „ Picui, 20.
 „ Pigmy, 4.
 „ Plumed Ground, 140.
 „ Red-eyed, 4, 19.
 „ Ruddy Quail, 21.
 „ Rufous, 21, 155.
 „ Salvadori's, 193.
 „ Scaly, 20, 155.
 „ Senegal, 4.
 „ „ Blue-spotted, 319.
 „ Sennett's Buff-bellied, 21.
 „ Socorro Mourning, 18.
 „ Solitary Ground, 193.
 „ Spinifex, 140.
 „ Stock, 17.
 „ Tambourine, 4, 20, 225.
 „ Talpacoti, 20, 319, 350.
 „ Venezuelan Ground, 18, 21.
 „ Verreaux's, 21.
 „ Wells', 21.
 „ White-bellied, 21.
 „ „ Plumed, 264.
 „ White-fronted, 49, 192.
 „ White-winged, 18.
 „ Yubis, 350.
 „ Zebra, 20.

- Doves, 131.
 Dresser's Eider, 287.
 Drongo, Racquet-tailed, 373.
 Duck, American Black, 350.
 " " Eider, 79.
 " Australian, 172.
 " " Musk, 282.
 " " White-eyed, 83.
 " " Wild, 87, 134.
 Bahama, 77, 134.
 Barrow's Golden-eye, 72, 100.
 Black, 81, 95.
 " " or Dusky, 77.
 Black-bellied, 76.
 " " -billed Tree, 76.
 Blue-billed, 85.
 Blue Mountain, 277.
 Brazilian, 3.
 Canvas-backed, 71, 79.
 Carolina, 3, 77, 86, 87, 94, 134,
 152, 236, 350
 " " Wood, 68.
 Chestnut-breasted, 350.
 Chinese Mandarin, 68.
 " " Pintail, 350.
 " " Spotbill, 350.
 Cinnamon, 3, 350.
 Crested, 260.
 Eider, 71, 286.
 Eyton's, 76.
 Falcated, 77.
 Florida, 77, 134.
 Freckled, 85.
 Fulvous, 76.
 Gadwall, 77.
 Golden-eye, 72, 100.
 Grey-breasted, 76.
 Harlequin, 4, 71, 285, 328.
 Indian Comb, 77.
 Javan, 76.
 Long-tail, 71, 285.
 Luzon, 134.
 Madagascar, 3.
 Mandarin, 3, 77, 86, 87, 236, 350.
 Masked, 282.
 Meller's, 77, 350.
 Muscovy, 77, 87, 279, 350.
 Musk, 84, 107.
 New Mexican, 77.
 " " Zealand, 90.
 North American Ruddy, 71, 280
 Pink-eared, 81, 86.
 Pintail, 77, 350.
 Plumed or Eyton's Tree, 81.
 Red-billed, 77, 350.
 " " -crested, 350.
 " " -headed, 350.
 Ring-necked, 79.
 Duck, Rosy-billed, 79, 350.
 " Ruddy, 135, 261, 280.
 " Scoter, 71.
 " South American Comb, 77.
 " Speckled or Black, 88.
 " Spiny-tailed, 107.
 " Steamer, 79, 271.
 " Torrent, 261, 277.
 " Tufted, 3, 70, 79, 87.
 " Versicolor, 3.
 " Wandering Tree, 81.
 " White-eyed, 79.
 " " -faced, 76.
 " " -winged, 77.
 " Wood, 82, 95.
 " Yellow-billed, 77, 350.
 Ducks, 73.
 " Diving, 35.
 " Tree, 236.
 Dumont's Grackles, 301.
 Dusky Wood-Swallow, 339.
 Dwarf Cardinals, 49.
 " Hermit Thrushes, 62.
 " Turtledove, 19, 328.
 Eagle, Bald, 133.
 " Monkey-eating, 272, 301.
 " Whistling, 357.
 Eagle-Owls, 122, 133.
 " Fraser's, 113.
 Early Years of the Avicultural Society,
 11, 36, 124, 152, 191, 221,
 263, 296, 327, 369.
 Eastern Curlew, 356.
 " Kingbird, 52.
 " Phoebe Flycatcher, 53.
 " Rosella Parrakeet, 215.
 " Sarus Crane, 349.
Ectopistes migratorius, 18.
 Edward's Lory, 300.
 " Pheasant, 4, 28, 51, 164, 350.
 " Purple Gallinule, 139.
 Egret, American, 27.
 " Cattle, 136.
 " Little, 132, 136.
 " Snowy, 27, 136.
Egretta g. garzetta, 132.
 " *thula*, 27.
 Egyptian Goose, 75, 80, 172, 319.
 " Plover, 224, 298.
 Eider Duck, Dresser's, 287.
 " " Icelandic, 287.
 " " King, 287.
 " " Spectacled, 287.
 " " Steller's, 287.
 Eider Ducks, 71, 280, 286.
 Eider Ducks in Captivity, 37.

- Elegant Grass Parrakeet, 61, 215, 319,
384, 386.
- Elliott's Pheasant, 4, 92, 165, 203, 350.
,, Pitta, 267, 271, 350.
- Emberiza b Buchananiani*, 324.
,, *flaviventris*, 314.
- Emblema picta*, 47, 61, 367.
- Emerald Doves, 328.
- Emperor Geese, 3, 74, 349.
- Emperor of Germany's Bird of Paradise,
300, 301.
- Emu, 2, 168, 348, 373.
- English Skylark Colony in British
Columbia, 171.
- Enicurus maculatus guttatus*, 268.
,, *schistaceus*, 268.
- Ensifera ensifera*, 243.
- Erisimatura australis*, 281.
,, *ferruginea*, 261, 281.
,, *f. equatorialis*, 281.
,, *f. vittata*, 281.
,, *jamaicensis*, 261, 280.
,, *leucocephala*, 281.
,, *macoa*, 281.
- Erythrura prasina*, 331.
,, *trichroa*, 229.
- Establishing the Lutino Ring-necked
Parrakeet, 401.
- Estrilda angolensis*, 125.
,, *atricapilla*, 116.
,, *nonnula*, 116.
- Eubucco bourcierii aequatorialis*, 241.
- Eudocimus albus*, 135.
,, *ruber*, 135.
- Eugenes fulgens*, 270.
- Eulabes intermedia*, 300.
,, *nigricollis*, 300.
,, *veneratus*, 300.
- Euncornis campestris*, 25.
- Eupetes, Chestnut-backed, 301.
- Eupetes pulcher*, 272, 301.
- Euphonia, Jamaican, 25.
- Euphonia nigricollis*, 237.
,, *violacea*, 238.
- Eupsittula guarouba*, 388.
- Eupsychortyx cristatus*, 167.
,, *leucopogon*, 167.
- European Bee-eater, 40.
,, Goldfinch, 191.
,, Shoveler, 280.
,, Teal, 69.
,, White-fronted Goose, 75.
,, Wigeon, 69.
- Excalfactoria chinensis*, 156.
,, *lineata*, 156.
- Eyton's Tree-Duck, 76, 134.
- Fairy Bluebirds, 300.
- Fairy Flycatchers, 117.
,, Tern, 357.
- Falcated Wigeon, 77.
- Fascination of Keeping Waterfowl, 65.
- Fawn Sparrows, 5.
- Finch, Alario, 14.
,, Beautiful Firetailed, 351.
,, Black-crested, 49, 331.
,, Chestnut-breasted, 266.
,, Crimson, 61, 370.
,, Cuban, 25, 48.
,, D'Orbigny's Slaty, 271.
,, Fire-tailed, 351.
,, Gouldian, 39, 367.
,, Green Singing, 14.
,, Masked, 232.
,, Melba, 61.
,, Olive, 297.
,, Painted, 47, 60, 61.
,, Parrot, 40, 60, 61, 232.
,, Pectoral, 222.
,, Pelzeln's Saffron, 331.
,, Pileated, 221.
,, Purple, 225.
,, Quail, 223, 369.
,, Red-eared Firetailed, 351.
,, Red-headed, 225.
,, Saffron, 14.
,, Star, 61, 370.
,, Timor Zebra, 272.
,, White's Warbling, 199.
,, White-throated, 195.
,, Yellow-backed, 25.
,, ,, -rumped, 266.
,, Zebra, 11, 60, 217, 300, 309, 337.
- Finch, Breeding of the Black-crested,
331.
- Finches, Owl, 229.
- Fireback, Bornean Crested, 164.
,, Siamese, 164.
,, Vieillot's, 163.
- Fireback Pheasants, 28.
- Firefinches, Bar-breasted, 117.
,, Peter's Spotted, 61, 192.
- Fire-tufted Barbet, 62, 252, 373.
- First Nesting in Captivity of the
Australian Sheld-duck, 159.
- Flamingoes, 370, 373.
,, Ruddy, 363.
- Florida Cormorant, 138.
,, Duck, 77, 134.
- Flowerpecker, Scarlet-backed, 268.
- Flycatcher, Black-and-Yellow, 268.
,, Eastern Phoebe, 53.
,, Fairy, 117.
,, Pied, 361.
,, Scissor-tailed, 322.
,, Spectacled, 117.

- Flycatcher, Spotted, 13, 361.
 " Verditer, 331.
 " White-gorgeted, 268.
 Flycatchers, 122.
 Flycatchers and Humming Birds of
 Canada, 52.
 Food and Breeding of Avadavats, 142.
 Fooks' Laughing Thrush, 270.
 Foreign Bird League, 201.
 Forest Kingfisher, 119.
 Forktail, Slaty-backed, 268.
 " Spotted, 268.
 Formosan Bamboo-Pheasant, 163.
 " Blue Pies, 62.
 " Magpie, 31.
 " or Baikal Teal, 78.
 Forsten's Lorikeet, 221.
Foudia madagascarensis, 287.
 Foxwarren Park, 235.
 Francolin, Bare-throated, 162.
 " Black, 162.
 " Clapperton's, 162.
 " Double-spurred, 162.
 " Gray's Bare-throated, 195.
 " Grey, 162.
 " Longbilled, 301.
 " Spot-bellied, 162.
Francolinus bicalcaratus, 162.
 " *francolinus*, 148.
 " *pintadeanus*, 162.
 " *pondicerianus*, 148, 162.
 " *spilogaster*, 162.
 Fraser's Eagle-Owls, 113.
 " Touraco, 191, 265.
 Freckled Duck, 85.
Fregata magnificens, 23.
 French Partridge, 162.
 Frigate Bird, 23.
 Fruit-eater, Western Swallow, 241.
 Fruit-Pigeon, Black-capped, 17.
 " Lilac-crowned, 16.
 " Wedge-tailed, 16.
 " Zoe's Banded, 366.
 Fruitsuckers, Yellow-headed, 300.
Fulica atra americana, 139.
Fuliginix, 35.
 Fulvous Pitta, 267.
 " Tree-duck, 3, 76, 350.
 Further Notes from Australia, 214, 335,
 351.
 Fytch's Bamboo-Partridge, 163.

 Gadwall Pigeon, 77, 350.
 Galah, 216.
 Galapagan Dove, 18.
 Galapagos Ground Doves, 28.
Gallicolumba criniger, 21.

Gallicolumba luzonica, 21.
 " *rufigula*, 21.
 Gallinule, Black-backed Purple, 139.
 " Edward's Purple, 139.
 " Green-backed Purple, 139.
Gallirallus australis, 139.
Gallus gallus, 165.
 " *lafeyettii*, 165.
 " *sonneratti*, 328.
 " *varius*, 165.
 Gambel's Quail, 167.
 Gang-gang Cockatoo, 199.
 Gannet, 138.
 Gape Worms in Young Eiders and
 Goosanders, 273.
 Garganey Teal, 78, 85.
 Garnet-throated Humming Bird, 62,
 350.
Garrulax connectens, 270.
 " *merulinus*, 270.
 " *milnei indochinensis*, 270.
 " *squamatus*, 270.
 " *subunicolor fooksi*, 270.
 Geese, Andean, 3, 349.
 " Ashy-headed, 3, 236, 283, 328,
 349.
 " Bar-headed, 72, 236.
 " Bean, 107.
 " Blue, 74.
 " Blue Snow, 3, 236, 349.
 " "-winged, 3, 349.
 " Cackling, 74, 107.
 " Canada, 74, 107.
 " Cereopsis, 107, 273, 349.
 " Egyptian, 80, 172.
 " Emperor, 3, 349.
 " Greater Snow, 74, 342, 349.
 " Greylag, 107.
 " Hutchins, 74, 236, 369.
 " Kelp, 302.
 " Lesser Canada, 74.
 " " Snow, 74.
 " " White-fronted, 3, 349.
 " Magellan, 3, 201.
 " Orinoco, 328.
 " Red-breasted, 349.
 " Ross's Snow, 3, 236, 349.
 " Ruddy-headed, 3, 283, 328, 349.
 " Sandwich Island, 328.
 " Semi-palmated, 76.
 " Siberian Red-breasted, 76.
 " Upland, 283.
 Geese, 3, 73.
 " Nesting of Newly Shipped, 342.
Gennarus hamiltonii, 164.
 " *horsfieldi*, 164.
 " *leucomelanos*, 164.
 " " *sharpii*, 164.

- Gennæus lineatus*, 164.
 „ *melanotus*, 164.
Geocichla aurimacula, 268.
 „ *cyanonota*, 153.
 Geoffroy's Dove, 20.
Geopelia cuneata, 20, 222.
 „ *humeralis*, 20, 37, 319.
 „ *maugei*, 20.
 „ *placida*, 20.
 „ *sinica*, 20.
Geophaps scripta, 21, 299.
 „ *smithii*, 21.
Geotrygon versicolor, 21.
 Germain Pheasants, 51, 166, 203.
 Giant Humming-Bird, 245.
 „ Whydah, 370.
Glaucidium jardini, 133.
 Glossy Ibis, 135.
 „ Starlings, 119.
 Godwit, Bar-tailed, 356.
 Godwits, 356.
 Gold Coast Colony, A Collector in, 112.
 Golden Plover, 356.
 Golden-crowned Parrakeet, 15.
 Golden-eye, American, 79.
 „ Barrow's, 135, 236, 283.
 „ Common, 96, 283, 350.
 Golden-eyes, 135, 280, 283, 328.
 Golden-faced Budgerigar, 147.
 Golden-shouldered Parrakeet, 14.
 Golden-throated Barbet, 195, 267.
 Golden-winged Laughing Thrush, 270.
 Goldfinch, American, 225.
 „ European, 191, 360.
 „ Himalayan, 191.
 Goldfinches, 9, 225, 305.
 Goliath Heron, 136.
 Goose, African Spurwing, 75.
 „ American White-fronted, 134.
 „ Andean, 75, 259, 283.
 „ Ashy-headed, 75, 89.
 „ Atlantic Brant, 75.
 „ Australian Maned, 76.
 „ „ Pigmy, 83.
 „ Bar-headed, 76, 134.
 „ Barnacle, 74, 75, 89.
 „ Barred Upland, 75.
 „ Bean, 75.
 „ Black-banded, 89.
 „ Black Brant, 75.
 „ Blue-winged, 76.
 „ Cackling, 102.
 „ Cape Barren or Cereopsis, 84.
 „ Cereopsis, 75.
 „ Chilean, 75.
 „ Chinese, 76.
 „ Egyptian, 75, 319.
 „ Emperor, 74.
 „ European White-fronted, 75.
 „ Greylag, 75.
 „ Hawaiian, 76, 95.
 „ Kelp, 75, 271, 283.
 „ Lesser White-fronted, 75.
 „ Magellan, 75.
 „ Magpie or Semipalmated, 84.
 „ Maned, 87, 349.
 „ Orinoco, 75.
 „ Pinkfoot, 75.
 „ Richardson's, 74.
 „ Ross's Snow, 74.
 „ Ruddy-headed, 75, 89.
 „ Sandwich Island, 95.
 „ Snow, 87.
 „ White-cheeked, 74.
 „ „ -fronted, 74.
 „ „ -quilled Pygmy, 85.
 Goshawks, 114.
 Gouldian Finches, 39, 229, 232.
 Goupil's Lory, 292.
 Goura, Crowned, 22.
 „ D'Albertisi's, 22.
 „ Victoria, 22.
Goura coronata, 299.
 „ *cristata*, 22.
 „ *scheepmakeri*, 22.
 „ *victoria*, 22.
 „ „ *beccari*, 299.
 Grackle, Dumont's, 301.
 „ Greater Antillean, 26.
 „ Rothschild's, 272, 300.
Grallaria ruficapilla, 244.
 „ *squamigera*, 244.
 Grallarias, 244.
 Grallinas, Pied, 337.
Granatina granatina, 225.
 Grass Bird, Little, 357.
 Grassfinch, Long-tailed, 15, 38, 343.
 „ Masked, 38, 343.
 „ Rufous-tailed, 38.
 „ Sacred, 38.
 „ White-cared, 14, 343.
 „ Yellow-billed, 343.
 Grass Parrakeets, 61, 383.
 Grassquit Black-faced, 25.
 „ Yellow-faced, 25.
 Gray's Argus Pheasant, 272, 301.
 „ Bare-throated Francolin, 195.
 Great Bird of Paradise, 373.
 „ Black-headed Gull, 138.
 „ Blue Heron, 136.
 „ Bustard, 137, 153, 330.
 „ Crested Black Cockatoo, 392.
 „ Northern Divers, 104.
 Greater Antillean Grackle, 26.
 „ Pintailed Sandgrouse, 191, 224.
 „ Scaup, 79, 350.

- Greater Snow Geese, 74, 342, 349.
 Grebe, Black-throated, 337.
 ,, Hoary-headed, 337,
 ,, Slavonian, 104.
 Greek Partridge, 162.
 Greenfinch, Blue, 5.
 ,, Canary-coloured, 5.
 Greenfinches, 306.
 Green Avadavat, 48, 222, 232.
 ,, Glossy Starling, 31.
 ,, Singing Finch, 14.
 ,, Twin-spotted Waxbill, 116, 232.
 Green-backed Purple Gallinule, 139,
 Green-headed Sunbird, 118.
 Green-spotted Emerald Dove, 20.
 ,, Tanagers, 61.
 Green-winged King Parrots, 301.
 ,, Macaw, 391.
 Greenshank, 356.
 Grey Francolin, 162.
 ,, Longtailed Sibia, 300.
 ,, Partridge, 131, 148.
 ,, Peacock Pheasant, 51.
 ,, Plover, 356.
 ,, Rheas, 2.
 ,, Shrike Thrush, 340.
 ,, Sibia, 256.
 ,, Sparrows, 5.
 ,, Teal, 78, 81.
 Grey-backed Zosterops, 358.
 Grey-breasted Tree Duck, 76.
 Grey-headed Negro-finches, 112, 115.
 ,, Sheld-duck, 159.
 ,, Sparrow, 370.
 Grey-hooded Ground-Pigeon, 21.
 Grey-necked Bunting, 324.
 ,, Crowned Cranes, 29, 349.
 Grey-tailed Tatler, 356.
 Grey-winged Ouzel, 195.
 Greylag Goose, 75, 107, 134.
 Grosbeak, Blue, 370.
 ,, Evening, 225.
 ,, Pine, 14, 264.
 Grosbeaks, 14.
 ,, Migration and Keeping of
 Evening, 225.
 Ground Doves, 27.
 Ground-Finch, Yellow-bellied, 271.
 Ground Thrushes, Orange-headed, 49.
 Ground-Tyrant, Black-rumped, 245.
 ,, Red-rumped, 245.
 Grouse, Black, 162.
 ,, Canada, 162.
 ,, Red, 162.
 ,, Ruffed, 162.
 ,, Willow, 162.
Grus mexicanus, 136.
 ,, *rubicunda*, 136.
 Guan, Guiana, 168.
 ,, Mexican, 168.
 ,, Para, 168.
 ,, Scaled, 168.
 Guiana Guan, 168.
 ,, Penelope, 168.
 Guineafowl, 166.
 ,, Abyssinian, 167.
 ,, Crested, 167.
 ,, Damara, 166.
 ,, Helmet, 166.
 ,, Pucheran's, 167.
 ,, Vulturine, 167, 373.
 Guinea Pigeon, 17.
 Guilding's Amazon Parrot, 153, 236.
Guiraca cyanea, 370.
 Guit-guits, 244.
 Gull, Black-headed, 138.
 ,, Dominican, 138.
 ,, Great Black-headed, 138.
 ,, Hemprich's, 138.
 ,, Herring, 138.
 ,, Laughing, 138.
 ,, Lesser Black-backed, 138.
 ,, Pacific, 358.
 ,, Silver, 138, 358.
Guttera edouardi, 167.
 ,, *pucherani*, 167.
Gymnogenys typicus, 114.
 ,, *t. pectoralis*, 114.
Hæmatopus ater, 271.
Halcyon cyanoventris, 300.
 ,, *senegalensis fuscopileæ*, 119.
 Half-collared Dove, 19.
 ,, Finch-billed Bulbul, 269.
Haliaëtus leucocephalus, 133.
 Hammerhead, 136.
 Hand-rearing of Red-breasted Mer-
 gansers, 103.
 Hangnest, 30.
 ,, Yellow-headed, 238.
 Harlequin Bronzewing Pigeon, 21.
 ,, Duck, 4, 71, 79, 285, 328.
 ,, Quail, 163, 263.
 Harrier, African, 114.
 ,, Swamp, 357.
 Hartlaubs, 232.
 Hartz Roller Canary, 306.
 Hawaiian Goose, 76, 95.
 Hawfinches, 306, 362.
 Hawk-headed Parrot, 41.
 Hawks, 122.
 Heck's Curassow, 168, 327.
 Hedge-Sparrows, 9.
Helianthus viola, 249.
Helianthea lutetiae, 246.

- Helmet Guineafowl, 166.
 Hemprich's Gull, 138.
 Heron, Boat-billed, 136.
 " Goliath, 136.
 " Great Blue, 136.
 " Night, 132, 136.
 " White-faced, 357.
 Herring Gull, 138.
Hesperiphona vespertina, 225.
Heteronetta atricapilla, 278.
Heterophasia picoides cana, 269.
 Hey's Partridge, 194.
 " Seeseec, 162.
 Hill Angel Humming-bird, 249.
 Hill Star Humming-bird, 245.
 Himalayan Goldfinch, 191.
Histrionicus histrionicus, 285.
Histiophaps histrionicus, 21.
 Hoary-headed Grebe, 337.
 " Ground-Dove, 21.
Holoquistus niger, 26.
Homopelia picturata, 18.
 " " *p.*, 18.
 " " *aldabrana*, 18.
 " *rostrata*, 18.
 Honey-eaters, 127, 209, 321, 339, 351.
 " Crescent, 352.
 " Lunate, 352.
 " Mountain, 301.
 " New Holland, 352.
 " Singing, 352.
 " Spiney-cheeked, 339.
 " White-bearded, 255.
 Hooded Cranes, 29.
 " Mergansers, 80.
 " Parrakeets, 188, 384, 392.
 " Siskin, 124.
 Hoopoes, 265.
 " Wild and Tame, 38.
Hoplopterus armatus, 137.
 Hornbill, Allied, 112.
 " Black-and-White Casqued, 112.
 " White-crested, 113.
 Horned Tragopan, 163.
 Horsfield's Pheasant, 4, 350.
 Hottentot Teal, 69, 134.
 House Martins, 127.
 Humming Bird, Alice's Pigmy
 Emerald, 62.
 " " Bee, 26.
 " " Blue Sylph, 249.
 " " Bolivian Violet-Eared, 223.
 " " Bouquet's Puff-legs, 242.
 " " Calliope, 54.
 " " Comte de Paris, 246.
 " " Garnet-throated, 62, 353.
 " " Giant, 245.
 " " Hill Angel, 249.
 Humming Bird, Hill Star, 245, 247.
 " " Mango, 26.
 " " Ruby-throated, 54.
 " " Shining Sunbeam, 246.
 " " Sword-billed, 242.
 " " Temminck's Sapphire-
 wing, 246.
 " " Thornbill, 242.
 " " Trainbearer, 247.
 " " Vervain, 26.
 " " Violet-ear, 247.
 " " White-booted Racket-tail,
 249.
 Humming-birds, 238, 270, 373.
 Hungarian Partridges, 95.
 Hunstein's Magnificent Bird of Para-
 dise, 301.
 Hutchins Geese, 74, 236, 369.
 Hyacinthine Macaw, 63, 391.
 Hybrid Herons in Japan, 132.
Hymenolæmus malacorhynchus, 277.
Hypergerus atriceps, 120.
Hyphantornis spilontus, 369.
Hypotenidia philippensis, 138, 320.
 Ibis, Black-faced, 135, 271.
 " " -headed, 135.
 " Glossy, 135.
 " Sacred, 135.
 " Scarlet, 135, 363.
 " Scarlet-White, 135.
 " White, 135.
 " White-faced Glossy, 135.
 Icelandic Eider Duck, 287.
Icterus chryscephalus, 238.
 Imperial Parrot, 40.
 " Pheasant, 164.
 Importation of Parrots, 161.
 Inca Dove, 20, 319.
 Indian Button-Quail, 167.
 " Comb Duck, 77.
 " Cotton Teal, 236.
 " Green-winged Dove, 20.
 " Grey and Black Partridges, 148.
 " Koklass Pheasant, 4.
 " Palm-dove, 20.
 " Ring-necked Parrakeet, 236.
 " Ruddy Turtledove, 19.
 " Turtledove, 19.
 Indo-Chinese Shama, 268, 350.
 Insurance of Birds Transported by Sea,
 170.
 Invitation to Leckford, 310.
 Iris Lory, 300.
 Isabelline Turtledove, 18.
Ispidina picta, 119.
Ixos flavala bourdellei, 269.

- Jackal Buzzard, 133, 265.
 Jackdaws, 127.
 Jackson's Coral-billed Thrushes, 62.
 Jamaica, Birds of, 22.
 Jamaican Euphonia, 25.
 Japanese Pheasants, 165.
 „ Starling, 29.
 Jardine's Pigmy Owl, 133.
 Javan Cissas, 300.
 „ Great-billed Barbet, 207, 251.
 „ Junglefowl, 165.
 „ Myna, 301.
 „ Peafowl, 166.
 „ Tree Duck, 76.
 Jay, Blue-bearded, 126.
 „ Lidth's, 29.
 „ "Urraca", 264.
 Jobi Island Doves, 49.
 Jungle Bush-Quail, 162, 331.
 Junglefowl, Ceylon, 165.
 „ Javan, 165.
 „ Red, 4, 165, 350.
 „ Sonnerat's, 51, 165, 350.
- Kaffir Rail, 138.
 Kagu, 136.
 Kakapo, New Zealand, 266.
 Kalij, Black-backed, 164.
 „ White-crested, 164.
 „ Black-breasted, 163, 164.
 „ Nepal, 164.
 „ Anderson's, 164.
 Keas and Sheep, 63.
 Kelp Goose, 75, 271, 283, 302.
 Kestrel, 14, 133.
 Kingbird, Eastern, 52.
 King Bird of Paradise, 299, 327.
 „ Crows, 300.
 „ Eiders, 287.
 „ Parrakeet, 56, 221, 385, 398.
 „ Parrots, 185.
 „ Penguin, 138.
 Kingfisher, Belted, 26.
 „ Blue-vented Javan, 300.
 „ Collared Blue, 301.
 „ Forest, 119.
 „ Malachite, 119.
 „ Pigmy, 119.
 „ Sacred, 38, 62, 352.
 „ Shining Blue, 119.
 „ White-breasted, 301.
 Kingfishers, 117, 122.
 Kingfishers in Captivity, 33.
 Kite, Black, 133.
Kittacincla interposita, 268.
 Kookaburras, 235.
 Koklass Pheasants, 164.
- Lady Amherst Pheasant, 93.
 Lag-goose, Grey, 134.
Lagonosticta niveiguttata, 192.
Lagopus rupestris, 328.
 Lammergeyer, 133.
Lamprolaima ramhi, 270.
 Lapwing, Cayenne, 137.
 „ Crowned, 137.
 „ Wattled, 137.
 Large Niltava, 268.
 Larks, Magpie, 337.
Larus atricilla, 138.
 „ *hemprichii*, 138.
 „ *novohollandiæ*, 138.
Laterallus leucopyrrhus, 139.
 „ *viridis*, 139.
Lathamus discolor, 310.
 Laughing Gull, 138.
 Laughing-thrush, Chestnut-capped, 252.
 Leadbeater's or Major Mitchell Cuckoos, 217, 236.
 Lear Macaw, 391.
 Leckford Aviary Jottings, 28.
 „ Invitation to, 310.
Leipoa ocellata, 168.
Leiophtila annectans saturata, 269.
 „ *capistrata capistrata*, 256.
 „ *desgodinsi*, 269.
 Lemon Dove, 21.
 Lemon-crest Cockatoo, 214.
Leptoptila chalconenia, 21.
 „ *chloroauchenia*, 193.
 „ *fulviventris brachyptera*, 21.
 „ *jamaicensis*, 21, 192.
 „ *reichenbachii*, 21, 155.
 „ *verreauxi*, 21.
 „ *wellsi*, 21.
 Lesser Bird of Paradise, 299, 301.
 „ Black-backed Gull, 138.
 „ Blue-winged Pitta, 170.
 „ Canada Geese, 74.
 „ Niltava, 49.
 „ Orange-headed Thrush, 268.
 „ Pin-tailed Sandgrouse, 168, 191, 224.
 „ Redpoll, 14.
 „ Rusty-checked Scimitar Babbler, 270.
 „ Scaup, 3, 79, 135, 350.
 „ Snow Geese, 74.
 „ Superb Bird of Paradise, 301.
 „ White-fronted Geese, 3, 75, 349.
 Lesson's Parrot, 238.
Leucophoyx candidissima, 136.
Leucopsar rothschildi, 300.
Leucosarcia melanoleuca, 22.
 Levaillant's Barbet, 207, 254, 257.

- Lewis's Pheasant, 164.
 Lidth's Jays, 29.
 Lilac-crowned Fruit-Pigeon, 16.
Limnocolax flavirostra, 138.
 " *niger*, 211.
Limnopardalis rufirhynchus, 138.
 Lineated Pheasant, 350.
 Linnet, 14, 305, 360.
Liocichla ripponi, 269.
Liothrix, 369.
 Little Auk, 195.
 " Bustard, 137.
 " Button-Quail, 168.
 " Egret, 132, 136.
 " Grass Bird, 357.
 " Owl, 63, 133.
 " Pied Cormorant, 359.
 " Widow Tyrant, 272.
Lobibyx novæhollandiæ, 137.
 Longbilled Francolins, 301.
 Long-tailed Broadbill, 267.
 " Doves, 4.
 " Duck, 71, 79, 285.
 " Grassfinch, 15, 38, 343.
 " Sibia, 211, 269.
 " White-eared Grassfinch, 343.
 " Yellow-billed Grassfinch, 343.
Lophoceros semifasciatus, 112.
Lophophaps leucogaster, 264.
 " *plumifera*, 140, 319.
 " *leucogaster*, 21.
Lophorhina superba minor, 301.
Lophortyx californianus, 167.
 " *douglasi*, 167.
 " *gambeli*, 167.
Lophospingus pusillus, 49, 331.
Lophura ignita, 164.
 " *rufa*, 163.
 Lorikeet, Black-throated, 221.
 " Blue-mountain, 130, 320.
 " Forsten's, 221.
 " Mrs. Johnstone's, 264.
 " Ornamented, 14.
 " Red-collared, 320.
 " Scaly-breasted, 320.
 " Swainson's, 186.
 " Varied, 126.
 " Weber's, 154.
Lorius pectoralis, 288.
 Lory, Black, 187, 193, 369.
 " Edwards, 300.
 " Goupil's, 292.
 " Iris, 300.
 " Mitchells, 300.
 " Tahiti Blue, 199.
 " Ultramarine, 292.
 " White-rumped, 300.
 Lovebird, Abyssinian, 369.
 " Black-checked, 298, 387.
 " Nyassa, 387.
 " Peach-faced, 387.
 " Red-faced, 128, 156.
 " Rosy-faced, 14.
 Lovebirds, 93.
Loxipasser anoxanthus, 25.
 Lunated Honey Eater, 352.
 Lutino Ring-necked Parrakeet, 401.
 Luzon Duck, 134.
Lybius torquatus, 255.
 " *tridactylus*, 254.
 Lyre Bird, 125.

 Macaw, Ambiguous, 391.
 " Blue and Yellow, 391, 411.
 " Green-winged, 397.
 " Hyacinthine, 63, 391.
 " Lear, 391.
 " Military, 391.
 " Red and Blue, 238, 391, 412.
 " Red and Yellow, 391.
Machlolophus rex, 270.
Macropygia umchall, 18.
 Madagascar Button-Quail, 168.
 " Ducks, 3.
 " Partridge, 162.
 " Turtledove, 18.
 " Weaver, 139, 287.
 " White-eye Duck, 79, 350.
 " White-eyed Pochard, 134.
 Magellan Geese, 3, 201.
 Magellanic Penguin, 271.
 Magpie, 360.
 " Formosan, 31.
 " Larks, 337.
 " Racket-tailed, 270.
 " Tanager, 199.
 Magpie or Semipalmated Goose, 84.
 Malabar Parrakeet, 130, 236.
 Malachite Kingfishers, 119.
 " Sunbird, 62.
Malacorhynchus membranaceus, 81, 86.
 Maleo, 272, 300.
 Mallard, 77.
 " Australian, 77.
 " Philippine, 77.
 Mallards, 77, 95.
 Mallee Fowl, 168.
 " Ringneck or Barnard's Parra-
 " keet, 376.
Malurus cyaneus, 41, 124.
 Management of Parrakeets, 379.
 Manakins, Blue-backed, 373.
 " Coroneted, 241.
 Manchurian Crane, 3, 136, 236, 349,
 369.

- Mandarin Duck, 3, 77, 86, 236, 350.
Mandingoa nitidula schlegeli, 116.
 Maned Goose or Wood Duck, 82, 87, 349.
 Mango Humming Bird, 26.
 Mannikin, Rufous-necked, 331.
 Many-coloured Parrakeet, 41, 217, 353, 383.
 Marbled Quail, 167.
 „ Teal, 79, 134.
Margaroperdix mandarensis, 162.
 Mariqua Sunbird, 62.
 Martineta Tinamou, 155, 168.
 Martinican Dove, 18.
Masius coronulatus, 241.
 Masked Duck, 282.
 „ Finches, 232.
 „ Grassfinches, 38, 343.
 „ Wood-Swallow, 339.
 Massai Robin Chats, 62.
 Mauge's Dove, 20.
 M. C. Cordier's Collection, 267.
 Meadow Pipit, 141.
 Meadow Pipit Bred in Confinement, 64.
 Mealworms, 174, 374.
 Mealy Rosella Parrakeet, 215.
 Medals, Award of, 199, 287.
Megaceryle alcyon, 26.
Melanerpes candidus, 252.
 Melba Finches, 61.
Meleagris ocellata, 167.
Meliornis novæhollandiæ, 255.
 Meller's Duck, 77, 350.
Mellisuga minima, 26.
Melopelia asiatica, 18.
 „ *ceciliæ*, 4.
Menura superba, 125.
Merganetta armata leucogenis, 261.
Merganettinæ, 277.
 Mergansers, Hooded, 80.
 „ Red-breasted, 103.
Mergus albellus 284.
Merops nubicus, 120.
 „ *ornatus*, 294.
Merula bouboul, 195.
Mesia rubrogularis, 269.
 Mesias, Red, 300.
 „ Red-throated, 269.
Metriopelia ceciliæ, 271.
 „ *melanoptera*, 20, 271.
 Mexican Curassow, 168.
 „ Guan, 168.
Microtribonyx ventralis, 139.
 Migration and Keeping of Evening Grosbeaks, 225.
 Mikado Pheasant, 4, 28, 51, 165, 350.
 Military Macaw, 391.
 Military Starlings, 238.
Milvus migrans, 133.
Mimus polyglottus, 24.
Mino dumentii, 301.
 Mitchell's Lory, 300.
Mniotila varia, 27.
 Mocking Bird, Northern, 24.
 Molluscan Crimson Wings, 300.
 Monal Pheasant, 163, 203.
 Monkey-eating Eagle, 272, 301.
 Montezuma Quail, 167.
 Moorhen, 139.
 Moorish House Bunting, 13.
 Mot-mot, 62.
 Mountain Bluebird, 287.
 „ Honey-eater, 301.
 „ Quail, 199.
 „ Witch Dove, 21.
 Mourning Barbet, 251.
 „ Dove, 319.
 Mouse-birds, Red-faced, 373.
 Mrs. Hodson's Partridge, 162.
 Mrs. Johnstone's Lorikeet, 264.
Munia castaneithorax, 266.
 „ *flaviprymna*, 194, 266.
 „ *fuscata*, 272, 300.
 „ *fuscus*, 139, 301.
 „ *pectoralis*, 222.
 „ *quinticolor*, 272, 300.
 Munia, Borneo, 139.
 „ Yellow-rumped, 194.
Muscadivora insularis, 17.
Muscicapula xanthopygia, 268.
Muscisaxicola alpina, 245.
Muscivora tyrannus, 322.
 Muscovy Duck, 77, 279, 350.
 Musk Duck, 84, 104.
 Musschenbroeck's Parrot, 301.
 Mute Swan, 74.
Mycteria americana, 136.
 Myna, Javan, 301.
 Mynas, 131, 235.
Myophonus ceruleus, 268.
Myristicivora spilorrhoea, 319.

Nettion capense, 134.
 „ *punctatum*, 134.
 Namaqua Dove, 319.
 Napoleon's Peacock Pheasant, 233.
Napothera brevicaudata stevensi, 269.
 Necklace Dove, 18.
 Neck-laced Teal, 78.
Nectarinia pulchella, 118.
 Need of a System of Pedigrees for Pure-bred Birds, 173.
 Negro Finch, Grey-headed, 115.
 Negro-finches, 112.

- Neochmia phaeton*, 370.
Neonanodes elegans, 319.
Neophema pulchella, 320.
 „ *splendida*, 319.
 „ *venusta*, 331.
Neopsephotus bourkii, 319.
 Nepal Kalij, 164.
Nesonetta aucklandica, 277.
Nesopelia galapagoensis, 18.
Nesophlox evelynæ, 26.
 Nesting of Newly-shipped Geese, 342.
Nettapus coromandelianus, 85.
 „ *pulchellus*, 83.
Nettion andium, 245.
 New Birds for Old, 5.
 New Mexican Duck, 77.
 „ Guinea Ravens, 301.
 „ „ Rifle Bird, 328.
 „ „ Swamp Quail, 163.
 New Holland Honey-Eater, 352.
 New Zealand Duck, 90.
 „ Kakapo, 266.
 „ Shoveler, 134, 350.
 Nicobar Pigeon, 17, 22.
 Night Heron, 132, 136.
 Nightingale, 361.
 Nightjar, 328.
Nigrita canicapilla, 112.
 „ „ *canicapilla*, 115.
 „ „ *emiliæ*, 115.
 Nile Courser or Crocodile Bird, 300.
Niltava grandis, 268.
 „ *sundara*, 152.
Niltava, Large, 268.
 „ Lesser, 49.
 „ Rufous-bellied, 49, 152.
Nomonyx dominicus, 282.
 Nonpareil, Pintailed, 331, 411.
 Norfolk Island Parrakeet, 406.
 North American Ruddy Duck, 71, 280.
 Northern Mocking Bird, 24.
Northipsitta alexandræ, 319.
 Notes, 61, 200, 235, 309, 411.
 Notes on Peruvian Waterfowl, 259.
 Notes on Waterfowl in the London Zoo, 86.
Nothoprocta cinerascens, 168.
 „ *perdicaria*, 168, 271, 299.
Nothura maculosa, 168.
Numida meleagris, 167.
 „ *mitrata*, 166.
 Nuns, Bornean Black, 301.
 Nuthatches, 127.
Nyassa Lovebird, 387.
Nycticorax n. nycticorax, 132.
Nyroca australis, 83.
 „ *erythrophthalma*, 134.
 „ *valisneria*, 280.
 Observations on the Breeding Habits of Smews in Captivity, 96.
 Observations on the Red-sided Eclectus Parrot in Captivity, 288.
 Ocellated Turkey, 167, 270.
Ocreatus underwoodi melanatherus, 249.
Odontophorus g. marmoratus, 167.
Ena capensis, 20, 319.
Oenopopelia tranquebarica, 19.
 „ „ *humilis*, 19.
 Olive Finch, 297.
 „ Pigeon, 17.
 Oort's Barbet, 207, 209, 211.
 Opaline Dark Green Budgerigar, 146.
 Orange-bellied Tanagers, 247.
 Orange-billed Tanager, 156, 241.
 Orange-cheeked Waxbills, 117.
 Orange-flanked Parrakeet, 404.
 Orange-headed Ground Thrushes, 49.
 Orange-spotted Bulbul, 211.
 Orange-winged Parrot, 392.
 Orangequit, 25.
Oreopeleia caniceps, 21.
 „ *chrysis*, 21.
 „ *linearis venezuelensis*, 21.
 „ *montana*, 21.
Oreortyx pictus plumiferus, 167, 199.
Oreotrochilus, 245.
 Oriental Turtledove, 19.
 Orinoco Goose, 75, 328.
 Oriole-Babblers, 120, 222.
 Oriole, Baltimore, 225.
 „ Golden, 119, 122.
 Ornamented Lorikeet, 14.
Ortalis motmot, 168.
 „ *spixi*, 168.
 „ *squamata*, 168.
 „ *vetula*, 168.
Ortygospiza polyzona, 223, 369.
 Osprey, 124.
 Ostrich, 2, 169, 348.
 „ Cock, 331.
Ocyphaps lophotes, 21.
Otidiphaps nobilis, 22.
 „ „ *cervicalis*, 22.
Otocompsa flaviventris, 211.
 „ *jocosa*, 370.
Otus leucotis, 133.
 Ouzel, Grey-winged, 195.
 Owl, American Eagle, 133.
 „ Barn, 109, 133.
 „ Boobook, 133.
 „ Burrowing, 133.
 „ Eagle, 122, 133.
 „ Jardine's Pigmy, 133.
 „ Little, 63, 133.
 „ Pagoda, 301.

- Owl, Parrot, 266.
 ,, Rose, 301.
 ,, Scops, 38, 133.
 ,, Snowy, 133.
 ,, Spotted Eagle, 41, 133.
 ,, Tawny, 133.
 ,, W. African Wood, 113.
 ,, White-eared Scops, 133.
- Owl Finches, 229.
- Owlets, 122.
- Oxyura australis*, 85.
 ,, *j. rubida*, 135.
- Oyster-catcher, South American Black, 271.
- Oyster-catchers, 185, 355.
- Pacific Gull, 358.
- Padda, Brown, 317.
- Padda fuscata*, 317.
- Pagoda Owl, 301.
- Painted Finch, 47, 60, 61.
 ,, Quail, 156, 163, 301.
- Palawan Peacock Pheasants, 4, 166, 233, 272, 301.
- Pallas' Sand-grouse, 168.
- Palm-Dove, Indian, 20.
 ,, Senegal, 18.
- Pampusana jobiensis*, 21.
 ,, *stairi*, 21.
 ,, *rubescens*, 21.
 ,, *xanthonura*, 22.
- Panther Bird, Spotted, 38.
- Papuan Golden-hearted Pigeon, 21.
- Paradise Parrakeet, 386.
 ,, Sheld-duck, 349.
 ,, Tanager, 61, 373.
- Paradisea auguste-victoriae*, 272, 301.
 ,, *gulielmi*, 300.
 ,, *minor*, 299, 301.
 ,, *raggiana*, 301.
- Paradise Birds, 272.
 ,, Sheld-ducks, 3, 76, 80, 159.
- Para Guan, 168.
- Pardalotus punctatus*, 38.
- Parotia sexpennis*, 272, 299.
 ,, *wahnesi*, 272, 300.
- Parrakeet, Adelaide, 215.
 ,, Rosella, 220.
 ,, Alexandrine, 130, 236.
 ,, All-green, 402.
 ,, Alpine, 407.
 ,, Australian, 130, 375, 390.
 ,, Barnard's, 41, 215, 217, 376.
 ,, Barraband, 186, 392.
 ,, Bauer's, 42, 199, 376, 381.
 ,, Blue Alexandrine, 397.
 ,, Blue Bonnet, 215, 217, 353.
- Parrakeet, Blue-winged Grass, 331, 384.
 ,, Bourkes, 183, 194, 215.
 ,, ,, Grass, 61, 319, 380, 384.
 ,, Brown's, 40, 320, 381.
 ,, Canary-winged, 402, 405.
 ,, Cloncurry Barnard, 274, 377.
 ,, Common Rosella, 215.
 ,, Crimson, 220.
 ,, ,, Rosella, 220.
 ,, ,, -winged, 186, 236, 319, 385, 398.
 ,, Derbyan, 38.
 ,, Eastern Rosella, 215.
 ,, Elegant, 215.
 ,, ,, Grass, 61, 319, 384.
 ,, Golden-crowned, 15.
 ,, ,, -shouldered, 14.
 ,, Grass, 353, 383.
 ,, Hooded, 188, 384, 392.
 ,, Indian Ring-necked, 236.
 ,, King, 56, 221, 385, 398.
 ,, Lutino Ring-necked, 401.
 ,, Malabar, 130, 236.
 ,, Many-coloured, 41, 217, 353, 383, 386.
 ,, Mealy Rosella, 215.
 ,, Norfolk Island, 406.
 ,, Orange-flanked, 404.
 ,, Paradise, 386.
 ,, Pennant's, 220, 410.
 ,, Pileated, 320.
 ,, Princess of Wales's, 38, 194, 385.
 ,, Psephotus, 219, 353.
 ,, Port Lincoln, 215, 376.
 ,, Queen Alexandra's, 61, 184, 194, 319, 392.
 ,, Queen of Bavaria, 392.
 ,, Red-rumped, 93, 215, 353, 383, 385.
 ,, ,, -sided Eclectus, 187.
 ,, Ring-necked, 129, 385.
 ,, Rock, 61, 384.
 ,, Rock Peplar, 385, 392.
 ,, Rosella, 93, 187, 381.
 ,, Salwatty, 399.
 ,, Scarlet-chested Grass, 319.
 ,, Splendid, 61, 384.
 ,, Stanley, 383.
 ,, Swift, 310.
 ,, Tovi, 403.
 ,, Tuipara, 404.
 ,, Turquoise, 61, 183, 215, 320, 384.
 ,, Twenty-eight, 44, 376.
 ,, Yellow-fronted New Zealand, 386.
 ,, Yellow-rumped, 220.
- Parrakeets, Breeding Rare, 182.

- Parrakeets, Brotogerys, 402.
 „ Management of, 379.
 Parrot, African Grey, 329.
 „ Amazon, 41, 238.
 „ August Amazon, 40.
 „ Bahama Amazon, 154.
 „ Blue-fronted Amazon, 393.
 „ Bodin's Amazon, 392.
 „ Bouquet's Amazon, 39.
 „ Cayman, 392.
 „ Desmarest's Dwarf, 123.
 „ Green-winged King, 301.
 „ Guilding's Amazon, 153, 236.
 „ Hawk-headed, 41.
 „ Imperial, 40.
 „ King, 185.
 „ Lesson's, 238.
 „ Musschenbroeck's, 301.
 „ Orange-winged, 392.
 „ Owl, 266.
 „ Red-capped, 195.
 „ „ -fronted, 392.
 „ „ -headed, 113.
 „ „ -sided Eclectus, 288.
 „ Senegal, 59.
 „ St. Lucia, 40.
 „ St. Vincent, 39.
 „ Yellow-cheeked, 392.
 Parrot Finch, 40.
 „ Breeding the Tri-coloured, 229.
 Parrot Finches, 60, 61, 232.
 „ „ Blue-faced, 230.
 „ „ Red-headed, 48.
 „ „ Three-coloured, 48.
 Parrots, Breeding, 236.
 „ and Parrakeets at Clères, 390.
 Parrots, Importation of, 161.
 Partridge, Arabian Chukar, 162.
 „ Barbary, 162.
 „ Black, 148.
 „ Bronze-wing Pigeon, 21, 299.
 „ Chukar, 95, 162.
 „ French, 162.
 „ Greek, 162.
 „ Grey, 131, 148.
 „ Hey's, 194.
 „ Hungarian, 95.
 „ Madagascar, 162.
 „ Mrs. Hodson's, 162.
 „ Roul-roul, 296, 301.
 „ Sand or See-see, 194.
 „ Tinamou, 168, 271, 299.
 Passenger Pigeon, 18.
Passer arcuatus, 39.
 „ *cinnamomeus*, 330.
 „ *diffusus*, 370.
 Passerine Dove, 20.
Patagona gigas, 245.
Pavo c. cristatus, 166.
 „ *c. nigripennis*, 166.
 „ *muticus*, 166.
 Peaceful Dove, 20, 352.
 Peach-faced Lovebird, 387.
 Peacock, Germain's, 166.
 „ Palawan, 166.
 „ Bronze-tailed, 166.
 Peacocks, 373.
 Peacock-Pheasants, 51, 166, 203, 311.
 Pea-Dove, 18.
 Peafowl Black-shouldered, 350.
 „ Black-winged, 4.
 „ Common, 4.
 „ Spicifer, 4, 350.
 „ Javan, 166.
 Pectoral Finch, 222.
 „ Rail, 138.
 „ Sparrow, 241.
 Pedigrees for Pure-bred Birds, 173.
 Pekin Robins, 369.
Pelecanus erythrorhynchus, 138.
 „ *occidentalis*, 23, 138.
 „ *onocrotalus*, 138.
 „ *rufescens*, 138.
 Pelican, Common, 138.
 „ Brown-backed, 138.
 „ Brown, 23, 138.
 „ American White, 138.
 „ Australian, 354.
 Pelzeln's Saffron Finch, 331.
 Penelope, Guiana, 168.
 „ White-headed, 168.
Penelope marail, 168.
 „ *pileata*, 168.
 Penguin, Black-footed, 138.
 „ King, 138.
 „ Magellanic, 271.
 Pennant's Parrakeet, 220, 410.
Percula asiatica, 162, 331.
 „ *argondah*, 162.
 Père David's Tit, 270.
 Peruvian Waterfowl, Notes on, 259.
Petasophora iolata, 223, 247.
 Peter's Spotted Firefinches, 61, 192.
 Petrel, White-faced Storm, 357.
 Petre's Tanager, 373.
Phaps chalcoptera, 21, 319.
Pharomacrus mocinno, 322.
Phasianus versicolor, 165.
 Pheasant, Amherst, 4, 51, 93, 165, 203, 350.
 „ Argus, 166.
 „ Bel's, 4, 164, 350.
 „ Blyth's, 4.
 „ Blue Crossoptilon, 93, 350.
 „ Borneo Argus, 166.
 „ Bronze-tailed Peacock, 4, 203.

- Pheasant, Brown Crossoptilon, 93.
 „ Bulwer, 272, 301.
 „ Burmese Silver, 164.
 „ Ceylon, 4.
 „ Cheer, 4, 164, 165.
 „ Chinquis, 203, 301, 350.
 „ Common, 164.
 „ „ Argus, 4.
 „ Crestless Fireback, 203.
 „ Dark-throated Golden, 350.
 „ Darwin's Koklass, 164.
 „ Edward's, 4, 28, 51, 164, 350.
 „ Elliott's, 4, 92, 165, 203, 350.
 „ Fireback, 28.
 „ Germain, 51, 203.
 „ Golden, 93, 165, 203, 350.
 „ Gray's Argus, 272, 301.
 „ Grey Peacock, 51.
 „ Horsfield's, 4, 350.
 „ Imperial, 164.
 „ Indian Koklass, 4.
 „ Japanese, 165.
 „ Koklass, 164.
 „ Lewis's, 164.
 „ Lineated, 350.
 „ Mikado, 4, 28, 51, 165, 350.
 „ Monal, 203.
 „ Napoleon Peacock, 233.
 „ Palawan, 4, 233, 272, 301.
 „ Peacock, 51, 203, 311.
 „ Reeves', 165.
 „ Rheinart's, 4, 166, 311.
 „ Ring-necked, 165.
 „ Rufous-tailed, 163.
 „ Salvadore's, 300.
 „ Satyr Tragopan, 4.
 „ Silver, 93, 163, 164, 203, 311.
 „ Soemmerrings, 4, 165, 350.
 „ Sonneratt's, 4.
 „ Stone, 163.
 „ Swinhoe's, 164, 203.
 „ Temminck's, 4.
 „ Tragopan, 28, 350.
 „ Versicolor, 4, 142, 172, 203.
 „ White-crested Kalij, 4, 350.
 „ Yellow-necked, 4, 164.
- Pheasant Enthusiast, By a, 202.
 Pheasant-Pigeon, 22.
 Pheasants, 4.
Phœcticus chrysogaster, 272.
 Philippine Mallard, 77.
Phœnicopterus ruber, 363.
Pholidauges leucogaster, 298.
Phonipara lepida, 297.
Phrygilus, 272.
 Picazuro Pigeon, 17.
 Picui Dove, 20.
 Pied Barbet, 254.
 Pied Crows, 112.
 „ Flycatcher, 361.
 „ Grallinas, 337.
 „ Java Sparrows, 272.
- Pigeon, Araucanian, 17.
 „ Australian Crested, 21.
 „ „ Green-winged, 319.
 „ Band-tailed, 17.
 „ Bare-eyed, 17.
 „ Bartlett's Bleeding-heart, 21, 330.
 „ Bleeding-heart, 21.
 „ Blue Rock, 17.
 „ Bolle's, 17.
 „ Bronzewing, 21, 319, 339.
 „ Brush Bronzewing, 21.
 „ Buff-hooded Ground, 21.
 „ Canarian, 17.
 „ Chilean, 271.
 „ Crowned, 299.
 „ Crested Bronzewing, 339, 352.
 „ Grey-hooded Ground, 21.
 „ Guinea, 17.
 „ Harlequin Bronzewing, 21.
 „ Nicobar, 17, 22.
 „ Olive, 17.
 „ Papuan Golden-heart, 21.
 „ Partridge Bronzewing, 21, 299.
 „ Passenger, 18.
 „ Pheasant, 22.
 „ Picazuro, 17.
 „ Plumed, 319.
 „ Porto Rico, 17.
 „ Red-billed, 17.
 „ Rufous, 17.
 „ Smith's Bronzewing, 21.
 „ Snow, 4, 17, 350.
 „ Splendid, 17.
 „ Spot-winged, 17.
 „ Stair's Ground, 21.
 „ Torres Strait Fruit, 319.
 „ Victoria Crowned, 299.
 „ White-bellied Plumed, 21.
 „ „ -breasted Ground, 21.
 „ „ -crowned, 17, 27.
 „ „ -throated Violet, 18, 371.
 „ Wood, 17.
 „ Wonga-wonga, 22, 350.
- Pigmy Ground Dove, 4, 20.
 „ Kingfishers, 119.
 Pileated Finch, 221.
 „ Parrakeet, 320.
 Pine Grosbeak, 14, 264.
 Pink-eared Duck, 81, 86.
 Pinkfooted Goose, 75.
 Pintail, 77, 350.
 „ Chilian, 77, 260.
 Pintailed Nonpareil, 331.
 „ Sandgrouse, 127, 168.

- Pionopsittacus pileatus*, 195.
 Pipit, Meadow, 64.
Piranga rubra, 241.
Pithecopbaga jefferyi, 272.
Pitta, Baud's, 272.
 ,, China, 373.
 ,, Elliot's, 267, 271, 350.
 ,, Fulvous, 267.
 ,, Lesser Blue-winged, 170.
Pitta baudii, 301.
 ,, *cyanoptera*, 170, 301.
 ,, *elliotti*, 267.
 ,, *oatesi*, 267.
Pittas, 301.
Platycercus venustus, 320.
 ,, *eximius*, 378.
 Plea for the Maintenance of a Stock of
 Rare Pheasants, 412.
Plegadis falcinellus, 135.
Ploceus cucullatus, 120.
 Plover, Banded, 320.
 ,, Black-breasted, 137.
 ,, Blacksmith, 137, 235.
 ,, Blue-winged, 334.
 ,, Egyptian, 224, 297.
 ,, Golden, 356.
 ,, Grey, 356.
 ,, Wattled, 328.
 Plover, Breeding the Black-winged, 334.
 Plumbeous Redstart, 268.
 Plumed Ground Dove, 140.
 ,, or Eyton's Tree Duck, 81.
 ,, Pigeon, 319.
 ,, Quail, 167.
Pluvianus aegyptius, 298.
 Pochard, American, 134.
 ,, Common, 3, 71, 350.
 ,, Madagascar White-eyed, 134.
 ,, Red-crested, 3, 71, 79.
 ,, Red-head, 3.
 ,, S. African, 134.
 ,, White-eyed, 71.
Pecilotraupis lunulata, 243.
 ,, *palpebrosa*, 247.
Poëphila acuticauda, 343.
 ,, *cincta*, 343.
 ,, *hecki*, 343.
 ,, *leucotis*, 14, 343.
 ,, *personata*, 343.
Poicephalus gulielmi fantiensis, 113.
Polyborus tharus, 133.
Polypectron bicalcaratum, 166.
 ,, *emphanum*, 166.
 ,, *napoleonis*, 233.
Polysticta stelleri, 287.
Polytelis (or *Spathopteryx alexandrae*), 194.
Pomatorhinus erythrogeus, 208.
 ,, *erythrogeus minor*, 270.
 ,, *Pomatorhinus ferruginosus orientalis*, 270.
 ,, *hypoleucos laotianus*, 270.
 ,, *ruficollis saturatus*, 270.
Poospiza whitei, 199.
 Popular Waterfowl, 272.
Porphyrio edwardsii, 139.
 ,, *madagascariensis*, 139.
 ,, *melanotus*, 139.
 Port Lincoln Parrakeet, 215, 376.
 Porto Rico Pigeon, 17.
 Prairie Chicken, 162.
 Pratincoles, 126.
 Preservation of Waterfowl and Avi-
 culture, 90, 276.
 Princess of Wales's Parrakeet, 38, 194,
 385.
 Prince Rudolph's Bird of Paradise, 328.
Procarduelis nipalensis, 268.
Procnopsis vassori, 247.
Psalidopymna victorie aequatorialis, 247.
Psarisomus dalhousiae, 267.
Psephotus chrysopterygius, 14.
 ,, ,, *dissimilis*, 188.
Psephotus Parrakeets, 219, 353.
Pseudochloris auriventris, 271.
 ,, *uropygialis*, 271.
Pseudotadorna cristata, 134, 279.
Psilopogon pyrolophus, 253, 373.
Psittacula manillensis, 129, 401.
 ,, *nipalensis*, 397.
Psittaculus weberi, 154.
Psittospiza riefferi, 250.
 Ptarmigan, 162.
 ,, Rock, 328.
Pternistis leucoscepus, 162, 195.
Pterocles alchatus, 168, 191.
 ,, *arenarius*, 224.
 ,, *exustus*, 168, 191.
 ,, *orientalis*, 168.
Pteroclorus alchatus, 224.
 ,, *exustus*, 224.
 ,, *pyrenaicus*, 223.
Pterophanes temmincki, 246.
Ptilinopus melanocephalus, 17.
Ptilopachus petrosus, 163.
Ptilopodiscus coronulatus, 16.
Ptiloris intercedens, 301.
Ptilosclera versicolor, 126.
 Pucheran's Guinea-fowl, 167.
 Puna Teal, 79, 261.
 Purple Finches, 225.
 ,, Sugar Birds, 371.
 ,, Tanager, 62.
 Purple-throated Continga, 373.
Purpureicephalus spurius, 320.
Pycnonotus, 113.
 ,, *bengalensis*, 258.
 ,, *bimaculatus barat*, 211.

- Pycnonotus leucotis*, 256.
Pyrrhuphonia jamaica, 25.
- Quail, Australian, 263.
 " " Varied Bustard, 195, 267.
 " Brown, 320.
 " Bustard, 156.
 " Button, 156.
 " Californian, 95, 167, 330.
 " Chinese, 14.
 " Chinese Painted, 36, 127.
 " Common, 162.
 " Douglas, 167.
 " Gambel's, 167.
 " Harlequin, 163, 263.
 " Jungle Bush, 331.
 " Marbled, 167.
 " Montezuma 167.
 " Mountain, 199.
 " New Guinea Swamp, 163.
 " Painted, 156, 163, 301.
 " Plumed, 167.
 " Rain, 163, 263.
 " Scaled, 167.
 " Stubble, 163, 340.
 " Swamp, 163, 195.
- Quail Finch, 223, 369.
 Queen Alexandra's Parrakeet, 61, 184,
 194, 319, 392.
 " of Bavaria's Conure, 388.
 " " Parrakeet, 392.
- Quetzal, 323.
- Racket-tailed Magpie, 270.
 Racquet-tailed Drongo, 373.
 Radjah Sheld-duck, 3, 77, 82, 89, 202,
 273, 349, 354.
- Rail, Abbott's, 298.
 " Banded, 320.
 " Black Weka, 139.
 " Cayenne, 139.
 " Kaffir, 138.
 " Pectoral, 138.
 " Sooty, 138.
 " Weka, 139.
 " Ypecaha, 139, 299.
- Rain Quail, 163, 263.
Rallus abbotti, 298.
 " *caerulescens*, 138.
Ramphastos swainsoni, 241.
Ramphocelus icteronotus, 240, 271.
 " *passerini*, 271.
 " *sanguinolentus*, 271.
Ramphomicrom microrynchum, 242.
 Ramsay's Barwing, 269.
 Rare Birds from Chile, 271.
 Rare Pheasants, Plea for the Main-
 tenance of a Stock, 412.
- Rarities Collected by F. W. Shaw
 Mayer and W. J. C. Frost,
 299.
- Ravens, New Guinea, 301.
 Records of a Rural Aviculturist, 58.
 Red and Blue Macaws, 238, 412.
 " " Yellow Macaw, 391.
 Red Bird of Paradise, 373.
 " Cock-of-the-Rock, 248.
 " Grouse, 162.
 " Junglefowl, 4, 165, 350.
 " Mesias, 300.
 " Shoveler, 134, 350.
 Red-backed Shrike, 156, 264, 361.
 Red-billed Duck, 77, 350.
 " or Silver Gull, 358.
 " Pigeon, 17.
 " Streamer-tail, 24.
 " Tree-ducks, 3.
- Red-breasted Barbet, 254.
 " Geese, 349.
- Red-capped Dotterels, 358.
 " Parrot, 195.
- Red-cheeked Scimitar Babbler, 208.
 Red-collared Lorikeet, 320.
 Red-crested Cardinals, 228.
 " Duck, 350.
 " Pochard, 3, 71, 79.
- Red-crowned Wart-Pigeon, 17.
 Red-eared Firetail, 351.
 Red-eyed Dove, 4, 19.
 Red-faced Lovebird, 156.
 " Mouse-birds, 373.
- Red-faced Lovebird, Breeding Ex-
 periments with the, 128.
- Red-flanked Blue Bush Robin, 275.
 Red-fronted Parrot, 392.
 Red-headed Finch, 48, 225.
 " Parrots, 113.
 " Pochards, 3.
 " Turkey Vulture, 23.
- Red-necked Stint, 355.
 Red-rumped Ground-Tyrant, 245.
 " Parrakeet, 93, 353, 383, 385.
 Red-sided Eclectus Parrakeet, 187.
 Red-sided Eclectus Parrot in Captivity,
 288.
- Red-spotted Blue-checked Barbet, 213.
 Red-tailed Laughing Thrush, 270.
 Red-throated Divers, 104.
 " Mesia, 269.
- Red-vented Bulbul, 196.
 Red-whiskered Bulbul, 196, 370.
 Red-winged Ground-Dove, 20.
 Redhead, American, 79.
 " Duck, 350.
 Redpoll, Lesser, 14.
 Redpolls, 195, 306, 360.

- Redrump Parrakeet, 215.
 Redshank, 138.
 Redstart, Plumbeous, 268.
 „ White-capped, 350.
 Redstarts, 361.
 Reeves' Pheasant, 165.
 Regent Bird, 62, 222.
 Resplendent Trogon, 322.
 Reviews—
Australian Parrots, 308.
Birds, 308.
 „ *as Animals*, 169.
 „ *of our Country and of the Dominions, etc.*, 308.
Handbook of British Birds, Vol. III, 307.
 Rhea, Common, 169.
 „ Darwin's, 2, 169.
 „ Grey, 2.
 „ White, 2.
 Rheas, 348.
Rheinardia ocellata, 311.
 Rheinard's Argus Pheasant, 4, 166.
Rhinocichla mitrata, 252.
Rhinophilus bicinctus, 296.
Rhyacornis fuliginosa, 268.
Rhynchotus rufescens, 168.
 Rice Bird, 317.
 Richardson's Goose, 74.
 Rieffer's Grass-green Tanagers, 250.
 Rifle Bird, 301.
 „ „ New Guinea, 328.
 Ringed Teal, 350.
 Ring-necked Duck, 79.
 „ Parrakeet, 129, 385.
 „ Pheasant, 165.
 Rippon's Yuhina, 269.
 River-duck, White-backed, 135.
 Robin-Chats, 120, 122.
 „ Massai, 62.
 „ White-headed, 304.
 Robins, 9, 361.
 „ Blue, 50.
 „ Blue-tailed Bush, 268.
 „ Pekin, 369.
 „ Red-flanked Blue Bush, 275.
 Rock Grass Parrakeet, 61, 384.
 „ Ptarmigan, 328.
 Rock Peplar Grass Parrakeet, 385, 392.
 Roller, Temminck's Blue, 272, 300.
Rollulus roulroul, 296.
 Rose-breasted Cockatoos, 216.
 Rosefinch, Dark, 268.
 Rosella Parrakeet, 187.
 Rose Owl, 301.
 Ross's Snow Geese, 3, 74, 236, 349.
 Rosy-billed Duck, 71, 79, 350.
 Rosy-faced Lovebird, 14.
 Rosy Pastors, 131.
 Rothschild's Bird of Paradise, 300.
 „ Grackle, 272, 300.
 Roulroul Partridge, 162, 296, 301.
 Royal Zoological Society of South Australia, Breeding Notes for 1939, 319.
Rubigula dispar, 255.
 Ruby-throated Bulbuls, 255.
 „ Humming Bird, 54.
 Ruddy Duck, 135, 261, 280.
 „ Flamingoes, 363.
 „ Quail-Dove, 21.
 „ Sheld-duck, 76, 80, 134, 159, 273.
 „ Turtledove, 19.
 Ruddy-headed Geese, 3, 75, 89, 283, 328, 349.
 Ruff, 138.
 Ruffed Grouse, 162.
 Ruffs and Reeves, 127.
 Rufous Dove, 21, 155.
 „ Pigeon, 17.
 „ Tinamou, 168.
 Rufous-bellied Niltava, 49, 152.
 Rufous-necked Mannikin, 331.
 „ Scimitar Babbler, 270.
 Rufous-tailed Grassfinch, 38.
 „ Pheasant, 163.
Rupicola rupicola, 248, 372.
 „ *sanguinolenta*, 248.
 Sacred Ibis, 135.
 „ Kingfisher, 38, 62, 352.
 Saffron Finch, 14.
Sallator auranti-rostris, 156.
Salvadorina waigiensis, 278.
 Salvadori's Pheasant, 300.
 „ Sugar-birds, 238.
 Salwatty Parrakeet, 399.
 Sandgrouse, Black-bellied, 168.
 „ Black-breasted, 224.
 „ Greater Pintailed, 191, 223, 224.
 „ Lesser Pintailed, 168, 191, 224.
 „ Pallas', 168.
 „ Pin-tailed, 127, 168.
 Sandhill Crane, 28, 136, 349.
 Sand or See-see Partridge, 194.
 Sandpiper, Common, 356.
 „ Curlew, 356.
 „ Sharp-tailed, 355.
 „ Wood, 355.
 Sandwich Island Goose, 95, 328.
Sarcidiornis carunculata, 260.
Sarcophorus pectoralis, 328.
Sarcops calvus, 223.
 Sarus Crane, 136, 236, 373.
 Satin Bower Bird, 124.
 Satyr Tragopan Pheasant, 4, 51.

- Saucerottea devillei*, 270.
 „ *feliccia*, 270.
 Scaled Guan, 168.
 „ Quail, 167.
 Scaly Dove, 20, 155.
 Scaly-breasted Lorikeet, 320.
Scardafella brasiliensis, 20.
 „ *inca*, 20, 319.
 „ *squamosa*, 155.
 Scarlet Ibis, 135.
 „ Tanager, 179, 241.
 „ White Ibis, 135.
 Scarlet-backed Flowerpecker, 268.
 Scarlet-bellied Tanagers, 243, 245, 246.
 Scarlet-chested Grass Parrakeet, 319.
 Scaup, 3, 71, 280.
 „ Common, 79.
 „ Greater, 79, 350.
 „ Lesser, 3, 79, 135, 350.
Schlegelia wilsoni, 272, 299.
 Scimitar Babblers, 300.
Scissirostrum dubium, 300.
 Scissor-tailed Flycatcher, 322.
 Sclater's Orange-headed Tanagers,
 241.
Scops giu, 38.
 Scops Owl, 38, 133.
Scopus umbretta, 136.
 Scoter Duck, 71, 79.
 Scoter, Black, 285.
 „ Velvet, 286.
 Screamer, Crested, 136, 156.
 Seagull, 22.
 Seedcracker, Crimson, 116.
 Seedeaters, Two Unfamiliar, 342.
 Seed-Finch, Black-and-White, 271.
 Seese, Hey's, 162.
 Semi-palmated Geese, 76.
Semnormis ramphastinus, 205.
 Senegal Blue-Spotted Dove, 319.
 „ Dove, 193.
 „ Palm-dove, 18.
 „ Parrot, 59.
 „ Scarlet-breasted Sunbird, 118.
 Sennett's Buff-bellied Dove, 21.
Sericulus melinus, 222.
 Seven-coloured or Striated Tanager,
 178.
 Seychelles Turtledove, 18.
 Shamas, 49, 271, 309.
 „ Indo-Chinese, 268, 350.
 Sharp-tailed Sandpiper, 355.
 Sharp-winged Teal, 78, 260.
 Sheld-duck, 3, 87.
 „ African, 3, 76, 349.
 „ Australian, 3, 82, 90, 159, 170,
 201, 273, 354.
 „ Common, 3, 76, 349.
 Sheld-duck, Crested, 279.
 „ Grey-headed, 159.
 „ Paradise, 3, 76, 80, 159, 349.
 „ Radjah, 3, 77, 82, 89, 202, 273,
 354.
 „ Ruddy, 3, 76, 80, 134, 159, 273.
 Shining Blue Kingfishers, 119.
 „ Sunbeam Humming-bird, 246.
 Short-tailed Babbler, 269.
 Shoveler, African, 70.
 „ American, 280.
 „ Argentine, 70.
 „ Australian, 70, 83.
 „ Cape, 77, 280.
 „ Common, 70, 77.
 „ European, 280.
 „ New Zealand, 134, 350.
 „ Red, 134, 350.
 „ Versicolor, 350.
 Shovelers, 87, 280, 350.
 Shrike, Red-backed, 156, 264, 361.
 Shrike-Starling, 300.
Sialia corrucoides, 287.
 Siamese Fireback, 164.
 Siberian Red-breasted Geese, 76.
 Siberia, Black-headed, 256.
 „ Desgodin's, 269.
 „ Grey, 256.
 „ „ Longtailed, 300.
 „ Long-tailed, 211, 269.
 „ Walden's, 269.
Sibia picoides similima, 211, 256.
 Silverbills, 142.
 Silver Gull, 138.
 „ Pheasant, 93, 163, 164, 203, 311.
 „ Sparrows, 5.
 Singing Honey Eater, 352.
 Siskin, 14, 362.
 „ American, 38.
 „ Black-headed, 14, 315.
 „ Hooded, 124.
 Siskins, 305.
 Siva, Blue-winged, 40.
 „ Yunnan winged, 269.
Siva wingatei, 269.
 Six Plumed Bird of Paradise, 299.
 Slaty-backed Forked Tail, 268.
 Slavonian Grebes, 104.
 Smew, 80, 135, 284.
 Smews in Captivity, Observations on
 the Breeding Habits of, 96.
 Smith's Bronzewing Pigeon, 21.
 „ Button-Quail, 168.
 Smooth-billed Ani, 24.
 Snow Goose, 87.
 „ Pigeon, 4, 17, 350.
 Snowy Egret, 26, 136.
 „ Owl, 133.

- Socorro Mourning Dove, 18.
 Scæmmerring's Pheasant, 4, 165, 350.
 Solitary Ground Dove, 193.
Somateria mollissima færensîs, 287.
 " " *mollissima*, 287.
 " " *spectabilis*, 287.
 Some Experiences in Waterfowl
 Breeding, 105.
 Some Rearing Experiences of An
 Owner of a Small Collec-
 tion, 367.
 Song Sparrows, 225.
 " Thrush, 305.
 Sonnerat's Junglefowl, 51, 165, 350.
 " Pheasant, 4.
 Sooty or Black Oyster Catcher, 355.
 " Rail, 138.
Sorella eminebey, 342.
 South African Crowned Crane, 137.
 " Pochard, 134.
 " Sheld-duck, 3, 349.
 South American Black Oyster-catcher,
 271.
 " Comb-duck, 77, 260.
 " Stiff-tail, 281.
 Southern Stone-Curlew, 137.
 Sparrow, Cape, 39.
 " Chestnut, 342.
 " Cinnamon Tree, 330.
 " Diamond, 352.
 " Fawn, 5.
 " Grey, 5.
 " Grey-headed, 370.
 " Pectoral, 241.
 " Pied Java, 272.
 " Silver, 5.
 " Song, 225.
 " White, 5.
 " Yellow-throated Rock, 14.
 Sparrow-Hawks, 114, 340.
 " African Little, 114.
Spatula capensis, 280.
 " *clipeata*, 280.
 " *platalea*, 134, 280.
 " *rhynchotis*, 83, 280.
 " " *variegata*, 134.
 Species or Varieties, 141.
 Spectacle-bird, Chinese, 14.
 Spectacled Eider, 287.
 " Flycatcher, 117.
 Speckled or Black Duck, 88.
Spermestes nigriceps, 331.
Spermophaga hæmatina hæmatina, 116.
Spermophila albigularis, 195.
Spheniscus magellanicus, 271.
Sphenocercus sphenurus, 16.
 Spicifer Peafowl, 4, 350.
Spiloglaux boobook, 133.
Spilopelia chinensis, 19.
 " " *chinensis*, 19.
 " " *suratensis*, 19.
 " " *tigrina*, 20.
Spindalis pretrei, 373.
 Spiney-cheeked Honey-eaters, 339.
 Spinifex Doves, 140.
 Spiny-tailed Duck, 109.
Spizixos canifrons, 269.
 " *semitorques*, 269.
 Splendid Grass Parrakeet, 61, 384.
 " Sunbird, 118.
 Spoonbill, 135.
Sporophila luctuosa, 271.
 Spotted Eagle Owl, 41, 133.
 " Forktail, 268.
 " Flycatcher, 13, 361.
 " Panther Bird, 38.
 " Tinamou, 168.
 " Turtledove, 19.
 Spot-bellied Francolin 162.
 Spotted-backed Weaver, 369.
 Spotted-breasted Laughing Thrush,
 270.
 Spot-winged Pigeon, 17.
 St. Lucia Parrot, 40.
 St. Vincent Parrot, 39.
Stachyris chryseæ, 269.
 Stairs' Ground-Pigeon, 21.
 Stanley Crane, 62, 136, 236, 349.
 Star Finch, 61, 370.
 Starling, Amethyst, 119.
 " Bald-headed, 223.
 " Glossy, 119.
 " Green Glossy, 31.
 " Japanese, 29.
 " Military, 238.
 " White-bellied Amethyst, 298.
 Starlings, 9, 122.
Starnenas cyanocephalus, 22.
 Steamer Ducks, 79, 271, 277.
Steatornis caripensis, 224.
 Steller's Eider, 287.
Stephanibyx coronatus, 137.
 " *meloapterus*, 334.
Stephanophorus diadematus, 175.
Stictonetta naevosa, 85.
Stictospiza formosa, 222.
 Stiff-tail, African, 281.
 " Australian, 281.
 " South American, 281.
 " White-headed, 281.
Stigmatopelia s. cambayensis, 20.
 " *s. senegalensis*, 20.
 Stint, Red-necked, 355.
 Stock Dove, 17, 127.
 Stonechat, 361.
 Stone-Curlew, Southern, 137.

- Stone Pheasant, 163.
Stoparola melanops, 331.
 Stork, White, 136.
 Streamer-tail, Red-billed, 24.
Streptopelia bitorquata, 19.
 capicola, 19.
 " *capicola*, 19.
 " *damarensis*, 19.
 " *tropica*, 19.
 " *decaocto*, 19.
 " *decaocto*, 19.
 " *decipiens permista*, 19.
 " *orientalis*, 19.
 " *s. semitorquata*, 19.
 " *semitorquata erythrophrys*, 19.
 " *t. turtur*, 18.
 " *vinacea*, 19.
 " *xanthocyclus*, 19.
Stringops habroptilus, 266.
Strix aluco, 133.
 " *woodfordii nuchalis*, 113.
 Stubble Quail, 163, 340.
 Successful Rearing of Zoe's Banded
 Fruit Pigeon, 366.
 Sugar-birds, Blue, 38.
 " Purple, 371.
 " Salvadori's, 238.
 " Yellow-winged, 238, 371.
 Sumatran Cissas, 300.
 Sunbird, Amethyst-rumped, 62.
 " Annamese Yellow-backed, 268.
 " " " -breasted, 268.
 " Beautiful, 117, 118.
 " Buff-throated, 113.
 " Coppery, 117, 118.
 " Dabry's, 268.
 " Green-headed, 118.
 " Malachite, 62.
 " Mariqua, 62.
 " Senegal Scarlet-breasted, 118.
 " Splendid, 118.
 " Superb, 113.
 " Van Hasselt's, 62, 300.
 " Violet-backed, 118.
 Sunbirds, 122, 131.
 Sun Bittern, 136.
 Superb Sunbird, 113.
 " Tanager, 297.
 Supposed Hybrid Whydah, 203.
 Surface-feeding Ducks, 3.
 Swainson's Lorikeets, 186.
 " Toucans, 241.
 Swallow, Welcome, 339.
 Swallows, 192.
 Swamp Harrier, 357.
 Swamp Quail, 163.
 Swan, Bewick's, 74.
 " Black, 74, 349, 354.
 " " Black-necked, 74.
 " " Blue, 84.
 " " Coscoroba, 74.
 " " Mute, 74.
 " " Trumpeter, 74, 94.
 " " Whistling, 74.
 " " Whooper, 74.
 Swans, 3, 73.
 Swinhoe's Silver Pheasant, 164, 203.
 Swift Parrakeet, 310.
 Sword-billed Humming-birds, 242.
Sycalis pelzelni, 331.
Sylvia atricapilla, 370.
Synæcus australis, 195.
Synoicus australis, 320.
Syrmaticus ellioti, 92.

T. turtur isabellina, 18.
Tachyeres, 271, 277.
Tachyphonus melaleucus, 225.
Tadorna radjah, 82, 202.
 " *insularis*, 300.
 Tahiti Blue Lory, 199.
 Taigoor Button-Quail, 167.
 Talpacoti Dove, 20, 319, 350.
 Tambourine Dove, 4, 20, 225.
 Tame Birds at Liberty, 29.
 Tanager, Black, 225.
 " " -headed, 62.
 " " -throated, 237.
 " Blue-shouldered, 1.
 " Chestnut-capped, 243.
 " Green-spotted, 61.
 " Magpie, 199.
 " Orange-bellied, 247.
 " " -billed, 156, 241.
 " Paradise, 61, 373.
 " Petre's, 373.
 " Purple, 62.
 " Rieffer's Grass-green, 250.
 " Scarlet, 179, 241.
 " " -bellied, 243, 245, 246.
 " Sclater's Orange-headed, 241.
 " Seven-coloured or Striated, 178.
 " Superb, 297.
 " Vassor's, 247.
 " White-capped, 175.
 " Yellow-backed, 240.
 " " -winged, 62.
 Tanagers, 208, 271.
Taeniotopygia castanotis, 309.
 " *insularis*, 272.
Tangara labradoroides, 241.
 " *lunigera*, 241.
Tarsiger cyanurus, 268, 275.
 " *c. praticus*, 275.
 " *c. rufilatus*, 275.
 Tataupa Tinamou, 155, 168.

- Tattler, Grey-tailed, 356.
 „ Wandering, 356.
 Tawny Owl, 133.
 Teal, American Green-winged, 78.
 „ Andaman, 87.
 „ Andean, 245, 259.
 „ Auckland Island, 277.
 „ Baikal, 78, 88, 134.
 „ Bluewing, 88, 350.
 „ Brazilian, 78.
 „ „ Black-capped, 278.
 „ Cape, 134.
 „ Chestnut, 81.
 „ „ -breasted, 3, 78, 87.
 „ Chilian, 78.
 „ Cinnamon, 78, 88, 261, 350.
 „ Common, 77, 279.
 „ European, 69.
 „ Formosan or Baikal, 78.
 „ Garganey, 78, 85.
 „ Greenwing, 88.
 „ Grey, 78, 81.
 „ Hottentot, 69, 134.
 „ Indian Cotton, 236.
 „ Marbled, 79, 134.
 „ Neck-laced, 78.
 „ Puna, 79, 261.
 „ Ringed, 350.
 „ Sharp-winged, 78, 260.
 „ Versicolor, 78, 267.
 „ Wild Muscovy, 87.
 Temminck's Blue Roller, 272, 300.
 „ Pheasant, 4.
 „ Sapphire-wing Humming-bird, 246.
 „ Tragopan, 163.
Temnurus temnura, 270.
 Tern, Caspian, 356.
 „ Crested, 357.
 „ Fairy, 357.
Tersina viridis occidentalis, 241.
 Teydean Chaffinch, 13.
Thalassornis leuconota leuconota, 281.
 „ *l. insularis*, 282.
 „ *leuconotus*, 135.
Theristicus melanopis, 135, 271.
 Thornbill Humming-birds, 242.
Thraupis abbas, 271.
 Three-coloured Parrot Finches, 48.
Threskiornis aethiopsicus, 135.
 „ *a. bernieri*, 135.
 „ *m. stictipennis*, 135.
 Thrush, Blue-winged Laughing, 270.
 „ Chinese Whistling, 268.
 „ Dwarf Hermit, 62.
 „ Fook's Laughing, 270.
 „ Golden-winged Laughing, 270.
 „ Grey Shrike, 340.
 Thrush, Jackson's Coral-billed, 62.
 „ Lesser Orange-headed, 268.
 „ Red-tailed Laughing, 270.
 „ Spotted-breasted Laughing, 270.
 „ White, 5.
 „ „ -throated Ground, 153.
Tiaris bicolor, 25.
 „ *canora*, 25.
 „ *olivacea*, 25.
 Timalias, 209.
 Timor Zebra Finches, 272.
 Tinamou, Cinerescent, 168.
 „ Martineta, 155, 168.
 „ Partridge, 168, 271, 299.
 „ Rufous, 168.
 „ Spotted, 168.
 „ Tataupa, 155, 168.
 Tinamous, 373.
 Tinker-birds, 122.
 Tit, Bearded, 9, 38.
 „ Blue, 11.
 „ Père David's, 270.
 Tits, 127.
 Torrent Duck, 261, 277.
 Torres Strait Fruit Pigeon, 319.
 Toucan-like Barb, 205, 249.
 Toucans, Swainson's, 241.
 Touraco, Buffon's, 62.
 „ Fraser's or the Great-billed, 191, 265.
 Touracos, 122.
 Tovi Parrakeet, 403.
Trachyphonus cafer, 207, 257.
 „ *margaritatus*, 207, 255.
 Tragopan, Blyth's, 163.
 „ Cabot's, 125, 163.
 „ Horned, 163.
 „ Pheasants, 28, 350.
 „ Satyr, 51.
 „ Temminck's, 125, 163.
 „ Western Horned, 163.
Tragopan melanocephalus, 163.
 „ *satyra*, 163.
 Tragopans, 125, 203.
 Trainbearer Humming-bird, 247.
 Tree-Creeper, European, 340.
 „ White-browed, 340.
 Tree-ducks, Black-billed, 3.
 „ Eyton's, 134.
 „ Fulvous, 3, 350.
 „ Red-billed, 3.
 „ White-faced, 3.
 Tree-ducks, 3, 236.
 Tri-coloured Parrot Finch, 229.
Trichoglossus forsteni, 221.
 „ *johnstoniæ*, 222.
 „ *nigrigularis*, 221.
 „ *rubritorquis*, 320.

- Tricholaema leucomelas*, 254.
Tricho-paradisea gulielmi, 272.
 Trogon, Resplendent, 322.
Tropicranus albocristatus, 113.
 Trumpeter Bullfinches, 37.
 " Swan, 74, 94.
 Tufted Duck, 3, 70, 79, 87.
 Tui Parrakeet, 403.
 Tuipara Parrakeet, 404.
Turacus macrohynchus, 191, 265.
 Turkey, Brush, 4, 156, 168.
 " Ocellated, 167, 270.
 " Wild, 4.
 Turkeys, 167.
Turnix maculosus tanki, 167.
 " *nigricollis*, 168.
 " *suscitator taigora*, 167.
 " *sylvatica lepurana*, 168.
 " *tanki*, 126, 195.
 " *varius*, 168, 195, 269.
 " *velox*, 168.
 Turnstone, 356.
 Turtledove, Burmese-collared, 225.
 " " Ruddy, 19.
 " Cape, 19.
 " Deceptive, 19.
 " Double-collared, 19.
 " Dwarf, 19, 328.
 " Indian, 19.
 " Indian Ruddy, 19.
 " Isabelline, 18.
 " Madagascar, 18.
 " Oriental, 19.
 " Ruddy, 19.
 " Seychelles, 18.
 " Spotted, 19.
 " Vinaceous, 19.
Turtur afer, 20, 319.
 " *chalcospilos*, 20.
 " *humilis*, 328.
 Turquoise Parrakeet, 61, 183, 215,
 320, 384.
 Twenty-eight Parrakeet, 44, 376.
 Twite, 360.
 Two Unfamiliar Seed-eaters, 342.
Tympanistria tympanistria, 20, 225.
Tympanus americanus, 162.
Tyrannidae, 239.
 Tyrant, Little Widow, 272.
 Tyrants, 239.

 Ultramarine Lory, Breeding of the, 292.
 Umbrella Bird, 240.
 Undulated Ant-Thrush, 244.
 Upland Goose, 75, 283.
Uraeginthus bengalis, 159.
 " Urraca " Jay, 264.

 Van Hasselt's Sunbird, 300.
 Varied Button-Quail, 168.
 " Loriqueet, 126.
 Vassor's Tanager, 247.
 Velvet Scoters, 286.
 Venezuelan Ground-Dove, 18, 21.
 Verditer Flycatcher, 331.
 Verreaux's Dove, 21.
 Versicolor Ducks, 3, 350.
 " Pheasants, 4, 172, 203.
 " " Where are the, 142.
 " Teal, 78, 267.
 Vervain Humming Bird, 26.
Vestipedes luciani, 242.
 Victoria Crowned Pigeon, 299.
 " Goura, 22.
 Vieillot's Fireback, 163.
 Vinaceous Turtledove, 19.
 Violet-backed Sunbird, 118.
 Violet-ear Humming-bird, 247.
 " Waxbill, 225.
 Violet Tanager, 238.
 Virginian Cardinal, 36.
 Vulture, American Black, 133, 373.
 " Red-headed Turkey, 23.
 Vulturine Guinea-fowl, 167, 373.

 Waders, 126.
 " Breeding of, 173.
 Wagtails, 361.
 Wahne's Six Plumed Bird of Paradise,
 300.
 Walden's Sibia, 269.
 Wandering Tree Duck, 81.
 Warbler, Black and White, 27.
 " Dartford, 361.
 Wart-Pigeon, Red-crowned, 17.
 Waterfowl and Aviculture, Preserva-
 tion of, 276.
 Waterfowl, Australian, 80.
 " Fascination of Keeping, 65.
 " in the London Zoo, 86.
 " Peruvian, 259.
 " Popular, 272.
 Water Dikkop, 137.
 " Rail, 330.
 Waterhen, Black-tailed, 139.
 " White-breasted, 139.
 Water Tyrants, Courier's, 4.
 Wattle-bird, Brush, 319, 320.
 Wattled Crane, 136, 236.
 " Lapwing, 137.
 " Plovers, 328.
 Waxbill, Blue-breasted, 125, 331.
 " Blue-capped, 116.
 " Green Twin-spot, 116, 232.
 " Orange-cheeked, 117.
 " Violet-eared, 225.

- Waxwing, 329.
 Weaver-birds, 117, 120.
 Weaver Cuckoo, 342.
 ,, Madagascar, 139, 287.
 ,, Spotted-backed, 369.
 Weaver-Finch, Blue-billed, 116.
 Weavers at Liberty, 236.
 Weber's Lorikeet, 154.
 Wedge-tailed Fruit-Pigeon, 16.
 Weka Rail, 139.
 Welcome Swallow, 339.
 Wells' Dove, 21.
 West African or Black-necked Crowned Crane, 126.
 ,, Wood Owls, 113.
 Western Horned Tragopan, 163.
 ,, Swallow Fruit-eater, 241.
 Wheatears, 360.
 Where are the Versicolor Pheasants? 142, 172.
 Whistling Eagle, 357.
 ,, Swan, 74.
 White Asiatic Crane, 349.
 ,, Crowned Pigeons, 27.
 ,, Ibis, 135.
 ,, Rheas, 2.
 ,, Sparrows, 5.
 ,, Stork, 136.
 ,, Thrushes, 5.
 White-backed River-duck, 135.
 White-bearded Honeyeaters, 255.
 White-bellied Amethyst Starling, 298.
 ,, Dove, 21.
 ,, Plumed Dove, 264.
 ,, Pigeon, 21.
 White-booted Racket-tail Humming-bird, 249.
 White-breasted Cormorant, 359.
 ,, Ground-Pigeon, 21.
 ,, Kingfisher, 301.
 ,, Scimitar Babbler, 270.
 ,, Waterhen, 139.
 White-browed Swallows, 338.
 ,, Tree Creeper, 340.
 White-capped Redstart, 350.
 ,, Tanager, 175.
 White-cheeked Bulbul, 196.
 ,, Crested Colin, 167.
 ,, Goose, 74.
 White-crested Hornbills, 113.
 ,, Kalij Pheasant, 4, 164, 350.
 White-crowned Pigeon, 17.
 White-eared Bulbuls, 256.
 ,, Grassfinch, 14.
 ,, Scops, 133.
 White-eye, Common, 3, 350.
 ,, Madagascan, 79, 350.
 White-eyed Duck, 79, 350.
 White-eyed Pochard, 71.
 White-faced Glossy Ibis, 135.
 ,, Heron, 357.
 ,, Storm Petrel, 357.
 ,, Tree Duck, 3, 76.
 White-fronted Chats, 340, 358.
 ,, Dove, 49, 192.
 ,, Goose, 74.
 White-gorgeted Flycatcher, 268.
 White-headed Penelope, 168.
 ,, Robin Chat, Breeding the, 304.
 ,, Stiff-tail, 281.
 ,, Woodpeckers, 252.
 White-necked Crane, 136, 236.
 White-quilled Pygmy Goose, 85.
 White-rumped Lory, 300.
 White-throated Finch, 195.
 ,, Ground-Thrush, 153.
 ,, Violet Pigeon, 18, 371.
 Whitewinged Cobalt Budgerigar, 146.
 ,, Dove, 18.
 ,, Duck, 77.
 ,, Wood-duck, 134.
 White's Warbling Finch, 199.
 Whooper Swan, 74.
 Why are Mealworms not Bred in England?, 174.
 Whydahs, 117.
 ,, Giant, 370.
 ,, Supposed Hybrid, 203.
 Wigeon, 87.
 Wigeon, American, 3, 68.
 ,, Chiloe, 3, 68, 350.
 ,, European, 68.
 Wild and Tame Hoopoes, 38.
 Wild Muscovy Teal, 87.
 ,, Turkeys, 4.
 Wild Waterfowl in Confinement in America, 73.
 Willow Grouse, 162.
 Wilson's Bird of Paradise, 299.
 Wonga-Wonga Pigeon, 22, 350.
 Wood Ducks, 95.
 ,, White-winged, 134.
 ,, Pigeon, 17.
 ,, Sandpiper, 355.
 ,, Stork, American, 136.
 ,, Swallows, 338.
 ,, Dusky, 339.
 ,, Masked, 339.
 ,, White-browed, 338.
 Woodpeckers, 62.
 ,, White-headed, 252.
 Woodstars, Bahaman, 26.
 Wren, Australian Blue, 41.
 ,, Black-backed Blue, 336.
 ,, Blue, 124, 335.
 Wrynecks, 127.

- Xanthixus flavescens berliozi*, 269.
Xantholema hamacephalus, 210.
 „ *h. indica*, 211.
 „ *h. lutea*, 211.
Xenopsingus concolor, 271.
Xolmis irupero, 272,
- Yellow-backed Cassique, 238.
 „ Finch, 25.
 „ Tanager, 240.
 Yellow-bellied Ground-finch, 271.
 Yellow-billed Duck, 77.
 Yellow-breasted Barbet, 207, 254, 255,
 256.
 Yellow-checked Barbet, 252.
 „ Parrot, 392.
 Yellow-faced Grassquit, 25.
 „ fronted New Zealand Parrakeet,
 386.
 Yellow-headed Fruitsuckers, 300.
 „ Hangnest, 238.
 Yellow-naped Yuhinas, 269.
 Yellow-necked Koklass Pheasant, 164.
 „ Pheasant, 4.
 Yellow-rumped Finch, 266.
 „ Munia, 194.
 „ Parrakeet, 220.
 Yellow-throated Rock Sparrow, 14.
 Yellow-wing Dark-green Budgerigar,
 147.
- Yellow-winged Sugar Birds, 62, 238,
 371.
 Ypecaha Rail, 139, 299.
Ypsilophorus plumbeus, 163.
 „ *ypsilophorus*, 163.
 Yubi's Pigeon, 350.
 Yuhina, Black-chinned, 269.
 „ Rippon's, 269.
 „ Yellow-naped, 269.
Yuhina diademata, 269.
 „ *flavicollis rouxi*, 269.
 „ *nigrimentum*, 269.
 Yuhinas, 62.
 Yunnan Blue-winged Sivas, 269.
- Zebra Dove, 20.
 „ Finch, 11, 60, 217, 300, 309, 337.
Zenaidura auriculata, 18.
 „ *aurita*, 18.
 „ *graysoni*, 18.
 „ *macroura carolinensis*, 18, 319.
 „ *vinaceo-rufa*, 18.
 „ *zenaida*, 18.
 Zoe's Banded Fruit Pigeon, Successful
 Rearing of, 366.
Zonifer tricolor, 137, 320.
Zosterops simplex, 14.
 Zosterops, Grey-backed, 357.

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