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- ADAMS, JOHN; Darsdale, Raunds, Northants. (Nov., 1930.)
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- ALLEN, M. T., F.Z.S.; Ravenswood, Northwood, Middlesex. (March, 1925.)
- ALLENBY, FIELD-MARSHAL THE VISCOUNT, G.C.B., G.C.M.G.; Naval and Military Club, Pall Mall, S.W. (Nov., 1922.)
- ALLISON, N. G.; 3 Ashurst Gardens, Tulse Hill, S.W. 2. (July, 1931.)
- AMSLER, MAURICE, M.B., F.Z.S.; Eton Court House, Eton, Windsor. (Dec., 1908.)
- ANDERSON, ALISTAIR; Tullichewan Castle, near Balloch, Dumbartonshire. (June, 1923.)
- APPLEBY, JOSEPH; Farnley, Great Crosby, Liverpool. (Oct., 1923.)
- ARCHER, Mrs. E.; The Stream, Kingsford Hill, Colchester. (May, 1930.)
- ARMOUR, Dr. M. D. S.; Crichton House, Anstruther, Fife. (Aug., 1932.)
- ARNAU, JOSÉ JULIÁ (Ingeniero); Plaza Constitucion 15, Binisalem, Mallorca. (Jan., 1927.)
- ARNOLD, EDWARD W. C.; Babylon, Long Island, N.Y., U.S.A. (April, 1928.)
- ARNOLD, J. H.; 4002 Massachusetts Street, Long Beach, California, U.S.A. (Oct., 1927.)
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- ASTLEY, Mrs. HUBERT; Brinsop Court, Hereford. (Dec., 1901.)
- AUBURN, L. W.; Beech Bough, Barnet Gate, Arkley. (July, 1929.)
- BABCOCK, HAROLD L.; Boston Society of Natural History, 234 Berkeley Street, Boston, Mass., U.S.A. (Aug., 1931.)
- BAKER, E. C. STUART, F.Z.S., M.B.O.U.; 6 Harold Road, Upper Norwood, S.E. 19. (Feb., 1904.)
- BALFOUR, F. R. S.; Dawyck, Stobo, Tweeddale, Scotland. (Nov., 1932.)
- BALMAIN, Miss MORA; Alford House, Castle Cary, Somerset. (June, 1930.)
- BAMFORD, WILLIAM; Bridgecroft, Kent Road, Harrogate. (March, 1904.)

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- BANKS, GEOFFREY; Tall Trees, Walsall Road, Four Oaks Common, near Birmingham. (July, 1932.)
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- BARKER, Major G. H.; Villa Fressinet, Grasse, A.M., France. (Feb., 1924.)
- BARKER, Capt. N. L., O.B.E.; Cross Green, Otley, Yorkshire. (Dec., 1926.)
- BARLOW, Mrs.; 45 Bath Road, Swindon. (Sept., 1926.)
- BARNARD, H. G.; Hindmarsh Building, Hindmarsh Square, Adelaide, Australia. (April, 1932.)
- BARNARD, T., M.C., F.Z.S.; Milner Road, Rondebosch, Cape Town, South Africa. (Sept., 1919.)
- BARB-SMITH, Mrs.; Birkegate, Glen Osmond, South Australia. (Sept., 1926.)
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- BEARBY, W. R.; 34 Church Street, West Hartlepool. (Aug., 1923.)
- BEDFORD, Her Grace the Duchess of, F.Z.S.; Woburn Abbey, Woburn, Beds, and 15 Belgrave Square, S.W. 1. (Feb., 1903.) (*Vice-President.*)
- BEEVER, G.; Brooklyn, Kirkheaton, Huddersfield. (June, 1923.)
- BELL, W. D.; 20 Archhold Terrace, Jesmond, Newcastle-on-Tyne. (May, 1926.)
- BENCHLEY, Mrs. BELLE; Zoological Society of San Diego, San Diego, California, U.S.A. (Feb., 1929.)
- BENJAMIN, Mrs.; Yarr Barton, West Chinnock, Crewkerne. (Dec., 1929.)
- BENN, J. E.; 2 Laureate Street, Port Pirie West, South Australia. (Dec., 1931.)
- BENNETT, C. E. M.; 11 Rosswood Gardens, Wallington, Surrey. (Jan., 1932.)
- BENSUADE, VASCO; 153 Estrada da Luz, Lisbon, Portugal. (July, 1931.)
- BERESFORD-WEBB, G. M.; Norbryght, South Godstone, Surrey. (May, 1906.)
- BEST, CYRIL; Glengatton, Wood Lane, Hucknall, Notts. (Aug., 1921.)
- BLAAUW, F. E., F.M.Z.S., F.M.B.O.U.; Gooilust, 's Graveland, Hilversum, Holland. (Nov., 1901.)
- BLACK, Mrs. A. R., R.F.D. 1; Box 250, Gardena, California, U.S.A. (April, 1930.)
- BLACKBURN, FRANK; 40 Mount Joy Road, Huddersfield. (April, 1929.)
- BLAIR, G. H.; The Sale Masonic Club, Masonic Hall, Tatton Road, Sale, Cheshire. (Sept., 1932.)
- BLAND, Mrs. G. L.; The Little House, Wellesbourne, Warwick. (July, 1929.)
- BLISSETT, Miss NELLIE; Dover Cottage, Dover Street, Ryde, Isle of Wight. (March, 1928.)
- BOGER, Mrs. F.; Brookfield, Ryde, Isle of Wight. (Jan., 1930.)
- BOOSEY, E. J.; Brambletye, Keston, Kent. (Feb., 1921.)
- BOTT, WILLIAM; Gwent, Walton-by-Clevedon, Somerset. (Dec., 1928.)
- BOURKE Hon. Mrs. ALGERNON; 75 Gloucester Place, Portman Square, W. 1. (Feb., 1911.)
- BOUSFIELD, Miss; Hazelgrove, New Milton, Hants. (Jan., 1908.)
- BOWER, ROBERT; Hush Heath Manor, near Goudhurst, Kent. (July, 1931.)
- BOYLE, JOHN; The Farm House, Shirburn, Watlington, Oxon. (Jan., 1929.)

- BRADSHAW, J., M.Sc., A.I.C., F.C.S.; Ruhebank, Sulby Grove, Rare, Morecambe. (Feb., 1925.)
- BRADSHAW, GEORGE; 54 Ingram Road, Wahroonga, Sydney, Australia. (May, 1927.)
- BROADWATER, C. C.; 27 Highland Avenue, Piedmont, California, U.S.A. (March, 1932.)
- BROCK, A. E.; St. Just, Exeter. (Dec., 1929.)
- BROOKS, Rev. O. E.; St. Luke's Vicarage, Brighton, Sussex. (Jan., 1930.)
- BROOKSBANK, ALEC; Brambletye, Keston, Kent. (Jan., 1928.)
- BROWN, E. J.; 37 Dean Road, Bitterne, Southampton. (March, 1931.)
- BROWN, W. FERRIER; Elgin, 65 Marine Avenue, Whitley Bay, Northumberland. (May, 1924.)
- BROWNING, WILLIAM H.; 260 Fourth Avenue, New York City, U.S.A. (March, 1906.)
- BRUNTON, J. W.; Inveresk Lodge, Musselburgh. (June, 1923.)
- BRYAN, Mrs. A. H.; P.O. Box 414, Balboa Heights, Canal Zone, Isthmus of Panama. (Jan., 1928.)
- BUCHANAN, A.; Viewbank, 33 Townhill Road, Dunfermline. (Dec., 1928.)
- BURN, Lady; Rydal Mount, Potters Bar, Middlesex. (Oct., 1932.)
- BUTLER, ARTHUR LARCHIN, M.Aust.O.U.; Lower Sandy Bay, Hobart, Tasmania. (July, 1905.)
- CAIRNS, Hon. D. H.; Carnach, Nairn. (Nov., 1930.)
- CAMPEY, A. D.; 117 Grovehill Road, Beverley, Yorks. (Jan., 1933.)
- CAPER, F.; Lewin's Mead, Bristol. (Oct., 1907.)
- CARR-WALKER, HERBERT; Almsford House, Fulwith Lane, Harrogate. (June, 1917.)
- CARLISLE, MELVILLE; P.O. Onderstepoort, Pretoria, South Africa. (March, 1930.)
- CASE, Mrs. ALICE M.; Barncroft, Eastergate, Chichester, Sussex. (May, 1918.)
- CHAMBERS, F. G.; The Beeches, Barlaston, Stoke-on-Trent. (Aug., 1932.)
- CHANNER, Mrs.; Webbery, Nr. Bideford, N. Devon.
- CHAPLIN, E. W.; The Hearne, Great Amwell, Ware, Herts. (Sept., 1903.)
- CHAPLIN, The Hon. ANTHONY; 9 Hill Street, Berkeley Square, W. 1. (July, 1932.)
- CHAPMAN, G. B., F.Z.S.; 24 Tottenham Court Road, London, W. (Nov., 1922.)
- CHAPMAN, Miss, F.Z.S.; 92 High Street, Birmingham. (April, 1927.)
- CHAWNER, Miss, F.Z.S.; The White House, Leckford, Stockbridge, Hants. (July, 1899.)
- CHICHESTER, Mrs.; The Deer Park Cottage, Glenarm, Co. Antrim, Ireland. (April, 1930.)
- CHILD, F. R.; Braemar, Down's Road, Luton, Beds. (March, 1920.)
- CHRISTIE, Mrs. G.; Kellas, By Elgin, Morayshire. (Jan., 1913.)
- CLARK, G. H.; 28 Elm Grove, Orpington, Kent. (June, 1932.)
- CLARK, Mrs. ALFRED; Warren House, Iver Heath, Bucks. (Sept., 1925.)
- CLEMO, J.; 18 Claremont Road, Redruth, Cornwall. (Oct., 1927.)
- COATES, Sir EDWARD CLIVE, Bart.; 14 Sussex Square, W. 2. (June, 1929.)

- COLES, CLIFFORD ; 16 Bancroft Avenue, Roseville, N.S.W., Australia. (July, 1929.)
- COLHOUN, Major J., M.C. ; St. Elmo, Shantallow, Londonderry, Ireland. (March, 1929.)
- COLLIN, HARRY A. ; Tynrodyn, Bangor, North Wales. (May, 1928.)
- COLLINGS, Miss C. ; Woodlands, 125 Harrow-dene Road, Wembley. (Nov., 1932.)
- COLTHURST, Mrs. E. V. ; The Copse, Wraxall, Somerset. (June, 1931.)
- COOK, S. M. ; Eastridge, Black Pill, Glam. (Aug., 1928.)
- COOPER, Mrs. H. VICTOR ; Villa d'Este, Burgess Road, Thorpe Bay, Essex. (May, 1926.)
- COOPER, JAMES ; Killerby Hall, Scarborough. (*Orig. Mem.*)
- CORSAN, G. H. ; Whittier College, Whittier, California, U.S.A. (Jan., 1928.)
- CORY, REGINALD R., F.Z.S. ; Duffryn, near Cardiff. (August, 1905.)
- COTTERELL, RICHARD ; Garnons, Hereford. (April, 1928.)
- COWLEY, H. ; The Manor House, Bubbenhall, Kenilworth. (Jan., 1926.)
- CROFTS, ROBERT T. ; 18 Wheelock Street, Middlewich, Cheshire. (April, 1929.)
- CURITT, HENRY G. F. ; 12 Mountague Place, Poplar, E. 14. (Jan., 1931.)
- CUNNINGHAM, Dr. F. H. L. ; "Rahere," High Street, Chesham, Bucks. (April, 1931.)
- CURA, L., & SONS ; Bath Court, Warner Street, Rosebery Avenue, E.C. 1. (Sept., 1928.)
- CURRIE, J. ; 54 Netherby Road, Edinburgh. (Aug., 1915.)
- CURTIS, Mrs. ; Caynham Court, Ludlow. (Sept., 1931.)
- CUSHNY, CHARLES ; Bath Club, 34 Dover Street, Piccadilly, W. 1. (Dec., 1926.)
- CZARNIKOW, HORACE, F.Z.S. ; Farnborough Hall, Banbury, Oxon. (March, 1924.)
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- DALE, SYDNEY E. ; 14 Lincoln Street, Crewe, Cheshire. (Oct., 1932.)
- DANBY, NORTON H. ; 4 Carlton Road, Ealing, W. 5. (May, 1927.)
- DANCOISNE, Abbé H. ; Curé de Canaples, Canaples (Somme), France. (July, 1932.)
- DANIEL, Dr. C. ; 46 Porchester Terrace, W. 2. (Sept., 1932.)
- DARLING, P. STORMOUTH ; Blackwood, Fulmer, Bucks. (June, 1928.)
- DARLTON, Mrs. ; Sissinghurst Court, Cranbrook, Kent. (April, 1932.)
- DAVIS, GODFREY, I.C.S., F.Z.S. ; 4 Robin Grove, Westhill, Highgate, N. 6. (Aug., 1927.)
- DEBONO, P. P., M.D., F.R.C.S.(Eng.) ; 8 Windsor Terrace, Sliema, Malta. (June, 1930.)
- DECOUX, A. ; Géry-près Aix, Hte. Vienne, France. (April, 1917.)
- DELAOOUR, JEAN, F.Z.S. ; Clères, Seine Inf., France. (April, 1916.)
- DELL, CHARLES ; Ferndale, Moss Lane, Pinner, Middlesex. (July, 1900.)
- DENLKY, C. F. ; Winden, Brookville Pike, Rockville Md., U.S.A. (Jan., 1927.)
- DENNIS, Mrs. CYRIL ; Oakley Hall, Market Drayton, Salop. (June, 1920.)
- DENNIS, Mrs. H. E. ; Holme Manor, Pulborough, Sussex. (March, 1903.)

- DENNY, MRS. HENRY, C.B.E., Staplefield Place, Staplefield, Sussex. (May, 1924.)
- DEVINE, F.; Dunamase, Cross Avenue, Booterstown, Co. Dublin. (April, 1929.)
- DICKEY, DONALD R.; California Institute of Technology, Pasadena, California, U.S.A. (April, 1929.)
- DICKINSON, MRS. G. W.; Lernbangweg, Paal 4, Java, Bandoeng, Dutch East Indies. (Jan., 1918.)
- DICKSON, MISS V. C.; Lea Croft, Crawley, Sussex. (Oct., 1927.)
- DIEMONT, D. E. H.; Rynvliet, Oudenryn, Holland. (June, 1927.)
- DILLON, MISS M.; Longworth Hall, Hereford. (April, 1931.)
- DINGLEY, V. G.; The Poplars, 335 Upper Richmond Road, Putney, S.W. 15. (May, 1930.)
- DIRECTOR, THE; Zoological Museum, Tring, Herts. (1912.)
- DOOLY, THOMAS L. S.; Whimbrel, Kirklake Road, Formby, near Liverpool. (Jan., 1924.)
- DRAKE, MRS. F. W.; Carrick Cottage, Mylor, Falmouth, Cornwall. (Dec., 1926.)
- DREWITT, FREDERIC DAWTREY, M.A., M.D., F.R.C.P., F.Z.S.; 14 Palace Gardens Terrace, Kensington, W. 8. (May, 1903.)
- DUNCKER, DR. HANS; 22 Wernigeroder Strasse, Bremen. (April, 1930.)
- DUNLEATH, THE LADY; Ballywalter Park, Ballywalter, Co. Down, Ireland. (August, 1897.)
- DUNMORE, OSCAR E.; Saxonholme, 198 Oadby Lane, Wigston Magna, Leicestershire. (Oct., 1922.)
- DUNN, MRS. C. T. M.; The Nash, Kempsey, near Worcester. (Aug., 1932.)
- DUNSTER, CAPTAIN J. E.; 34 Kensington Gardens Square, W. 2. (July, 1930.)
- DUVEN, MRS.; Broadway, Limsfield, Surrey. (Sept., 1927.)
- DUYZEND, W. C.; Koppelwig 35, Huize, "Casarca," Zeist, Holland. (March, 1927.)
- EDGAR, MRS. GWENDOLINE; Cedar Cottage, Forton Road, Gosport, Hants. (Aug., 1932.)
- EDMOND-BLANC, M. FR.; 40 Boulevard Maillot, Neuilly-sur-Seine, France. (Aug., 1932.)
- EDWARDS, MRS. A. E.; Three Elms, Kippington, near Sevenoaks, Kent. (Jan., 1925.)
- ELLIOTT, F. S.; 31 Kelvin Road, Ipswich, Suffolk. (Nov., 1925.)
- ELPHICK, GEORGE; 118 Harley Street, W. 1. (April, 1926.)
- ELWES, MRS. ROBERT; Little Congham, King's Lynn, Norfolk. (Dec., 1926.)
- ENDTZ, A., M.D.; Loosduinen, 369 Haagweg, Holland. (Oct., 1932.)
- ENGLISH, W. L., M.B.; High Street, Haslington, Crewe. (Oct., 1931.)
- EVANS, G.; 85 Parliament Hill Mansions, N.W. 5. (April, 1926.)
- EVANS, MISS JOAN; 8 South Eaton Place, S.W. 1. (Jan., 1929.)
- EVANS, R. M.; Inglewood, Ratcliffe Road, Leicester. (March, 1927.)
- EUSTACE, C. H.; c/o P.O. Box 252, Shanghai, China. (Feb., 1927.)

List of Members

- EZRA, ALFRED, O.B.E., F.Z.S., M.B.O.U.; (*President*), Foxwarren Park, Cobham, Surrey. (1912.)
- EZRA, Sir DAVID, Kt., F.Z.S., M.B.O.U.; 3 Kyd Street, Calcutta, India. (June, 1912.)
- FABIAN, CYRIL ERIC; 29 Meadowcroft Road, Palmers Green, N. 13. (March, 1930.)
- FERGUSON, A. B.; 22 Duke Street, Kilmarnock. (April, 1931.)
- FETHERSTONHAUGH, Mrs.; The Rosery, Exming, Newmarket, Cambs. (April, 1930.)
- FIELD, Captain H. E. B.; Olinda, Bridge Road, Worthing, Sussex. (Nov., 1930.)
- FILLMER, H. R.; Oakfield, Hurst Road, Hassocks, Sussex. (*Orig. Mem.*)
- FOOK, H. A.; Zoological Gardens, Alipore, Calcutta, India. (Jan., 1932.)
- FOOKS, F. G.; c/o Mon. J. Delacour, Chateau de Clères, Seine Inférieure, France. (Jan., 1926.)
- FROST, WILFRED; c/o Zoological Society, Regent's Park, N.W. 8. (July, 1908.)
- FULLER, Capt. BERNARD J.; Oakfield, Wokingham, Berks. (Sept., 1928.)
- FURNER, A. C.; Oakdene, Whitaker Road, Derby. (Oct., 1929.)
- GAMBLE, Miss KATHLEEN A.; 17 Park Hill, Ealing, W. 5. (March, 1930.)
- GANGULI, S., C.M.Z.S.; Superintendent Zoological Gardens, Alipore, Calcutta, India. (June, 1931.)
- GARCKE, Mrs. C.; Ditton House, Near Maidenhead. (June, 1916.)
- GHIGI, il Prof. ALESSANDRO; Via D'Azeglio, Bologna, Italy.
- GIBBINS, WILLIAM B., F.Z.S.; Ettington, near Stratford-on-Avon. (June, 1895.) (*Hon. Mem.*)
- GIFFORD, E. W.; 1650 Vista Street, Oakland, California, U.S.A. (Aug., 1927.)
- GLADDING, WALTER, F.R.H.S., N.R.S.; Abbotsford Gardens and Aviaries, Cuckfield Road, Burgess Hill, Sussex. (Dec., 1926.)
- GLADSTONE, HUGH, M.A., F.Z.S., F.R.S.E., F.S.A.Scot.; Capenoch, Thornhill, Dumfriesshire. (Dec., 1932.)
- GLENISTER, A. G., F.Z.S., M.B.O.U.; The Barn House, East Blatchington, Seaford. (June, 1928.)
- GLOVER, PERCY H.; Broadlands, Fareham, Hants. (June, 1931.)
- GODDARD, H. E.; Birchcroft, Fetcham, near Leatherhead. (Feb., 1899.)
- GODDARD, Mrs.; Fernham House, Faringdon, Berks. (Feb., 1923.)
- GOLDER, H. G.; Hon. Secretary and Treasurer Norwich Alliance All England C.B.d., 37 Crown Road, Norwich. (June, 1931.)
- GOODHAND, H.; Ashton, Dudley Street, Grimsby. (June, 1929.)
- GOODHEART, Commander LEANDER McCORMICK, R.N.V.R. (Retd.), O.B.E., F.R.G.S.; Langley Park, Silver Spring, Maryland, U.S.A. (Dec., 1927.)
- GOSSE, Mrs. JAMES; 9 Park Terrace, Park Side, South Australia. (July, 1923.)
- GRAINGER, Capt. LIDDELL; Ayton Castle, Ayton, Berwickshire. (Aug., 1927.)
- GRAY, HENRY, M.R.C.V.S.; 85 Earls Court Road, W. 8. (June, 1906.)
- GRAY, J.; 25 Musgrave Gardens, Durham. (Dec., 1932.)

- GREEN, H. BAREHAM; The Godlands, Maidstone, Kent. (June, 1930.)
- GREEN, ROLAND, F.Z.S.; 84 Elgin Road, Seven Kings, Essex. (Sept., 1926.)
- GREENWOOD, HENRY R.; Kenwood, Bradford Rodd, Bingley, Yorkshire. (Nov., 1928.)
- GREGORY, Mrs.; Melville, Parkstone, Dorset. (Dec., 1901.)
- GREY, The Viscount of Falloden, K.G., F.Z.S.; Falloden, Christon Bank, Northumberland. (1913.)
- GROVE, Hon. Mrs. JULIAN. (March, 1917.)
- GRUNZIG, B. FRANK; 38 Livingstone Avenue, Avenel, New Jersey, U.S.A. (Jan., 1933.)
- GUBBAY, Mrs. MAURICE; 30 Hill Street, Berkeley Square, W. 1. (Feb., 1928.)
- GUILFORD, Miss H.; 23 Lenton Avenue, The Park, Nottingham. (Mar., 1903.)
- GUILLEMARD, Lady; 290 St. James Court, Buckingham Gate, S.W. 1. (Jan., 1928.)
- GULBENKIAN, C. S.; 51 Avenue d'Jéna, Paris xvie Paris. (Dec., 1908.)
- GURNEY, DANIEL; The Grange, North Runcton, King's Lynn. (July, 1927.)
- GURNEY, Miss DIANA; North Runcton Hall, King's Lynn. (July, 1927.)
- GURNEY, G. H., F.Z.S.; Keswick Hall, Norwich. (Sept., 1918.)
- HACHISUKA, The Hon. M.; Mita Shiba, Tokyo, Japan. (July, 1932.)
- HALL, T. WALTER; 6 Gladstone Road, Sheffield. (Nov., 1926.)
- HAMERTON, Col. A. E., C.M.G., D.S.O.; 1 Park Village West, Regent's Park, N.W. 1. (Dec., 1930.)
- HAMPE, ALEX.; c/o Mrs. Hillmann, Beekstrasse 1, Koenigsberg 1, Proussen, Germany. (Jan., 1927.)
- HANKEY, ALGERNON A., F.Z.S.; 71 Lissenden Mansions, Highgate Road, N.W. 5. (June, 1923.)
- HANSELL, FRANK A. D.; The Croft, Muthill, Perthshire. (May, 1925.)
- HARMAN, Miss KNOBEL, F.Z.S.; 27 Grosvenor Street, Grosvenor Square, W. 1. (Sept., 1928.)
- HARRINGTON, T. J. S.; 8 Ealing Park Gardens, Ealing, W. 5. (Jan., 1933.)
- HARVEY, P. T.; Farleigh, 170 King's Road, Westcliff-on-Sea, Essex. (Nov., 1926.)
- HASINGER, L. C.; "Whip Poor Willie" Farm, Indiana, Penn., U.S.A. (April, 1928.)
- HASTINGS, P. H.; Old Engine House, Milton, Portsmouth. (March, 1930.)
- HAWORTH, JOHN T.; 21 Bridge Street, Congleton, Cheshire. (Jan., 1928.)
- HEAL, C. H.; Stanley Villa, Paulton, Somerset. (Sept., 1932.)
- HERB, THOMAS; Croft House, Old Aylestone, Leicester. (April, 1914.)
- HELLEN, G. H. A.; 60 Fore Street, Bodmin, Cornwall. (Feb., 1928.)
- HINE-HAYCOCK, A. L.; Kittery Court, Kingswear, Devon. (Aug., 1932.)
- HIRST, ALBERT; 10 Talbot Avenue, Egerton, Huddersfield. (July, 1923.)
- HIRST, ARNOLD; P.O., Box 262 DD, Sydney, N.S.W., Australia. (April, 1929.)
- HOBOKEN, J. H. VAN; Rotterdamsche Ryweg, 193 Oberschie, Holland. (Oct., 1927.)
- HOLLAS, Mrs. K. E.; Red Scar, Grimsargh, near Preston. (Oct., 1922.)
- HOLLOND, Miss GLADYS M. B.; 5 Norfolk Crescent, Hyde Park, W. 2. (March, 1930.)

- HOLMES, Mrs. CARL; The Node, Codicote, Hitchin, Herts. (June, 1929.)
- HONE, Capt. T. N.; Highways, Bellingdon, Chesham, Bucks. (Nov., 1927.)
- HOPKINSON, EMILIUS, C.M.G., M.A., M.B.Oxon., D.S.O., F.Z.S.; Wynstay, Balcombe, Sussex. (Oct., 1906.)
- HOPSON, FRED C.; Porchester, Newbury. (March, 1897.)
- HORNE, I. S.; 505 Atlanta Street, Altadena, California, U.S.A. (Jan., 1928.)
- HORNE, DOUGLAS PERCY; 95 Oxford Gardens, W. 10. (Sept., 1928.)
- HORNER, Miss D.; Riccall, York. (Aug., 1931.)
- HORSBRUGH, C. B.; Blessington House, Hillsborough, Co. Down.
- HORSFORD, D. M.; Bosvathick, Penryn, Cornwall. (Aug., 1922.)
- HOUSDEN, JAMES B.; Brooklyn, 31 Cator Road, Sydenham, S.E. 26. (*Orig. Mem.*)
- HUCKLE, Mrs. GEORGE; The Bungalow, 14 Park Lane, Salisbury. (Jan., 1928.)
- HUMPHREYS, WALTER; Whitman House, Shottery, Stratford-on-Avon. (May, 1929.)
- HUMPHRIES, WALTER JOHN; 31 Booth Street, Manchester. (Feb., 1931.)
- HUNTING, J. CARLTON; Gaybird Pheasantry, Great Missenden, Bucks. (June, 1925.)
- HUTCHINSON, Miss ALICE; address unknown. (Aug., 1907.)
- IMAL, SETSUJI; 10 Hatagaya, Yoyohata, Toyotama-Gun, Tokyo-Fu, Japan. (Jan., 1928.)
- IMPARATI, Dr. Prof. EDOARDO; Ravenna, Italy. (Jan., 1932.)
- IRVINE, W. J.; 36 Ann Street, Belfast. (June, 1926.)
- IRVINE, Mrs. CHRISTINE; Blakeway, Allport Road, Bromborough, Cheshire. (March, 1930.)
- ISENBERG, A. H.; 286 Atherton Road, Menlo Park, California, U.S.A. (Aug., 1926.)
- JABOUILLE, M. P.; Gouvernement de la Cochinchine, Saigon, French Indo-China. (Feb., 1927.)
- JACKSON, W.; P.O. Box 326, San Mateo, California, U.S.A. (June, 1928.)
- JARVIS, Miss I. F.; The Old Manor, Salisbury. (Aug., 1930.)
- JEFFERSON, Miss D. D.; Beehive Cottage, Maidencombe, near Newton Abbot, S. Devon. (May, 1932.)
- JENNISON, GEORGE, M.A., F.Z.S.; Barwick Lodge, Disley, Cheshire. (April, 1918.)
- JOHNSON, F.; Downham Tavern, Bromley, Kent. (Jan., 1933.)
- JOHNSTON, ROBERT PERCY; West House, Wigton, Cumberland. (March, 1925.)
- JONES, H.; 146 Victoria Street, Blackburn, Lancs. (Jan., 1932.)
- KEATOR, BEVERLEY, R.F.D.; 12 Westport, Conn., U.S.A. (June, 1924.)
- KEMP, ROBERT; 5 Rose Hill, Lostwithiel, Cornwall. (March, 1926.)
- KERR, G. ERNEST; Harviestoun, Dollar, Scotland. (March, 1927.)
- KEWLEY, Mrs. M. A.; Old Court House, Whitchurch, Aylesbury, Bucks. (Sept., 1910.)
- KHALEK, J. A., B.Eng. (Sheff.); Engineer in the Egyptian State Railway Loco. Works, 105 Station Road, Ashford, Kent. (Dec., 1931.)

- KINGWELL, Miss FRANCES; Beechfield, S. Brent, S. Devon. (June, 1929.)
- KIRK, LAURENCE; The Sawyers, Lt. Cornard, Sudbury, Suffolk. (March, 1927.)
- KLAASEN, WM.; c/o Holland-America Line, 120 Market Street, San Francisco, Calif., U.S.A. (Jan., 1932.)
- KNIGHT, RONALD D.; 537 Welford Road, Leicester. (March, 1932.)
- KNOBEL, Miss E. MAUD, F.Z.S., M.B.O.U.; 86 Regents Park Road, N.W. 1. (Aug., 1916.) Hon. Mem. (*Hon. Secretary and Treasurer*).
- KUNTZ, P.; 289 Edmonton Street, Winnipeg, Manitoba, Canada. (May, 1930.)
- LADLAY, J. C.; Lindores, Fife, Scotland. (April, 1929.)
- LAMBERT, PAUL; Nawton, Yorkshire. (Sept., 1929.)
- LANCASTER, Mrs.; Sycescote, Streetly, Staffs. (Dec., 1923.)
- LANGHAM, Sir CHARLES, Bart.; Tempo Manor, Co. Fermanagh, Ireland. (July, 1932.)
- LAUDER, P.; 646 Barker Road, The Peak, Hong-kong, China.
- 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.)
- LEGALLET, Madame, F.Z.S.; La Villette, Saint-Pierre-lès Elbeuf (S. 1.), France. (April, 1918.)
- LEGENDRE, M.; 25 Rue La Condamine, 17e, Paris. (June, 1928.)
- LEMP, EDWIN A.; Cragnold, Kirkwood, Missouri, U.S.A. (March, 1929.)
- LESIE, CLEMENT M.; 22 Meadowside, Dundee. (Jan., 1932.)
- LESSE, MAURICE DE; Villa Muralto à Saint-Raphael, Var, France. (Jan., 1933.)
- LEWIS, ARTHUR, F.Z.S.; Brambleside, Ferndown, Dorset. (Jan., 1926.)
- LEWIS, E. H.; Box 192, Avalon, Catalina Island, California, U.S.A.. (Sept., 1928.)
- LEWIS, J. SPEDAN, F.Z.S.; 54 Orchard Court, Portman Square, W. 1. (Sept., 1924.)
- LIBRARY INTERNATIONAL INSTITUT D'AGRICULTURE, Villa Umberto, 1. Rome 10.
- LIGHTFOOT, J. G.; The Gables, Upton Heath, Chester. (May, 1927.)
- LILFORD, The Lady; Lilford Hall, Oundle, Northants. (Jan., 1898.)
- LINCOLN, E. R. W.; c/o *Cage Birds*, 4 Carmelite Street, E.C. 4. (July, 1932.)
- LINDSEY, Dr. H. O.; 527-8 Ricou-Brewster Building, Shreveport, La., U.S.A. (May, 1930.)
- LLOYD, Mrs.; Greenmore Hill, Woodcote, nr. Reading. (Jan., 1928.)
- LOCKEY, R.; Creighton House, Morpeth. (July, 1927.)
- LOCKYER, ALFRED; Tredenham, St. Blazey, Cornwall. (Dec., 1905.)
- LODGE, GEORGE, E., F.Z.S., Hawkhouse, Park Road, Camberley, Surrey. (May, 1923.)
- LOLY, VICTOR G.; Box 127, Anaheim, California, U.S.A. (June, 1928.)
- LONDONDERBY, The Marchioness of, D.B.E.; Mount Stewart, Co. Down, Ireland. (Féb., 1930.)
- LONGDON, Mrs. C. A.; Arretton, Epsom Road, Guildford. (Feb., 1909.)

List of Members

- LOSKEY, R. F.; *c/o* Commission de Irrigacion, Pimentel, Peru. (Jan., 1930.)
- LOVELACE, The Countess of; Wentworth House, Chelsea Embankment, S.W.3. (May, 1906.)
- LOWE, Rev. J. R.; S. Philip and All Saints Vicarage, Markesbury Avenue, Richmond, Surrey. (June, 1927.)
- LYNDE, Dr. ROY; Elendale, North Dakota, U.S.A. (June, 1931.)
- LYON, Capt. the Hon. MICHAEL; Glamis Castle, Glamis, Forfarshire. (May, 1927.)
- MCCANSE, DAVID; Strand Towr, Belfast. (July, 1932.)
- MCCORQUODALE, Mrs.; Cound Hall, Shrewsbury. (Jan., 1920.)
- MCCULLAGH, CRAWFORD; Lisimara, White Abby, Northern Ireland. (June, 1930.)
- MCCUTCHEAN, WILLIAM A.; 18 Selby Lane, Menlo Park, California, U.S.A. (Oct., 1931.)
- MCGREDDY, SAMUEL; Ashton, Portadown, Northern Ireland. (June, 1928.)
- MACK, WILLIAM; 26 Wasley Street, Mt. Lawley, Western Australia. (Feb., 1931.)
- MACKIE, PHILIP C.; Tudor Cottage, Orville Gardens, Headingley, Leeds. (Jan., 1926.)
- MACKLIN, C. H., M.R.C.S., L.R.C.P.; 23 Church Street, Amptill, Beds. (May, 1923.)
- MCKECHNIE, Dr. W. D.; 751 Granville Street, Vancouver, B.C., Canada. (Sept., 1931.)
- MCMILLAN, ARNOLD; Ivy House, New Romney, Kent. (March, 1930.)
- MCLINTOCK, Miss M. H.; The Grove, Catton Grove Road, Norwich. (July, 1927.)
- MCPHERSON, D.; Home Farm, Powick, Worcester. (Aug., 1931.)
- MAIRAUX, E. (Ingénieur Agronome I.A.G.); 41 Rue de la Ruche, Bruxelles, Belgium. (July, 1929.)
- MALLAM, Dr. D.; Oakfield, Station Road, Redhill, Surrey. (May, 1930.)
- MALONE, Mrs. M. L'ESTRANGE; West Lodge, Malton, Yorks. (Jan., 1902.)
- MALONE, Miss SHELAGH L'ESTRANGE; West Lodge, Malton, Yorks. (Dec., 1931.)
- MANCHESTER PUBLIC LIBRARIES; Charles Nowell, F.L.A. (Chief Librarian), Piccadilly, Manchester. (July, 1913.)
- MANWARING, Mrs.; Crossway, Knole Paddock, Sevenoaks, Kent. (Jan., 1933.)
- MARESI, POMPEO M.; 36 W. 44th Street, New York, N.Y., U.S.A. (June, 1924.)
- MARSDEN, J. W., F.Z.S.; Greylands, Lower Heysham, Lancs. (March, 1914.)
- MARSHALL, ARCHIBALD McLEAN, F.Z.S.; 6 Warrior Square Terrace, St. Leonards-on-Sea. (Jan., 1906.)
- MARTEN, L. H., O.B.E., F.Z.S.; Tilton, near Battle, Sussex. (June, 1930.)
- MARTIN, A.; Keswick Hall, Norwich. (Oct., 1930.)
- MARTIN, G. B.; Ravensdene, Grove Park, Kent. (April, 1930.)
- MARTINDALE, GERALD; The Marldon Aviaries, near Paignton, S. Devon. (Jan., 1933.)
- MATSUNAGA, YASUMORI; Kashima-Machi, Fujigun, Shizuoka-ken, Japan. (March, 1928.)

- MAXWELL, C. T.; 1 Shardcroft Avenue, Herne Hill, S.E. 24. (Dec., 1908.)
MAXWELL, P. H.; Eberley Hill, St. Giles, near Torrington, N. Devon.
(Oct., 1929.)
MAXWELL-JACKSON, Miss M.; Percy House, Scatton, Knaresborough, Yorks.
(Jan., 1913.)
MAYER, F. W. SHAW; "Wulfruna," 88 Concord Road, Homebush, Sydney,
Australia. (Aug., 1922.)
MAYNARD, C. GORDON; Springfield, Northaw, Potters Bar, Herts. (Aug.,
1928.)
MEADE-WALDO, E. G. B., F.Z.S., M.B.O.U.; Stonewall Park, Chiddingstone,
Kent. (Jan., 1895.)
METZGER, C. T.; 6312 So. Ashland Avenue, Chicago, Ill., U.S.A. (1923.)
MILLER, S. P.; Northend, Gloucester Road, Teddington.
MINTMAN, Dr. D.; 138 Stoke Newington Road, N. 16. (Aug., 1932.)
MOBLEY, LESLIE D.; 814 North Crane Street, Compton, California, U.S.A.
(Nov., 1932.)
MOODY, A. F.; Lilford, Barnwell, Peterborough. (July, 1926.)
MOORE, H.; Chapel Road, Tadworth, Surrey. (July, 1928.)
MOORE, ROBERT T.; Box 28a, Pasadena, California, U.S.A. (July, 1928.)
MORRISON, A.; The Oaks, Paddockhall Road, Haywards Heath, Sussex.
(Jan., 1932.)
MOSS, Mrs. W. E.; The Manor House, Sonning-on-Thames, Berks. (March,
1928.)
MOTTERSHEAD, GEORGE S.; Chester Zoological Gardens, Upton-by-Chester.
(Aug., 1929.)
MOUNTAIN, Capt. WALTON; Groombridge Place, Kent. (Feb., 1923.)
MURAT, PRINCE PAUL, F.Z.S.; Chateau de Rocheplatte, par Aulnay-la-
Rivière, Loiret, France. (July, 1923.)
MURPHY, JOHN (District Commissioner); Kipini, Tana River, Kenya Colony.
(Oct., 1932.)
MURRAY, Mrs. DEWAR; The Lodge Farm, Toddington, Bedfordshire.
(May, 1929.)
MUSEUM OF COMPARATIVE ZOOLOGY; Cambridge, Mass., U.S.A.
- NELSON, RICHARD, 735 Holderness Road, Hull. (April, 1925.)
NEWELL, Dr. D. S.; First National Bank Building, Connellsville, Pa., U.S.A.
(Oct., 1930.)
NEWMAN, T. H., F.Z.S., M.B.O.U.; Verulam, 46 Forty Avenue, Wembley
Park, Middlesex. (May, 1900.)
NEWMARCH, C. T., F.Z.S.; Gamage's Ltd., Holborn, W.C. (Aug., 1915.)
NICOL, HAMISH, F.R.C.S., F.Z.S.; Hillside, Christchurch Road, Hampstead,
N.W. 3. (Jan., 1926.)
NICHOLSON, ALFRED E.; Blenheim, Forthview Terrace, Blackhall,
Edinburgh. (Feb., 1925.)
NICHOLSON, JOHN R.; Edenvale, Weardale Place, Grange Estate,
Stockton-on-Tees. (Feb., 1931.)
NORCROSS, HERBERT; Normanhurst, Mount Road, Middleton, Lancs.
(March, 1930.)
NORRIS, H. M.; Lowood, 14 View Road, Highgate, N. 6. (Oct., 1931.)

- OBERHOLSER, HARRY C. ; 2805 18th Street, N.W. Washington, D.C., U.S.A. (Oct., 1903.)
- Ogilvie, Mrs. Brenda ; Bonaly Tower, Colinton, Midlothian. (May, 1927.)
- ORMSBY, Miss E. M. ; Belmont Bungalow, Forest Lane, Harrogate. (Nov., 1927.)
- OSTREHAN, CLEMENT ; Kington Rectory, Worcester. (Jan., 1928.)
- 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.)
- PARKER, WINDSOR D. ; The Grange, Woolpit, Suffolk. (March, 1930.)
- PASS, GERALD V. DE ; The Kennels, Satwell, near Henley-on-Thames. (April, 1930.)
- PATRICK, LEON, M.D. ; Smith Grote Building, Orange, California U.S.A. (Dec., 1926.)
- PATTERSON, A. J. ; Ripon, Ruxley Lane, Ewell. (Jan., 1933.)
- PATTON, J. V. ; Hollister, California, U.S.A. (Oct., 1930.)
- PEART, Miss ; Edgarley, Broomfield Avenue, Palmers Green, N. 13. (March, 1927.)
- PEERS, E. R. ; Tintern, Gloucester Road, New Barnet. (Rejoined Jan., 1932.)
- PEMBLETON, THOMAS ; Sudbury Aviaries, 120 Watford Road, Wembley, Middlesex. (March, 1930.)
- PETERSON, Mrs. ; Applehill, Kelling, near Holt, Norfolk. (July, 1929.)
- PHILLIPS, Dr. JOHN C. ; Wenham, Mass., U.S.A. (March, 1910.)
- PICKFORD, RANDOLPH JOHN ; Etherley Lodge, Nr. Bishop Auckland. (Feb., 1903.)
- PIERRE, Mrs. LILLIAN C. ; Hotel Pierre, Fifth Avenue and 61st Street, New York City, U.S.A. (April, 1932.)
- PIKE, L. G., F.Z.S. ; King Barrow, Wareham, Dorset. (1912.)
- PLATH, KARL ; 2847 Giddings Street, Chicago, U.S.A. (July, 1924.)
- PLEDGE, Miss BERYLL ISABEL DE ; 9 Beaufort House, Beaufort Street, Chelsea, S.W. 3. (June, 1932.)
- POLE, Lady ; Calcot Place, Reading. (Jan., 1933.)
- POLTIMORE, Lady ; Court Hall, North Molten. (Jan., 1926.)
- PORTER, SYDNEY, F.Z.S. ; The White Gates, Stenson Road, Derby. (April, 1920.)
- PORT, Miss J. ; Twisly, Catsfield, Battle, Sussex. (Oct., 1928.)
- POTTER, BERNARD E., M.B., M.R.C.S., L.R.C.P., F.Z.S. ; 17 Portland Place, W. (Mar., 1914.)
- POTTER, W. H. ; Whetherill, Fitzillian Avenue, Harold Wood, Essex. (July, 1926.)
- 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.*)
- PYMAN, Miss E. E. ; West House, West Hartlepool. (June, 1919.)
- QUINCEY, R. S. DE Q. ; The Vern, Bodenham, Hereford. (April, 1913.)

- RATTIGAN, Capt. G. E.; 6 Hyde Road, Paignton, S. Devon. (Aug., 1908.)
- REEVE, Capt. J. S., F.Z.S.; Leadenham House, Lincoln. (March, 1908.)
- REVENTLOW, AXEL; Zoological Garden, Kobenhavn F., Denmark. (Jan., 1928.)
- REYNOLDS, ALFRED W., L.D.S., R.C.S.(Eng.); 12a Grosvenor Street, W. 1. (July, 1932.)
- RHEAM, G. W.; Yewhurst, Freshfield, Liverpool. (March, 1928.)
- RICHARDS, H.; 11 Mount Pleasant, Redruth, Cornwall. (March, 1929.)
- RICHARDSON, Miss AURIL; Amwellbury, near Ware, Herts. (Jan., 1932.)
- RIEVELEY, JOHN W.; St. Oswald's Gate, Fulford, York. (June, 1929.)
- RIX, G. W.; Lime Tree House, Stone, Staffs. (Jan., 1933.)
- ROBERTS, Captain G.; Lillingstone-Dayrell House, Buckingham. (July, 1930.)
- ROBERTS, H.; Bagatelle, Market Harborough. (Aug., 1927.)
- ROBERTS, Miss IDA; Beaumaria, Montpelier Street, Hobart, Tasmania. (Jan., 1923.)
- ROBINSON, Miss ELSIE; Oatlands, Camberley, Surrey. (Sept., 1929.)
- 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, Col. J. M., D.S.O., F.Z.S., M.B.O.U. (late Royal Dragoons); Riverhill, Sevenoaks. (April, 1907.)
- ROGERS, Mrs.; Keston, Sea Road, Barton-on-Sea, Hants. (Feb., 1925.)
- ROOPER, Mrs. F.; 11 Maze Hill, St. Leonard's-on-Sea. (Aug., 1924.)
- ROTSCHILD, JAMES DE; 46 Park Street, W. 1. (March, 1923.)
- ROTSCHILD, LIONEL DE; 18 Kensington Palace Gardens. (Nov., 1913.)
- ROUSE, R. F.; Mountlands, 64 Westfield Road, Edgbaston, Birmingham. (Nov., 1932.)
- RUDKIN, FRANCIS H.; R.L. Box 31, Fillmore, California, U.S.A. (May, 1929.)
- RUMSEY, LACY; 23 Rua de Serpa Pinto, Villa Nova de Gaya, Oporto, Portugal. (April, 1919.)
- RUSHWORTH, Mrs. CYNTHIA; Beechfield, Walton-on-Thames, Surrey. (Aug., 1932.)
- RUSSELL, Sir CLAUD, K.C.M.G.; The Foreign Office, Whitehall. (Jan., 1930.)
- RYAN, B. J.; Executive Engineer, P.W.D., Jaipur State, Rajputana, India. (Aug., 1926.)
- RYAN, G. E.; 31 Porchester Terrace, Hyde Park, W. (June, 1931.)
- RYCROFT, Mrs.; Stratton Rise, Cirencester, Glos. (Oct., 1927.)
- ST. QUINTIN, WILLIAM HERBERT, F.Z.S., M.B.O.U.; Scampston Hall, Malton, Yorks. (*Orig. Mem.*)
- SALTER, FRANK H.; 5 The Crescent, Scarborough. (April, 1930.)
- SCHÜTZE, EDUARD; Eystrup, Weser, Germany. (Feb., 1927.)
- SCHUYL, D. G.; Kralingscheweg 332, Rotterdam, Holland. (Jan., 1914.)
- SLATER, W. L., M.A., F.Z.S.; 10 Sloane Court, S.W.3. (Aug., 1904.)
- SCOTT, Capt. B. HAMILTON; Drayton, Foxhall Road, Rushmere St. Andrew, Ipswich. (1912.)

- SCOTT, C. B.; Whitton, New South Wales, Australia. (Aug., 1932.)
- SCOTT-HOPKINS, Capt. C.; Low Hall, Kirby Moorside, Yorks. (July, 1928.)
- SCRIBE, Monsieur RENÉ; 38 Coupure, Gand, Belgium. (Oct., 1925.)
- SEPPINGS, Lieut.-Col. J. W. H., F.Z.S.; c/o Lloyd's Bank, Ltd., Cox & King's Branch (K. Section), 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.) (*Editor.*)
- SEWELL, Miss D.; Blake Dene, Parkstone, Dorset. (Jan., 1933.)
- 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.)
- SHERIFF, A., F.Z.S.; Edge Hill, 8 Ranulf Road, N.W. 2. (March, 1923.)
- SILVER, ALLEN, F.Z.S.; 18 Baneswell Road, Newport, Mon.
- SIMPSON, ARCHIBALD; Stone Gappe, Bardsey, Yorks. (Feb., 1901.)
- SIMPSON, H. W.; 6 Barry Road, Stonebridge, Willesden, N.W. 10. (Nov., 1924.)
- SIMSON, Capt. RUPERT, O.B.E.; Rickham, Bray, Berkshire. (July, 1932.)
- SIBSONS, H. P.; 8 Potter Street, Worksop, Notts. (April, 1927.)
- SLADE, G. J.; Shenley, Wilton Crescent, Southampton. (Feb., 1915.)
- SMITH, A. GORDON; c/o S. Smith & Sons (Motor Accessories), Ltd., Cricklewood, N.W. (March, 1931.)
- SMITH, A. ST. ALBAN, F.Z.S.; "Greenways," Kingwood, Henley-on-Thames. (Feb., 1929.)
- 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, W. W.; Cranmer, Dower Avenue, Wallington, Surrey. (April, 1920.)
- SNELL, Mrs. NORRIS; Redcote, Paget Road, Ipswich. (Feb., 1928.)
- 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.)
- SOWDEN, NORMAN; Kirklands, Menston, near Leeds. (Feb., 1930.)
- SPALDING, Mrs. KEITH; Maryland Hotel, Pasadena, California, U.S.A. (July, 1929.)
- SPENCER, HENRY; Yew Court, Scalby, Yorkshire. (Sept., 1928.)
- SPRAWSON, EVELYN; M.C., M.R.C.S., F.Z.S., Cranford, Welcomes Road, Kenley, Surrey. (June, 1923.)
- SPROSTON, Mrs.; Elm House, Nantwich, Cheshire. (June, 1917.)
- SPURWAY, N. B.; Glenwood, Stonegate, Leicester. (April, 1923.)
- STANDEVEN, J.; Heath Bank, Halifax. (Sept., 1930.)
- STARK, J.; Woods Cottage, Haddington, Scotland. (Jan., 1924.)
- STEFANI, Herr HANS; 48 Kanalstrasse, Neuss-am-Rhein, Germany. (March, 1931.)
- STEPHENS, JOHN; Kingswood Chase; Hindhead, Surrey. (Sept., 1932.)

- STEVENS, RONALD; Chapel Farm, Elmley Castle, Pershore, Worcestershire. (Feb., 1932.)
- STEYNE, ALAN N.; American Vice-Consul, American Consular Service, Hamburg, Germany. (Sept., 1932.)
- STIGAND, MRS. PEARSALL; Antica Casa Colonica, 19 Via Augusto Baldesi, San Gervasio, Florence, Italy. (Dec., 1932.)
- STILEMAN, GERALD R.; Chelsea Cottage, Hockering Gardens, Woking, Surrey. (Rejoined Feb., 1932.)
- STOKES, Capt. H. S., F.Z.S., M.B.O.U., M.C.; Longdon, Stafford. (Oct., 1922.)
- STOREY, Mrs. A.; Hawling Manor, Andoverford, Glos. (Nov., 1912.)
- STROMBI, Miss DORA A.; 26 High Street, Brechin, Angus. (April, 1930.)
- SUGGITT, ROBERT; Suggitt's Lane, Cleethorpes, Grimsby. (Dec., 1903.)
- SUMMERSKILL, C. C.; 19 Alma Road, Winton, Bournemouth. (March, 1925.)
- SUTCLIFFE, ALBERT, F.Z.S.; Beechfield, Grimsby. (Feb., 1906.)
- SWEETNAM, Rev. J. E.; The Vicarage, Taunton. (Feb., 1931.)
- SYKES, JOHN; Home Park Poultry Farm, Musselburgh, Midlothian. (Jan., 1912.)
- SYMES, IVER T. J.; Bridge House, Tadley, Hants. (July, 1930.)
- TAKA-TSUKASA, PRINCE NOBUSUKE, F.Z.S.; Kamimeguro, Meguro, Japan. (Feb., 1914.)
- TALBOT-PONSONBY, C. G.; Glebe House, Lindfield, Hayward's Heath, Sussex. (May, 1927.)
- 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.; The Place House, Peasmarsch, Rye, Sussex. (1912.)
- TEAGUE, P. W.; The Knoll, Kilpeck, near Hereford. (June, 1930.)
- TENNANT, Hon. STEPHEN; Wilsford Manor, Salisbury, (April, 1926.)
- TESCHEMAKER, W. E., B.A.; Ringmore, Teignmouth, Devon. (May, 1904.)
- THOM, ALFRED A.; Whitewell Lodge, Whitechurch, 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.)
- THOMSON, Dr.; Bankstown, near Sydney, Australia. (Jan., 1926.)
- THOMPSON, Mrs. A. C.; Glaisdale, Ely, Cambs. (Dec., 1924.)
- THOMPSON, Capt. G. W.; Ardwell, Steel Cross, Crowborough. (March, 1930.)
- THORNTON, JOHN ROBERT; 9 Moorhead Terrace, Shipley, Yorkshire. (July, 1930.)
- THORPE, D. LOSH, M.B.O.U., F.Z.S.; The Aviaries, Loshville, Etterby Scarf, Carlisle. (Aug., 1930.)
- TODD, HORATIO, J.P., M.P.S.I., F.C.S.; Bromleigh, Neill's Hill, Belfast. (Aug., 1924.)
- TOMLINSON, MALCOLM R.; Shepherd's House, Inveresk, Midlothian. (April, 1913.)
- TOWNSEND, S. M.; 3 Swift Street, Fulham, London, S.W. (*Orig. Mem.*)
- TRANSVAAL MUSEUM; The Director, Transvaal Museum, Pretoria. (Jan., 1921.)

List of Members

- TRAVERS, Mrs. J. ; Windmill Cottage, Mayfield, Sussex. (Dec., 1903.)
 TURNER, A. L. ; 476 Pitt Street, Sydney, N.S.W., Australia. (Oct., 1930.)
 TURNER, H. B. ; Malverleys, near Newbury. (April, 1928.)
- UNIVERSITY CLUB LIBRARY ; 1 West 54th Street, New York City, U.S.A.
 (April, 1932.)
 UPPINGHAM SCHOOL ; the school library, the Old School House, Uppingham.
 (Nov., 1920.)
- VALENTINE, ERNEST ; 7 Highfield, Workington. (May, 1899.)
 VENNER, Rev. P. K. ; Gosfield Vicarage, Halstead, Essex. (April, 1923.)
 VENNING, H. C. ; Willett, Bicknaller, Taunton. (Jan, 1927.)
 VIERHELLER, GEO. P. ; St. Louis Zoological Park, St. Louis, Mo., U.S.A.
 (March, 1928.)
 VILLIERS, Mrs. T. L. ; Steuart House, Colpetty, Colombo, Ceylon. (Feb.,
 1927.)
 VIVIAN, Hon. Mrs. ; Regina Hotel, Monte Carlo, France. (Aug., 1928.)
 VLASTO, Mrs. ; Binfield Park, Bracknell, Berks. (March, 1927.)
 VOIGT, WALTER ; 13, Feodorastrasse, Jena, Germany. (Jan., 1926.)
- WALKER, Miss H. K. O. ; Chesham, Bury, Lanca. (Feb., 1895.)
 WALL, Mrs. ; Meadowside, Marlborough, Wilts. (Nov., 1924.)
 WATKINS, I. R. HOLMES ; Shirley, Griffithstown, Monmouthshire. (May,
 1932.)
 WATSON, Miss ; Field Burcote, Towcester. (Jan., 1933.)
 WATSON, A. D. ; c/o Feather Hill Ranch, 1595 East Valley Road, Santa
 Barbara, California, U.S.A. (June, 1930.)
 WATTS, C. H. ; Kilrenny, 94 Blinco Grove, Cambridge. (Nov., 1931.)
 WAUD, Capt. L. REGINALD, F.Z.S., M.B.O.U. ; Bradley Court, Chieveley, near
 Newbury. (May, 1913.)
 WAXMAN, A. E. WRIGHT DE BERRI ; Maitai, Murray Road, Beecroft, N.S.W.
 WEAVER, G. ; 63 Minster Road, Stourport. (Jan., 1933.)
 WEBB, C. S. ; Fairmeade, Canterbury Road, Lyminge, near Folkestone,
 Kent. (March, 1928.)
 WEBB, PATRICK B. ; Barney's Brae, Randalstown, Co. Antrim, N. Ireland.
 (Aug., 1929.)
 WEBSTER, M. D. ; 90 Kings Street, Inverbervie by Montrose. (April, 1931.)
 WESTMACOTT, Lady ; 6 rue Bel Respiro, Monte Carlo, Principanti de Monaco.
 (Dec., 1928.)
 WESTMINSTER, Her Grace the Duchess of ; 2 Davies Street, W. 1. (June,
 1932.)
 WHARTON-TIGAR, Mrs. N. ; 67 Haverstock Hill, Hampstead, N.W. 3. (July,
 1932.)
 WHIPHAM, Mrs. U. F., F.Z.S. ; 34 Westbourne Park Road, W. 2 ; and St.
 Loyes, Heavitree, Exeter. (July, 1921.)
 WHITE, JOHN YORK ; Chaseley, 22 Willett Way, Petts Wood, Kent. (Jan.,
 1925.)
 WHITFIELD, DAVID ; Sycamore Vale, Ivy Lane, Macclesfield. (Jan., 1931.)

- WHITLEY, HERBERT, F.Z.S.; Primley Hill, Paignton, S. Devon. (Sept., 1923.)
- WHITTINGHAM, W. NEVILLE; Stonefall Hall, near Harrogate. (Feb., 1928.)
- WILCOCK, JOHN, B.A., M.B.O.U.; Hill Crest, Weston Coyney, Stoke-on-Trent. (April, 1931.)
- WILDEBOER, Dr. H. G.; Burnbrae, Holderness Road, Hull. (1924.)
- WILKINS, A.; Rendcombe, Chesham, Bucks. (April, 1930.)
- WILKINSON, Mrs.; The Hollies, Royston, Herts. (Oct., 1932.)
- WILLFORD, HENRY; Sans Souci, Havenstreet, Ryde, Isle of Wight. (Nov., 1907.)
- WILLIAMS, SIDNEY, F.Z.S.; 19 Beechdale, Winchmore Hill, N. 21. (Oct., 1910.)
- WILLIAMSON, T. F. M.; 339 McGee Avenue, Mill Valley, California, U.S.A. (Aug., 1917.)
- WILSON, AND., F.Z.S.; 233 Argyle Street, Glasgow. (April, 1927.)
- WILSON, Mrs. MAITLAND; Bagshot Heath, Camberley, Surrey.
- WINTER, DWIGHT; Center and Negley Avenue, Pittsburgh, Pa., U.S.A. (1922.)
- WINTON, Dr. R. M.; Citrus Exchange Building, Tampa, Florida, U.S.A. (July, 1928.)
- WITHINGTON, Mrs.; Fringford Lodge, Bicester. (March, 1932.)
- WOLF, M. W.; Theresienstrasse 5 III, Dresden, N. 6, Germany. (Oct., 1931.)
- WOOD, Dr. CASEY, F.Z.S.; McGill University Library, Montreal, Canada. (Sept., 1922.)
- WOOD, Mrs. MURIEL; 8 Lambolle Road, N.W. 3. (July, 1927.)
- WOODCOCK, GEORGE; Bingwood, Hillside, Green Curve, Banstead, Surrey. (Jan., 1933.)
- WORKMAN, WILLIAM HUGHES, F.Z.S., M.B.O.U.; Lismore, Windsor Avenue, Belfast. (May, 1903.)
- WRIGHT, R. N.; 24 Clinton Road, Redruth, Cornwall. (Feb., 1930.)
- YOUNGER, Major CHARLES ARTHUR JOHNSTON (Retired); 85 St. Thomas's Street, Portsmouth. (July, 1932.)
- YOUNGER, Mrs. CHARLES; 85 St. Thomas's Street, Portsmouth. (Feb., 1932.)
- ZAR, TSEDING DAVID; 678 Avenue Haig, Shanghai, China. (Nov., 1932.)
- ZOOLOGICAL SOCIETY OF PHILADELPHIA; 34th Street, and Girard Avenue, Philadelphia, Penn., U.S.A. (Jan., 1920.)
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THE AVICULTURAL SOCIETY OF VICTORIA

LIST OF AFFILIATED MEMBERS

- AISBET, W. J. ; Burwood Poultry Farm, Norwood Road, Burwood, Victoria.
 BAIN, J. A. ; 84 Cameron Street, Launceston, Tasmania.
 BELL, J. R. ; 218 Latrobe Street, Melbourne, C. I., Victoria.
 BICKERTON, HUGH ; 6 Hopetoun Road, Toorak, S.E. 2, Melbourne, Victoria.
 BOBBRIDGE, H. M. ; Yangarnook, Toolern Vale, Victoria.
 BOWMAN, DE. W. A. ; 401 St. George's Road, North Fitzroy, N. 7, Victoria.
 BRAY, F. I. ; Chief Secretary's Office, Perth, Western Australia.
 CLENDINNEN, Dr. L. J. ; (*Hon. Secretary*) ; 105 Collins Street, Melbourne, C. I., Victoria.
 COLE, F. C. ; Barkley Street, Mordialloc, S. 12, Victoria, Australia.
 CRAIG, W. ; 8 Elizabeth Street, Melbourne, C. I., Victoria, Australia.
 CUMMING, W. ; 65 William Street, Melbourne, C. I.
 DAVIES, Dr. F. L. ; High Street, Malvern, S.E. 3, Melbourne.
 DONALD, Dr. B. P. ; Wanacknabeal, Victoria, Australia.
 HELLMAN, J. ; 137 Murrumbeena Road, Murrumbeena, Victoria.
 JACQUES, ALAN ; Balwyn Road, Balwyn, E. 8, Melbourne.
 LANGDON, W. F. ; Hawthorn Road, Caulfield, S.E. 8, Melbourne.
 LAW, J. L. G. ; 306 St. Kilda Street, Brighton, S. 5, Victoria.
 LORY, F. ; 393 Barker's Road, Kew, E. 4, Victoria, Australia.
 LUXTON, T. ; 329 Glenferrie Road, Malvern, S.E. 4, Melbourne.
 MUIR, E. H. ; Astor House, 108 Collins Street, Melbourne, C. I., Victoria.
 MCPHERSON, W. E. ; 43 Mount Albert Road, Canterbury, E. 7, Victoria, Australia.
 MOORE, — ; 375 Upper Heidelberg Road, Ivanhoe, Victoria, Australia.
 NAIRN, Mr. ; o/o Modern Art Co., Field Street, Clifton Hill, N. 8, Victoria.
 NIALL, K. M. ; 125 William Street, Melbourne, C. I., Victoria, Australia.
 PHILP, R. ; Douglas Street, Malvern, S.E. 5, Victoria.
 PICKING, DOUGLAS ; Dromana, Victoria.
 PITTOCK, C. E. ; Geelong Slate Works, Ryrie Street, Geelong, Victoria.
 PLEASANCE, N. ; Hopetoun Road, Toorak, S.E. 2, Melbourne.
 PRATT, J. C. ; Lansell Road, Toorak, S.E. 2, Melbourne, Victoria.
 STOBIE, GRAEME ; 405 Collins Street, Melbourne, C. I.
 TUCKER, E. R. ; 22 Howitt Road, Caulfield, S.E. 7, Victoria.
 VINCENT, E. ; 28 Normanby Avenue, Caulfield, S.E. 7, Victoria.
 WEPFNER, S. ; 84 St. Georges Road, Elsternwick, S. 4, Victoria.

THE AVICULTURAL SOCIETY OF SOUTH AUSTRALIA
(ADELAIDE)

LIST OF AFFILIATED MEMBERS

- BENS, J. E. ; 2 Laureate Street, Pt. Pirie West, South Australia.
 BENNETT, C. E. ; Park Terrace, Parkside, South Australia.
 BURFIELD, C. C. ; 43 Lynton Avenue, Millwood Estate, South Australia.
 DUNSTAN, Dr. ; Woodville Road, Woodville, Adelaide, South Australia.
 HARVEY, S. (*Hon. Secretary*) ; St. Austell, Burnside Road, Kensington Gardens, Adelaide, South Australia.
 HUMBLE, C. W. ; 86 Rundle Street, Adelaide, South Australia.
 KITCHEN, F. C. ; P.O., Box 16B, Broken Hill, N.S.W., Australia.
 LEWIS, G. ; c/o A. & E. Lewis, Pirie Street, Adelaide, South Australia.
 LIENAU, C. H. A. ; Newbury, 23 Victoria Avenue, Unley Park, South Australia.
 MINCHIN, R. ; Zoological Gardens, Adelaide, South Australia.

THE AVICULTURAL SOCIETY OF WESTERN AUSTRALIA

LIST OF AFFILIATED MEMBERS

- HIGHAM, H. V. (*Secretary*) ; Dawne, 6 Karoo Street, South Perth, Western Australia.

THE AVICULTURAL SOCIETY OF NEW ZEALAND

LIST OF AFFILIATED MEMBERS

- AINSWORTH, A. ; 7 Samoa Street, Kilbirnie, Wellington, N.Z.
 ALLAN, GEO. H. ; 14 Bridgman Street, St. Kilda, Dunedin, N.Z.
 ALLEN, W. ; Helensville South, N.Z.
 ANDERSON, A. ; St. John's Hill, Wanganui, N.Z.
 ANDERSON, Mrs. E. ; Roseberry Poultry Farm, Birkenhead, Auckland, N.Z.
 Auckland City Council ; Mr. GRIFFIN, Representative, Auckland War Memorial Museum, Auckland, N.Z.
 BEDFORD, E. ; 96 Clomburn Road, Remuera, Auckland, N.Z.
 BLACK, J. W. ; c/o Cossens & Black, Ltd., Princes Street, Dunedin, N.Z.
 BLAKEY, H. P. ; Dentist, Broadway, Newmarket, Auckland, N.Z.
 BULL, H. B. J. ; 1 Erin Street, One Tree Hill, Auckland, N.Z.
 BULLOCK, Mrs. E. ; 6 Clifton Road, Hamilton, N.Z.
 CAMPBELL, Mrs. J. P. (*President*) ; 16 Arney Road, Remuera, Auckland, N.Z.
 COLLINS, Mrs. G. ; 433 South Road, New Plymouth, N.Z.
 CORBET, G. M. (*Vice-President*) ; c/o J. G. Ward & Co., P.O. Box 183 ; Invercargill, N.Z.
 CROWTHER, W. J. ; Remuera Road, Remuera, Auckland, N.Z.
 CRUICKSHANK, R. ; 9 Westbourne Road, Remuera, Auckland, N.Z.

A.c. No. 437
12/12/06



- EDWARDS, HOWARD (Dental Surgeon); Wanganui, N.Z.
 FORSTER, ROBT.; 401 Hastings Road, Hastings, H.B., N.Z.
 FRITH, A.; Hinaiu Street, Frankton Junction, N.Z.
 GILFILLAN, Mr. S. E.; 3 Muritai Road, Takapuna, Auckland, N.Z.
 GRAVESON, T.; 14 Oakland Road, Mt. Eden, Auckland, N.Z.
 HENLEY, A. E.; 66 Victoria Street West, Auckland, N.Z.
 HUTCHINSON, G. ROLAND (*Hon. Secretary and Treasurer*); 5 Keith Avenue, Remuera, Auckland, N.Z.
 JONASSEN, N.; Pollen Street, Thames, N.Z.
 JONES, Mrs. E.; 337 Victoria Street, Hamilton, N.Z.
 JUST, A. W.; 30 College Street, W., Palmerston N., N.Z.
 KENT, Miss T. R.; 88 Manchester Street, Christchurch, N.Z.
 KINLEY, WM.; c/o Northcote Vehicular Ferry Office, Beaumont Street, Freeman's Bay, Auckland, N.Z.
 LEECE, Mrs.; 3 Reimers Avenue, Edendale, Auckland, N.Z.
 LUND, G. (*Auditor*); 162 Calliope Road, Devonport, Auckland, N.Z.
 MAINLAND, A.; 29 Hollywood Avenue, Auckland, N.Z.
 MARTIN, J. T.; c/o Box 24, Bluff, N.Z.
 MATTHEWS, W. N.; c/o Epsom Tramway Barn, Epsom, Auckland, N.Z.
 MCKAY, D.; P.O. Box 256, Hamilton, N.Z.
 OSBORNE, E. J.; 11 Airedale Street, Auckland, N.Z.
 PARKER, T.; 1 Oakley Road, Hamilton, N.Z.
 PASCOE, J. C.; Thames Road, Paeroa, N.Z.
 PINFOLD, Mrs. C. H.; Cr. Victoria and Princes Streets, Hamilton, N.Z.
 POTTER, S. D.; 53 Sunglen Road, off Dominion Road, Auckland, N.Z.
 PRATT, DOUGLAS; Sharpe Road, Epsom, Auckland, N.Z.
 PRISCOTT, JOHN; Hood Street, Hamilton, N.Z.
 SHEARER, E.; 18 Allendale Road, Mt. Albert, Auckland, N.Z.
 SPENCER, Mrs. L. C.; 11 Dilworth Avenue, Remuera, Auckland, N.Z.
 STRANG, ALEX R.; Frankleigh Park, New Plymouth, N.Z.
 SUTHERLAND, Mrs. B.; Holmwood, Karori, Wellington, N.Z.
 TATTERSFIELD, F.; "Puriri Puke," Allendale Road, Mt. Albert, AUCKLAND, N.Z.
 VERRAN, J., Hauraki Street, Birkenhead, Auckland, N.Z.
 WADHAM, P.; Chudleigh Estate, Waihou, N.Z.
 YOUNG, ROBT.; Tahora Avenue, Remuera, Auckland, N.Z.

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 time 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 initialled 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.



Giant Pitta.
Pitta maxima

THE
AVICULTURAL MAGAZINE

THE JOURNAL OF THE
AVICULTURAL SOCIETY

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THE EARLY DAYS OF THE AVICULTURAL
SOCIETY

By AN ORIGINAL MEMBER

Origins are always interesting, and the fact that the Avicultural Society will in 1933 enter upon its fortieth year, points to the desirability of putting upon record its early beginnings, while any one of the dwindling band of Original Members survives to do it.

The Society is now a large and important one, but it began in a small way. It was founded in 1894 by two young men (C. S. Simpson and H. R. Fillmer) who were intimate personal friends and who had recently entered upon their professional careers in medicine and law respectively. They had been bird enthusiasts from childhood, and they, especially Simpson, had had a fair amount of experience in the care of a number of foreign species, but it is doubtful whether they would have succeeded in making the Society a success without the co-operation of two older and much more experienced bird-keepers, Mr. Reginald Phillipps and Dr. A. G. Butler, both of whom were not only experts on the subject, but had the gift of writing interestingly about it.

For some years there had been in existence a small Society called the "United Kingdom Foreign Cage Bird Society", which issued a little monthly publication the contents of which were contributed by the members. This was undoubtedly the prototype of the

Avicultural Society. The originator of this U.K.F.C.B.S. was Mr. William Osbaldeston, who was also, during its whole existence, hon. secretary and editor of its "Notes". He was a north countryman, with plenty of zeal and energy, but of rather scanty education and without journalistic ability. The paper issued under his editorship often recorded interesting facts, and was not deficient in humour of the unconscious sort, but it had very obvious limitations. Messrs. Simpson and Fillmer offered to assist Mr. Osbaldeston in his editorial work, but their offer was declined. They then felt at liberty to start a new Society, with the knowledge that it must inevitably supersede the U.K.F.C.B.S., which it speedily did. The old Society was formally absorbed into the Avicultural in June, 1895. But all honour belongs to Mr. Osbaldeston for originating an idea which he could not personally develop.

There was another society, the "Cage Bird Club", which had an influence on the beginnings of the Avicultural Society. It had been formed a year or two earlier, its originator and inspirer being Mr. W. H. Betts. The purpose of the Cage Bird Club was to provide a meeting ground for the more cultured section of bird-keepers. It had a guinea subscription, held its meetings in a high-class London hotel, and printed its *Transactions* for circulation amongst its members.

Unfortunately its appeal was very limited and it was inevitably exposed to accusations of snobbishness. In spite of the ability with which the Club was managed by Mr. Betts, its life was short, and probably the Avicultural Society contributed to its downfall by drawing away its foreign bird section of members.

The founders of our Society were successful in getting the Countess of Bective to be the first President, and the Hon. and Rev. F. G. Dutton (a well-known authority upon Parrots) to be Vice-President. A provisional Committee was formed, consisting of twelve ladies and gentlemen besides the Hon. Secretary, C. S. Simpson, and the Hon. Treasurer, H. R. Fillmer. Among the twelve, besides Dr. Butler, Mr. Phillipps, and Mr. Betts, mentioned above, were the following: Mr. H. T. T. Camps, who for many successive years judged the Parrot section at the Crystal Palace Show and who was the owner of a large and choice collection of the larger Parrots and Cockatoos. He was a

fine type of East Anglian yeoman. Mr. W. Swaysland, the author of the British bird section of Cassell's well-known *Canaries and Cage Birds*. And Dr. G. C. Williamson, the art critic, who kept a number of species of Owls, but who is better known as a writer on subjects other than aviculture.

A circular was issued announcing the formation of the Society, from which I quote the following. This circular bore the names of all the Committee.

"The number of persons, who, in this country, have taken up the pursuit of Aviculture (that is, the keeping and breeding of Birds) has very largely increased of late years, and it is believed that a Society which should afford its members a means of interchanging, and so increasing, their knowledge of this most interesting pursuit, and of placing this knowledge on a more scientific basis, would serve a useful purpose.

"The principal means by which it is proposed to accomplish this end is by the publication of a monthly magazine, which will be devoted chiefly to the habits and proper treatment of birds in captivity, but will also deal with their natural history in a state of freedom, and will introduce points of scientific ornithology in so far as they bear on practical aviculture."

I think it must be admitted that the foundations of the Society were well and truly laid, and that its purpose and object, as outlined in the circular, have been adhered to with but little alteration. There has been great, very great, development and improvement, but no revolutionary change has been necessary.

The original subscription to the Society was 5*s.*, with an entrance fee of 2*s.* 6*d.* The monthly copies of the Magazine were priced at 6*d.* each.

The first volume of the AVICULTURAL MAGAZINE contained 128 pages, but being printed throughout in smaller type than that now used, the matter per page was more than double that in a page of the present Magazine. The first monthly part, that for November, 1894, consisted of 20 pages, the subsequent parts forming the first volume were of either 12 or 8 pages each. Only 200 copies were printed of most of the parts, and the volume has long been out of print.

The contents of the first number are not very different in character from that of the present Magazine. In this first part we find an article by Dr. Butler "On Aviculture in Aviaries". A paper on the Skua entitled "The Waterfall Pirate at Home" by Dr. Williamson. One by Reginald Phillipps called "My Bird Room". The beginning of a series on "Rare Foreign Birds". Notes on "Our Winter Visitors" by Walter Swaysland. "Egg-production and Egg-binding" by Dr. Simpson. And some reviews, notes, and correspondence.

Many who became prominent and valued members joined the Society in its first year, and were practically "original members", though not so called. Among them were Messrs. David Seth-Smith, J. Lewis Bonhote, E. G. B. Meade-Waldo, F. Finn, and C. L. Rothera, and the Rev. H. D. Astley.

Volume II (1895-6) consists of 191 pages. The articles are printed in larger type, the original small type being retained for the correspondence pages. Dr. Simpson, who edited the first two volumes, resigned the hon. secretaryship in October, 1896, and was succeeded by Mr. Fillmer. Notable contributors to this volume were J. Lewis Bonhote, Dr. A. G. Butler, Charles L. Rothera, John Sergeant, the Rev. H. D. Astley, O. E. Cresswell, C. S. Simpson, Reginald Phillips, E. G. B. Meade-Waldo, R. A. Todd, H. J. Fulljames, D. Seth-Smith, Mrs. Leslie Williams, the Rev. C. D. Farrer, Aug. F. Wiener, and W. H. St. Quintin. In two years the membership of the Society had increased from 52 to 173.

Vol. III saw the introduction of illustrations, there being four hand-coloured plates and two or three in black and white. An extra charge of 5s. per annum was made for the coloured plates, but these plates were also issued uncoloured without extra charge. The number of pages rose to 212. The coloured plates, all from drawings by Frohawk, represented the Pine Grosbeak, the Ornamented Lorikeet, the Blue-winged Green Honeysucker, and the Diamond Dove.

Volume IV, like its predecessor, contains four hand-coloured plates, the birds depicted being the Chinese Quail, the Golden-shouldered Parrakeet, the White-eared Grass Finch, and the Chinese Zosterops. Two of these were by Frohawk and two by P. J. Smit. In addition to contributions from those who had written before, this volume

contains articles by the Hon. and Rev. F. G. Dutton, Chas. Louis Hett, G. E. Bouskill, Thomas Marshall, W. Landless, Percy W. Farmborough, A. Savage, and F. Finn.

In Volume V, in lieu of hand-coloured plates, there are four chromolithographs from drawings by P. J. Smit, the subjects being the Rufous-tailed Finch, the Blue Sugar Bird, the American Siskin, and the Princess of Wales Parrakeet. The extra charge for plates was dropped, but the nominal price of the Magazine was raised to 9d. There was a slight falling off in the number of pages. Amongst other writers who first appear in this volume are W. T. Page and A. A. Pearson. The Society and the Magazine were now firmly established, and the membership had risen to 265. In 1899 Mr. Fillmer resigned the Secretaryship and Editorship. Mr. Bonhote succeeded him as Hon. Secretary and Mr. Cresswell as Editor.

After this lapse of time, it is perhaps not indiscreet to disclose a small fact in connection with the articles and correspondence which appeared under the name of Septimus Perkins. The truth is that there "never was no sich person". Septimus Perkins was the *nom de plume* of a member who wrote also somewhat voluminously on avicultural subjects both under his own name and, in publications other than our Magazine, under another assumed name.

["An Original Member" has consented to his name being divulged. He is Mr. H. R. Fillmer who, in conjunction with Dr. C. S. Simpson, laid the foundations of the Avicultural Society nearly forty years ago and laid them well. We all owe him much for what he did in the old days and are very grateful to him for the above most interesting account of the Society's beginnings. Some of us remember well those early days and it is a great pleasure in these later days to occasionally take down the old volumes from their shelves and read of our first successes and failures, and to peruse again the excellent and very instructive articles by those who have now passed away.

There was always a certain mystery about "Septimus Perkins". His writings were those of an experienced aviculturist, but no one seemed to know him. Now the secret is out—he was Horatio R. Fillmer.—ED.]

THE GIANT PITTA

(Pitta maxima)

By SYDNEY PORTER

This Pitta, the largest and finest of a group of extraordinary and brilliant birds, was first made known to British aviculture in the autumn of last year by Mr. Frost, who went specially to the island of Halmaheira to obtain it. This little known island, by the way, is the home of another very extraordinary bird which has recently been made known to aviculturists in this country, namely, Wallace's Bird of Paradise (*Semioptera wallacei*). Though several specimens were obtained, only two, I believe, arrived here. One was purchased by the Zoological Society but it did not survive long, which is to be regretted, for the bird appeared to be in the most perfect condition.

The brilliant colouring of this bird can never be reproduced properly on paper, and the plate, though an excellent one, does not convey the vivid and "living" colours of the bird as they are in life. The red of the under parts is like that of port wine with a light shining through. The white appeared glossy and polished like the finest china. The poise is very characteristic of the bird. All other plates drawn from skins or "stuffed" specimens represent the bird in anything but a life-like position.

It is a thousand pities that the habitat of this bird should be so remote and the bird itself so rare, for no more desirable denizen of our aviaries could be imagined. It is to be hoped that Mr. Frost, who is an old hand at collecting in the Far East, will bring back some more of the lovely birds, but I doubt it, as the expense of obtaining them is very great. Pittas are not birds for the beginner in aviculture. For one thing, no bird is more impatient of cold; even in the summer they cannot be kept outside, for the cold and damp of some summer days quickly gives them fatal chills. They are best kept in small indoor aviaries where the temperature is never less than 60° F. They can stand a temperature up to 100° F.; in fact the hotter it is the better it seems to suit them.

It is very essential that Pittas should be kept on damp leaf-mould or good turf, for being ground birds their feet soon go wrong. Kept under favourable conditions Pittas will keep in perfect health for

many years. I have a Green-breasted Pitta which I have had for over five years and it always remains in wonderful condition.

When the birds moult, which occurs in August, we give an abundance of live ant eggs and wasp grub which helps to retain the brilliant colouring, especially the red which, unless live food is given, fades to a dull pink.

In regard to the wild life of this bird there is a very interesting chapter in the *Ibis* for 1894, p. 501, by Whitehead. He says:—

“ This lovely bird we are told by Mr. Wallace inhabits the rocky forests of the mountainous island of Halmahera, where it hops about with great activity in the dense tangled forests bristling with rocks. Thinking that the white breast of this Pitta might be caused by the bird's surroundings, I wrote to Mr. Wallace asking him to kindly let me know the colour of the rocks amongst which it lives. In answer to my question whether they were white, he replies: ‘ . . . This district where my specimens of *Pitta maxima* were obtained was all coral-limestone, very rugged and covered with scanty shrubby vegetation. This limestone is always full of holes and small caverns, so that it would offer patches of almost white or greyish white rock with almost black shadows. The black is, I think, the more important as being protective to the bird, when seen from above by birds of prey, while the white of the breast would also be assimilated to the rock when seen horizontally by carnivorous reptiles (lizards and snakes) for there are no carnivorous mammals. I believe the bird is also found in the volcanic districts of Gilolo but here also there is rugged rock full of holes and chasms (black) and scanty vegetation.’

“ It is an interesting speculation whether the continued cast-up glare from the white rock may have influenced the change of colour of the breast of this species.”

Wallace also mentions this bird in his well-known book the *Malay Archipelago*. He says: “ My boy Ali shot me a pair of the most beautiful birds of the East, *Pitta gigas*, a large ground Thrush whose plumage of velvety black above is relieved by a breast of pure white, shoulders of azure blue, and belly of vivid crimson. It has very long and strong legs, and hops about with such activity in the dense, tangled forest, bristling with rocks, as to make it difficult to shoot.”

BREEDING THE SPLENDID OR SCARLET- CHESTED PARRAKEET

(*Neophema splendida*)

By S. HARVEY (Adelaide)

In August, 1931, we were all very surprised when several pairs of this beautiful Parrakeet were captured and brought to Adelaide. The Governor secured one pair which was sent to His Majesty the King. These arrived in England safely and were greatly admired, and caused quite a stir in avicultural circles. The remainder were purchased by South Australian aviculturists. Some of the Parrakeets were trapped west of Oodnadatta, others along the east-west line, one hen bird was caught by a Hawk and fortunately rescued by a farmer near Yaninee on the west coast of Eyre's Peninsula; so it will be seen that these birds at times are found over a large area of South Australia.

Now that we had at last secured these extremely rare Parrakeets the questions were: "Have they ever been bred in captivity?" and "Can we breed them?" The first question was answered by the Editor of the AVICULTURAL MAGAZINE—stating that there was no record of the Scarlet-chested Parrakeet ever being reared in captivity. I was fortunate in securing the hen the Hawk caught, also birds from both the other districts, so, barring accidents, will be set up for breeding.

The first two pairs of these Parrakeets I purchased were from near Oodnadatta, one of the cocks was an adult fully coloured bird (it is my belief that these Parrakeets are not fully coloured until at least two years of age), the other was a younger bird, only showing a small patch of scarlet on the chest. This bird was decidedly off colour when offered to me, no doubt feeling the effects of its long journey. Knowing that to do anything with breeding I needed at least two pairs, I snapped up the four birds that were offered without hesitation, and considered myself very fortunate to have been given the opportunity to add them to my collection. They were taken home at once and put in large box cages in the aviary; on sunny days they were placed outside, but most of the time they were kept in, with the radiator burning day and night; this was necessary on account of the young cock looking so miserable, nearly always sitting fluffed up. After

three weeks the good pair was put out into one of the breeding aviaries, after being kept shut in the house for a week so as to settle down and become accustomed to feeding there, then their door was opened and they had the use of the flight. The young cock was beginning to worry me because he did not seem to improve; while the radiator was burning he looked fairly well, but as soon as it was turned off he was very miserable, sitting fluffed up in a corner. A wire-netting partition in the box separated the hen, because I wished to give medicine to the cock bird; netting was used for partition so they could see each other and thus prevent fretting. For some time Dimol Syrup was given, but this did not have any effect. Then Mr. Ron. Minchin suggested trying a mixture consisting of 3 parts Liquor Amon-acet., 3 parts tincture of squills, and 2 parts sweet spirit of nitre. After a few days an improvement was noticed, a fortnight later the radiator was turned off and still the improvement was maintained. I do not know how many weeks this bird was nursed, but it was a long while. This pair of birds was put out into a breeding aviary and has not looked back, and the hen is now sitting on four eggs. I have mentioned this case to show that with care Parrakeets can be completely cured.

The aviaries in which these Parrakeets are kept measure 17 by 5 feet overall by 9 feet high, the house is 5 by 5 feet, with 12 ft. flight in front; the house has doors so that birds can be closed up, glass sashes can be screwed to doors if necessary.

The first season no attempt was made to breed. A pair was seen taking an interest in a log on 4th June, 1932 (ten months after being trapped), and on 6th June were feeding each other. It appeared as though they were going to commence nesting as the hen was often seen hanging on to a log and looking into the hole. The cock appeared to want the hen to nest in a box that was hanging on the other side of the flight; he was continually flying on to this box and running along the top; then he would go to the front and look in the hole, occasionally going inside, while doing this he would be calling to the hen. But she was not to be put off the nest that she had decided on, and on 23rd June was seen entering the log, sometimes she would stay there for a considerable time. Just when I thought they were really

going to start it became very wet and cold, and they appeared to give up all thoughts of nesting. They did not take any more interest in the log until 12th July, when the hen again visited the same log. On 14th July the cock was feeding the hen. Both were very restless, continually chasing each other, and the cock still persisted in trying to coax the hen to nest in the box, but she was determined to take her own choice. Some mornings the hen would be seen on the perch inside the house and the cock on the floor running all over the place very excitedly, all the time chirping and looking up at his mate as if trying to entice her down with him. This performance occurred repeatedly and was a very interesting sight. For a day or so the hen was continually entering the log, but did not stay long at first; after a while her visits were more prolonged. On 18th and 19th July she spent most of the day in the log. When I returned home at 5.15 on the 19th she was off, but within two or three minutes returned to the nest and remained there for the night, so I was satisfied that she had now commenced sitting. It was nearly a week before she was seen again and then for only a few minutes. The cock was very often seen entering the log to feed the hen, sometimes going right in, but more often sitting in the entrance and stretching down, when only half of his tail could be seen.

After they had been sitting a month I felt rather worried because the hen was still in the log and no sound of young ones feeding had been heard. I had made up my mind not to go near them; it was very difficult to keep away, especially as I thought something had gone wrong. On 26th August I went for a holiday and returned on 5th September. The first inquiry on returning was to ascertain if any sound of young had been heard, the reply was "No", so I immediately took the log down, removed the top, and, on looking down, the hen moved to one side showing two eggs. I then put a stick down and moved her further aside, but could see nothing else. The log was then laid on the ground (the top had been replaced) and the bottom was removed and the dirt was emptied out; amongst this were two young ones that had died soon after hatching.

While all this was going on the hen made no attempt to leave the nest, she just went to the top of the log. Fresh wood dust was put

in and the bottom replaced, and the log was hung up again in the same place. Still the hen remained inside and was not seen for nearly a week, then only for a few minutes.

No more investigations were made until the 12th October, when the hen was off. I thought I would see how many eggs they had, and you can imagine the surprise to find five young ones which appeared to be fully 10 days old. The hen evidently took no objection to her log being cleaned out because she must have laid immediately to have young this size. The day these young were observed was just two days over five weeks from the day the log was cleaned out, allowing approximately three weeks to hatch, and the young to be about 10 days old, it will be seen that no time was wasted. Another inspection was made on 23rd October. All looked well and were well feathered. Later in the day the hen was seen in the log on the other side of the aviary, I am wondering if she is going to nest again and leave the rearing of the young to the cock. There are two logs and one box inside and the same out in the flight. The log in which they nested is about 3 feet long and 4 inches in diameter. This was hanging nearly perpendicularly on the front of the house out in the flight. Both ends of the log are blocked and a hole 2 inches in diameter cut 12 inches from bottom, about 4 inches of wood dirt was put in the bottom.

When this pair failed with their first nest I considered that my chance of being the first to rear the Scarlet-chested Parrakeet had gone. Then another pair commenced visiting a log inside the house, and on the 24th August started sitting in a log similar to the one described. The hen was very seldom seen, the cock fed her while she was on the nest. On 16th October the first young one left the nest, this was two days under two months from the date of commencing to sit. The following day another one followed suit. It was very cold weather, so these were caught and put inside at night and the door was shut to prevent them flying out into the flight again. On the 18th both returned to their own log; there were two other logs quite near that they could have gone in. They all remained in until the 20th when three ventured out, on the 21st the fourth came out, and on the 22nd the fifth showed itself. It appears to me that there are two cocks and three hens (this is being written on

the 23rd October); one cock is showing a considerable amount of red on the abdomen, a fair amount of blue is showing on the face, the blue on the cocks' faces is much brighter than that on the hens, the primaries are dark blue, and coverts pale blue as in the adult. The other bird, which I think is a cock, has not any red on the abdomen, but had a few red feathers showing on the chest. The birds that I think are hens have a deeper green on the chest, the young cocks' chests have more yellow in the green. They are all well feathered and are quite strong on the wing. The father does all the feeding now they have left the nest, while in the nest the hen assists.

The Parrots I keep are principally of the genus *Neophema*, and I have been successful in winning the medal of the Avicultural Society of South Australia for the Elegant, Turquoise, and Bourke's, that is for being the first member to breed these species, so naturally I am very anxious to win the medal for the Scarlet-chested.

These results should prove that there is no harm in allowing aviculturists to keep these rare Parrakeets in their aviaries.

Note.—27-10-32. The hen which reared young is in the log this morning, evidently laying again.

[In a later note from Mr. Harvey dated 6th November he writes : "I am having a remarkable year with the *Neophemas*, to date have reared 13 Bourkes, 7 Turquoise, 10 Scarlets flying and 4 in a log about 2 weeks old, 10 Elegants in 3 logs (not out), 7 pairs Turquoise sitting, 2 of these on second nest. Two hen Scarlets are laying again. The Bourke-Scarlet cross were infertile. I am not doing any good with other birds yet."—ED.]

BREEDING RESULTS AT THE KESTON FOREIGN BIRD FARM, SEASON 1932

By E. J. BOOSEY and ALEC BROOKSBANK

The season which has just drawn to a close has been, on the whole, a good one for aviculturists.

At the Keston Foreign Bird Farm breeding results have been well up to standard, and there has, so far, been a welcome lack of mysterious unpreventable diseases—such as septicaemia—even among the most susceptible species of Parrakeets.

Our oldest pair of Browns again did very well, rearing eight young—five in the first nest and three in the second. This pair of birds have now produced twenty-five young ones in three years and their progeny have been exported by us to France, Belgium, Germany, and California. It would be interesting to know how many grandchildren they possess!

A pair of Stanleys imported amongst other birds from Australia in February and both exceedingly wild, were put into a secluded aviary in April, and astonished us by promptly going to nest and rearing five young instead of at once falling into a heavy moult, as one might have expected. Stanleys are such beautiful little Parrakeets and, from the aviculturist's point of view, so desirable in every way, that it seems a pity they have not, in the past, been more regularly and carefully bred, making it more possible than it is at present to obtain good, healthy stock birds.

One great advantage they possess over nearly all other Broadtails is the striking and unmistakable difference in colour of the two sexes, the cock's breast being rich crimson and that of the hen brick red. Thus, even a novice can pick out a true pair of adults at a glance.

A hen Barraband bred here two years ago and, mated to an imported cock, produced a very fine family of five. A photograph of three of this brood appeared in *Cage Birds* some time ago. Another pair reared four young but the cock, who has the unpleasant and unnatural habit of treating his sons as rivals in breeding condition as soon as they leave the nest, murdered the first to emerge—a particularly brightly coloured young cock—and had to be removed to prevent further

tragedies. The hen devoted herself to the remaining three and did not seem particularly upset at being a temporary grass widow.

The behaviour of this particular cock is the more extraordinary as Barrabands are usually quite the most amiable of the larger Parrakeets and, in a big aviary, will even live in harmony when two or more breeding pairs are kept together. The cocks hardly ever molest newly-fledged young, not their own, and will sometimes assist in their early education. One trembles to think of the slaughter there would be if one attempted to keep several breeding pairs of Lorikeets or Peach-faced Lovebirds together.

Barrabands—considered (with Many-colours), in the old days, to be such impossible birds to keep alive—are in reality so simple to cater for and such ready breeders, that it seems a pity their many virtues as aviary birds are not more widely appreciated.

We had very bad luck with one of our pairs of Many-colours. The hen, having successfully laid five eggs, and when she was just starting to sit, suddenly became completely paralysed in both feet. She eventually recovered, but in the meantime her eggs had to be placed under a mateless hen Stanley, who had just begun to lay an infertile clutch of her own. Although every one of the substituted eggs hatched she not unnaturally failed to rear them, especially as they hatched about a week before she could have expected her own family.

Another pair of Many-colours—a cock bred here mated to an imported hen—successfully reared five young, among which was a cock of particularly brilliant colouring. The hens, too, were all very well coloured, possessing, as we had hoped, a band of brownish bronze on the upper breast, inherited from their mother who, because of her bright colouring, was specially selected as a mate for the most vivid cock.

The oldest pair we possess, who have lived in an aviary for about seventeen years, and whose age when wild caught in Australia is not known, only reared one young one this year, though last year they had six. Unfortunately at the end of last season the hen developed a badly dropped wing—a recurrence of a similar trouble she had some years ago—and we fully expected her breeding days were over, and were surprised at their producing even one youngster this year. They are the most devoted couple and, though they will probably breed no more,

we hope to keep them for many years yet, to live out the remainder of their lives in peace and comfort. They must by now possess a vast number of descendants.

Bourke's did quite fairly well. One of our breeding pairs, however, had trouble with their first nest which succumbed to a form of nestling diarrhoea when old enough to have their eyes open and be starting to feather. The cause remained for some time obscure, until the same thing began to appear in the second nest, in the same aviary. We then discovered that the parent Bourke's, usually so indifferent to all green food—except occasionally flowering grass—had suddenly decided to eat considerable quantities of dandelion leaves, thistle, etc., and other more or less laxative weeds, growing in the open run. These, though apparently quite harmless to the old birds, proved altogether too strong when fed to the nestlings, and the diarrhoea ceased when the run was cleared of all but a patch of flowering *Poa annua* grass, and the rest of the brood was successfully reared.

Individual pairs of Bourke's have their own ideas as to what constitutes the best baby food: some like hemp while others prefer sprouting oats and ignore the former completely, some pairs too will partake of much more green food than others.

A single cock Bourke's, graciously lent to us for the breeding season by His Majesty the King, was mated, in default of a hen of his own species, to a Turquoise. Unfortunately the Bourke's started to moult immediately he was put into an outdoor aviary, while his wife promptly went to nest and laid five eggs, all of which proved to be infertile; but as the cock was moulting so heavily at the time it was hardly a fair test of him as a stock bird. The Bourke's recovered from his moult while his wife was sitting on the clutch of infertile eggs and by the time she was due to lay again was in breeding condition and so attentive to her that there seemed every prospect of a brood of interesting hybrids. Tragedy, however, attended this nest, as the hen was found to have died in her nest-box when she was presumed to be sitting again. She had laid two eggs. His Majesty's Bourke's is now with one of our young ones of his own species, bred here this season.

Elegants were again single brooded, as appears to be invariably the case with this species. Blue-wings, on the other hand, produced

as usual two broods, and it seems extraordinary that two species of Parrakeets, so very nearly related to each other, should differ thus in their yearly number of nests. Again, their close relation, the Turquoise, differs from both in being prepared to go on nesting almost to the extent of a Budgerigar.

Our Turquoisines were rather a disappointment as to the number of young actually reared. The hen of one of the most promising pairs laying numerous eggs but always deserting them a few days before they were due to hatch. Some of her eggs were, however, successfully transferred to a last year's cock Blue-wing \times Turquoise hybrid, mated to a true Turquoise hen whose eggs had proved infertile.

These hybrids are rather beautiful, having a vivid blue band across the forehead, and a large and lovely patch of Turquoise blue on the wing. They have, too, the vestige of a red shoulder patch represented by a few small red feathers which only show, however, when the wings are expanded. They are a size larger than Turquoisines, and of all our Grass Parrakeets, they are by far the most friendly and intelligent, taking the greatest interest in all one does and becoming tame of their own accord. Their two different voices clearly indicate their mixed ancestry, though when lively or excited they indulge exclusively in the bat-like squeakings of a Turquoise.

Both Swainson's and Red-collared Lorikeets breed steadily the whole year round. We had a nest of the former fledged on Christmas Day last year and it looks as though they will do the same again this year. Some youngsters have just fledged (31st October), the eggs were laid about July and the young stay in the nest an extraordinarily long time compared with Parrakeet babies. They are fed exclusively on our Lorikeet food and an apple a day, canary seed is available in their aviaries but they never eat any, and no extras are given when they have young in the nest. We mention this as we believe some people who try to breed them give all kinds of messy tit-bits which are quite unnecessary and in all probability bad for the parents.

Two years ago, owing to pressure of aviary accommodation, we disposed of all our Lovebirds. Last year, therefore, we only had Peach-faces breeding. These did extremely well. In one of the back numbers of the AVICULTURAL MAGAZINE a query was asked how

Lovebirds could be sexed. If the pelvic bone of *adult* birds is felt, as advised by Miss Knobel for sexing large Parrots, it will be found to be quite wide in the hen and very narrow in the cock. We have never known this test to fail but it will not work until the birds have reached maturity. Next year we hope to breed several more members of the *Agapornis* family.

Of the Finches perhaps the most spectacular success was the *Ruficaudas*. The hot summer seemed to suit them and all were double brooded. We finished the season with forty-three youngsters from five pairs.

Long-tailed Grass Finches proved disappointing through, we believe, no fault of their own. We tried them in a new sort of open aviary but their temperament is extremely inquisitive and every time anything happened outside the aviary, or anyone passed, off they came to see what was happening, resulting in chilled eggs. One hen had thirty-two eggs to her credit and not a single young one hatched. There are, of course, extremes to everything and from sixteen young (produced by another pair) to thirty-two eggs seems to us to be the limit both ways. Results from our other pairs were somewhere between these two points. A Heck's hen brought up a family of four most beautiful young by herself, her mate succumbing to pneumonia the day the brood hatched.

The performances of the Zebra Finches were very different from last year. We reared approximately 500 young from forty-five pairs. It may be of interest to mention that we have not got a single imported bird of this species in the place. It has been queried from time to time whether aviary bred birds breed as well and are as fertile as imported ones. In our opinion and experience they breed far better provided, of course, that the parent birds are carefully bred and not allowed to degenerate. Unfortunately, since they are so extremely simple to breed, there are undoubtedly small, badly bred specimens offered for sale. Aviary bred hens, we find, are less liable to egg-binding than imported ones. Bengalese, as usual, obliged by rearing almost anything we cared to give them as well as approximately eighty of their own species. While we write there are still young in the nests. We breed them during the summer in outdoor aviaries and not cages, and the

young are considerably larger than imported cage-bred stock from Japan.

Gouldians, as usual, began to manifest a belated desire to breed at the end of the summer and it is therefore difficult at the time of writing to say exactly how many will be finally reared. Quite a number, however, are already fledged and there are more in the nests.

A young hen bred last season moulted out with a blue streak down the centre of the lilac breast patch and the yellow replaced by greenish yellow. She is not now particularly beautiful to look at but our excitement can be imagined when the blue streak appeared and we had visions of breeding a blue Gouldian Finch! It would have been interesting to see how the colours would have developed had the bird been a cock.

The Cherry Finches settled down to domestic matters early in the summer and although we have very few pairs quite a nice lot of young were reared, all of which we are keeping as we want to increase our stock and they are difficult to obtain.

Masked and Bichenos did well but both are rather difficult to suit with nesting sites and they must be left severely alone in a secluded corner. The former are rather late starters and it is very often difficult to get in more than one nest. One pair reared five. The maximum young we had in any one nest of Bichenos was three. Other species bred here this season are Silverbills, Fire Finches (at liberty), Diamond Doves (prolific but very bad parents), and about 2,500 Budgerigars in all the various colours. We also got a Zebra Finch \times Long-tailed Grass Finch hybrid and though we think this cross must have been done before we cannot find any mention of it anywhere.¹ Before they moult they are not unlike young Long-tails with a rather small bib, but the Zebra Finch penny-trumpet voice. This year we decided to try a few Waxbills at liberty—Fire Finches, Cordon Bleus, Orange-cheeked Waxbills, and Golden-breasted Waxbills—all stayed well and were successfully caught up again at the end of October, with the exception of the Golden-breasts, which strayed shortly after being let out. The Fire Finches were found to have bred in the garden and several youngsters were caught up with the parents and will be liberated

¹ [Bred by Rice in 1911 (Hopkinson's *Records*).—Ed.]

again next Spring when, in addition, we are going to try Avadavats and Lavender Finches as well as a pair of Shamas, the latter, of course, at partial liberty. The Orange-cheeks and Cordon Bleus were a pretty sight feeding on the bending heads of white and spray millet that had grown up as weeds in the garden and round the aviaries, and it is extraordinary the joy which seems to be afforded to all liberty Waxbills by sitting among pea-sticks. During the summer at any hour of the day the Cordon Bleus and Orange-cheeked could always be found among the Sweet Peas.

Notable additions to our breeding stock for next year are : Yellow-rumped Parrakeets, Crimson-winged Parrakeets, King Parrakeets, Norfolk Island Parrakeets, Cuban Finches, Green Avadavats, Pintailed Nonpareils, Fischer's Lovebirds, Black-cheeked Lovebirds, Red (Hooded) Siskins.

REARING CHUKORS AND OTHERS

By Captain REGINALD WAUD

It may be of interest to some of the readers of the AVICULTURAL MAGAZINE to hear of my experiment with Chukor Partridge eggs, although some may have tried it.

A friend gave me six eggs. I put them under a Silky Bantam hen—who I knew was a good mother—and I also put one Japanese Bantam egg under her with the Chukor eggs (I did this in the hope that the Bantam chick would keep the Chukor chicks from being so wild, as they always are as soon as hatched). She sat very well indeed, but to my dismay the Bantam egg hatched on the 21st day and no signs of the Chukors hatching. However, I looked at them and thought they were heavy and looked as though they might hatch, having no idea how long it took for Chukor eggs to incubate. I took the Bantam chick away and kept it warm and fed it for three days, when I saw signs of the Chukors hatching and they all did except one. I then replaced the Bantam chick and kept them in a coop with a run in front of it on the lawn, and reared the lot. After about three weeks I took the run away and let them have free range, keeping the hen in the coop

and being careful to move it every day to let them have fresh ground. They quickly grew and were able to leave the Silky, and now they are all full winged and perfectly tame and always go about with the little Bantam, which turned out to be a hen. I regret to say I did lose two, but not until they were full grown and that was by a dog killing them!

It is most amusing to see the three Chukors always with the Bantam, and if she leaves them and goes off on her own they get terribly fussy and excited until they find her.

The Chukors fly beautifully and as a rule roost on the top of the house. A curious thing is that the Bantam flies as well as they do and also roosts with them.

They never go very far from the garden, occasionally into the Park, but always return. Most days they all fly on to the dining-room window ledge while we are having luncheon, and sit patiently waiting for bits of bread, and when I go out the Chukors, Bantam, and hybrid Pheasants (of which I will speak later) always come up to be fed.

They are the most attractive birds and their call quite delightful. It has been an amusing experiment, well worth trying, and gives one endless pleasure to watch them.

This year has not been a good one for my breeding birds at Bradley. I have reared a few Ducks but none of the rarer ones, only Pochard and Falcated. No Parrakeets have been reared. I think my chief trouble has been rats. This year they seem to have been very numerous. They ran about on the tops and sides of aviaries at night and so frightened the birds off their nests besides destroying many ducklings.

I have reared quite a lot of hybrid Pheasants. My friend Mr. Ezra gave me a most beautiful Reeves cock, which he said was a murderer and had killed every Pheasant he could get at on his place, but I suppose the change of environment altered his wicked ways, as he has never attempted to do any murders with me. I kept him in the wallaby paddock and told the keeper (early in this year, about February) to catch up a few common Pheasant hens out of the woods, which he did. I clipped their wings and put them with him. They laid very well and I put the eggs under hens and reared quite a lot, although I had a great many infertile eggs. I must say they are the most beautiful birds now they have moulted out. So far a great many have

remained about the garden, but a good many have gone away into the woods ; I only hope they will not be shot.

A curious thing is that a common Rhode Island Red Hen, who brought up some of the hybrid Pheasants, has formed a great attachment to the Reeves cock. The common Pheasant hens having moulted and grown their wings have departed, so now the Reeves and Rhode Island Red hen live alone with the wallabies and are most friendly. The Reeves follows the hen wherever she goes. I only hope next year I may be able to get that hybrid, and if I do a friend says " it will be a ' museum piece ' ".

ON A RECENT VISIT TO THE BERLIN ZOO

By J. DELACOUR

I spent three days in Berlin in November and was altogether delighted with the magnificent Zoo of the German capital.

If the Small Birds and Parrot Houses are certainly larger and better stocked in London and in some American Gardens, I believe that all the other departments are superior in Berlin to those of any Zoo in the world. The Mammal collection, both in number of specimens and species, is without rivals in the world ; almost every species represented is housed in palatial dwellings and bred regularly in spite of the cold climate of northern Germany. But this is not the place to talk about mammals. In the bird line the Waders and Waterfowl are especially well represented and beautifully shown in large, fine, and practical aviaries and ponds of different kinds. There are many more individuals and species represented than I have ever seen anywhere. The Pheasantry is also very good but not equal to that in London. I can only mention here a very few of the most interesting birds.

In a large aviary, all planted with pine trees and heather, often changed, there are some Capercaillies, Hazel Grouse, Black Game, and Siberian Jays, all tame and kept in perfect condition during the last three years. The very complete collection of Ostrich-like birds contains such rarities as Beccari's Cassowary, Spatz's Ostriches,

Darwin's and Great-billed Rheas the latter the form *R. americana*, much darker than the common Grey Rhea. On the ponds there are Ashy-headed, Andean, Blue-winged, and other rare Geese; Eiders, Crested Mergansers, Steamer Ducks, and two of the rarest species of Ducks—the Crested Duck (*Anas cristata*) and the Andean Teal (*A. oxyptera*).

In the Bird House one sees some very rare Weavers and Whydahs, three Egyptian Plovers (*Pluvianus*), Birds of Paradise, a tame Woodcock, many Humming-birds, several in perfect condition, three species of Mannakin, a large Cotinga (*Pyroderus scutatus*), but the real treasures are two pairs of very pretty little Lorikeets (*Psittuteles iris*) and Parrot Finches (*Chlorura microrhyncha*).

I am afraid that the above lines give a very inadequate idea of the wealth of the Berlin Zoo. Any bird lover visiting Germany ought not to miss the chance of admiring this wonderful establishment, which has been organized and still is most ably managed by Dr. L. Heck and his son.

THE CHESTER ZOOLOGICAL GARDENS

By DENYS WESTON

Nothing has given me greater pleasure during the last few years than to see the growth of several provincial Zoological Gardens. The thought that most bird lovers must share my penchant for other animals than birds has prompted me to describe one of the latest additions: I refer to the Chester Zoo.

Passing through Cheshire I called upon Mr. J. G. Lightfoot, a late Director of this deservedly popular Institution, and it is to him that I am indebted for help in compiling this article.

These delightful Gardens, situated at Upton by Chester, lie about $2\frac{1}{2}$ miles from Chester and are open daily, including Sundays, from 10 a.m. until dark, motor buses passing the entrance. The road is well signposted for motorists, and I found no difficulty in finding my way from the lucid directions given me by Mr. Lightfoot.

After passing the entrance lodge, there is ample room in the free car park both for cars and charabancs, and a pleasant shaded walk

approaches the main building which is a magnificent mansion in the Tudor style with parquet flooring in walnut and mahogany, overlooking spacious lawns with cedars and shrubberies.

Should the weather prove inclement music is provided daily, and there are both cafés and tea rooms. There is plenty of interest under cover. If the weather is propitious it is possible, after a surfeit of animals, to indulge in deck chairs or outdoor games should we not wish to hurry home.

The founder of these delightful Gardens was Mr. G. S. Mottershead, F.Z.S., who now holds the post of Hon. Curator, supported by a strong group of directors.

It naturally costs a great deal of money to institute and run a concern of this magnitude, and the Society has in the past been rather crippled for funds. Much progress has, however, been made, and the future now looks very rosy. I understand from Mr. Lightfoot that since my visit another dozen aviaries have been practically completed, and this winter a large aquarium is to be erected in the spacious cellars after the style of the one at the London Zoo.

In another six months' time the feathered population will probably be trebled as collectors at present in Australia and Central Africa are expected back about next March.

One of the first aviculturists to take an interest in this Society was the Marquess of Tavistock, who is well known to my readers. He has generously donated a very fine pair of Barraband Parrakeets for whom a fine aviary has been specially constructed.

Arrangements have also been made to commence shortly a series of lectures (during the winter months) dealing with the various phases of animal and bird life.

Space, and the policy of the Society, will only permit me to refer to the feathered inmates, but before doing so I hope that I shall be allowed a little latitude to relate the following interesting but rather gruesome incident. A short time ago, in the large outside monkey cage, a *Rhesus* monkey deliberately committed suicide in the presence of several visitors. He obtained, probably from a visitor, a length of rope with which he played for a while. He then climbed up one of the large branches, tied one end to this, made a noose of the other,

and put it round his neck and jumped down. Death was, of course, instantaneous. The rope was recently exhibited at a meeting of the Zoological Society of London.

The first feathered inmates I noticed after entry were a Pelican, Flamingo, and Black Swan sunning themselves in an enclosure which also contained Bar-headed Geese, Mandarin and Carolina Ducks and a Gull. An Adjutant Stork allowed me to enter his large enclosure and appeared quite friendly. The carnivorous birds included African Kites, American Eagle-Owls, Long-eared Owl, Tawny Owl, Kestrel, and Raven. Cranes were represented by a very fine pair each of the Demoiselle and Crowned, both in perfect condition.

The Parrot tribe was well represented. I noticed seven various Macaws, Blue-fronted and Orange-winged Amazons, Alexandrine, Ring-necked and Quaker Parrakeets, Masked Lovebirds, Blue-winged Parrotlet, Cockatiel, Sulphur-crested and Roseate Cockatoos and Budgerigars.

Other inmates included a Blue-bearded Jay, Californian Quails, various Pigeons and Doves, and a very fine Golden Pheasant.

Small Finches consisted of the well-known imported foreign species, besides Canaries and Britishers, all appearing contented and happy.

In conclusion I would urge upon all bird lovers to support this venture when in the north of England by paying a visit, and I must congratulate the Directors upon the condition in which both the inmates and Gardens were kept.

THE BREEDING OF CABOT'S TRAGOPAN PHEASANT

By E. H. LEWIS

In February of 1932 we received at the Catalina Bird Park, Avalon, California, three pairs of Cabot's Tragopan or Horned Pheasant (*Tragopan caboti*). They had arrived from a dealer in Japan, and in such excellent condition that after careful examination they were placed directly into our show pens rather than into our quarantine department where new arrivals are usually placed for observation.

They made themselves at home from the start, were very quiet and gentle, and by the 1st April males were displaying, and shortly afterwards the hens commenced to lay. Only one pair, however, proved fertile, and from these four beautiful birds were hatched, and matured sufficiently by the middle of October to show us that they were all males.

A brief description of the pens occupied might be of interest and, we hope, helpful to those of our members who have Pheasants of this class. These pens have a frontage of 12 feet, a depth of 30 feet, and are 10 feet in height. The front, the only place from which our thousands of visitors can view the birds, has a stucco and tile base, 2 feet high, then 1 in. mesh-wire for 8 feet, and a stucco trim on top. Back of the pen is made into a tight, open-front house, full width of the pen, and roofed over for 5 feet, the remaining 25 feet to the front being covered with inch mesh wire. Sides are 2 feet in base boards, the wire mesh to top. The ground of the pen is for the front 3 feet covered with clean building-sand, then 20 feet of greens, both for feed and looks, and is either grass, barley, wheat, or some succulent feed good for the birds. The balance of the pen is clean earth, with an acacia-tree planted a foot from the edge of the green. Each pen is watered by a system controlled from the outside—one valve watering and sprinkling ten pens at once. The pens therefore have water, growing green feed, a 10 ft. high tree, clean earth and sand for dusting, and a tight-fitting house in the rear for shade and perching. We feel that this combination of room, green feed, water, sun, and shade provides the birds with as near natural conditions as can be given them in captivity.

The birds were fed on usual Pheasant grain-mixture, with a little fruit each day. A box of clean grit and shell was before them always.

For nesting we built a box shaped like a small house, with peaked roof, inside measuring 18 inches square with a front opening of 10 inches: this was nailed to the wall about 6 feet from the ground and in constant view of our visitors. The hen would fly into this box from the tree or from a perch. A little dried grass had been placed in the box, and the nest suiting her she rewarded us by laying four eggs and commencing incubation. She was still very quiet and did not leave the nest whilst we were inside the pen cleaning or feeding. In about twenty-eight days—we are not quite sure exactly—each egg had hatched and four

sturdy looking dark youngsters were found with almost fully developed wings. The next day we made the hen leave the nest, and we carefully removed the little fellows down to a darkened corner of the pen, the hen, very much disturbed, fighting our feet; but the moment we moved away from the chicks she at once went directly to them and had them all safely tucked away under her before you could count ten. They stayed in this corner for the first day and night, but the second night the hen called them to her on a perch about 4 feet from the ground, the chicks flying to a lower perch first. In a month they were perching in the tree, some under her and some alongside. For the first four weeks of their existence they seemed to be constantly under the hen. If they left her for a few moments her sweet and low call soon had them back under her in safety and warmth.

We fed them chopped hard-boiled egg, with finely chopped lettuce, for the first week, then added some "Spratts' " No. 12 Pheasant meal, moistened with warm water. In a month was added a fine chick grain and the egg gradually reduced until it had disappeared. A little fruit was still being fed and the youngsters got their share of it. No insect feed was given except what they got naturally from the green feed growing in their pen, but a box of good poultry growing mash was before them after the first two weeks and they ate a considerable quantity of it.

The male bird had remained in the pen all the time, but did not bother nor, apparently, take much interest in them. For two weeks, however, we fed him first, and then fed the hen and chicks separately a little distance off. Soon he commenced to notice them, and would call when he discovered something good to eat. From then on we fed them all together, and never once did we observe him act in any way as though he resented their presence. He would call and warn them exactly like the hen, but at no time would he brood them.

It has been delightful to watch this brood grow up to maturity, and we feel that the mother hen is entitled to the entire credit on account of her careful and constant brooding. The hen—and the male bird, too—never seem to "step" around with the chicks, rather they glide over the ground slowly and carefully, with the result that the little ones are not knocked about and trodden upon as often happens when raising

Pheasant chicks with foster-mother hens. We have raised with Domestic Hens Impeyans, Firebacks, Peacock, Eared, Swinhoe, and other rare Pheasants, as well as all the more common kinds, and have had all the heart-breaking failures most Pheasant raisers have met with, including the loss this season of two weeks' old Argus chicks. If we don't make the same mistake twice we are satisfied that we are improving. We have had some delightful and satisfactory results here for which we can fairly give most of the credit to our wonderful climate. Too much credit cannot be given to aviculturists who successfully rear young under the climatic handicaps you must experience in Europe.

We often wonder if, in the rearing of Pheasants particularly, too much dependence is not often placed on the kind of feed used and too little on the proper handling of the birds otherwise, such as sanitation, warmth, protection, and so on. We believe more birds are lost by improper care than by improper food. Proper food is, of course, important, but proper care is equally if not more so. If the above rambling remarks are of interest to our members we feel well repaid for the effort taken in putting down as nearly as possible all the little details we have noticed in the rearing of these handsome Pheasants.

REVIEWS

AUSTRALIAN GRASS FINCHES¹

Here is a book which every aviculturist will have to read and almost certainly buy, for it is a complete natural history of this delightful group of small seed-eaters which appeal to all with their beauty, adaptability, and comparative readiness to breed, and whose only drawback is the difficulty of getting so many of them nowadays, though perhaps that may increase rather than detract from their attraction.

Mr. Cayley's book deals exhaustively with and illustrates every species in colour; each account is divided into two portions, the first dealing with the wild life (Description, Distribution, Field Notes, etc.), the second avicultural, where everything we want to know in this line

¹ *Australian Finches in Bush and Aviary*. By Neville W. Cayley, F.R.Z.S. Messrs. Angus and Robertson, Ltd., Sydney. 1932.

is provided and made extremely interesting. Nearly every species seems to have been bred or is being bred in Australia, and in addition the number of hybrids which have been produced there is surprising. Two of the plates are given up to these and show about a dozen different crosses painted from examples bred in Australia. Besides the coloured plates the book is well provided with photographs of nests, birds, aviaries, etc., as well as most useful outline maps which show at a glance the distribution of the different species, and it will surprise some of us to find how comparatively limited this so often is. Taking everything into consideration one can safely say that here is the almost perfect avicultural book and Australia is indeed lucky in having an artist-author to produce and publishers willing to publish such a delightful book at the price, which (if the same as the author's previous book *What's That Bird?*) will be 12s. 6d.

E. H.

THE GREAT CRESTED GREBE INQUIRY, 1931¹

The Great Crested Grebe (*Podiceps c. cristatus*) is one of our most ornamental and interesting birds, which may be seen on any of the large lakes or reservoirs of this country, even within a few miles of the metropolis. It has increased enormously during the last half-century, and it is difficult to realize that 50 years ago it was threatened with extinction on account of the craze that was then in vogue for the wearing of "Grebe furs". Legislation came to the assistance of this bird in 1880, since which year it has gradually re-established itself.

In 1930 two very keen ornithologists were making an ecological study of aquatic birds in Surrey, which led them to follow up certain lines of inquiry into the distribution and habits of the Great Crested Grebe. This proved to be a very large undertaking. A schedule of the necessary questions was drawn up and widely circulated. Appeals for help were published in the daily, evening, and local newspapers, and letters were written to every well-known naturalist, to local observers, taxidermists, town clerks, and clergy with lakes in their parishes,

¹ By T. H. Harrison and P. A. D. Holland, reprinted from *British Birds*, and published by H. F. and G. Witherby, 328 High Holborn, W.C.1. Price 2s. 6d.

and every other possible step was taken to make the inquiry a truly national one.

The result has been the publication of a most valuable Report, which gives not only the present status of the Great Crested Grebe but its complete history and its habits. It is not a dry-as-dust set of statistics but a document of absorbing interest to everyone who is interested in our native birds, and we cannot praise too highly the thoroughness with which this inquiry has been carried out. It reflects the greatest credit upon the organizers and their very large body of helpers.

D. S.S.

CORRESPONDENCE, NOTES, ETC.

THE WAYS OF PARRAKEETS

Birds appear to be in no way inferior to the human race in the totally unexpected (and unpleasant) things they sometimes do!

For more than eight years I have had a breeding pair of Yellow-rumped Parrakeets which reached me when about eighteen months old. They have been the most prolific and devoted couple of Broadtails in my collection. They have reared literally dozens of offspring and I have never seen the slightest approach to a quarrel between them, the cock not even making his mate get out of his way as most of his race and sex do out of the breeding season. Last July, when their second brood were out of the nest and they themselves were moulting, the cock suddenly started to bully the hen. The removal of the young birds and the nests distracted his thoughts and caused him to behave normally for about six weeks, when he again attacked her and mauled her badly, so that we had to cut his wing. Fighting is so much part of a Broadtail's life when at liberty and he indulges in it so often and so unnecessarily in spite of running no small danger of fatal wounds, that one wonders whether the monotony of long years of enforced peace with no other company than that of the wife of his bosom, may not produce some kind of complex in his nature! The only alternative explanation would seem to be that X, encouraged by the success of the equally unexpected assault he inspired the Amboina King to make upon her mate, turned his mischievous attention to the most model couple in the collection to see how he could upset the even tenor of *their* lives!

My hen Brown's Parrakeet, after rearing four fine young ones, fell slightly ill and had to be taken into the hospital for treatment. Her mate has the unpleasant personal idiosyncrasy that he always insists on killing his partner if she has been separated from him even for the shortest period, and he has to have his wing cut to restrain him from his unamiable intentions.

This time I thought I would try if by a manœuvre I could avoid the usual scene and the infliction of the usual penalty. He had been living for some

weeks with his four children, to whom he has been a model father, so he had not grown accustomed to solitude. I therefore hoped that if we caught the young brood, causing him some anxiety and alarm, shut him up alone in the shelter, released the hen in the flight, and then opened the slide quietly, he might come out again sufficiently confused by recent events to accept her as part of the normal *ménage*. If one had been dealing with the "automaton" type of bird, i.e. with one of those passerines of low intelligence which react to their immediate environment and, like babies, are not given to reflection, it would almost certainly have worked, but the Brown's knew as well as I did the nature of the change when he walked out of the shelter and met, not his offspring, but their mamma on the threshold. For a brief moment his better nature almost triumphed. He answered her pleased greeting with a deep bow and a tremendous display of his lovely violet shoulders. But a moment later his old crabbed self reasserted itself and he made one or two spiteful swoops at her, chattering as he did so. Even then his mind was not fully made up and they soon settled down side by side, and I hoped that peace would continue. About half an hour later he attacked her again and drove her into the shelter, coming out himself and settling down to what was evidently a period of further reflection. Then, very deliberately and with the air of one who has given a matter full and careful attention from every aspect, he re-entered his wife's refuge and addressed himself to the task of hunting her to death . . . at which point appeared the aviary attendant and the scissors.

TAVISTOCK.

PHEASANT NOTES

I was interested to read the notes on Fancy Pheasants in the November number of this Magazine. Firstly, I notice Dr. Evelyn Sprawson had very bad luck with his Tragopans. As he mentions, I have never found the cocks molest the hens in any way and I have had a few pairs of these birds from time to time. I have always found them most docile. They are my favourite Pheasants, not only because their colouring is beautiful but chiefly because they become so extraordinarily tame in such a short time. I never shut my birds up in their shelter either during winter or summer, and they spend most of their time in the open, very rarely going in the shed except to dust themselves. I have never known my Tragopans nest on the ground. They always like to lay their eggs on an elevation. I give mine a box lined with dead leaves. I consider seven fertile eggs out of nine laid is very good for Tragopans. It is bad luck only to have reared one. But I know only too well what disappointments one has with these Pheasants when trying to rear them. Gentles are undoubtedly splendid for them but given in strict moderation. I give mine custody for the first few weeks. The chicks must have plenty of liberty, as they are good foragers. I only reared one this year out of four chicks hatched. I quite think I could have reared two more but unfortunately we had a very bad storm when the eggs were being sat on by a Bantam and were due to hatch in a day or two. The poor Bantam was sitting in water. The chicks hatched all right but there is no doubt it affected them. They would not eat and the Bantam was not too good in finding them food. Silky Bantams are splendid mothers but sometimes they are

too good—covering their chicks all day. I had rather an interesting experience with Tragopans this year. I purchased two Temminck cocks about a year ago from Mr. Hampe in Shanghai, both wild caught birds. I mated one with a Satyr hen which was bred at the London Zoo. She had previously had a Satyr cock and proved very fertile. He unfortunately died. I gave her a Temminck cock. She laid five eggs and four were fertile. Most unfortunately the hen has now died. To keep the cock company I have given him his daughter: she is nearly full grown. I wish it were easier to buy these birds. Mr. Chapman usually imports some every year about March, but most of them arrive in a poor condition though one can usually pick out some healthy birds. The Monauls which arrive with them are usually in the same condition. This is no fault of Mr. Chapman. It is usually the only way one can purchase these birds, from dealers, as they are not good breeders in captivity. I am hoping that there are three Temmincks on the way for me from Shanghai; if so, they are sure to arrive in first-class condition as they are in very competent hands and not newly caught. I do not think there are any Temmincks in Europe except one pair in Italy and mine.

Referring to Mr. Beever's remarks, Tragopans are certainly not so active as many Pheasants are, but I do not think that this would lead to abnormal fat. My Argus, Monauls, Imperials, and Mikados are all likewise rather slow in their movements compared to, say, the Amherst and Golden. I have never found hempseed harmful but it must, of course, be given sparingly. I give mine a little once a day—but only a little. I give my Argus a little sunflower seed occasionally. He loves it. Mr. Beever wishes for more experience in rearing the rarer Pheasants. I could not refer him to anyone more competent than Mrs. Lambert, of Nawton, York. He knows her. Mrs. Lambert has all my chicks in her care from the day they are hatched, and what she does not know about it is not worth knowing. She has had most kinds under her care and I can tell Mr. Beever and anyone else who cares to know, that there is no royal road to success. You either have good luck or bad luck—not often the happy medium. When once you have mastered the feeding you are entirely in the hands of the weather. This past year the early spring weather was appalling—rain, rain, rain! Nests and eggs were floating. I lost several young chicks in this way. Two Peacock Pheasant eggs were due to hatch during one of the worst storms, both fertile and both dead. Several eggs which Mr. Seth-Smith sent to Mrs. Lambert for incubation were destroyed during one storm. Heart-rending, but one has to put up with it and to look forward to better luck next year.

I will tell Mr. Beever how to get Reeves to lay and to lay fertile eggs. Give your Reeves' cock only *one* hen. Reeves are not at all pugnacious. I have never known or heard of a Reeves' cock killing his hens. I hope Mr. Carlton Hunting has succeeded in rearing his Borneo Firebacks, as they have a nasty habit of dying suddenly when you have every right to consider them safe. In the course of a letter I wrote to Mr. Hunting, I asked him how his young Borneos were, but he did not mention them in his reply! I hope he has reared them.

I think Mr. Beever is rather pessimistic when he talks of many species of Pheasants becoming extinct in the near future. I think all Pheasants that come from China, and many do come from there, are fairly safe for many years. So many parts of that vast country are inaccessible to the naturalist as it abounds in brigands, etc. The home of the Bulwer's, Imperial, and the Edward's are likewise death-traps. Monsieur Delacour knows all about



FLIGHTLESS CORMORANT (*Nannopterum harrisi*) FROM THE GALAPAGOS ISLANDS.

Frontispiece.

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THE FLIGHTLESS CORMORANT OF THE
GALAPAGOS ISLANDS

A species of Cormorant which has found flight unnecessary and has therefore lost the use of its wings is as remarkable a bird as was the Great Auk, which was in the same predicament. The one is now extinct and it is feared the other will be soon.

A few days before Christmas, 1932, Lord Moyne returned home from a yachting trip on which he had visited the Galapagos Islands, those barren mounds of black lava which lie on the Equator 500 miles from Ecuador, in the Pacific. He brought back with him four examples of the large and strange Marine Lizard, five of the beautiful little Galapagos Doves (*Nesopelia galapagensis*), and one example of the curious Flightless Cormorant (*Nannopterum harrisi*), which lives in one small portion of this group of islands, namely on part of the coast of Narborough and the adjoining western side of Albemarle. Darwin visited these islands during his historic voyage of the *Beagle*, in 1835, and gave a wonderful account of their fauna, but he missed this Cormorant, which suggests that it was scarce even then. It was not described until 1898, when a series was collected for the Hon., now Lord, Rothschild, who wrote, when describing it, "This bird is the largest known Cormorant, and its wings are quite soft and incapable of flight and of about the same size as the wings of the Great Auk." In colour this Cormorant is dull blackish, a hue that is apparently

common to a good many of the animals of these black lava islands. It nests among the rocks, and Lord Moyne found two females sitting each on three eggs.

The specimen that has arrived is a young bird and feeding on live fish, which it is beginning to take well, in the diving-bird tank. Its wings, entirely lacking feathers capable of flight, and its huge feet are clearly seen in the photograph.

This is the first time this Cormorant has been brought alive to this country, though it has been exhibited in New York.

D. SETH-SMITH.

BIRD NOTES FROM CLÈRES FOR 1932

By J. DELACOUR

On the whole the weather of this last year has been quite good in Normandy. The winter was exceptionally dry and bright, although quite mild, and practically no losses occurred. The summer was also very fine, dry on the whole, and in this cool valley not too hot, except for a few days in August. Unfortunately April and May were wet and cold, and the result was that birds in general, but mostly Pheasants, laid few eggs and late, or even in some cases none at all.

Only one Darwin's Rhea was hatched early in May, but it obstinately refused to feed and, in spite of all sorts of attentions, died after three or four days. Grey and White Rheas, seventeen in all, were reared as usual without any difficulty. However, I must warn fellow aviculturists to carefully avoid dampness at night with young Rheas. When about four weeks old, we moved our birds to a fresh field in which the hut, where they are shut in at night, had no wooden floor, but one of bare earth instead, and slightly damp. Within a few days all the young Rheas had cramp and distorted legs and looked like dying. In haste we put them back into their old pen to sleep on a dry wooden floor, and in the space of one week they had all recovered.

Owing to the cold weather in the spring some of my good breeding

pairs of Pheasants did not lay as usual. This was the case with Lewis's, Imperial, Siamese, Firebacks, Germain's, and Palawan Peacock Pheasants. Others, such as my best pairs of Monauls, laid one clutch only. But we reared a fair number of Mikado, Elliot's, Bel's, Chinquis, Monauls, Brown and Blue Crossoptilons, and of other less rare species. It is particularly gratifying to have at last succeeded in breeding a good number of the fine blue species (*Crossoptilon auritum*), which I imported four years ago from Kansu, at a great expense, through the kind help of Mr. Hampe. I have now six pairs and they can be considered as established here. They are just as strong, hardy, and easy to rear as the better-known brown Manchurian species.

Another interesting event was the first breeding in captivity of the Bronze-tailed Peacock Pheasant (*Polyplectron chalcurum*). A pair of these quaint little birds purchased two years ago as Mr. Frost brought them from Sumatra, started laying early in May. Unfortunately the first clutch was destroyed by the Rheinart's Argus, living in the same aviary—which, by the way, is the largest compartment in my small birds' aviaries, 65 by 22 feet, and where crowds of Doves and small birds live beside the Rheinart's and Bronze-tails. However, instead of depositing her next two eggs on the ground the little hen Bronze-tail, which is quite tame, wisely chose for her nest one of the baskets hung up under the roof for the use of Pigeons and Doves. I was surprised, on 15th May, to find her sitting. The eggs were at once removed and placed under a Bantam hen. One was clear, but the other one hatched and the chick was reared to the adult stage without any more trouble than an ordinary Chinquis. A fortnight after, two more eggs were laid in a similar basket; both hatched in due time and the chicks grew well. One, however, died in October; the other one was removed to an indoor aviary where he has been doing very well since.

The clutch of the Bronze-tailed Peacock Pheasant consists of two eggs like that of all Polyplectrons. These eggs are pinkish white, spotless, and measure about 49 by 30 millimetres. The chicks look like young Chinquis but are very much darker, almost blackish brown all over with very dark chestnut markings. They behave just like any other young Polyplectrons. This year I have moved my Palawans to that large aviary and removed the Bronze-tailed to

a smaller one, so as to give the first named a better chance to breed next season.

The Rheinart's had no luck this year: the first two clutches were smashed; only one egg each of the other two clutches was fertile and hatched, but one chick was killed by the broody hen; the other one was growing well when, at three weeks old, it died in a few days of some sort of roup, to which this species is particularly susceptible. The old pair are magnificent. The long tail-feathers of the cock reached 1.73 m. this year, a length that I have never recorded before in wild specimens, the average being 1.50 m.

My hen Argus laid many eggs but, the male having an injured foot, they proved infertile. I have now obtained some perfect birds.

Before leaving the subject of game birds, I have something to say about the Australian Brush Turkeys. For two years I had been keeping these birds in large pens with poor results. I started with two cocks and four hens. Soon each cock killed a hen and last year, through some keeper's neglect, one male went into the next aviary and killed the other one. Mounds had been built every year with suitable materials provided, but no chicks ever came out. Being left last spring with one cock and two hens, I decided in April to pinion them and let them out in the park, feeling rather tired of them. It took them about a month to settle down, but they soon became tame enough. The male chose a small flat piece of ground in a sloping wood high up on the hill, and built a fine mound, which he kept up beautifully till the end of October, changing its shape every day. Only one hen was allowed to come near, and I am convinced that these birds are strictly monogamous, as it was already found out in France some fifty years ago, when they were bred in numbers in a wild state on an estate not far from Paris. Unfortunately the work had started too late. The first chicks came out in the middle of September and eight in all were seen, with a difference of nine or ten days between each of them. The first two were fully reared without any special food or care, but the season was too much advanced for the others, and we found them dead after a few days. We caught the last one, late in October, and it did quite well indoors for three weeks when it died, apparently poisoned.

It is very curious that although the mound was well away in the park all the young ones were seen very soon after hatching near the bird kitchen, where grain is fed twice a day. I should not be surprised to find that the cock, who is looking most carefully after the nest and certainly helps the chicks to come out, leads them to the feeding-ground, before leaving them to their own resources. After the exit of the last chick the cock took no more interest in the mound and started moulting; his head became pale and his yellow wattles disappeared. During the breeding season he was very buoyant but never vicious to any birds. I hope to be more successful next year as the birds will certainly start breeding earlier, not being disturbed in the spring. But one of this year's birds looks like a male. Will the old cock put up with a rival?

Most of my Cranes were badly paired up last spring, but by the way of exchanges and through the kindness of the London Zoo authorities, I have now a good pair of White-necks and what is probably the last pair in Europe of Manchurians. Each pair has been given the run of some fifty acres, with water, and no other Cranes to disturb them, so that I hope to breed them next season. For the first time here, two pairs of Demoiselle Cranes have hatched and reared young, one 2 and the other one 1. A third pair laid but did not hatch. The breeding pairs left the flock and settled down, one in the garden, the other one up in the wood. They were wonderful parents and fed the chicks on insects held at the tips of their bills. They are charming to watch. The young Cranes grow quickly and must be pinioned at the age of five or six weeks. In December they still lacked the long tertiaries and ear-tufts of the parents.

My old Black-necked Crane, the only one ever imported into Europe, died last summer. A great loss!

The Black-necked Swans reared two cygnets, out of three born early in March. The Black Swans reared four.

We were rather successful with Geese, the following being reared: 7 Emperor, 2 Ross's Snow, 2 Blue-winged, 2 Magellan, 4 Ashy-headed, and one hybrid between a gander Lesser White-front and a hybrid Goose Emperor \times Blue Snow; it promises to look very queer! A hybrid Emperor \times Ross's Snow, bred last year, has grown rather

handsome, being white with dark grey markings on the hind neck and breast, and all the wing feathers with dark grey centres. Needless to say that I had no intention of producing these hybrids!

Six South African, 4 Common, and 4 hybrid Rajah \times Ruddy Sheldrakes were also reared, as well as about 100 Duck and Teal of different species; one pair of Cinnamon Teal produced not less than nineteen young in three clutches, thirteen of which were fully reared, the last brood, left to the mother, having met with accident.

A Cotton Teal, unfortunately unmated, kept in a large flight, laid two eggs.

All the Sea Ducks are flourishing on soaked dog-biscuit and grain, and of course what natural food they may find. I have had a pair of Common Scoters now for more than four years and a male Velvet Scoter for two years. A lovely tame drake Long-tail is doing beautifully and is now in full plumage. No doubt the clear, cold, running water of the small chalky lake is congenial to these birds.

Through the help of the Berlin Zoo and Messrs. Carl Hagenbeck I was able to acquire some imported Ruddy-headed and Ashy-headed Geese which ought to prove most useful for a change of blood, as none had been obtained in Europe for many years and the stock was beginning to deteriorate. I also obtained Red Shovellers and Versicolor Teal from South America.

In the small birds' aviaries a certain number of more or less common species of Finches were bred, the most interesting being the Madagascar Weaver (*Foudia*). I kept in the largest flight two pairs of birds that I brought over in 1929. One pair nested three times last summer in a privet, rearing four young ones. Of course, as soon as it started breeding one of the males killed the other one. The Madagascar Weaver has not been often bred in captivity.

Many Bronze-winged, Jobi, Long-tailed, and Diamond Doves were bred, and also Budgerigars and Lovebirds.

The indoor aviaries are well stocked at present, with several Humming-birds, Sunbirds, Motmots, a rare Lagrandière's Great Barbet, which I caught in Laos, an American Golden Green Barbet (*Bucco aurovirens*), a lovely South American Ouzel (*Turdus flavipes*), a pair of Yellow-fronted Mesias from Laos (*Mesia cunhaci*),

a pair of Black-throated Cardinals (*Paroaria gularis*), Amethyst Starlings, etc. In the greenhouse I have several Sunbirds and Sugar-birds, the old Forktail, a Blue-tailed Pitta, two pairs of Fairy Bluebirds, caught by myself in Laos, one pair of Niltavas, one of Rainbow Buntings, one Indian Crested Bunting, and several Mannikins of three species (*Chiroziphia pareola*, *Manacus manacus*, and *M. rubricapillus*). These are charming birds, tame and quaint and beautifully coloured. They do very well on a mixture of cut-up apple, sponge cake, and are really easier to keep than many Tanagers.

The results obtained in the Greenhouse Aviary have been so satisfactory as regards the health and condition of the tropical birds that I have commenced to build a new one with all double glass to prevent quick changes in temperature. It will include a highly heated division for Humming-birds. I hope it will be ready by the early Spring. It is connected with the present Greenhouse Aviary by a glass-covered passage.

To put an end to this already too lengthy paper I shall mention an extraordinarily tame and clever small Troupial (*Icterus croconotus*) which inhabits my room, more often free than in the cage, and Mr. Fooks' pet Hill Mynah which imitates my voice so well when I call out "Frank!" that one never knows whether it is I or the bird that is calling.

THE BREEDING OF ROSELLA PARRAKEETS

By WALTER VOIGT, Jena, Germany

In the year 1926 I purchased a pair of Rosellas (*Platyercus eximius*) from Gamages for a German fancier. The birds arrived here in perfect condition and later on changed owners twice before they again came into my possession in 1929. These beautiful birds spent the winter in a metal cage 3 feet long, and it was really extraordinary how small was the food consumption of such large birds compared with that of the Budgerigar. The principal food consists of sunflower seed, white millet, canary-seed, spray millet, and as an extra a mixture of

scalded ants' pupæ, hard-boiled egg, and a little biscuit. Now and then they like to nibble at a little maw-seed and oats. The perches of the cage were very eagerly chewed up, so that they had to be renewed every week. The birds, particularly the hen, were very wild, but in time they got accustomed to people, and in May, 1930, the birds were put into a flight cage, in the open, of the following size: Length, 4½ feet; height, 3 feet; depth, 2 ft. 8 in. The back of the cage is of wood, as is the top, all the other sides are open and covered with small-mesh wire netting. After the birds had become fairly used to this cage I gave them a nest-box with a hollowed-out egg cavity. The hen soon disappeared in the nest-box and she only came out very rarely to take food. The period of hope began for me now, and I was not destined to be disappointed. At the end of June I heard the cries of the young ones in the box but, as I have made it a rule never to look in the nest-boxes during breeding, I did not know how many young there were.

I use nest-boxes of the vertical type—11 by 11 inches and height 18 inches. The entrance-hole is 4 inches in diameter. But this is the important point: With boxes of this design I have very often observed that eggs were crushed by the hen entering too hastily. The hens jump usually from the entrance-hole on to the eggs. In order to avoid this I have provided the boxes on the inside with a strip of wire netting. This wire netting reaches from the hole to the egg cavity. All hens now let themselves down on this netting. As a covering on the egg cavity I use one to two handfuls of fine sawdust. I have also tried to use horizontal nest-boxes, but as yet have had no success with these as the birds preferred the usual form. I will, however, continue my attempts with the horizontal boxes next year.

From now onwards more egg-food was offered and a great deal of half-ripe grass seed, also half-ripe oats. In the early period the half-ripe grass seed no doubt formed the chief food of the young, and as soon as you got near the cage with the bunches of grass, you could see by the behaviour of the cock how keen he was on this food.

The middle of July three strong youngsters flew out. They were a long time getting accustomed to people. They dashed about the cage whenever anyone came near. By avoiding all hasty movements

during feeding and with the help of a calming whistle the wildness disappeared. Only the old hen remained wild and is still wild to this day. There was no second nest in 1930.

After the old birds, separated from the young ones, had spent the winter again in the cage in an unheated room, they were put back into the breeding cage in May, 1931. They felt themselves at once at home, and the hen quickly found the nest-box, and it was not long before she was sitting tight again. The success in 1931 was two young. A further three lay like dried-up mummies in the nest-box. A second brood was also not produced in 1931.

It was now my business to obtain unrelated mates for the three young birds of the 1930 brood which had by this time become adult, which was extremely difficult on account of the Parrot ban, but I was successful in hunting up two cocks; also I received later a hen from a mating of Mealy Rosella \times Rosella. I had now collected a fine number of Rosellas. Of these I kept the old breeding pair and also two further pairs, the rest were sold.

May came round again in 1932. This time I could thus begin breeding with three pairs. The old breeding pair once more received the old breeding cage, while I put the two other pairs in two aviaries situated apart so that the birds could call to one another, but could not see one another. As in the previous years the old pair at once went to nest this year. Nor did I have to wait long for the second pair with the two-years-old hen which I reared myself, whereas the third pair with my two-years-old cock and the hen (Mealy \times Rosella) made no attempt at nesting as the cock was ill. Later on this hen laid a few eggs on which she sat very well, but which proved to be infertile. The old breeding pair had six young in one brood this year, of which, however, only five flew. The second pair gave me two young. This year, as previously, the old breeding pair did not have a second nest, but the second pair went to nest again soon after the young were caught up and this time four young ones flew. From two pairs I thus obtained eleven young in all. On the strength of this experience I believe I can say that the old breeding pair was no doubt imported, and consequently imported Rosellas only have one nest per year, while with aviary-bred birds several nests can be expected. I hope in 1933 to be able to

continue breeding with equal success and also to breed then the Splendid Rosella (*Platycercus splendidus*), of which I was able to acquire three pairs. In addition I hope to breed Pennants and Brown's and to be able to report my breeding successes in this Magazine.

Together with the Australian Parrakeets I regard the Australian Finches as my special favourites, as also does my father, and since 1910 many young birds have seen the light of day here.

In case any reader has rare Parrakeets or Finches to dispose of, I shall be glad if he will kindly offer them to me.

(Translated by F. S. Elliott)

MORE ADDITIONS TO BREEDING RECORDS¹

By Dr. E. HOPKINSON, C.M.G., D.S.O.

(Continued from Vol. X, page 326)

PARROTS

- p. 76. *Add*: 329. *i*, VIOLET-NECKED LORY (*Eos variegata* (Gm.)). Bred by Soudée in France in 1926; see *L'Oiseau*, 1927, 15. Neunzig records (p. 791) a previous incomplete success in Germany, "Frau Prowe . . . got as far as two-weeks-old young," and gives the reference *D.G.W.*, 1909, 10.
- p. 222. *Add*: 332. FORSTEN'S LORIKEET. *a*, FORSTEN'S × RED-COLLARED LORIKEET. Bred by Whitley in 1927; a first, but no record published. I saw the young bird in August, again in the following year, and it is still alive and, I think, has had brothers or sisters since (1932).
- p. 79. 338. SCALY-BREADED LORIKEET. For "1895" in line 1, read "1925", and in line 4, after ". . . years ago", read: Later he gave me the reference, *L'Oiseau*, 1925, 287.

¹ The page references and numbers are (as in previous parts) those of my *Records of Birds Bred in Captivity* (Witherby, 1926); new records are indicated by the addition *i*, *ii*, etc., to the number.

- p. 80. 342. GANGGANG COCKATOO. *Add*: and the same breeder got young every season for the next three years, *teste* Tavistock and Delacour, *A.M.*, 1926, 150.
- p. 81. 347. BARE-EYED COCKATOO. *Add*: , and Blaauw in Holland bred them again in 1926, rearing one young bird; the breeder gives a full account (with a photograph) in the *Ibis* (1927, 425).
- p. 81. 348. ROSEATE COCKATOO. *Add*: In America were bred by Rudkin in 1929, *teste* Prestwich (*A.M.*, 1930, 29, and *Aviculture*, Jan., 1932), and Tavistock reared two this year (1932).
- p. 224. 348. *b*, ROSEATE × LESSER SULPHUR-CRESTED COCKATOO. *Add*: Whitley bred two in 1931, one of which was shown at the Crystal Palace Show, February, 1932; *see A.M.*, 1932, 67. I saw both the young birds in May, 1932, striking looking specimens which distinctly show the mixed parentage, though not yet in full colour.
- p. 81. 350. BLUE AND YELLOW MACAW. *See* next entry.
- p. 82. 350. RED AND YELLOW MACAW (*A. araruna*). *Add after* Sharland: , as well as a reference, *D.G.W.*, 1901, 303, to another success in Germany, where a pair laid in a cupboard in a room and hatched out a young bird, which left the nest at 94 days old. In *D.G.W.*, 1932, p. 110, M. Müller describes success in a large flying aviary at Essen and gives photographs of the young bird at various ages between 7 and 12 weeks old. It was hatched on 5th October and was over 4 months old at the time the account was written. A summary of this account appeared in the September number of the Magazine, which also contained two other Macaw-breeding records: (1) BLUE AND YELLOW MACAWS successfully bred in Australia by Padbury in 1931 and 1932; the breeder has now two pairs of home-bred birds (*A.M.*, 1932, 221). (2) The rearing of a RED AND YELLOW × BLUE AND YELLOW MACAW hybrid in New Zealand, in 1931 (Anderson, *A.M.*, 1932, 220).
- p. 224. 353. RED AND YELLOW MACAW. *Add*: *a*, RED AND YELLOW

- × BLUE AND YELLOW MACAW. Bred in New Zealand ;
see (2) in the preceding entry.
- p. 224. The P.Z.S. reference under 351. a, should be 279 not p. 2.
- p. 82. 351. RED AND BLUE MACAW. *Add*: Has been bred in the U.S.A. by Holmes, *teste* the list in *Aviculture*, Jan., 1932.
- p. 82. 354. ILLIGER'S MACAW. *Add*: The Zoo reared two young in 1931, *teste* Seth-Smith, *A.M.*, 1931, 236.
- p. 83. 356. YELLOW-HEADED CONURE (*C. jendaya*). *For the record as it stands, read*: Butler (*AGB.*, ii, 157) says that there is a record of successful breeding in *Notes on Cage-birds*, ii, 173. Biquet in France was successful in 1924; see *L'Oiseau*, 1925, 98, and Moody (*A.M.*, 1929, 8) writes, "have bred at Woburn every year since 1926."
- p. 83. *Add*: 356. i, RED-MASKED CONURE (*C. rubrolarvatus*). First bred by Shore-Baily in 1925 (*A.M.*, 1925, 318, and 1926, 116 (Medal)).
- p. 83. *Add*: 358. i, PETZ'S CONURE (*C. canicularis*). Has been bred in the U.S.A. (Palmer), *teste* the list in *Aviculture*, Jan., 1932.
- p. 84. 362. GOLDEN-CROWNED CONURE. *Add*: For the United Kingdom Captain Waud was the first breeder; he reared a young bird in 1926. See *A.M.*, 1926, 327.
- p. 85. 365. WHITE-EARED CONURE. *Add*: M. Découx (*in lit.* 15, i, 27) writes, "Abbé Leray told me he bred them many times."
- p. 85. 366. RED-BELLIED CONURE. *Add*: A.S. Medal (*A.M.*, 1926, 116).
- p. 85. *Add*: 367. i, PRINCE LUCIAN'S CONURE (*P. luciani* (Deville)). Bred for the first time by Mme Lecallier in France in 1918 and also elsewhere in France in the same year (*A.M.*, 1927, 140).
- p. 288. Hybrid entry. 365. *Add* (or ? *vice versa*).
- p. 86. No. 371. GUIANA PARROTLET. *Add*: In *A.M.*, 1926, 244, Dr. Wildeboer of Hull gives an account of success in that year.
- p. 86. *Add*: 371. i, BLUE-RUMPED PARROTLET (*Forpus cyanopygius*

- (Bp.)). Bred by Mrs. Goddard in 1927 and the Medal awarded for a first success in the United Kingdom (*A.M.*, 1928, 52).
- p. 86. *Add*: 371. *ii*, GREEN-RUMPED PARROTLET (*F. viridissimus* (*Lafr.*)). Bred by Dr. Plath in Chicago in August, 1924 (*teste* Plath *in lit.* 28th October 1932); one young bird was reared which the breeder kept for two years and then gave away. Whitley at Paignton in 1931 reared a brood of Parrotlets, which he identified as *viridissimus*, and this must be the first record for the United Kingdom. I saw the birds (old and young) all green and certainly neither what we used to know as "Blue-wing Lovebirds", which used to arrive in such numbers from the Argentine, nor the Blue-rumped Lovebirds bred by Mrs. Goddard which I also saw.
- p. 225.¹ *Add*: The rearing of some Parrotlet hybrids is recorded in the List given in the January number of *Aviculture (U.S.A.)*. The record is: *Forpus v. vividus* × *F. caelestis*: bred by Mrs. Tomlinson in California and the parents identified as above by Plath.
- p. 87. *Add*: 373. *i*, ORANGE-FLANKED PARAKEET (*B. pyrrhopterus* (*Lath.*)). First breeder: W. Lewis in 1925; three reared out of five hatched (A.S. Medal); *see A.M.*, 1925, 292; 1926, 71, 116.
- p. 89. 380. ALEXANDRINE PARRAKEET. *Add*: Ezra in *A.M.*, 1931, 331, writes that he now has nine blue-bred young hatched 1929-31, the parents being the blue cock he has had so long and a green hen; one at least of the 1929 birds is a hen, and this should go a long way to the arrival in the near future of home-bred blues.
- p. 89. 383. RING-NECKED PARRAKEET. *Add*: Ezra (*same reference as above*) has seven lutino-bred young, but all are apparently hens, most of whom have laid. Tavistock has this year (1931) reared two good lutino young from one of his pairs of lutinos.

¹ The generic name of the Parrotlets has to be changed from *Psittacula* to *Forpus*, and that of the Ringnecks from *Palacornis* to *Psittacula*.

- p. 89. No. 384. AFRICAN RING-NECK. *Add to the record*: Lord Tavistock tells me that he remembers Canon Dutton breeding the African Ringneck some years before the war.
- p. 89. *Add*: 384. *i*, DERBYAN PARRAKEET (*Psittacula derbyana* (Fraser)). Bred by Dr. Leon Patrick in California for the first time in 1930, two young being reared; see *Aviculture (U.S.A.)*, Nov., 1930 (*teste A.M.*, 1931, 23) and *L'Oiseau*, 1931, 73, where the award of the French Medal for a first success is announced. Dr. Patrick tells me (15th August, 1932) that he bred them again in 1931 and 1932, one of the 1930 cocks being the father of three of the 1932 birds.
- p. 90. *Add*: 386. *i*, MALABAR PARRAKEET (*Psittacula peristerodes* (Vigors); *late columboides*). First breeder: Tavistock in 1927; four young reared. In the previous year one young one had been hatched, but only to live ten days. See *L'Oiseau*, 1928, 36. In 1931 Ezra reared a brood (*A.M.*, 1931, 236).
- p. 90. 387. VERNAL HANGING PARRAKEET. *Delete the last three lines of the entry and add as a footnote*: From *D.G.W.*, 1908, 367 and *Nzig.*, p. 734, it appears that Mme J. Prowe of Moscow was almost successful in 1907 in rearing the BLUE-CROWNED HANGING PARRAKEET (*L. galgulus* (Linn)), for one chick was hatched and lived thirty-two days. This is probably the "breeding in Russia, *Gef. Welt*, 1907", mentioned by Shore-Bailly and referred to in an editorial note in *L'Oiseau*, 1926, 107.
- p. 91. 389. BLACK-TAILED PARRAKEET. *For the record as given read*: The first to breed the "Rock Peplar" in the United Kingdom was Mrs. Johnstone in 1903 (*AGB.*, ii, 208), but they had been bred many years before in France; see *Brisay, Dans Nos Volières*. They have been bred fairly often more recently and on both sides of the Atlantic.
- p. 91. 390. ALEXANDRA PARRAKEET. *Add*: Ezra in 1931 reared a brood of four from a pair he had received the previous winter; full account by the breeder, *A.M.*, 1932, 9.
- p. 227. 390. *b*, ALEXANDRA × CRIMSON-WING PARRAKEET. *For*

the entry as given, read : Tavistock in *Cage-birds*, 15th August, 1925, reported the breeding of this cross in 1925 ; two were hatched, but one died soon after leaving the nest ; the other was at first thought to be a hen, but turned out a cock. See *A.M.*, 1925, 231, and 1926, 338. This was the first success.

- p. 91. *Add* : 392. *i*, SULA ISLAND KING PARRAKEET (*A. sulansis* (Rehw.)). A hybrid record only.
- p. 227. 391. CRIMSON-WING PARRAKEET. *For the entry as it stands, read* : *a*, CRIMSON-WING × SULA ISLAND KING PARRAKEET. Bred by Tavistock in 1927, three young reared : a first. See *A.M.*, 1927, 259, and *L'Oiseau*, 1928, 38. One of the young hybrids was presented to the Zoo, where it still (1932) is ; a strikingly handsome bird. *b*, CRIMSON-WING × ROCK PEPLAR (Black-tailed Parrakeet). Bred by Whitley in 1928, 1929, and 1930, but never recorded. I saw the 1930 brood (four) in the nest in May ; one was shown at the Crystal Palace, February, 1932. See *A.M.*, 1932, 67 ; and see 390. *b*, and 392. *b*.
- p. 289. *Hybrid entry 391 ; add as another male parent*, the Bluebonnet.
- p. 92. 394. ABYSSINIAN LOVEBIRD. *Delete the bracketed sentence at the end of the entry, and read instead* : Two English successes were recorded in 1925. (1) W. Lewis, who reared two out of four hatched, and gained the A.S. Medal (*A.M.*, 1925, 292 ; 1926, 71, 116). (2) Groves, who reared one young bird. This, according to Prestwich writing in *A.M.*, 1928, 295, was really the first success, Lewis's occurring a few weeks later. Shore-Baily in 1926 reared four young from one nest. The really first success appears to have been obtained in Germany earlier in 1925 than either of the two English breeders ; see *A.M.*, 1926, 146, and *D.G.W.*, 1926 and 1927. They have also been bred by others in Germany, in France, and in the U.S.A.
- p. 92. 395. PEACH-FACED LOVEBIRD. *Add* : Whitley breeds them freely and also hybrids ; success has also been obtained in the New York Zoo, *teste* Crandall's 1927 List.

- p. 227. 395. PEACH-FACED LOVEBIRD. *Add*: *a*, PEACH-FACED × MASKED LOVEBIRD. First bred by Whitley in 1928; since freely, but never recorded.
- p. 92. *Add*: 395. *i*, NYASA LOVEBIRD (*A. liliana* (Shelley)). First breeder: Stokes, in May, 1926; see *A.M.*, 1926, 169. In France they were bred later in the same year by both Mme Lecallier and M. Découx, in each case showing themselves free breeders. Since then they have been frequently and freely bred.
- p. 227. *Add*: 395. *i*, NYASA LOVEBIRD. *a*, NYASA × PEACH-FACED LOVEBIRD. First bred by Whitley and the further cross, NYASA × the *a*, Hybrid. *b*, NYASA × BLACK-CHEEKED LOVEBIRD. First bred by Blanchard in France in 1928; four young reared which resembled the mother. See *L'Oiseau*, 1929, 108. Whitley is now breeding this cross freely and has done so to several generations, the hybrids breeding true to type.
- p. 93. 396. BLACK-CHEEKED LOVEBIRD. *Add*: About 1923 more were imported and they are now (1932) being bred in many aviaries.
- p. 227. 396. *a*, BLACK-CHEEKED × PEACH-FACED LOVEBIRD. *Add*: They were bred in France later than 1925, *teste* Prestwich, *A.M.*, 1929, 79. Whitley has also bred and is, I think, still breeding this cross. *Add*: *b*, BLACK-CHEEKED × NYASA LOVEBIRD. Five reared from two nests by Bennett in Australia in 1927 (*A.M.*, 1928, 301). This was probably the first success. Since then the cross has been commonly bred, notably by Whitley who finds the young keep strictly to type; he has also obtained further crosses, as the hybrids are fertile, and this appears to be the case with most, if not all, Lovebird crosses. Such further crosses were also recorded by Bennett, viz. the *b*, Hybrid × BLACK-CHEEK (i.e. three-quarter BLACK-CHEEK) and vice versa (i.e. three-quarter NYASA). *d*, BLACK-CHEEKED × MASKED LOVEBIRD. First bred by Lowe in 1928 (United Kingdom). See *A.M.*, 1929, 21; the French Medal was awarded. The cross has

been often bred since. Whitley in 1930 reared further hybrids, viz. BLACK-CHEEKED \times NYASA-BLACK-CHEEK hybrid, five young in 1930 and others since. BLACK-CHEEKED-MASKED Hybrid \times MASKED. The result of this cross is a large-sized MASKED.

- p. 93. *Add*: 396. *i*, MASKED LOVEBIRD (*A. personata*). First breeder: Tavistock in 1927; two young were reared and in the following February he had more young almost ready to fly. See *A.M.*, 1928, 18, and *L'Oiseau*, 1928, 59. Since then have been bred freely elsewhere. About 1928 the Zoo obtained a blue cock which was mated in 1929 with a normal hen, which reared a brood of green young. In 1930 the blue father was mated with one of his green daughters and more young (green) were obtained. In 1931 three blue young and a lot more blue-bred were reared, so now there is a good stock of probable blue-breeders. See Seth-Smith, *A.M.*, 1931, 235, etc.
- p. 228. *Add*: 396. *i*, MASKED LOVEBIRD. *a*, MASKED \times NYASA LOVEBIRD. First bred in 1928 by both Bearby and Lewis, *teste* Prestwich, *A.M.*, 1929, 78. *b*, MASKED \times FISCHER'S LOVEBIRD. First (according to Prestwich, as above), Bearby in 1928, but two were reared in France by Blanchard in August of the same year: query, which was first? Since these (and other crosses) have been often obtained.
- p. 93. *Add*: 396. *ii*, FISCHER'S LOVEBIRD (*A. fischeri*). Tavistock bred them in 1927 and received the French Medal as such; see *A.M.*, 1928, 55, and *L'Oiseau*, 1928, 59, 61. Whitley, however, was actually the first to rear this species, but published no record.
- p. 228. *Add*: FISCHER'S LOVEBIRD. *a*, FISCHER'S \times NYASA LOVEBIRD. First breeder: Dooly, in the United Kingdom in 1928, *teste* Prestwich, *A.M.*, 1929, 78. *b*, FISCHER'S \times MASKED LOVEBIRD. First (*teste* Prestwich, *A.M.*, 1928, 305) Mrs. Miles, of Chichester, in 1928. Since then by others, notably by Whitley, who has bred them to at least a second generation. *c*, FISCHER'S \times PEACH-FACED LOVEBIRD.

M. Olivaux reports in *L'Oiseau*, 1929, 45, that he reared five young in 1928 at Rennes, and inquires if this is a "first". Whitley thinks his first young were earlier and since then he has been breeding them easily. For a list of Lovebird hybrids to date see *A.M.*, 1928, 189; I think most of these records have been incorporated above, but cannot be sure owing to their multiplicity; I do, however, feel certain that other combinations have been obtained, of which I can find no record.

- p. 228. Under 397. *a*, PENNANT × ROSELLA, line 2, for "*erythrop-terus*" read "*erythropeplus*".
- p. 228. 398. *a*, ADELAIDE × PENNANT. For four read: three, one of which went to the Zoo (*A.M.*, 1926, 328); and add: *b*, ADELAIDE × ROSELLA. This cross was bred by Arthur about 1892, teste Finn and Arthur in the *Cage-birds Handbook*, "Parrots," 1927.
- p. 228. 399. YELLOW-BELLIED PARRAKEET. Add: *a*, YELLOW-BELLIED × ADELAIDE PARRAKEET. Tavistock tells me (*in lit.* 8, i, 1927) that one was reared at Woburn at liberty some time ago. In his *Parrots . . .* (1928) he gives further particulars of this cross (p. 207). *b*, YELLOW-BELLIED × ROSELLA. Bred by Whitley in 1928 and 1929, and I saw the birds in May, 1930, when the hen was again sitting on three more young. In 1932 I saw several of the quadruple hybrids bred at Paignton; two of the parents were these or their hybrids, but I forget what the two other species involved were.
- p. 94. 400. YELLOW-RUMPED PARRAKEET. Add: Tavistock in 1926 reared one young bird, making, I think, the second record (*A.M.*, 1926, 279).
- p. 228. 400. *a*, YELLOW-RUMPED × ROSELLA. For the record as given, read: Page gives this cross; his entry almost certainly refers to Arthur's success in 1908, which is recorded in the *Cage-birds "Parrot" Handbook* (1927) by Finn and Arthur.
- p. 228. 401. MEALY ROSELLA. For the entry given, read: *a*, MEALY ROSELLA × ROSELLA. Bred by Whitley in 1926. *b*, MEALY ROSELLA × BARNARD'S PARRAKEET. Hybrids have also

- been obtained with males of the Rosella, Bauer's, and Red-rump Parrakeets.
- p. 228. 402. ROSELLA. *a*, ROSELLA × MEALY ROSELLA. *Add*: which no doubt deals with the hybrid bred by Arthur in 1891 and exhibited at Preston Show. See "Parrots" (*Cage-birds Handbook*, 1927) by Finn and Arthur.
- p. 290. *Hybrid entry*. 402. ROSELLA. *To the list of male parents add*: the Yellow-bellied Parrakeet and the Barraband, the last *teste* Tavistock's *Parrots* . . . p. 198. (But which way was it?—E.H.)
- p. 94. *Add*: 403. *i*, BROWN'S PARRAKEET (*P. venustus* (Kuhl)). Tavistock records success in 1928 in *A.M.*, 1928, 234, and says that it had been previously bred in Fifeshire by Miss Drummond, who published an account either in *A.M.* or *B.N.*, but this I cannot find.
- p. 229. 403. STANLEY PARRAKEET. *Add*: *b*, STANLEY × PILEATED PARRAKEET. Prestwich in *A.M.*, 1930, 29, puts on record that two such hybrids were reared by Patrick in California in 1929.
- p. 95. 404. PILEATED PARRAKEET. *Add*: They were bred in California by Dr. Leon Patrick in 1930; see *A.M.*, 1930, 335, and *L'Oiseau*, 1931, 715.
- p. 95. 406. YELLOW-NAPE PARRAKEET. *Amend the entry*: First success, the Zoo in 1912; that at the Zoo in 1862 given by Neunzig is an error.
- p. 229. 495. *a*, BARNARD'S × YELLOW-NAPE PARRAKEET. *Add*: Also reared by Whitley in 1927.
- p. 230. 408. BLUEBONNET PARRAKEET. *Add*: *b*, BLUEBONNET × CRIMSON-WING. Whitley in 1931, *teste* Whitley in *lit.* 30th July, 1931.
- p. 230. *Add*: 416. ELEGANT GRASS-PARRAKEET and 418. TURQUOISINE. 416. *a*, ELEGANT × TURQUOISINE. Neunzig (p. 751) says that "in 1879 a hybrid ELEGANT and TURQUOISINE was bred", but not where, nor definitely that the cross was this way.
- p. 98. 419. SPLENDID GRASS PARRAKEET. Seth-Smith has shown

(*A.M.*, 1932, 73) that the record of breeding at the Zoo (as in my *Records* and elsewhere) is the result of a clerical error in the Zoo Official List, 1883, "hatched" having been printed instead of the correct "purchased". Harvey, of Adelaide, has had great success in 1932 and now has about a dozen young Splendid Parrakeets flying in his aviaries.

- p. 100. 425. BUDGERIGAR. Blues and all sorts of other colours and shades except red, are now being bred. About 1925-26 the prices of blues, etc., soared immensely, £50 a pair or more, but by 1928 had dropped to about £5, and now except for extra-special exhibition specimens, they are so commonly bred that I should think 10s. may be taken as an average price.
- p. 100. 426. SWIFT PARRAKEET. *For the record as it stands, read:* First bred in 1887 by A. Rousse at Fontenoy-le-Sainte in France (*Neunzig*, p. 753, *says* Belgium.) He had a male which nested successfully with two females; one had five, the other four young, all of which lived to adulthood. De Brisay, Cornély, and others also bred this Parrakeet successfully; see *De Brisay, Dans Nos Volières . . .*, p. 33. I know no record for the United Kingdom, but was told when in Tasmania last year that it had been bred occasionally there in aviaries.

REVIEWS

COLOURED CHARTS OF INDIAN BIRDS

A series of five charts, each containing a number of coloured figures of Indian birds, has been published by the Bombay Natural History Society. Each chart measures 40 by 36 inches, and no less than 210 species are illustrated on the five charts, while Chart No. 5 contains also figures illustrating the topography of a bird and the various types of beaks and feet of the different orders. The illustrations are decidedly

good, both in drawing and coloration, and nothing like them has been attempted before. The series comprises Perching Birds, Climbing Birds, Birds of Prey, Game Birds, Wading and Swimming Birds.

These charts are primarily designed to familiarize the people of



Photograph of Chart No. 1. There are five of these Charts of Indian Birds, printed in colours, mounted on canvas and varnished.

India with their native birds, and from the educational point of view they will prove of very great value, and we greatly wish the idea could be extended to *our* native birds, in order to teach the growing generation here about the birds of their country, for there is no sounder way of instilling a love of birds in the human mind than to teach people how to identify them, and there is no better way of doing this than by good coloured illustrations.

Many of the species figured are well known to aviculturists in this country and we feel sure that a good many of our members will like to acquire this series. It is published at 45 rupees, which represents £3 7s. 6d., for the five charts, which are not sold separately. We understand that the Bombay Natural History Society has also had these pictures made up into book form, which is more convenient if one has limited wall space. The album measures about 12 by 9½ inches and the price will be £5 7s. 6d. Applications for the charts or the album (in Great Britain) should be sent to the publishers, Messrs. Vitty & Seaborne, 132 Long Acre, London, W.C. 2.

D. S.S.

CAGE BIRDS ANNUAL

We are favoured with a copy of *Cage Birds Annual* for 1933. It contains much useful information to Aviculturists and some excellent and practical articles, those which will especially appeal to our members being "An Aviary of Whydahs and Weavers", by J. Donald Mills; "Budgerigars of the Future", by F. S. Elliott; "Our Rarer Soft-bills", by H. Norman; and "The Keeping of Tanagers, Sugar Birds, and Zosterops", by Rosslyn Mannering. Those interested in the Mendelian Theory will find interest and instruction in Mr. A. K. Gill's article on the White Canary.

This publication can be obtained from The Poultry World, Ltd., 4 Carmelite Street, E.C. 4, price 1s. 8d. post free.

CORRESPONDENCE, NOTES, ETC.

THE YOUNG OF THE RUDDY QUAIL DOVE

Captain Stokes, in his account of the breeding of the Black-capped Fruit Pigeon by Mr. Whitley, mentions the fact that the young leave the nest when only a few days old. I have been successful this season in breeding the Ruddy Quail Dove (*Oreopelia montana*) and was much surprised when the young flew five days after hatching. Although they were frequently returned to the nest, as I was afraid they might be injured by Pheasants, they would not remain there, except if returned late in the evening, when the hen would join them on the nest. The young, doubtless, in a state of nature leave the exposed nest in bush or tree at the first opportunity for the comparative safety of the ground.

P. C. MACKIE.

PROLIFIC ZEBRA FINCHES ; FOOD FOR TANAGERS

Last spring I bought a pair of Zebra Finches the offspring of which have increased to such an alarming extent that I fear my aviary, which is quite extensive, will be overstocked with these birds, and they continue even now to keep bringing youngsters into the world. Beyond the fact of catching them up and making them cease, is there any other way to induce them to take a rest, or is it best to let nature continue its course? I shall be very glad if any of your readers can give me any advice on this subject and inform me if this is a very common habit amongst these Zebra Finches. I have just purchased some softbill food which is advertised for Tanagers, etc., but I cannot induce these birds to look at it. They will only eat bananas and apparently would sooner starve than touch the softbill food. Have any of your readers, I wonder, had the same experience?

EVELYN W. BARCLAY.

QUEER BEHAVIOUR OF A DUCK

Mr. A. Ezra's letter upon "Strange Bird Friendships" is extremely interesting and reminds me of a White Runner Drake I once had which *never knew he was a Drake—or never wanted to!*

I make these following assertions upon my honour as an F.Z.S., although I do not expect them to be believed.

Some six years ago I sat a Hen upon thirteen eggs. Having only twelve Fowls' eggs I made up the thirteen by adding a White Runner Duck egg. This egg duly hatched out, as did nine of the Fowls' eggs. In the next run separated only by inch mesh wire netting was a flock of White Runners but "Sebastian", as we named the hen-hatched duckling, never took the slightest notice of them. He thought he was, or he was determined to be, a Fowl.

My Runner Ducks and Geese were sent out each morning to a pond some 500 yards up the road. Here they swam about all day and were fetched home at night. People used to come to their doors to watch them waddling in single file home to bed. Never once would Sebastian join the throng. He would not go near the other Ducks, neither would he go near water. We put him out with the others but he would turn back and quack at the door

until it was opened when he would rush back to the Fowl pen. Several times I had him carried up to the pond and placed thereon. He left the water quickly and evidently thoroughly disgusted. He would mate with no Duck but mated, or attempted to, freely with the Hen. We had to separate him from them upon this account. Nothing we could do would make him associate with his own species. He was eventually killed by one of my dogs.

H. MOORE.

A SECOND EGG-TOOTH IN YOUNG PIGEONS

For the last two seasons we have reared young from a pair of Grey-fronted Ground Doves (*Leptoptila rufazilla*), and it has lately been observed that the



young possess an egg-tooth on the lower as well as on the upper mandible. The tooth is well developed and can clearly be seen in the enclosed photograph.

At the time of writing the two young are still in the nest and growing remarkably fast, as is the case with most Pigeons.

R. R. MINCHIN (Adelaide).

In the AVICULTURAL MAGAZINE of 1908 (p. 341), in describing the breeding habits of the Partridge Bronze-wing Pigeon (*Geophaps scripta*), Mr. T. H. Newman pointed out the presence in the nestlings of "a white knob on both mandibles at tip", and further remarks: "The upper one is of the usual triangular shape, but unusually large, while the lower one takes the form of a flattened semi-circular nail. I am not aware that an egg-tooth on the lower jaw has been recorded in any species of bird, but it is evidently not so uncommon among Pigeons, as I found it present in newly-hatched young of the Brush Bronze-wing (*Phaps elegans*), but very much smaller, and, to my surprise, I could just detect it in two young Picui Doves (*Columbula picui*) and in a young Diamond Dove (*Geopelia cuneata*). . . . It would be interesting if our members would examine any young Doves or Pigeons that they may have hatched and report if they find it present. I think the young of *Columba* and *Turtur* have no trace of it."

Subsequently Mr. Whitley discovered a second egg-tooth present in the nestlings of *Oreopelia montana*, as recorded in this Journal (1925, p. 277), with an illustration.—ED.

The following interesting letters and notes are from the Report of the Avicultural Society of New Zealand for 1932 :—

THE PUKEKO¹

Until about three years ago the Pukeko (or Swamp Hen) had the doubtful honour of being classed as "native game". Of course the Pukeko is not a game bird in any sense of the word, but it was something to shoot. In fact in this respect they were very popular as they have several characteristics which appeal to the so-called sportsmen. They may, for instance, be shot with ease while feeding unsuspectingly in the paddocks. Further, if alarmed they usually prefer to run rather than fly, this of course gives the shooter a chance to display his skill; and even when forced to take wing the flight is sufficiently slow and laboured to make it an "even break"—for the man.

With so much to recommend it to sporting circles is it any wonder that a howl of indignation went up when it was placed on the list of absolutely protected birds? Reasons for its slaughter came in from every quarter (sportsmen are found all over our fair Dominion). It destroys Duck eggs they said. It devours vast quantities of grain. It ruins grain stacks and so on.

My own observations of the Pukeko feeding among my own crops of millet, turnips, and oats, I handed on to the Native Bird Protection Society.

These observations absolutely exonerated the bird on my farm, although they were fairly numerous. At the same time it is possible under certain circumstances it does do damage, but isolated cases cannot be used as an argument for wholesale destruction of the bird.

The Native Bird Protection Society brought pressure to bear on the Department of Internal Affairs, who finally decided to investigate. Consequently between the 5th November, 1928, and 16th September, 1929, a number of birds were shot in districts where the damage they committed was supposed to be greatest. The net result of this investigation is altogether in favour of the Pukeko.

Now as regards the egg-eating habits. I secured a Pukeko and for a fortnight fed it on green stuff and scraps. Then for twelve hours I left it with only an egg in the pen. At the end of that time as the egg was still intact, I broke it and left it in a saucer. Another eight hours went by and the egg was untouched. As I considered this sufficient test I then fed the bird with its usual food which it ate greedily.

This does not prove that all Pukekos are abstainers as far as eggs are concerned; it does, however, conclusively show that all are not egg thieves, and thereby another "frame-up" is exposed.

Since writing the above article I have definite information that a number of farmers who had in the past wanted the Pukeko destroyed are now its champions and want it preserved, and in places where it has disappeared wish to have it re-introduced. This bird they consider is one of the best agents in destroying that menace to grass lands, the grass grub.

S. D. POTTER.

¹ The Black-backed Porphyrio (*Porphyrio melanotus*).

BREEDING THE AUSTRALIAN FIRE FINCH¹

A pair of these beautiful birds first came into my possession in November, 1930. I soon discovered that they were not very easy to acclimatize for the hen died a few days later. A second hen was procured, but she too went the way of the first.

In the meantime the cock flourished, sang his quaint but rather pleasant little song, and became thoroughly hardened, for that winter he spent outdoors in company with Singing, Zebra, and Chestnut Finches. Moreover, his conduct left nothing to be desired in spite of the bad character some writers give them. In fact so far as my experience goes the only "dangerous" time is when they are nesting.

In August, 1931, I managed to buy another pair. The cock looked fairly "seedy", but the hen appeared to be in the best of health. I bought them, and as I expected the cock died before long. However, I was happy, for at last I had a pair and what was more they soon showed signs of mutual affection.

This being the case I decided to give them every possible opportunity and put them in a well-sheltered aviary by themselves. They soon built a nest in the only box provided, but to my intense disappointment only pulled it to pieces a week later. However, before long they recommenced operations, this time on top of the box, and from then till the time two brown youngsters with black bills greeted me they never looked back.

Since then I have reared a good many, in fact every bird hatched has been reared. Four eggs seem to be the average number in a clutch, and the colour is white.

The nest has two compartments either side by side or one above the other. The eggs are laid in one, and the male roosts in the other. Incubation is performed by both sexes.

For food I used canary, white, mixed, and hungarian millets, grass heads, powdered cuttlefish, and gentles.

S. D. POTTER.

CUBA FINCHES

It was in February, 1932, I was fortunate enough to get a pair of these pretty and entertaining little birds. As they were in perfect condition and the weather favourable, I soon transferred them to an outdoor aviary in company with Gouldians, Pintailed Nonpareils, Parrot and Singing Finches. They were immediately at home and commenced building the very next day.

The site chosen was high up in the flight so I had to place a sheet of iron over the top to protect the nest from the weather.

The nest would be a credit to a House Sparrow and that is about all. It is large—very large, and made principally of short pieces of hay and vegetable down. It is completely covered and entrance is via a tube or passage that runs in up to the nest.

Both parents sat and they are remarkably light sitters.

The egg I did not see, but on the 23rd March, 1932, four youngsters resembling the hen in colour left the nest.

The food I use is mixed, hungarian, and white millets, canary seed, cuttlefish, green stuff, and a few gentles.

Cuba Finches are very active and well able to look after themselves among larger birds, but they are not quarrelsome and are very hardy.

S. D. POTTER.

¹ Generally known in Great Britain as the Crimson Finch.—Ed.

GOULDIAN FINCHES

Extract from a letter received from Mr. H. V. Highman, Hon. Secretary of the Avicultural Society of Western Australia. This extract is given to members on account of the information which it contains concerning the Gouldian Finch.

Most fanciers here find great trouble in rearing and keeping this beautiful Finch. The cold nights seem the trouble. From two pairs I have this season reared seventeen youngsters and the parents are still nesting. My aviary is the outdoor ground type 12 by 9 by 7 feet high, well protected from prevailing winds on two sides and on the other two sides I hang a tarpaulin on a windy night. The top is half-roofed, but the Gouldians roost in the open. For nests I use small cigar boxes about 6 by 6 inches with a high, small opening. The old birds I feed on Australian hungarian millet and canary seed only. Greens in the way of thistle, etc., are eaten, but not in any big degree. Seeding grasses are a great favourite.

I forgot to mention, it is my opinion that two pair at least are needed for success in breeding. I did not have any luck with single pairs. It may be only fancy, but since keeping at least two pairs I have never looked back.

We have an excellent poultry preparation by name "Merval" over here, and I use this in the drinking water weekly. I have been doing this for the past seven months and my losses have been one Avadavat and one Goldfinch. Naturally I swear by "Merval".

With the young I find the parents maintain them with regurgitated seed, but I also supplied white ants which were greatly relished. Young reared on partly insect diet never look back, but reared on seed only they mostly die at about six months when breaking into colour. I find ants' eggs are also soon devoured and, of course, the Virol recipe is faithfully applied.

Of course, in your country the extreme cold would be your problem and I should say you would have to include some heat-giving quality in the diet. Here the extreme heat is the bother.

I might say I am a great believer in seeing that all Finches roost at night on a full "tummy". They can then stand the cold better. With our Finches enteritis is the main bother, but "Merval", in my opinion, prevents and cures.

EDITOR'S NOTE

The preparation "Merval" is not obtainable in New Zealand, but it is a poultry conditioner as well as a cure for the majority of bird diseases caused by bad condition of the stomach and intestines. The preparation "Dimol" is useful for correcting trouble in these organs.

TALKING BUDGERIGAR

To Hon. Secretary,
Avicultural Society of N.Z.

I'm just going to give you a few additional details concerning our talking Budgerigar which will probably interest you. I brought him inside the day following that on which he left the nest, fed him on soaked seed and hulled oats, and in a few days he was able to crack any seed. He is exactly nine months old now and first started talking about three months ago. His

vocabulary as yet is very limited but is rapidly extending, especially this last week or two.

As you stated, he calls "Budgie, Budgie" when wanting to draw attention to himself, also says "Pretty Budgie"; "Hullo, Budgie"; "Come on, Budgie"; "Scratch Budgie". He is also good at imitating a whistle, and recently I brought a young cock Canary inside and Budgie is real good at imitating him. The only trouble with him is that I can't guarantee him to talk at any particular time, such as when a visitor comes to hear him. Sometimes I can't get him to talk when I want him while at other times he sits talking away to himself when nobody is listening to him.

Recently he seems to have become particularly attached to my little daughter aged eleven, and at mealtimes is generally perched on her shoulder trying to participate in every bite she puts in her mouth. Immediately she goes to her room at night and switches on the light, he's off through to the room like lightning, and perches on her forehead while she lies reading. If he's not there, he's at the mirror talking to himself. Of course, being a small bird his voice is not too strong. Probably this is enough news of this one bird, but the members of our household can't sing his praises enough because we think he's wonderful.

J. TWEEKIE HUNTLY.

BREEDING THE DHYAL BIRD

The parent birds had been in captivity in New Zealand for over a year and both were remarkably fit. I gave them a large coco-nut husk into which they carried very little nesting material. Four eggs were laid, dark green with large black spots. I wish to emphasize the shortness of time between the introduction of the coco-nut husk and the laying of the eggs.

In due course three young were hatched on the 8th January, 1932. Unfortunately two died within the first thirty-six hours, but the remaining youngster was quite healthy.

The parent birds were fed with any live insects that could be obtained, these including spiders, earwigs, centipedes, cockroaches, and mealworms. A note of interest in regard to the spiders. The parent birds would pull the legs off and eat them themselves and then pass over the body of the spider to the youngster.

With the combined efforts of the whole of my family in searching for insects and the two parents in feeding them to the youngster, the latter was fully fledged within two weeks and showed the white markings on its wings.

The Dhyal birds are exceedingly clean in their nesting habits, carrying the whole of the excreta as far as possible away from the nest. The young one finally left the nest on the 25th January, 1932, and shortly afterwards became completely independent. After a period of a couple of months, it is now flying around and is as large as the parent birds, but has a breast, however, marked just like a Thrush.

I regard the breeding of this Dhyal bird as one of my greatest achievements as an aviculturist, for I can assure you it was no small effort obtaining sufficient quantity of live insects.

A. E. HENLEY.



John Bull, 1890, E. Darmanin, 1911, London.

Macklot's Pitta.
Pitta mackloti

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LORD BUCKMASTER'S BILL

A Bill has been introduced in the House of Lords by Lord Buckmaster which seeks to make it illegal to capture or "keep in a cage or other receptacle" any bird included in the schedule which accompanies the Bill, a schedule which includes practically every bird on the British list with the exception of crows, magpies, and a few others.

What does this imply? It means that everyone who has a British bird in his possession must, if the Bill becomes law, either wring its neck or turn it loose to starve within six months of the passing of the Act. It means also that whereas the rich man can keep his foreign birds, the poor man who cannot afford these can keep no birds at all unless he is content with canaries.

The keeping of birds is a custom of great antiquity, and everyone who is prepared to keep birds under suitable conditions should have every right to do so. Moreover, bird keepers are invariably bird lovers and take a pride and delight in the health and happiness of their pets; and the working man has every bit as much right to keep his Goldfinch or Linnet as has the nobleman his Cranes or Emus.

That the conditions under which birds are kept and sold in certain shops in the East End are far from ideal we are prepared to believe, and if there is any cruelty involved the R.S.P.C.A. should take the

matter up, but there is no reason in the world for a drastic measure such as this Bill and we hope all of our members will use their influence to so modify it that the just rights of Britishers are not infringed.—
EDITOR.

MACKLOT'S PITTA
(*Pitta mackloti*)
AND NOTES ON THE HOODED PITTA

By SYDNEY PORTER

This is a lovely Pitta which was introduced into this country by the enterprise of that well-known and persevering collector, Mr. Frost, who brings so many rarities from the Far East. Only one bird, I think, was imported which, like the Giant Pitta, did not survive long.

It is a much smaller bird than the above-mentioned Pitta and not so striking in colour, but at the same time a very beautiful creature.

This bird was offered to me but I did not purchase it, as I was contemplating giving up all my birds; but as I kept my Pittas I rather regret this now.

Macklot's Pitta has a very wide range, being found in New Guinea, New Ireland, New Britain, and the Cape York district of Australia, as well as many islands adjacent to New Guinea. I believe the one which was imported came from New Guinea.

Pittas are my favourite birds and I am seldom without several of these lovely creatures. When tame they are unusually intelligent and confiding, and when properly looked after are long-lived.

Most Pittas are semi-aquatic and shallow pans of water should always be provided for the birds to paddle about in. A rich insectivorous food is necessary; a poor quality food will not support them, in fact they refuse to eat it. My birds are fed upon a very good food mixed by that veteran aviculturist Mr. Frostick, and this is mixed with grated carrot and hard-boiled egg. This, with an abundance of live food, keeps the birds in perfect health for years. For some time

past we have been in possession of a true pair of Green-breasted or Hooded Pittas; one of the birds, the hen, has been with us for over five years. The other was picked up in a miserable condition about twelve months ago, but after a few months and after the moult it became in as good a condition as the other one. Up to the spring of last year both birds had been remarkably silent, the older bird only at rare intervals giving out its strange barking call. Knowing how very pugnacious Pittas are towards one another, we did not keep them together, but placed them in small aviaries adjoining one another.

Several months ago the birds became very interested in one another, conversing in a low, wheezing undertone with each other the whole day, and every now and then giving vent to their loud, barking-like call. It was very amusing to watch the birds trying to feed each other at the same time, each with a beak full of mealworms.

Most of the display consisted of bobbing up and down, each bird drawing itself up to its full height and then quickly bowing down until the breast was resting on the floor. One morning we let both birds out on to the bird-room floor, as they were remarkably tame, just to see what they would do, and a most amusing display was witnessed.

The birds greeted each other with a very loud, sharp call that we had never heard before, and immediately waltzed round in a circle, bowing and bobbing up and down. Then one of the birds would in turn retire to the end of the room and, with its beautifully marked wings stretched out and the brilliant blue wing coverts standing out at right angles to the wings, the blue feathers of the lower back raised and the scarlet under parts puffed out, the bird would rush at the other one, nearly knocking it over. This was done repeatedly by each bird in turn. Now we let the birds out every morning and the display is begun immediately and is continued for several minutes. Frequently the birds pair and then return to the respective aviaries. The birds now know, and are ready waiting by the door as soon as we enter the bird-room. On rare occasions they caress one another.

Each day the male bird makes a nest in its food pot. This consists of leaves and fibre from the trays of leaf-mould in the birds' cages. Dry pieces of grass are also used, which are pulled from pieces of turf;

sometimes when one of the birds is pulling a grass stem, endeavouring to loosen it, it will suddenly remain motionless, as though in deep contemplation, for several minutes at a time. Doubtless this is due to some natural instinct which urges them to remain stationary when disturbed by an enemy in their native forests. Standing still amidst vegetation a *Pitta* is well-nigh invisible, as I found out some little time ago when the hen was frightened during a period of liberty in the bird-room. She flew straight downstairs through the open door and away over the trees, and settled in the grass in the middle of the orchard. Although I knew the exact spot where the bird alighted and made a diligent search for about half an hour, it remained invisible. Just as I had almost abandoned the search it took wing from almost under my feet and sailed off, looking like a huge, brilliant butterfly, into the grounds of a neighbouring house. After an extensive search we found her, but she took flight again, circled round, made a bee-line for the bird-room door, flew straight in through the open door, upstairs, and into her aviary. This was the first time she had ever been out!

BIRDS IN A DWELLING-ROOM

By BERNARD C. THOMASSET

My aviaries are unheated and I have no bird-room, so that each winter a certain number of birds which cannot stand much cold have to pass the winter in my sitting-room.

We are told that an ordinary dwelling-room heated by an open fire-place is unsuitable for wintering birds on account of the fluctuations of temperature. During the day the room may be fairly warm, but at night it is sure to be chilly.

This, no doubt, is true; but, in spite of it, I have found that my birds do particularly well under such conditions.

It is true that birds are bad for a sitting-room. Cages are bulky and unsightly, and their inmates scatter seed and sand, and one's friends and neighbours consider one eccentric, but a sitting-room does not appear to be bad for birds.

The room which they share with me is about 20 by 18 feet and has windows to the south and east. It gets all the sun there is until about 3.30 o'clock, but it is in no wise a warm room. I find it most important to place cages where they will have the maximum of light and the minimum of draught, and, in an ordinary room, an open wire cage is difficult to place. All my cages have backs, either permanent or detachable, and in some positions sides are advisable. Generally, the best place is at right angles to a window, but not immediately in front of it.

On January mornings the room strikes one as cold. The temperature by the window, where the cages are, is only a few degrees above 40°, but the birds do not seem to feel in the least cold. A pair of Gouldian Finches and their six September-hatched young ones never show a ruffled feather, and they are keen on their bath however frosty the weather, providing it is sunny. Light appears to affect their spirits more than temperature. It is interesting to note how much hardier home-bred Gouldians are than imported birds. A Shama is spending his tenth winter here, and Long-tailed Grass Finches are quite happy. I find it possible to winter these last outside, but they certainly look miserable during hard frost.

Lately I brought in a pair of young Diamond Doves. These are the only birds which feed regularly by artificial light. I often hear them at their food tin quite late in the evening. The Shama has a passion for wireless, and will sometimes sing to it late at night, but I have seldom known him feed after dark. He is, however, a light sleeper and will accept a mealworm at any hour.

NOTES FROM ASSOUAN

By G. H. GURNEY, F.Z.S.

As I am spending three months in this wonderfully fascinating Egyptian town I send a few notes on the everyday birds which one sees around one. I am afraid the notes will not have much connection with Aviculture, as the average Egyptian's only idea in keeping a bird alive is to cage it, until it is fat enough to eat, and one may see in the

town quantities of Palm Doves, in tiny cages, awaiting this fate. Being in bad health I am unable to do more than observe those species which fall under my eye so to speak. I cannot manage, unfortunately, to get out into the desert wadis and palm-groves where one might see more species.

As I write (7th January) there is little or no migration going on, and so the species which one does come across must be looked upon more or less as residents. Compared with Luxor, the Fayaum, and the more northerly parts of Egypt, I do not think Assouan can be considered a good place for birds. The enormous population of Europeans employed in connection with the never-ending works at the Great Dam, with the consequent amount of river-craft of all descriptions dashing hither and thither, not to mention the weekly arrival of one of Cook's Tourist steamers in Assouan itself, have driven away practically all bird life from the immediate vicinity of the Nile, though of course in the migration season, when the hordes of birds of every description are dashing northwards, there must be many who, at any rate, stop for a few hours on one of the many islands into which this part of the Nile is broken up.

However, those which are here are of great interest, and give me inexhaustible pleasure to watch, and I also marvel that none of the many delectable species ever find their way into our aviaries. The native boys are past-masters in the art of trapping and it seems to me there would be plenty of scope for a collector to bring back a number of species practically new to Aviculture!

I am wakened every morning by the melodious "huh-huh" from a pair of Hoopoes who have already commenced to breed under the roof over my balcony window. I constantly see them flying up with short pieces of straw, and I well remember when I was here many years ago digging out a Hoopoe's nest which was almost entirely composed of short pieces of straw. They are very abundant here, all now paired, and it is amusing to watch them congregate when the gardener is watering with a hose the plots of mown grass in the hotel garden; no doubt the water brings insects to the surface of the ground. Their unmistakable note may be heard on all sides.

Quantities of the beautiful little Egyptian Palm-Dove inhabit the

hotel garden and the adjacent public garden. They are not particularly tame, and I do not think they have started breeding yet. They are very fond of sitting or walking on the hard garden paths; one narrowly escaped a terrible death from venturing too near a monkey chained to a tree, the Dove got away, but minus all its tail feathers!

From my bedroom balcony I can watch with my glasses a pair of Hooded Crows constructing a big untidy nest in an acacia tree not far away. For the last few days while I have been laid up with a cold, this pair of birds have kept me amused by their breeding proclivities, love-making and squabbling alternatively. I have taken a large number of daily notes, which really one day might work up into a not uninteresting paper. They are, of course, very common here and always amusing to watch. One of their enemies is the Greater Spotted Cuckoo and the Crow's nest I have under observation appears to be haunted, more or less, by one and sometimes two of these birds. Whether the Cuckoo is parasitical on the Crow I am not certain without a reference book, but the manner of the former, anyhow, looks very suspicious. Greater Spotted Cuckoos are not as common here as they are at Luxor, but still appear to be evenly distributed. They live a great deal in the sonto trees, and as you pass in your motor they fly out, but always two or three at a time. I have never seen a single one. They are very fine, handsome birds, and would, of course, make ideal aviary birds, only the food question might cause difficulty. I believe here they feed almost entirely on various caterpillars in preference to small lizards, but there should be no great difficulty in getting them on to a suitable food in captivity, though I do not remember ever having seen one, even at the Zoo. By far and away the most noticeable, as well as the most beautiful of the birds at Assouan at the present time, is the Little Green Bee-eater which swings like a jewelled pendant from a telegraph wire or from the end of a spray of acacia, and when two or three dash off at the same moment to seize some passing insect, the sun reflecting on their green and gold plumage, they look like some gigantic sun-bird. They are resident here the whole year round, but the Blue-checked and European species all join them on migration. They have a weak little note, something like "cheer-wit", which they constantly utter.

Among other noticeable birds which haunt the hotel garden are

plenty of White-spotted Blue-throats, which, with their long tails held continuously erect, are often to be seen hopping amongst the shrubs.

A drive into the desert, however short a one, at once reveals the presence of various sand-coloured Larks and Pipits, but unless I handled them I would not dare to swear as to their identity. A small flock of light-coloured birds on the right reveals the whereabouts of a little company of Trumpeter-Bullfinches, while perched on the larger rocks stands up bold and defiant the magnificent Black Chat. Their iridescent black plumage is particularly conspicuous against the pale sand, and a more handsome bird it would be hard to find. The White-rumped Chat is also frequently to be seen, but prefers ground which is not of quite so rocky a nature. There are also certainly two species of pale-coloured *Saxicolas*, but again, without a book of reference, I am not clear as to their identity.

The Houbara Bustard is certainly found in the immediate vicinity of Assouan, and a native gave me a description of a small sandy-coloured Partridge, which is found in some of the more distant "wadis" which can be nothing else but *Ammoperdix heyii*. Guineafowl and Sand-grouse are also reported as being resident beyond Shelal, but I very much doubt whether this is the case, and whether they range anywhere near this district.

As regards birds of prey, for which Egypt is so noted, I have had little scope for seeing much in that line. Of course, the ubiquitous Yellow-billed Kite is always with us, for ever soaring round the hotel and immediately perching on the three hotel flag-staffs directly the flags are hauled down at sunset. Kestrels are frequent; and a splendid male Merlin dashed out of a sount tree close to me one day. No doubt various species of Vultures occur; I have only identified the Egyptian Vulture.

I have also been prevented from seeing the birds which live around the Nile itself. I can only mention the more noticeable ones which have come within my view of observation from my terrace-seat. Buff-backed Herons, of course, are common enough, but nothing like in the abundance one finds them in at Luxor and other places. Lesser Egrets are scarcer. Apart from their different coloration in beak the flight of these two species is very different and there should be no difficulty

in telling them apart when on the wing. The Egret looks a much bigger and lumpier bird altogether. An Egret and an adult Egyptian Vulture passed me flying fairly close in the same direction this morning, with the brilliant sun shining full on their white plumage. It was interesting to note that the Vulture looked far more white and brilliant than the Heron. Pied Kingfishers occur on the rocks in the Nile, but are much more plentiful all round the Fayau area, and nearer Luxor, where there is more cultivation and consequently ponds and streams; here at Assouan the desert comes far too close all round, and many birds very common in Lower Egypt are practically non-existent here; two notable instances are the Spur-winged Plover and the Bulbul. Night Herons are probably common, concealed among the foliage of the Lebek trees by day, and not stirring till dusk. There are numbers of small Waders, running about on the sand-banks of the Nile, but even with glasses it is difficult to identify them. A charming and very characteristic bird which I had nearly forgotten to mention, is the grey Egyptian Swallow which is always in evidence everywhere, either hawking flies up and down the streets of the town, or swinging round the big boulders about the Nile; I have also noticed one or two European Swallows. But even from my prescribed area I realize that Assouan is not a good place for birds: it is far too much shut in by the desert on all sides, and compared with Lower Egypt the number of species one sees is comparatively small.

DISEASES OF AVIARY BIRDS

By A. E. HAMERTON, C.M.G., M.R.C.S.

Pathologist to the Zoological Society of London.

[*This valuable article was written for and printed in the Veterinary Journal and is reprinted by permission of the Editor of that publication and the Author.—Ed., A.M.*]

Diseases causing mortality among birds that are commonly kept in captivity may be specified in order of frequency as follows:—

(1) *Diseases of the Respiratory System*, including (a) congestion and œdema of lungs; (b) pneumonia; (c) bronchitis and bronchopneumonia.

In the aviaries of the London Zoological Gardens, where my experience has been gained, the respiratory diseases above named are by far the most destructive, and affect mainly small species. The lungs of birds are so closely fixed to the parietes that there is little room for expansion; any inflammatory condition is, therefore, often quickly fatal. Congestion of the lungs may be defined as a condition of active hyperæmia of the organs, that is revealed by areas of deep red, almost purple, discoloration, which, on compression between finger and thumb, exude frothy fluid. The portion of lung affected contains some air, and does not sink in water. The whole lung is œdematous and boggy from oozing of fluid into the air spaces. On microscopic examination the air spaces of the lung are patent, but most of them contain some coagulum, leucocytes, and red blood cells. An extension of this process results in plugging of the tertiary bronchi and their diverticula with exudate, and consolidation of groups of lobules, which form a patch of consolidated lung that sinks in water, a condition of bronchopneumonia. Sometimes the whole of one lung and a large part of the other may be found firmly consolidated and hepatized, and sinks like a stone in water; a condition resembling acute lobar pneumonia of mammals. These conditions come on suddenly: the bird may appear well in the evening, and is found dead at the bottom of its cage next morning. The disease is not usually diagnosed before death, and I know of no treatment. Cold and fog, or a dusty, stuffy atmosphere appear to be predisposing causes.

(2) *Diseases of the Alimentary System.*—(a) Catarrh of intestine; (b) enteritis and gastritis; (c) fæcal impaction and intestinal obstruction. Catarrh of the intestines and enteritis are the next most common causes of death in cage birds. In most cases no specific bacterial or parasitic cause can be determined, and the distinction between catarrhal inflammation and enteritis is somewhat arbitrary, and depends mainly upon the intensity of the lesions as seen by the naked eye, or as may be indicated before death by the character of the diarrhœa from which the birds suffer. In catarrh of the intestines there is swelling and œdema of the intestinal mucosa, and in chronic cases the mucosa may have atrophied and disappeared from portions of the bowel. The lumen of the gut often contains undigested seeds or sand, and there is always great excess of mucous exudate. In enteritis the gut is more severely

and more extensively inflamed, and deep red in colour; the mucosa is intensely congested and hæmorrhagic, with patches of denudation, sloughing, or ulceration, and a blood-stained exudate, or even blood, may fill the lumen of the gut. Both conditions are frequently associated with secondary inflammation of the pancreas and gall bladder, viscosity of bile, and changes in the liver associated with biliary stasis.

Local ulcers of the gizzard and intestine are not uncommon, and are frequently caused by the irritation of a foreign body, usually a piece of wire, which may perforate the walls of the alimentary canal and cause fatal peritonitis. Idiopathic peptic ulcers occasionally occur in the gizzard, but more commonly in the duodenum near the entrance of the pancreatic ducts, and may cause death by perforation, hæmorrhage, or secondary septic processes in pancreas or liver. Intestinal obstruction and ulceration caused by impaction of chalk-like concretions of excreta (urates, etc.) in the cloaca, and secondary fatal septicæmia is a condition to which birds in captivity are liable. In small birds much the same effect may be produced externally by stoppage of the vent, due to the accumulation of hardened fæcal material on the surrounding feathers.

Little can be done in London in the way of preventing the respiratory diseases, for they are climatic in origin, and associated with the presence of fog, atmospheric impurities, cold weather, and stuffy, dusty rooms. Much, however, can be done in reducing the mortality from intestinal diseases, for they, like mycosis and tuberculosis, are to a great extent filth diseases engendered in cages with dirty perches, sides, and bottoms, dirty feeding utensils, and feeding with stale food. Wholesome, fresh food, cleanliness, and the use of disinfectants are the remedies. Troubles arising from constipation and over-feeding can sometimes be recognized during life, and successfully treated with household remedies.

(3) *Specific Infections*, the cause of which is definitely known, and can easily be determined by simple laboratory methods, viz.: Tuberculosis (avian); and mycosis. It is of interest to recall that tuberculosis of birds was first recognized by Bland Sutton when working in the Prosectorium of the London Zoological Gardens in 1884. His material was examined by Drs. Gibbs and Klein, then the accepted authorities on tubercle bacilli in London. At first the disease was regarded as

leprosy; later, Klein changed his opinion, and agreed that the disease was tuberculous. Cage birds of all kinds are susceptible to the avian type of tubercle bacillus; but, with the exception of cockatoos and parrots, they are said to be resistant to the human and bovine strains. The only mammal of economic importance that is commonly infected with avian tubercle bacilli is the domestic pig, and it is possible that in the very rare cases in which man has become infected with the avian type of tubercle bacillus he has contracted it through the pig. Calves are susceptible to the avian type of tubercle bacillus, but to a much less degree. In the Zoological Gardens, a kangaroo was recently found infected with avian tubercle bacilli in the pancreas, and Stanley Griffith has reported a similar infection of the udder of a goat.

Although tuberculosis probably attacks every avian species living in captivity or domestication, it seems to be extremely rare among wild birds. The authenticated cases on record are so few that they may be mentioned. Shattock and others described a case in a lapwing (*Vanellus vanellus*) which was captured in Scotland. The specimen is now in the Museum of the College of Surgeons. Hammond Smith records a case in a wild kestrel (*Falco tinnunculus*). Cobbett found a case in a Partridge (*Perdix perdix*), and Hare, of the Royal Veterinary College, quite recently described a case in a wild Blackbird (*Turdus merula*) caught by a cat in a London garden.

In most birds affected with tuberculosis, the lesions are large and conspicuous by advanced caseation. The liver, spleen, and intestines are, in most cases, the organs most severely attacked. Sometimes the disease may be confined to the respiratory system, in which case the trachea, lungs, and air sacs may be affected. In these cases it is often impossible to distinguish the lesion from mycosis, except by microscopical examination, when the finding of tubercle bacilli is decisive. I have never found mycotic lesions and tuberculous lesions co-existing. In records of such double infections I can find no data regarding microscopical examination, which in certain cases is the only means of distinguishing between the two diseases. Tuberculosis of the avian glands (thymus, or lymph glands of neck) is fairly common, and in fact there is no internal avian tissue or structure, except that of the nervous system, in which I have not found lesions of tuberculosis.

If an infected bird is introduced, the aviary becomes grossly contaminated, and other cases may follow, for the birds pick up the tubercle bacilli in millions off the ground with their food, etc.

The following case is illustrative: A Crossopylon Pheasant (*Crossopylon auritum*) died from "enteritis". Examination with a hand lens revealed minute white deposits scattered throughout the whole extent of the intestinal mucosa. Smear preparations of the faeces were examined microscopically. They resembled preparations made from a pure culture of tubercle bacilli in the vast numbers of these organisms revealed. Histological examination of the tissue showed the deposits to be miliary tubercles in the mucosa and in the intestinal villi, which were packed with tubercle bacilli. The potential infectivity of this bird needs no emphasis.

Another case illustrates localized quiescent tuberculosis: A Jackson's Whydah bird (*Drepanoplectes jacksoni*) lived in the Zoo for twenty-one years, when it died from the pressure effects of an abdominal "tumour", the size of a filbert nut, that occupied the greater part of the abdomen. The tumour was enclosed in a fibrous capsule, and contained caseous material. Microscopical examination revealed masses of tubercle bacilli in a structureless matrix, with giant-cell systems in the enveloping capsule. The "tumour" was found to be the spleen; its proper tissue was destroyed. No other tuberculous deposits were found in the bird. Despite the bird's age and destruction of its spleen, its general condition was good. It was in full nuptial plumage, and the testicles showed normal seasonal activity. Interesting points in this case are: (1) The partiality of the avian tubercle bacillus for the spleen of birds in contrast to the rarity of tuberculosis of the human spleen; (2) Birds, like mankind, can get on very well without any spleen at all.

Mycosis is a common and fatal disease of the air passages due to infection with fungi (moulds) of the genera *aspergillus* and *penicillium*. It is characterized by the formation of a mouldy growth on the mucous membranes of the air tubes, and of the air sacs in the thoracic and abdominal cavities. The disease occurs mainly among exotic birds, and is probably acquired under the insanitary conditions in dealers' stores and on the voyage to England. We have seen whole consignments of birds arrive, crowded together in cages fouled with mouldy excreta,

in which nearly every bird has died from mycosis shortly after arrival. *Aspergillus fumigatus* is the commonest fungus causing mycotic lesions in birds. The primary deposit usually occurs on the inner surface of the large thoracic and abdominal air sacs, in which they spread and coalesce, to form a tough, yellowish, leathery, mouldy film, lining the whole of the inner surface of large air sacs; or the growth may completely fill the air sacs of small birds with hard yellow nodules, which may occur in the air spaces of the lungs, where they cause inflammatory consolidation, distinguishable from tuberculosis only by microscopical examination. In some cases the mycotic growth is found only in the syrinx, where it causes death by choking of the windpipe. The disease kills slowly, and can often be diagnosed during life by the gasping and laboured respiration of the birds. When recognized, a sick bird should be segregated.

(4) *Deaths Caused by Animal Parasites.*—External parasites are responsible for ill-health among aviary and domesticated birds that are kept under insanitary conditions, but they are rarely a primary cause of death. More than forty species of lice occur among aviary birds. The common bird flea (*Pulex avium*) infests many species of birds, and the red mite is a nocturnal blood sucker that causes loss of blood and intense irritation. Scaly leg or foot mange is caused by a species of sarcoptic mite, and another species infests the portions of the quills that lie beneath the skin, and causes loss of feathers. The fowl tick infests poultry and Canaries, and carries the fatal spirillum fever of birds; fortunately a rare disease in England. Internal parasites may be dangerous to birds, and often cause death.

The following are common and destructive among aviary birds:—

Gape Worms (*Syngamus trachealis*) infest the air passages of certain cage birds, Waterfowl, and Pheasants, and cause death by blocking of the air passages, or by causing inflammatory conditions of the lungs.

Round Worms (*Nematodes*) are common intestinal parasites, and sometimes cause death by perforating the gut. The most destructive, however, are the following:—

Heterakis.—Small round worms from 31-2 cm. in length, easily seen by the naked eye, infest the caeca of birds, and cause severe

inflammation and gangrene of this part of the bowel. It is a most destructive disease amongst gallinaceous birds and pigeons.

Spiroptera, or hair worms, infest the gizzard and proventriculus of Waterfowl and gallinaceous birds, and cause death by burrowing under the mucosa and setting up severe inflammation.

A *Filaria*-like worm (*Diplotriana tricuspis*) is sometimes found in the body cavity of Jays that have died of pneumonic consolidation of the lungs. This worm causes fatal avian pneumonia by laying its eggs in vast numbers in the tissues of the lung, in which they can be readily detected on microscopical examination of the affected organ.

Tapeworms (Cestodes) are common intestinal parasites of aviary birds. They do not usually cause disease, except when found in very large numbers, they may then cause death by intestinal obstruction or inflammation.

Flukes or flatworms (Trematodes) are sometimes found infesting the kidneys of Egrets, and possibly other water birds. If in large numbers they may set up a verminous nephritis, resulting in death from disorganization of the kidneys. The eggs of the parasite are readily found on microscopical examination of the contents of ureters or cloaca.

Microfilaria.—The larval forms of filaria worms are sometimes found concentrated in great numbers in the capillaries and alveoli of the lungs of birds that have died from pulmonary congestion and œdema, and they can hardly be acquitted of being concerned in causing the fatal lesion.

The air-sac mite (*Cytolechus nudus*) infests the air sacs, and may cause purulent inflammation therein.

Coccidia are protozoal parasites infesting the intestinal epithelium of birds. They set up intractible diarrhœa that is most destructive to young birds. Coccidiosis can be diagnosed only by microscopical examination of the excreta, in which the characteristic oöcyst can easily be recognized. When the parasites infest the caecal epithelium the lesions produced may closely resemble those caused by heterakis worms; minute inspection with the naked eye or hand lens will exclude the worm infection.

Other protozoal parasites of birds, viz. those of bird malaria (*Plasmodium*), are of special interest, in that they were studied by Ronald

Ross, who demonstrated their development in the mosquito—a revelation that led directly to the discovery of the *anophales* mosquito as the essential insect host of the parasite (*Plasmodium*) of human malaria. Avian plasmodia infest the red-blood corpuscles of their vertebrate hosts, and produce malarial fever, which is a fairly common cause of death in recently imported tropical birds. Newly imported birds will sometimes suddenly drop off their perches dead. Post-mortem examination may show nothing visible to the naked eye: a microscopical examination of the blood, however, will reveal great destruction of red blood cells, more than half of which may be occupied by a malarial parasite.

Diseases of the Circulatory System.—Idiopathic anæmia of birds can rarely be traced to the blood-forming organs. Leukæmia, however, is a fairly common cause of avian mortality, and is manifested by an enormous increase of the leucocytes and decrease in the number of red cells; associated with pale, watery appearance of the blood, and a pallid anæmic aspect of all the internal organs. Pericarditis, with serous or purulent effusion, or a dry form of the disease with a white film or urate deposit on the opposing surfaces of the sac is commonly found as a secondary complication of grave primary lesions of the kidneys, or in general septicæmia. Birds will sometimes die, however, with the pericardium distended with clear fluid, and a like effusion in the peritoneum, and no other lesion. There is generally a history of exposure in such cases. Myocarditis and fatty degeneration of the heart in old birds is often associated with rupture of the auricles, hæmopericardium, and sudden death. Endocarditis, or valvular disease of the heart, is quite a common cause of death, and is generally acute, and often associated with an external septic lesion, such as septic "corns" of feet, or infection of the wound after pinioning, or other injury. Chronic endocarditis resulting in sclerosis and distortion of the mitral valves with incompetence and cardiac hypertrophy occurs in old birds. Fatty and calcareous atheromatous deposits in the arterial system are sometimes so advanced as to seriously diminish the flow of blood by narrowing of the calibre of the brachio-cephalic and coronary arteries, a common disease in aged Parrots.

Diseases of the Urinary and Genital Systems.—Birds of all kinds

are very subject to nephritis, which is a common cause of death. In nearly all cases of nephritis in captive birds the inflammatory conditions found appear to have arisen from defects in elimination, resulting in "renal constipation" and clogging of the urinary tubules and ureters with semi-solid or solid white concretions of urates. In such cases the kidneys are usually enlarged, dirty-yellow in colour, and may show hæmorrhages in the soft, friable, and degenerated parenchyma. The condition is often associated with œdema of the lungs, anæmia, pyelonephrosis, and septicæmia; and the serous membranes of the heart and abdominal viscera may appear to be white-washed with a film of urates. Apart from the condition above noted, degeneration changes, hyaline, fatty, and lipoid, are conspicuous lesions, and affect mainly the tubular epithelium; or the tubules may form cysts devoid of epithelium. There is usually much inflammatory reaction and proliferation of fibrous tissue in the inter-tubular spaces, and round the glomeruli; arterio-sclerosis is not often seen. These conditions may in some cases be late results of a specific infection that was not recognized during life.

Diseases of the Generative System, associated with ovarian activity, cause heavy losses among breeding birds, of which the commonest is perhaps simple egg-binding. Salpingitis and general peritonitis, due to the retention of malformed and necrosed ova in the genital tract, or to the rupture and escape of egg contents into the peritoneal cavity, are often found.

Diseases of the Liver and Gall Bladder.—Biliary cirrhosis, secondary to gall-bladder infections in birds that possess a gall-bladder, is not infrequent, and may be associated with general dropsy of the tissues, ascites and pericardial effusion. In the case of a Hornbill (*Phinoplas vigil*), a gall-stone the size and shape of a date stone was impacted in the bile duct and was associated with suppurative cholangitis and biliary cirrhosis. Fatty degeneration of the liver, often associated with angiomatous proliferation of the blood channels is perhaps the commonest hepatic cause of death, which usually follows rupture of the enlarged and friable liver. Abscesses of the liver are generally caused by foreign bodies perforating the stomach or intestines, or they may be secondary to ulcerative enteritis. Localized necrosis

of the liver is seen in parasitic infections, heterakis and coccidiosis, and other specific infections.

Diseases and Disorders of Nutrition.—Severe degrees of osteomalacia and osteoporesis are very common among young birds taken from the nest and reared by hand. True rickets with the deformity and distortion of long bones found in mammals has not yet been seen in birds at the Zoo. Gout is a common disease among elderly Parrots that have been systematically overfed. It is easily recognized by the "chalk stones" deposited in the periarticular tissues about the joints of the feet and wings, and gouty spondylitis.

Neoplastic Disease.—Innocent tumours, adenomas, lipomas and granulomas are common enough, and sometimes cause death by their pressure effects. Hæmangioma of liver and kidneys occurs, and may cause death by rupture and internal hæmorrhage. Spontaneous cancer in birds is rare. The following cases have occurred in the Zoological Gardens: A Bank Myna (*Acridotheres ginginianus*) died from an acinous carcinoma of the pancreas, with extensive secondary deposits in the liver. A Gold Pheasant (*Chrysolophus pictus*) died from an adenocarcinoma growing from the lower pole of the right kidney. The tumour occupied most of the abdominal cavity, and apparently killed by pressure effect.

Diseases of the Nervous System are seldom recognized. Cerebral abscess occurs rarely.

There are many specific infectious avian diseases, such as psittacosis, fowl cholera, pullorum disease or fowl typhoid, fowl pox, fowl plague, and others; most of them are filth diseases engendered by overcrowding, dirty aviaries, stale food, and water polluted by excreta, etc. I have not seen any of these diseases in the Zoological Gardens in London, and will not describe them, as they occur mostly in domestic poultry, except psittacosis, which appears to be a disease of cage birds only.

I apologize to my readers who may have read through this meagre account of some of the more common and easily recognizable diseases of cage birds in the hope that they would find some useful guide or hints for treatment. Unfortunately, I am not a veterinarian, but a general pathologist, and I have had no personal experience of avian

therapeutics, and have little faith in the few remedies I have seen tried. If what I have written may be some help in the recognition and prevention of certain common diseases of cage birds, my purpose will have been accomplished.

MORE ADDITIONS TO BREEDING RECORDS¹

By Dr. E. HOPKINSON, C.M.G., D.S.O.

(Continued from page 52)

PIGEONS

- p. 101. *Add*: 429. *i*, BLACK-CAPPED FRUIT-PIGEON (*Spilotreron melanocephalus* (Forster)). Bred for the first time by Whitley in 1932; see *A.M.*, 1932, 267. The one young bird left the nest able to fly well, though only about a third the size of its parents and with the body feathers still mostly represented by down.
- p. 101. No. 431. RED-CROWNED FRUIT-PIGEON. *Add*: see also *Bull.*, 1917, 416, and *L'Oiseau*, 1929, 94.
- p. 231. *Add*: 433. GUINEA PIGEON. *a*, GUINEA × DOMESTIC PIGEON. This cross was reared by Whitley in 1929 and again in 1930; I saw the birds, which show their paternal relationship distinctly.
- p. 103. *Add*: . *i*, ARAUCANIAN PIGEON (*C. araucana* (Linn.)). First breeder, Fellay at Maxime-sur-Mer in France in 1922; see *L'Oiseau*, 1924, 204.
- p. 103. No. 442. PORTO RICO PIGEON. *Add*: Whitley bred them in 1926 and they have continued to do so with him since. They have also been bred in the U.S.A. They are ground-nesters at Paignton.
- p. 104. No. 446. CANARIAN PIGEON. *Add*: Meade-Waldo (*in lit.* 25.1.1930) tells me that he also bred this species about the same time as St. Quintin and that he also bred BOLLE'S

¹ The page references and numbers are (as in previous instalments) those of *Records of Birds Bred in Captivity* (Witherby, 1926); new records are indicated by the addition of *i*, *ii*, etc., to the record-numbers.

- PIGEON (*C. bollei*) about the same date; this Pigeon must therefore be added as No. 446. *i*.
- p. 231. 449. BLUE ROCK PIGEON. *Add: c*, DOMESTIC PIGEON × BARBARY DOVE. Whitley tells me that he once reared this cross "some years ago", the only success he has ever obtained though he has paired up many. The father was a small White Owl-Pigeon. Dr. Podmore in the *Cage Bird Fancy* of 29th October, 1932, records two Pigeon-Dove crosses he has at last obtained after years of experiment; one was from a Domestic Pigeon, a very small Blue Rock mated with a hen Barbary. Two young were reared from the first clutch, the first time this has occurred in thirty years of experiment; usually the breeder found that young were produced only after long mating. *d*, DOMESTIC PIGEON × TURTLE-DOVE. Dr. Podmore (as above) also reared this cross recently. One young one (a cock) was reared after the father, a cross-bred Almond Tumbler had been paired with the hen Turtle-dove for two years. When six months old the young bird was mated to another hen Turtle-dove, but whether there was issue we are not told. I had hoped to have obtained more details of these interesting results, but to date know nothing more. *e*, DOMESTIC PIGEON × EASTERN TURTLE-DOVE (*Streptopelia orientalis* (Lath.)). One was reared near Tokyo in Japan *teste* Momiyama, who says the young bird much resembled the father (*Hachisuka*, 1928, 27).
- p. 104. LONG-TAILED CUCKOO-DOVE (*Macropygia leptogrammica*). Two races have been bred. First, *M. l. unchall*, the Indian form, by Mme Lécailier in France in 1926 and 1927; this was recorded under the name *tusalia*, but Delacour says that that race has never been imported and that the proper name is (as given here) *unchall*. See *L'Oiseau*, 1927, 249; 1928, 364. Ezra reared one young bird of the Haut-Laos race, *M. unchall minor* (not *swinhoei*, as in the original account, *teste* Delacour), in October, 1927; see *L'Oiseau*, 1928, 63 (Medal) and *A.M.*, 1928, 21, 52. The breeder

writing later (*A.M.*, 1929, 27, and 1931, 193) says that they have never stopped since, and that now he has a dozen or more. In the list in *Aviculture (U.S.A.)*, January, 1932, their breeding in the States by Greenshields is recorded under the name *tusalia*.

- p. 104. *Add*: 451. *i*, SOCORRO MOURNING DOVE (*Zenaidura graysoni*, (Lawr.)). First breeder Giffard in California about 1924; in 1925 he sent some of them to Mme Lecallier in France and H. Bright in England, who both bred them over here. See *A.M.*, 1926, 223, and *L'Oiseau*, 1926, 326; 1929, 23.
- p. 105. 454. BRONZE-NECKED DOVE. *Add*: In France they were bred by Fellay in 1922 (*L'Oiseau*, 1924, 205), and later Découx was most successful, rearing nine young in 1926.
- p. 105. 456. WHITE-WINGED DOVE for "*leucoptera* (L.)" read "*asiatica* (L.)".
- p. 106. 459. MADAGASCAR TURTLE-DOVE. *Add*: , but M. Decoux tells me that this Dove had been previously bred in Africa by Dr. Vinsa about 1886, and that the same breeder also bred *S. rostrata* and recorded the event in *Bull.*, 1887, 648.
- p. 233. 461. BARBARY DOVE. *c*, BARBARY × DOMESTIC PIGEON. *Add*: Whitley is very doubtful whether this cross has ever been obtained this way, for he has paired up many, but always without result. He once, however, got a success the other way; see No. 449 above. He has also at Paignton a few dark brown Barbary Doves, which have never bred though he has had them for years; he presumes they are hybrid "Barbaries" of sorts though he has no idea what the other parent (presumably the father) was. He also has another lot of much lighter brown "Barbaries", which do breed regularly, but always produce brown or normally coloured young with an occasional White, NEVER any intermediate forms. How these originated he does not know.
- p. 234. 473. *b*, NECKLACE × SENEGAL DOVE. *Add*: Shore-Baily, writing in 1926, says that he has bred this cross almost regularly since 1915 and that the hybrids breed regularly

- inter se* and always true to type. Whitley has some of this "new species" and finds the same thing.
- p. 169. Add: 477. *i*, RUFIOUS-BREASTED WOOD-DOVE (*Aptopelia larvata* (Temm.)). Tavistock tells me (*in lit. January, 1930*) that this species "bred freely at liberty at Woburn before the War".
- p. 109. 478. BAR-SHOULDERED DOVE. *For the entry as given, read: Bred at the Zoo from 1868 onwards (AGB., ii, 276), but Russ claims to have been the first breeder. De Brisay in his Colombes Exotiques (p. 50), gives 1885 as the date of the first success in France, and records a second success at the Jardin d'Acclimatation, Paris, which is recorded in Bull., 1889, 54. They have also been bred in America (Crandall's 1909 List) and Neunzig says "frequently bred".*
- p. 109. 482. DIAMOND DOVE. *For the entry as given, read: Easily and often bred, first by Russ in Germany in 1875 (Bull., 1880, 680); in France Cornély bred them about 1886 (Brisay, Colombes Exot., p. 30) and among British records are the Zoo and in B.N., v, 217; vi, 45; viii, 147.*
- p. 110. 486. PASSERINE DOVE. Add: , and many times in France, Delaurier and others, since (*see Colombes Exot., p. 8*).
- p. 110. Add: 488. *i*, RED-WINGED GROUND-DOVE (*Ch. rufipennis* (Bp.)). First breeder, Noack in California between 1917 and 1926 *teste* Crandall's 1927 List.
- p. 111. 490. GEOFFROY'S DOVE. *Line 2, after 1921, insert: Bright also bred them in that year; see B.N., 1921, 141.*
- p. 111. 491. CAPE DOVE. Add: They have recently been bred in a cage in France by Godry, *see L'Oiseau, 1924, 139*, and Découx's account on p. 69 of the same volume.
- p. 111. 492. TAMBOURINE DOVE. Add: Ezra reared one in 1931 (*A.M., 1931, 330*) and, I think, has bred others since.
- p. 113. 499. BRUSH BRONZE-WING. Add: Crandall's 1927 List of *Birds bred in America* includes this Dove.
- p. 234. Add: 498. BRONZE-WING PIGEON. *a*, BRONZE-WING × BRUSH BRONZE-WING. Several were reared at the Zoo about 1914, *teste* Newman, *A.M., 1929, 3*.

- p. 234. *Add*: 499. BRUSH BRONZE-WING. *a*, BRUSH BRONZE-WING × BRONZE-WING. Several reared by Newman in 1912 and 1914. *See A.M.*, 1929, 3.
- p. 113. *Add*: 501. *i*, SMITH'S BRONZE-WING (*G. smithi* (J. and S.)). First breeder Mme Lecallier in France in 1922. *See L'Oiseau*, 1923, 234.
- p. 114. *Add*: 505. *i*, WELL'S DOVE (*L. wellsii* (Lawr.)). First breeder H. Bright; *see* account in *A.M.*, 1926, 221.
- p. 114. 505. VERREAUX' DOVE. *Add*: Giffard has bred them in California, *teste* List in *Aviculture (U.S.A.)*, January, 1932.
- p. 115. 509. CURAN GROUND-DOVE. *Add*: , and in the *Aviculture*, 1932, List by Giffard in California recently.
- p. 115. 510. HOARY-HEADED GROUND-DOVE. *For the record as it stands, read*: First breeder Mme Lecallier in France in 1925 (*see L'Oiseau*, September, 1925). Later in the same year Ezra also succeeded in England (*A.M.*, 1925, 298; 1926, 116, Medal). Découx has been a particularly fortunate breeder, for in 1926 all his young hatched were reared; *see L'Oiseau*, 1925 and 1926.
- p. 115. 513. BLEEDING-HEART PIGEON. *For the entry as given, read*: First breeder Delaurier in 1878 at Angoulême in France, where they bred freely; for the United Kingdom the first success was Miss Alderson's in 1893 (*see A.M.* (2), i, 132). They have also been bred in America, *teste* Crandall's 1917 List. Neunzig (p. 847) writes: "They start to breed regularly but do not sit well; the eggs have been hatched and the young reared by house Doves, and in this way a French aviculturist reared more than twenty young from a single pair." (This was Delaurier *teste* Découx.)
- p. 116. 514. BARTLETT'S BLEEDING-HEART PIGEON. *Add*: In France Mme Lecallier has bred them, *see L'Oiseau*, 1926, 187.
- p. 116. 515. WHITE-BREASTED GROUND-PIGEON. *Add*: Ezra bred them in 1931, rearing two young (*A.M.*, 1931, 330) and they appear in Crandall's 1927 List as having been bred in California by Giffard.
- p. 116. *Add*: 515. *i*, BUFF-HODED GROUND-PIGEON (*G. xanthonura*

- (Temm)). First breeder Giffard in California about 1926, *teste* Crandall's 1927 *List*.
- p. 234. *Add*: 515. WHITE-BREASTED GROUND-PIGEON. 515. *i*, BUFF-HOODED GROUND-PIGEON. *a*, BUFF-HOODED × WHITE-BREASTED GROUND-PIGEON. Hachisuka, p. 48, records them as having been bred by E. W. Giffard in California in 1927; "the single squab hatched attained maturity early in 1928, . . . indistinguishable from *G. kubaryi* from the Caroline Islands," and asks: "Is *kubaryi* of hybrid origin?"
- p. 116. 516. GREY-HOODED GROUND-PIGEON. *Add*: In 1926 they were bred both in England and France, by Bright and Mme Lecallier; see *L'Oiseau*, 1927, 245; 1929, 97.
- p. 116. *Add*: 516. *i*, STAIRS' GROUND-PIGEON (*G. stairi* (Gray)). First breeder, Giffard¹ in California *teste* Crandall's 1927 *List*.
- p. 116. *Add*: 517. *i*, GREEN-NAPED PHEASANT-PIGEON. *Otidiphaps nobilis*, (Gld.). Bred in California by Mrs. Black in 1930; one chick reared; see *A.M.*, 1930, 159, and *Aviculture (U.S.A.)*.
- p. 117. 518. BLUE-HEADED QUAIL-DOVE. *Add*: In France they were also bred by Ollivray in 1886 (*Brisay, Colombes Exot.*, p. 94) and by Mme Lecallier in 1924 (*L'Oiseau*, 1924, 282). They have also been bred in the U.S.A. (Gifford).
- p. 117. 520. GOURA PIGEON. *Add*: Seth-Smith in *A.M.*, 1931, 20, says that *Goura coronata* was successfully bred at the Zoo in 1914 and the event recorded (with a photo of the young bird) in the *Field* at the time.

BIRDS OF PREY

- p. 118. *Add*: 522. *i*, LAMMERGEYER (*Gypætus barbatus* (Storr)). In *A.M.*, 1931, 53, there is a note to the effect that the *British Bulgarian Review* states that the LAMMERGEYER

¹ Is the correct spelling Giffard or -ford? I find both about equally used in different publications.

- was bred successfully in the Royal Aviaries at Sofia for sixteen years.
- p. 118. Add: 523. *i*, BLACK KITE (*Milvus migrans* (Bodd)). Bred at the Zoo in 1929, *teste* Report.
- p. 118. 524. KESTREL. *For the record as it stands, read*: In *A.M.*, 1896, 77, St. Quintin records the successful rearing of KESTRELS for two years running. Nzig. (*Einh.*, p. 466) says "has been bred once".
- p. 118. Add: 524. *i*, NORTH AMERICAN BLACK VULTURE (*Coragyps urubu* (V.)). Bred at the New York Zoo between 1917 and 1926 *teste* Crandall's 1927 *List.* (Whitley thinks "*C. atrata*" has been bred at the London Zoo.)
- p. 118. 525. EAGLE-OWL. *Add*: Miss Chawner again attained success in Mr. Spedan Lewis's aviaries and records in *A.M.*, 1928, 195, the rearing there of one young one of the Virginian Race (*B. b. virginianus*). N.B.—The Arundel-bred birds were also almost certainly of this race. With Whitley the typical form has reared young each year since 1930. *See also A.M.*, 1928, 251 (Gurney—an early record) and 1929, 262.
- p. 118. 527. SNOWY OWL. *For the entry as given read*: Bred by St. Quintin on two occasions about 1898; *see A.M.*, v, 72, 182, *teste* Editor, *A.M.*, 1926, 341. Meade-Waldo tells me that he also bred them about the same time.
- p. 119. 528. SCOPS OWL. *Add to references*: *A.M.*, 1900, 77.
- p. 119. *Add*: 530. *i*, BOOBOOK OWL (*Syrnium boobook* (Lath.)). Bred by Fleay in Australia in 1926, *teste* the Editor of the *A.M.* (1926, 339) quoting the October *Emu*.
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OBITUARY

WILLIAM HERBERT ST. QUINTIN

We deeply regret to have to record the death, which took place on 21st January, of William Herbert St. Quintin, J.P., D.L., at the age of eighty-one.

Mr. St. Quintin was the eldest son of Matthew Chitty Downes St. Quintin, of the 17th Lancers, and was educated at Eton and Christ Church College, Oxford. He married in 1885, Violet Helen, second daughter of the Hon. Cecil Duncombe, of Nawton Grange, York.

Throughout his long life Mr. St. Quintin was devoted to natural history in all its branches, though ornithology and entomology were his favourite subjects. He was an original member of the Avicultural Society, and in its early days contributed many valuable articles to the *Magazine*. His home, Scampston Hall, in Yorkshire, was full of interest for those who were fond of live birds, for it was surrounded with large paddocks in which were Cranes, Bustards, Grouse, Pheasants of many species, Secretary Birds, and many others. A large lake in the grounds was covered with Waterfowl of many species, and his aviaries contained a large collection of the Birds of Prey, Owls, and the smaller birds. He was also a great gardener, and very many rare plants and shrubs from all parts of the world thrived in his grounds, and he knew the name and habits of each.

Mr. E. G. B. Meade-Waldo writes of him : " Yes, St. Quintin's death is a great grief and loss to me. We have been the greatest friends ever since our schooldays in 1869, but more especially since 1880, when I took up Falconry with him. He was the best all-round field naturalist, and especially ornithologist, I ever met. So far as I know he is the only one who has bred the Little Bustard, and he was the first to breed the Roller and the Tragopans. He was a first-rate entomologist and wonderful at breeding and rearing through all their stages all kinds of insects ; and was also most successful in taming lizards, etc. The Avicultural and Zoological Societies owe him much as do also the London Parks, to which he has given many rare Waterfowl."

All of us who knew him will remember him as one of the most delightful and lovable of men, who was always ready to place his vast store of knowledge at the disposal of others.

D. S.S.

A PROPOSED RESEARCH LABORATORY FOR THE DISEASES OF CAGE BIRDS

The study of birds in captivity, be they domestic birds such as Canaries, Poultry, and Pigeons, or the undomesticated forms dealt with by aviculturists, has never been more popular than it is at the present time, but little has been done in the scientific study of the diseases of birds and their treatment.

The matter has been under consideration by the Royal Veterinary College, the Governors of which are determined to try to provide the required services and for this purpose have prepared plans for the establishment of a laboratory.

This laboratory is designed for two purposes: firstly, to conduct research by whole-time trained scientists into diseases of fur-bearing animals and birds; secondly, to serve as a centre of instruction to veterinary students and of assistance for veterinary practitioners. The veterinary surgeons of Great Britain desire the facilities and guidance of a laboratory which will enable them to give personal service to breeders on the treatment and prevention of disease in small stock.

Such a laboratory should eventually be of great service to aviculturists who are asked to help with their donations to make this scheme possible.

Professor Tom Hare writes:—

“ Sir Frederick Hobday has instructed me to say that if £2,000 can be obtained by next July a start will be made with the research; at present a little over £600 has been subscribed towards the fund. You will note that the object of the Royal Veterinary College is to build up a large laboratory confined to research on diseases of small fur-bearing animals, Pigeons, and aviary birds.

“ During the last four years I have become familiar with many of the problems troubling owners of aviaries, and though I and my colleague have already published our research on two diseases, we recognize it is impossible to cope with the demand on our present limitations of staff and finance. The work already referred to has been done in our spare time, and I am sure you yourself will appreciate

that the many urgent problems concerning aviculturists demand the energies of a whole-time trained pathologist.

"We had expressed to Miss Knobel the hope that your Council and yourself would consent to making known the objects of this appeal and the urgent need for endowing the research, so that Sir Frederick Hobday might approach your members with the assurance that through the AVICULTURAL MAGAZINE your Council had expressed their approval and support of the appeal.

"I should like to emphasize, in order to prevent any misunderstanding, that we have no desire or intention to divert material for examination from the laboratory of your own society; on the contrary it is our desire to expand wherever possible all services devoted to the study and control of disease in birds. For some years past the students of the College have been trained in the diseases of birds and already there are scattered about the country a number of veterinary practitioners devoting their attention to this branch of veterinary practice. We think it essential that aviculturists should ultimately have the opportunity of consulting veterinary surgeons familiar with the owner's problems and with the conditions obtaining in the locality, thus eventually we hope to build up the veterinary services for bird owners comparable to that available for the owners of agricultural stock, dogs, and cats."

The Editor of *Cage Birds* has consented to receive subscriptions towards this object, and they should be sent to him at 4 Carmelite Street, E.C. 4, marked "Veterinary Research Laboratory Fund".

The Veterinary Journal for January, 1933, is chiefly devoted to Fur-bearing Animals and Cage Birds and contains a valuable article on *Diseases of Aviary Birds* by Colonel A. E. Hamerton, M.R.C.S., Pathologist to the Zoological Society. By permission of the author and editor we are reprinting this in the present number of the AVICULTURAL MAGAZINE. Another article of special interest to our members deals with Ricketts in Parrakeets and is from the pen of the Marquess of Tavistock.

THE INDEX GUIDE

Our publisher tells me that very few of our members have up to the present purchased the *Index Guide* to the past numbers of the Magazine. This Index was compiled by Dr. Hopkinson, to whom the members owe much for the great amount of time and labour he put into its production. It is a most valuable addition to the series of the Magazine and is of the greatest assistance to aviculturists as a reference guide to what has been published on any particular species. I would especially ask our members one and all to add this useful volume to their series of the Magazine. It can be obtained from Messrs. Stephen Austin & Sons, Fore Street, Hertford, price 10s. 6d. post free.

EDITOR.

AVICULTURE, VOLUME I

The first volume of *Aviculture*, which was published by the Society in 1925, dealt with the *Passeres*, including the majority of those species of birds which chiefly appeal to aviculturists. The demand for this work exceeded all expectations, and it was soon out of print. The demand continues, and the Council has decided to publish a revised edition, brought completely up-to-date, *if sufficient applications for it are received to justify the cost of production*. An order form was circulated with the February number, and is repeated with the present issue, and those who would like the book are asked to sign the form forthwith (if they have not already done so), and forward it to the publishers. Their remittance will not be asked for until it is decided if publication is possible, and this depends entirely upon the number of applications received.

CORRESPONDENCE, NOTES, ETC.

BLUE ROCK THRUSH AND MICE

I have a very tame and rather savage Blue Rock Thrush (*Monticola solitaria*) which has been here some years and which has taken his part on two occasions in rearing a family.

More than once during past seasons I have found dead mice on the floor of the aviary he occupies, and it was only after finding him in the act of battering a mouse, which he would not relinquish, that I began to suspect him of doing his best to help me rid the aviaries of this scourge. Since then I have seen him with a quarter-grown mouse which he finally swallowed whole after giving it a good beating on the floor and perches. I am not aware that he ever throws up any "pellets".

It is odd that a bird with such predatory tastes should never, to my knowledge, have attempted to take the young of small birds such as Finches or Roller Canaries which share his aviary.

MAURICE ANSLER.

BREEDING THE COLLARED JAY-THRUSH

It may interest some of our members, and Dr. Hopkinson may add it to his records, that the Collared Jay-Thrush (*Garrulax picicollis*) bred last summer in an aviary of the small Zoological Garden of Shanghai. The pair had inhabited the rather large aviary for about two years together with other Babblers (White-throated, Spectacled, *cinereiceps*, and Berthemy's), Golden Pheasants, and a Crowned Pigeon. Early last spring I noticed that the pair was very keen on building a nest. However, the low evergreens with which the aviary is planted were evidently not to the liking of the birds. I begged the Chinese keeper to fasten a dead shrub high up in the corner of the aviary, but nothing was done and the Babblers decided finally to make a nest out of a small bunch of straw lying in a small wooden box with open front hanging high up on the wall of the shelter. Here they made a very deep nest and laid three rather large eggs of a beautiful blue colour. I could not ascertain whether both parents incubated, but they were very anxious about their nest and chased any bird away which dared to come near. After about twelve days of incubation all the three eggs hatched. Unfortunately, the other inhabitants of the aviary, especially a pair of Black-necked Grackles, constantly inspected the nest and disturbed the parents so much that the young died after three days. Had this pair had an aviary to themselves, I am convinced they would have reared their children. The Collared Jay-Thrush is, according to my experience, a very desirable aviary bird. He is showy and for ever on the move, he is very hardy and does not molest other inhabitants of the same aviary, even smaller ones like Peking Robins and Java Sparrows. Male and female are easily distinguishable. The broad band running from the ear-covers down to the breast is pure black in the cock, while in the hen it is of a sooty colour.

ALEX. HAMPE.

SUCCESSFUL BREEDING OF KINGFISHERS IN AUSTRIA

A most remarkable breeding record is that of the common Kingfisher, with complete success, by the late Mr. P. Carniel in Austria. A full, most interesting report is given by the late Mr. Carniel in the *Gefiederte Welt*. The old pair were housed in a small aviary (the exact dimensions are not given) with a small artificial basin and two artificial mud walls in which the pair constructed their cave nest and after two failures reared a brood of six young Kingfishers to full maturity. Mr. Carniel provided his birds with an unlimited number of small fish. Most tragically and sadly Mr. Carniel was carried away by a sudden fatal illness soon after this true lover of birds had achieved this most remarkable success. If the common Kingfisher, which feeds almost entirely on fish and is very aquatic, can be bred it should be easier to induce the tropical Kingfishers, which need very little water and feed on beetles, etc., from the dry ground, to go to nest in captivity.

ALEX. HAMPE.

WILLOW WARBLERS ATTRACTED BY AVIARIES

I wonder whether any of our members have noticed that aviaries appear to have a particular attraction for Willow Wrens.

The several aviaries which I have owned in different districts have all been haunted by these little birds. At present I keep only seed-eaters, so that food supply can offer no attraction to Warblers, yet the Willow Wrens are constantly on the aviary roof trying to find an entrance.

They appear to take a great interest in the inmates and I doubt whether their intentions are benevolent. A Grass Finch, which escaped, returned frequently to its home but was persistently chased away by the pair of Willow Wrens on duty.

B. C. THOMASSET.

We have noticed the same thing repeatedly and have even known them to squeeze through $\frac{1}{2}$ -in. mesh netting, so anxious were they to join the birds inside the aviary.—Ed.

A TALKING BUDGERIGAR

I have a Cobalt Budgerigar, hatched rather late last year, and which, as an experiment, I brought into the house to see if we could teach him to talk. Within six weeks he was saying "Joey", and since then has learnt to say "Pretty little Joey", "Come along", "Good-night, Joey", etc.

I took him out of the nest just as he was almost ready to leave and put him in a cage in the kitchen. The maid took him in hand and I think a woman's voice is the best for training them at first.

This bird is most amusing; we let him out of his cage and he will at once come on to my finger, run up my arm on to my shoulder, and nibble at my ear, neck, and occasionally at my lips (when I speak to him); he does not attempt to bite, however, he just tickles.

We put him on the table and give him a bunch of keys and a number of paper spills to play with; it is funny to see him talking away as he nibbles at the keys. The paper spills he drags, one by one, to the edge of the table

and throws them over on to the floor, and then stands peeping down to see where they have dropped. No matter how often you pick them up and put them on the table Master Joey will throw them overboard again.

This bird will go anywhere about the house on my wife's shoulder, though she has to be careful to take off her necklace and ear-rings, for Joey has more than once broken a pearl necklace; he is as quick as lightning and most inquisitive about anything fresh.

He is a French-moult bird and though fully feathered drops his flights and tail feathers; this is probably why he is so very tame, for he can only fly a very little, but as a pet I am inclined to think this is an advantage; to see him running about playing on the table at times is exceedingly funny. Anyhow, we are very fond of him and would not like to part with him.

As a pet and talking Budgie I think he must be hard to beat.

Last year I was successful in breeding 2 Red Rosellas, 5 Ringnecks, 5 Cockatiels, and considerably over 100 Budgerigars in all colours; these were all bred outdoors, in garden aviaries.

H. P. Sissons.

It is not only "French-moult" Budgerigars that become extremely tame. We have known several perfect specimens that were quite as tame as this.—Ed.

CRIMSON FINCHES

I note in the November issue of the Magazine that Mr. Andrew R. Hynd asks if it is possible to sex young Crimson Finches, and as I breed them regularly I thought perhaps I could help.

The youngsters on leaving the nest are dark brown in colour, lighter underneath, with a little dull red on the lower back and above the tail. The bill is black and in many respects they resemble young Zebra Finches. (They have no red face as in the adult female, nor do they resemble her very closely in any other respect.) At this stage the young are all very much alike, but the males may be picked out by a little more red.

Within a month the plumage becomes darker all over, and by six weeks time red is rapidly appearing on the breasts of the males.

I notice that Mr. Hynd is wondering if his youngsters are all of one sex. I do not know how his will turn out, but such an occurrence is by no means rare. Last season I had three nests that were 100 per cent males.

While dealing with this beautiful little bird I wish to contradict some of the statements made against it. I have kept it with a good many other Grass Finches and found it harmless, though occasionally blustering in demeanour. The only time it is likely to be at all savage is during the breeding season and then the remedy is obvious. During the rest of the year it is quite trustworthy with even Waxbills, providing of course they are not overcrowded, but who is optimistic enough to expect harmony if this occurs, whether a Crimson Finch is present or not?

S. D. POTTER.

AUCKLAND, N.Z.



[Photos: W. H. Workman.]

YOUNG LESSER BLACK-BACKED GULLS.

(1) 3 weeks, (2) 6 weeks, (3) 5 months old.

To face p. 93.]

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APRIL, 1933.

LESSER BLACK-BACKED GULLS

By W. H. WORKMAN

As there is always a demand from our readers to hear about the commoner kinds of birds and how they may be brought up, it has occurred to me to put down a few notes regarding three chicks of the above species, which were given to me in 1932, and two of which, now full grown, are a never-ending source of interest and amusement to us all.

About the middle of June a friend who owns a grouse moor in Co. Antrim arrived at my house with a paper bag containing the three downy chicks, two just about two days out of the egg and the third about five days old. I was more than surprised to get these birds from an inland moor many miles from the sea, but such is the case; this species breeds inland on this mountain. My experience of the Lesser Black-backed Gull on the West Coast of Scotland was always confined to small islands where I have found hundreds of nests.

Needless to say, I was delighted with the little chicks clad in their light grey down with large black blotches all over; this can be seen well in the photographs taken when three weeks old. The job was to know how to feed them. There doesn't seem to be much published about Gulls, but we made an attempt by hand-feeding with bread and milk, which they ate ravenously, and in a few days picked for themselves. We kept them in a box with wire netting over the top; as they are very dirty things when young the hay had to be changed every day. These

Gulls have a very curious habit—it is this : after eating a few mouthfuls, even when very young, they would run across to their water bowl and vigorously wash their bills, splashing the water all over the place. They never lost this habit and now run over to one of the ponds, not to drink but simply to wash their beaks.

After a few days we tried them with very small pieces of heart mixed with the bread and milk ; this they went wild for and it was with great difficulty that we got the younger ones their proper share. The big fellow would get in first and if he had his way would leave no meat. They seemed always hungry for meat, more so than for fish. Even now fish does not interest them nearly as much as a bit of meat. What puzzled me at this stage was how the old birds kept them in food, as they had to fly miles to the sea for every meal.

After a few weeks it was easy work, two or three meals a day consisting of bread, milk, potatoes, and any rough scraps of meat or fish does them well ; they now get the same food only twice a day. Strange to say, they are very fond of that maize food which, readers will remember, I described in an earlier number ; they eat it unsoaked and rush for it every time it is offered to them.

I think I have shown from the above how easy it would be for our members to bring up young Gulls and keep them as pets in their gardens. Let us now look at them from the interest point of view. They are great pets, always in the picture, always hungry, and always in the best of form wet or dry. One has only to open the window and call them for a bit of bread, when they come racing across the lawn and catch the pieces in the air as well as any dog. They get very annoyed with the Trumpeters who, of course, have premier place in my affections and get the tit-bits, such as a dead mouse, etc., and when so engaged the Gulls will sneak up and try to pull the Trumpeters' feathers, but the Trumpeters are quite able to deal with them, and with a roar chase the Gulls all over the place.

I did not pinion these birds when young ; they have one wing clipped but I would advise members getting young birds to pinion them at once, it saves a lot of trouble.

We kept them in a small aviary and one day my man and I thought we would let them have a run on the lawn before their wings were

clipped, as we thought such young birds never having had the slightest chance of flying would not think of such a thing without a little practice. But the big one took a run or two across the lawn just like a plane getting up speed and sailed most beautifully into the air round and round till it reached a height of 50 or 60 feet, then it sailed down again, making a perfect landing, when we caught it and clipped a wing and treated the others the same. It was extraordinary to see how easily the power of flight comes to these big birds by instinct—no practising of balance, they just flew perfectly at the very first attempt.

The photographs, which I took at various times this summer and autumn, show the gulls at different stages of their growth which, during the first few weeks, is prodigious; in fact one can see them grow from day to day. We unfortunately lost one of these birds: it fell when young and, I think, injured its brain; it was never a good doer like the other two.

PROLIFIC ZEBRA FINCHES

By THE REV. JOHN E. G. SWEETNAM

The difficulty mentioned by Miss Barclay in the February number is one which most aviculturists would gladly experience, even with such plebeians of the aviary as Zebra Finches. In reply to her query; whilst the only certain way of preventing breeding is the separation of the sexes, excessive enthusiasm in this direction will be reduced by removing all nesting materials. This procedure presents a practical difficulty in the case of small hardbills, such as Zebras, which use nesting boxes as bedrooms and are apt to suffer from the effects of cold in bad weather if prevented from doing so. As the annual moult will suspend breeding operations for a time the birds themselves are not likely to suffer from over-breeding.

Having kept these vivacious but rather stupid little finches for some years I have reached certain conclusions about them which may possibly be of interest to members, and in any case I would like to know if others agree with me.

(1) Individual birds and pairs vary considerably in prolificness

and, though I have generally found aviary-bred birds more satisfactory than imported specimens—and a cross between the two best of all—it seems to be more a matter of individual characteristics than of strain.

(2) All healthy pairs will nest and lay, the eggs being generally fertile, but some pairs are much more liable to desert their eggs or, more probably, their newly hatched young than others.

(3) None can be relied upon to resist the temptation to use nesting material if it is available, piling it on top of partly incubated eggs and thus rendering all attempts at incubation abortive. Apart from the difficulty already mentioned, the removal of the temptation presents a further difficulty where there are several pairs in an aviary all in different stages of breeding activity. But for this besetting sin the species would really live up to its reputation as one of the surest breeding finches. Because of it I have always found them most uncertain, some pairs, like Miss Barclay's, being prolific in the extreme and others quite the reverse.

Personally, I have found these little rascals so trying to the temper that I would have exorcised them altogether were it not that one is so constantly asked to supply or exchange them. That the problem is, unfortunately, not confined to bipeds of this species makes it no less exasperating to find that the children upon which one's hopes were set have inherited the original sin of the race, rather than the virtues of their parents!

(4) So far as breeding results are concerned, the method of feeding seems comparatively unimportant. Personally, I have had no better results when spray millet was supplied than when the birds were fed with ordinary millet and canary seed only.

(5) Though I have never been able to spare the space, I believe the real secret of success—such as that achieved by The Keston Bird Farm last season—is in allowing several pairs a large aviary to themselves, and I should be interested to know if those who have succeeded in breeding considerable numbers of Zebras under these conditions take any steps to prevent the deterioration of the stock through inbreeding, or to remove odd cocks during the breeding season, both of which would present practical difficulties in the larger aviaries. These little finches are most prolific.

FANCY PHEASANTS

By R. F. ROUSE

It has been suggested by a fellow member that I should give my impressions on the keeping and care of these beautiful birds. I am happy to do so knowing that every true Aviculturist will be interested in the experiences of an amateur.

In the first place, I read an article in this magazine on these birds, after which I decided to commence in a small way by purchasing a pair of Golden (*Chrysolophus pictus*) from Rogers of Liverpool. These birds duly arrived in splendid condition and almost immediately commenced to lay. In due course six eggs were laid, all of which proved fertile and were hatched out. Two chicks died during the first week owing, I believe, to the lateness of the season; the remainder are in my possession to-day, fine, strong, healthy birds.

Encouraged by this success I was most anxious to proceed further and, fortunately, at this period there appeared an article in this magazine by Paul Lambert, of Nawton, which proved most interesting and instructive. He stated that anyone intending to take up this hobby should not hesitate to communicate with him when he would be happy to place his knowledge at their disposal. I took advantage of this very generous offer with the result that we now correspond regularly and, from the one pair of Golden Pheasants, some eleven other species have been purchased, a list of which is herewith given:—

- Silver (*Gennæus nyctemerus*).
- Amherst (*Chrysolophus amherstiae*).
- Siamese Fireback (*Diardigallus diardi*).
- Pure White (*Phasianus colchicus* var.).
- Mongolian, Pure (*P. colchicus mongolicus*).
- Temminck's Tragopan (*Tragopan temmincki*).
- Impeyan (*Lophophorus impeyanus*).
- Vieillots Fireback (*L. rufa*).
- Peacock Pheasant (*Polyplectron bicalcaratum*).
- Reeves (*Syrmaticus reevesi*).
- Edwards (*Gennæus edwardsi*).

PLUS

Peafowl, Black-shouldered.
Chukar Partridges.
Bustard Quails.
Chinese Painted Quails.
Californian Quails.
Jungle Fowl, etc.

So much has been written as to which is the most handsome species, and so many comments have been made, it is not necessary for me to dwell upon this point, except to say that the majority are very beautifully marked and are truly handsome birds.

As to the keeping and care of Pheasants, their needs are simple, but it is essential to have a fair knowledge of their requirements, and one cannot do better than purchase one of the many books which are on the market. Personally, the book which I treasure more than any other is one by Wm. Beebe entitled *Pheasants, their Lives and Homes*, which can be obtained through the usual channels. Here you have particulars of their habits, foods, housing, etc., all of which are most helpful and valuable. In brief, my experience has been as follows:—

Housing.—It is not necessary to give the majority large pens as they do quite well in a limited amount of space, providing the correct food is given. However, during the spring and summer not more than one pair should occupy the same enclosure, and aviaries should be well supplied with shrubs for protecting the hens during the breeding season.

Food.—I was recommended to give the following: wheat, hemp, dari, crushed maize, green food, flint grit (meal during winter months), but in all instances in small quantities, in fact I found that these birds eat less than ordinary poultry, and are, therefore, not expensive to keep.

Water.—It is most essential that this should be fresh and should be changed at least once daily: this point is most important if you wish to keep your birds in a healthy condition, and it is advisable to add a small quantity of sulphate of iron to the water, say twice weekly.

Ailments.—Pheasants, I believe, are subject to one or two diseases, but the only experience I have had is of "Scaly Leg". An Edwards developed this and became slightly lame. I was recommended to purchase a small quantity of flowers of sulphur, mix to a paste with paraffin oil and apply with a toothbrush to the affected part; this treatment was adopted twice in one week and the scaly leg was cured, since when no further trouble has developed. Really, if everthing is carried out in a proper manner there is no cause for alarm as these birds are most healthy and clean in their habits.

Breeding.—Apart from the incident mentioned at the commencement of this article I cannot pen any other experience, but I am looking forward keenly to the coming season and hope for success.

Anyone taking up a hobby who has a little time at his disposal cannot do better than adopt this most fascinating pastime; it is not expensive unless you purchase some of the rarest species, and it affords unbounded pleasure.

It is surprising how tame the birds become after a short period in captivity.

Lastly, may I, through these columns, thank Mr. Lambert for his kind help and interest. He has been most helpful in offering advice concerning the purchasing and has shown great interest in the welfare of my birds, and also Mr. Seth-Smith for allowing me to write this article for so valuable a magazine.

MORE ADDITIONS TO BREEDING RECORDS¹

By DR. E. HOPKINSON, C.M.G., D.S.O.

(Continued from page 85)

DUCKS AND GEESE

p. 120. 537. TRUMPETER SWAN. When the Ornithological Congress met in Amsterdam at Whitsuntide, 1930, the members were shown Mr. Blaauw's collection; the Trumpeters had

¹ The page references and numbers are (as in previous instalments) those of *Records of Birds Bred in Captivity* (Witherby, 1926); new records are indicated by the addition of *i*, *ii*, etc., to the record-numbers.

been bred fairly often since about 1903 and some had been sent back to America, where they are now probably extinct, in the hope that they would be bred again there.

(N.B.—The reference 1903, 137 in the original entry should be deleted.)

- p. 120. *Add*: 538. *i*, BEWICK'S SWAN (*C. bewickii* (Yarrell)). Bred at Woburn in 1914; *teste* Tavistock in *lit.* 8th January, 1927 and 17th October, 1932.
- p. 120. 539. BLACK-NECKED SWAN. *Add*: A recent success is Ezra's who reared a brood of four in 1931 (*A.M.*, 1931, 333).
- p. 234. 535. *a*, WHOOPER × WHISTLING SWAN. *Add*: This cross was bred at Woburn, *teste* Tavistock in *lit.* 8th January, 1927. It also has a place in Page's book.
- p. 235. *b*, WHOOPER × TRUMPETER SWAN. *For the entry as given, read*: Page, the sole authority for this record.
- p. 235. *Add under* TRUMPETER SWAN: *a*, TRUMPETER × COMMON SWAN. Tavistock tells me that the Duke of Bedford had some of these hybrids, but where they came from is unknown.
- p. 235. *a*, BLACK SWAN × WHITE SWAN. *Add*: Such a hybrid belonging to the Brentford County Council went to the Zoo in 1927; *see A.M.*, 1927, 203: 1928, 50. Another example is now in Whipsnade Park.
- c*, BLACK SWAN × CANADA GOOSE. *Add*: Another example of this cross is recorded in the *Auk*, 1928, 39, as having been bred by Pierce in Massachusetts in 1924.
- p. 236. 541. SPURWING GOOSE. *Add*: *b*, SPURWING GOOSE × MAGELLAN GOOSE (Upland Goose). Whitley saw at the Clifton Zoo some time ago what he was sure was such a hybrid, and a Spurwing gander was with a Magellan Goose at the time. Visiting Clifton again in April, 1931, he saw the keeper, Payne, who confirmed his surmise and told him that the bird in question had been bred at Clifton about 1927. Seth-Smith took some photos of it.
- p. 121. 546. COMB-DUCK. *Add*: Moody records the rearing of two in 1931 (*A.M.*, 1931, 47).
- p. 237. 544. *a*, *Add after failed, line 3*: Delacour in *L'Oiseau*,

- 1928, 237, says that he saw in Laverge's collection of water-fowl in California a hybrid which looked like this cross.
- p. 237. 545a. *a*, *Asarcornis scutulata* × Common Duck. *Add*: See also *L'Oiseau*, 1927, 280.
- p. 122. 547. COSCOROBA SWAN. *Replace the bracketed sentence with*: Lord Tavistock confirms this and says that the young bird referred to and a later brood were reared artificially.
- p. 122. *Add*: ABYSSINIAN BLUE-WINGED GOOSE (*Cyanochen cyanoptera* (Rüpp)). First bred by Blaauw in Holland in 1926, four young being reared under a hen; see the Breeder's full account (with photos) in *Ibis*, 1927, 422.
- p. 237. *Add*: ORINOCO GOOSE. *a*, ORINOCO × EGYPTIAN GOOSE. Finn (*A.M.*, 1928, 50) says that one example of this cross was exhibited at the Zoo "some years ago".
- p. 122. 549. BLUE-WINGED SNOW-GOOSE. *Add*: , but ? where and when. The first real record I know is in *A.M.*, 1928, 114, where Corsan records his success in Canada in 1915 and mentions other later American successes; the list in *Aviculture (U.S.A.)*, *January*, 1932, gives the National Zoological Park as one of these.
- p. 122. 550. LESSER SNOW-GOOSE. *For the entry as given, read*: Bred by Blaauw in Holland about 1901; see *Ibis*, *January*, 1903, and *A.M.*, 1904, 137. This was almost certainly the first success, though Page includes in among the birds which have been bred in the U.K. They have since been bred in the U.S.A. (Jager), *teste* Crandall's 1927 List.
- p. 124. 561. CANADA GOOSE. *Add*: The *Times* reviewer (2nd November, 1926) points out that this Goose is not uncommonly bred, and that the records must have been overlooked.
- p. 124. *Add*: 563, *i*, RED-BREASTED GOOSE (*Branta ruficollis* (Pallas)). First bred at Woburn in 1926 from a pair out of a flock which had enjoyed semi-freedom there without any previous attempt at breeding. Four goslings were hatched, three of which were reared in an incubator. See *A.M.*, 1926, 321; 1927, 65.

- p. 124. 564. SANDWICH ISLANDS GOOSE. *Add*: Now practically extinct. Hachisuka (p. 60) says that H. W. Henslow, writing in 1902, says that formerly they were frequently domesticated in the islands and sometimes bred in captivity.
- p. 239. *Add*: 563aa. BERNACLE × LESSER WHITE-FRONTED GOOSE. This cross has been reared at Woburn (Tavistock in *lit.*, 8th January, 1927), and *teste* Tavistock (in *lit.*, 17th October, 1932) there was a hybrid BERNACLE × CHINESE GOOSE in Battersea Park in 1931.
- p. 240. *Add*: 564. SANDWICH ISLANDS GOOSE. a, SANDWICH ISLANDS GOOSE × CHINESE GOOSE. Hachisuka (p. 59) says that he saw in the Bishop Museum, Honolulu, a mounted specimen of this cross, which was labelled "bred under captive conditions".
- p. 124. 565. UPLAND GOOSE. *Add*: They have also been bred in America, *teste* Crandall's 1927 List.
- p. 240. 565. b, UPLAND × EGYPTIAN GOOSE. *Add*: see also *L'Oiseau*, 1927, 280.
- p. 126. 574. RED-BILLED TREE-DUCK. *Delete* As 573 and read: Commandante Duliguier reared two young under a Rhode Island Red hen in France in 1927; see *L'Oiseau*, 1928, 48. Probably a first success, though the species has a place in Page's book.
- p. 298. 575. EGYPTIAN GOOSE. *To the list of male parents in the hybrid entry, add*: SHELDRAKE.
- p. 241. 576. SHELDUCK. *Add*: c, SHELDRAKE × EGYPTIAN GOOSE. Mr. R. H. Haslam in a letter to the *Times*, 21st May, 1929, writes that he has hatched four young birds of this cross. In reply to my inquiry as to what happened, he writes (30th September, 1930) that the young were reared by the mother and reached maturity, but being unpinioned flew away in August.
- p. 241. *Add*: 576. i, WHITE-HEADED SHELDUCK (*Radjah radjah* (*Garnot*)). a, "Rajah × Ruddy Shelduck". Delacour in *A.M.*, 1932, 8, says that one was reared at Clères which resembled the father.

- p. 127. 579. NEW ZEALAND SHELDUCK. *Add*: These "Paradise Ducks" are now rare, but four were reared at the Zoo and eight in the Scilly Isles in 1928. Seth-Smith, *A.M.*, 1929, 24.
- p. 127. 584. MELLER'S DUCK. *For the entry as it stands, read*: Bred by Ezra in 1931: four reared. *A.M.*, 1931, 349. A very rarely imported bird, but had I think been bred before.
- p. 127. *Add*: 585, *i*, LUZON DUCK (*A. luzonica* (Fraser)). A hybrid record only.
- p. 244. *Add*: 585. *i*, LUZON DUCK. *a*, LUZON DUCK × AUSTRALIAN WILD DUCK. Delacour in *L'Oiseau*, 1928, 77, records the rearing of one, a female, out of five hatched in Laverga's collection in California.
- p. 245. 590. *a*, FALCATED DUCK × GADWELL. *Add*: The cross has also been obtained at the Washington Zoo. *Add*: *d*, FALCATED DUCK × AUSTRALIAN TEAL. Delacour saw one male in Laverga's collection in California, but does not state how or where it was bred (*L'Oiseau*, 1928, 29). *e*, FALCATED DUCK × SHOVELLER. Two reared at Lilford in 1931 *teste* Moody (*A.M.*, 1932, 48).
- p. 247. *Add*: 598. *b*, AUSTRALIAN TEAL × FALCATED DUCK. Ten reared by Laidley, 1931 (*A.M.*, 1931, 209), "Chestnut-breasted × Falcated".
- p. 132. *Add a foot-note*: WHITE-BACKED DUCK (*Thalassornis leuconota*). Delacour gave two to Ezra in 1930, which bred in 1931 and hatched out three young, but these only lived ten days (*A. M.*, 1931, 349).
- p. 250. *Add*: 613. *b*, RED-CRESTED POCHARD × AUSTRALIAN WILD DUCK. Laverga in California had bred numerous specimens of this cross *teste* Delacour (*L'Oiseau*, 1928, 29).
- p. 250. 614. *a*, ROSYBILL × WILD DUCK. Commonly bred by Laverga *teste* Delacour as above.
- p. 252. *Add*: 618. *c*, COMMON SCAUP × CANVASBACK DUCK. Nine reared at Lilford in 1931, *teste* Moody (*A.M.*, 1932, 48).
- p. 134. *Add a foot-note to* 623. EIDER-DUCK. Were St. Quintin's eggs collected or laid in captivity?

HERONS, ETC.

- p. 253. Two other Ibis hybrids must be added. (1) *Threskiornis molucca tictipennis* (Gld.) \times *T. aethiopicus bernieri* (Bp.), which is recorded in the Zoo List of Birds (Lowe, 1929, p. 492) as having been bred at the Zoo in 1887. (2) Black-headed Ibis (*melanocephala*) \times Spoonbill, the authority for which is Heck's *Liebender Bilder* . . . (1899), which gives a series of photos on inhabitants of the Berlin Zoo. One of these shows a young Ibis-Spoonbill hybrid with its parents, which was bred in the Gardens.
- p. 135. *Add*: 632. *i*, GREAT BLUE HERON (*Ardea herodias* (Linn)). The list in *Aviculture (U.S.A.)*, January, 1932, records the breeding of *A. herodias* \times *occidentalis* (two races) in the Washington Zoo.
- p. 253. *Add*: 636. NIGHT-HERON. *a*, NIGHT-HERON \times LITTLE EGRET. Hachisuka (p. 61) says that several of these hybrids have been bred at the Hakazaki Aquarium, Fukuoka, Japan, and that the hybrids resemble the father. The first record was *T. Kuroda, Tori, iv*, 1904.
- p. 137. 645. COMMON CRANE. Mr. Seth-Smith (*A.M.*, 1927, 343) shows that my record is incorrect, for "there is no doubt that a chick was hatched at the London Zoo on 23rd June 1863, and that it lived twenty-seven years". Tavistock (*in lit.*, 8th January, 1927) tells me that they were bred at Woburn to the second generation.
- p. 138. *Add*: 646. *i*, SANDHILL CRANE (*M. mexicanus*). Has been bred at the Washington Zoo, *teste* the List in *Aviculture (U.S.A.)*, January, 1932.

WADERS

- p. 140. 657. SOUTHERN STONE-CURLEW. *Add*: Whitley reared one young bird in 1929, which is still alive, and Delacour in *A.M.*, 1928, 269, says that it has often been bred in confinement in its own country. See also *A.M.*, 1929, 264.
- p. 140. *Add*: 659. *i*, CROWNED LAPWING (*Stephanibyx coronatus*). Three reared at the Zoo in 1929, which were all alive in

1930; the nests (of which at least two were made) were close to the wire of the aviary and the sitting hen took absolutely no notice of the passing public. See *A.M.*, 1929, 155.

GULLS

- p. 141. 667. *Alter the name and record to*: SILVER GULL (Jameson's Gull) (*L. novaehollandiae*, Stephens). Has been bred at the Zoo at different times from about 1903 to date, and also in the New York Zoo and no doubt elsewhere.

CORMORANTS AND PELICANS

- p. 142. *Add*: 672. *i*, COMMON CORMORANT (*Phalacrocorax carbo*). The pair in St. James' Park bred in 1931 (*The Times*) and the young one was flying about wild in November, but whether it flew away or was caught up and pinioned, I do not know. A letter in the *Times* of 25th May, 1932, says that the old pair have reared young again. (Had they bred there before?)
- p. 143. *Add*: 674. *i*, AMERICAN WHITE PELICAN (*P. erythrorhynchus*). Were bred for the second time at the Washington Zoo in 1930, *teste A.M.*, 1930, 335, quoting *Aviculture (U.S.A.) of October*, 1930. They also appear in the *Aviculture list of January*, 1932.

RAILS

- p. 143. *Add*: 678. *i*, KAFFIR RAIL. Shore Baily in *A.M.*, 1929, 286, reports success. (Was it *caerulescens*?—E.H.)
- p. 143. *Add a foot-note*. No. 677. KING PENGUIN. The death of the young bird born at Edinburgh is mentioned as having occurred in 1925 by a reviewer in the *Observer* of 30th October, 1932.
- p. 143. *Add*: 679. *i*, BRAZILIAN RAIL (*Limnopardalis rytirhynchus* (or ? *sanguinolentus*). A pair of these little South American Rails bred in one of Whitley's aviaries at Paignton in 1927. Four young were hatched, two being reared. I saw them in August, fully-feathered but without the yellow bill of the

- parents, which by then had laid a second clutch and were sitting again, but this attempt was a failure. The nest was a most unrail-like structure, almost suggesting a thrush's, built right on the top of a bush close to the overhead wire of the aviary. The birds bred again the next year and are still doing so. *Add*: 679, 2. AFRICAN BLACK RAIL (*Limnocorax niger*). Bred by Sich in 1930 and the young reared. *A.M.*, 1930, 270; 1931, 57 (Medal).
- p. 144. 680. CAYENNE RAIL. *Add*: Shore Baily bred them in England in 1926; *see A.M.*, 1926, 305.
- p. 144. 682. NORTHERN WEKA RAIL. *The specific name should be "australis" and the date in line 1, 1900 (not 1890).*
- p. 145. *Add*: AMERICAN COOT (*Fulica americana*). Have been bred at the New York Zoo *teste* Crandall's 1927 List

CORRESPONDENCE, NOTES, ETC.

REARING GREAT BUSTARDS IN SPAIN

In 1931 I persuaded a friend to rear some Great Bustards by hand, of which the Zoo had one pair. In 1932 we tried the experiment, successfully, of rearing them under hens. I enclose two photographs.

They are fed as little fellows on insects, chopped fruit (they like tomato best), and bread-crumbs, and as they advance in age they get tomato, bread, green food, grapes, and rabbit liver, or an occasional mouse chopped and mixed up, but they like large pieces. They are simple enough to cater for as the diet can be less expensive, fruit being replaced by green peas (soaked hard ones will do), but, as you know, they are a funny mixture of being over-tame yet very nervous of any strange effect such as bright colours that they are not accustomed to, or a dog passing that they don't know, or a sound that is new to them. Their bones are so light and brittle that leg or wing accidents are liable when frightened. Their feathers, too, are soft and one wonders at their once being indigenous to as far north as, I believe, the Lothians. Sometimes a bird takes a dislike to another one and is apt to bully it; but most birds are like that.

J. C. LAIDLAY.

HATCHING BLUE BIRDS BY FOSTER PARENTS

I have, owing to my absence from home, only just seen the suggestion put forward by our member, Mr. A. Lewis, in our Magazine for November, 1932, respecting my failure in rearing Blue Birds under foster parents.

Presumably Mr. Lewis failed to observe the article written to the fancy press some short time ago by Dr. M. Amsler who has had considerable experience in the rearing of Blue Birds under foster parents.



REARING GREAT BUSTARDS IN SPAIN.
At 30 days and 6 to 7 weeks old.

[To face p. 106.

I cannot do better than quote the following—a portion of the article:—

“To show how accommodating our Robin can be I will quote two extreme cases. In the first, I took my five Blue Robins eggs to a nest I knew, and, to my chagrin found the foster parents' eggs just hatching, in fact one chick had left the egg. I removed this youngster and the three remaining eggs and substituted my own five much larger blue eggs. I did not expect much result, but to my surprise the Robins sat on for another six or seven days and hatched out the substituted eggs and finally reared three young.

“On another occasion I was at a loss for a Robins nest, and heard of one in which the clutch was just complete. In this case my own Blue Birds had been setting ten days. I took the risk and swapped the eggs, and the red-breasts must have had the surprise of their lives to hatch out four chicks at the end of two or three days incubation. In this case all the eggs hatched and the young were reared satisfactorily.”

N. NICHOLSON.

NOTES FROM NEW ZEALAND

THE KEA AND THE IMPORTED MYNAH

I was recently discussing the habits of the Kea with an early settler in New Zealand, a man who is now over 80. In his early days he lived in parts of the South Island where the Kea was very common and his explanation of the “changed habits” may be of interest to you.

In the mountainous districts various species of the plant *Raoulia*, commonly known as the vegetable sheep, are common. They are described on pp. 105–106 of Dr. Cockayne's book, *New Zealand Plants and their Story*, 2nd edition, an illustration facing page 104. The author says: “The vegetable sheep are not inaptly named, for at a distance a shepherd might be misled.” My informant told me he had frequently seen the Kea perched on one of these masses of vegetation driving its beak into the interior in search of the many grubs found there.

The change of habit from this to a dead or even a living animal is easy to understand and seems to me more logical than the theory usually advanced.

The skins at an abattoir are usually hung on fences to dry in the sun and wind, the wool being underneath, and therefore the sheepskin in this position would bear no resemblance to the vegetable counterpart.

It is obvious that the bird searching for grubs in a dead or living sheep would readily persevere and thus acquire a taste for the fat layer which it would soon reach with its powerful beak.

At the same time it should be recognized that all the birds do not acquire this taste, which is probably somewhat similar to the objectionable habit seen in the man-eating tiger or shark. An individual bird having acquired the habit becomes a very great danger to the farmer but it is rather sweeping to suggest that the habits of the whole species have changed.

It is particularly interesting to note the changing habits of imported birds and also of native birds due to the importation of other forms of food.

I have been observing of late the Mynah from India. In my district, the Wairarapa, it seems to be entirely insectivorous, but further north—Hawkes Lay—I have seen them taking nectar from the flowers of the flax plant or the red-hot poker. This habit it seems to have learnt from the native Tui or Parson Bird. In my garden I have watched the Tui feeding

in this way but up to the present have never seen the Mynah doing this. This strikes me as interesting because the distance between the two places is only 150 miles.

Again it may be accounted for because Mynahs are scarce here but more plentiful in the warmer northern district, and it is possible that the changed habit may be peculiar to an occasional member of the species rather than to all in a district.

I trust that these sketchy notes are not boring, but knowing that extreme accuracy on these matters will interest you I am with all humility putting forward my suggestions and observations.

56 Renall Street,
Masterton, N.Z.

H. MAURICE PEACOCK.

The above letter, received by the Editor, was not intended for the AVICULTURAL MAGAZINE, but as it is of much interest to our members we feel sure Mr. Peacock will not object to its publication. The Kea is a most intelligent and inquisitive bird and we do not think it would mistake a sheep for a plant. On the other hand, having acquired the habit of eating mutton fat through the carelessness of the early sheep farmers, and possibly some of the present-day ones, in exposing skins and offal, it was quick to learn that this could be obtained by killing the living animals. But, as Mr. Peacock says, all Keas do not acquire this taste, in fact, probably very few do. We met a sheep farmer the other day who lived in a district in which there were a number of Keas and he had never had the least trouble from them, although he had lost plenty of lambs from the attacks of the imported fox and the native Raven. The reward of the Government of a substantial bonus for every Kea killed is most reprehensible and may result in the extermination of one of the most interesting members of the New Zealand avifauna.—ED.

THE GREEN BROADBILL

I have just lost my hen Green Broadbill after nearly four years in captivity, which is, I suppose, the rather modest record for this species. I am inclined to think that Broadbills are not fit subjects for aviculture in a temperate climate except for people who can turn them loose in hot greenhouses among tropical vegetation. Here their gentle disposition and non-destructive habits should make them very suitable subjects, while their surroundings would provide them with those opportunities of bathing in damp leaves which are essential if the beauty of their plumage is to be retained. Few individuals master the art of performing their ablutions successfully in a dish.

TAVISTOCK.

POWERS OF MIMICRY IN BIRDS

I have two 5-weeks-old Pekinese puppies which have been reared in a glass house affixed to the east-wall of my house. Among other birds a house-moulted Shama is also housed there. This bird has now incorporated with his natural song all the whimperings of the two puppies. He has their utterings perfectly intonated.

H. MOORE.

WHITE-CAPPED PARROTS

I have just received a pair of White-capped Parrots (*Pionus senilis*), a pretty species very rarely imported. The plumage is most attractive and very varied. The head and neck, apart from the snow-white cap and a faint whitish streak across the throat, is slate-coloured with tinges of blue and green; the breast blue and slate-coloured with tinges of green. The upper surface is green or bronze green with a considerable amount of pale brown, prettily shaded, in the centre of the wing. The flight feathers are deep brilliant blue mixed with green and the tail quills are of the same colour, some being edged with rose-red. The under tail coverts are pink, eyes large and dark, and surrounded by an area of bare, parchment-coloured skin. Bill, horn-coloured; size about that of the Dusky Parrot.

My birds are evidently a pair from the marked difference in the size and shape of the head and beak, but I am not quite sure which is the cock and which the hen.

After a few days rest, warmth, and good feeding one of the pair—I rather think the lady—has developed a most irascible temper and ruffling her feathers makes determined efforts to bite a human visitor. Should her mate get in the way at such times he is liable to receive a nip as well, but normally they seem on friendly terms. The only sound I have heard them utter so far is a very gentle murmuring.

TAVISTOCK.

SNAKES, MICE, THRUSHES AND FISH

The account in the AVICULTURAL MAGAZINE of Blue Rock Thrush and mice impels me to write of another cure for this pest that might be useful to the Society and to the Zoological Gardens. At Belle Vue, being troubled in a hot aviary by mice, I tested out snakes for fur and feathers. I found that the Egyptian Sand Snake (*Eryx johnii*) would not touch feathers. I placed one in my aviary and lost him for a year when he reappeared very fat: not a bird had disappeared in unknown ways, but the mice had all gone.

Another curious thing about Thrushes and Blackbirds is their love for small fish. We had a very shallow fountain in our aviary in which we put sticklebacks. The Thrushes and Blackbirds took them as soon as our backs were turned: of course after noticing this habit we cut off the spines.

GEO. JENNISON, F.Z.S.

LORD BUCKMASTER'S BILL

I entirely agree with your criticism of Lord Buckmaster's Bill in that it would be grossly unfair to prevent the poor man from keeping British birds while larger foreign species may be kept by wealthier people in their parks. I think, however, we should not shut our eyes to the very large amount of bad aviculture that exists and needs reforming. Not only are dealers' shops and dealers' methods of trapping and transporting birds often in great need of improvement, but the great majority of cages made and used are far too small and are very badly constructed. There are also a large number of bird owners who need to be taught that bird cages should not be hung in the blazing sun, in draughty windows, nor in kitchens; also

that birds require baths, green food, and grit as well as seed and water; that cleanliness is essential; that perches need washing as regularly as cage floors, and that a thick spar of wood fixed at both ends is very tiring to a bird's legs and feet.

TAVISTOCK.

I imagine that this Bill has little chance of becoming law in its present form, and undoubtedly it requires to be watched and amended. But I think aviculturists will have to reconcile themselves to the passing, sooner or later, of legislation of some such character, for there is an increasing number of people to whom the caging of wild birds is abhorrent.

Of course, the subject bristles with difficulties. To start with, a definite principle to work on is most desirable, and the only sound one is, I think,

"Never to seek one's pleasure or one's gain
In sorrow of the meanest thing that breathes."

But when one comes to apply this principle troubles begin, for one has to consider in each case whether the benefit to man is sufficient to compensate for the injury inflicted on the lower creature, and this is often a difficult problem.

It is a fact that British birds, with the exception of the Redpoll and Siskin, seem to resent captivity more than most foreign species. Newly caged Goldfinches and Linnets certainly suffer, and I believe that few of your readers would defend the caging of Skylarks. On the other hand, there can generally be no cruelty in keeping any bird hand-reared from the nest, though Swallows and other species obviously unsuited for captivity might well be prohibited even if hand-reared.

I do not think that we need trouble ourselves greatly to defend the right of the working man to keep a British songster in a small cage. So long as he has Canaries, Budgerigars, and Bengalese, not to mention other foreign species easily bred in cages or small aviaries, I do not see that he will be hardly used by a ban on the caging of wild-caught Linnets and Goldfinches. Bullfinches are much sooner reconciled to captivity; and this species is such an enemy to the fruit-grower that almost anything which will reduce its numbers is defensible.

HORATIO R. FILLMER.

The Bill, as drafted, is altogether too drastic, but few would object to certain amendments to the present law as regards the capture and caging of British birds. Personally, I would like to see the use of large clap-nets forbidden, for with these the professional bird-catcher captures Finches and such like by the hundred and sells them at a ridiculously low price to persons who have no idea as to how to look after them properly. There are certain birds that should never be kept in captivity under any circumstances, such as Swallows, Swifts, Martins, Kingfishers, and I personally would add Skylarks and Dippers. Many or most of the other insectivorous birds thrive well in captivity if taken in hand by experienced persons, and few who are not experienced ever attempt to keep them. One has heard lately a great deal about the alleged blinding of birds to make them sing, but I personally have never come across a case of this abominable cruelty, and until recently I should have said that it was certainly never practised in this country; but now I am beginning to wonder whether, in some of the low haunts of our

slums, where Chaffinch singing competitions still take place, some villains may not still exist who practise this abomination. In our Magazine for August, 1915, Dr. Bernard Potter wrote a very interesting account of the birds observed by him in Flanders, and he describes his disgust at finding that the natives of a certain village were in the habit of holding singing competitions for Chaffinches with *blinded birds*. The Editor, in a footnote, says that this practice, although prohibited by law, also exists in Italy. One can hardly imagine any Englishman, even of the lowest grade, doing anything so vile, but if it is even done here the law is surely powerful enough to mete out the punishment that should finally put a stop to it.

These Chaffinches, I learn, are kept in the most wretched little cages in which they can barely turn round, and here, too, is a case for an amendment of the present law.

D. SETH-SMITH.

I think that all members of the Avicultural Society should follow the advice of our Editor and protest in the strongest possible way against the Bill that has been introduced by Lord Buckmaster. If the Bill as drafted becomes law I can see in the near future a further attack on our hobby. This, to me, appears only the thin edge of the wedge; sooner or later another attack will be made on the keeping of foreign birds. The sponsors of this Bill know next to nothing about the keeping of cage and aviary birds, and if a check is not put upon them will do our hobby a great deal of harm. Therefore I would suggest that every one of our members, from the officers downwards, should write to their respective M.P. protesting against this Bill. The 1926 Bird Protection Act already in existence is sufficient to deal with any form of cruelty, and there is no need for further restrictions. With every one of our members pulling their weight, this Bill will meet the fate it justly deserves, but we must act now and at once.

A. MARTIN.

AVICULTURE, VOL. I

I notice that a revised edition of Vol. I of *Aviculture* is under consideration. Perhaps you would not resent my bringing to notice a few errors which probably occurred through printer's faults and in translation. They are as follows: Under "American Warblers", p. 276, the description of *Mniotilta varia* (Black and White Creeping Warbler) is given: "all lined with white and dark-brown". It should be *black* in place of "dark-brown". *Sialurus auricapillus* (Oven bird) has the crown *orange-tawny* not "bright red". *Icteria virens* (the Yellow-breasted Chat), largest of all the American Warblers, has the lower parts *rich yellow* not "yellowish-fawn". It also states that *Oporornis formosus* (Kentucky Warbler) resembles it. The resemblance is superficial and the bird is only half the size.

I question the size of *Compsocoma sumptuosus*, p. 116, given as 10½ inches. Also on p. 326, under "Broadbills", sixth line, "ruby-grey" must be the printer's error.

I am hoping that you will accept these corrections in the spirit they are given. I know only too well the mistakes that can happen before an article appears in print. Our own *Aviculture* is full of them, but we hope to improve.

KARL PLATH.

Dr. HOPKINSON'S "RECORDS"

In the current AVICULTURAL MAGAZINE (February, 1933), I notice an error occurring in Dr. Hopkinson's "More Additions to Breeding Records". He states that some parrotlet Hybrids were bred in California and identified by me as *Forpus v. vividus* × *F. coelestis*. This is wrong; from the description given by Mrs. Tomlinson I suspected that the male was not *coelestis*, so asked her to kindly send me the mounted specimen she had of a bird that had died earlier. She complied and it was identified as *Forpus conspicillatus*. So her Hybrids were of *Forpus conspicillatus* (male) × *F. v. vividus* (female). I don't understand how this mis-statement occurred in Dr. Hopkinson's list, but hope you will correct it in the Magazine.

KARL PLATH.

A FEATHER-PLUCKING PARROT

Can you help me in the following case of a Parrakeet feather plucking. It is quite bare except for its head and wings. It is allowed out of its cage and is out of doors every day possible. It is fed on the usual sunflower seed mixture, but has fruit and green food. It is not given any meat, but occasional cake and tea to drink. I should be so much obliged if some member will help me in this case.

MABEL A. HEWLEY.

SOME BREEDING RESULTS IN COPENHAGEN

During 1932 I bred four youngsters of *Bathilda ruficauda*, five *Sporaeoginthus clarkii*, and seven *Estrilda astrild*. I had two youngsters of *Neisa dufresnei* but, unfortunately, the cock died and the hen left the youngsters. Otherwise, it would have been a first breeding record. In 1931 I reared, by using Bengalese as fosters, two young of *Pytelia melba*, which died at six or seven months old in nearly full adult plumage. I was interested to learn that they were at this age in adult plumage, as, in my opinion, it takes rather a long time for *Pytelia phoenicoptera* to become adult.

Perhaps some of my notes should be of interest to Dr. Hopkinson.

C. AF. ENEHJELM.

BREEDING MEALWORMS AT HOME

A lady writes: "For many years I have produced my own mealworms at practically no cost. A long box in our entrance hall, with scraps of carpet, layers of chicken meal, brown paper, and a layer of bran, also a welcome addition when the beetles are laying eggs in the summer, soaked dog-biscuit, or anything moist. This arrangement will produce thousands of mealworms, and these twice the size of bought ones, if well fed. No trouble whatever."



John Van Sice & Co. Lithographers, 117, London.

Bourke's Grass Parrakeet
Neopsephotus bourkii.

THE AVICULTURAL MAGAZINE

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BOURKE'S PARRAKEET

(*Neopsephotus bourkei*)

By E. J. BOOSEY

When I was asked by our Editor to write an article on Bourke's Parrakeets, I wondered for some time how best I could convey the unique beauty of this little bird to those who, perhaps, may never have seen a living specimen.

Bourke's Parrakeet is the complete antithesis of the now-happily-defunct "Bright Young People". They seem to realize instinctively that their beauty is of such a quality that they have no need to advertise themselves. No need to be for ever shouting to anyone who will listen: "Look at us—look well—and see how beautiful, how vivid we are—before it is too late!"

If you don't appreciate the beauty of Bourke's, you just don't and that's an end of it, but they would, I feel sure, pity rather than blame you for such lack of taste. For Bourke's are quiet little birds, and in their tranquil loveliness they remind one of lavender and old lace, and the half-forgotten peace of a golden age that is never likely to return.

Their voices are not harsh, but quiet and pleasant, and entirely in harmony with their appearance.

Unlike most Parrakeets they possess no vivid colours. Their plumage is of a delicate smoky brownish grey laced with pale gold on the back.

The shoulders are of a mauvish lavender blue, and the lower breast is enlivened with a small pink sunset which is in harmony with the pale evening blue which appears on the under wing-coverts, under tail-coverts, thighs, and sides of the rump.

Bourke's Parrakeet inhabits the interior of New South Wales and the surrounding district of South Australia adjoining, also the interior of West Australia. Their staple diet should consist of a mixture of canary and white millet with oats and a very small proportion of hemp seed. Millet spray is also much appreciated, but they are not great green food eaters. They are not so very difficult to breed; that is to say, they lack the tiresome habit of some Browns and most Hooded, of coming into breeding condition in the autumn—an impossible time of year, when it is too late to allow them to nest.

Bourke's, indeed, vere in the opposite direction, and usually show signs of wanting to breed rather sooner than one would wish. The cock becomes more than normally active and begins to feed his wife towards the end of February, but one has to harden one's heart, for if the eggs were successfully laid without the hen succumbing to egg-binding it is highly probable that the young brood would be killed by frosts in April.

The end of the third week in March, therefore, is the earliest they should be given their nest-boxes. The average hen Bourke's is a very fussy little bird about her nest, and if the box itself or the position in which it is hung is not exactly to her liking her method of showing her disapproval is very different to that of other hen Parrakeets—particularly Broadtails. A hen Broadtail who considers the box provided for her unworthy of the family her fond owner hopes she will rear in it always follows the same programme: the box is put in and this is usually the sign for a lot of excited tail-wagging on the part of the cock (fathers being notoriously bad judges of the suitability or otherwise of a nursery for their offspring), while the hen—more cautious—is eventually persuaded gingerly to enter the dark aperture, after the cock has made tolerably certain that no snakes or other dangerous vermin lurk within. As soon as she had disappeared there follows further tail-wagging and much anxious peering down the hole on the part of the cock. If his wife likes the box provided, she will be observed to spend longer and longer periods inside it, biting about and

generally preparing it as a nursery for her family. If, on the other hand, she does not, she at first registers her disapproval by paying frequent but cursory visits in order, apparently, to make quite sure that it is entirely unsuitable. Then, having made quite sure, she will indulge in a premature moult, rather than make use of such a travesty of a suitable nesting site.

Bourke's, however, behave quite differently. As soon as the nest-box is hung in the shelter, both rush outside and pretend to be completely terrified of it, though the cock considers himself justified in indulging in a slight courting display, which often consists of jumping on to the wire netting and making short rapid runs up it, during which the wings are depressed to show the lavender blue of the shoulders.

His wife then inspects the nest and her inspection is brief, but extremely thorough.

If it suits her you may expect eggs within a week or so. If it does not she will show you as much in no uncertain manner. It will be carefully examined, found wanting, and thereafter completely ignored, and the only thing to do if you desire a brood of young Bourke's is to provide her at once with another nest-box of an entirely new type, and preferably hung in a quite different position to the first one.

Generally speaking, Bourke's are particularly partial to a natural log, or, failing that, a box completely covered with bark. They seem to like inspecting the entrance hole while clinging on to the bark as a Woodpecker might, and an ordinary plain wood box does not, therefore, appeal to them.

Once the hen has decided that she approves the nest provided for her, she will disappear inside it and will hardly be seen again until the young brood is a week or ten days old.

This may cause her owner a certain amount of anxiety, particularly as the majority of hen Parrakeets do not begin to sit until the third egg has been laid, but on no account should one interfere. If the hen is dead on the nest from egg-binding there is nothing further to be done about it, and if not one's over-anxious interference may cause her to desert, so it is far best to leave well alone and hope for the best.

When the young brood is hatched no particular extra food is necessary except possibly a little of their ordinary seed mixture (to

which extra oats and a very small quantity of hemp have been added) being thrown daily on top of a flat mound of earth in the open run, where any that is not eaten at once will probably be consumed later on when it has started to sprout.

The object of throwing seed on the ground when there are young in the nest is to induce the parents to eat rather more than they otherwise would, because for some extraordinary reason, nearly all Parrakeets will rush eagerly down to devour a handful of seed thrown on the ground as though it were some rarely-provided and delicious tit-bit, although a pot of precisely the same seed mixture is perpetually before them on the seed tray. The behaviour of young Bourke's when they first leave the nest is extremely variable. Some are stupidly wild, others excessively tame—so much so that they will step on to your finger and allow you to carry them into the shelter—where, for safety, they should always be confined each night for at least the first ten days after they are fledged.

As, however, the majority of nestlings are at first desperately wild it is a wise precaution to line their aviary entirely with taut string netting about six inches from the wire, or else to cover the furthest end (where they are most likely to injure themselves) with a protective hedge of twiggy branches to break the impact if they dash against it. This should be done in good time before the young ones fledge.

Nothing is more nerve-racking than to have to watch a young bird battering itself wildly against the hard wire netting when one knows that to enter the aviary with the idea of helping would only be to make matters worse. It is a curious fact with regard to two of the breeding pairs of Bourke's here at the Keston Foreign Bird Farm that the tamest and steadiest pair produce the wildest young ones, and vice versa.

Bourke's are not particularly fond of green food, but even so, when they have young to feed this does not apparently prevent them from eating any rank and laxative weeds that may be growing in their aviary, which is most disastrous to the young brood, who frequently develop nestling diarrhoea as a result.

It is, therefore, of the utmost importance that the outside flight

should be cleared of all but a patch of flowering *Poa annua* grass before the first brood of young ones hatch.

It is rather interesting that Bourke's bred in aviaries in this country seem, usually, more partial to healthy and luscious green food such as spinach beet, possibly because they were born in a more "green and fertile land" than the parts of Australia their parents inhabited.

Their ability, or otherwise, to stand extreme cold does not seem to have been thoroughly tested, doubtless because their rarity does not encourage people to experiment with them.

We have, however, left them out in an aviary with a well-built though unheated shelter during some quite severe early frosts in autumn, without their being any the worse, but we have never as yet tried them out-of-doors for a whole winter without any artificial heat.

It is probable they would survive a moderately mild winter, but would succumb to any very prolonged period of extreme cold and fog combined.

Some cocks are rather inclined to chase their hens about a good deal if they consider that they are not settling down to domestic duties as quickly and readily as they should. No particular alarm, however, need be felt as they lack the murderous tendencies of many of the larger Parrakeets, and the chasing about to which their wives are subjected is often beneficial in that it induces backward hens to go to nest earlier than they otherwise would.

Bourke's, of which we have several pairs sitting at the present time, were successfully reared here at The Keston Foreign Bird Farm both last season and in 1931.

EARLY NOTES

By the Rev. J. R. LOWE

It is with some diffidence that I send you these somewhat scrappy notes and observations, as they will be, I am afraid, very elementary and do not concern the habits and behaviour of any rare birds; yet they may possibly be of interest to some, as from time to time there

have been indications in the *AVICULTURAL MAGAZINE* that notes from members on the quite commonly kept birds would be welcome.

As this March weather became more beautiful each day I decided to take my pair of Shamas from the indoor bird-room and put them in their outside aviary, a roofed affair with two wooden sides at right-angles and two wire sides at right-angles, 9 ft. square by 7 ft. high. I turned the cock out on 14th March and, although there were several ground frosts, he was none the worse after ten days. On 24th March I brought the hen down and rather stupidly turned her out as well. The cock started clicking ferociously and began to sing—one can only describe it as under his breath—and the hen burst into loud song (this particular hen has almost as fine a voice as the cock). Matters began to look serious and, in a few moments, a hectic aerial chase began; the hen dashed into the bottom of a bush and the cock, singing furiously all the time, began to attack the lady unmercifully. It was no go, and I put the cock in a large cage hung up in the aviary with the hen at liberty. The position at the moment, 3rd April, is merely an armed truce; and the hen infuriates her proposed husband by sitting on his cage while he rattles the wires with his beak. Yesterday, 2nd April, I let the cock out, and he was as good as gold for about five minutes; the hen during that time sang lustily, sometimes the full Shama burst of music and then short mellow notes, the cock only clicked and flicked his tail. Then suddenly he went for her good and proper, and the lady dived into a cyprus bush, quite safely. I left them for half an hour; coming back, the cock had gone back into his cage, the lady was still embedded in the cyprus. I did not feel convinced, and slipped the cage door down. I must be patient, I suppose, till mid-May.

My first pair of Diamond Doves are most intriguing. They are 1932 birds of English breed, and came to me last September. Now, 3rd April, the little hen is making an absurdly flimsy nest in the aviary shelter, which contains hybridizing pairs of Finches. To those who have bred hundreds of Diamond Doves what follows will seem hardly worth recording, but they are new birds to me and everything they do is a thrill. Up to the end of February I was not certain that they were a pair and then, one day, I saw the cock display, and his absurd bow

and tail cocked up in a fan and tiny coo rewarded the long wait from September. My pair, I notice, both coo to themselves; the hen has a funny little treble voice, but she is using it quite a lot just now; the cock's coo in displaying is different from the coo he uses when he is sitting still. At times he gives a great leap towards the hen and almost knocks her over; I am looking forward to my first Diamond Dove egg.

I never quite know these days whether it is polite to mention Budgerigars in the AVICULTURAL MAGAZINE. However, it seems that it is going to be a very fertile year; for from three pairs that began to lay on 1st March seventeen eggs were laid and sixteen hatched; fourteen are alive and doing well on 3rd April. I have two hens this year who refused to lay in any nest-box hung up in the shelter of their respective compartments; directly I put up a box in each outer flight both hens laid forthwith and are now sitting hard.

A cock Linnet, who has been in a large aviary with a hen Bullfinch, has learnt that absurd song of hers perfectly. He also calls her with a Bullfinch pipe, and he delights my heart by feeding her at every possible moment.

THE SPLENDID PARRAKEET IN AUSTRALIA

By H. B. SCHOLZ

With regard to the Splendid Parrakeet (*Neophema splendida*), I think I may claim to know more than any man living, having made a special study of it in its wild state. The district I live in is situated about 180 miles west of Port Augusta and just south of the Gawler Ranges in South Australia, and possibly this is the only district in Australia where these extremely rare and beautiful Parrakeets are to be found, in isolated pairs. In 1931 my hired man was coming in from the paddock where he had been working when he observed a Hawk chasing a small bird. The birds were flying toward him and the small bird flew right into his waiting hands just as the Hawk struck. It tore some of the feathers from the Parrakeet's neck but did not injure the skin, so he brought it home. Although this sounds rather far-fetched it is perfectly true, and as I had lived here for fourteen years and had

never seen a bird like this I put it in a small aviary with a pair of Canaries, with which it agreed quite well.

Some months later I happened to read in the Press about the very rare Scarlet-chested Parrot being found again, after having been thought extinct. I compared the bird (hen) I had with the description and found it was *Neophema splendida* without a doubt. I let Mr. Simon Harvey, a leading aviculturist of South Australia, know, and he made a special trip of 400 miles by car to see it and ascertain if there were any more here. I went out with him for a week, but we did not see any. Last year I was determined to find them if there were any about, so I went out from August to December and combed the district through, and was successful in securing twelve. I particularly made a study of their natural habits, sometimes lying for hours camouflaged with mallee boughs to watch them feed. They only occur in isolated pairs, never in flocks, and feed on the seeds of various native grasses and small herbaceous plants. It was interesting to watch them eating spear-grass seeds. They would wait until the wind would blow a stalk towards them and then hold it down with one claw whilst they ate the seeds. It has always been a problem as to how they obtained their drink, as they do not come into the settled areas. I live right on the fringe of the great heart of Australia, and north of me there is, practically speaking, no civilization, and very little water is to be found. I observed that they ran their beaks along the round leaves of a small shrub and, on examining the leaves, I found by squeezing they exuded about two drops of palatable juice. This, I presume, is the secret of their water supply. I found four nests, usually about 8 feet from the ground. One contained three cock birds, another three hen birds, another one hen bird, and the other a pair. I also caught two hens and a cock bird (adult birds). I caught them on the nests whilst feeding their young. I had no trouble in feeding the young, using granose biscuit, scalded and sweetened with a little honey. They build in a perpendicular hollow with a few dry leaves about 18 inches from the entrance. These birds live in the most God-forsaken country it is possible to set eyes on, preferring sandhills and spinifex country to the bigger timbered mallee country. One who is inexperienced would never think of looking for birds where these are

found. I let Mr. Harvey have two pairs and a Mr. Hunt one pair, and I have retained three pairs for breeding purposes. I have chosen the most brilliant birds to breed from. I have one young cock who shows red from the throat to the vent. Some males have the clear-cut blue head and red chest, whilst others have the straggly red patch. I saw one gorgeous cock bird, perched not 20 feet from me, whose breast was perfect. The old cock bird I have has a clean-cut blue head, wonderfully silky in appearance, and has the red chest extending nearly to between the legs. He is a picture to behold. The females I have are not of a duller green than the males, but they lack the brilliant blue on the head and, of course, the red chest.

It will be interesting to see how my young birds get on as the two young cocks are much brighter than the others I had.

Budgerigars, Many-Colours, and Port Lincoln Ringnecks, Cockatiels, Major Mitchell Cockatoos, and Galahs were here by the hundreds this year. I saw a flock of some thousands of Budgerigars last week. They are usually gone by this time. They all come here to breed. I am keenly interested in the preservation of our rare birds and am now on the look-out for the Night Parrot.

YANINEE,
SOUTH AUSTRALIA.

BEECHE'S JAY

By JAMES B. HOUSDEN

Beeche's Jay is a very beautiful bird with its plumage of dark blue and glossy black and small crest. It is known in New Mexico and the southern States of U.S.A. as the Blue Jay.

It is chiefly found in New Mexico and Arizona; a resident throughout the oak belt which generally fringe the foothills of the mountains and ranges well up among the pines.

I met with great numbers when staying on the Buno Mountains Ranch in New Mexico. I have watched them, when hidden behind a tree, very quickly and quietly swoop down into the open door of one of the fowls' runs, pick up a grain of maize, and quickly fly out again and up into the tree to eat it; but when discovered their notes are very harsh and far-reaching.

I was told that in the fall of the year large flocks of this Jay visit the ranch, in fact so as to become quite a nuisance, fighting for food with the pigs and fowls; and it would be no difficulty to catch fifty of them with the open door and a long string in the fowls' runs.

They are very restless, constantly on the move prying into this or that, spending a good portion of their time on the ground twitching their tails almost constantly.

I found a number of nests of this Jay built in low shrubs about 10 feet from the ground; nests like deep saucers; eggs, four to seven in number, a beautiful spotted green colour.

I have one of these Jays, a most lovely bird and very tame.

I have mentioned in a former number the day I was lost in the forest in New Mexico. After I had met with an old coloured man and rested in his cabin, he pointed out the way he thought would take me to the ranch.

I had walked a very long way when a strange coincidence occurred; somewhere from the scrub half a dozen of these Jays flew in front of me squawking and flapping their wings (something like some of the birds at home will do in a country lane). I followed on and these birds continued to fly in front of me. I thought perhaps they might be flying to the ranch, and this actually proved to be the case, for after another long walk I came to the wire fence of the ranch.

My base of operation during the month I spent here was the ranch house, which stood at a most beautiful sub-tropical spot. Sitting under the trees at a very delightful spot it was quite enjoyable to watch and listen to the wild life all around. This was quite a paradise for birds, the study of which day after day was very delightful. It is an inexhaustible subject and one that one never tires of in this wonderful country.

My room at the ranch overlooked a small lake; one could watch the sun go down behind the hills, mountains, and valley that fringe the lake in a mingled glory of red and gold. In a few minutes it was gone below the horizon and darkness came quickly. Hardly had the sun gone down than the stars began to peep, one after another, and very soon night birds began to utter cries. A memorable night the writer would not have missed.

NESTING NOTES FROM FOXWARREN PARK IN 1932

By ALFRED EZRA, O.B.E.

Although a good many birds nested during the fine summer of 1932, very few young were reared, and only two that had not done so previously. These were the WHITE-WINGED MYNAH (*Sturnia nemoricola*) and FYTCH'S BAMBOO PARTRIDGE (*Bambusicola fytchii*). I now give the particulars of all the nesting and rearing of birds during the year.

ELEGANT PARRAKEET (*Neophema elegans*). A pair of these birds laid their first egg on the 4th April. In all three eggs were laid. Two were infertile and the third had a partly formed chick. Nesting again, the hen laid four eggs about the third week of June. By the 17th July four young were hatched. Two of these died, but the other two were successfully reared, leaving the nest on the 19th August in splendid condition.

BOURKE'S PARRAKEET (*Neopsephotus bourkei*). A pair laid two eggs in June but did not sit. The eggs were transferred to an Elegant's nest. One young was hatched on 15th July. Chick found dead on the 17th, most probably because the Elegants were incubating four of their own eggs, and these did not hatch out till the 17th. The male Bourke's was found dead on the 29th July. Cause, congestion of lungs. A new male bird was put in with the hen on 8th August. Another nest, and three eggs were laid the first week of September. One young hatched out on the 24th, but the other eggs were infertile. Young one found dead on the 10th October. Parents had been feeding well. A female Elegant paired to a male Bourke went to nest and laid three eggs. All infertile.

RING-NECKED PARRAKEET (*Psittacula krameri*). A lutino hen mated to a green male bird nested early in February, laying three eggs. One was broken during incubation, one was infertile, and one young was hatched out on 3rd March. Found dead on the 29th. Nested again about the end of April, laying three eggs. Two young were hatched out on 25th May. The third egg had been cracked.

Young fully reared, leaving the nest on 14th July. Both young birds green.

Another pair of the above, but both cock and hen lutinos, laid four eggs early in March. All eggs were fertile, but all the young died in the shell. Laid three eggs again early in May. All eggs again fertile, but all young dead in shell. It looks uncommonly as if some weakness in the two lutinos prevents the eggs from hatching.

A third pair of RINGNECKED PARRAKEETS, a green cock and a lutino hen, nested, laying three eggs about the third week of March. One young hatched out on 18th April, but the other two eggs were broken. One young reared, leaving the nest on the 24th June. Young one green.

Fourth pair—green cock and lutino hen, nested, laying six eggs by the 23rd March. Three young ones were hatched about 21st April, the remaining eggs were infertile. One young was found dead on 22nd April, but the other two were reared. Both green.

ALEXANDRINE PARRAKEET (*Psittacula nipalensis*). Green cock bird and lutino female. Laid two eggs from the perch on the 23rd December (1931). Another two eggs were laid on the 27th December (1931) in the nest. One young hatched out and reared, leaving the nest on the 27th March, 1932. Green again.

LAYARDS PARRAKEET (*Psittacula calthrapæ*). Laid three eggs by the 25th May. All infertile.

MALABAR PARRAKEET (*P. peristeroides*). Four eggs laid by the 30th April, all infertile. Hen pulled her flight feathers out.

BARRABANDS PARRAKEET (*Polytelis swainsoni*). Laid one egg on floor and two more were found on the grass. This was done because they did not like the outside nest-box. As soon as I gave them a nest-box inside the aviary shelter they laid four eggs. Three young hatched in June, only one reared.

QUEEN ALEXANDRA'S PARRAKEET (*Polytelis alexandra*). The old pair laid four eggs by the 15th April. All were hatched by 5th May. One young one found dead in the nest, and the other three dead in the grass. Laid three more eggs. Two young hatched out by 8th June. One young found dead in nest, apparently having been killed, the other young one was seen being carried about by the female in her

beak—dead. I thought after this extraordinary behaviour a change would do them good, so I removed them into another aviary. Three eggs were laid by 21st June. One young hatched but the other two eggs were infertile. This young one was also killed by the 11th July. She again laid four eggs by the third week of July, and this time I removed the cock bird from the aviary and left the hen sitting. Two young ones were hatched, and these were successfully reared by the hen alone. I wonder whether this plan will work again or some new treatment will be necessary.

A pair of young birds I reared last year nested, laying two eggs by the 24th May. Hen bird was found dead on the nest through being egg-bound. I transferred the two eggs into the Barrabands' nest. One egg hatched out on the 12th June, but the young did not live long.

Another pair, also reared last year, laid four eggs. All the eggs were infertile. Another two eggs were laid by the middle of June, both of which were again infertile. It is interesting to note that these Parrakeets nest when they are not quite a year old.

CROWNED STARLING (*Galeopsar salvadorii*). Last year's breeding pair laid two eggs by 11th May. Both hatched out. One young one died and the other one was reared. Laid again, three eggs by 27th July. Two young were hatched. One died but the other one was reared, leaving the nest by the end of September. I again let the hen bird out, and she was at liberty the whole time till the young were reared. The cock bird was kept in a cage inside the aviary shelter where the nest was.

WONGA WONGA PIGEON (*Leucosarcia picata*). These birds have been most unsatisfactory. In November, 1931, they laid one egg on the floor of the aviary, which was broken.

Another egg was found broken in a nest on 11th December, 1931. Laid another egg on the 17th February, 1932, which was infertile. Another two eggs were laid by the 27th March, both of which hatched out by the 17th April. Both young ones found dead on 5th May. Again laid one egg between 18th and 25th May, both of which were infertile. Another two eggs by 22nd June. One young one was hatched 7th July, the other dead in shell. The young one was found

dead on 12th September, fully grown and feathered, but had not left the nest. By 16th September two more eggs were laid. These eggs were placed under domestic Pigeons. One hatched out and the second one died in the shell. The young one only lived a couple of days. On 26th November they laid two more eggs, which hatched out, but both the young died soon after hatching. These birds nested in a large basket about 10 feet from the ground inside the aviary shelter. A good deal of straw, grass, and twigs were used in making the nest.

RUPPELL'S STARLING (*Lamprolornis purpureopterus*). I had no success with these birds. The hen became egg-bound after laying one egg, and then the cock died a few days later.

SILKY STARLING (*Spodiopsar sericeus*). Laid four eggs in June but the hen would not incubate them.

ROTHSCHILD'S GRACKLE (*Leucopsar rothschildi*). Early in May five eggs were laid, all of which were eaten up by the 6th. Laid four eggs again by the 23rd May, and this time I confined the cock bird in a cage in the aviary, but the hen would not incubate the eggs. By the 22nd June five more eggs were laid. The cock bird was again removed, but the hen would not sit. On bringing the cock bird back all the eggs were eaten up. By 20th July four more eggs were laid, and the cock bird was again removed. This time the hen sat well but *all* the eggs were infertile.

SLENDERBILL STARLING (*Cinnamoptyx tenuirostris*). Three eggs were laid about the third week of May. One young was hatched out on 16th June, and the other two eggs were thrown out of the nest with young partly out of the shells. The young one died on the 28th June. By the 15th July two more eggs were laid and these were both broken. Again by the 26th July four eggs were laid. These were all fertile, but the young were only partly formed. By the 7th September three more eggs were laid. All were hatched by the 25th. One young one died on the 7th October, another on the 9th, and the third one—which I thought was going to be reared—died on the 18th October by accidentally falling out of the nest. These birds nested in a basket placed inside the aviary shelter about 10 feet from the ground. The nest was made of dried grass and feathers, and a considerable quantity of mud in the bottom of the nest about 6 inches

thick. Rather the shape of a pear with the top scooped out. It took the birds three weeks to build it.

WHITE-CRESTED JAY THRUSH (*Garrulax diardi*). These birds never attempted to make a nest, but laid several eggs on the aviary floor between April and May. I had a nest made for them on the 23rd May, and they readily occupied it, and laid two eggs in it by the 24th June. Two young were hatched on the 10th July. Both were found dead the next day. They had been thrown out of the nest. No further attempts were made to use the nest, although several more eggs were laid on the floor.

PASQUIER'S JAY THRUSH (*Garrulax pasquieri*). No success with these birds as I lost the hen through being egg-bound.

AMERICAN BLUEBIRD (*Sialia sialis*). Three eggs were laid by the 16th April, and all these disappeared. Most probably were eaten. Another four eggs were laid in May. Three of these eggs were broken, and the fourth was hatched out. Young left the nest on 6th June not at all strong, and was found dead the following day. Another four eggs were laid by the middle of June. Hen would not sit.

SHAMA (*Kittocincla malabarica*). The hen bird killed the male and was removed from the aviary. A fresh pair were put in. These were English bred. One egg was laid on 28th May, but the hen died of egg-binding. Another hen was put in with the same cock bird. She laid only one egg on 14th June, which disappeared by the end of the month. Two more eggs were laid in July. Both fertile but young only partly formed.

WHITE-WINGED MYNAH (*Sturnia nemoricolor*). One young successfully reared as reported in the December number of the Magazine.

CROWNED LAPWINGS (*Stephanibix coronatus*). Two eggs laid in a hollow in the ground by the pond on 15th and 16th April. One young hatched out on 14th May and was found dead the next day. The second young one was hatched out on 16th May and this one was found dead on the following day. This one had evidently been killed, as both legs were broken.

MADAGASCAR PARTRIDGE (*Margaroperdix madagascariensis*). Two pairs were left together in a large aviary. Unfortunately one male was killed just as they were coming into breeding condition. One hen

nested under some pampas grass and the first egg was laid on 29th May. Ten eggs in all were laid. As the hen would not sit the eggs were put under a Silky hen on 21st June. Seven young were hatched. On 23rd June another hen was found incubating eight eggs under some ivy. She gave up incubating these eggs and these were also put under a Silky hen on the 29th. Four young hatched out by 16th July. One of these was drowned. Ten young were fully reared.

SWINHOES PHEASANT-TAILED PIGEON (*Macropygia swinhoei*). Two pairs of these birds have laid numerous eggs, but only two young were reared. Most of the eggs were accidentally broken.

RENAULD'S GROUND CUCKOO (*Carpococcyx renauldi*). One nest was made inside the aviary shelter in a basket about 10 feet from the ground. The nest was made of twigs, grass, leaves, and feathers. Three eggs were laid by 7th May, two of which were fertile. Chicks partly formed. Hen did not incubate very well. By 9th June three more eggs were laid, all of which were infertile. Four more eggs were laid by 9th July. Two of these eggs were fertile but chicks only partly formed. I hope to turn these birds out in my big animal enclosure this summer, and hope for success.

FYTCH'S BAMBOO PARTRIDGE (*Bambusicola fytchii*). Nine young were hatched, but only two of these were successfully reared. Already reported in the December number of the Magazine, 1932.

AFRICAN WATTLED PLOVER (*Lobivanellus lateralis*). Nest made on gravelled pathway in one of the large aviaries with only a few stones heaped up. Laid four eggs in April, two of which were broken and the other two were infertile. A second nest was made on the turf in the small flight of the aviary, again using a few stones and some mud. Four eggs were laid. Two young were hatched out but died almost at once. One egg was broken and the fourth egg contained a dead chick.

SULPHURY SEED-EATER (*Serinus sulphuratus*). Built a nest, resembling that of a Chaffinch, in some ivy in May. Four eggs were laid. Two young were reared.

PURPLE-HEADED STARLING (*Lamprocolius auratus*). One pair built a nest in a big oblong nest-box in the flight of the aviary. Four eggs laid by the 8th June. Three young hatched by 25th June. Parents fed well for twelve days, but on examining the nest on 8th July all

the young were found dead. Nested again in a bamboo nest-box, but no signs of eggs or young ones were seen. Another pair went to nest and laid three eggs in July. One young hatched and this was thrown out of the nest by 6th August.

CHINESE BLACKBIRD (*Turdus mandarinus*). Built first nest on window ledge of the aviary, and laid three eggs in it by 11th April. All these disappeared in a few days. Again laid four eggs in the same nest by 23rd April. These also disappeared. Built another nest in some ivy and laid six eggs. All infertile. Another nest was built in a box above the aviary door, and five eggs were laid in it. Only one young one hatched out, on 20th June. This was well fed for nine days and then it disappeared. Another five eggs were laid, all of which were infertile. There are too many birds in this aviary, including Chinese Magpies and Lidth's Jays, so one does not expect anything to be reared in it.

SUPERB STARLING (*Spreo superbus*). Five of these birds in one large aviary built several nests and seemed to enter every nest in turn. Eggs were found in all the nests. On 31st May two young ones were seen flying about in the aviary. These were fed by all the five Starlings and fully reared. Several more were hatched but no more reared. Another pair laid sixteen eggs in another aviary in twos and threes, but only two lots were incubated and five young were hatched out. None of these were reared as the parents gave up feeding them.

JAPANESE MAGPIE (*Cyanopica cyanea*). A nest was found in some ivy containing three eggs in September. Three young hatched out on the 16th September. All three died as the parents' instead of feeding them took to feeding a pair of Occipital Blue Pies in the next aviary.

TAMBOURINE DOVE (*Tympanistria tympanistria*). One pair hatched out several young but in every case they either fell out of the nest or were pushed out when about fourteen days old. Another pair also hatched out several young, but only two were successfully reared.

WHITE-CHEEKED BULBUL (*Pycnonotus leucotis*). A nest was built with dried grass and feathers in a log nest-box. Four eggs were laid—all addled. Three more were laid by 27th June. This nest was

destroyed and all eggs broken. Two more eggs were laid and destroyed by 15th August.

SOUTH AFRICAN BUNTING (*Fringillaria tahapisi*). Built a small nest in a shrub, very like that of a Linnet. Two eggs were laid. Both infertile. By 27th August two more eggs were laid. Both of these disappeared five days later. Another two eggs laid were found broken on the grass.

BRONZE-WINGED PIGEON (*Phaps chalcoptera*). The old pair which reared ten young last year laid sixteen eggs between April and July. Not until August were two young reared. Another pair bred by me last year successfully reared three young ones.

PEKIN ROBIN (*Leiothrix lutea*). I liberated about forty of these birds in May. Some nested in the garden and reared young. All except half a dozen have disappeared.

In the large animal enclosure I was successful in rearing the following birds:—

WHITE PEAFOWL. Eleven.

MANDARIN DUCK. Reared twenty-six. These were reared by full-winged Ducks in nest-boxes put up for them in trees about 15 feet off the ground. The Ducks with the Ducklings were seen walking round the fence to get to the water. As soon as the gate was opened they all went in and were reared by their parents. These fly about a good deal and so far have not gone away.

MANED GEESE. Five of these were reared.

OTHER DUCKS. About twenty—Carolinas, Meller's, and Bahamas.

SWANS. These did not nest.

PHEASANTS. Seventeen Golden Pheasants.

CRANE. One Sarus Crane successfully reared.

MORE ADDITIONS TO BREEDING RECORDS¹

By Dr. E. HOPKINSON, C.M.G., D.S.O.

(Concluded from page 106)

GAME BIRDS

- p. 146. 691. RED GROUSE. *Add*: Wormald reared some under a Bantam in 1912, *teste* Seth-Smith, *A.M.*, 1930, 97.
- p. 146. 694. BLACK GROUSE. *For the record as it stands, read*: Bred in Dumfriesshire in 1899 by H. S. Gladstone; *see Birds of Dumfriesshire*, 1910, p. 326. Mr. Gladstone tells me in a letter that at the London Zoo eggs were laid in 1840 which were hatched, and one young one lived till 6th January, 1841, as may be discovered from the "Daily Occurrence Book" (MS.) of the Zoological Society.
- p. 147. Nos. 699-701. *For "Caccabis" read "Alectoris"*. *Add*: 699. *i*, CHUKAR (*Alectoris chukar*). Breed freely with Ezra practically at liberty and also with Whitley in ordinary confinement. *Add*: 699. *ii*, ARABIAN CHUKAR (*A. melanocephala*). First bred by Whitley in 1927; about a dozen eggs were hatched from 50 eggs laid; 6 of the young were reared. They bred again in 1928, and also produced hybrids.
- p. 256. *Add*: 699. *i*, CHUKAR. 699. *ii*, ARABIAN CHUKAR. *a*, CHUKAR \times ARABIAN CHUKAR. Bred by Whitley in 1928, when I saw them; he reared quite a number and I think they continue to breed.
- p. 148. *Add*: 703. *i*, GREY FRANCOLIN (*F. pondicerianus*). First breeder Amsler in 1927; Medal awarded, *see A.M.*, 1928, 52.
- p. 148. No. 705. SPOTTED-BELLIED FRANCOLIN. *Add*: Shore Baily reports success in 1927; two young had been reared and were on the wing at the time of writing (*A.M.*, 1927, 200).

¹ The page references and numbers are (as in previous instalments) those of *Records of Birds Bred in Captivity* (Witherby, 1926); new records are indicated by the addition of *i*, *ii*, etc., to the record-numbers.

- p. 148. *Add*: 705. *i*, DOUBLE-SPURRED FRANCOLIN (*F. bicalcaratus* (Linn.)). Mr. Meade-Waldo tells me (1930) that he bred this species and published a record in an early number of the *MAGAZINE*, but this reference has escaped me.
- p. 148. 709. MADAGASCAR PARTRIDGE. *Add*: Ezra bred them (for the first time in the U.K.) in 1931, rearing two chicks (*A.M.*, 1931, 331).
- p. 149. 712. ROULROUL. *For the record as it stands, read*: First bred and successfully reared by Whitley at Paignton in 1926; I saw the two young when about three months old and they were still alive in August of the following year, but the mother had unfortunately died. For a full account by the breeder and a coloured plate see *A.M.*, 1926, 321, and 1927, 253. Although the Roulroul has a place in Page's book, the only previous record was one of incomplete success, Ingrams; see *A.M.*, 1908, 38.
- p. 151. 722. CHINESE BAMBOO-PHEASANT (*thoracica*). *Add*: Gurney records success in 1932 in *A.M.*, 1932, 207, a first for the U.K.
- p. 151. *Add*: 722. *i*, FORMOSAN BAMBOO-PHEASANT (*B. sonorivox*). First bred in 1929 by Mme. Lecallier in France; see *L'Oiseau*, 1929, 95. In the following year Ezra bred them in England (*A.M.*, 1930, 289; 1931, 81, Medal).
- p. 151. *Add*: 723, *i*, WESTERN HORNED TRAGOPAN (*T. melanocephalus*). Ghigi and Delacour in *A.M.*, 1930, 234, say "very rare, but it was bred formerly".
- p. 256. 724. *Add*: TEMMINCK'S \times HORNED TRAGOPAN. Bred by Delacour in France in 1926 and 1927; see *L'Oiseau*, 1927, 279.
- p. 151. 725. BLYTH'S TRAGOPAN. *For the record as it stands, read*: Ollivray in France bred five young in 1891, *teste* De Brisay, *L'Aviculture Chez L'Eleveur*, p. 82.
- p. 151. 727. EARED PHEASANT (*C. auritum*). *Add*: In 1929 Delacour received a number of "Blue Crossoptilons", that is this bird. They were unfortunately all males, but he bred some hybrids from one of them.
- p. 257. *Add*: 727. EARED PHEASANT (Blue Crossoptilon), *a*, BLUE \times BROWN CROSSOPTILON (= *manchuricum*). Bred by

Delacour in 1930, the resulting young looking almost like the father; one of these hybrid hens mated with a Blue cock produced two young further hybrids indistinguishable from the father (*A.M.*, 1932, 7).

- p. 152. 728. MANCHURIAN EARED PHEASANT. *Add*: A pair are recorded as having bred at a year old in the U.S.A. (*A.M.*, 1931, 234).
- p. 152. 729. MONAL. *Add after "France" in line 8*: They were bred at the Zoo in 1926.
- p. 257. 729. c, MONAL × DOMESTIC HEN. *Add*: In *L'Oiseau*, 1927, 277, he describes the bird.
- p. 153. 733. SIAMESE PHEASANT. *Delete the last sentence, "For . . . only" and read instead*: Were bred at the Zoo in 1926.
- p. 153. 735. WHITE-CRESTED KALIJ. *Add*: Crandall's 1927 List contains the entry, "White-crested Kalij, (*G. hamiltoni*), bred at the New York Zoo." This, I presume is a subspecies.
- p. 258. *Add*: 737. NEPAL KALIJ. a, NEPAL × BLACK-BREASTED KALIJ. Four reared in France by Delacour in 1927; see *L'Oiseau*, 1927, 279.
- p. 154. *Add*: 741. i, LEWIS'S PHEASANT (*G. lewisi*). Two young out of five hatched reared at Clères in 1931; the hen had laid unfertile eggs in the previous year. Delacour: *L'Oiseau*, 1932, 7.
- p. 258. 739. c, SILVER × COMMON PHEASANT. *Add*: the cross has also been bred at the Tokio Zoo (*Hachisuka*, p. 77).
- p. 259. 742. a, EDWARD'S × SWINHOE'S S. PHEASANT. *Add*: , which gained their full plumage at 18 months old (*L'Oiseau*, 1926, 361).
- p. 155. 745. CHEER PHEASANT. *Add*: and more recently it has been bred in the U.S.A. by Kuser, *teste* Crandall's 1927 List.
- p. 260. 753. JAPANESE PHEASANT. *For the records as they stand, read*: a, JAP. PHEASANT × BLACK-BREASTED KALIJ. "In evidence at S. Kensington" (Vale). b, JAPANESE × COMMON PHEASANT. Has been bred at the Zoo, 1910 and

- since, and also in Japan (*P. c. karpowi*) teste *Hachisuka*, p. 76. *c*, JAPANESE × RING-NECKED PHEASANT. *d*, JAPANESE × SOEMMERRING'S PHEASANT. *c* and *d* have both been bred in Japan, teste *Hachisuka*. *e*, JAPANESE × AMHERST PHEASANT. This cross has been obtained in Tunis by M. Labbe (*L'Oiseau*, vol. ii), and also vol. iv, teste *Hachisuka*, who saw three of M. Labbe's birds in 1927. *f*, JAPANESE × GOLDEN PHEASANT. In Japan, teste *Hachisuka*. *g*, JAPANESE PHEASANT × Domestic hen. *ditto*.
- p. 310. *Emend the hybrid entry 753 to agree with above, and add the following male parents: Common Pheasant, Silver Pheasant, Domestic Fowl (a Bantam cock, teste Hachisuka), and a hybrid of which the father was a Jap × Golden cross and the mother a Japanese Pheasant.*
- p. 260. 754. SOEMMERRING'S PHEASANT. *For the entry as it stands, read: a, SOEMMERRING'S × REEVES' PHEASANT. Bred by Delacour at Villers-bretonneux before 1913; see B.N., 1920, 16, and L'Oiseau, 1927, 278. b, SOEMMERRING'S × GOLDEN PHEASANT. In Japan, teste Hachisuka, p. 76. c, SOEMMERRING'S × COMMON PHEASANT. In Japan, teste Hachisuka (P. c. karpowi).*
- p. 157. 757. MIKADO PHEASANT. *Add: , recently quite freely with Delacour at Clères, see L'Oiseau, 1932, 7.*
- p. 261. 757. MIKADO PHEASANT. *Add to a. Hachisuka says this hybrid much resembles C. humiac. Add to b.: , and L'Oiseau, 1927, 278.*
- p. 261. 759. GOLDEN PHEASANT. *a, GOLDEN × COMMON PHEASANT. Add: Delacour had a male specimen alive, see L'Oiseau, 1927, 279.*
- p. 157. *Add: 761. i, CEYLON JUNGLEFOWL (G. lafayetti). Two broods were reared at the Zoo in 1928, teste Seth-Smith, A.M., 1929, 24. A first. Have recently been reared at the Calcutta Zoo.*
- p. 261. JUNGLEFOWL. *a, SONNERAT'S × RED JUNGLEFOWL. Delacour says (L'Oiseau, 1927, 277) that these hybrids are easily*

obtained and fertile, and Finn (*A.M.*, 1931, 177) mentions two SONNERAT'S × JAVAN hybrids.

b, JAVAN × RED JUNGLEFOWL. *Add*: One young one reared out of several hatched, *teste* Delacour (*L'Oiseau*, 1926, 361).

Add: *g*, Domestic cock (Bantam) × JAPANESE PHEASANT. "This cross was bred in Tokio and is alive now." *Hachisuka*, 1928, 49.

p. 311. *Delete* "and the Domestic hen" at the end of hybrid entry, 760-762.

p. 158. 763. PEACOCK-PHEASANT. *Add*: In *L'Oiseau*, 1932, 6. Delacour records the rearing of six *P. chinquis ghigi* in 1931.

p. 158. *Add*: 764. *i*, PALAWAN PEACOCK-PHEASANT (*P. emphanum (late napoleonis)*). Bred for the first time by Patton in California in 1930, *teste* *Aviculture (U.S.A.)*, of October, 1930, and the list given in the *January*, 1932, number.

p. 158. *Add*: 765. *i*, RHEINHARDT'S ARGUS (*Rhenardius ocellatus (Verr)*). One reared at Clères by Delacour in 1931, a first; another chick lived 10 weeks (*L'Oiseau*, 1932, 6). M. Jabouille in Assam had once got as far as rearing a youngster to 40 days (*l, c*, 1926, 359).

p. 262. 766-768. PEAFOWL. *Add*: the two species of *Pavo* hybridize easily to the third and fourth generations (*Hachisuka*, p. 69, where he gives an exhaustive account of Game-bird hybrids with illustrations of many, pp. 62-85).

e, PEACOCK × FOWL. *Add*: *Hachisuka* (p. 74) gives a photo of such a hybrid and its mother, the hen.

p. 262. 769. GUINEAFOWL. *a*, GUINEAFOWL × PEA-HEN. *Hachisuka* (p. 72) gives a photo of two of these hybrids and says they have only been bred twice, once in Germany, once in Italy; he gives the reference, *A. Ghigi, Monog. di Gallene di Faraone*, 1927, p. 61, *Palte*, 36.

p. 262. *Add*: 773. *i*, ZAMBESI CRESTED GUINEAFOWL (*N. lividicollis, Ghigi*).

773. *ii*, MOZAMBIQUE CRESTED GUINEAFOWL (*N. barbata, Ghigi*).

- a, Professor Ghigi reared 25 of these "hybrids" at semi-liberty in Italy in 1928 and gives a full account in *L'Oiseau*, 1929, 38. The article is headed "Élevage de la Pintade huppée", the parents specified as above.
- p. 159. 772. ABYSSINIAN GUINEAFOWL. *Add*: Gurney reared eight young in 1928; see *A.M.*, 1929, 3.
- p. 160. *Add*: 780. *i*, MARBLED GUINEA QUAIL (*Odontophorus guianensis panamensis*). Bred in America by Mrs. Bryan in 1929, *teste A.M.*, 1930, 25, quoting *Aviculture (U.S.A.)*, October, 1929.

BUTTON-QUAILS

- p. 162. 792 BLACK-THROATED BUTTON-QUAIL. *Add*: In 1926 Découx reared two young; see *L'Oiseau*, 1927.
793. SMITH'S BUTTON-QUAIL. *Add*: Sich recently succeeded in England and was awarded the A.S. Medal (*A.M.*, 1927, 264; 1928, 52).

SAND-GROUSE

- p. 163. 794. PIN-TAILED SAND-GROUSE. *Insert after also in line 8, A.M.*, 1900, 77.
- Add*: 796. *i*, PALLAS' SAND-GROUSE (*Syrrhaptes paradoxus (Pallas)*). W. H. Workman in *A.M.*, 1932, 37, brings to light an early record of the breeding of this species in Denmark, described in the *Zoologist*, 1892, p. 341, by Christensen, of Copenhagen, who reared one chick in 1891, which was still alive in April, 1892, in the best of health and very tame. In the year before he had had fertile eggs, but they failed to hatch.

CURASSOWS

- p. 164. *Add*: 799. *i*, BANDED CURASSOW (*C. sclateri*). Have been bred at the New York Zoo, *teste* Crandall's 1927 List.
- p. 264. 797. *a*, *Add*: The one young bird was fully reared and grew up to be a typical *globicera*, *teste A.M.*, 1930, 296.
- p. 165. 806. BRUSH-TURKEY. *Line 6, after November, 1904, insert*: and the *Report* for 1926 gives "two reared" for that year.

Add to end of record : When in Australia in 1930 I found that they were considered fairly easy breeders there in suitable surroundings. Smith, at Brisbane, has great success in an aviary made by enclosing about a hundred square yards of "bush". He had 37 young birds reared that season when I saw his place, and had done about as well in other years, but when I was there again in 1932 he was having bad luck, for he had only reared two chicks, mainly owing to rats and snakes. When the mound is made the hens are shut up in pens adjoining the main run, as otherwise they hunt the young about till they kill them; the cock turns over the mound almost daily, and always loosens the earth over the eggs due to hatch, so that Mr. Smith says that he must remember the date of laying of each egg.

- p. 165. *Add* : 806. *i*, MALLEE FOWL (*Leipoa ocellata* (Gld.)). Have been bred in Australia several times, two breeders being Bellchambers and Downer of South Australia. I saw the breeding birds and their five young of the year when I visited Adelaide in 1932. For a description of this, etc., see *A.M.*, 1932, 120.

TINAMOUS

- p. 166. 810. CINERESCENT TINAMOU. *Add* : the name *cinereus* is, however, again used in the Medal award, *A.M.*, 1926, 116. *Add* : 810. *i*, PARTRIDGE TINAMOU (*N. perdivaria* (Kittl.)). Shore Baily (*A.M.*, 1929, 251) records success in 1929.

This lengthy list reaches its end here, but it is really an endless job, for new records are naturally being made and I am still asking for more in this line, that is new records, particularly printed ones, and corrections needed for the old. Notes to the Magazine would be the most useful.—E. H.

CORRESPONDENCE, NOTES, ETC.

GOULDIANS BREEDING TO THE THIRD GENERATION

Mr. P. W. Teague writes: "I am pleased to tell you my *third* generation of English-bred Gouldians is now an accomplished fact, although there are only five of them. Fortunately these are from two unrelated pairs, so that I can carry on further study and experiment, I hope."

A FEATHER-PLUCKING PARROT

Probably "the usual sunflower seed mixture" referred to by Mrs. Hewley is the cause of her Parrakeet plucking itself, as all packet Parrot foods are unsuitable for feeding Parrots and Parrakeets. The bird should be fed on canary, white millet, wheat, oats, and peanuts, with fruit and green food, but no cake or tea. A twiggy branch of any non-poisonous deciduous tree—oak, ash, elm, lime, hazel, etc.—should be provided for the bird to nibble, ash being particularly good. If it could be given some form of aviary accommodation the chances of a permanent recovery are considerably increased. Bathing facilities should be provided.

TAVISTOCK.

PROLIFIC BOURKE'S PARRAKEETS

I thought that perhaps you might be interested to hear about an extraordinary pair of Bourke's Parrakeets in the aviaries of Mr. Rowland Hutchinson, of Auckland, whose kind hospitality I am now enjoying. This pair of birds was purchased last year, and a few months after being received from Australia they went to nest. The hen laid eleven eggs. Of course, these were too many to cover, so only eight hatched out; of these, six were reared. Before the young had left the nest the hen laid again; this time she hatched and reared seven perfect young ones. Again before the last youngster left the nest she again laid six more eggs and was sitting on them when I left for Fiji.

Surely such a hen is a veritable treasure, beating even a Budgerigar in fertility. Mr. Hutchinson has promised me some of this prolific strain to bring back with me.

SYDNEY PORTER.

THE BLACK-BREASTED PLOVER

On my return from Egypt last week, I was pleased to learn that my pair of Australian Black-breasted Plovers had eggs, and had been sitting for over a week; the four eggs were laid in a small scrape in the sand on the floor of the shelter of their aviary, and each bird takes its turn in sitting. If I am lucky enough to rear the young, I shall hope to write a full account later on.

G. H. GURNEY.

A TROPICAL HOUSE

The few birds flying loose in my new Tropical aviary look splendid, especially the King Bird of Paradise which is absolutely perfect, and of the

richest deep red colour. There is no doubt that the hot, moist atmosphere suits them; the house is thoroughly sprayed with tepid water twice a day, which keeps it damp and moist.

G. H. GURNEY.

[M. Delacour was the first to start a Tropical house, which is really a stove-house, with tropical vegetation in a very moist atmosphere, which is kept at a temperature of between 70° and 80° F. The Tropical House in the Zoological Gardens has proved a great success, though the vegetation has suffered somewhat from the presence of a large species of cockroach, a relic of the time when the house was given up to tortoises. The health of the birds is superb, and their plumage keeps perfect. For tropical insectivorous birds—Honey-eaters, Sugar-birds, Pittas, and such-like—the conditions of a Tropical house are ideal.—ED.]

SUNBIRDS

It has been my pleasure at one time or another to have in my collection several Sunbirds, as they are always great favourites of mine. All are exceedingly handsome creatures, and if kept under proper conditions are long-lived and a source of joy to their owners. I give pride of place to the Malachite, the largest of the family. It is a beautiful emerald green, with a tuft of yellow on each side of the breast which, however, is only seen when the bird is resting. The central tail feathers are prolonged and much longer than the rest. Pen and brush alike fail to do justice to the extreme beauty and coloration of this wonderful species and therefore no word of mine can convey the contour of this glorious gem of the avian world; it must be seen for its beauty to be appreciated. When seen in the sunlight the feathers glisten with radiant hues, now golden, now bronze, and now shining green.

Another bird I have kept with success is the Purple Sunbird, all glittering purple of different shades as you view it from different angles. I have found this species a very good songster. Closely related is the White-breasted Sunbird, which has a purple back but is white on the breast. Then I have also had the Double-collared Sunbird, a glorious creature, silky bronze in colour with two golden bands around its neck.

I have always found Sunbirds do best if kept in a large flight cage, but no doubt they would do well if allowed to fly loose in an indoor aviary or tropical house; but I am sure they are not suited for outside aviaries as the sudden changes in our climate are too much for them. A large flight cage, tastefully decorated with small natural twigs, and flowers when possible, and, given the right food, they will live long and happily and be a source of joy to their owner. Various methods of feeding have been adopted, but I have found the following the best: To a cup of boiling water add one teaspoonful of Horlick's Malted Milk and the same quantity of sugar. Twice a week a little honey may be added. I am sure many Sunbirds have a short life because the syrup is made too strong. Sweet grapes and a small piece of banana are all helpful, as well as small flies, but if they show the least sign of over-fatness stop the fruit supply. I have found that Sunbirds can stand the cold when once acclimatized, but do much better with a little heat. Great care must also be taken to see that their feet are clean, as they will loose their claws if great care is not taken. Sunbirds are also great bathers and

should be allowed to have access to fresh water daily. One of the greatest drawbacks with these birds is that no two birds of the same species must be kept together, as they are sure to fight, and the weaker one is apt to get killed.

A. MARTIN.

I have a very fine Sunbird (*Chalcomitra gutturalis*), which, all the time I have had it, has never shown any inclination to bathe. Nevertheless, I have sprayed it daily, which it seems to enjoy. A few days ago I filled its dish with rain water, which happened to be handy. Shortly afterwards I noticed the bird go down to drink (which most Sunbirds are rarely seen to do) and, having had a sip, proceed to give himself a really satisfactory bath. Since then I have used rain water, and the bird scarcely misses a day without drenching himself. At first I was greatly surprised to see him bathing as he had never shown the slightest interest in water, but then I realized that perhaps it might be more than a mere coincidence that the provision of rain water and his first bath should have taken place on the same day. When we remember that wild birds are very fond of bathing in wet foliage, I think we need hardly be amazed that the softness of rain water should seem attractive to them. I doubt not that this habit will give an extra gloss to the bird's already gem-like plumage.

From observations on the Sunbirds which I have possessed—certainly over a dozen species—I have been forced to the conclusion that the majority of species care not greatly for any insects larger than the minute forms that fill the air on a warm evening. Further, I am convinced that they never extract live food from flowers by means of their tongues as is often stated in textbooks. It is curious that, whereas the small *Cinnyris michrorhynchus* and *Cyrtostomus asiaticus* are fond of fairly large flies and spiders, the larger *Chalcomitra gutturalis*, *Cinnyris habessinicus* and *Nectarinia famosa*, etc., find great difficulty in swallowing anything larger than a gnat and, when they do succeed in getting it down, generally throw it up again. A good way of providing insect food for these larger Sunbirds is by putting the cage out of doors in warm weather near a bush or wall, which attracts those minute forms of life which dance in clouds. It is curiously fascinating to watch the birds snapping at these in the air.

ANTHONY CHAPLIN.

MR. LEWIS OF HARRODS

Aviculturists will be interested to learn that Mr. Lewis, who has for so many years managed the Zoological Department at Harrods, has now set up on his own at 179 Brompton Road. Here will be found birds of all sorts, dogs of many breeds, and the smaller pet mammals, also general requisites, cages, etc.

Mr. Lewis is an aviculturist of no small merit, having kept many of the rarer foreign birds, such as Sunbirds, Sugar-birds, Tanagers, and the like, and he won the medal for successfully breeding the Orange-flanked Parrakeet for the first time in captivity.

Mr. Lewis hopes to specialize more in the rarer species of birds rather than the commoner kinds, and he will be pleased to advise any member on general livestock. I am sure we all wish Mr. Lewis success in his new venture.

E. MAUD KNOBEL.



Jessie, Hunt, & Durrant, 178, Leaden

Fire-Tailed Finch
Zonæginthus bellus.
(Upper) Imm. (Centre) ♂. (Lower) ♀.

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THE FIRE-TAILED FINCH

(*Zonæginthus bellus*)

This beautiful Finch occurs in the coastal districts of the south-eastern portion of Australia, in Tasmania, Kangaroo Island, and the larger islands of Bass Strait. Its principal habitat is Tasmania, whence most of those that have been imported to Europe have come. They are partial to the scrub and herbage which grows near water-courses, and are found in small parties, generally accompanied by the so-called Sydney Waxbill—the Red-browed Finch (*Ægintha temporalis*). They have a peculiar plaintive note, and when they fly the brilliant scarlet colour of the rump is particularly noticeable. The nest, according to Campbell, is "bottle-shaped, or covered in, with spouted entrance; constructed of grasses chiefly, with the addition of portions of other plants; lined inside somewhat sparingly with fine grasses and fur or feathers. Usually situated in thick-foliaged tree or bush." One pair of these finches was exhibited at the last Crystal Palace show, but few have been imported in recent years. They are delicate at first, and said to be difficult to import. In 1908 I brought a number home, and we had no trouble with them, but others with far more experience have sometimes had very bad luck. There seems to be no record of this species having bred in Europe, but Dr. Hopkinson found an aviculturist in Sydney breeding them quite freely, as recorded in *More Additions to Breeding Records*. Mr. Neville Cayley, in his

admirable *Australian Finches*, gives a long and interesting account of the Fire-tail. He considers it to a great extent insectivorous, but Mr. H. E. Peir, who he quotes has bred numbers in aviaries while feeding them upon canary-seed and an abundance of green-food and grasses in seed only. His advice is to keep Fire-tails by themselves, not with other birds of any kind, and to give them dense cover in which to hide. Apparently several pairs may be kept in the same aviary providing they have no other companions.

Mr. Cayley gives other instances of successful breeding in Australia, and quotes the Curator of Beaumaris Zoological Gardens (Tasmania) to the effect that Fire-tails have been bred in captivity in Tasmania "for the last sixty years at least, but who was the first person to do so is now impossible to find out. They require a cage not less than four feet by three, and will build their own nests among branches placed therein, one pair to a cage and fed on plain canary-seed (hemp is fatal)."

The great secret of keeping Fire-tail Finches seems to be to give them abundant dense cover in which to hide.

D. S-S.

GOULDIANS

By P. W. TEAGUE

First of all I would take this opportunity, with the Editor's permission, of expressing my thanks to the great number of enthusiasts who have written me most appreciative letters about my previous article on Gouldians. I had so many letters that I doubt if I answered them all; however, it is most gratifying to me to know my article has been the means of helping so many who had previously failed with these delightful birds.

Last season was somewhat disappointing from a breeding point of view with Gouldians, due chiefly to my being from home for nearly six weeks in June and July. During this period I had to leave my birds to the tender care of a village girl who, I think, did everything I asked

her not to do. The amazing part is that Gouldians could have lived under such treatment as I found on my return. Fortunately I took the precaution to add "Yadil" to all the automatic drinkers otherwise my losses might have been heavy. Even a strong, hardy tri-coloured Parrot Finch died from the "slap-dash" treatment of this village lass: however, it proved to me that English-bred Gouldians can stand a lot and it also proved that I had evidently got stamina into them anyhow. My absence I shall blame for my poor breeding results, although it should be understood that not every pair of Gouldians will breed. I mated six pairs which were in good trim when I left in June, but the only ones to be successful were the two pairs of second generation birds which reared two from one pair and five from the other. The five left the nest in October, but the sharp early frosts we had then killed two in one night, so I brought the remainder indoors with their father who completed the rearing. These young ones were in the "between time", the stupid period, that is, partly feeding themselves and partly being fed by the male. The hens at this time are often on the look-out to commence another nest, leaving the cock bird to finish off feeding the young. These stupid young birds haven't sufficient sense to have a good "fill up" to carry them through the long autumn nights, and they would not feed with a lantern in the aviary. Here let me give a warning not to remove the young from the parent birds until you are quite sure they are all feeding themselves. This lack of a good "fill up" before going to roost also caused the death of four young Cordons the same night through this same severe frost: although they appeared to be feeding themselves, they paid the penalty for their independence—the stupid period again. For safety I also brought the other two young Gouldians indoors which were hatched earlier in the season.

I found the second generation Gouldians much more ready to nest than first generation birds and proved most excellent feeders. My second generation birds stood the winter splendidly in their unheated outdoor aviary, without artificial light, and despite the snow blizzard and severe weather we had. These aviaries, as previously mentioned, are shuttered up with "Sunralite" or "Windolite" shutters, but this did not prevent the water being frozen to a solid block of ice

every night. It should be noted the birds were dry, free from all draughts and cold winds, which I think important. To give readers an idea of the exposed position these aviaries occupy I had two blown over. These two aviaries are screwed together and measure 13 by 3 ft., so the force of the gale to move this lot can be guessed.

Another point of note is that the three late hatched young were fed almost entirely on the soaked seed method given in my article, with the addition of Virol in their drinking water daily. Fresh seeding grasses and green food were unobtainable here, for the severe frosts killed everything except cabbages, and these the Gouldians would not touch. These young Gouldians have made remarkable progress, good size and now—early May—almost completed their moult to adult plumage. On the other hand I have two hens over twenty months old which have scarcely changed a feather to adult plumage, and this in spite of the fact that they both laid when about twelve months old, but, like Dr. Sprawson's experience, the adult males would not take the slightest notice of them. This goes to show how individual Gouldians differ both in the matter of moulting and also in their individual tastes.

My stud of Gouldians, numbering over twenty, contains birds from six months old to an old pair I purchased six years ago. This pair were in full adult plumage when I got them, so they are probably much older. I have one adult cock, bred by mating father to daughter, and another from brother and sister. These are about two years old, of quite average size, and appear to have as much vigour as birds bred from unrelated parents.

I noticed in Mr. Highman's letter in the February issue that his Gouldians relish white ants. A Gouldian breeder I know in Natal informs me that his birds won't look at the white ants, neither have I been able to get my Gouldians to touch our meadow ants pupa although offered quite fresh regularly during the summer. No doubt the Virol water I recommend helps to fulfil this loss. That reminds me I have been in communication with Virol, Ltd., about a difficulty I experience when using Virol-water in hot weather. I wrote to the Managing Director, who has been quite interested in my experiments with Virol for Gouldians, and I am indebted to him and their chemist, Mr. Wood,

for carrying out some experiments for me. Herewith Mr. Wood's reply, which I feel sure will be very helpful to our friends in hot climates.

"With regard to the souring of the Virol and water mixtures you are in the habit of using for your birds. You will appreciate that the difficulty lies in finding a preservative which shall be not only easy to use, but also completely harmless to the birds. I have, however, worked out a method which I think will serve your purpose

"Obtain from your chemist some 10-volume Hydrogen Peroxide.

Add the Virol to water which has been warmed to about blood heat ; to half-pint of this solution add one teaspoonful of the Peroxide. Mix thoroughly, allow to cool before giving same to the birds.

"You can take it that this addition will be without any harmful action whatever, and a solution so treated will keep even under summer conditions for about three days. I cannot tell exactly how long it will keep, as I have been forced by weather conditions to conduct my experiments in artificial heat. Should you find it necessary, there is no objection whatever to doubling the quantity of Hydrogen Peroxide used. I should like to point out while on this question, that on dissolving Virol in the water, the fat contained in the Virol is bound to separate and form a layer on the surface. This must not be taken to mean that the solution is in any way 'going off'. It is a perfectly natural result and one which cannot be avoided in any way."

I shall try the above formula this summer, but my method of making the Virol-water is to boil the water first and then let it cool to blood heat before adding the Virol. I shall be interested to hear what results and observations are made by those using the above.

In spite of my absence I did not lose a single Gouldian from the usual summer complaints, but the bitter cold winds we had in November and December last caused the death of two Gouldians from chills. My Fire Finches, Cordon Bleus, Blue-headed and Golden-breasted Waxbills all came through the winter outdoors without heat, and I take it last winter was of average severity ; anyway, it was pretty severe in this locality.

I forgot to mention that the old pair of Gouldians previously mentioned usually commence moulting in November or December in spite of their being imported birds. This pair usually commence to

nest in April or May, and they are a wonderful pair having hatched and reared 28 youngsters altogether. I only wish all my other pairs had been as prolific. It is this old cock that has been such a wonderful foster-parent too, having reared two or three young ones that had been prematurely deserted.

In conclusion there is a very true saying I should like to repeat: "Diligent observation is more useful than written theories." So diligently watch your birds and endeavour to find out what they want.

SUNBIRDS

By Dr. E. HOPKINSON, C.M.G., D.S.O.

Sunbirds are now being almost commonly kept as cage-birds, not only in big collections but by people who want a single pet bird which is easy to cater for and to keep in perfect health and happiness. For this reason and for their beauty Sunbirds provide exactly what is wanted, and this has suggested that some indication of their *status* as cage-birds may be helpful to those interested.

This essay in this direction takes the form of a list of those *species* of which the writer has records of their having been kept, documented by references to coloured plates and notes of avicultural interest. No descriptions of plumage nor accounts of the wild life are included, for as regards the first, written descriptions to most of us mean but little, while a plate is the next best thing to a series of skins as an aid to the identification of a new bird; as regards the habits, etc., of the birds, they must be searched for in the works of the authorities, and the references given will, it is hoped, be a help towards this.

The plates referenced are mostly from Shelley's *Monograph of the Nectariniidae* which appeared in 1876-1880 (abbreviated here as "*Shelley, Mon.*"), and from Jardine's "Sunbirds," *Naturalist's Library*, Edinburgh, 1843, the plates in which, though old-fashioned, are quite good of their kind (*Nat. Libr.*, xvi).

The British Museum Catalogue, vol. ix, pp. 1-126 (1884), provides descriptions of all the species known at that date, Shelley's *Birds of Africa*, vol. ii, pp. 10-166 (1900), deals fully with the African species and contains coloured plates of about ten, while for those of India there is the third volume (1926) of Stuart Baker's *Fauna of British India: Birds*, pp. 372-418, with one coloured plate (*Æthopyga gouldia*).

Of course, the number of Sunbirds which have been kept in captivity form but a minute proportion of the family, which includes about 150 species divided into three or four times as many sub-species, and out of the 20 or more genera it will be seen that only 9 are represented to date in Aviculture.

The references given under each entry in the list which follows are mostly avicultural, and give the sources of my records. The chief are:—

Neunzig's *Fremdlandische Stuben-vogel*, Madgeburg, 1921, pp. 105-111 (here as *Nzig.*); Delacour's article in *Aviculture*, 1925, pp. 251-6, with a coloured plate showing six species (*Avic.*, i); the *Zoo List of Birds*, 1929 (G. C. Low), reference to which is indicated by a Z and the list-number. The pages of our Magazine and of *Bird Notes* (here as *A.M.* and *B.N.*) also provide their share of the references, though only the more important ones are included. Perhaps I may refer to a particular omission, that is *A.M.*, 1918, p. 153, where the same subject is dealt with, commencing with the days of pre-Mellin ignorance, when Sunbirds could practically not be kept, so that the appearance of one on the show bench was hailed as "unique", up to the year 1911, when the Mellin's food régime was introduced by Mr. Ezra and Sunbird-keeping converted from a hopeless business to the simple one it is nowadays with Mellin or Horlick as the food-basis.

In that article the question was asked who actually first used Mellin's food for these birds and where? We know who introduced it to England and when, but had it been discovered by another previously? As far as I know no definite answer was obtained in 1918; perhaps we may get one now.

MALACHITE SUNBIRD (*Nectarinia famosa* (Linn)). Z. 616. Hab.: South Africa. Plates: Shelley, *Mon.*, pl. 5; *Bird Notes*, 1916, pl. 74. First imported about 1914. Count Ségur was apparently the first to own the species, "he had two pairs in 1914" (*Nzig.*, p. 106).

- and since then they have often been at the Zoo and elsewhere. Delacour had one which lived seven years and then met with a violent end with the rest of the collection, (*Avic.*, i, p. 353). Other references: *B.N.*, 1913, p. 373; 1914, p. 284; *A.M.*, 1921, p. 18; 1924, p. 309.
- BEAUTIFUL SUNBIRD (*N. pulchella* (Linn)). Hab.: North Tropical Africa. Plates: Shelley, *Mon.*, pl. 4; *A.M.*, 1929, pl. 53; *Nat. Libr.*, xvi, pl. 18. First imported, 1929. "One new to the collection, presented by Mr. Spedan Lewis" (*Report*, 1929). I do not think any others have reached us.
- KILIMANJARO SUNBIRD (*N. kilimensis* (Stanley)). Z. 617. Hab.: Uganda and Kenya, from Ruwenzori to Kilimanjaro. Plate: Shelley, *Birds of Africa*, ii, p. 28, pl. i, fig. 1. First imported in 1921 or 1922. This was to the Zoo, where I saw it, a very bronzy-coloured bird, as far as I remember.
- WEDGE-TAILED SUNBIRD (*Anthobaphes violaceus* (Linn)). Hab.: South Africa. Plates: Shelley, *Mon.*, p. 8; *Nat. Libr.*, xvi; *Sunbirds*, Jardine, pl. 16. First imported about 1920. Delacour had one for four years about that time, the only one imported apparently till the Zoo got one in 1930 (see *Report*, 1930).
- MAKLOT'S SUNBIRD (*Chalcostetha calcostetha* (Jard., 1843); *Cinnyris macklotii*, Bp., 1850); *Nectarinia pectoralis* (Temm., 1823), pre-occupied). Hab.: Malaya, Siam, Sumatra, Java, etc. Plates: Shelley, *Mon.*, pl. 30; *Nat. Libr.*, pl. 25; Robinson and Kloss, *Birds, Malay Peninsula*, ii, pl., p. 308. First imported, 189-. "About twenty-five years ago a male lived a long time at the Berlin Zoo" (*Nzig.*, p. 106). The only record I know.
- BLACK-BREASTED SUNBIRD (*Æthopyga saturata* (Hodgs.)). Hab.: Himalayas. Plates: Shelley, *Mon.*, pl. 11; *Nat. Libr.*, pl. 28; *B.N.*, 1916, pl., p. 74 (not good). First imported about 1924. Delacour and Mrs. Bourke have kept it.
- HIMALAYAN YELLOW-BACKED SUNBIRD (*Æthopyga siparaja scheria* (Tickell)). Z. 618. Hab.: Himalayas. Plates: Shelley, *Mon.*, pl. 22; *Nat. Libr.*, xvi, pl. 26; *A.M.*, 1914, pl., p. 89. First imported 1914, when it was in Count Ségur's collection in Paris. Mr. Ezra and others have had it since. "A common cage-bird

in its own country, where it lives for a long time on sugar-water, biscuit, and milk, given alternately with honey" (*Nzig.*, p. 107).

VIGORS' YELLOW-BACKED SUNBIRD (*Æ. siparaja vigorsii* (Sykes)).

Hab.: West Coast of India. Plate: Shelley, *Mon.*, pl. 23. First imported 1931, when the *Zoo Report* gives: "a-o, deposited July: new to the collection."

NEPAL YELLOW-BACKED SUNBIRD (*Æ. n. nipalensis* (Hodgs.)). Hab.:

East Himalayas. Plates: Shelley, *Mon.*, pl. 10; *Nat. Libr.*, xiv, pl. 27.

HORSFIELD'S YELLOW-BACKED SUNBIRD (*Æ. nipalensis horsfieldi*

(Blyth)). Hab.: Himalayas, Garhwal to Kuman. Plate: Shelley, *Mon.*, pl. 10. First imported before 1925; ? exact date. Mr. Ezra has had both these Sunbirds and Mr. Chaplin obtained one of the second recently, but it was in bad condition and soon died.

LOTEN'S SUNBIRD (*Leptocoma lotenia* (Linn)). Hab.: South India and

Ceylon. Plates: Shelley, *Mon.*, pl. 56; *Nat. Libr.*, xvi, pl., p. 260.

"Seldom imported, but one was in the Berlin Zoo for a long time" (*Nzig.*, p. 108), and Mr. Ezra has had it (*Avic.*, i, p. 251).

PURPLE SUNBIRD (*L. a. asiatica* (Lath.)). Z. 619. Hab.: India and

Ceylon. Plates: Shelley, *Mon.*, pl. 57; *Nat. Libr.*, xvi, pl. 24;

B.N., 1916, pl., p. 17. Date of first importation uncertain, but

probably in 1897 by Finn. *Nzig.*, p. 108, says: "The most

frequently imported of all Sunbirds, . . . love play, . . . can be kept in the open . . ." and young have been hatched at the Zoo

and eggs were laid with Mr. Brook in Scotland (*Avic.*, i, p. 255).

Other references: *A.M.*, 1899, p. 41; 1911, p. 201; 1913, p. 327;

1918, p. 154; *B.N.*, 1911, pp. 101, 131; 1913, p. 40; 1915, p. 19;

1916, pl., p. 17. Mr. Chaplin now has a pair of the more brilliantly-

coloured sub-species, *L. a. intermedia* (Hume), which ranges from East Bengal to South China.

VAN HASSELT'S SUNBIRD (*L. brasiliiana* (Gm., 1788), *Nectarinia hasseltii*

(Temm. and Laugier, 1825)). Hab.: Malaya to Assam; Java,

Sumatra, Borneo. Plates: Shelley, *Mon.*, pl. 42; *Nat. Libr.*,

xvi, pl. 22. First imported in 1929 for Mr. Ezra; the two birds

he then obtained were still alive in 1932. See also *L'Oiseau*,

1930, p. 504.

- PURPLE-RUMPED SUNBIRD, Amethyst-rumped Sunbird (*L. zeylonica* (Linn)). Z. 620. Hab.: India and Ceylon. Plates: Shelley, *Mon.*, pl. 45; *Nat. Libr.*, xvi, pl. 20. When first imported uncertain, but Finn brought some from India in 1897, which did not live to reach England (*A.M.*, 1899, p. 42). *Nzig.*, p. 109, says: "has lived for many years at the Berlin Zoo. . . . In their native country they are commonly kept and fed on sugar-water, honey, jam, and raspberries." "The most common species in captivity before the War; it has not been seen since" (*Avic.*, i, p. 255). Mr. Ezra and many others have kept it. See also *B.N.*, 1912, pp. 233, 250; *A.M.*, 1913, p. 289; 1918, p. 154.
- ABYSSINIAN SPLENDID SUNBIRD (*Cinnyris habessinicus* (Hempr. and Ehrenb.)). Hab.: Abyssinia to N.E. Uganda. Plate: Shelley, *Mon.*, pl. 63. One reached the Zoo in November, 1931. New to the collection (*Report*, 1931).
- BIFASCIATED SUNBIRD (*C. b. bifasciatus* (Shaw)). Hab.: Gabon to Mossamedes and across to Uganda. Plate: Shelley, *Mon.*, pl. 66. M. Delacour obtained some in 1920 (*Avic.*, i, p. 155), but did not these turn out to be the subspecies which follows?
- EAST COAST BIFASCIATED SUNBIRD (*C. b. microrhynchus* (Shelley)). Z. 621. Hab.: East Africa coastal districts. Plate: Shelley, *Mon.*, pl. 67. The Zoo record the only one I know.
- MARIQUA SUNBIRD (*C. mariquensis* (Smith)). Z. 624. Hab.: South Africa. Plates: Shelley, *Mon.*, pl. 65; *Nat. Libr.*, xvi, pl. 4. First imported in 1914 to France (*Nzig.*, p. 109), and one was exhibited at the 1927 Crystal Palace Show (*A.M.*, 1927, p. 86). Mr. Ezra had one in 1930.
- WHITE-BREADED SUNBIRD (*C. talatala* (Smith, 1836)). (*C. leucogaster*, v., 1819, not available.) Hab.: South Africa. Plate: Shelley, *Mon.*, pl. 71. Count Ségur had the first in 1914 (*Nzig.*, p. 109; *Avic.*, i, p. 255), the first and only importation, I think.
- GREATER DOUBLE-COLLARED SUNBIRD (*C. afer* (Linn)). Z. 622. Hab.: South Africa. Plates: Shelley, *Mon.*, pl. 77; *Nat. Libr.*, xvi, pl. 2, m & f. France, 1914, as the above, and our Zoo has also had it.
- LESSER DOUBLE-COLLARED SUNBIRD (*C. chalybæus* (Linn)). Z. 623.

Hab.: Western Cape Province. Plates: Shelley, *Mon.*, pl. 78; *Nat. Libr.*, xvi, pl. 1. First importation, 1914—to France for Count Ségur (*Nzig.*, p. 110), and it has been kept since by others.

AMETHYST SUNBIRD (*Chalcomitra amethystina* (Shaw)). Z. 626. Hab.: South Africa. Plates: Shelley, *Mon.*, pl. 84; *Nat. Libr.*, xvi, pl. 13; *A.M.*, 1914, pl., p. 231. First imported to Germany in 1914 (*D. Gef. Welt.*, 1914, and *Nzig.*, p. 111). Since in other collections.

SENEGAL SUNBIRD, Scarlet-chested Sunbird (*Ch. senegalensis* (Linn)). Hab.: Senegal to Northern Nigeria. Plates: Shelley, *Mon.*, pl. 83; *Nat. Libr.*, xvi, pl. 11. Apparently the first importation was in 1932; in July of that year I saw one sent over by M. Delacour for Lord Tavistock and later M. Decoux wrote to tell me that he also had one, "the second time this species has been imported to France."

SOUTHERN SCARLET-CHESTED SUNBIRD (*Ch. senegalensis gutturalis* (Linn)). Z. 626. Hab.: Natal to Nyasaland, etc. Plates: Shelley, *Mon.*, pl. 81; *Nat. Libr.*, xvi, pl. 12. "Was introduced to the market at the end of 1912 by Ditzell, of Leipzig, and four examples were in Herr Pracht's collection (*Nzig.*, p. 112). The Zoo have had it, and Gamage's had some in 1926 (*L'Oiseau*, 1927, p. 62).

COLLARED SUNBIRD (*Anthreptes collaris* (V.)). Z. 628. Hab.: East Cape Province to Natal, etc. Plates: Shelley, *Mon.*, pl. 110; *Nat. Libr.*, xvi, pl. 6. First arrival, two to the Zoo in 1920; I saw them, and they lived at least a year there. See also *A.M.*, 1920, p. 158.

TROPICAL COLLARED SUNBIRD (*A. collaris hypodila* (Jardine)). Z. 628a. Hab.: Equatorial West Africa to Uganda, etc. "Gamage had some in 1926, a first importation (*L'Oiseau*, 1927, p. 62), and the Zoo list notes that a specimen "new to the collection" was received in December of that year.

VIOLET-BACKED SUNBIRD (*A. longuemarei* (Lesson)). Hab.: Senegal, Gambia, and Portuguese Guinea. Plates: Shelley, *Mon.*, pl. 108; Swainson, *Birds of West Africa*, ii, p. 146, pl. 17. "First importation in 1926 for Gamage's," (*teste L'Oiseau*, 1927, p. 63), but Mr. Chaplin doubts very much if this species has ever been imported, and I can support this belief knowing that no Sunbirds ever left the *habitat*

(from Sclater's *Systema*) given above in 1926, for had they done so I must have heard of it, being in Gambia at the time and known all round to be interested in birds and bird-catching. Also I am practically certain that the birds Gamage had all came from much further south in West Africa.

- PLAIN SUNBIRD (*A. simplex* (S. Müller, 1843)). Z. 628*b*. Hab. : Borneo and Sumatra. Plate : Shelley, *Mon.*, pl. 100. "One presented by Mr. St. Alban Smith, June, 1930; new to the collection" (*Report*, 1930).
- BROWN-THROATED SUNBIRD (*A. malacensis* (Scop)). Z. 628*a*. Hab. : Malaya to Sumatra, Java, Borneo, etc. Plates : Shelley, *Mon.*, pl. 101, fig. 2; Rob. and Kloss, *Birds of Malay Peninsula*, pl., p. 302; B. and Chasen, *B. Singapore*, pl., p. 224. One new to the Zoo received 26th January, 1930 (*Report*, 1930). The writer has had one for the last month, given him by Mr. Chaplin, which has proved to him how easy a Sunbird is to cater for nowadays, and what a happy cage-bird one makes; incidentally too, this new possession may be one of the causes of this article.
- RUFIOUS-THROATED SUNBIRD (*A. rhodolaema* (Shelley)). Hab. : Malaya, Sumatra, and Borneo. Plate : Shelley, *Mon.*, pl. 101. First importation about 1932, when Mr. Chaplin tells me he obtained two examples.
- GREAT SPIDER-HUNTER (*Arachnothera magna* (Hodgs.)). Z. 627. Hab. : Himalayas to Tenasserim, etc. Plate : Shelley, *Mon.*, pl. 112, fig. 1. First importation, 1913. In *B.N.*, 1913, p. 32, Captain Perreau describes one he brought over in that year, and later Mr. Ezra had two which he presented to the Zoo. In November, 1929, Goodfellow brought two or three for Mr. Spedan Lewis, but if they actually came from Borneo as most of the other birds with them did, they must have belonged to another species, and I should think that this sentence really belongs to the next entry.
- ROBUST SPIDER-HUNTER (*Arachnorhaphis robusta* (Müll. and Schl.)). Hab. : Sumatra and Borneo. Plate : Shelley, *Mon.*, pl. 118. "One, new to collection, presented by Mr. Spedan Lewis, November, 1929" (*Report*, 1929).
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SUNBIRDS AND OTHERS

By the HON. ANTHONY CHAPLIN

Having been invited by the Editor to make some remarks about the birds I have kept, I should like to begin by saying that although I seldom have more than half a dozen individuals at the same time, and very often less when I have something of special interest or rarity, yet at one time and another I have owned a large and varied number of species, many of which have eventually been presented to the Zoological Society. My speciality has been, and always will be, Sunbirds, a family which now contains almost as many species as the Humming-birds, and which, therefore, has one more point in common with that most interesting of all bird types. For although the experts may shout when the Nectariniidæ and Trochilidæ are mentioned in the same breath, yet these two very distinct families have more than enough in common to confuse (and at the same time excuse) the superficial ornithologist. Both have a very rapid and dragon-fly-like flight; both suck the honey from flowers and snap insects in the air; both bear a resemblance to one another in form and colour. Isolated species of Humming-birds live on isolated Andean peaks, and in the same way the volcanoes of the Central African lakes often have their unique species of Sunbird, which are likewise found just below the snows, an example of this being Lord Dartmouth's Sunbird on Ruwenzori. And this recalls an important point which should not be overlooked when keeping Sunbirds in captivity, namely, that some species actually enjoy a cool misty atmosphere and are the better for it. Aviculturists are too apt to overdo heat, at any rate as regards the Nectariniidæ, and perhaps I may be permitted (I hope without giving offence) to point this out to Mr. Martin who, in the last issue of the Magazine advocates heat for Sunbirds. He is certainly right in respect to some species, as for example the little *Cinnyris leucogaster* of South Africa, which he has kept, and which from collectors' accounts seems to be a particularly delicate species. On the other hand *Nectarinia famosa* is capable of standing great cold and severe stormy weather, as indeed it must at home in the wild and inclement Drakensberg.

Of the two dozen species of Nectariniidæ that I have possessed, I think the Shining Sunbird (*C. habessinicus*) has proved the hardiest. This is interesting because the species inhabits the torrid Red Sea littoral, and is represented by a subspecies on the Arabian side. I let this bird out on a warm, sunny morning in February; it was alarmed by a Pigeon flying over low, and darted off into a wood. I subsequently heard it calling in an orchard over a quarter of a mile distant. This product of the tropics was away all the afternoon without food, and the thermometer must have fallen to round freezing point. When my wife and I had given up all hope of ever seeing our little friend again, he suddenly appeared and hovered about the lattice window of the drawing-room, whence he had originally set out. I may add that he was none the worse for his adventure, but I am afraid I have since lost him, as I tried the experiment again and this time he may have got lost for he has not been seen since.

The tiny *Cinnyrus bifasciatus microrhynchus* from the Zambezi Valley is also quite indifferent to cold. I had one in Scotland in the late autumn and early winter of 1929, which I was obliged to keep in a room facing north and east. The little bird used to sing happily with the thermometer at 40° F. But if Sunbirds are to be acclimatized in this way it stands to reason that their food must be made as nourishing as possible, so that once again I am compelled to disagree with Mr. Martin. Moreover, I have never seen any signs of over fatness in Sunbirds: they seem, on the contrary, to use up all their heat in constant activity, so that no superfluous energy is left over for fat production. Again, I have never found a Sunbird to suffer from foot trouble of any kind (except perhaps the rather harmless, if unsightly, thickening of the scales on the tarsi, produced by age), and as far as I can see there is no reason on earth why a Sunbird should ever lose a claw, unless it is kept in such a way that its perches become encrusted with its droppings.

Three perches of different girth are ideal: one half-way up the cage at each end to allow room for the bird to hover above them, and the third near the ground in the middle, with the food and water within reach at each end on the ground. With this arrangement the perches never get dirty; nor, may I add, do the birds. Horlick's,

honey, and a little Marmite added is a good food mixture, which should not be too watery: Sunbirds lose all their activity if allowed to get thin.

I have noticed that the female of *Leptocoma asiatica* also has a song, and will sing to the male when they are paired. Nearly all the males have a display of some sort, which consists often of an accentuation of the dragon-fly movements, and a peculiar stroking of the flanks with alternately spread wings, while the tail is spread and held at an angle horizontally. When pectoral tufts are present these are brought into prominence and are opened and closed both in flight and while perched. I have a pair of *Leptocoma asiatica* in a small outdoor aviary to themselves: they are very pleased with each other and spend a great deal of time catching tiny insects on the wing. I have hopes they may breed.

To turn from the Sunbirds, I should like next to mention a very rare Tanager which I once possessed. This bird was the Black-throated Scarlet Tanager (*Rhamphocelus nigrigularis*) from the Upper Amazons, and appears to be the only live specimen ever imported, but the extraordinary point about it is the fact that it was as tame as the tamest Hangnest, and would follow anyone about, or let itself be picked up. It had the same aggressiveness as many Hangnests, and would administer punishment if not given what it desired! Tanagers of this genus are always so wild and nervous that I have no doubt this bird had been hand-reared. These large Tanagers seem easy to feed and keep in health, but the *Calliste* group are difficult to keep for any length of time. They very often seem to die just when they have reached what appears to be perfect condition, nearly always from digestive trouble. This is the more to be lamented as they are such lovely and all together desirable creatures. To my mind there is little in nature more beautiful than the sight of a *Calliste fastuosa* in perfect condition literally flashing from perch to perch. When really fit the bird seems to bounce from place to place so quickly that at times it appears hardly to touch one branch before it has reached another. I have two rather rare examples in *Chlorophonia frontalis* and *C. occipitalis*, the former from Venezuela and the latter from Mexico.

After the Sunbirds and Tanagers the birds of prey are my favourites

in captivity. Most of the species I have kept have been British, the best of which was a young female Hen-harrier. I procured the bird in the North of Scotland while out Partridge shooting: it rose from under some whins and I realized at once what it was, but before I could shout "Don't shoot" it had been winged by the gun next to me. I refused to allow the keeper to kill it and determined to take it home in a game-bag and try and make it live, as the species is extinct as a breeding bird on the mainland, although it breeds in Orkney, whence this immature bird had undoubtedly wandered. After a week it would jump on to the wrist and was tame enough to travel loose in the car to London, spending *en route* a night in my room at a hotel in Carlisle, sleeping on a wood basket. The bad wing was very difficult to heal and it was washed and dressed twice a day, the Harrier meanwhile remaining motionless, and seemingly a better patient than many humans would have been in similar painful circumstances.

Of foreign species I have only had the Central African Pigmy Falcon (*Poliohierax semitorquatus*), and the Himalayan Red-legged Falconet (*Microhierax caerulescens*): the latter I possess at the present time, and it is certainly the smaller kind of the two. These small Falcons are very delicate, more so as regards food than temperature, and unless they are *constantly* supplied with small birds, mice, and lizards live only a very short time. But I am sure almost all birds of prey will become very tame if trouble is taken. But it is no good looking at them and expecting them suddenly to be aware of their owners' goodness of heart. The only method is that used in the days of falconry: to get hold of the bird and carry it about where there are many surprises and most noise. To do this the bird must either be hooded or prevented from flying by a clipped wing. The latter operation spoils the appearance of the bird, but it is surely better to have a Hawk that will jump readily on to its owner's wrist and love to be carried about, than one that will dash at the bars of its cage when looked at.

Other families with which I am well acquainted are the Honeyeaters, the best of which to my mind is the Spine-bill (*Acanthorhynchus tenuirostris*). A bird with more lovely movements it would be difficult to mention: it is hardy and might possibly breed in an outdoor aviary, were a pair ever to be imported. There is a male in the Zoological

Gardens which appears to want to breed, and which is in very fine condition. This bird was very weak when it arrived last spring. I had it in Scotland for a time and fed it largely on spiders, which are no doubt responsible for a rather remarkable recovery.

Of Flycatchers, Warblers, and Thrushes I have had many species, including the Yellow, Black and White *Xanthopygia xanthopygia* from the Malay States, the little Indian Pied Flycatcher (*Cyornis melanoleuca melanoleuca*), which is doing well at present—it has a pretty song and appears to be hardy, the Guatemalan Thrush-Robin with a lovely Hermit-thrush-like song, and *Eopsaltria australis* from Victoria.

Of the Shrikes, a quaint and very interesting example was Smith's Helmet Shrike (*Prionops talacoma*), which proved as expert at catching mealworms in the air as any Drongo.

I have also possessed at one time and another several of the Paradisiidæ, including *Lophorina superba lattipennis*, *Cicinnurus regius*, *Astrarchia rothschildi*, and *Diphyllodes magnifica*. But I believe I shall never again keep Paradise Birds; they are too costly and require such a quantity of fruit; moreover it is difficult to provide them with the right atmosphere, without which the moult is rarely successful.

If I may I should like to exhort those aviculturists who are lucky enough to procure Sunbirds to pay special attention to the winter and summer change of plumage, for this is a subject about which very little is known. I myself am satisfied that the following species lose the breeding plumage for part of the year: *Nectarinia pulchella*, *Nectarinia famosa* (sometimes), *Leptocoma asiatica asiatica*, *L. a. intermedia*, and *Cinnyris bifasciatus microrhynchus* (although some collectors say they have never seen it out of colour at any time of the year in East Africa). I should be very grateful for any information from aviculturists on this question, especially as regards the large and small Double-collared (*C. afer* and *chalybæus*) and the Malachite (*Nectarinia famosa*).

IN A LITTLE CORNER OF CORNWALL

By MRS. F. W. DRAKE

“Beauty lies in the eye of the beholder”

Spring arrived with a glorious March, and how busy we all were in our aviaries with their gardens, turning over the soil, removing large old shrubs and planting new, small, and sweet-scented flowering ones in their place. Primroses are also a great joy to small birds, for all the wee mites love picking off the flower-heads, not only for the nectar they contain, but for the sheer joy of seeing them strewn on the ground as a carpet for their loved mates to walk on; surely no one could grudge them that, seeing how much we also appreciate beautiful things around us—our very birds, flowers, etc. In Cornwall things grow at such a rate that a stick from the hedge stuck into the ground—as a mark—becomes almost a young tree in a week! Extremely trying at times I can assure you.

My birds all delight in a flower garden, and it seems to me to encourage them to go to nest. At present I have Avadavats, Gold-breasts, Bengalese, Cordon Bleus, Violet-ears, Pectoral and Zebra Finches all sitting, also my St. Helena and Orange-check Waxbills, their third year together. The Lavenders not only fly about looking very pretty, but are also very mischievous. As for the Violet-ears, they sit so frequently and so long with never a single result that they always remind me of the tale of the fisherman, when sitting beside a stream outside the grounds of an asylum. A head popped up over the wall and asked, “Have you caught anything?” “No.” “How long have you been at it?” “Six hours.” “Come inside then.”

The jolly Pekin Robins are only now thinking of furnishing their house. I think seeing the Shamas having the free use of the garden and orchard has reminded them of the freedom they had last year. I think at this point I may say a few words on Shamas, my pair being truly delightful birds. About the end of October last I brought them into the greenhouse adjoining the sitting-room; each had its own cage for eating and sleeping in, but all day long they had their freedom with a pair of Persian Bulbuls, a Superb and a Scarlet Tanager. The

latter I have had for nearly seven years now, and I consider him one of my most gorgeous birds. The sitting-room is also at their disposal and I must add that Shamas are so clean that I am sure no one need fear having them loose in their sitting-rooms. If they fly through an open window they very soon come back. They never fight—if Jean gets hold of a nice fat spider, of course Jim too wants it; he makes a dive at her, but has never yet hurt her, and she flies off to the top of the greenhouse and there consumes her delicacy. While I was at the Palace Show my husband lost Jean, but on going upstairs found her singing in her sweet way perched on the head of my bed, probably looking for Jim and me.

I put out both Shamas in the middle of March, into their own aviary, which measures $12 \times 6 \times 7$ to 9 ft. high. The shelter is quite a miniature affair, standing on legs about 3 ft. long. Jean was usually inside and Jim underneath where I had fixed a perch. The nest-box is outside. I watched them closely for a day or two. The courtship is alarmingly savage and might very well be taken for a terrific "dust-up". Within a few days eggs were laid, and now there are four youngsters still in the nest. The parent birds delight in following us all round the garden, always appreciating company, and on very wet days frequently fly through the greenhouse into the sitting-room, where Jim bursts into song. He is here at this moment, and now comes Jean. I consider the Shama a most delightful bird to keep and they seem to so enjoy their life of so-called captivity. My Shamas are not at all keen on housemaids. I think because they kill spiders under their very beaks! If you treat a Shama as a pal he will treat you as one, and what could be nicer.

THE PURSUIT OF THE COCK GREY PARROT

By THE MARQUESS OF TAVISTOCK •

Since the sexes in a wild state are presumably about equal it is one of the unsolved mysteries of aviculture why practically all captive Grey Parrots should be hens.

For years Canon Dutton's old Polly has occupied a small aviary in my collection. Sheltered only from direct wind and wet she has

passed unscathed through the severest winters, for, properly fed, the Grey Parrot is the hardiest foreign bird you can put into an aviary. I have only lost one in the open and that was by an accident, and have never had one ill. If the ability of Grey Parrots to stand our climate out-of-doors were more widely recognized probably more people would keep them in that way and the birds would be healthier and happier. Unlike Amazons, they do not forget their talking accomplishments when living in the open, but continue to pick up any conversation or sounds they may hear. A Grey Parrot is content in quite a small aviary as it does not seem to be particularly keen on flying, but the wire netting must be of a really stout gauge and all exposed woodwork protected with zinc, as they bite wood almost as persistently as Cockatoos. Perches, of course, can be renewed as they are chewed up.

For some years I made no particular effort to find Polly a mate, realizing that the task was well-nigh hopeless, but her laying and patient incubation of two clutches of eggs in one season encouraged me to make the attempt. The first cock was supposed to have been sexed by an expert. "He" certainly had a larger and heavier beak than Polly, who is a particularly feminine-looking Grey with a small beak and a very elliptical eye. Having had some experience of stormy introductions between Amazons, even when of opposite sexes, I was very uncertain how Polly would greet a member of her race after her long period of solitude. However, after a little preliminary squabbling they settled down to tolerate one another, though they never displayed any affection. In due course the new Parrot came into breeding condition and proved an unmistakable female.

Some time afterwards Miss Knobel discovered a bird she believed by the pelvic bone test to be a certain cock. Although I got "him" rather late in the year for turning out, I decided to risk "him" in the aviary. Polly's reception of "him" was much like that of "his" predecessor, although "he" was anxious to make friends. The new arrival prospered and was soon in perfect plumage, but one winter night met with a mysterious accident, being found dead next morning with an injured claw and a pool of blood nearby. On post-mortem

"he" also proved a hen, showing that the pelvic test, though often useful, is not wholly to be relied on.

Some months later I saw an enormous Grey in Harrods and determined to have him. Foolishly, however, I delayed in making my purchase, and when I returned he was gone. I believe he really *was* a cock! I took a smaller bird, but as it was very feminine in body-shape and squabbled with Polly even more than usual I decided not to persevere.

Finally, Bill. The other day a letter reached me from the owner of a Parrot who said he had a bird in breeding condition and would I like to have it? He felt sure from its actions it was a male. Bill is still an uncertain quantity. If he *is* a cock then none of the supposed indications of sex in the appearance of Grey Parrots are reliable. He is a smallish bird and there is nothing about the shape of the bare skin round the eye nor of the eye itself to separate him from his predecessors. The day after his arrival he was exceedingly restless, making strenuous efforts to get out of his cage and starting to pluck himself with much energy. I had meant to keep him indoors till the weather was milder, but he made such a mess of himself that I felt I had better risk him in the aviary. Polly's greeting at first was less unfriendly than usual. She went up and looked at him and then, without molesting him, turned and walked away for a couple of feet and, hanging on the wire, examined him closely first with one eye and then with the other. He responded to these observations by uttering a single—not very loud—whistle at frequent intervals. Later in the day Polly was less polite, pecking him on the head when he tried to share her food dish and giving him a tweak when he turned to walk away, unfriendly acts which he endured rather patiently. Now, a few days later, he is evidently beginning to respond to fresh air and good feeding. He has stopped plucking himself and is developing a bad temper towards humans, biting the wire, scooping out mouthfuls of rotten wood, and delivering himself of a tuneless Gregorian chant strangely like that wherewith Koko, the Amazon, of unblest memory, was wont to defy me. I may grow to value Bill but I do not think I shall ever like him. I foresee that he will join the ranks of the man-eaters!

In conclusion, if you own a Grey Parrot don't, if you value the

poor bird's health, feed it (or anything else) on packet Parrot foods. A seed mixture of two parts canary, one part white millet, half-part hemp, one part yellow maize, one part sunflower, and one part pea-nuts, with plenty of ripe fruit, will suit its digestion far better.

BREEDING PROSPECTS FOR 1933

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

An SOS for copy this morning from our Editor left me somewhat puzzled for the choice of a subject. Last year's successes were few, apart from half a score of Blue Robins, some Gouldians, and some 200 Budgerigars. I have, therefore, decided to walk round my cages and somewhat depleted aviaries and to discuss my breeding prospects for the year. This is so much pleasanter than a retrospect, for at this early date one can hardly have any failures or disappointments to register.

First in my bird-room I have my old Blue Rock Thrush, whose mousing activities were recently described in the *AVICULTURAL MAGAZINE*. Having disposed of some 20 or 30 mice of various sizes in his outdoor aviary, I did him the unkindness to catch him up and cage him. Being predatory on mice I argued that he would not turn up his bill at a young Roller Canary, several pairs of which species shared his aviary with him. I had often noticed that I was the world's worst breeder of Canaries, and I now suspect that my old Thrush has been for the past few years responsible for my non-success.

In adjacent cages are five or six pairs of Gouldian Finches—the sexes separate as far as is possible—but all my young of last year are still in their nestling plumage, and therefore unsexed. I fear a preponderance of males, as many of them occasionally break out into song and dance. Together with these are two pairs of Long-tailed Grass Finches.

These and two hen Gouldian Finches are from Chapman's last importation, and I must say that his collector is to be congratulated on the condition of all these imported birds, which reminded me of Payne and Wallace's faultless collections some twenty-four years ago.

Close by a cage containing a Hooded Siskin, mated to two White Border Canaries, both of which are now sitting on full clutches. I have hopes of these nests as I have frequently seen the Siskin feeding both Canaries.¹

It is a pity that the Hooded Siskin is so delicate on its arrival in England. My present cock is all I have left of two apparently good pairs purchased last year. Both hens nested and died either before or during incubation. In 1912 I successfully bred these birds for the first time in Great Britain, but my pair of Siskins then was one which had been in the country for two or three years and was thoroughly acclimatized.

A pair of (?) New Guinea Parrotlets, waiting for the warmer weather to go outdoors, spend a good deal of their time either cuddling or bickering.

Two quite small cages contain each a pair of Blue Robins nesting, one couple now on its second clutch.

Two pairs of Bengalese are busy nesting, and I hope may later on help to rear either Grass Finches or Gouldian Finches.

Last, but not least, comes "Wally", my old Senegal Parrot. He has been here for years and has never had a feather out of place or a day's sickness, although he gets all the various foods forbidden by Lord Tavistock, i.e. tea, cake, sugar dipped in coffee, and occasionally a bit of fried egg at breakfast. A mealworm is perhaps the greatest treat one can offer him.

This bird is quite a character. He says a few words, lies on his back and clasps his hands in prayer, and does various acrobatic tricks on a pencil. Any strange man can handle him with impunity, but I grieve to say he is a misogynist and will set about any member of the fair sex, even a baby, although quite friendly with a boy of the same age.

One end of my greenhouse is wired off into two small aviaries each some 9 ft. long. Here I have at present a pair of Blue Robins and a pair of Shamas. I use these aviaries, which are slightly heated, when I wish to start birds breeding early, but the results do not always work out according to plan. The Shamas, for instance, have been playing at

¹ These eggs are all fertile.

nesting for the past six weeks, whereas another pair, the hen of which was only purchased from Mr. Frost some three weeks ago, have a completed nest, and now have eggs.

The Blue Robins in this aviary have also been disappointing, the cock, who was an adult bird in 1926, is still in perfect breeding condition and magnificent plumage, but I had the sad misfortune to lose his original mate last winter, a substitute which I obtained from a kind friend, while accepting all his attentions (which included many mealworms), appeared a little weak in flight and refused to build. After wasting much time I bought back a 1931 hen of my own breeding, which I substituted for this unsatisfactory bird, and within fourteen days I am able to report a nest containing five eggs.

Four aviaries from 8 to 20 ft. long are given up to Budgerigars in their different colour varieties. These are "seed-winners", by which I mean that they pay their way, even with the present over-production, and enable one to purchase a few birds occasionally without encroaching on one's banking account.

This leaves four larger aviaries some 30 by 10 ft., each of which is about equally divided, between flight and shelter.

In No. 1 I have a pair of Shamas nesting as already mentioned, a pair of Bartlett's Bleeding-heart Doves, which produced fertile eggs last year but no young. This year I have in No. 3 aviary two pairs of Barbary Doves, which I intend to use as foster-parents. The only other occupants of No. 1 are a pair of Siberian Bullfinches, which I have had for many years. These have nested and hatched young on several occasions, but have never succeeded completely. Last summer I caged these birds and by giving them their liberty alternately induced the hen to build in a cypress-tree in my garden, after which I liberated both birds. Eggs were laid, but unfortunately some marauder, possibly a jackdaw, destroyed the eggs, and I had to catch up both birds again as the season was advanced and I did not expect any more nesting.

In No. 2 aviary I have a few pairs of Roller Canaries and a few odd Serins which may or may not produce hybrids. It was in this aviary that my Blue Rock Thrushes bred in 1931, and again with only partial success in 1932.

No. 3 aviary is practically empty except for the two pairs of Barbary Doves and a hen Sulphury Seed-eater mated to a cock Greenfinch. She was sold to me as a cock and a fine singer some four years ago. It is quite true she sings—after a fashion—but she has proved her sex each season, including the present one, by building a nest and incubating a clutch of eggs. Last summer I caught a cock Greenfinch for her. Being a bird of somewhat similar build and colour I hoped they might mate, but I have seen him making love to a wild hen through the aviary wires, so fear my plans will not mature.

The last of my larger aviaries contains a collection of Waxbills and two White-fronted Doves. Whether these are a pair or not I am not sure. I understand from Mrs. Astley, who gave them to me, that they are ready breeders, but so far I have seen no signs of building or display on the part of the bird I consider to be the male.

There is still one more small enclosure which I have failed to mention which is just a wire flight, some 10 by 4 ft., without any real shelter, and which opens direct into the garden. It is here that I place any pair of birds which I want to breed at semi-liberty. In this aviary and in this manner I have successfully reared Great Tits, Orchard Finches, Green Cardinals, the American Robin (*Turdus migratorius*), and the Blue Robin, the last on numerous occasions. If I lived in the country and had more time I should erect a number of these small wire flights, well apart one from the other to prevent fighting between their respective occupants. There is, of course, always a risk of losing one's birds which perhaps adds spice to the experiment, but once there are young to feed the danger of straying is a very small one. Such is the devotion of birds to their offspring that we are all familiar with the fuss and bill-clicking which occurs when we inspect a nest of almost any insectivorous bird, and it is with this class of bird in particular that I should employ semi-liberty, on account of the much greater variety of food which a free bird can supply to its young. It is an undoubted fact that birds so reared are much larger and more vigorous than those bred in a closed aviary on a diet of mealworms, ants' eggs, and any other live food which its hard-working owner can collect.

The pleasure of seeing one's birds flying loose and of knowing that

yet another brood is rapidly growing in the nest, is one which must be experienced to be appreciated, and who knows but that it might persuade Lord Buckmaster to join our Society ?

CUBAN FINCHES

(*Phonipara canora*)

By P. B. WEBB

The Cuban Finch is too well enough known to aviculturalists of this country, from pictures at any rate, to need any description as to appearance. It is not to be found, however, in as many aviaries as it deserves. The reason for this is probably that it is not by any means a common bird. It can be purchased when it appears on the market for from 20s. to 40s. a pair, the former price being rather below the average for newly imported specimens. It is often hard to establish when newly imported, but later it becomes hardy. Anyone who has not already kept some of these birds will find that they are among the most interesting of the smaller Finches. They are ever on the move and have always a busy disposition as they hop and flit about. They continually twitter, which has, I suppose, given them their exaggerated name of "Melodious" Finch. Their song—if their few notes may be thus termed—is anything but "melodious". It is certainly rather pleasing, more from the fact that it gives one the idea that they consider life worth living, and mean to tell you so, than from a musical point of view. While one is explaining this to you his body is being oscillated from side to side, which is also rather quaint. True pairs are very fond of each other and are continually close together. They usually build a nest fairly soon, and if the hen does not lay in it at once it will be used by both as sleeping quarters. It is usual for a pair to start family operations soon and they lay from two to four eggs. Some hens are never to be caught on the nest; they seem to be off at the sound of a step many yards away, yet the chicks hatch in the normal time. Others sit very closely indeed and as the nest is of domed type it is very hard to ascertain if all is well. As these birds are seldom troubled

with egg-binding, this is not a great problem. The nest is a very neat one. The hen does the sitting, the cock joining her at night. In an aviary with other small Finches and Waxbills they stand a good chance of breeding. They are quite capable of defending their house and home and usually will not worry other birds. Beware, however, of putting two pairs in the same aviary, or even two odd birds of the same sex; if you make this mistake it is more than likely that the stock of these birds therein will be reduced to half. This is their one failing—so far as I have discovered. In Butler's *Foreign Finches* it is stated that these birds are fond of mealworms, but they are probably better without them. I took this advice, but when the eggs were hatched I thought a few would help matters, so about four were given daily. The three young birds died one by one, the last being almost feathered. Much the same thing took place with a second pair. Thinking perhaps that they were not getting enough live food, the quantity was doubled next time and insectile mixture was used. They did not eat much of the latter, but in a short time finished up the mealworms. The results were no better. With one or two more failures ended 1931.

During last winter there was plenty of time to think things over. I resolved, therefore, to try breeding in 1932 without any additional live food to that picked up by the birds in the aviary. On reflection, it had come to my mind that several winters ago I kept a pair of Cubans in a cage. This pair hatched and reared one young bird during the months of January and February. I had no mealworms at the time. The pair, which were later involved in an accident causing their death, were considered an abnormal pair. Why this opinion was formed is of interest. The birds were purchased from the continent. Part of their journey to Randalstown was in an aeroplane; nevertheless, for some reason they were held up somewhere and the complete trip took them four and a half days. When they arrived I was surprised to find that they had built a nest in the corner of their travelling box which was only about 8 by 8 by 4 in. It was not much of a nest, it is true, but "one cannot make bricks without straw". It was, however, typical in form though rather flimsy. The only materials at their disposal were the sponge from their water-pot, bits of millet sprays, and pieces of a sticky paper label which was attached to the inside of the box, and

far south. This particular specimen, so Mr. Castang tells me, was driven out of its usual course by storms and was discovered in a somewhat exhausted state on the beach. It was taken home and fed by a fisherman, and Messrs. Hagenbeck's representative, who was making a collection of Penguins to take home to Hamburg, hearing of it, was not slow in acquiring it, and I am told it arrived in excellent condition.

D. SETH-SMITH.

CORRESPONDENCE, NOTES, ETC.

SHAMA ATTACKING MOUSE

In the March number of the AVICULTURAL MAGAZINE appeared a note from me concerning the killing of mice by a Blue Rock Thrush. At that time I picked up several dead mice in the adjoining aviary and imagined that these had been damaged by the Thrush and had crawled through the wire-netting dividing the two aviaries, and had died from their injuries.

Some ten days ago I noticed a cock Shama in this aviary dancing about on the ground and evidently attacking something. On closer inspection I found that his attentions were directed against a three-quarter grown mouse which escaped up a privet bush while I watched. Meantime I had called up my man and a friend who is a member of the Avicultural Society, and we saw the Shama fly into the bush and again attack the mouse, which then jumped back to the ground, where the Shama quickly battered it to death by a series of vicious pecks.

MAURICE AMSLER.

SPICE FINCH AND GRASSFINCH MATING

It may interest members of the Avicultural Society that I think with any luck I shall be introducing a new kind of Finch; but, of course, the cross may have been done before, viz. a Spice Finch and a Long-tailed Grassfinch. So far I have not been able to ascertain with any certainty which their sexes are. The Grassfinch, I discovered this morning, was sitting on the eggs, and its mate was hovering close by, and I have no other Grassfinch in the aviary, but certainly the nest was put together by the Spice Finch. I find these little birds make no end of nests just for the spree of the thing, which mostly consist of large pieces of bamboo twigs. My Zebra Finches are hard at it at the moment, and nothing seems to daunt them.

EVELYN H. BARCLAY.

DISPLAY OF HANGING PARROTS

My Golden-backed and Worcester's Hanging Parrots engage in a somewhat unusual form of courtship ceremony unlike anything I have witnessed in other species. The Worcester's, who is the hen, takes up her position right in the

entrance hole where the aviary shelter communicates with the flight and starts busily preening the feathers of her rump. The Golden-back takes up his position just behind her and a little to one side and, holding his head low, keeps it close to hers, uttering sibilant noises and occasionally making a quick lunge at her as though to bite, though without doing so, an action which also forms part of his normal display. Occasionally, though not very often, the hen will interrupt her pretended toilet to give his head a brief nibble. The curious thing is that this particular form of display only seems to take place in the doorway above mentioned and never in any other part of the aviary, not even at the entrance to the nest.

Although the Worcester's lays two or three clutches of eggs each summer and sits patiently she has unfortunately never hatched a young one.

TAVISTOCK.

THE SCHÖNBRUNN ZOO

I hope if you ever go to Vienna that you will visit the bird-houses at the Schönbrunn Zoo. You may get some ideas as they are well worth a visit.

All the birds of prey, Eagles, Vultures, etc., of every species live *together* in an enormous aviary, where they have absolute freedom of flight and exist in perfect amity. Many were nesting. There are huge rocks and sham ruined castle walls and big trees—a perfectly wonderful exhibition.

In another very large aviary are all the Owls imaginable and far more in different species than in our Zoo; likewise all the Hawks in another aviary by themselves. Then every kind of Tit is shown in a large aviary with growing trees—firs, Scotch firs, etc.: Bearded Tits, Long-tailed Tits—every possible kind I have ever heard of and all in one aviary.

In another aviary I saw Hoopoes, Crested Wrens, two kinds of Wagtails, ordinary and French Partridges, Woodpeckers, and Nuthatches, well kept and in natural surroundings—in some cases with a small running stream. I was immensely interested.

Then the Crane class: Egrets, Storks (one pair building), Carrion Crows, Magpies—all together.

Please make use of this letter.

E. A. STONOR.

A LOVEBIRD PROBLEM

I wonder if you would publish this letter in the next AVICULTURAL MAGAZINE in the hope that someone may be able to help me. I have got a Masked Lovebird—a cock—over five years old. In October I noticed him one day in the aviary not well. I took him in and was quite sure he was dying; however, after giving him brandy he quite recovered and was sitting up on his perch cleaning his feathers when he suddenly fell off, losing the power of both his legs. Ever since he has lived in the bottom of his cage sitting on a duster. He is in perfect feather but eats no ordinary food, only millet spray or digestive biscuits mashed up and off a spoon. About two months ago I began letting him out of his cage and since then he has spent the day flying round the drawing-room. He can perch (or, rather, sit on his breast-bone) on anything level; and he can hang on to anything by his beak. When he is out he eats some plain canary seed and white millet, which is left on a window ledge for some Budgerigars, and lately he has made tremendous

friends with a Tovi Parrakeet. About four years ago he and another Black-cheeked Lovebird cock lived for a summer in a cage in the house and spent all day free, coming home to their cage through the window in the evening, and twice since he has spent his days in the drawing-room, where the door is always open. He has gone out again: he was out to-day for about four hours. He looks just like a dead leaf when he hangs swaying on a branch, but when flying he is just as well as he ever was. I watched him to-day light on the flat roof of the aviary and rise from it again; he pushes himself up with his beak. At first his legs were both tight up against his body, but to-day, when he flew over me in the garden, one leg was hanging down; and I fancy lately he has had a little more power in his right leg.

The trouble is that I do not know what to do to help him. He hates being touched. To get him into his cage at night one has to wait until he is hanging on to a picture or the window and press his cage against him. In the morning I lift him out. I tried to force him to eat soaked seed at first, but he would far sooner starve. I have painted his legs and rubbed them with no success; but, apart from his legs, he is in perfect health. I've rarely seen a bird with such a gloss on him, and he is quite fat. When he is out he goes and sits on the Lovebird aviary and talks to them; and to-day he came in and out of the house several times calling to get the Tovi to follow him out, but I was afraid of the Tovi—who is rather a fool but quite finger-tame—getting lost, and I shut him up in his cage.

It is so pathetic to see this bird that I wish someone could help me. I think he is quite happy now that he can fly; but, of course, some day he'll get taken by a cat or a Hawk, as he cannot start quickly, and if his legs get no better I am afraid they will waste away and never have any hope of improvement.

H. G. CHICHESTER.

A FEATHER-PLUCKING PARROT

In reply to Mrs. Hewley in reference to Feather-plucking Parrot. If this lady cares to correspond with me I have no doubt that I can be instrumental in promoting a cure, either by sending treatment or by having the bird sent to me for treatment.

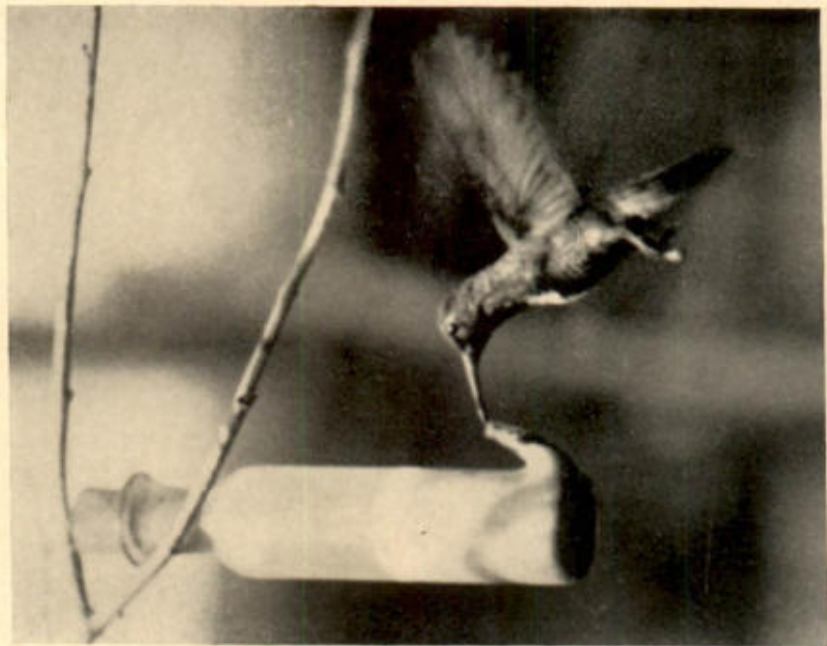
I have had under treatment a very severe case which I have successfully stopped; there is to date no signs of the habit returning, and I think a complete cure has been effected.

P. H. HASTINGS, F.Z.S.

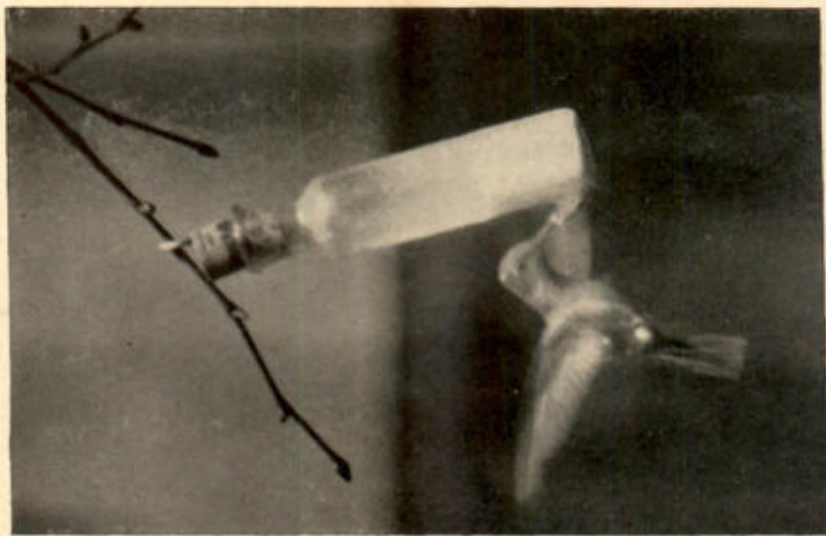
LOCKSWAY ROAD,
MILTON,
SOUTHSEA.

ADDITIONS TO BREEDING RECORDS

Dr. Hopkinson's series of articles under the above heading, which have been appearing in the Magazine for some months past, have been reprinted and form a very useful appendix to his volume *Records of Birds Bred in Captivity*, which was published in 1926. Since that year the list has been greatly increased, but the *Additions* bring it up to date. The number of reprints published is very limited, but copies can be obtained, while they last, from the Editor at 2s. 6d. each.



D. Saff-Swift



Frontispiece.]

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JULY, 1933.

THE ARRIVAL OF HUMMING BIRDS

By DAVID SETH-SMITH

When, some two months ago, M. Delacour told me that a certain German collector was expected to arrive in Europe towards the end of May with a collection of Humming Birds, and that of a similar collection which arrived a year ago the majority were still thriving in Berlin, I determined that some should be procured for the Zoological Gardens and that, in the meantime, a suitable place should be prepared for their reception.

The chief difficulty in the past with Humming Birds has been in maintaining a suitable temperature, for it has been proved that, with the smaller species from the lowlands at any rate, the thermometer should never fall below 60 degrees Fabr., the most suitable temperature for them being from 10 to 20 degrees above this. Another supposed difficulty arose from their reputed quarrelsomeness, for we were led to understand that if two or more were kept in the same cage or aviary there would be serious fighting.

With regard to their feeding, I think Mr. Ezra was the first to prove that, other things being correct, they could be kept well on a diluted mixture of Mellin's Food, honey, and condensed milk. Mr. Ezra kept one in a cage in a heated bath-room in London for upwards of two years. It was let out of its cage daily and always went back

of its own accord. Finally, through the window being accidentally left open at the wrong time, it escaped and was not able to find its way back.

In the New York Zoological Park one was kept for four years on this diet, and its death was attributed to a failure of the electric heating device.

As to their reputed quarrelsomeness, they certainly like to dart at one another and make a show of fighting; but like the squabbles of Ruffs, most of it is bluff and does no harm. The collection in the Berlin Gardens is kept in one fairly large indoor aviary and little harm has been experienced through fighting; in fact a few squabbles help to keep the birds exercised and healthy.

As a site for a Humming Bird aviary in the London Zoo I could think of no more suitable place than the Tropical House. Here such birds as Sugar-birds, the more difficult Honey-eaters, Sunbirds, and so forth have done extremely well in a damp and warm atmosphere. So a corner of this was selected for an aviary of about 18 by 12 feet. The front was screened off with plate glass, the open side covered with "Windolite", and the top below the glass roof covered with fine white mosquito netting. A ventilator near the ground admits fresh air while the exhausted air has an exit at the top. As a precaution against the possible failure of the hot-water heating supply an additional electric heating apparatus has been installed. This is thermostatically controlled so that should the temperature fall below about 70 degrees Fahr. the electric heater comes into action. The place has been planted with flowers and a fountain installed.

Regarding further the feeding of Humming Birds, I have said that their principal food consists of a mixture of syrup, and it is important that this should not be allowed to soil their plumage or they would very soon suffer. It must be given in a vessel which has an opening of not more than about one-eighth of an inch so that the birds can insert their bills only. If given in an open dish they would become terribly sticky. I think it was the German importer who devised the particular feeding bottles that are now used. They are well shown in the photographs and work on the principle of the poultry drinkers one sometimes sees, where the water remains at a constant level at

the small drinking outlet, the reservoir being airtight. These bottles are used in the cages in which Hummers are imported, placed outside in a small wooden frame, the small nozzle at the bottom projecting through the bars. When hung up in the aviary the birds spotted them at once and hovering before them inserted their beaks and sucked up the syrup.

In the article which follows Captain Stokes describes the meeting of these birds at Havre and it only remains for me to record their arrival and subsequent behaviour in London. The Zoological Society is very greatly indebted to M. Delacour for arranging the details of the collection of this consignment and for allowing Overseer Bailey to make Clères his headquarters from which to collect the birds and subsequently transport them to the Zoological Gardens; in fact, without his kind help it would have been very difficult, if not impossible, to have obtained them. Sincere thanks are due also to Captain Stokes for the great help he gave.

Captain Stokes and Bailey arrived safely with a collection of twenty Humming Birds, all apparently in excellent condition and none the worse for their voyage. Their cages were placed in the new aviary, but it was thought advisable not to liberate them until the next day, when the cages were opened and they were not slow in shooting out with their curious, insect-like flight. They at once commenced to buzz about, examining and sampling the flowers, hovering round the feeders, and drinking the syrup or playfully darting at a companion. The fountain was a great joy to them and they delighted in dashing through the spray or perching on the edge of the basin and bathing; or they would hover round its sides, sucking up the drops of water as they trickled over. Their flight is remarkably insect-like, as one will hover in front of a flower, motionless, except for the wings, which vibrate so rapidly as to be almost invisible, then shoot forward, sideways or even backwards. One is reminded irresistibly of some large moth, especially the Humming-bird Hawk Moth, which is in its shape and actions a replica of a small Humming Bird.

Two of the Hummers died two days after their arrival, and a *post mortem* examination showed that death was due to fatty degeneration of the liver—too rich food, so we diluted the syrup with twice the

quantity of water advised by the importer. We also discontinued the use of sugar in addition to the Mellin's, honey, and condensed milk, all of which contain sugar, and up to the present the birds have shown every sign of good health and spirits. The food they are having now consists of one dessert spoonful of the three above ingredients, a pinch of Liebig's Extract of Meat, and a pinch of powdered charcoal, mixed with half a pint of hot water. This, when cooled, is poured into the bottles and is changed for a fresh supply after about four hours. In the evening honey and water is substituted and left in the aviary until the following morning.

In addition to this syrup diet the birds are supplied with such insect food as green fly and fruit-flies. They are also given an assortment of flowers.

The species that the Zoological Society has obtained are as follows:—

Brazilian Swallow-tail (*Eupetomena macroura*), Ruby and Topaz (*Chrysolampis elatus*), Pucheran's Emerald (*Chlorostilbon aureoventris pucherani*), Black-tailed Emerald (*Agyrtrina fimbriata nigricauda*), White-throated Sapphire (*Hylocharis cyanus*), Hairy Hermit (*Glaucis hirsuta*).

Mr. Delacour secured a number of Humming Birds from this consignment, amongst which the following additional species are represented:—

Pretre's Hermit (*Phathornis pretrii*), Red-vented Hermit (*P. ruber*), Dusky Jacobin (*Melanotrochilus fuscus*), Black-throated Mango (*Anthracothorax nigricollis*), Brazilian Wood Nymph (*Thalurania glaucopsis*), Southern Gold-throat (*Polytmus thaumantias*).

M. Delacour writes: "All are perfect so far and so pretty."

THE CARGO OF LIVING JEWELS

By CAPTAIN H. S. STOKES

The jewel boat docked at Havre on 23rd May, and M. Delacour, Bailey from the London Zoo, and I were the first people up the gangway to see what we had specially gone to France for.

And I must readily admit that when I went into the treasure room I felt like the Queen of Sheba among the riches of Solomon—there was no more spirit in me. There they were, rows of emeralds and rubies and sapphires and topaz, flashing and iridescent, and every jewel of them a living Humming Bird, 200 of them !

And not Humming Birds with frayed wings and sticky plumage flopping piteously about in dirty cages, but everyone in show condition and perfect. They were the property of a German dealer who had caught them in Brazil for distribution among the fortunate ones of Europe. They travelled in a nice warm room on the boat, in charming little wicker cages about 15 inches square and about four birds to a cage. The cage floors were covered with clean paper, and the birds were fed from glass bottles corked at the top and with a tiny up-turned glass mouth painted red at the bottom.

The food in the bottles was a mixture of honey, sugar, Mellin's food, Leibig's extract, and water, with a little powdered charcoal to keep it sweet. The exact components I do not know, but I am quite sure the London Zoo would supply the details.

The bottles were washed out three times daily with silver sand, and filled each time with fresh food. Every bird in each cage was able to take ample flying exercise, and did so without any stupid banging about or injury to itself.

The temperature of their room was between 75 and 85 degrees Fahr., and the dealer told us they would stand another 20 degrees with the utmost enjoyment, but would become torpid and unable to fly at anything below 60 degrees. The birds seemed to dip their beaks into the food at very short intervals, and most of them fed while hovering.

The next thing was to sort out what we had settled to buy. Twenty each for M. Delacour and the London Zoo and a dozen more for two private aviarists were soon caught and recaged by the nimble hands of Bailey, who took upon himself and carried out with the utmost care and cleverness their safe transport to their new homes. A three-hour drive by motor to Clères, going very gingerly with all the windows closed ; the arrival there just before dark when the side of the crate was removed and oil lamps placed by it for the treasures to feed by ;

the gradual dimming of the lamps while fifty pairs of little wings were still buzzing; the extinguishing of the lights while four humans listened to hear if every bird was still and safe on its perch for the night; all this was something new and thrilling in bird-keeping and a great experience for me.

They were housed in M. Delacour's greenhouse aviary. The next morning was fixed for our departure for London, and 4.30 a.m. saw Bailey and Fooks up and working at the birds. M. Delacour and I joined them in our pyjamas, and every bird (and a great many others too besides Humming Birds) were fed and watered. Two hours after sunrise we were working in a temperature of 115 degrees sun and fire heat, and I fear we were much thirstier than the birds!

We left by car for the Dieppe boat, on which by the kindness of the captain we got a nice warm bathroom for the birds. The Zoo van met us at Victoria and the precious cargo was safely landed by 6.30 p.m.

A compartment of the Tropical Bird and Plant House had been specially prepared for the "Hummers", charming with flowers and ferns and a fountain, and well furnished with spriggy branches. The next morning the cages were opened and every bird flew out, buzzing like a winged beetle. And what happened? Did they flop about and bang and crouch and shiver with fright? Not a bit. They fought harmlessly, they sipped their nectar, they bathed in the dewy leaves and splashed in the fountain, and hummed and buzzed as in their native forest.

The German dealer said he had ten species on the boat, but we brought neither the largest nor the very smallest, fearing that they would either bully or be bullied. (The smallest had bodies little bigger than bumble bees!)

I have since heard from M. Delacour that his are quite happy and doing well in his greenhouse, which is far hotter than the London Zoo cage. So let no moist and perspiring humans, eschewing Turkish bath atmospheres, try fresh-air cures or spartan treatment for the little Hummers, or our treasures will die and our experience and our labour of love be wasted.

NOTES ON THE SMALL BIRDS IN THE
TROPICAL HOUSES AT CLÈRES

By J. DELACOUR

In the last two or three years, in fact since I have started keeping delicate small birds in a Tropical house, with heat and moisture amongst a rich vegetation, a good many rare and little known species have come to me to be tried there, with good results as a rule.

To the primitive house, which includes two divisions, another one, much warmer, with double glass all over to avoid quick changes in the temperature, has been added this year. The new house consists of a central part with four separate flights on each side, a large water-lily pool and aquaria, and at the end a smaller compartment, warmer still, for very delicate birds—Humming Birds particularly.

The great difficulty in such accommodations is to associate satisfactorily the different sorts of birds and to avoid altogether that the vegetation be soiled and damaged, and also that the food of certain birds does not interfere with the health of others. This last drawback is specially serious in the case of nectar-eating birds, Zosterops, Fruit-suckers, Sun, Sugar, and Humming Birds, whose food (Mellin's food, honey, and milk) is eagerly eaten by others such as Tanagers and Starlings, with the result that the latter soon become ill and die. Therefore, it is only safe to associate them with species which will not touch their sop, such as insectivorous birds and seed-eaters. At present I put with them Fairy Bluebirds, Niltavas, Minivets, Tits, different Chats and Robins, Shamas, Pittas, Clarinos, Manakins, and such like, but Tanagers, particularly, cannot live in their company for any length of time, especially Callistes, such as Superb, Tri-coloured, Festives, etc.

I now keep a few Seed-eaters in my first Tropical house. Although most of them prove impossible as they cut leaves, I have found that Rainbow and Indian Crested Buntings are very satisfactory; also Chinese Painted Quails, which look lovely as they walk among the plants, Bartlett's and Marquesas Doves. With them live the old Fork-tail, tame and beautiful, a Blue-tailed Pitta, a White-capped Redstart, a pair of Niltavas, a Clarino, a pair of Fairy Bluebirds, at

present nesting, a Ruby-throat, some beautiful Manakins and Yellow-winged Sugar Birds, and a Senegal Sunbird. Peace reigns in this community and not a leaf is damaged by the birds. The next compartment houses only a breeding pair of tame Shamas and a fine Red-breasted Sunbird (*C. gutturalis*), which there retains his brilliant scarlet gorget at the moult, but is so spiteful as to kill any weaker bird.

The central part of the new house, which is connected with the old one by a glass covered passage, contains a breeding pair of Purple Sugar-birds, a Vigor, Sunbird, finger-tame, a pair of Larger Minivets, one Lesser Minivet (*P. cinnamomeus*), a pair of Tickell's, one White-browed and one Blue-throated, Blue Fly-catchers, a pair of Red-headed Tits (*Ægithaliscus concinnus iredalei*), a Blue-headed Robin (*Adelura caruleocephala*), a Plumbeous Redstart, and a true pair of Hooded Pittas. In the latter the male is much larger, brighter, and bolder-looking than the hen. At first they fought badly; now they live, each in a part of the house, its territory in a state of armed peace, which I hope will soon change into one of a happy married life. To them have been added a pair of Black and White Manakins (*Manacus manacus*) and some Humming Birds, such as *Eupetomena glaucis*, *Pygmornis*, *Thalurania*, *Lampornis*, and *Hylocharis*.

In the side aviaries, which do not contain any vegetation but are surrounded by creepers and other tall plants, there are a Rifle Bird of Paradise and a very pretty Yellow-legged Ouzel (*Turdus flavipes*) from Brazil, rare Barbets *Megalaima lagrandieri*, which I caught in Laos, and a Brazilian species (*Capito aurovirens*); although of very different sizes they agree well, but will attack wickedly all other birds. Another compartment houses several species of Zosterops, Fruit-suckers and Sugar-birds, and a Senegal Sunbird, while other Sunbirds live in cages; another flight is given up to a large and varied population, Black-throated Cardinals (*P. gularis*), a very rare small species, Abyssinian Red-headed Barbets, Amethyst and Royal Starlings, a Cayenne Troupial, an Annamese Mesia (*M. cunhaci*) and some larger Tanagers; in others are a pair of Malacca Parrakeets, Red-headed (*P. rubricapilla*) and Beautiful Manakins (*C. pareola*), and many sorts of smaller Tanagers. The special Humming-birds' compartment contains about fifteen Humming-birds of the following genera: *Phalornis*

Agyrtia, Hylocharis, Chlorostilbon, Melanotrochilus, Eulampis, and Polytmus.

The collection of stove-plants growing in dry walls and beds, and on trees, is quite interesting, and the more ornamental species are represented. They grow luxuriantly, being thoroughly wetted morning and evening. Of course, care must be taken that perches do not overhang them too much and any soiled leaf be washed every day; but it is not really difficult to keep them clean if the house is not overcrowded, which, of course, must be carefully avoided.

The condition of birds kept under such conditions is wonderful. The newly arrived ones are always put in the warmer place for some time. No matter how dirty and poor they may look at first, after a few days they become clean and bright. So far, even weak and sick ones have recovered quickly and losses are practically now extinct. Two of my houses contain large deep pools, but I have never been bothered with drowning accidents. The edge of the pools is, of course, shallow all round, and care is always taken that newly arrived birds with imperfect wings are not let out where there is deep water. But with good fliers I never have had any trouble. I am glad to see that several zoos and amateurs, particularly Mr. J. H. Gurney, are also trying to keep birds in similar Tropical houses, and I am sure that they will be very successful, both from the point of view of the condition of birds and of the pleasure of seeing them in much prettier and more natural surroundings than it has so far been the case with birds kept indoors.

The Humming-birds, particularly, are doing beautifully and look lovely under such conditions.

SOME REMINISCENCES OF A COLLECTOR

By WALTER GOODFELLOW

At the request of the Editor I am trying to recall a few of the bird pets I have had in days that are gone, hoping they may be of interest to other bird-lovers.

Starting in the first instance as a collector of skins for museums

(I emphasize "for museums" as I never collected one skin for plumage purposes) I gradually drifted into a collector of live birds, at one time combining the two. This was at a time when rarities we are now accustomed to see imported as a matter of course were few and far between. At first, and for many years, my collections were made for the owners of large private aviaries. I think what induced me to take up the life, quite apart from the risks and excitement of it, was that others here at home could get to know and enjoy as living creatures some of the rare and beautiful birds hitherto only known from skins in museums. In this way I have been able to introduce to aviculture endless species for the first time. I remember as a boy how I gazed enraptured at exotic birds in museums and natural history books and longed to see them alive with my own eyes. Since those days I have seen all these in their own surroundings and even brought most of them home alive and discovered many others hitherto unknown to science. There are a few remarkable birds I still hope to get one day.

I am aware there are people of a certain mentality who consider it cruel to bring these captives away from their own lands, and I have many times had it brought to my notice. I recall an amusing incident of some years back on one of my journeys home with a very valuable consignment of birds. I was attending to my charges one day when a solemn-faced missionary suddenly announced his presence with the exclamation: "Young man, don't you think it is a very cruel thing you are doing, to make God's beautiful creatures prisoners like this. Can't I appeal to your better nature to let them go when we get to land!" This land would have been the shores of the Red Sea, so I leave it for readers to judge where the cruelty would have come in. No consideration to be taken of the risk and expense I had been put to, or even the freight paid on them. No, just let those birds from tropical forests go on the desert shores of the Red Sea, and according to our friend I should have done an act of kindness, and his mind no doubt would have been easy while mine would have been haunted by the cruel thing I had done.

I could give a number of instances from my own personal experience where recently caught birds have escaped from cages even in the

jungle and returned again of their own free will. And other cases where certain birds have been so wild and intractable that for their own sakes I have turned them loose only for them to return again and again to captivity. I will give two examples out of many. Both these occurred up the Maclure Gulf, N.E. New Guinea. Among a collection I had made was a single Black Lory (*C. ater*). It succeeded in opening its cage door and flew off to join a flock of the same species which frequented the neighbourhood. This was not near a village but on a hillside with virgin jungle all around, and the cages were in a makeshift shed with an open front. One morning four days later when feeding my birds as usual, a noisy flock of Black Lories flew overhead, and one detached itself from the others and without any hesitation flew straight down to its old cage and tried to get in, which of course I helped it to do. Among the same collection were two birds of no great interest or beauty, in fact most people consider them ugly, the Friar Bird or Bare-headed Honey-eaters. There are several species of this bird, larger and smaller, but all very much alike; one is well-known in Queensland under the name of Leatherhead. The two I had were so wild and went into such paroxysms of fear when fed, or even approached, I thought it sheer cruelty to keep them confined any longer. So one day I left the door of their rather small box cage open. When I returned some time later I was surprised to find them still in it, so I caught them up and turned them loose. The cage was left standing under others with the door open, and when I went to arrange the birds for the night I found the Honey-eaters back in their cage and just as wild as ever. The next day the same thing was repeated, and on the third morning when going off on my rounds I took them a mile or more away and this time said good-bye to them for ever. It was not cupboard love unless they preferred the food I supplied to that which grew all around and others of their own kind to associate with. There is an allied species of this bird now in an outdoor aviary at the "Zoo", presented by Mr. St. Alban Smith. Often when I see this bird it recalls a terrible murder and suicide which it witnessed, together with a Lesser Lemon Crested Cockatoo now in the Parrot House. This was in Singapore, when one evening a Chinese houseboy killed another Chinaman just under where their

companionship with me, and remained constantly by my side, gentle and inoffensive, without that grabbing propensity of trying to swallow anything laying about which attracts their attention, common to many of them. It dearly loved to be nursed, and used to get on my knees as far as such a big bird could. When I was engaged on work at the table or during meal times it either lay at my feet or with as much of its body over my knees as it could get, or stood behind my chair with its head and neck resting over my shoulder. At night it settled down by the side of my camp bed, and on the island of Sorong, where mosquito nets were unnecessary, it often during the night slept with its head under my blanket. Many times it felt about with its beak in the dark on the outside of the bed to make sure I was still there. At such times if I rested my hand on it for a little while it settled down contentedly to sleep again.

Every morning I made a complete tour of the little island to collect wild fruits for my birds, and on these occasions "Kitty" always came with me, keeping close by my side. There was one tiny bay of white coral sand where I always rested for a time under an overhanging tree while "Kitty" went into the sea for a bath. There were many other Cassowaries running about in the village, but of these she took no notice whatever, in fact she carefully avoided them. Many other charming traits she had which have now escaped my memory.

Just before I had "Kitty" I was living at Humbolt's Bay, not far from the frontier of what was then German New Guinea. Here I had many eggs of this species brought to me. The usual colour of course is green, but some were even cream coloured, and others ranged through all shades of green, some yellowish ones being especially beautiful. One day the chief of a large village near by brought in an egg from which the chick inside could be heard squeaking, therefore I thought it must be on the point of hatching. As it felt cold I wrapped it in a flannel cholera belt and put it in my shirt to warm up. It was still squeaking but not so loudly when I went to bed that night, so I placed it by my side under the blanket. Here I imagine some will think what a quiet sleeper I must be. Well I am, I suppose, because during years of this sort of life one is always adopting all sorts of motherless creatures, which if very young must be brought to bed for warmth.

They have ranged from kangaroos, monkeys of various kinds, parrots and other birds, to a jaguar, ocelots, and snakes. The last of course more often than not in bags.

Waking up during the night, I found the egg very hot—too hot, I thought—and not a sound from it, and I was afraid I had overcooked it and laid it by the side of the bed to cool off a bit. In the morning the egg still remained very warm and silent and I got a bit anxious. Later I sent for the chiefs and talked it over with them, and the conclusion we came to was that all must be well, for if the chick was dead the egg would have got cold quickly. No doubt it was then warm and comfortable. The egg remained like this for four days, during which time I did hear an occasional chirp. I had found it unnecessary to keep it in my shirt all day; a warm up now and then was sufficient, and the rest of the time it was under the blanket, but at night I kept it in bed with me. On the fourth morning I noticed a crack in the shell, and a little later the tip of the beak could be seen working at the opening. It seemed slow work, but by night the crack had extended considerably, so again it had to go to bed with me. No doubt at this stage the parent bird would have helped the young one to break loose, but I was afraid of damaging it. During the night it was apparent that something violent was happening, and a sudden vigorous kick on the part of the chick smashed the shell, and a very wet and leggy creature was struggling about in the bed. A light was brought, and my man and I duly admired the new-born babe. After it had been wrapped in a dry cholera belt and clean sheets put on the bed, we settled down comfortably until the morning.

After this came an influx of squeaking eggs, and in a similar manner hatched out no less than seven. Some only took twenty-four hours, and the longest I kept one was eight days before the chick emerged. Naturally I was very solicitous for my little family and careful to see they never lacked food or water, but even for young Cassowaries I thought their appetites large. Alas, the sequel was sad, for their bodies developed at such a rate that their legs began to bow out under the weight and finally were unable to support them. I had made a large enclosure for them to run in but all to no avail. I had practically killed them with kindness and overfeeding. They ought to have been

dealt with drastically from birth, and when I started to do so it was too late. I felt envious as I went through native villages and saw mere chicks running about with firm legs and all the vigour imaginable, and yet half-starved and having to compete with the village dogs for any scraps of offal going. It taught me one lesson, however, and I resolved that the next young Cassowary I had I would harden my heart in the matter of feeding.

Perhaps two years later when on my way to the mountains in British S.E. New Guinea I had my second chance. During a march one very tiring day I had lingered with a companion a good deal in the rear of the carriers watching various birds in the trees, when suddenly far ahead we heard such a sudden hubbub and yells I naturally thought some revolt had broken out or our men were being attacked. I had been warned that there was much unrest among a certain tribe we had to pass through. By the time we caught them up much of the excitement was over, and through the coloured interpreter I learned that the first carriers had disturbed a mother Cassowary with four or five young ones. Although in thick jungle we were by the banks of a river, and the birds had taken to the water at once in an endeavour to swim across, for Cassowaries are perfectly good swimmers. All had succeeded except one, which the current had carried into a small bend where the bank was too steep for it to land, so the men had captured it and gone on ahead with it. When we camped that evening in a deserted forest village I enquired for the bird and found the poor thing which was not more than a foot high, hanging by its legs from a projection in one of the huts. They were intending to kill and cook it as soon as they had started a fire, so I only arrived just in time to save it. From then on I took entire charge of it. We had still some six or seven days' travelling to do, from early morning till night with only a short halt at midday, so it was not a good beginning for such a young bird and not giving it much of a chance. We were bound for high ranges where dwelt the Long-tailed Birds of Paradise, the Princess Stephanie's, and Meyer's Sickle-bill, and the only way it could travel was tied up in a bag on the top of one of the loads. It was fed and watered three times a day under great difficulties, as at first I was always afraid it would run off into the forests. Eventually we settled

in camp in a cold damp region nearly always in clouds, somewhere near 8,000 feet, the trees all heavily festooned with funereal-looking moss. One of the first things I did was to have a daytime enclosure made for the Cassowary. At night it was to be put away snugly in a box in my tent; but we might have saved ourselves all this trouble, for it had by now no intention whatever of losing sight of us, and settled down to domestic life in camp thoroughly at home and contented.

In Port Moresby I had met a young Danish count globe-trotting and anxious to see something of the interior of the country. For the sake of his company I was only too glad to take him along with me when he suggested it. He was a keen naturalist and just as fond of birds as myself, so between us I am afraid the "baby" was inclined to be spoilt. It was not long before it learnt that the warmest place in camp as evening came on was under our blankets, and soon found a way to get on the beds and insinuate itself under the blankets where it remained until fastened up in its own box for the night. It grew rapidly, and at each change of camp its transport became a question for consideration. It also began to be blamed for any trifle lost or mislaid in camp owing to a habit it had of swallowing anything it could get down its throat, and it was surprising what it could get down. Several times I just managed to save my bunch of keys by holding its neck tightly and putting my fingers down its throat. When natives came into camp, as they did daily when we returned to lower altitudes, Kitty the Second, as I had by now named her, wandered innocently among them as they squatted about on the ground, but with a keen eye on their necklaces. A sudden grab with her beak and before they realized what had happened Kitty was hastily picking up the beads and swallowed half before they knew where they were. The natives soon got used to this, and it was amusing to see them take off their finery before settling down. She seemed to me to know that she belonged to a superior race of people, to assume a disdainful manner with the natives, walking among them in a condescending way; neither did she hesitate to show fight with their dogs. One day on the coast when looking through a bag of money I came upon an Australian sovereign, which I placed at my side on the bed. In a

moment Kitty had spotted that bright golden coin and had swallowed it before I could stop her. In this case, the only thing to do was to shut her up in an empty room until it was recovered.

In due course after many adventures Kitty arrived home and went straight to Hoddam Castle, Dumfries. Here at once she established herself a prime favourite for several years. She had palatial quarters, but during the day was allowed the freedom of a considerable part of the grounds. I am sorry to relate though, as she increased in size and strength she began to make herself objectionable to the gardeners. It was no doubt all done in play, but several times she ripped up (or rather down) their trousers, and more or less severely scratched them; so she had to be confined to her quarters which made her temper altogether worse, but with her owner she was always affection itself.

One day before this time she was found missing, and telephone messages were sent to the police stations around. It was not long before reports began to come in from districts she had passed through, but all seemed afraid to capture her. On the second day she was reported to be 18 miles away and then lost sight of again. On the third day, a tired dust-covered Kitty was seen approaching the castle, almost too tired to go any farther, but when she saw her owner she put on a spurt and sank down at his feet evidently very glad to be home again. This speaks volumes for her intelligence that she was able to find her way back again. Shortly after this her career ended at Hoddam, and she was presented to Regent's Park where she lived until she caught a cold and died.

It was a Painted-necked Cassowary (*C. picticollis*), one of the smaller mountain species, rare as a living bird in captivity.

Once in another part of New Guinea I came suddenly upon a very large full-grown bird (*C. sclateri*) idly pecking about in the pebbly bed of a wide dried-up river. It was well out in the middle when it saw me, and the tactics it adopted were somewhat curious. Instead of at once making a dash for the tree-lined banks, it pretended to be quite unconcerned and went on pecking about, but gradually making for the shelter of some rocks. As soon as it reached them it took to its heels and was gone like a flash. In the brilliant sunlight it looked

strangely beautiful, and somehow almost prehistoric in the silent surroundings where not a bird's note was to be heard.

On reading this paper through, I fear I have not presented Cassowaries as favourably as I intended or they deserve. However, I have written chiefly of two only out of many individuals and species which have been under my care for longer or shorter periods. I can thoroughly recommend them to those who are able to give the necessary accommodation to such large birds, although under these conditions they can never be so interesting as say in a camp wandering about free. They are not difficult to keep if they have a little warmth in the winter, nor are they expensive to feed, but they cannot stand damp cold. So fond am I of these birds that at one time I seriously considered settling in some Eastern island where I could keep and breed them.

(To be continued.)

FURTHER NOTES ON THE WHITE-FRONTED BEE-EATER

(*Melittophagus bullockoides*)

By A. EZRA, O.B.E.

This beautiful Bee-eater, which figured in the January number of the AVICULTURAL MAGAZINE of 1927, was brought over by Mr. Webb, the well-known collector, in June, 1926. In all five specimens were landed in perfect condition. Two of these went to Captain Stokes and the remaining three were secured by me. I need not describe the bird as the coloured drawing by Roland Green in the January number of the Magazine of 1927 shows him off perfectly. I do not think this species has ever been imported before, and great credit is due to Mr. Webb for landing these delicate birds in such wonderful condition. When I first saw them at Gamage's shop, I must admit, I was frightened of them as I did not think they would do in captivity, so did not buy them. I soon changed my mind when I saw the two

flying about in Captain Stokes' aviary. I rang up Gamage's at once and secured the remaining three birds. These were turned out in one of my small aviaries, and it was a treat to see them chase flies and eat them. They lived practically on mealworms and, of course, caught every bee and wasp that flew into the aviary and swallowed it. Practically the whole of their first winter they ate only mealworms and these had to be thrown up to them, as they never came to the food tray. They were marvellous at catching mealworms, and no matter how difficult the catch, it was never missed. They were fed in this way all the winter months, and kept in the heated part of the aviary. They were given six good feeds of mealworms a day, and on the tray with the insectivorous food a few mealworms were always left. For the whole winter the birds were not seen on the food tray, so the other occupants of the aviary must have made short work of the mealworms. So the whole of their first winter these birds lived only on mealworms. In the spring they were in robust health, and gradually took to visiting the food tray, when they did not only eat the mealworms but helped themselves to some of the insectivorous mixture. All the summer months a piece of meat was left hanging in the outer flight of the aviary to attract flies and blue-bottles, and these were quickly devoured by the Bee-eaters. I lost one of the three birds after about eighteen months, and the second one lived for four years, when he died of pneumonia. The third and last one lived in perfect health and plumage till last March, when he was killed by some other bird in the aviary. All the birds in the aviary were old ones, and they had lived amicably for years—I don't know till this day who killed this delightful pet. The other occupants of the aviary were a pair of Fairy Bluebirds, a pair of Amethyst Starlings, a pair of Rufous-bellied Niltavas, and a pair of White-cheeked Bulbuls. I rather suspect the Bulbuls, although they always seemed friendly enough. I have never regretted the loss of a bird more and I am sure a Bee-eater has never been kept in captivity for so long. From June, 1926 to March, 1933—nearly seven years.

Needless to say they were great favourites of mine and no birds gave me greater pleasure. Bee-eaters do splendidly in large aviaries, and look lovely when flying about after insects. They are quite easy to keep provided they are given a lot of mealworms and a warm shelter

Among new arrivals were a Humming Bird from the same consignment as those displayed at the London Zoo and four species of Sunbirds and some Bee-eaters brought by Mr. Webb from East Africa.

Breeding in the aviaries were Crowned Starlings, the hen flying at liberty to feed her young, also Ruppel's Starlings, Derbyan, Queen Alexandra, and Malabar Parrakeets.

There were numerous families of Alexandrine Parrakeets in the nest-boxes, but unfortunately the eggs from the Blue cock and his Blue-bred daughter were unfertile, and the young from the Lutino pair of the same species were not reared.

In the enclosure for animals and large birds a very remarkable feature was the nesting of two pairs of the rare Reynolds' Ground Cuckoos (*Carpococcyx renauldi*) from Indo-China.

These birds have been in the aviaries for two or three years, but last winter Mr. Ezra turned them out without even clipping their wings. They did not stray away, and both females are now incubating clutches of eggs in nests built a fair height from the ground. It is greatly to be hoped that complete success will be achieved with their breeding. On the smaller duck pond we were able to see a young White-backed Duck from Madagascar (*Thalassornis leuconota*) three-quarters grown and quite independent of his parents. This is the first breeding of the species in England, and indeed no one else has succeeded in keeping it for long. The very rare Pink-headed Duck from India was greatly admired, but unfortunately the chances of breeding it have vanished for the present, as the only female died during the winter. Many old friends among the birds which we have been accustomed to see at Foxwarren were still there, and in their usual faultless condition. Flocks of Cranes of three or four species, Pheasants, Flamingoes, Geese, and Pea Fowl, all looked quite lovely in their surroundings of lawn and woodland.

Mr. Leach proposed a vote of thanks to our hosts who were heartily acclaimed.

Altogether it was a delightful party, so please Mr. President let us come again next year.

RARE BIRDS FROM KENYA

Mr. C. S. Webb returned home on 25th May from a successful collecting expedition in the region of the Aberdare Mountains, north of Naivasha, Kenya. As might have been expected from a district where the collection of live birds has rarely if ever before been attempted, almost everything brought home was new to aviculture. All arrived in good condition, the majority being perfect, as is usual with Mr. Webb's birds, so carefully does he study their caging and attention from the day of capture. The natives, Mr. Webb tells me, take no interest in the birds and have no idea as to how to capture them, so that Mr. Webb had to do his catching himself.

Here is a list of those of Mr. Webb's collection which appear to be new to aviculture —

- Hartlaub's Touraco (*Turacus hartlaubi*).
 Pink-breasted Dove (*Streptopelia lugens*).
 Jackson's Francolin (*Francolinus jacksoni*).
 Black-winged Plover (*Stephanibyx melanopterus*).
 Masai Red-headed Parrot (*Poicephalus gulielmi massaicus*).
 White-headed Wood-Hoopoes (*Phæniculus bollei jacksoni*).
 White-eyed Flycatchers (*Dioptornis fischeri*).
 White-starred Bush Robins (*Gonocichla stellata guttifer*).
 Orange Thrush (*Geokichla gurneyi keniensis*).
 Kenya White-eye (*Zosterops kikuyuensis*).
 Kikuyu Grey-throated Bulbul (*Arizelocichla teprolama kikuyuensis*).
 Tacazzé Sunbird (*Nectarinia tacazze*).
 Bronzy Sunbird (*N. kilimensis*).
 Kenya Malachite Sunbird (*N. anigularis*).
 Golden-winged Sunbird (*Drepanorhynchus reichenowi*).
 Kenya Double-collared Sunbird (*Cinnyris mediocris*).
 Falkenstein's Sunbird (*C. venustus falkensteini*).
 Kenya Highlands Scarlet-chested Sunbird (*Chalcomitra senegalensis lamperti*).
 Reichenow's Weaver (*Ploceus reichenowi*).
 Black and Yellow Weaver (*Euplectes capensis xanthomelas*).
 Kenya Rufous Sparrow (*Passer iagansis rufocinctus*).



Photo by D. Seth-Smith.

BLACK-WINGED PLOVER (*Stephanibyx melanopterus*)

Six examples of this beautiful Plover were brought home alive by Mr. C. S. Webb from the highland plains below the Aberdare mountains in Kenya.

[To face p. 194.

Delamere's Giant Whydah (*Dioptropura progne delamerei*).

Black-headed Waxbill (*Estrilda atricapilla kandti*).

Purple Grenadier Waxbill (*Granatina ianthogaster roosevelti*).

Mr. Webb also kindly brought home specimens of the following three species which were presented to the Zoological Society by Mr. F. G. Moreau, and captured in the Usambara Mountains, North-east Tanganyika :—

Crimson-winged Finch (*Cryptospiza reichenowi ocularis*).

Olive Barbet (*Bucanodon olivaceus*).

Lesser St. Helena Waxbill (*Estrilda astrild minor*).

D. S.S.

THINGS WHICH MAY HELP

By P. B. WEBB

There is the problem of keeping the grass in aviaries short. This can be done, if the flight is a big one, with a lawn mower, or with clippers in a small one. The last method is slow and one is likely to have blisters when it is all clipped. The former is frightening to the birds, especially if they have nests in the flights.

During the last two years I have employed guinea-pigs, to whom it is all in the day's work. It is extraordinary how soon and efficiently they get over the ground. They are much more suitable than rabbits would be as they do not burrow, and are more easily prevented from destroying the plants and bushes which are growing in the aviary. This is done with strips of netting round the base of the plants. The animals can be moved from one division to another in their box without disturbing the birds. There are those who will not wish to run the risk of souring the ground with them ; I have found no ill-effect up to the present.

In Woolworth's one can buy vases made of sheet-iron (Fig. 1) painted dark green, conical in shape, apex down with a large nail to push into the ground—they are designed, I think, to keep cut flowers fresh on graves. These will be found to be just the thing in which to

place seeding grasses. They will keep the grass from withering and their shape spreads the grasses so that the birds can reach every head of seed. Do not forget to plug the centre with a wisp of grass to keep the birds from being drowned.

A root of *Polygonum Sachalinense* is well worth having in an aviary. It grows to about six or seven feet high and its large leaves give a tropical effect, also good cover for the birds from strong sun and rain. It dies down in the winter and shoots up again each spring.

It is useless, of course, in aviaries in which there are birds which eat every green leaf they come upon.

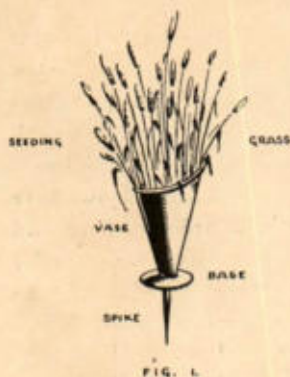


FIG. 1

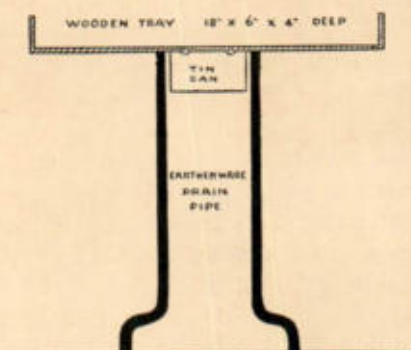


FIG. 2 (SECTION)

Those who are contemplating the building of a new aviary should consider this method. Build each side and the roof in sections. When the inside of a section has been sheathed with tongue and groove sheathing, turn it over and fill the whole up to the level of the framing with sawdust which has been well sprinkled with creosote; then the outside sheathing may be nailed in place. When all the sections are completed and a foundation has been prepared, the house may be erected, care having been taken, when designing, for bolts and holes for final fastening. Half-inch sheathing will be required for the outside and even thinner will do for the inside. If you do this you will have a house on the lines of a hay-box cooker in which the temperature can be kept very even. It also has the advantage of being very cheap to build. Double glass with a space of 1 inch between panes will be well worth

the extra cost. Mice and parasites will not have anything to do with the creosoted sawdust.

If you are troubled with mice, a cheap and efficient stand for seed hoppers may be made by using 4 or 6 in. crockery pipes (Fig. 2) These pipes have one end enlarged to fit over the small end of another pipe. This serves as a base on which it can stand. A wood tray to carry the hoppers and catch the husks may be arranged to rest on the top. A convenient method of fixing this is to procure a round tin can which just fits inside the pipe. This is then screwed to the bottom of the tray, and will be found quite steady when in position inside the pipe. It also has the advantage of being easily removed.

If one is in the habit of electrically lighting their aviary on winter nights, there is the difficulty of getting all the birds on to their perches before the light is turned out. One is kept standing hand on switch; just as all is ready one bird hops on to the wire division or some such foolish place. It is no sooner on a perch when another does likewise—it is a little wearing on one's patience. This can be avoided if you have two lampholders and switches, in one holder is an ordinary lamp and in the other a Neon lamp. These lamps give a red glow sufficient for the birds to find their way to their roosting places, and they may be left on all night as they consume so very little current.

A FEW BREEDING NOTES FROM FOXWARREN UP TO 10th MAY, 1933

By A. P. SHEARING

As this is my first venture at penning a few notes for the magazine perhaps a short account of the breeding results to date may be of interest to members.

CHINESE BLACKBIRD (*Turdus mandarinus*).—This pair of birds have been given an aviary to themselves and are at present incubating four eggs.

CROWNED STARLING (*Galeopsar salvadorii*).—There are two pairs of these this year and the old pair have already built and laid the

first egg, and I hope by the time these notes are in print to have some young ones as it is a picture to see the hen bird at liberty. A second pair are busily engaged in building.

ROTHSCHILD'S GRAKLE (*Leucopsar rothschildi*).—To date only one egg has been laid and this was eaten. It seems as though the only way of successfully breeding these birds is to remove the eggs as soon as they are laid and place them in Starlings' or Thrushes' nests.

WONGA WONGA PIGEON (*Leucosarcia picata*).—These birds have started the same habits of last year as the first two eggs were both fertile, but the birds only sat 10 days; they are at present incubating two eggs, but these will shortly be placed under Domestic Pigeons.

SLENDERBILL STARLING (*Cinnamopterus tenuirostris*).—We are hoping for better luck this year with these birds as they have almost finished building operations, and to prevent any expected young ones from falling out of the nest a large cradle has been placed under this. It is very interesting to see how these birds shaped their nest and the large amount of mud, dried grass and feathers that are used.

SHAMA (*Kittocincla malabarica*).—Both pairs have obliged by laying eggs and we are hoping they will be more businesslike this year than last.

AMERICAN BLUEBIRD (*Sialia sialis*).—Started building the day they were given a nest-box and the first egg was laid 2nd April, two eggs being laid in all; but owing to the very cold weather these did not hatch, although both contained perfectly formed chicks. Four more eggs were laid by 2nd May and these are now being incubated.

WHITE-WINGED MYNAH (*Sturnia nemoricolor*).—The pair that successfully reared a young one last year are now incubating four eggs.

MADAGASCAR PARTRIDGE (*Margaroperdix madagascariensis*).—A pair of these have laid seven eggs up to the present, ten eggs being the usual number laid.

AFRICAN WATTLED PLOVER (*Lobivanellus lateralis*).—This pair again chose the pathway in the large aviary for their nesting site and bits of bark were used to construct the nest. On 24th April the first egg was laid; two days later another egg was found broken in the pond. The birds did not seem to take much notice of the first egg and yesterday (6th May) another egg was found about 4 yards

from where the first was laid. Evidently they had taken a dislike to the first nest as they were observed trying to roll the egg along the pathway to the second nest.

PIED GRALLINA (*Grallina picata*).—Built a cup-shaped nest on a beam in sleeping place, using a considerable quantity of mud, and first egg laid 27th April. Up to the present these birds are incubating very well.

SUPERB STARLING (*Spreo superbus*).—One young was hatched out on 27th April. Another pair are incubating three eggs.

QUEEN'S ALEXANDRA'S PARRAKEET (*Northipsitta alexandra*).—The old pair laid five eggs by the 12th April and three young were hatched out by the 25th, the other two being infertile. One young one was found dead three days later, the other two are now twelve days old. The cock bird was removed from the aviary after the hen had been sitting a few days, so apparently this plan is proving very successful. A pair that were reared here in 1931 laid six eggs by the 25th April and two young were hatched out to-day (7th May). We are now waiting to see how these birds behave.

RING-NECKED PARRAKEET (*Psittacula krameri*).—A lutino hen, mated to a green male, laid four eggs by the 27th March. One young was hatched out on 21st April the other three eggs being infertile. Another pair of Ring-necked Parrakeets, lutino hen and green male, laid three eggs by the 2nd April and two young were hatched out on 30th April. As this hen is extremely spiteful and very fond of human flesh I have not ascertained whether the third is good.

A third pair of Ring-necked Parrakeets, both lutinos, laid four eggs by 31st March. All contained dead chicks so it is quite obvious that there is some weakness in these as each time the same thing has occurred.

A hen Ring-necked Parrakeet, mated to a cock Alexandrine \times Ring-necked hybrid, laid five eggs by 28th March and three young was hatched out by 21st April; the other two eggs contained dead chicks.

A pair of ALEXANDRINE PARRAKEETS (*Psittacula nipalensis*) laid four eggs by 5th February and three young were hatched out, two by the 6th March and the third six days later. One of the young ones was found dead on the 17th March and the other two were found

to have been brutally murdered the next day, apparently the work of the parent birds as nothing can get into the aviary. This is rather unusual for these birds as in other years they have both proved themselves to be beyond reproach with regard to rearing young.

These birds have just hatched out three more young. I wonder if the same fate is in store for these.

Another pair, both lutinos, went to nest and three eggs were laid by the 27th January, all being infertile. They again went to nest and three more eggs were laid by the 24th March. One young was hatched out but was found buried under some peat moss; the other two eggs were infertile.

BARRABAND PARRAKEET (*Polytelis swainsoni*).—Laid five eggs by 3rd April and five young were hatched out by the 24th April. Two of these died, but the other three are looking splendid.

ELEGANT PARRAKEET (*Neonanodes elegans*).—Two pairs of these are at present incubating eggs.

MALABAR PARRAKEETS (*Psittacula peristerodes*).—A pair of these are at present incubating three eggs.

DERBYAN PARRAKEET (*Psittacula derbyana*).—After four years these birds have decided to do something more than destroying aviaries, so after gnawing the roof off one nest-box and examining the other nest-box in the flight they decided to rent the nest-box in the sleeping quarters and on 23rd April the first egg was laid. Two days later I went to see if any more eggs were laid, but got no farther than the door of the sleeping quarters as the hen bird gave one shriek and flew at me in such a manner as to indicate that the safest place was outside the aviary. Some days later, however, I did manage to get a peep into the nest, and discovered two eggs; since then I have given her a wide berth.

WHITE-CRESTED JAY (*Garrulax diardi*).—These birds made a nice nest this year and one egg was laid by the 12th April; this was hatched out on 26th April and found dead the next day. These birds make a habit of throwing their young out of the nest.

BRONZE-WINGED PIGEON (*Phaps chalcoptera*).—The old pair of these have started well this year as they already have one young which is now 14 days old. Another pair are incubating two eggs.

TAMBOURINE DOVE (*Tympanistria tympanistria*).—Three pairs of these are at present incubating eggs.

VIRGINIAN CARDINAL (*Cardinalis virginianus*).—Have built a nest in some ivy, but up to the present have not laid.

CROWNED LAPWING (*Stephanibyx coronatus*).—Two eggs were laid, but both were eaten by a cock Madagascar Partridge.

A hen Green Singing Finch mated to a cock Alario Finch have nested in a box-bush and the first egg was laid yesterday (6th May).

I hope to supply further and more successful notes later on.

REVIEWS

THE MEANING OF ANIMAL COLOUR AND ADORNMENT

(Edward Arnold & Co., 18s. net.)

Major R. W. G. Hingston, the author of this book, is a well-known and observant field naturalist who has done much excellent work amongst which may be mentioned the production of books of great merit, such as *A Naturalist in the Guiana Forest*. In the volume now under notice he tries to prove that the chief function of the various colour adornments of animals is to excite fear in rivals and so give the animal possessing these special markings or adornments an advantage over its adversaries. Since, however, an animal generally fights with a rival of its own species and sex, which is similarly adorned, it is difficult to see what advantage the one has over the other. The author admits that many animals are protectively coloured, but considers that they would be better equipped in this direction if they were entirely without markings, or self-coloured and devoid of the dark or light markings which nearly all possess. He instances the lion as a tawny-coloured animal which would be more protectively coloured than it is if it did not possess the darker markings which are found on the mane, tail-tuft, and ears. Such markings he considers as threatening marks. He does not seem to have grasped the fact that an animal that is uniformly coloured and devoid of all markings is very much more conspicuous than one in which the shape

of the animal is broken up by distinct markings such as are found on these areas of the lion. The dark line which runs diagonally across the body of the great ant-eater may look conspicuous enough in a cage, but amongst the lights and shades of its native forest must entirely obliterate its outline.

The brilliant and extravagant markings on many male birds, Major Hingston believes, are there for the purpose of striking terror in their rivals, but since, in many cases, these markings are only visible when making advances to the female it seems evident that they are there for the sole purpose of inducing her to turn her attentions to family matters. An Argus Pheasant, for instance, will exhibit his wonderfully marked wing-feathers to his mate alone, and if a rival male appears these are at once hidden and a rush is made, with no sort of display, and the rival driven off.

When enumerating the "threatening colours" of birds Major Hingston mentions the red legs of the male Red-crested Pochard, a bird which would certainly meet a rival on the water, where nothing but a fish is likely to see these brilliant appendages!

The author is correct when he says that the songs of birds have the effect of warning rivals that the territory is occupied, but this is not their only function. In the case of migrants the male arrives first and, having occupied a site for his summer home, his song has the effect of attracting the first female of his species that comes within earshot. And why should not song be a sign of contentment and joy?

Major Hingston's book is well worthy of careful perusal by all who would try to solve the great problems of Nature, but we feel sure that many of our readers will fail to agree with some at least of the theories he advances.

D. S. S.

THE PARROT BOOK

(The Marshall Press, Limited, 2s. net.)

Mr. Allen Silver is a well-known authority on birds in captivity, and Parrots in particular, and all interested in this group will welcome this small handbook which gives them all the practical advice they

are likely to require in the care of their pets. It is divided into two parts, the first being a general account of Parrots, their feeding, handling, exhibition, and so forth, the second dealing with the individual groups of Parrots and containing a list and brief description of the different species and their localities. A cheap but very useful little book.

CORRESPONDENCE, NOTES, ETC.

THE SPLENDID GRASS PARRAKEET

I have been fortunate, through the great kindness of Mr. Harvey, of Adelaide, to secure a very fine pair of Splendid Grass Parrakeets bred by himself and nearly adult. The cock will be a magnificent specimen should he survive his next complete moult, as the greater part of his breast is already scarlet. The hen is extremely Turquoise-like, so much so that I doubt if I should have identified her as a different species had she come over with Turquoisines. The blue on her wing is certainly paler but less strikingly so than I expected, and she has a good shot of orange on the abdomen, but so have some hen Turquoisines. It is evident that *N. splendida* is the Turquoise's closest ally, far closer than any of the Grass Parrakeets of the Bluewing type which cannot be so very near as their hybrids with the Turquoise appear to be sterile.

The Splendid's favourite food appears to be spray millet and they are very fond of seeding grass and green food.

Like many aviary-bred Parrakeets they are at present more timid than the average bird that has been captured in a wild state.

TAVISTOCK.

SUNBIRDS

I was delighted to see in the June number of the Magazine an article on Sunbirds from the able pen of the Hon. Anthony Chaplin. I notice that Mr. Chaplin does not agree with all I wrote about Sunbirds in the May issue. This is all to the good, as one learns much from such discussions. May I be allowed, however, to make a few further remarks on this interesting subject? In my recent article I did not say that Sunbirds required great heat. I said that I had found that they could stand the cold when once acclimatized, but did better with a little heat, and I still maintain that this is so. If a bird can live in the cold when at liberty it does not follow that it will continue to do so when in captivity. This I have proved over and over again. Take, for example, our own British birds, the Wren and Tree-creeper. I have always found that they will be far happier when caged if given a little heat, and 60 degrees is far better than 40 degrees. Now as regards my advice about food, I have found that if the syrup is given too strong it is likely to purge the bird.

also I have had deaths from over-fatness which sometimes results in fits. Because a bird lives for, say, 6 or even 12 months and appears to be in perfect health and then dies, it does not, in my opinion, mean that you have fed and treated it correctly. On the treatment I advised, I kept in full health a Purple Sunbird for 10½ years; also my well-known winning Malachite lived for close upon 9 years. I could point to many more nectar-feeding birds, apart from Sunbirds, that have done well on this weak syrup, but will only mention two. Yellow-wing Sugar Bird, 10 years; Swainson's Lorikeet, 9 years, and still going strong. With such results as these I cannot for one moment think my treatment could have been wrong. In closing may I throw out a suggestion about Tanagers (*Calliste*) mentioned by Mr. Chaplin? Treat these as advised for Sunbirds and half our troubles will be over, and they will live much longer.

A. MARTIN.

"YADIL" FOR ROUPE AND GAPES

About a month ago a friend brought me a young Gouldian to see what I could do with it, as it was blind in one eye. Two days later it developed a thick cheesy matter around the nostrils, and had the offensive smell of roupe. Anyway, I strictly isolated it and treated with "Yadil". It is now practically fit and well again, and my friend writes to say he has lost, I think he said, three other Gouldians from the same trouble and the p.m. report is roupe, as I surmised at first. I have never come across roupe before in Finches, although I have treated dozens of cases in poultry. By the way, there was some correspondence in the Magazine about gapes and worms in Spico Starlings, etc. The best preventative and cure for gapes and worms I ever used was raw garlic smashed up and put in the drinking water. At least this is what I regularly used for my Bantams, Poultry, and Pheasants in Natal. This is one reason why I favour the use of "Yadil", as I understand garlic is one of its chief ingredients.

A. W. TEAGUE.

ADDITIONS TO BREEDING RECORDS

Dr. Hopkinson's series of articles under the above heading, which have been appearing in the Magazine for some months past, have been reprinted and form a very useful appendix to his volume *Records of Birds Bred in Captivity*, which was published in 1926. Since that year the list has been greatly increased, but the *Additions* bring it up to date. The number of reprints published is very limited, but copies can be obtained, while they last, from the Editor at 2s. 6d. each.



Frontpiece.]

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MY TROPICAL AVIARY

By G. H. GURNEY

A short account of my recently-constructed tropical aviary may be of interest to other members and induce them to start something of the same sort. A very small outlay, not necessarily using very great heat, will furnish an old greenhouse or disused conservatory, and with a little ingenuity a delightful and uncommon aviary may be made. My house, a photograph of one corner of which accompanies this article, was constructed out of a small greenhouse, which had formerly housed a dull array of ordinary pot plants. Extra hot-water pipes were added, and tall tropical plants planted. It is some 24 feet long by 15 feet wide: to this I added a long extension of brick and glass, built at right angles to the main house. The glass sides I painted with a rough representation of a tropical forest, with dense foliage and trees; this blocks out the adjacent aviaries and houses, which could be seen through the glass and spoilt the effect. The illusion is further increased by the tall-growing tropical plants, planted on three sides of the house, palms, dracaenas, and a banana tree, seven or eight feet high, while the roof is covered with exotic creepers and the curious pitcher plants (*Nepentes*); this gives additional shade for the birds. Two rather large tree trunks covered with moss and lichen, on which are planted some scarlet *Nidulariums*, help to give a further tropical effect.

Light branches are placed here and there as perches for the birds, so disposed that their droppings will not soil the plants beneath. All the plants are growing; none are in pots. Two pools overhung by ferns etc. contain respectively some tropical fish, and two small aligators and six little water terrapins. The fourth side of the house is planted with a collection of smaller stove plants, backed by crotons, anthuriums with their huge leaves, and caladiums. One side of the L-shaped extension is occupied by a long tank which contains a number of large tropical aquatic plants; the opposite side being given up to aquaria for tropical fish. At the extreme end of the extension is a small aviary, divided into three compartments, containing Sunbirds; all the other birds are flying loose. The temperature is never allowed to drop below 70°, and is often nearly up to 90°. The whole house is thoroughly sprayed three times a day, consequently the atmosphere is always moist and damp. Under these conditions both birds and plants flourish amazingly, and all look perfect.

The birds at present flying loose include five or six Minivets (which are almost *over-tame*, and refuse to stop perching on one's head or arms, if they think there is any chance of a mealworm), a King Bird of Paradise, several Yellow-winged Sugar Birds, a Blacked-headed Sugar Bird, a Purple Sugar Bird, a Green Fruitsucker, a Redstart, a lovely White-starred Bush-robin (*Gogonocilla stellata*), a Kuhls Ground Thrush (perfectly tame, and always singing beautifully; very smart too in his black-and-white plumage and rich chestnut-coloured head), and a Dusky Sunbird (*Crisnyris mediocris*), which stands no nonsense from any of the other birds; he is a beautiful and constant songster, too. Pittas did extremely well in the house but, as they kept entirely hidden among the thick foliage and were never seen, though often heard, I removed them. I could put other birds in, but I prefer rather to understock it, than overcrowd it. A seat at one end of the house adds considerably to one's pleasure when watching the birds.

Not far from the tropical house I have recently constructed another rather unusual kind of aviary, in the shape of an old disused squash-racquet court. A glass roof has been added and, as it measures roughly 23 feet square and is over 25 feet high, it is thoroughly spacious.

This is furnished with tall oleander trees and various palms in tubs. At present there is no artificial heating, but I hope to have hot-water pipes, connecting with an already-existing outside stove, installed during the summer. Natural boughs for perches stretch across the entire width of the house. Here I have a pair of Maroon Orioles, a Lesser Bird of Paradise, a Lort's Roller, Festive Tanagers and some Royal and Spree Starlings. One corner has been wired in, as a separate aviary, and this contains a pair of White-headed Wood Hoopoes, very showy and amusing birds, which delight in running up and down the sloping trunk of a tree covered with cork bark, in a very woodpecker-like way; two handreared Ringed Plovers run about on the peat moss at the bottom of the aviary, and are charmingly tame and confiding. Some cages contain Lories, Conures, and Barbets. Here again a long seat placed against the back wall adds considerably to one's comfort when watching the inmates of my racquet-court aviary.

CAPERCAILLIE IN UPPER TWEEDDALE

By F. R. S. BALFOUR

Perhaps it might be of some interest to the members of the Avicultural Society to hear of my successful introduction of Capercaillie (*Tetrao urogallus*) to the woods of Dawyck in Upper Tweeddale.

In 1929 and 1930 I received eggs from Perthshire and one consignment of day-old chicks. I had no success whatever. The chicks from the few eggs that hatched died in a short time, as did the live chicks that were sent to me.

I then set about getting three-quarter grown birds. My efforts in Scotland were not encouraging; only one cock and one hen reaching me from Deeside in August, 1930. In September of that year I was fishing in Southern Norway and made arrangements for the catching up of Capercaillie in nets. However, although two hen birds were

caught, they were not sent to me owing, I believe, to difficulty in getting permission for the export of game birds from Norway.

My next attempt was to get them from Finland. Of two cock and four hen "Auerwild" shipped to me from Helsingfors to Hull in November, 1930, all arrived safely except one of the cocks, which died on the voyage. Of the four hens, one died a few days after they had been turned into our woods in the last week of the month. The Capercaillie were seen from time to time in my woods and those of my neighbours, but I did not hear of any nesting in the season of 1931.

In October of that year two more cocks and one hen reached me safely from Finland.

In June, 1932, at an altitude of about 1,300 feet in a larch wood of about ninety years old, I saw a nest of seven eggs and flushed both the old birds. By laying rags soaked in renardine here and there in a circle a hundred yards from the nest we assured its safety from foxes. All the eggs hatched. I heard of another nest in the wood of Glentress, some twelve miles down the valley, and we believe that another brood was reared at Dawyck in the same larch wood as that in which the first nest was found, but over a mile distant.

This year a nest was found on the 2nd June, with five eggs, at about the same altitude as the nest of last year. We protected it in the same manner and I have since learned that all the eggs hatched.

It is well known that the native Capercaillie became extinct about the year 1770, the last mention of it being that of Pennant, who said it could still be met with in Glenmoriston in Inverness-shire in 1769. It was reintroduced at Taymouth in Perthshire in 1837 and 1838. Since then it has steadily progressed through the glens of the Highlands wherever the planting of coniferous woods has provided it with food.

The interest of my experiment is that, as far as I know, the species does not occur elsewhere south of Clyde and Forth, though an attempt to establish it was made in 1841 at Glenapp in Ayrshire and occasionally since then, though I believe without success.

OF FABLE AND FACT

By the HON. ANTHONY CHAPLIN

After a vigil of eight years I have at length become the possessor of three living Humming-Birds: they have been with me now for a month. It is an unfortunate truth that a dream at long last fulfilled too often savours of disappointment. But in this case I am happy not to have proved this serious state of things, for, although I have followed the tortuous path of trocildic study for a reasonable season, I am still able to find with Hudson that "Humming-Birds are perhaps the very loveliest things in nature". But, unlike and in spite of that great man of letters and of science, having "sufficiently admired the unique beauty and marvellous velocity of Humming-Birds", I consider there is still a deal more to be said about them. Indeed, one of the greatest attractions of this race of "feathered fairies", which certainly "promises to exceed all other families—even the cosmopolitan Finches and Warblers—in number of species", is that we know so little about them when it comes to being more than just a "science of dead animals".

One of the few facts concerning Humming-Birds about which aviculturists feel any confidence is that they become lifeless at a lower temperature than 65° F. Nevertheless, I have had *Eupetomena macroura* in an outdoor aviary for a fortnight, and it is in fine health: the appended chart of temperatures is inclined to lower the value of such facts. Likewise, I have submitted the little *Chrysolampis moschitus* and *Eucephela carulea* to the comparatively low temperature of 57° F. for considerable periods at a stretch, without seeing any change in the apparently excellent condition of these diminutive beings. Even so, I have found the *Chrysolampis* torpid at 70° at 10.30 p.m., so we must seek the real explanation of this unusual avian habit elsewhere.

What do we know of the feeding habits of the Trochilidæ? Of migration, of voice, of mental disposition? "Oh, yes," you say, "they do not sing, for they have no vocal muscles; they resemble insects rather than birds in intelligence; we know, for we have read." Yet not a few species certainly boast of vocal powers in keeping with their pigmy persons, and in captivity they show more intelligence

than that over-musical Canary-bird which has had the benefit of man's instruction for countless generations.

How generally known is it that Humming-Birds are found in Canada during the warmer months? Not one species, nor even two, but no less than four. Even the tiny *Stellula calliope* breeds in the Rockies of British Columbia round about latitude 60° N., a fact only recently made known. Yet most of us expressed incredulity on being told that merely *one* species travels up the west coast and another up the east in summer, as far as Alaska and Nova Scotia respectively. Who knows whether more do not breed in the mountains of the North-west Pacific Coast? And at the other end of the continent what of those seen by Captain King flying in a snowstorm round the fuscias of Tierra del Fuego? Despite all this, they will always be considered by most of us as a tropical family.

Now many years have passed since Hudson's death, and there remains much to be learnt of the mysteries of the Trochilidæ; nay, I have no doubt they will keep us in speculative excitement for many and many years to come.

Although the little creatures may be suspected of being hardier than many of us would credit, it is earnestly to be hoped that they will not be kept in captivity by those who are unwilling or unable to spend a great deal of time with them. If they can stand some cold, there still remain a hundred and one causes for sudden decline. And, above all, the keeper of Humming-Birds should be one who has cultivated a real understanding of the conditions governing the wild state of the family as a whole.

BOURKE'S PARRAKEETS

By GERALD MARTINDALE

The article in the May issue of the AVICULTURAL MAGAZINE on Bourke's Parrakeets by Mr. Boosey was of particular interest to me, as in many respects his experience in breeding these birds is different from my own, and therefore it may interest some of our members to hear my experience.

The well-known authority on foreign birds, Captain Rattigan, came into possession of a pair of young Bourke's freshly imported, but owing to ill-health Captain Rattigan had to give up all his birds for a time and place himself in the hands of a London specialist. He offered the young Bourke's to an eminent aviculturist, who, however, refused the offer, claiming the hen had a broken wing. Captain Rattigan maintained that it was a strain and not a fracture and that the bird would be flying again in a short while. However, his offer was refused on the ground that the hen would be very unlikely to breed successfully.

Captain Rattigan then suggested that I should take the birds, as my aviary is a large one. As I had never possessed any Parrakeets and had only a knowledge of Budgerigars, I was rather afraid of the responsibility of the care of such valuable birds, especially as I had read of their liability to crack their skulls, flying up against the wire of the flight or against the ceiling of the bird-house. To place taut string netting across a flight 30 feet by 24 feet we agreed was out of the question, so we decided to let them take their chances. The hen, at first, could only manage to reach the perch in the large cage I put them in, but after a while, being given her complete liberty, she flew better and now flies as well as the cock.

The first year the Bourke's did not breed but, in February of the following year, I placed a wooden box, 12 in. \times 6 in. \times 6 in., with a block of peat in the bottom and very soon the hen took to the nest. On 24th April she came off the nest and had a tremendous bath in a large flower-pot saucer. I seized the opportunity to examine the nest. Three little lumps of white down, that resembled white mould, turned out to be chicks, ranging from three to six days old. The youngest died the first week. The remaining two were successfully reared and again the hen went to nest and raised three more. When these were flying, the hen began to lay again, but I decided to remove the nest-box for that year. This year the hen has raised her first nest and is hatching her second brood at the time of writing. Of course, individual Bourke's differ in constitution and tastes. Our Bourke's would never touch oats, but were very fond of chickweed and groundsel, and they both seemed to like the heads of daisies. *Heat* I have never had in the house and, although my pond in the garden the last two

winters had 6 inches of ice on it, the drinking water in the bird-house has never frozen, the thermometer never going lower than 35°; this is on account of the walls of the bird-house being double and covered with rubberoid outside, and the roof being thatched over corrugated iron and matchboarded inside. The front of the house faces south and has an entrance under the eaves of the roof about one foot high, which runs along the entire length of the house; this is left open all the year round, and the Bourke's can fly in and out as they desire, although always driven in before sunset. The hen has never been eggbound, neither have they ever dashed themselves against the wire, this no doubt on account of the flight being so high—12 feet. Our birds delight in bathing and the young Bourke's eat a quantity of groundsel. As was mentioned before, we are careful to drive the birds in about sundown, as they seem very stupid when the light is failing; and, when the light has gone, it is a hopeless proposition to induce them to enter the house.

I should consider, judging from our own pair, that Bourke's are some of the very easiest birds to breed one could hope for, providing of course they have a large flight to ensure plenty of wing exercise and a house unaffected by changes of our uncertain climate. They are exceedingly small eaters and I would not hesitate to say that a dozen Bourke's would not eat as much seed as one pair of Budgerigars. It is essential to have a large flight if one wants to see the Bourke's at their best, for they have a wonderfully pretty and varied flight. They sail out of the house very much resembling the flight of a Partridge and, when chasing each other or being chased by the Budgerigars, their flight is really amazing, the marvellously quick swoops and quick change of direction makes one hold one's breath in the fear they will crash. To see Bourke's in a shower of rain is a sight to remember, their contortions in endeavouring to get the rain to all their parts almost persuade one the birds are having a fit; first one wing is lifted as they lay on their side, and then the other; the tail is then elevated over their heads, in fact, I have more than once seen them somersault off a branch in their excited exertions. I have bred Budgerigars for over ten years and find them much more trouble to breed than Bourke's.

The cock evidently does not come into the full glory of his plumage until two years of age, and therefore anyone seeing a young Bourke is apt to be slightly disappointed after reading the glowing descriptions of their beauty, but once they have reached their maturity they are really most lovely birds. When the young birds first leave the nest and fly out into the flight they look rather like little brown saints, for the white fluff of babyhood makes a sort of halo round their heads. My entire flight is entirely covered with grass, mostly rye, which is mown in the autumn, and the Bourke's enjoy running through the grass. I attribute our success in breeding these birds to: firstly, a very healthy locality; secondly, to a tight well-built house that keeps an even temperature; and thirdly, to a large and high flight where the birds can fly properly and have plenty of room to turn, swoop, and soar. Given these three things, I think anyone with the minimum of knowledge of birds could successfully breed them.

P.S.—Recently I have been giving the Bourke's spinach beet, which they greedily devoured without any hesitation.

SOME REMINISCENCES OF A COLLECTOR

By WALTER GOODFELLOW

(Continued from page 190)

The outbreak of war found me on my second trip to Ecuador (for live birds this time) and just making the final preparations to leave for home, but this was impossible under the circumstances, so I had to remain there until the middle of the next year by which time the seas were free again.

I had made a wonderful collection of birds. Tanagers formed the greater part, and such a display of colour it would be hard to beat. Travelling boxes are not the best accommodation in which to keep birds for any length of time and, as I was unable to provide anything better until some months later when I had a house to myself, many of them died and I had to return to the forests to renew part of the

collection. Some species, especially those from the Amazonian side of the Andes, were for various reasons not replaced. At that time sailings were irregular and ships few and far between, with usually only a few days' notice, besides which, companies did not care to carry live stock in war time; so when an opportunity came to leave I had to hurry off at once without being able to make all the preparations I should have liked.

Among the birds not replaced were a few worth special mention as they still have not been brought here alive. One was a Vulturine Parrot (*Geepsittacus vulturinus*), which I had had for many months and was very tame. I had got it from the Indians who had, no doubt, reared it by hand from the nest as they do most of their parrots. This bird must not be confused with Pesquet's Vulture-headed Parrot (*Dasyptilus*) from New Guinea, a very much larger bird, of which a fair number have been imported, and which in its habits more resembles a Lory. The former is a medium-sized Parrot of rich greens, a blackish head with white markings, and orange shoulders gives a rough description of it. Mine was not in the least noisy, and was very intelligent. I expect it is rare in Ecuador as I never met with it in the forests on either of my visits.

Another was the Laminated Mountain Toucan (*Andigena laminirostris*) found high up on the western side of the Andes. The few members of this beautiful and uncommonly coloured genus all come from high altitudes, some from as high as 11,500 feet and have breasts of pale greyish blue. In *laminirostris* the upper mandible looks as if the outer surface has been peeled off, leaving only a semi-detached piece on either side at the base. Its local name is "Palengo".

A third very curious bird was the Toucan-like Barbet (*Tetragonops rhanphastinus*). I had two of these, which are very different in shape and appearance to any of the Barbets of the old world; and, in its colours and the arrangement of them, corresponds almost exactly to the Laminated Toucan, being olive, blue grey, black, white, scarlet, and yellow, and has a bulky-looking head. The bill is not in the least like a Toucan's, as it is very short and thick with long hard bristles at the base. It inhabits the same locality as the Toucan, and is usually met with in small parties of four or five high up in the trees, feeding

entirely on fruit. I never once heard mine make any sound at all. They were steady cage birds from the first, and quickly settled down. The Quichua Indians call them "Yumbos", which is also their name for the forest-dwelling Indians.

Of the birds I lost, perhaps the one I prized the most of all was a single example of the White-capped Tanager (*Sericossypha elbocristata*), a bird as large as a Thrush. Except for the cap and upper breast, it is entirely black with a satin-like gloss. The breast is shining crimson, and the top of the head pure white of a velvet-like texture, altogether making a striking-looking bird. The female is only a trifle less beautiful, the red being more of a claret shade, and not so extensive, and the cap of a less pure white. In any case, they are rare and come only from the Amazonian side of the Andes at about 7,000 feet. Although I spent two months in the locality where I caught my male, I only twice saw a small flock of five or six, and both within a few days of one another, so it may have been one and the same. The Quichuas do not know this bird, and had never seen it. I think I lost mine, after having had it several months, through eating a fruit something like a large elderberry, which was sold in the Quito market. All the birds were passionately fond of it, but on some it had a very intoxicating effect. A few died through it, but others recovered after the effects had worn off, yet all the small Tanagers eat it with impunity. I think this also caused the death of the Barbets.

The last bird I must mention was the Coroneted Manakin (*Masius coronulatus*). I had three of these and the first died several months before the others; the last one at sea. It is far more active and graceful than the other species which have been over here. It is intensely black, with the under side of the wings primrose yellow. The crown is also the same colour, and ends on the nape in tiny stiff scale-like brown feathers, while those on the forehead are compressed into a slight crest. A line of yellow down the throat widens into a patch of the same on the breast. Altogether an exquisite little bird. The legs, which are rather longer than those of most Manakins, and the feet are red. I have forgotten the Quichua name for it, but it comes from the Western Andes. This bird also eats the berries I mentioned, without any ill effects.

Ecuador is not an easy country for the collector as the inhabitants know nothing of bird catching. If they would only climb trees it would be a great help in setting the nets, but whenever I suggested it I was invariably asked if I thought they were monkeys. The best tree climbers I have met with anywhere are the Dyaks of Borneo, who will tackle anything and who, with their superb physique, far less resemble monkeys.

The lowlands of the Pacific coast are exceedingly unhealthy, and it would be very difficult indeed to work upwards through the forests from there; besides all the best Tanagers come from the intermediate and higher altitudes, and away from the coast few inhabitants are met with until the central highlands are reached. The plan I adopted was to make Quito, which is over 9,000 feet up, my base and work over the tops of the western and eastern ranges from there. But here again are difficulties as high passes have to be crossed wherever one goes. That over the Eastern Cordillera at 16,500 feet is more often than not under snow, with treacherous bogs on either side into which a man would sink, without a good local guide. I have crossed this pass five times and never lost my fear of it, but the last time was the only one when I had livestock with me. On that occasion when we got to the actual foot of the pass, we rested for a while in a turf hovel, and here still further covered the cages with every article of clothing we could spare, almost to suffocation, for at times the wind on the top is so strong it tears the clothing on your back. I had some tame Parrots with me and these I put inside my shirt, while my companion filled his up with Marmozets. Once over, and below the snow and slush, we rested in a small sheltered gully to unload ourselves of livestock, and had not lost one. Here, in the warmer sunshine we fed and watered the birds. That night, still in the cold, we had to sleep in a ruined turf hut with the wind whistling through chinks in the walls.

These high altitudes above the bush zone are called "paramos" (wilderness) and are bleak and forbidding except on sunny days. Yet some species of Humming Birds dwell there, feeding on small Alpine flowers. When camping on Pichincha above Quito at 15,000 feet, several times at the close of day I saw the small Puff-leg (*Eriocnemis*

nigrivestis) fly past the camp in a snowstorm evidently to sleep among the crags which form part of the rim of the crater above. This species is black with a sapphire blue throat and under tail-coverts, and white down puffs on the legs. On sunny days at the same camp I collected two other species of the same genus, *E. luciani* and *E. mosquera*, but usually these two are found on the bushes lower down. Another exquisite species also up there is *Oreotrochilus pichinchæ*, a good sized bird with a purple blue head and a white breast. This and *O. chimborazo* of course take their names from the mountains they inhabit, but where they overlap they breed together, the offspring being a mixture of the two. Lord Rothschild had a fine series of such in his collection. Pichincha is, or was, a veritable paradise for Humming Birds, but I fear by now the bird shooters from Quito have enormously reduced their numbers, some kinds even to extinction. The camp I am writing about was on the eastern side and, between that and Quito, many more than a dozen different species were to be met with, feeding on the flowering bushes which cover the slopes. Some are permanent residents while others come only at certain seasons. Some years only a few of some kinds appear, or none at all. Where they migrate to has never yet been discovered, doubtless to the slopes of some of the other great mountains in that region as yet unfrequented by man. The species common to bush ranges of the Andes are very few indeed, or have marked differences. Even on Pichincha a species is confined to one side only, as the vegetation is entirely different on the eastern and western sides. It seems to me that with few exceptions the mountain Humming Birds are far more beautiful, and have more eccentric forms than those from the hot lowlands. These are far too numerous to mention more than a few. Among the former are all the White Puff-legs and one with black puffs. These are very conspicuous even when the birds are at rest, but when in flight and seen from behind, they look like a snow-white pad on each side of the tail. Then you have the real long tails (train bearers) like *Lesbia victoria* so common in all the gardens of Quito, and *L. gouldi gracilis*, while a little lower down in the western range is *Cyanolesbia gorgo* with a long broad peacock-blue tail, and on the eastern at a corresponding altitude *C. mocoa* with an emerald green one. The Swordbill (*Docimastes ensiferus*) has a bill quite

not require so much care in the way of special heating. Anyone with only a small conservatory could make an equally fine show, and at a comparatively small cost. I have had no experience with Hummers in captivity, and from what I had seen of their behaviour in a wild state, I never thought it would be possible to keep them together, but the Zoo has proved they can be so kept.

The first time I went to Ecuador to collect skins, I paid special attention to Humming Birds, with the result that in Northern Ecuador alone I collected about one hundred and fifty species including several new ones. The first I saw alive were on the little Dutch island of Curaçoa in the West Indies, and were feeding on some bushes in front of the post office. I was standing within two or three feet and could easily have caught them in a butterfly net; indeed, later on in South America I often did. Most people associate them solely with tropical forests and beautiful flowers as I once did, so it came almost as a shock to see them sitting prosaically on the telegraph wires along dusty roads, or high up in the cold on misty mountain sides. They often sit inactive for long stretches at a time, as many may have noticed at the Zoo. Some are very crepuscular and are feeding when it is almost too dark to see them. Perhaps the smallest of all, but with a name longer than itself, *Chatocercus bombus*, is no larger than a humble-bee, and was found feeding on the flowers of the coffee bushes at Santo Domingo in Ecuador, in the company of hawk-moths, when it was too dusk to distinguish between them. I remember on more than one occasion when I was skinning birds in Quito, *Petasophora iolata* flew in the room and, hovering at the edge of the table by my elbow, pulled at the cotton wool I was using to built a nest by the window. These same birds were often about the rooms searching for spiders near the ceilings.

At present, I think most people are only attracted by their diminutive size; but the time, no doubt, will come when the larger kinds will be equally appreciated and the more curious and beautiful ones desired.

It is just possible that some of the high mountain Hummers might suffer when brought down to the coast, but once at sea they should be all right. The only high-mountain birds which died with me were the

Red-crested Cotingas (*Heliocera rubrocristata*), of which I had seven but these have such exceptionally thick plumage, are gluttonous feeders, and consequently become very fat. Another time I would strictly diet them. The beautiful Scarlet-bellied Tanager (*Pacilothraupis lunulatus*) from the same altitude, 12,000 feet, all lived and arrived here safely.

(To be continued.)

EARED PHEASANTS

By HANS STEFANI (Neuss, Germany).

Amongst all the kinds of pheasants hitherto known, the Eared Pheasants or Crossoptilons show the greatest tameness and familiarity towards human beings. After a short period of training they can be kept in the open without any hesitation, if their owner has a fenced-in garden at disposal which is not too small. To begin with, for reasons of safety, it would be desirable to cut the wing feathers of *one* wing. However, when they have become familiarized with the local conditions, and when, after moulting, the cut wing feathers grow again, it is not to be feared that they will fly away, but of course in stating this it is assumed that they will not be chased by dogs.

The Eared Pheasant quickly gets to know his attendant, and follows him like a dog, if he is trained by little bits of food being given him from time to time. Strangers, but also many persons that he has got to dislike in his daily intercourse, the cock especially will attack by pecking severely with his beak. In this connection it is often amusing to observe how the very appearance of such a person leads the Eared Pheasant cock to run up quickly, even from a considerable distance, in order to drive the person whom he regards as an interloper out of his reach.

Both sexes are of the same colour. The hen can only be distinguished from the cock by the absence of the spur. The cock, however, only grows the spur during the second year of his life, so that in younger



EARED PHEASANTS AT LIBERTY IN A GARDEN.

birds it is not possible to distinguish the sexes with certainty. Eared Pheasants are monogamous. In captivity they lay from 15 to 30 eggs. In the wild state, on the other hand, they are said to lay only about eight eggs. The laying period begins in April. Every second day, but at the beginning only every third day, the hen lays one egg, which is light greenish-grey.

In captivity they do not often hatch their own eggs; it is generally necessary to make use of broody hens as fosters.

The chickens grow uncommonly rapidly, producing the beautiful feathers of the adults in the autumn of the first year of their lives, that is, at the age of a few months, and after that they can scarcely be distinguished from the old birds. No other kinds of pheasant grows so rapidly.

Of the three species of *Crossoptilon*, the Brown, the Blue, and the White, only the first mentioned is comparatively frequently found with us in captivity. It bears the scientific name of *Crossoptilon manchuricum*, apparently because it is not found in Manchuria! Indeed, its home is the most southern part of Mongolia. According to Beebe (*Monograph of the Pheasants*) it is found to the west of Peking, in the district traversed by the Hoangho, which are for the most part very wild. It is therefore not sensitive to the influences of weather, and can easily bear even strenuous cold.

The Brown Eared Pheasant, or Manchurian *Crossoptilon*, is not suitable for small enclosures. In such he almost always shows a vice which completely destroys his beauty. In order to pass his time he for the most part becomes a feather-eater; one bird bites off the beautiful tail feathers of its companion, so that the Pheasants, in such a mutilated condition, with their tails not unlike brushes, no longer have any claim to beauty. It is quite different, however, when they are at liberty and where a large garden is at their disposal. There they have other occupations, and also of course much more varied food, because, although they are for the most part herbivorous, they also do not despise insects and worms. When kept in this way they do not adopt the vice of eating feathers, and they always appear in their full beauty. Also when kept in freedom they enter into much more intimate relations with their keeper than if they are compelled to pass a miserable

existence in small enclosures. They are the tamest of all the Pheasants, and are beautiful ornaments to large gardens. They do not scratch, but they do, with their beaks, search the ground for anything edible ; but the slight amount of damage which they do in this way is scarcely perceptible in a big garden.

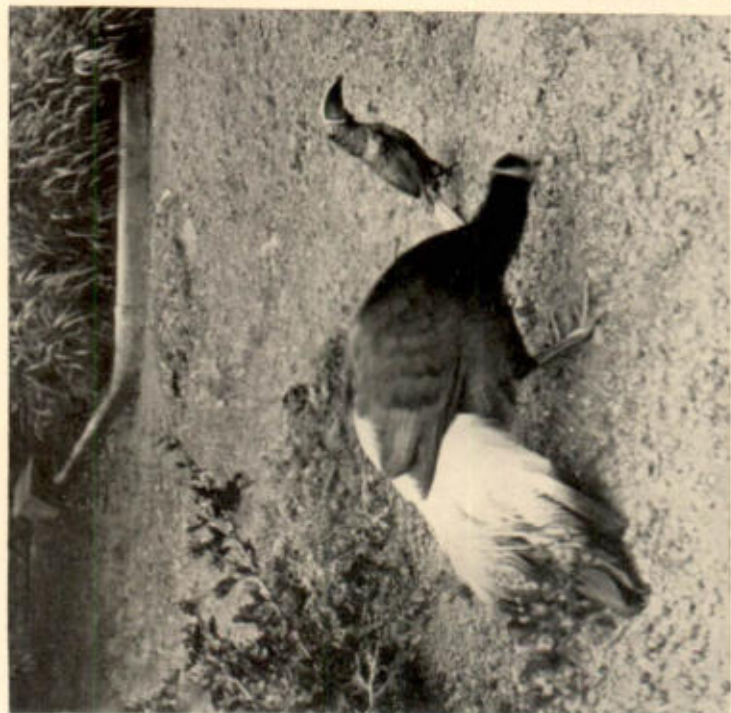
The trained glance of the experienced attendant can draw certain conclusions with regard to the sex in the case of the Brown Crossoptilon, even when they are young. The fact is that the hen for the most part holds her wings more carelessly than the cock, who is in the habit of carrying his wings a little higher, so that in his case the white area on the back appears narrower than with the hen. There is also a difference in size, the cock being slightly the larger and he has a somewhat broader head than the hen. All these features, however, do not guarantee against wrong conclusions, the only sure sign of the cock being the spur, but this is missing in his youth.

Crossoptilon auritum, the Blue Eared Pheasant, is one of the greatest rarities among Pheasants. Its original home is in the province of Kansu in Central China, and the easterly part of Tibet. It only breeds in a limited way ; in a free wild life broods of only six or seven chickens are observed, of which, of course, again only a small proportion escapes all dangers and attains the age of reproduction. Its greatest enemy, however, is man, because the natives are always after him, on account of his tail feathers being used as ornaments for the helmets of high Chinese officers. As only the four middle feathers can be made use of in this way, the bird, in consequence of being constantly hunted, has already become a rarity even in its own homeland. It is unfortunately only too likely that it will be exterminated in a not far distant future.

But the difficulty of obtaining this bird is not easily overcome ; its home has neither navigable waterways nor railways. As the only means of conveyance, there is the caravan journey on the shoulders of coolies during which the birds, newly caught, have to be conveyed over distances of more than 1,000 km. before a ship or a railway receives them and carries them to a Chinese port. For months they are exposed to the strain of a caravan journey, shut up in small carrying-baskets, which render any movement of the birds impossible, and transmits



BLUE EARED PHEASANTS.



THE BROWN OR MANCHURIAN EARED PHEASANT.

to them every jerk of the carriers; fed in a defective way and contrary to their nature, exposed to the alternations of heat and cold, exhausted and weakened, only a portion reach their preliminary goal, a Chinese port, alive. There they first of all require to be looked after for weeks in order to regain some strength, and being reinvigorated, to start on the second part of their journey, a sea voyage of almost 20,000 km., which brings them to a French port, from where, finally, after a further railway journey of several days, they reach their final destination, the enclosure of an aviculturist. The danger that after such enormous strain, they carry in them a disease germ and soon succumb to it, is of course very great, and one can only breathe freely and call his birds one's own, if they are still safe and sound one or two months after their arrival.

The Blue Crossoptilon presumably reached Europe for the first time alive a few years ago. In the year 1929 a French fancier imported twenty of these birds, among which, however, there was only one single hen, which unfortunately, a few weeks after its arrival on European soil, perished. Therefore only cocks were left, which were used for crossing with Brown Crossoptilons. Unfortunately, the resulting hybrids were then quite falsely offered as Blue Eared Pheasants, so that we shall soon have similar unsatisfactory conditions to record with the Blue Crossoptilon as have existed for about eighty years through the crossing of Amherst and Gold Pheasants. As is known, Lady Amherst, a hundred years ago, imported into Europe two cocks of this species of Pheasant which were named after her. Some decades later also, first of all, only cocks arrived here, which, in consequence of the lack of hens of the same breed, were crossed with the closely allied Gold Pheasants, so that nowadays, unfortunately, we have far more of the crossbreed than pure-bred Amherst Pheasants.

The Blue \times Brown hybrids offered as Blues are, however, easily recognizable. They have not the clear colour of the blue birds, but a blue-black, which appears of a dirty colour. Anyone who is acquainted with pure-bred Blue Crossoptilon will not confuse the blue-brown hybrids with them.

The Blue Crossoptilon is quite differently marked to the Brown. In the case of the blue species the body and also the back, in its whole

length, is uniform blue, as well as the upper part of the tail; only on the two sides of the lower part of the tail there is a white speculum. In the Brown Crossoptilon, on the other hand, the rear part of the back and the upper part of the tail are almost white. These light-coloured parts of the body are entirely absent in the case of the Blue species.

The same careless holding of the wings which was mentioned in the case of the Brown Crossoptilon as a special feature is not shown by the hen of the Blue. On the other hand, with her the blue colouring is somewhat lighter than in the case of the cock, and the carriage of the Blue cock is somewhat prouder, more upright, whilst the hen is in the habit of carrying herself more horizontally. But whether these features are generally applicable or are only a peculiarity of the hen observed by me remains an open question. As there is only this single hen in Europe, comparative observations could, of course, not be carried through any further. It is only the spur of the cock, in this species also, which is a certain indication as to the sex. This is absent in the hen.

A pure-bred pair of Blue Eared Pheasants, cock and hen, imported directly from China is, however, in the possession of a German aviculturist. But unfortunately, this is the only pure-bred pair at present in Europe. But as both birds, in consequence of the present unrest in China, took nearly six months on their voyage from their homeland (Kansu) to Europe, and stood it in good condition, and have meanwhile fully become accustomed to their new home, it is to be assumed that in the near future really pure-bred Blue Crossoptilons will be bred in Europe. The egg is light greyish-brown.

The first of the pictures shows Brown and the second one a pair of Blue Eared Pheasants. It is true that the brown and blue colours cannot be recognized in the pictures, but on the other hand the difference in the distribution of the white colour of the two species is very clear.

Crossoptilon tibetanus, the White Crossoptilon, is probably at the present time not represented with us in captivity. It came to Europe, however, some forty years ago. The Zoological Gardens of London and Berlin possessed it. In the Berlin Zoo some eggs were also laid,

but chickens were not hatched. Meanwhile this beautiful bird has unfortunately died out again in Europe. South-Eastern Tibet is its home. The northern limit of its area of distribution touches the southern limit of the Blue Crossoptilon, so that hybrids occur between these two species in nature. The celebrated English investigator, Elliott, regarded these as a distinct species, and mentions them in his work, *Monograph of the Phasianidae* as *Crossoptilon drouynii*. Later it turned out, however, that they were hybrids between the Blue and the White species, which occur there occasionally in the wild condition in the areas of distribution where the two touch each other.

It is to be hoped that the introduction of the White Eared Pheasant into Europe will, in the near future, be crowned with success again. We should then have at our disposal all the three species of that group of ornamental Pheasants which, through their very remarkable tameness and familiarity towards human beings, appear to be likely to give us as much pleasure as tame poultry-yard and garden birds of peculiar beauty, as Peacocks have already done for centuries past.

MR. SHAW MAYER'S COLLECTION

Mr. Shaw Mayer reached London early in July from his latest collecting trip in North-East New Guinea, and, as usual, brought home a number of rare and beautiful birds, many of which had not before been imported alive. They were from the Kratke Mountains and New Britain.

There were three adult males, one adult female, and several immature Prince Rudolf's Bird of Paradise (*Paradisornis rudolfi*), three males and two females of the Lesser Superb Bird of Paradise (*Lophorhina superba minor*), one male *Drepanornis albertisi cervinicauda*.

Of Parrots, there was a pair of White-eared Black-capped Lories (*Lorius hypnochrourus*) from New Britain, thirteen Stella Lories (*Charmosyna stella*), and four examples of the lovely melanistic form of this bird which has been named *Charmosyna atrata*. One pair of the rare Parrot, *Neopsittacus musschenbroeki*, which has the appearance of a Lorikeet; one *Charmosynopsis pallidior*, the form of the Fair Lory found in New Britain. Five Green-winged King Parrots (*Alisterus*

chloropterus). One pair of the rare Pheasant Pigeon (*Otidiphaps cervicalis*), a number of the form of Three-coloured Parrot Finch from New Britain—*Erythrura trichroa goodfellowi*, a number of three species of *Munia*—*M. melana*, *M. spectabilis*, and *M. tristissima*. One male Yellow-breasted Sunbird (*Cyrtostomus frenatus*) and five Duke of York Island Sunbirds (*Hermotimia sericea corinna*).

There was also a Grey-throated Honey-eater (*Xanthobis polygramma*) and a pair of Mountain *Zosterops*, which were disposed of before they were identified.

CORRESPONDENCE, NOTES, ETC.

BREEDING NOTES FROM M. DECOUX

The present breeding season has so far been rather good in spite of the rainy weather. I was *very* successful with my pair of Scaly-breasted Lorikeets which I bought two years ago. They have a couple of young in the nest now, and since last Christmas they have reared five young ones. The following Parrakeets have bred this year, some young being still in the nest: Barrabands, Stanleys, Red-rumps, Crimson-wings, Bauers (one pair had two nests, and three young are still in the box), Swainson's Lorikeets, Mealy Rosellas, Yellow-bellied and Yellow-rumped Parrakeets. The eggs of the Swift Lorikeets were addled.

Among small Finches, the Masked Fire Finches have young ready to leave the nest. I have some hybrid Long-tailed Grass Finch × Bengalese, funny little things with yellow bills which rather take after their father, the Grass Finch. I also bred four hybrids from a *Munia castaneithorax* cock and Bengalese hen, which have just left the nest and look like young Chestnut-breasted Finches. The ordinary species of Australian and African Finches are nesting. I have been particularly successful with Parrot Finches and Bichenos.

The Doves and Quails have not done so well this year. I had a lot of clear eggs from pairs that bred freely last year. I was very unlucky with my Wonga-Wonga Pigeons; the hen died after laying in April and I was unable to get another. Do you know anybody who can help me to pair my odd cock? This species is rather difficult to breed. A pair of young were reared by my old pair two years ago but I have been unable to rear any since.

A. DECOUX.

A NEW PLOVER

I have recently received four specimens of a very elegant Plover, which I believe to be new to aviculture, unless it has been previously exhibited at the Zoological Gardens. It is *Scarciophorus tectus*, and is an African species, ranging from Abyssinia and Somaliland right across the continent to

Senegambia. It is a particularly graceful, slenderly-built bird, rather high on the legs and very slim in the body, but its most noticeable feature—and this is very pronounced—are the feathers of the crown of the head, which form a kind of crest, but instead of standing upright in the manner of a Lapwing's crest, they stretch out beyond the back of the head in a horizontal manner.



Somewhat in this fashion.

I can only compare them, in a miniature way, to the crest or feathers on the top of the head of the Houbara Bustard, or of the Hammerhead Stork. This gives these Plovers an air of great distinction from other closely allied species and, indeed, they are most showy and charming birds. The colour is roughly as follows: Above, sandy-brown; the wing-coverts tipped with white; quills black; rump and tail white; the latter with a broad terminal band of black. Crown of head black, extending down the neck; frontal line white; lores black; sides of neck black, with broad band of white; throat black; breast and under parts white; bill and legs coral pink.

It is certainly one of the most showy of the *Charadriidæ*. All Plovers make delightful aviary birds: they quickly become tame, are fairly hardy when acclimatized, though always delighting in plenty of sun, and are ready to go to nest in suitable aviaries, all of which make them most desirable assets from an avicultural point of view.

G. H. GURNEY.

QUEEN ALEXANDRA PARRAKEETS AND THEIR STRANGE BEHAVIOUR IN CAPTIVITY IN AUSTRALIA

In 1925, ten young Queen Alexandras were taken from nests and hand-reared from somewhere near Oodnadatta in South Australia. It was my good fortune to secure these birds. Two pairs remained in my aviaries, and the remaining three pairs were distributed between three friends.

A very anxious fortnight was spent negotiating for the purchase of these rarities. Word was received that the Alexandras were about. A few weeks later, the wife of the man who had caught these birds came to town. No time was lost in finding out where she was staying, and, paying a visit, I was asked to make an offer, and did so. The next day, the lady went to a friend of mine to see if he was interested. My friend decided to let me negotiate on condition that he had one pair. This was agreed, and the following day I again saw our lady friend and increased my offer. This was accepted, and a wire was sent asking for the birds to be sent down by rail. In due course

the ten birds arrived; the excitement of going to meet the train can be imagined, especially as I had not seen a live specimen. Later, I met the husband, and he informed me that I was very fortunate to get the Parrakeets as he was not at home when the wire arrived, and he intended bringing them down when he came to town. He said if he had been home the birds would not have been sent. Anyway, he must have celebrated the sale, as the cheque was received by him and then lost, and I had to send another cheque.

The second season one pair went to nest, laying five eggs, all of which were fertile. All hatched, but were dead on the following day. The following season another attempt was made with the same result.

Mr. F. P. Kell, who had one of the pairs, was very fortunate in 1928, when his birds nested in a log about 3 feet long, 5 inches in diameter, hanging horizontally, and reared two fine young ones. The next two seasons this pair nested, but allowed the young to die. Later, Mr. Kell disposed of his birds, and I secured his four Alexandras.

Each season mine nested, and they continued to let the young die as soon as hatched. Once an egg was transferred to one of Dr. Hamilton's Red Rumps, but this venture ended in failure.

In 1931 my old pair hatched three young and went on rearing for about three days and then two died, the remaining one was taken away and hand-reared by Mr. W. H. Foglia.

In 1932 the old pair which I secured from Mr. Kell and my old pair both went to nest within a week of each other. They both had four eggs. This time both cocks were removed after the hens commenced sitting. This was a partial success. Mr. Kell's hen hatched three, and reared them for three weeks, and then threw one out. When discovered, it was nearly dead and only lived a couple of hours. The other two were taken away at once and successfully hand-reared.

After the other hen had been sitting a fortnight two of the eggs were removed and given to a Bourke's which had been sitting a week (the Bourke's eggs were removed). This experiment was made in desperation and was a wonderful success, as both eggs were hatched and the young reared until they were independent. I must say I was surprised when the Bourke's continued feeding: I was expecting to have to hand-rear after a fortnight.

The other hen hatched her two eggs and reared the young until a month old and then deserted them. When this was discovered one young was dead; the other one was at once removed and successfully hand-reared. Next season I intend to transfer all the eggs.

S. HARVEY.

CURIOUS BEHAVIOUR OF A BARBARY PARTRIDGE

I would like to bring to the notice of the members of our Society the following occurrence:—

I have in my aviaries a pair of Red-legged Barbary Partridges (*Alectoris petrosa*). Early in April a nest was made, and the hen began to lay. The eggs were laid at the rate of one every four or five days. (On former occasions an egg was laid every three days.) When nine eggs had been laid, and six weeks after the first egg had been laid, the cock began to sit. I did not interfere until three weeks later, when I was surprised to see the cock viciously attacking the hen and mauling her badly. I was just in time to

save her; she was so weak and exhausted that she let me pick her up quite easily although, as a rule, she is not at all tame.

The cock went back to the nest, continued to sit, and eventually hatched every single one of the nine eggs. Since then he has been a model parent, and looks after his brood just as the hen used to do. Some days after I removed the hen I discovered a rotten nest with six eggs, which I have put under a hen, but it is too soon to find out whether these eggs are fertile.

I am rather curious to know whether it is usual in the Partridge family for the cock to take over all responsibility in bringing up the family; or whether what happened in my aviary is an unusual freak.

P. P. DEBONO.

SUCCESSFUL BREEDING OF AUSTRALIAN PARRAKEETS

I have pleasure in reporting a very curious and successful breeding of three pairs of Australian Parrakeets, which commenced laying on 14th April, 1933, each pair laying four eggs, and all commenced serious incubation on Easter Monday, 17th April, 1933, the result being:—

(1) Recently imported pair of Bourke's Parrakeets. Laid four eggs; hatched two; two were infertile. Time, eighteen days. Nest-box: 11 in. x 11 in. x 2 ft. 6 in. high, with about a 3-in. hole near top. The box being filled with earth to within 8 in. of hole. Male bird definitely did not assist in incubation, as suggested in *Green's Reference Book*. Two birds in practically full adult plumage left the nest on 11th June, 1933. They appeared rather wild first day, but second day onwards they became quite steady. Parents fed young almost entirely on soaked bread.

(2) Elegant Grass Parrakeet. Laid four eggs; hatched three; one died in nest about three days old; one egg infertile. Time, about twenty days. The nest used was similar to that used for the Bourke's. Female only incubated. Male bird perched on top, or on perch in front of entrance-hole, practically the whole period. 15th June two young ones popped their heads out of the entrance-hole, but did not leave the nest. They are fully feathered, dark green, their heads are shaped more like Peplars than Elegants. They are in fine condition.

(3) Rock Peplar Parrakeets. This pair of birds, second time in my possession. Laid four eggs; hatched four. Time, about twenty-eight days. 22nd June they were in perfect condition; three-quarters the size of the parents, and in adult plumage, but have not left the nest. I had erected a natural hollow log for these birds, which seemed to me ideal. I also placed an old wooden travelling box on end to stand on in the event of my wishing to inspect the nest. The outcome of this was, the birds took to the dirty old box and laid on the bare wood, incubated and reared her young. This is quite contrary to Lord Tavistock's reference book. The young birds are being fed almost entirely on wet bread.

Since writing the above, the Elegant and Rock Peplar Parrakeets have left the nest. Particulars are as follows:—

Elegant Grass Parrakeets. Left the nest on 24th June.

Rock Peplar Parrakeets. Two left the nest on 26th June, the other two on 27th June. These birds are identical in plumage to the female.

A. J. PATTERSON.

ELECTRIC HEATING

I should be very much obliged to any of my fellow members if they would help me with the following propositions.

I have three aviaries, warmed in the winter with hot water pipes heated by a coke furnace. The electric main runs past my house, so I cannot help thinking that my aviaries might be so much more easily heated by electricity. The question is: what is the best form to use it in? I find the tubular heating is not much good, and I am afraid of ordinary open small stoves, but I cannot help thinking there must be some way of making something to go over those to keep birds out of them and getting too near the heat. I should be very glad to hear other people's experiences in this matter. I also want to know the cause of the failure to rear young birds. I have had numberless young Canaries hatched out to all appearances quite healthy, strong little birds. They have in most cases thrived well until they got to the stage when they are nearly full-fledged, and then they are knocked out of the nest and die. I have reared a few, but nothing like the number hatched. They have egg food, sponge cake, and the usual seeds, and plenty of green food and grit. I should very much appreciate any help in this matter.

MABEL A. KEWLEY.

THE KEA PARROT

In the April number of the AVICULTURAL MAGAZINE you publish a letter on the "Kea and the imported Mynah" (House Mynah). Unfortunately, I have not as yet been able to study the Kea at liberty, although I have seen a number in confinement. But I know several sheep-farmers in the "Kea country", and not one of them has seen a Kea kill or ever attack a sheep.

Some of them "know men who have seen them", and a few frankly admit they believe the whole story a myth. The "supposed" method of attack is for the bird to alight on the animal's back, flap its wing and scratch, thus scaring it. The sheep, of course, races hither and thither and finally drops from sheer exhaustion, and then the Kea is supposed to commit his foul deed—I wonder?

It may interest you to know that the Government bonus on Kea's heads no longer exists, consequently, far fewer are now destroyed.

I cannot quite understand the "sheep farmer" mentioned in your note on Mr. Peacock's letter, when he mentions losses through the "imported foxes and native ravens". There is no such bird as a "native raven" and foxes, strange as it may seem when one considers the number of "pests" that have been introduced, have never reached New Zealand, except as odd specimens for our zoos.

S. D. POTTER.

GAPES

This season I have tried the French preparation called "*Aniodol interne*" for gapes, and have found it most wonderfully quick in its action, and on each occasion it has cured the bird completely. It was first tried on a young English Thrush and a young Blackbird, both of which were cured after only

one dose of the stuff. In May, the day before the Avicultural party here, my Crowned Starling, which has just hatched off young, was found to be coughing very badly. The bird was caught up and given five drops of *Aniodol*, and put back into the aviary. The cough disappeared at once, and she successfully reared her young. In June, a Superb Starling was treated with it, and again at the end of June a White-winged Mynah. Within an hour no signs of gapes were seen. It is a very simple remedy; only five drops of the stuff is poured into the bird's beak with a dropper, and the bird is held in the hand for a couple of minutes to make certain that the drops are swallowed. After the wonderful success I have had with this stuff, I would recommend all bird lovers to keep a bottle of this most useful cure handy.

"*Aniodol interne*" can be bought from Laboratoires de l'*Aniodol*, 3 Rue des Alouettes, Nanterre, Paris, France.

Raptakosaba, 17 Mangrove Lane.

ALFRED EZRA.

TORPIDITY IN THE TROCHILIDÆ

At 10.45 p.m. on 21st June the two Humming Birds, *Eupetomena macroura* and *Chrysolampis moschitus*, were torpid at a temperature of 66° F. Now I have always suspected that this state is *not* induced primarily or necessarily by a low atmospheric temperature. I therefore deliberately exposed the birds to more cool air (by opening an additional window), but left the electric light burning, after moving the birds gently with a stick so that they hung upside-down, like bats, on their respective perches. Within ten minutes the eyes of each were open, and in a very few minutes more one after the other flew to have a feed. *

I think this proves that the torpid state is not necessarily brought on by cold, and that it is probably a natural state of rest—a kind of very deep sleep—provided by Nature in order that the creature's energy may be generated for the astonishingly active life it is to lead on the following day. We are thus forced to speculate on the possibility of hibernation in some members of the family, which—should it be indulged in by them—would be no more extraordinary than in the case of bats. In these latter, spread from the Tropics to more rigorous climes, only those which are exposed to periods of scarcity of food pass any time in a torpid state. Could not the same be the case with the *Trochilus colubris*, *Selasphorus rufus*, *Eustephanes gallentus*, and others, which at certain seasons must sometimes be caught without food in prematurely severe weather before they can have had time to shift their quarters?

When I say that the birds were torpid, I mean that they showed to all appearance no spark of life; they could be moved about and laid out on a table like as many dried skins. But what is, I think, important is that they should not only remain upright on their perches but should be so smooth in feather that they appear to have been struck dead suddenly while asleep without having had time to alter their positions: all evidence to show that it is a natural condition. I have no doubt that it is due to this habit that the Trochilidæ are supposed to need a very high temperature in order to be maintained in health. For my part I have but little hesitation in submitting them to the ordinary atmospheric conditions provided for most foreign birds.

Chart of minimum night temperatures stood without apparent ill-effects in an all-open outdoor aviary by the Humming Bird, *Chrysolampis moschitus* [elatus]

Date	Temp. F.	Remarks
June 23-24	49	} Cold days.
" 24-25	51	
" 25-26	50	
" 26-27	49	
" 27-28	50	
" 28-29	44	
" 29-30	52	
June 30-July 1	47	} Hot days.
July 1-2	58	
" 2-3	52	
" 3-4	57	
" 4-5	52	
" 5-6	56	
" 6-7	53	
" 7-8	55	
" 8-9	57	
" 9-10	55	
" 10-11	53	
" 11-12	51	

The bird has become torpid on several occasions with the thermometer at 63° F.; yet it is often active at 56° F. It has been torpid successively for 17, 15, and 20 hours within four days. I am inclined to attribute this state more to windy weather than to cold. When we consider that in a wild state these small birds would have great difficulty in procuring food either from flowers or in the air during stormy weather, it does not seem very strange that Nature should have devised a plan for preventing them from starving. It remains to be discovered for how long at a stretch they are able to remain in this state of what must be termed "partial hibernation".

I think, moreover, it will one day be proved that the near allies of the Trochilidae (Swifts, Nightjars, and even Colies) have the same power of remaining unconscious for a longer or shorter period.

ANTHONY CHAPLIN.

A HUMMING BIRD'S OUTING

Yesterday (18th July) I was rung up by a gentleman in Cuckfield, about 4 miles away, to say that he had got a Humming Bird which had been about for a day or two, and asking if it was mine and what to feed it on. I went over to see it and found that it was a Humming Bird and that it was greedily sucking up Nestlé's milk from blossoms stuck into the wires of a canary-cage in which it had been put. I, of course, was able to tell the

finder that the owner must be Mr. Chaplin, and he at once took it over to him, and I hear this morning that it is none the worse for its long outing and the recent weather. It is a Swallow-tail (*Eupetomena macroura*), one of the two of this species which Mr. Chaplin obtained when the Zoo got theirs at the beginning of June. It escaped the day it was brought here, which was about 8th June, so that it has been on its own for more than a month in spite of the heavy rain and cold and in that time has not only existed but kept fit, and must also have covered quite a lot of ground in the time, as it has been seen (and sometimes recognized as a Humming Bird), at Bolney, 7 miles away and other places.

Mr. Chaplin promises full details later, but I think it worth while putting on record at once this almost unbelievable (but absolutely proved) adventure of a Humming Bird—a second Balcombe miracle I call it, the first being the same owner's Ruby and Topaz, which has been out-of-doors in a small aviary for about the same time, and that without any worse effects than occasional temporary torpidity.

E. HOPKINSON.

SHAMAS CATCHING FISH

I have just discovered a trait in my Shammas which I cannot recollect having previously seen mentioned in connection with these birds.

Recently I constructed a small rock pool in the outdoor flight of my aviary and installed therein two small minnows, whose presence was almost immediately discovered by the Shammas, which at once started hopping round the edge of the pool, making pecks at the minnows when they came near the edge. I watched for some time, and as the birds were unsuccessful in their efforts I concluded the fish were safe. However, on visiting the flight some hours later I discovered both minnows gone, and in spite of a diligent search round about not a sign could I discover of them, so I can only conclude that the Shammas are better anglers than I gave them credit for. I had previously given several dead minnows to the birds, which they at once pounced on and devoured with evident relish, provided the fish were sufficiently small. I was prompted to do this having remembered reading in a series of articles by Mrs. Hammond in *The Cage Bird Fancy* that any small fish found among the "dried flies" when making up Softbill food should be left in as the birds would eat them. As I have already indicated, however, this is the first time I have known of them being able to provide themselves with "fresh fish".

If you think the foregoing may be of any interest to members of the Avicultural Society, you are at liberty to use it as you think best.

CLEMENT M. LESLIE.

SOME NOTES ON THE PRESENT BREEDING SEASON

In March, 1930, I purchased a pair of Alpine Chough (*Phyrrhocorax graculus*). I think they are a true pair, the hen being the smaller bird. These are in a large aviary, 60 ft. x 35 ft. x 12 ft., in which, in addition to other birds, there are two White Jackdaws, sex uncertain. Last year the Choughs were inclined to go to nest; they tried to build but the Jackdaws, which the

Choughs seemed afraid of, interfered, so nothing came of it. This year the Choughs seemed masters of the Jacks, and successfully built a nest. Just before she began to sit I examined the nest and found in it four Chough's and three Jackdaw's eggs. After the Chough had sat three weeks or so I examined the eggs and found them all to be unfertile.

The Alpine Chough is not included in Dr. Hopkinson's book on birds bred in captivity, and I wonder if this is the first record of it having done so.

I have lost by death this month a Chinese Painted Quail (*Excalfactoria chinensis*), after having laid forty-nine eggs during the season. The Quails are housed in an aviary in which there are about fifty small foreign Finches. The Quails keep to the floor of the sleeping quarters, which is about 15 ft. x 4 ft. They never go into the flight. I put some heather in one corner and they had twelve eggs in the first nest; she left these and made another nest at the other end of the aviary. These twelve eggs my gardener, George, who attends to the birds and is a keen aviculturist, took home and set under a Bantam, but she broke them all. The Quail then laid six more eggs: five of these were put in a Blackbird's nest in the big aviary. These hatched sooner than we expected; three young disappeared and two eggs left in the nest had fully developed young in. The Quail then had a nest of thirteen eggs: twelve of these were put under a Bantam, and she hatched ten but crushed them all to death. The Quail then had a nest of six eggs. These she sat herself and hatched six young. Unfortunately four of these were drowned when 2 days old in a saucer of water. The other two are now fine healthy birds. When the two young were about 4 weeks old the Quail began to lay again, and after laying twelve eggs died. The twelve eggs have been set under a Bantam and better luck is hoped for this time.

I have a Spree Starling, but which of the Sprees it is I do not know. She has a nest of four blue eggs. In the same aviary there are two Purple-backed Starlings and one Red-eyed Glossy Starling; the sex of these I do not know. The Spree is sitting well, but whether the eggs will be fertile or not I cannot say.

D. LOSH THORPE.

SUCCESS WITH FIRE FINCHES AND CORDON BLEUS

I have had two rather delightful successes lately in my indoor bird-room. First I managed to rear a Fire Finch, which left the nest on the 3rd November. This mite was reared to a great extent by electric light! I turned on the light between 5.30 and 6 o'clock, as soon as I saw the parents feeding. One day it was very stormy and the birds were in bed before 3.30 in the afternoon. It was useless lighting up in the evening; they never took the food and only got disturbed. The November baby was a hen, and she and her mother sat together this month and produced between them a baby which left the nest last Saturday. Both hens think it their own and both feed it with the cock!

My joy on Saturday was eclipsed on Sunday by the Cordons bringing out of their nest a baby, too! This I do feel is a feat, as I have been trying for four years to breed Cordons in a room. They had mealworms and ants' eggs, but no gentles until I saw the baby; but they have fed regularly on the food given to the Canaries—hard-boiled egg and biscuit—one teaspoonful of egg to two of thin arrowroot biscuit given at stated intervals, and at 1 o'clock

bread and milk sprinkled with maw. The cock Cordon called out with joy at the bread and milk. I also gave soaked seed. A week before the baby left the nest I found quite a large dead one on the floor. I cannot think how the parents dragged it out of the nest; and I, thinking my hopes were dead, didn't give any ants' eggs, and they only had the Canaries' food, so they can rear on egg food. I read that they could in Butler's book, but until this year my Cordons were never fertile; I think they became fertile from taking the egg regularly from March. The baby spent the first night on the floor, but they urged it until next day they got it on to the branches tied on to the wall, and this evening it is sleeping beside its father. The hen has gone to nest again with four or five eggs. The nest is cleverly hidden, and I only found it by putting another branch on the wall and hearing the cock calling anxiously.

I of course gave lettuce, seeding grass, shepherd's purse in seed, all at stated intervals from 6 o'clock. I left egg food at night for the first feed, and I kept to regular hours all day.

CHRISTINE IRVINE.

AN UNPRECEDENTED TRAGEDY

In one of my large aviaries I had a pair of Indian Ring-necked Parrakeets nesting. A normal coloured green cock mated to a lutino hen. Two fine young ones were hatched, and were practically reared, and would have left the nest in a day or two, when an awful disaster befel them. One afternoon some bees were seen near the aviary, and on our looking into the nest-box we were horrified to see that a huge swarm of bees had settled on the two unfortunate young ones and had smothered them. We were lucky to save the parents by shutting them up, but it took us two days to clear the bees from the nest-box. This is a sad experience I have never had before, and thought it would interest members to hear of it. I am sorry to have lost two beautiful young lutino-bred Parrakeets, which would have most probably bred some lutinos in time, and in such an extraordinary way.

ALFRED EZRA.

THE CALL OF THE MALEO

There cannot be many people who have heard the call of the Maleo (*Megacephalon maleo*), either in confinement or, probably, even in a wild state, unless it may be a few travellers in its native islands, but it is of such a remarkable nature that I think it is worthy of putting on record. I have never heard my bird, which I have had for three years, utter a sound until yesterday, when I suddenly heard the most extraordinary noise coming from its aviary and, hastily turning to discover the cause and the producer, was able to see the whole performance. The Maleo was half sitting, in a crouching position in the centre of its enclosure, with neck stretched out and head lowered, the wings were also partially extended, the call was a very

loud, deep resonant, bubbling note, lasting for several seconds, and repeated at short intervals of about three minutes for quite a considerable time. It is distinctly musical, and might be likened to a loud bass tremolo on a violoncello, but with a clear treble inflexion as well. In a wild state it would probably be audible at a considerable distance. The bird appeared to find it an effort to make it.

G. H. GURNEY.

SUCCESSFUL REARING OF A YOUNG DERBYAN PARRAKEET

Psittacula derbyana, of the wooded valleys of the Upper Yangtse in Western China, is caught by the Chinese on walnut trees in nooses, being particularly fond of walnuts. The coloured picture which appeared in the Magazine of 1926 (p. 145) gives a good idea of the bird and its colour. It is most destructive in an aviary. Time after time my aviaries have had to be repaired when a good deal of the wire netting had been destroyed by their strong beaks. In 1929 Mr. Hampe, one of our members, sent me a few of these beautiful birds from Shanghai. Although I have had them for over four years, they never attempted to nest till this year. They were given the choice of three nests, two of which were in the flight of the aviary and the third inside the aviary shelter. The inside one was chosen, and the first egg laid on 23rd April. Only two eggs were laid. All the peat moss and sawdust that I had put into the nest-box was thrown out. One young one was hatched on the 24th May, the other egg being unfertile. The parents were devoted to their young, and the old birds flew at one viciously each time one tried to enter the aviary. When the young one was about three weeks old the parents got quite tame, and did not mind how often one entered the aviary and looked at their offspring. The young bird left the nest on 14th July—a fine healthy, and strong bird. It resembles the male bird, but is rather dull in colour. The beak is red at present. I believe this is the first time this Parrakeet has been reared in captivity in Europe.

ALFRED EZRA.



John H. C. Taylor & Son, 124, Strand, London.

Masked Grassfinch
Poephila personata.

Upper figure ♀, centre ♂, lower juv.

(From living specimens taken in Northern Territory, in collection of the late G.A. Heumann).

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THE MASKED GRASSFINCH

(*Poëphila personata*)

By EDWARD J. BOOSEY

The Masked Grassfinch—an inhabitant of Australia—is about the same size and shape as a Long-tailed Grassfinch, but, though equally slim, its general appearance is rather heavier owing to its larger beak.

Its plumage is an attractive blend of warm golden brown, a paler café-au-lait colour, black and white, with a bright yellow beak.

The sexes are difficult enough to distinguish, but, if anything, the various black areas in the plumage are less extensive in the hen; nor is her back of quite such a rich golden brown, and in some cases, she is just perceptibly the smaller bird of the two.

With all birds, where the cock and hen are so alike as in this case, it is a difficult and dangerous matter to lay down any hard and fast rule for sexing them. I say "dangerous" because of the ensuing chorus of disagreement to which one invariably exposes oneself. One has only to state that the hen of a particular species is smaller than her mate for a number of people instantly to discover that judging by *their* pair, the *hen* is quite obviously *much* the larger bird of the two!

Similarly, one only has, tentatively, to venture the opinion that

a particular bird (and even one that is notoriously "difficult") is a rather shy breeder, for someone to rush forward with the startling news that, on the contrary, *their* pair behave, and always have behaved, quite like guinea pigs, producing so many young ones that their harassed owner simply doesn't know what to *do* with them! And they are probably right; but only about the particular pair of that species they happen to be fortunate enough to own.

As a boy I possessed a pair of Zebra Finches whose irritating behaviour was such as to justify me in supposing that of all the difficult triumphs of aviculture, none was more unattainable than the successful rearing of a brood of Zebra Finches!

The reason for this diversity of experience is, of course, the infinite variety of behaviour, temperament, size, and colouring to be met with among individual birds of the same species; and if this applies to Finches it is doubly true of the more sensitive Parrots and Parrakeets. It is, therefore, obviously unsafe to generalize, for whereas one pair of birds in a particular aviary will rear large families, to their owner's delight, another pair of the same species will often fail to rear anything at all, though housed in precisely the same type of aviary and even under the same management.

I am now going to be rash enough to assert that here at the Keston Foreign Bird Farm we have found that, though young Masked are reared every year, they cannot be considered quite such easy or prolific breeders as their cousins, the Long-tail. They are by nature much shyer birds, and therefore take considerably longer to settle down in a new environment; in fact, if you want to breed them you would be well advised to put them in your most secluded aviary, otherwise, if they have anything to disturb or distract them, your chances of success will be small.

One point of great importance to remember when dealing with Masked is their rooted dislike, when breeding, to fussy interference on the part of their owners. Some particularly docile pairs there may be who will tolerate a certain amount of nest-inspection, but they are few indeed compared with those that will desert on the slightest provocation.

The more experience I have of bird-breeding, the more certain

I become that the frequent failure—particularly among Finches—to bring up their young ones successfully is due, in almost every case, to their owners' inability to resist the temptation "just to have *one* look in the nest to see how they're getting on". The result is that the parents are given a feeling of insecurity, which is fatal.

It is significant how often a person who has succeeded in rearing a brood of notoriously shy breeders in a large aviary will end an account of the incident with the remark: "And the extraordinary thing was I never even knew they had young ones!"

It is not, of course, extraordinary at all, for it provides the clue to their success.

In a large planted aviary they will build their nests in bushes, but failing that they prefer an open to a closed nest-box. All our Masked Finches are bred here in our own "Keston" wire Finch nests, which seem to suit them admirably.

The eggs are white, and incubation lasts from 14 to 15 days, the young ones remaining in the nest about a month.

One gentleman in California states that they are fond of carrying pieces of charcoal into the nest, presumably in order to keep it clean and sweet. Masked Finches are not among the earliest of breeders and newly imported specimens, particularly, seldom settle down to breed until late in the season.

They should be fed on a mixture of white and brown millet and canary, but the biggest proportion should consist of the latter, since many seem not to care much for ordinary millet. They are, however, very fond of millet spray and green food, such as flowering grass, spinach-beet, etc. Mealworms or other live food should be supplied when they have a brood to feed. The young leave the nest with a lead-coloured beak which gradually changes to yellow.

They can be wintered without heat, provided they have a well-constructed, damp-proof shelter to roost in at night.

SOME REMINISCENCES OF A COLLECTOR

By WALTER GOODFELLOW

(Continued from page 220)

Apart from the difficulties of catching birds, collectors have many other trials to put up with, not the least being from inquisitive people who have no particular interest in birds and only come out of idle curiosity to pass the time away both on shore and more especially at sea. These people ply one with senseless questions and are generally in the way even when they must see you are up to your eyes in work. I am always only too delighted to show my birds to those who really appreciate them, but the others often at times drive me to desperation. I wonder how many times in one part of South America or another, when I have been feeding by hand young birds, or even cleaning out and feeding the others, onlookers have exclaimed "Que paciencia!" So by now I always know what is coming. Once, when going up the Ecuadorian coast, terribly worried by the inconvenient location for the cages and trying wind, and hurrying to get finished before the sudden tropical darkness overtook me, several ladies were plying me with question after question as to the name of this bird and that, till at last I asked them if they were not ashamed to ask me, a foreigner, the names of the birds of their own country. I added that almost any intelligent schoolboy in mine could have told them. Perhaps not strictly true, and less I think now than I did at the time, because lately I have hardly once been to the Zoo without being struck by the ignorance displayed by the general public on matters of natural history; adults as well as children. The remarks one overhears and the myths perpetuated one thought long dead!

The railway station for Quito is quite outside the city, and it had been a great work to get the cages and baggage down to it through all the steep cobble-paved streets from where I lived, when I moved to the coast. When at last they were all safely deposited on the platform quite a crowd of well-dressed people rushed them under my very nose and began tearing off the covers, which had all been so carefully tacked down, and even turning the cages on their backs the better to see their contents. Asiatic coolies are equally aggravating when handling live-

stock. In spite of all your instructions, more often than not immediately afterwards, when lifting the cages they turn them upside-down. Perhaps one of the greatest worries to contend with is panic at night among the birds, which sometimes occurs night after night. It is usually impossible to do anything, for a light taken among them only adds to it and disturbs still more. It sometimes sounds as if not one will be alive in the morning. At such times sleep for me is quite out of the question for the rest of the night. It is so seldom a cause can be found. Sometimes it is due to rats or other vermin, and occasionally I have been troubled by snakes. In the Formosan forests minks were my bugbears and came night after night to my Mikado Pheasants, and of all birds in a panic pheasants most easily damage themselves. In spite of various kinds of traps I only once succeeded in catching one, and it turned out to be an entirely new species.

The journey to the coast from Quito takes the best part of two days, so I engaged a luggage-van and travelled in it with the birds. The night is spent at Riobamba, where all the passengers alight and join the train again in the morning; meanwhile the train goes back a few miles up the line to water, where it stops the night, as it seems, under the very snows of Chimborazo. The highest part of the line is crossed about here at 12,000 feet. I slept in the van as the doors had to be kept open a little way for ventilation, and bitterly cold it was; but by covering the cages with tent-flies, etc., I did not lose one bird. The marmosets and a squirrel monkey I had with me under my blankets on the floor, and much squabbling there was to get the best places before they finally settled down.

After passing through the Panama Canal with the collection we encountered one night a very sudden storm. On the Royal Mail boat they had given me the second-class smoking room for my birds and, it being hot, the windows had been left open. Many of the cages were thrown down in wild confusion before I could get there, and a few birds were killed and two or three escaped and were not seen again; but in spite of all this I managed to land in London nearly forty species of tanagers almost, if not all, new to aviculture, ranging in size from the big Hooded Tanagers, *Ruthraupis*, to the small Violet group, *Euphonia*.

Among these tanagers two species changed their colour in

a remarkable manner after they had moulted in captivity—one entirely and the other partially—so it is just as well to place it on record here. Rieffer's Grass-green Tanager, *Psittospiza riefferi*, is a robustly built bird of a crude Brunswick-green, the colour garden seats are often painted. The shoulders are pale emerald and very glossy; the cheeks and thighs bright chestnut; bill, legs, and feet coral red. After they had moulted the entire green parts became a beautiful blue; so when they arrived over here some were still green and others blue. I gave a skin of the latter to the Natural History Museum, and when the late Mr. Ogilvie Grant saw it he said if anyone had sent it in he would have had no hesitation in naming it a new species.

The other bird was the Black-chinned Mountain Tanager, *Compsocoma notabilis*, a very poor name to describe such a lovely bird, for this genus has three exquisite species: the others are *victorini* and *sumptuosa*. I had all three, but only one specimen of *notabilis*, which is larger than the other two. The back of this bird is a most unusual shade of yellowish green with the sheen and appearance of spun glass. This changed to a very bright mauve. It was one of the first birds I got when I first started the collection, and it lived right through and landed here safely.

In addition to the tanagers and other birds were eleven species of parrots, and these were a source of much enjoyment and companionship during my stay in Quito. I had rented the upper part of a large empty house on the mountain-side above the city. On the entrance side my floor was not much above the level of the road, but on the other side it was a sheer drop down to the roofs below, with a marvellous view to the south embracing snowy peaks and a half encircling line of volcanoes beginning with Pichincha on the immediate right. On this side was a glass-covered corridor for the birds, which at one end led into a small kitchen and at the other a small room which opened on to a flat roof. The parrots practically had the run of all this side, for they were all tame and one or two very good talkers. They included four *Pionus menstruus*, with heads so exceedingly blue they thought over here they must belong to another species; a number (I forget how many) of the Bronze-winged, *P. chalcopterus*; two Coral-billed, *P. corallinus*, which had such a powdery bloom all over their plumage

that they looked like birds modelled in plaster of Paris and artificially coloured. A pair of Grey-headed Parrots, *P. seriloides*, concluded this group, most of which I had reared by hand from the nest. They all knew their names and each one had a very distinct personality. Whenever I sat down in the corridor or the kitchen they swarmed all over me, each one trying to get a favoured position. One of the Blue-headed ones called "Verdecita" I had bought from a woman at the door, not that I wanted it, but it was so loving and adopted me at once, I simply had not the heart to send it away. This turned out to be one of the most marvellous mimics I have ever known, and repeated the scandal and laughter of some garrulous old women, one of which after using a certain expression always went off into a fit of asthmatical coughing. It was all so real one seemed to get to know the different people and could easily picture them with heads together talking scandal. This bird unfortunately met with a sad end on the coast. I had a tame tayra shut up in a room, and going in one day I was unaware that the parrot was following me, and the tayra rushed out and had it in its jaws before I knew exactly what had happened. I missed this fussy little person perhaps more than if it had been all the others put together. I think it was my favourite, and I still have a few of its feathers. There was "Chiquita" another of the same kind and only a little less accomplished; and "Toni", not a talker but a very droll bird. I think this is one of the most delightful of all parrots to keep, if hand-reared, especially for a lady or an invalid, as they are not a bit noisy and so docile and affectionate. To such I have often recommended them since. A woman also brought to the door a Lesson's Amazon, *A. lilacina*, to sell. I already had one and so again I was disinclined to buy at first as I had so many parrots, but it came to my hand at once and in such a hurry as if glad to escape from its owner; I thought it must have been ill-treated, so I succumbed again. It crowed like a rooster and imitated many farmyard sounds. Two Red-faced Conures were the naughty boys of the party and up to all manner of mischief and were called the "Cossacks". These and the Grey-headed had full wings, so when the corridor windows were open they had to be shut up in the kitchen. The Grey-heads I had reared from the nest and they had always slept in a basket with two Black-capped Caiques.

and generally avoided by travellers locally as its people have a bad reputation. It is called La Patia, is very hot, possibly unhealthy, for it is, I believe, rather below sea-level. Why I mention it is because I saw birds there I had not seen in any of the surrounding districts. Collectors may have been there but I never heard of any. It is well watered, and what inhabitants it has are all negroes. That foreigners, and especially English, can go there and be well treated I proved. Although in Popayan I had been warned against it by everyone, I still intended to stay there to collect for a short time if I thought it looked favourable, so when arranging with muleteers I stipulated that if I did not like the look of the place I would continue on to Pasto. The Patia is about half-way, and I had already paid in advance half the hire of the mules to Pasto according to custom. However, before I reached the valley I had already decided to go on, for the region seemed isolated and, having met no mule trains *en route*, I began to feel if once set down there it might be a long time before I could get away again. The end of my journey south was to be Quito, and finally over the Andes to the headwaters of the Amazon and home via that river. The season too was getting advanced as I had spent more time in Popayan and its surrounding mountains than I had intended.

The valley as we approached it from the north was quite suddenly revealed at our feet, as we had come to the brink of a great precipice without apparently any way down. There was a way, however, a very steep and winding one among rocks which concealed it. Once at the bottom, after fording many rivers or branches of the same one, we came late in the afternoon to a small village of thatched and white-washed huts, but without any inhabitants in sight. Here at once the muleteers began to unload although I protested and explained that I would go on, but they complained that my baggage was altogether too heavy for their animals, so off they went in all haste and I was left with my belongings in what looked like a deserted village except for a few pigs and fowls. I knocked at the door of a house that looked a little better than the others, and after a time a very fat negress appeared and I explained my position. She inquired who and what I was and when she found I was not a Colombian she thawed a little. I must explain that I was dressed in poncho and zamaras (chaps)

vast swamps and lakes of surpassing loveliness, and with the whole country entirely covered with the most wonderful sub-tropical forest. It was here that the unique bird life reigned supreme.

Alas, but little is now left to give any indication of the former wonders of the native forest, and the bleak and barren hillsides give no witness to their former fertility except here and there where the blackened and half-decayed stump of some forest giant, which it was too much trouble to root out, bears mute testimony to the glories that have passed.

Sometimes in a deep gully or kloof in the mountains we see a slight vision of the splendour that was once New Zealand's—a few acres of indigenous forest which someone has forgotten to burn but, alas, sadly weeded out.

And still the sacrilege goes on. In the farthest corners the settlers are penetrating, the last few giant kauries are falling to the axe and the fires are sweeping through the luxuriant greenery of the forest. The giant tree-ferns, the fuschias, the graceful nikau-palms are devoured in a few minutes by the sweeping tongues of flame, and soon the country is reduced to a state of desirable pasturage—all so that we can buy frozen mutton a little cheaper.

And the birds—what of them? Most of them have gone for ever. They were massacred in their millions by the early settlers and by the forest-felling gangs sent to various parts to open up the country. Old settlers have told me that in the early days men would not be content with the shooting of a few birds for the pot but would kill hundreds at a time for the pure lust of killing. This specially applied to the magnificent fruit pigeon, probably the finest and most beautiful of all known pigeons. These were so tame and unsuspecting that a man could stand under a fruit-bearing tree and shoot two hundred in a morning. He would probably take away six or so and leave the rest to rot. This, combined with the destruction of the forests, upon which the birds were dependent for their food, by felling and burning and also the introduction of carnivorous mammals, has placed the birds of New Zealand in their present position, when it is possible for residents in New Zealand to spend months in the country districts without seeing a native bird of any kind except perhaps a few odd White-eyes.

On the other hand this does not account for the diminution of certain endemic species such as the North Island Thrush, the Stitch-bird, the North Island Robin, and the strange aberrant Wattled-Crows which commenced to disappear from the untouched forest regions soon after the advent of the white men into the country.

These birds (and several others) commenced to disappear for no apparent reason whatsoever and by the beginning of the twentieth century had practically ceased to exist. The only plausible explanation is that the New Zealand birds were very susceptible to the germ-carrying parasites which were brought to the country by the various introduced species, to which they themselves had become immune.

The Robin and the Thrush, both birds which were untouched by the colonists, commenced to disappear in the very early days of settlement from the very remote parts of the country where the conditions were the same since the beginning of time and into which no white man had yet penetrated. Some of the birds, such as the Bell-bird, the Wattled Crows, etc., were reckoned by the leading local authorities to be extinct at the end of the nineteenth century but have since re-established themselves, especially the former bird which is now almost common in the scattered forest patches, and the Crows are reappearing in certain localities.

The indigenous forest of New Zealand is magnificent, at least, what there is left of it, for the hand of Man has dealt very hardly with the vegetation of these Antipodean islands. Destruction is the watchword of the New Zealand farmer. To him the tree-fern, totara, the mati, the kahikatea are blots on the landscape to be got rid of at any cost. It is of no account if the blackberries, the thistle, ragwort, gorse, etc., overrun his land. These are tolerated for they are exotics and remind him of home but not the native bush, that must be got rid of without delay. In fact it is possible to travel many miles and not see a sign of any native vegetation. Everything is imported, the grass, the trees, and even the weeds. Very soon the New Zealand forest will exist no more except in a few Government reserves. In fact, one has to travel miles and miles off the beaten track to see even a small remnant of native forest.

It is beyond my power of words to describe the beauties of the native

forest which have been untouched by man. Great forest giants raise their heads a hundred to two hundred feet above the mass of tree-ferns, fuschias, giant mosses, and a hundred other forest trees. Hardly a naked branch or trunk is visible for all are clothed in a luxuriant garment of mosses, ferns, and lichens. Nowhere in the whole world do ferns grow in such profusion or variety. Every forest giant is festooned with lovely grey green lichen, climbing ferns, and huge forest creepers. So dense is the undergrowth as to be absolutely impenetrable in some parts, one's progress is counted not by the miles per hour but by the hours per mile.

Everywhere is damp and dark and it seems to rain perpetually. The luxuriant vegetation is no doubt due to the excessive rainfall. The shades of green are wonderful; never have I seen such a range, from the almost black of the crêpe fern to the pale greenish white of some of the lichens.

Very often the forests are destroyed wantonly, but sometimes sawmills are established; all the large timber is felled and gradually the felling operations are extended until forest railways have to be built extending sometimes twenty-five miles or so from the mills. The finest specimens of the trees are felled; some I have seen have been fifteen feet through at the base and by counting the rings I have ascertained that some must have been 750 years old, rivalling the famous American "Redwoods" themselves.

When the choicest timber has been felled and taken away, with a dog-in-the-manger attitude the rest of the forest is burnt. It is heart-breaking to see the flames licking up the magnificent timber, the tree-ferns, and the general undergrowth. Nothing is spared. On every hand the devastation is appalling; no battle-fields in Flanders ever looked worse than the forest country through which the fire has passed. And the tragedy of it is that most of the land which is now being burnt is no good for settlement, being far too steep and precipitous. In a few years it becomes like the arid mountainous regions of Arabia. I once asked the manager of a large timber company who were burning one of the most magnificent remnants of native forest left in the country what was the need for such destruction. I was told that it was customary to burn the forest after the big timber had been taken out!

Most New Zealanders seem to think that the native vegetation is something to be ashamed of, to be burnt, to be got rid of at any cost. On the most inaccessible mountains and hills, in the deepest gullies, in fact in any place often absolutely useless for pasturage, the forest is burnt off, after a few years a secondary growth will appear only to be burnt off again and again; sometimes after successive burnings a few cabbage-trees or tree-ferns will struggle through but these are not tolerated and the farmer is not satisfied until at last the whole is covered up with "exotics", such as bramble, gorse, and other pests.

A barrister friend of mine tells me that arson is due to a strange psychological complex in which the individual affected derives a kind of Sadistic thrill in seeing the devouring flames. It seems to me that the inhabitants of the rural districts of New Zealand are to a large degree afflicted by this strange mental aberration.

One day perhaps New Zealanders will wake up and realize what the destruction of the forests mean, not only to the bird life about which they care very little, but in the gradual diminishing of the rainfall.

One sees the rain-clouds circling round the tops of the mountains where patches of forest have been reluctantly left, usually owing to disputes between the vendor and the prospective purchaser; and leaving untouched altogether the hills and mountains which have been denuded of vegetation.

There are some districts which were once heavily forested and which are now practically desert owing to the total destruction of the native vegetation.

True, there are Government reserves but all round the spirit of destruction is creeping in. The fires lighted by the farmers creep into the reserves, cattle are allowed to run through the forests destroying the wonderful undergrowth and in time causing the forest giants, which must have their roots protected from the sun, to perish.

Old pioneers have told me of the awful slaughter of bird life as the country was opened up. The Kakas (the large native Parrot), the Fruit Pigeons, the Bitterns, the Parrakeets, Tuis, Bell-birds, and, in fact, every living bird almost was killed on sight. If a man had too many for his own use the rest were thrown away. On the

establishment of the cold storage houses in the cities, men would go out and kill birds in hundreds, sending them to the refrigerators to be brought out and used as required. Many people would send in several months' supply at a time.

It is little wonder then that most of the larger New Zealand birds, if not extinct are nearly so. Only a few of the endemic birds have been able to hold their own against the advance of civilization. The Pipit, the White-eyes, and the Purple Swamp Hen are about the only birds which are seen in the vicinity of human habitations.

By the lovely Lake Waikaremoana, with its equally beautiful name, "Little Ocean of Rippling Waters," which lies over two thousand feet above sea-level, I found my heart's delight.

It was by these incomparable blue waters, surrounded by steep mountains clothed to the water's edge with the most magnificent virgin forest, that I first heard the chorus of Bell-birds and Tuis which so charmed the early explorers and settlers and which is heard in so few places to-day on the mainland.

To attempt to convey to the reader's mind but the slightest impression of the grandeur of Lake Waikaremoana would be impossible. Only those who have looked upon its beauties can realize that such scenes are a reality and not the vivid imagination of an artistic mind.

To see the sun, as it sinks over the distant mountains, turn the blue waters to pink and orange is a sight worth coming half round the world to see. I thought that upon leaving the fair island of Dominica I should never again see such an earthly paradise, but this surpassed anything I had ever seen. Not only did the fascination lie in the scenery but it is one of the last refuges on the mainland of New Zealand's much persecuted avifauna. Here within a few yards of the government hostel one sees hosts of Tuis, Bell-birds, Tom-tits, Whiteheads, and last but not least many of the magnificent Fruit Pigeons.

What a haven of refuge, what a feast to the tired eyes of the city dweller. Upon arriving there one feels like a tired traveller who after years of wandering has at last reached home.

Upon its placid waters flock, as soon as the shooting season starts, hosts of persecuted waterfowl to find sanctuary in its forest-fringed inlets, for the lake being so indented has nearly a hundred miles of

coast-line. On one morning alone, I was told, three hundred Black Swans found refuge from their slayers.

Long may the remnant of New Zealand's unique avifauna find a shelter from the ruthless world in its forest glades but, alas! even around this fair spot, settlement grows and timber companies obtain leases to chop and burn the forest; the fires, through carelessness, penetrate far into the protected areas—a good thing, say the New Zealand farmers, to see such rubbish burnt, for to the average farmer the magnificent forest is known as "rubbish". It is difficult to imagine the type of mind which would rather see thousands of acres of treeless land enclosed with barbed wire fences than see the forest glades of unsurpassing splendour as one sees them here.

Little Barrier Island is to the ornithologist visiting New Zealand, what water is to the tired and thirsty traveller in the desert. This wonderful island off the coast of New Zealand in the blue Pacific Ocean is perhaps unique in the world. In the virgin forests which cover the island from the sea-shore to the summits of the highest peaks in the centre, some of the world's rarest birds find their last refuge. Here species banished years ago from the mainland live out their lives in the seclusion of the forest untouched and unafraid of man as they did in the long distant ages before the Australasian regions were discovered by the white races.

The New Zealand Government, as if to atone for the terrible massacre of the bird life on the mainland have set aside—for all time let us hope—this almost inaccessible island for the preservation of the native birds. The proclaiming of this island as a sanctuary came only just in time to save such vanishing species as the Stitch Bird, the North Island Robin, etc., for it was on Little Barrier, or to give it its Maori name, Hauturu, meaning "the resting place of the winds", that many rapacious agents of skin collectors in Europe made their last attempt to obtain skins of the vanishing New Zealand birds.

This race of collectors is fortunately dying out, in Europe at least. These men were collectors of bird skins on the same lines as one collects stamps, if a bird was rare or nearly extinct so much the better, there was more joy in possessing the skin. Agents were sent to obtain the last survivors of the race, for to them it mattered little if the birds

were exterminated so long as there were skins in cabinets. In fact, many so-called ornithologists of the last century seemed secretly glad when a bird became extinct if they possessed any skins of the last of the species. And it is due to these people who used to call themselves ornithologists that many of the world's rarest birds are practically extinct to-day.

My stay on Little Barrier was an event in my ornithological career. For years I had secretly wished to pay this interesting island a visit and I little dreamt that my wish would one day materialize. For one thing it is not easy to obtain permission to visit it and I hardly relished making a prolonged stay on the island alone. Owing to the great kindness of Mr. Rowland Hutchinson, the Honorary Secretary of the Avicultural Society of New Zealand, all these difficulties were overcome. So one blazing hot summer's day in January of this year (1933) I set off from Auckland with my companion, also a member of the Avicultural Society, and who, besides being a keen aviculturist, had a very good knowledge of the native birds, so needless to say we had a great deal in common.

After a day's journey up the coast we arrived at a tiny port where we had to charter a launch to take us to the island. Unfortunately owing to bad weather we were compelled to spend several days at the hotel whose chief source of income seemed to be derived not from visitors but from illicit drinking. At last we set sail in a launch which seemed almost too frail to carry our enormous amount of baggage.

What a thrill it was as we neared the island! How immense it seemed as it loomed up through the mists, its great sinister-looking peaks wreathed with floating masses of clouds, its deep green forests reaching down from above the clouds to the edge of the impregnable looking cliffs.

Instead of finding ourselves alone on this sub-tropical island, we found it almost overcrowded! There was the caretaker, his son and wife and a friend, three students from a New Zealand college, and a noted bird artist, a Miss Daff, whose pictures I hope will one day grace the pages of this Magazine.

The island consists mainly of very precipitous razor-backed mountain

ridges, some being quite inaccessible owing to their almost perpendicular formation and the density of the vegetation. It rises up to 2,300 feet in the centre of the island and all the ridges seem to converge at this point. The highest ridges are mainly covered with kauri forest. In some parts the ridges are so narrow that it is almost difficult not to overbalance and fall down either side!

There are two small areas of flat land where it is possible to land, but for the main part the coast-line consists of high perpendicular cliffs, some a thousand feet high, whose bases are washed by the sea at high tide. All along the foot of the cliffs and often on the cliffs themselves, growing out at right angles right over the sea, are the beautiful pohutukawa trees whose crimson flowers are a great attraction to all the honey-sucking birds, and when the trees are in flower, flocks of Bell-birds and Tuis can be seen regaling themselves on the nectar from the crimson blossoms.

Other island sanctuaries were visited, including the Hen and Chicken Islands, Kapiti Island (this beautiful island I reluctantly had to leave after a three days' stay owing to blood poisoning contracted in Fiji), Stewart Island, etc., but the Little Barrier is certainly the gem of them all.

The following notes are not arranged in any scientific order but are merely placed in the order as the birds were seen.

I was very fortunate in seeing nearly all the endemic land birds of the North Island, but owing to being laid up with the blood poisoning already mentioned I was unable to see a great deal of the South Island. Though the destruction of the forest in the North Island is bad it is not to be compared with that in the South Island. The devastation is beyond description. Hundreds of square miles of barren and desert country with no sign of a single native plant or tree. One may drive for a hundred miles or more and see not a single vestige of native vegetation. Range upon range of mountains have been denuded of their forests and are now completely barren, reminding one of the desert regions of the Sahara. It is almost unbelievable, the destruction of native flora; only in a few remote reserves does one see any native trees, and all this has happened in the last sixty years or so. The early sheep farmers completed their work to such an extent and with such

rapidity that the younger generation have no idea that the country was forested at all.

The South Island of New Zealand reminds me of a woman with her hair shorn off, for the wonderful vegetation was to New Zealand what the hair is to a beautiful woman. No country in the world has been spoiled to such an extent in so short a time. True there are forest reserves but they are infinitesimal compared to the barren areas.

The native birds are exceedingly scarce. Imported birds abound, Sparrows, Goldfinches, Redpoles by the thousand. There are rabbits by the million.

The success of my trip through New Zealand was entirely due to the kindness of Mr. Rowland Hutchinson, the Honorary Secretary of the Avicultural Society of New Zealand, and also to other members of the Society, who made me more than welcome and who made a period of six months seem more like six weeks.

THE NEW ZEALAND SCAUP (*Fuligula novæseelandiæ*)

This jolly little duck appears to be nowhere plentiful on the North Island and is found mainly on the clear inland lakes where I saw it in pairs. It is exceedingly tame on the lakes of the North Island sanctuaries, especially on the Lakes Waikaremoana and Waikare-iti, where it is free from persecution.

It is much more plentiful on the lakes of the Southern Island than anywhere else. Around the wharf at Queenstown there are several small flocks absolutely tame and always waiting for bits of food thrown to them by the tourists. The Scaup is a great diver and can be seen swimming in the clear waters searching for food at the bottom of the lakes. Often one of the large trout will be seen in attendance following the duck and finding food in the mud disturbed by the bird. These ducks have a habit of frequently lifting themselves out of the water and exposing the light under parts.

Though by no means brightly coloured this bird has a very great charm which is mainly accounted for by the rich browns and pleasing shape and by its extreme tameness when not persecuted. In New Zealand it is known as the Black Teal but is totally unlike a teal in

appearance. I saw several tame birds and very delightful pets they make, and I know of no more charming addition to one's collection of waterfowl.

I do not think that it has ever been imported into this country. I had hopes of bringing some back but was disappointed at the last minute, though I still have hopes of being able to get some.

THE RIFLEMAN (*Acanthisitta choris*)

I first made the acquaintance of this feathered mite in the dense alpine scrub on the slopes of Mount Tongariro.

When wandering in search of birds near the snow-line almost at the very limit of the vegetation, I came across a man who was working on a new road, and in talking to him about the birds, he asked me if I could tell him the name of a bird no larger than the first joint of his thumb. I knew that this must be the Rifleman and sure enough in a few minutes after leaving him one of these feathered sprites came up within a foot or two of my face and chattered and scolded.

Afterwards I found them quite common up to the limit of the vegetation on the mountain. Quite fearless and intensely inquisitive they spend their time running up and down the trunks and limbs of the lichen-covered trees in search of minute insects on which they entirely subsist. Extremely active, they never rest for a minute except when they come to examine a stranger in the "bush". All the time they utter a thin, shrill, scolding note.

In size these tiny creatures are about half the bulk of the English Wren, but look larger than they really are because they usually keep their feathers puffed out and their wings outspread.

The Rifleman does not seem so common in the low areas as in the more mountainous regions. I found it excessively plentiful in the beech forests of the North Island, ranging from 3,000 to 5,000 feet. In the Waikaremoana forests it was very abundant between 2,500 and 3,000 feet, but I think it must make a migration to lower altitudes in the winter time, for in those parts the cold is very severe and in mid-winter there are several feet of snow.

The presence of the Rifleman can at once be detected by the shrill

high-pitched note which is uttered nearly all the time the bird is in motion. This tiny bird has few enemies; he is too quick and active for cats, rats, weasels, or hawks, the entrance hole of his nest, which is usually in a hollow tree near the ground, is so small that only this tiny creature could possibly get inside. It was impossible even to get two fingers into the entrance hole to the nests I found.

So long as the beech forests remain in the higher altitudes this tiny bird will continue plentiful.

(To be continued)

BREEDING RUPPELL'S STARLING

(*Lamprotornis purpureopterus*)

By ALFRED EZRA

This Starling is found in N.E. Africa, from Abyssinia to Tanganyika Territory, where they are plentiful in small flocks. They have quite a pleasing song, and are insectivorous and frugivorous and associate with the green Glossy Starlings. I was nearly successful in rearing a young one the year before last, in fact one young one was reared but was killed the day he left the nest. This year I had a pair in one of my large aviaries, and they built a nest inside the aviary shelter in a nest-box about eight feet from the ground. The nest was built of leaves, roots of grass, and mud. The first egg was laid on the 10th May. Three eggs were laid, and, although the birds did not sit very well, two young were hatched out by the 26th May. One young one was found dead on the 1st June, but the other one was successfully reared, leaving the nest on the 20th June. The hen bird did most of the feeding, and from the 26th June the young bird fed himself. The old birds started building again the day the young left the nest. When feeding their young the old birds had the habit of attacking anyone who went into the aviary, usually from behind, catching one on the head or neck.

The birds were given a good many mealworms and gentles while feeding their young. The young bird, a fine healthy specimen, is at present kept in a cage by himself. While I write this (5th July), the old birds are incubating three eggs. I believe this is the first time that this Starling has been successfully reared in captivity.

SOME DESULTORY NOTES FROM A SOMERSET AVIARY

By the Rev. J. E. SWEETNAM, Vicar of Taunton

The annual migration of members, and consequent dearth of copy at this time of the year, may perhaps attach some fictitious value to notes from one whose enthusiasm is perforce restrained by considerations of time and space.

At the moment I have four aviaries in use, one being merely a spare room in a disused part of this old Vicarage, adapted by the addition of a flight fixed on the outside of one of the windows. It is used chiefly as winter quarters for the less hardy species. Another is quite a small affair with double flight, fitted with small trap doors, and now containing pairs of green Glossy Starlings (*Laprocolius chalybeus*) and Pekin Robins. The former have been playing at nesting since May, but the Pekins look like qualifying for release by nesting in earnest at last. As the Starlings are very tame and undoubtedly a true pair they have been a disappointment due, I imagine, to the fact that the releasing aviary is too small to give them a fair chance. I have had an odd bird of this species flying loose before and intend releasing this pair shortly, whether nesting or not.

Once a pair of these intelligent and confiding birds can be induced to nest in an aviary they may be safely released, and young Glossies are most easily bred in this way but, given a large planted aviary, they should not be difficult. The chief trouble with them is to secure a true pair as there is no external distinction and both sexes sing, though the hen has a more raucous voice.

Birds in the other aviaries include a cock Virginian Cardinal—a bachelor from choice, since he murdered his intended wife in cold

blood last week—and a beautiful cock Indigo Bunting whose celibacy is due to failure to secure a wife for him. As a Bunting he should be partly insectivorous, but I have never known him touch anything other than seed. My modest collection includes also a pair of Crimson-winged Waxbills (so called, but in both appearance and habits they more nearly resemble Finches) now nesting, pairs of Alario, White-throated and Guttural Finches, Black-headed Siskins, three or four pairs of Diamond Doves, and numerous small fry such as Java Sparrows, Zebra Finches, Bengalee, and Silverbills. There are also some coloured Canaries, a cock Algerian Chaffinch which, mated to a British hen, produced, but did not fully rear young in June; and numerous other British species which have already produced several mules and hybrids, more remarkable for their vitality than their rarity.

A Chestnut-breasted \times Bengalee hybrid which only lived for a few days might have been saved had I had a true pair of Bengalee available at the time.

My records to date (30th July) show a total of sixty-five young reared but, as usual, the majority of these are "small fry", and the season has, so far, been disappointing.

I would advise anyone who can do so to procure a pair of Black-headed Siskins—delightful little birds and persistent breeders. My only pair are again nesting, undeterred by the fact that their first clutch was unfertile and, for some unknown reason, the four apparently strong young in the second nest only survived a week. If they are more successful this time I hope to contribute some detailed notes about the nesting habits of this species, of which I can find no such record. From the day the first egg is laid the hen never seems to leave the nest, being assiduously fed by the cock who, not content with this, is ready to assist in the rearing of any other young birds in the aviary. Though not a very brilliantly coloured bird, his constant activity and the contrast of black head with yellow body makes him always conspicuous in an aviary.

I owe an apology to Zebra Finches for the bad character I gave them in some recent notes in the Magazine. Since then my four pairs have been exemplary, producing young with a regularity hardly surpassed even by Silverbills—which latter increase so quickly that one

can hardly give them away. The cock of one of my two adult pairs is of the Indian, and the hen the African variety, about half the young having the characteristics of each parent and being indistinguishable from pure-bred birds.

Though stupid and rather uninteresting, I find Diamond Doves most prolific and excellent "seed providers". I reckon on obtaining an average of one pair of young per month from each pair from March to September, but this applies only to fully adult pairs, young birds being uncertain during the early months of their first season. For the benefit of any who may not have discovered it it may be worth mentioning that the liberal use of maw seed during the breeding season is, in my opinion, almost essential to success in breeding this species. Indeed, some pairs seem to feed their young almost entirely on it.

I remember reading that someone—I think it was our President—had bred Diamond Doves freely by keeping several pairs in the same aviary. If so, it must have been an exceptionally large one as, in my experience with them, even two cocks in an ordinary sized aviary spend their time trying to murder each other, with disastrous results to all breeding operations. Mine are no trouble at all to feed but are so prolific that eggs laid immediately after, and often before, the young leave the nest must be removed. Otherwise the parents devote their attention to the destruction of the first pair. When this occurs the unwanted young can be easily hand-reared on nothing but milk until old enough to peck maw for themselves.

An alternative to removing the eggs is the removal of the cock before the young leave the nest, when the hen will manage the feeding of both nestlings. Last season I had no less than twenty-three young from two adult pairs, and I have already had almost that number from three pairs this season.

As they are entirely harmless with all other birds I generally keep one pair in each hardbill aviary where, apart from the addition of maw, they require no special treatment of any kind.

After Diamond Doves and Zebra Finches I find Java Sparrows the best seed providers, and no birds could be less trouble to feed and breed—the young seeming to turn up from nowhere. In my experience the percentage of fertile eggs is considerably greater when pure whites

are mated to greys, though, of course, this means a number of grey and pied young.

That I have had no success with Spermophilæ this season may be due to the fact that what, apart from a yellow bill, looked for all the world like a hen White-throated Finch has turned out to be a cock of some sort—either an immature White-throated or some allied species with which I am not familiar.

These notes have already amply justified the title in so far as desultoriness is concerned. The following incident may have some bearing on the length of this article, even if it has none whatever on aviculture!

Among the many old customs associated with this Church is that of distributing numerous loaves of bread on 1st May. The terms of the old charity decree that the Vicar shall preach a sermon to those assembled at the prescribed service, and shall receive the sum of five shillings "for his pains". With the enthusiasm of a newly-appointed Vicar I availed myself of the first such opportunity to speak at even greater length than I have here written. When the loaf-laden congregation had dispersed I said to my Curate, "well, I think I have earned my five shillings." To which, he, with an asperity perhaps pardonable in one who had had to listen to the homily without receiving even a loaf, replied, "I think the people have earned their bread."

SUCCESSFUL REARING OF THE MADAGASCAR WHITE-BACKED DUCK

(*Thalassornis leuconota insularis*)

By ALFRED EZRA

This most amusing Duck was described by me in the Magazine in 1931, on page 349, when they bred with me, but the young were not reared. This year early in April I accidentally found a nest on the island of the small Duck pond in the enclosure. Hearing some hissing, we looked to see where the sound came from, when we suddenly found the bird sitting on three eggs and in a very bad temper at being

disturbed. The nest was a very high one, and the birds kept adding to it each time we saw it. Two of the three eggs were hatched out, but one of the young was found dead just outside the nest. The other one was swimming along gaily with its parents and was the funniest little thing I have ever seen. As soon as it saw any of us it dived and kept under water for quite a long time. The parents took great care of the baby, swimming on either side of it, and no other Duck on the pond was allowed to get anywhere near it. The birds were given plenty of duck weed and gentles, and in a few days the young one was tame enough to come and feed with the parents. By the middle of June it was impossible to know the young one from its parents. The old birds are sitting again, and I hope some more young will be reared. I am delighted at my success in rearing this amusing little Duck, especially as my pond is hardly a suitable one for breeding rare Duck, being very small and overcrowded by several species of Duck. As far as I know, this bird has never been bred in captivity before.

12th July. This morning five beautiful young ones were seen on the pond, being well guarded by the parents.

THE BREEDING OF THE SPURWING GOOSE

The African Spurwing Goose (*Plectropterus gambensis*) is a large and handsome species with metallic black and white plumage, pink feet, and spurs on the wings. It is not often kept in collections of waterfowl because it is spiteful towards other birds unless allowed plenty of liberty. In the London Zoological Gardens it has been somewhat out of place and generally regarded as rather a nuisance, and no attempt has it ever made to reproduce its species. In fact, no records of its breeding in captivity seem to exist, though it has produced hybrids with the Egyptian Goose and the Upland Goose. An example of the latter hybrid was bred in the Clifton Zoo a few years ago and, I believe, is still there.

As the accommodation at the London Gardens was too limited for these large birds a pair that had lived there for a number of years was transferred to Whipsnade when the Zoological Park there was formed



[To face p. 302]

Photo D. Seth-Smith.

SPURWING GOOSE WITH HER BROOD OF TEN—WHIPSADE PARK, 1933.

some three or four years ago. Here they made themselves at home at once, becoming extremely tame and wandering to considerable distances. Every afternoon at precisely the same time of day they would pay a visit to the Head Keeper's lodge, where they knew they were sure of some special dainty. In fact there, with almost unlimited space to range over, they proved attractive and very intelligent birds, but they made no attempt to breed until this year, when, in June, the female completely disappeared and it was feared that some prowling fox had taken her. However, she was eventually found, half a mile away from the pond on which the pair were wont to reside, in a thick belt of bushes sitting tightly upon ten eggs. Fearing that a fox might take her, the Head Keeper spread a trail of creosote in a wide circle round the nest and in the centre of this she went on sitting. She hatched all ten eggs and appeared one morning on her accustomed pond, a half mile trail, with her brood. To reach the pond she had to cross a paddock in which was a pair of Sarus Cranes with their chick, and at such times these Cranes are dangerous. The Cranes attacked, but the plucky goose put up such a good defence that they could get nowhere near the chicks, and finally she took the offensive and drove the Cranes right away.

The first evening after hatching the Goose returned to her nest, another half-mile tramp, with her brood and there they spent the night.

Spurwinged Geese are very distinct from the usual run of Geese and they remind one somewhat of huge Tree Ducks, while their goslings are much more like Ducks than Geese. In fact, they are almost indistinguishable from Mallard ducklings, though, of course, somewhat larger than these at the same age.

M. Delacour's description of these Geese in *Aviculture* (Vol. II) hardly does them justice; he calls them "ugly and clumsily built, very spiteful, and very susceptible to cold". They appear neither ugly nor clumsily built when seen in the right setting, that is a large open space, neither do they appear spiteful when given sufficient room, and as for their delicacy, well, when first imported doubtless they need care, but Whipsnade is as cold as most places in England and there they have not suffered in the open for the last four years.

D. SETH-SMITH.

THE KESTON FOREIGN BIRD FARM : A SUCCESSFUL EXPERIMENT

By DAVID SETH-SMITH

Messrs. Boosey and Brookesbank's experiment in forming a foreign bird farm has interested me greatly from the start, for in my young days I built a castle in the air which consisted of a farm ; but it was no ordinary farm, its most interesting and most profitable branch was the breeding of foreign birds. My castle was never more than in the air, for the considered verdict of the Powers that were was to the effect that, desirable as were hobbies, it would be a fatal mistake to dream of turning one's hobby into one's career. Hobbies, I was told, were excellent for those who had time or leisure to indulge in them, but for the majority the thing was to keep one's nose to the grindstone until one was old and infirm, when one would be able to revert to the hobbies of one's youth. So, had I had my way, I am not sure that the Keston Foreign Bird Farm would have been, as it is, the first of its kind ! As it is, to watch its progress and be able to very heartily congratulate its founders is a great joy. Here are two young men, both keen naturalists and bird lovers, who left other careers because they believed that their favourite hobby could be ridden to success. The one was born to an important position in the music world, his father being head of the famous old publishing house which bears his name ; the other was on the stage, with every prospect of a successful career. But the fascination of keeping and breeding foreign birds was strong, and, after all, why should it not be made to pay and pay well ? So, in the face of strong opposition, they joined hands and took the plunge, and have never regretted it, for they have proved that they were right.

The Keston Foreign Bird Farm is an undoubted success. I visited it two years ago, and was much impressed by what I saw. I have now visited it again, and the way it has progressed in the interval is astonishing. The number of aviaries has doubled, and it is very evident that its owners know their job right well and can now be sure of producing each year a numerous healthy crop of young birds of kinds that are most sought after by aviculturists. They are especially

successful with the rarer species of Parrakeets, and only dispose of those actually bred on the farm.

The farm is situated on a sloping hillside facing south, and sheltered from the north by a wood. Aviaries for the Parrakeets are arranged in rows on terraces. There are forty-six of these, and there is sufficient space to allow of each one being moved, backwards or forwards, so that the same ground is not occupied two years running. At first sight some of these aviaries strike one as being on the small side, but



SOME OF THE PARRAKEET AVIARIES AT KESTON.

experience has shown that they are just the right size for their purpose, neither too small or too large, and the proof that they are right is shown by the number of first-rate young birds that are reared in them. They are made secure from rats by having small-mesh wire netting floors, and a great point is that human beings do not enter, the birds being attended to from the outside and so are never frightened.

The list of birds bred this season is an imposing one ; it consists

of Rosellas, Browns, Bourkes, Elegants, Many-colours, Turquoisines, Blue-wings, Stanleys, Barrabands, Ring-necks; Swainson's Lorikeets; Peach-faced, Nyasa, Black-cheeked and Fischer's Lovebirds, and hybrids between a cock Red-rump and a hen Hooded Parrakeet.

I have mentioned only the aviaries for the rarer Parrakeets; there are no less than 200 other aviaries for Budgerigars, Finches, Waxbills, etc., and in these have been reared this year Red- and Black-headed Gouldians, Bichenos and Ringed Finches, Rufous-tails, Green Avadavats and Silver-bills, Long-tailed, Hecks and Masked Grass-finches; Cherry Finches and Bengalese. The last of these prove very valuable foster-parents for other Finches, a fact which has led to the construction of a special Bengalese House, a most useful structure containing rows of metal cages, each housing a pair of Bengalese busily engaged in incubating eggs or rearing young, perhaps their own, but more likely those of some rarer Finch or Waxbill.

Budgerigar enthusiasts will find at Keston some of the best examples of the various coloured varieties. There are some 2,000 Budgerigars on the farm, and those that took my fancy most were some Yellows of a wonderful hue—lovely golden birds, with not the faintest trace of green in their plumage.

But when one has seen all these aviaries, with their varied and rare occupants, there is still the most interesting house of all to inspect—the Acclimatisation House, a brick building some 36 by 30 ft., lighted by skylights fitted with Vita-glass, and warmed in winter by a very modern type of radiator, heated by an anthracite stove which is thermostatically controlled. This house contains five aisles, each 6 by 30 ft., and has room for 100 cages which are 2 ft. 6 in. by 2 ft. by 1 ft. 6 in. These are of metal, and any two can, by moving a partition, be thrown into one, making a cage 5 feet long, which is very useful for such birds as Parrakeets.

Owing to the Parrot ban the Keston Foreign Bird Farm are, of course, precluded from selling any but British-bred Parrots, but this does not apply to the Finches and Waxbills. These have a nasty way of dying when newly imported, and there is a demand for acclimatised specimens. This is being met by a careful system of acclimatising. The Acclimatising House and a series of aviaries are

made full use of in this, and the Keston Farm is able to guarantee that only birds thoroughly used to the vagaries of the English climate are offered for sale by them. The price of these is necessarily higher than for newly-imported birds, but there is far less risk of their dying.

I have not room to mention all the birds I saw at Keston, but must record the presence there of a very perfect pair of the Yellow-fronted New Zealand Parrakeet (*Cyanoramphus auriceps*), perhaps the rarest birds in the collection, and I think there is every chance of their breeding.

REVIEWS

THE CARE AND PROPAGATION OF ORNAMENTAL WATERFOWL¹

We welcome the appearance of Mr. J. C. Laidlay's new book because the various species of Waterfowl are very popular with those fortunate enough to have the necessary facilities for keeping them properly. They are delightful birds, hardy, and very ornamental, and it is not necessary to have enormous stretches of water in order to keep them; quite small ponds are all they require. In fact, we have known a pair of Carolinas not only to thrive but to rear a brood in an enclosure of some 20 feet square containing a pond of less than 6 feet in diameter!

Mr. Laidlay has had a life-long experience of keeping and breeding all kinds of Ornamental Ducks and Geese, and no one was better fitted to write a book on the subject. His book deals with more than a hundred species, of each of which a short description is given and, where known, the period of incubation, and there are no less than sixty-eight photographic illustrations, all taken from life. We wish it had been found possible to enlarge the account of each species by details of its wild life where this is known, and more precise details of the habitat. To give this as "Africa" or "Australia" is somewhat vague!

¹ *The Care and Propagation of Ornamental Waterfowl*, by J. C. Laidlay, of Lindores, Fife. McLagan and Cumming, Warriston Road, Edinburgh, and 21 Suffolk Street, London, S.W. 1. Price 12s. 6d.

The chapters at the end of the book will be found of the utmost value to all who wish to keep and breed Ornamental Waterfowl, for in these the author gives precise details of how it should be done. These chapters are headed: "Broody hens and their management," "Buying birds and their treatment on arrival," "Feeding and management of adult Duck," "Eggs and fertility," "Management of young," "In the rearing field," and "The Duck as the mother".

The photographic illustrations, which are whole-page plates, will be found a great help in identifying the species, though in the first one, "Pair of Red Flamingoes," it should have been stated that these are young birds in immature plumage.

ADVICE ON THE REARING OF PHEASANTS AND PEAFOWL

A booklet that will prove very useful to all Pheasant keepers has been published by the Hundridge Game Farm, of Hambledon, Hants, from whom it can be obtained for 2s. 6d. It gives practical advice on the keeping and breeding of Pheasants of all kinds, and the hatching and rearing of their chicks. It deals with the subjects of broody hens, coops, the best foods for the chicks during the various periods of their growth, and the ailments to which they are subject. Mr. P. J. Lambert contributes a lengthy article which is of particular value since few have had so much experience of Pheasant keeping and rearing as he. The booklet concludes with a useful article on Peafowl and their treatment.

THE KEEPING OF FISH

We have been asked to notice a book just published by the Poultry World, Ltd. (Dorset House, Stamford Street, S.E. 1), under the title of *The Aquarium*, written by the Director of the Zoological Society's Aquarium, Mr. E. G. Boulenger, and illustrated by Mr. L. R. Brightwell.

While this book, strictly speaking, does not come within our province, we happen to know that quite a number of our members are interested in pisciculture as well as aviculture, and these will be glad to know of a book giving sound advice on the subject while obtainable at the extraordinarily moderate price of 1s. 6d. Mr. Brightwell's drawings are charming.

CORRESPONDENCE, NOTES, ETC.

THE BARBARY PARTRIDGE

It would appear from Mr. Debono's letter that the Barbary Partridge has the same habit as the Cretan Chukor. Two lots of eggs are laid, the cock taking charge of one and the hen of the other, the broods being reared separately. It seems also that, having got his batch of eggs, the cock resents the company of his mate: possibly she irritates him with unwanted advice as to how he should perform the duties of incubation.

TAVISTOCK.



*Photo, A. Wilkinson,
(Kapiti Island.)*

THE TUI (*Prosthemadera nova seelandica*).

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NOTES ON NEW ZEALAND BIRDS

By SYDNEY PORTER

(Continued from page 357)

THE BLUE OR MOUNTAIN DUCK (*Hymenolaimus malacorhynchus*)

One of my disappointments in New Zealand was not seeing this strange and very rare, aberrant duck. I tracked it down to one of its few remaining resorts, the Whakapapanui River on Mount Tongariro. I searched in vain for this illusive creature, wandering far up the river almost to the snow line and was rewarded only by finding a few feathers. I was told by a road man that birds had been seen flying upstream a few days before my arrival.

This very distinct duck is found only on the fastest flowing streams and torrents which flow through the mountain forest and never frequents the low forest lands or the still open waters.

Never very common, this bird has become very rare, chiefly on account of its tameness and lack of fear of man.

My hopes ran high of seeing this bird when one of the employees at the Chateau Tongariro told me that he had found a nest of eight young ones, but on his taking me to the spot I found that the supposed nest was only a shelter where the young ones had gone when frightened by the man.

There was no doubt that the birds were there, for they were seen

and heard by several people whilst I was at the Chateau. But though I wandered miles up and down the stream, a no easy matter when the banks were steep and covered with the densest alpine forest to the water's edge, I was never lucky enough to see the birds.

This duck possesses remarkable swimming powers. It can strike upstream against a current which would sweep a man off his feet.

If the bird could keep at the high altitudes where it nests, all the year round, it would be safe, but in these districts the cold in the winter is intense; snow covers the ground, the rivers often freeze over. The birds are then forced to lower altitudes and come within range of the duck-shooters who, although the bird is protected, neither know nor care at what species they aim. To them a duck is a duck, whether it is blue, black, or yellow.

I was told by some gold prospectors that the bird was occasionally seen in the Sounds district in the south-west corner of the South Island, but that it was far from plentiful and was being exterminated by the various introduced mammals, such as cats, rats and weasels, which now abound in the district.

According to all accounts this bird will eventually become extinct, its extreme tameness has been its undoing, neither can it cope with the altered conditions. It is not found on any of the island sanctuaries or it might have been saved for posterity. I doubt whether it would be possible to keep this species in captivity. I don't think that it has even been exported from New Zealand.

The bird is distinguished from all other ducks by its blue-grey plumage and its extraordinary bill. The end of the upper mandible is semi-circular and has a flap of loose skin which hangs over the lower part. This is no doubt of great use to the bird in obtaining its food from the bottoms of the fast-flowing streams.

THE TUI (*Prothemadera novaeseelandiae*)

After the Kiwi, the Tui is perhaps the most famous of all New Zealand birds. The first question one is asked when it is known that one is interested in birds is, "Ah, have you heard the Tui?"

A certain bird book recently published states that the Tui is common throughout New Zealand. From my own observations and from

those of others this unfortunately is not the case. Everyone in New Zealand knows of the Tui, for its fame is almost legendary, but very few town dwellers or members of the younger generation have seen it unless they live in remote districts.

It was my great desire to see these famous birds as soon as I arrived in New Zealand, but to do so I had to travel many miles off the beaten track into the virgin bush. In fact to get the first glimpse of this bird I had to go nearly twenty miles into the mountains from a tiny township called Mananui (meaning, "the place of many birds"). We travelled up in the early mornings on a "jigger", an ingenious machine consisting of an ancient motor cycle with four truck wheels fastened on to enable it to run on the lines up to the timber-felling camp. The first day we journeyed up in the pouring rain, almost frozen with cold, and that was in midsummer! At length, after many hours in the dripping forest, we heard the loud ringing notes of a Tui and soon afterwards saw him perched on the topmost branch of a high forest tree, his "pōis" were very conspicuous, he continued to call for a time but later we lost him.

In the days following we saw quite a few, but never more than three or four at a time. Usually they were more often heard than seen. Once we were lucky enough to see two males displaying to a female. There was a terrible commotion as the birds dashed about the branches. They seemed quite regardless of our presence. The two males jumped about with the greatest energy, their body feathers puffed out, until they appeared nearly twice their natural size, all the time their "pōis" standing out very plainly against the deep shining plumage. They danced and sang in an exceedingly noisy and clumsy way until the hen moved off, followed by her two suitors.

People go into raptures over the song of this bird, but to my mind it is greatly over-rated. It is certainly very loud, much louder and stronger in volume than any other bird I know, but it is by no means sweet like the song of the skylark.

Both the song of the Tui and the way it is delivered are remarkable. The loud rich notes are poured out with much gesticulating and reaching; one would almost think that the bird had a bone in its throat that it was trying to get rid of.

Whilst in Stewart Island, Tuis often came and sang quite close to me when sitting in the forest, sometimes within a foot or two of my face. It is only when close to the bird that one hears the flow of soft bubbling notes which are lost when one is a distance away. Though there are many loud clear musical notes, they are not continuous and the whole flow of melody is spoilt by the harsh coughing and choking notes with which it intersperses its song.

In certain forested districts such as the remote Government reserves the birds are comparatively numerous and when unmolested become the most conspicuous birds about the district. They are always in evidence, dashing about all over the place with a noisy, blustering motion. The sound made by the wings when flying is remarkable and resembles a loud rustling of silk, and it can be heard from a considerable distance. Every few minutes as they move from tree to tree they stop to utter a few melodious notes which, when heard from several birds at once and in conjunction with the Bellbirds, make quite an enchanting melody, but when heard singly the song lacks the musical qualities generally attributed to it.

To question the Tuis' musical powers ranks almost as blasphemy in New Zealand. He calls his loudest in the very early mornings and many times about dawn I have been awakened by an almost deafening chorus of these birds, a rare thing in New Zealand in these days.

When seeking refuge from the angry seas in some of the quiet inlets of Stewart Island, we heard the chorus of Bellbirds and Tuis which floated over the still waters from the forests, such as Captain Cook must have heard when he first anchored in some of the then beautiful inlets on the coast of New Zealand and which he speaks about in his journals.

A great deal of sentimental stuff is written about the Tui such as, the following from a recent novel, "There was a sudden whir of wings, a flash of blue and white, and a Tui darted through the branches up to the topmost twig of the tallest tree. Swaying gently, he droned a few guttural notes, then broke into a torrent of joyous song and as though at a signal the forest woke to animation and music. A moment of wild harmony and then as suddenly as it started the vocal melody subsided." I only quote this to show the traditional attitude towards

the Tui's song which is similar to the one with regard to the nightingale in England. It is a strange thing that though the skylark is very plentiful in New Zealand its song remains unnoticed. Yet the most wonderful bird melody I have ever heard was from a chorus of skylarks in New Zealand. We lay anchored in the Bay of Whangarei. We rose early, weighing anchor at about 4 a.m. on the most perfect summer's morning; the water was as still as glass, and not a single sound was heard. Then the sky began to flush with the faintest pink of the early dawn, and suddenly a skylark mounted into the still clear air and poured forth his sweet melody, then another and another until at last there must have been literally hundreds. In the stillness of that early dawn they formed the most wonderful avian chorus I have ever heard or ever expect to hear again. Things like that only happen once in one's life-time.

On the Little Barrier Island the Tui, if not the commonest bird, is at least the most conspicuous. It is seen and heard everywhere and they seem in a great degree to consort with the Bellbirds, but this is no doubt owing to their food supply being the same.

The old and knarled Pohutukawa trees which spread their crimson laden branches over the waters of the blue Pacific, were almost alive with both TuIs and Bellbirds in the blossoming season and although there was a great deal of quarrelling between individuals of each species one never saw the different species attack each other.

Around the caretaker's house the TuIs and the Bellbirds as well were very tame. One could stand within two or three feet of them and watch them feed on the plate of porridge that was placed outside every morning. The TuIs never fought the Bellbirds, though the latter very wisely gave way to them at all times, no doubt owing to their superior size.

When at the Barrier in January we saw a great many young birds only recently left the nest. These resemble young Blackbirds with a greyish collar on the back of the neck.

The Tui has wonderful powers of flight and it was always a great treat to watch these birds indulging in their amazing aerial gymnastics. The birds mount to a great height in the air and suddenly come down with a terrific rush like a meteor falling to earth.

The bird, which is similar in shape to a Blackbird though considerably larger, is metallic blue-black in colour, bronzy on the back and metallic blue on the wings and tail. On the back of the neck is a broad collar of hackle-shaped feathers and on the throat are two very striking plumes of white curled feathers which resemble little white balls similar to those used by the Maoris in their Pöi-dance hence the name "Pöi-bird."

The Tui is most pugnacious and blustering in its demeanour. It passes through the forests with a great deal of noise but with incredible swiftness. It reminds me of a man, who, full of his own importance, bustles about with a great deal of noise but who really does nothing at all. Very few other birds dare stand up to a Tui and when they are very much in evidence most other birds except the Bellbirds keep out of the road.

Had not the Tui been given the protection of the Law, it would have vanished long ago, for it was esteemed by the European and Maori alike, by the former for pies and the latter for potting down for winter use.

The food of the Tui consists mainly of the nectar of flowers, small insects and berries, and when not engaged in sucking the honey from the flowers with their long forked tongues, they can be seen searching for insects in the bunches of leaves at the end of the branches.

When the beautiful yellow kowhais are in bloom, one can be almost sure of seeing several of these birds extracting the nectar from the brilliant golden blossoms. These trees are a very great attraction and the birds will often come miles to visit them, often forsaking the forests and coming close to human habitations.

The Tui often mimics various other birds' songs and also noises, in fact it has the reputation of being able to imitate the human voice, but this I very much doubt. Many times I have tracked down a new bird as I thought by its song, only to find that it was a Tui. When on Little Barrier Island, we were puzzled by a mysterious bird which used to sing after dark, in a tree near our camp. Its song was totally unlike any other we had heard. It remained a mystery until after careful watching we found it to be a Tui.

That a bird with such a marked individuality as this one would make a delightful pet goes without saying, but few are the people within recent years who have kept one. Many years ago it was occasionally imported into England but no one seemed to be able to keep them long; that was in the days before the feeding of honey-eating birds was understood. But now we have the food, the birds have gone and never again shall we see them in our aviaries, for so strict are the laws relating to the bird life in New Zealand that it is an offence even to possess one of these birds, let alone export one.

Within recent years, I will not say how long ago, I possessed a single example of one of these charming birds. It came to us a poor dejected creature, there being no indication of the beauty that was later to develop. It was a very young one and looked much like a very bedraggled Blackbird, but with careful nursing he came round and developed into one of the most charming pets I have ever possessed. He lived upon the ordinary sunbird food, that is, Mellin's, Nestles', and honey. We also hung a tiny meat safe, made out of wire netting in his aviary which contained rather over-ripe meat and was a great attraction to the flies which he loved; once a winged insect found its way into his aviary it never got out again. In spite of his size he was the most agile bird I have ever possessed. He moulted into the most perfect adult plumage complete with "pōis". He did not sing so much his own song as imitate the calls and notes of other birds. His special delight was in imitating the call of a Lesser Bird of Paradise. This was not at all pleasing, for the loud ear-splitting "wak, wak, wak" of *Paradisea minor* is anything but musical.

One day I was watching him and admiring his lovely plumage when suddenly he fell dead. I could hardly realize what had happened; one minute he was full of life and vigour and the next a lifeless corpse. A post-mortem showed that he was in perfect condition, no vestige of disease. This was during a very hot summer and I think it must have been sunstroke, for I did not realize then that the Tui was an inhabitant of the deep leafy forests and shunned the bright sunlight. Had I known that, he might still have been gracing my aviaries. So ended the short life of one of the most interesting birds I have ever owned and perhaps the last that will ever be seen in this country.

BELLBIRD (*Anthornis melanura*)

This is another songster which is rather over-rated. Its notes are very much like those of the Tui though it lacks the harsh coughing notes that the latter bird puts into its song. But the resemblance to bells is very remote unless they may be likened to the clang of a cow bell. But possibly I am no criterion for my ear is more attuned to the softer and more continuous song of the European birds.

This bird, like its congener is far from common over most part of the main land, but in the remote forested areas it is as plentiful as the Tui, but is not nearly as conspicuous as that bird, keeping more to the interior of the forest.

In the manuka scrub around our camp on the Little Barrier Island these birds swarmed. All day long from the first indication of the dawn until well into the dark we heard the loud and melodious calls of these honey-eaters as they searched for insects or sucked the honey from the nectar-bearing flowers. There was a family of young ones in the bushes which overhung our camp and all day long we heard the sharp metallic note of the young ones as they called for food.

We tamed this family by fastening soaked figs and sardine tins of diluted condensed milk on the nearby branches. First the young ones came and then the female. Eventually they became so tame that we could pick them up or they would hop on to our hands if we held them near the food, I cherished a great affection for the little hen. She was the very essence of motherhood, and her one great concern was the care of her babies. She rather mistrusted us at first and I am sure it was a great relief to her to find that we meant no harm to her charges. Her whole attitude was of the utmost anxiety that the young ones got enough food. She never for a second rested. It was ludicrous to see the youngsters feeding on the figs until the mother came when they clamoured for food. She fed them upon what she had brought and then started to feed them on the fig. While she was there they never helped themselves.

I once witnessed a very interesting little incident. The little mother brought a large cicada and started to show one of the young ones how to break it up. She hammered it about on the branch for a time, then handed it to the youngster, who in a clumsy way tried to do the

same. She snatched it back, hammered it again and passed it back, the young one now started to drop it but the little hen was ready and caught it before it fell to the earth. Every time he dropped it she passed it back and immediately got into position for catching it again by hanging head downwards underneath him until in time she caught it almost as soon as it was level with her beak. Finally he got it down his throat.

I never saw her mate. Evidently like some humans he thought that domestic duties quite out of his sphere.

Bellbirds are extremely pugnacious. Even in the young ones this instinct develops at a very early stage. The young ones around our tent fought furiously amongst themselves especially when the female was feeding them. Eventually other Bellbirds came around, being attracted to the food, but they were furiously attacked and driven off by the youngsters who seemed to think that this was solely their own preserve.

So hard did the little mother work to rear her offspring that she had no time for any toilet and her plumage became very frayed and worn. I often think of her and wonder if she is still doing her best to swell the population of *Anthornis melanura* on Little Barrier. If she is, her efforts will not be in vain, for on that enchanted island the feathered inhabitants have few enemies.

Around the caretaker's house the birds were in hundreds and absolutely without fear. I have never seen such tame and confiding birds. If I lived there I should never want a bird in a cage, there would be no need. One could watch them licking up the nectar from fuchsia flowers within a foot or two. One could sit on the door-step (such things are done by respectable people in New Zealand) of the house and see within range of a few feet, Bellbirds, Tuis, Fruit Pigeons, Parrakeets, Cuckoos and other birds with no fear of man and going about their occupations as though one didn't exist.

In the mornings a plate of sweetened porridge was placed outside the door on a box and for an hour or so until it was finished there was a continual stream of birds, sometimes there would be a dozen or so, but usually less, for the adult males were very quarrelsome, driving off all other birds especially the young ones. In fact so determined were

the males to get rid of the young birds that they chased them for long distances until they were out of the vicinity.

So tame were the birds that one could sometimes go up and stroke them whilst they were feeding. Once one ran up the stick I was holding and examined between my fingers. Its intentions were hardly complimentary! The Bellbirds of Little Barrier Island were certainly the tamest wild birds I have ever come across. I was shown a photograph of the late caretaker's wife, holding a bowl of nectar, the birds were perching on the rim of the bowl, also on the hands, arms, and shoulders of the lady.

Whenever a Tui came down to the porridge plate, the Bellbirds at once gave way and offered no resistance. They seemed seldom to leave the vicinity of the house; they could be seen on the doorstep, in the outhouses, or examining the contents of any bucket or tin left about. With a little patience I am sure the birds could have been induced to come into the house and feed from the table.

These birds are very keen on bathing, and almost as soon as one had finished at the porridge, it would fly up to the spouting on one of the outhouses and have a thorough bath.

This is one of the few species of New Zealand birds which seems to have taken a new lease of life during the past twenty or thirty years or so. In the '90's of the last century it seemed to disappear from most districts and naturalists thought at that time that a few more years would see its total extinction, but fortunately they were wrong. Why and how it came back no one seems to know; possibly it developed an immunity to the diseases of the imported birds, for now in certain spots it is common, especially in Stewart Island and in some parts of the South Island. Many years ago the Bellbird was imported into this country fairly frequently but it must be now between forty and fifty years since this sweet songster was seen in the aviaries of British aviculturists and like the Tui I doubt whether it will ever be seen again, for like that bird it is strictly protected.

I saw one or two in captivity in New Zealand which were in perfect condition and I was told of some one who had bred them to the third generation. They are quite easy to keep, feeding upon the usual sunbird nectar, insects, and berries.

The Bellbird is about six inches in length and of a general olive green, the wings and tail darkish, the head glossy purple-black. There are bright yellow pectoral tufts which seem to be never exposed. The iris is bright ruby red.

The extinction of this bird is very unlikely now that they have become re-established in the forested areas and while the various islands where it is common are kept as sanctuaries. I could say a great deal more about this charming bird but space forbids. Both the Bellbird and the Tui seem such an intrinsic part of the life of New Zealand that I can never think of that far distant country without seeing in my mind's eye the forms of these two sweet songsters.

BREEDING NOTES FOR 1933

By THE MARQUESS OF TAVISTOCK

1933 has been, on the whole, rather a disappointing season, the number of young birds reared being considerably below the output of 1932. This was partly due to an unusually large number of reliable breeding pairs coming to an untimely end between the conclusion of last season and the beginning of this one. The cock Yellow-rump, after years of wedded bliss resulting in additions to the population of anything up to nine young per annum, suddenly fell upon his wife and inflicted injuries which eventually led to her death. Neither was this the only domestic tragedy. A hen lutinistic Plumhead, paired to a green and yellow cock, always wants to nest far too early in the year at a time which would give her very delicate young no chance of survival. From the end of February she had been biting the wood in every corner she could find and just three days before her nest would have gone in she decided that her frayed nerves and thwarted maternal instincts must find *some* outlet and she gnawed a large hole in her mate's skull! It was some weeks before I could get hold of a green cock and although they paired at once and the hen was often in a tree-trunk she never properly settled down and finally dropped into moult without laying. Fatal matrimonial disputes through the

pair being kept back from nesting are a very real danger both with Grass Parrakeets and some of the smaller members of the Ringneck family and it is often wise to separate the sexes. The alternative of letting them nest when they want to is worse than useless and merely results in young dead in the nest or shell, clear eggs, and a wasted season. The Plumheads just mentioned last year reared four green young which, to prevent accidents, I wintered in a flight cage in the heated birdroom. I did not turn them out till the very end of May but even so I was too early and a few cool days resulted in the two hens developing chills which in one case proved fatal, although the patient was taken into the hospital on the first sign of illness. Until they have completed their first moult young Plumheads are more liable to chill than any Parrakeet I know, and, like Long-tailed Parrakeets and Vasa Parrots, they do not appear to have the slightest power of recovery even from what, in another bird, would be a most trifling illness.

Another ménage that came to an end through incompatibility of temperament was that of the Salawati and Amboina Kings. After living with him for nearly two years and producing a young one that died when ready to leave the nest, the Amboina without warning fell upon her mate and scalped him. Thinking that her temper might have been embittered by worry over her offspring and the approaching moult I resolved to give the couple another chance. Accordingly, when both were in breeding condition, I again introduced the Salawati. The two birds seemed delighted to see each other, inspected the nest together and went to roost side by side, but by 9 a.m. the following morning she had scalped him again! The Apache tendencies of the Amboina King are most trying and unexpected and clearly it will be impossible to breed from her unless I can obtain a powerful male of her own large race able to keep her in proper subjection.

When the Salawati had recovered from his second adventure I tried him with the Sula Island King, though with some misgiving as on a previous occasion she had bullied him. This time, rather to my surprise, she behaved better and allows him to be master. They have not, however, nested, possibly because the Sula Island must now be getting very old as I have had her not far short of 20 years.

My breeding pair of Barnards, the cock being *B. crommelinae*, came to an untimely end last winter. One day I noticed both looking ill with symptoms not easy to identify. The hen soon died and proved to be suffering from tuberculosis. For a while the cock seemed likely to recover but in the end he started to go very lame and I destroyed him to save him from further suffering. This is the first case I have had here of a deadly disease fortunately very rare in movable aviaries and the origin of the isolated outbreak remains a mystery.

Towards the end of the winter my cock Rock Peplar, a trained liberty bird, looked not quite right, having the appearance of having banged himself or met with a similar injury. His eyes looked bright and his appetite remained good, but he died rather suddenly and proved to be a victim to aspergillosis, a disease which has occasionally caused losses among non-psittacine birds. His widow was a most erratic hen for whose mental attributes I entertained the lowest opinion. Disregarding every shape and make of nest, she persisted, year after year, in laying her eggs from the perch and then incubating the perch from which she had projected them. I had practically made up my mind to get rid of her, but, having foster parents available, I decided to try and secure a fresh cock. The first, although of the handsome yellow type so much to be preferred, proved an aviary-bred degenerate of no use for stock purposes. The second was one of the greenish West Australian birds, but I kept him as nothing better was available. The hen was soon at her old tricks of inspecting nests and refusing to listen to the threats of her partner and his entreaties that she should set up house in one of them. When she was on the point of laying I introduced a new wooden box with a coco-nut-husk bottom which I should have considered most unsuitable for Rock Peplars and one, moreover, which she had scorned the year before. The contrary creature, however, took possession of it and after some obvious hesitation as to whether it would not, after all, be better to return to the perch, laid her eggs in it and started to sit and at the time of writing has actually reared a fine son and two daughters!

Barrabands did poorly. One pair that reared three young last year had clear eggs and the pair that reared five have only two, though

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they are lovely birds, no doubt owing to the extra feeding they received. The third pair had young dead in the shell. The cock is a youngster imported last autumn who only came into adult plumage in mid-winter; doubtless he will do better next year. It is rather strange, though, that even when the feeding, management, and stock are identical and there is no lack of sunshine before or during the breeding season, for some elusive reason the fertility of eggs and readiness of birds to lay will vary considerably in different years.

The Princess of Wales Parrakeets came into breeding condition and paired but the hen would not take to any nest and did not lay. I am hoping for better luck next year with an unrelated cock bred by Mr. Harvey. This bird got ill when turned into the aviary in hot weather and I mean to try and acclimatize him to outdoor life in winter when the microbes are less active. He is at present in a flight cage in the bird-room and has learned to imitate perfectly all the cries of the Roseate Cockatoos in the adjoining aviary!

The Crimson-wings reared four good young but one was found dying from a mysterious injury to the mouth a short time after it had left the nest.

Although the cock spends most of the year at liberty and the hen lays twice each season the fertility of the Australian Kings' eggs is always very low. This year only one of the first clutch hatched. Usually the hen waits until her first lot of offspring are out in the world before she lays a second time, but this year she laid again about a fortnight before the young one flew. She is a devoted mother, continuing to feed her first family even when she is incubating the second lot of eggs, but this year her concern for her child proved unfortunate. The day it left the nest anxiety for its welfare and desire to assist it in its first exploration of the outside world proved the stronger impulse and she deserted her eggs in order to do her duty by her débutante daughter! One of the eggs that looked fertile was entrusted to the Grey Parrot, but I fear with no good result, for Polly, like most old maids of the parrot family, only likes eggs and should one happen to hatch is so shocked by the unexpected event that she destroys the pink monstrosity.

A second hen Crimson-wing, paired to the infertile Hybrid Sula

Island King was given a couple of lutino-bred Ringneck's eggs which unfortunately failed to hatch. After this she laid two more infertile clutches. I must try and get her a mate of her own species as it is a pity such a fine breeder should be wasted. The third Crimson-wing, paired to the Princess of Wales Hybrid did not nest, neither did a new Australian King imported last autumn.

The Worcester's Hanging Parrot, paired to the Golden-backed, as usual laid and faithfully incubated two infertile clutches, an experiment in vitamin feeding failing to achieve any good result.

The Racket-tailed Parrots for a long time raised my hopes, the hen visiting the nest freely, but no eggs appeared and they are now in moult.

The lutino Blue-fronted Amazon continues to disappoint me, though she has come into breeding condition more than once and quite often enters the nest. I have never been able to get a really satisfactory cock for her. The last one, though most ferocious with human beings and a good flier, refused to pair and always began to moult in May when the lutino was most eager to breed. His successor is so wing-stiff from long caging that he cannot fly after nearly two years in the aviary, he is stupidly nervous and nearly has a fit every time anyone passes within twenty yards of him and he, too, has a predilection for May moulting. A pair of Red-collared Lorikeets, lent me by Keston, laid two eggs that failed to hatch. They are vicious brutes, the hen being even worse than her companion in her whole-hearted efforts to bite.

A new pair of Leadbeater's Cockatoos nested and laid four eggs—rather a large clutch for Cockatoos in confinement. Unfortunately, though he sat well, the cock refused to pair. I have reason to think he will do better next season.

The white Roseate and his grey mate again reared two grey young ones, I think a pair. Their two sons of last year have grown into fine strong birds. I have been fortunate recently in securing a nice pair of true Albinos with pink feet and reddish eyes (my old cock's feet and eyes are normal) so that in time with good luck I may be able to build up a strain of this very beautiful variety. A white Roseate in good plumage is even lovelier than a Leadbeater as the breast is

a much richer pink and a better contrast to the snowy wings. I was hoping to breed another lutino Ringneck, but the law of averages was relentless and I had to pay for my good fortune last year when two fine lutinos were reared in one brood and have since grown well.

One pair which have never yet produced anything with both size and stamina reared an extremely fine green young one. The hen is not a very good flier and plucks the feathers of her rump and to see if I could offset those evidences of degeneracy I gave them nothing to drink except water containing yolk of raw egg and orange juice. I intend to try further experiments by giving this mixture to birds rearing young.

The hen who reared the lutinos last year is a most miserable specimen and unable to fly and her mate is not much better, either physically or morally, for he is a baby-killer and has to be removed before his offspring hatch. This year the mother of the lutinos got egg-bound with her second egg. When an elderly hen Ringneck begins to get egg-bound it usually means the end of her breeding career and the signal of approaching sterility. I wondered if the two lutinos would not prove to be the old lady's swan-song in the breeding line! The first pair of eggs failed to hatch under foster parents but in May the Ringneck nested again and although she made rather heavy weather of it, succeeded, with the aid of hot sun and warm nights, in laying two more eggs which not only hatched but produced two fine green young ones fully reared and free from any defects.

The third pair of Ringnecks were a lutino-bred cock and a three-year-old untested green hen bred from lutino-breds. I was rather inclined to think that this hen was sterile, for, as a two-year-old she had taken not the slightest interest in the nest-box. However, I was wrong for she laid four eggs and hatched two green young which she reared, though she plucked their heads and backs rather badly and one is not a very good specimen.

Barnards did nothing beyond look at their nest, the hen being a young one, and wintered indoors.

The Pennants hatched three out of six eggs in the coco-nut-husk box for which the hen has a predilection. One died when a few days old. The others are about half-grown at the time of writing. I am

anxious to get another cock as the present one is elderly and eccentric and a very lazy husband and parent.

The Browns did badly, hatching only one of their eggs and losing the young one. Here again the cock needs replacing. A second pair on loan from Keston arrived late in the season and did not settle down to business. Brown's Parrakeets have an unrivalled capacity for moulting. Their North Australian origin seems to upset their calendar and many never seem to get it straight again and their motto appears to be "when in doubt, moult". The result is that some individuals accomplish more moults in a year than a Grouse and, while it does not seem to upset their general health, it seriously interferes with their breeding. Their compatriots the Hooded are nearly as tiresome. My hen resolutely refuses to adopt himself to our seasons. She lays first in October whether she has a nest or not; loses her young; nests again in mid-winter and gets egg-bound; raises false hopes by dropping a few feathers in February, moults steadily from March to July, comes into show condition in August and begins to take a leisurely interest in the nest in September.

The hen Rosella refused to settle down in the healthy natural tree trunk I provided her with, but immediately took to a wooden box I offered in desperation late in the season. She would have done better to follow my choice of a nest and not her own, for of the six young hatched one died in the nest and the other five were rickety, two succumbing after they had flown or rather fallen out.

The Queen of Bavaria Conures had three clear eggs as in 1932. I have now changed the cock. The present one unfortunately cannot fly as he has been treated by the native method which, by permanently destroying the end primaries on one side has the effect of pinioning without removal of the joint. He is, however, a more richly coloured bird than the full-winged one and seems anxious to breed.

The Purple Sunbirds did nothing. The cock seemed to want to nest and at times got very annoyed with the hen and attacked her so spitefully that it was necessary to provide plenty of thick clumps of bushes for her to hide in.

The odd cock, a very old bird, managed to break his leg, but it has mended perfectly with no attention.

The Senegal Sunbirds have also done nothing although I think their breeding season must be later as the cock is just starting to sing.

The Fairy Bluebirds laid three times, but the hen got egg-bound with the second egg of both the first clutches. I removed the cock as he appears to be an egg-eater. The first time the hen sat unsteadily and soon upset her egg. For the second venture we made her a nest in an open wire box which she took to readily and she sat quite well, hatching one young one, but throwing it out of the nest when about a week old. The third time she would not sit.

My failure to induce the Rothschild's Birds of Paradise to nest was explained when this summer the "hen" moulted into a young cock. The curious thing was that the fine adult cock was desperately afraid of the immature one, but I have known the same thing happen with Fairy Bluebirds. It hardly supports the new theory that the object of the bright colours of male birds is to terrify rivals! The Rothschild's are moulting at rather a sensible time of year for Birds of Paradise, i.e. in late summer and autumn. The hen King Bird of Paradise carried nesting material about a few weeks ago but the cock had not fully completed his moult.

The big Banksian Cockatoo is sitting but I fear the result will be the usual clear eggs.

The cock Palm Cockatoo seemed disposed to feed his mate but they are still very wild and go no further. They seem to be partly nocturnal in their habits as I often hear their strange cries during the hours of darkness.

I have unfortunately lost one of my Imperial Amazons from enteritis. It had been ill earlier in the year, but recovered. The survivor, Mr. Porter's bird, with the broken wing, I decided to release, as it never seemed happy in confinement and I thought it would enjoy climbing about with the shot-damaged Bouquet's. It never used its wings in the aviary and the only time I saw it try to do so it fell to the ground like a stone. What was our surprise, therefore, on letting it out, to find that it could fly as if it had never had the slightest injury. It is at present living wild in the wood at the back of the aviaries, feeding on apples and acorns and refusing to come down for artificial food.

The most interesting new arrival is a lutino hen Rosella, a very beautiful bird indeed. The blue areas of the normal Rosella's plumage are snow-white or white faintly tinged with blue; part of the green and yellow areas are very pale lemon and the head, rump, and upper breast are mainly orange-red, the feathers of the mantle being edged with the same colour. The eyes are red and the feet pink. Naturally I shall try and breed from her but I fear it will not be easy, partly because she is tame and inclined to be cheeky; partly because she seems to have been kept in a cage a long time and is rather fat and her constitution may not be of the best and she may not be easy to acclimatize to aviary life.

Three cock Malabars are also a welcome new addition as my only other cock is a lunatic who bites off his flight feathers at the beginning of each breeding season and has damaged feet and beak. As a mate for my best breeding hen I got the loan of a cock I bred myself some years ago, but he did not do well and without being in any way ill did not come into proper breeding condition and the hen got fed up with him and did not lay.

The spinster Layard again nested but her eggs were infertile as she had not time to get on friendly terms with the Plumhead I introduced.

The cock Slaty-head and hen Plumhead that lost their solitary young one in the nest last year I provided this season with a natural tree trunk as I find young Plumheads very intolerant of any substitute for a completely natural nursery. Three eggs hatched: one young one disappeared at an early stage, the others, a pair, have been reared. They resemble young Plumheads, but their central tail feathers are brighter blue with white tips and their heads have a dusky tinge.

A pair of White-capped Parrots (*Pionus senilis*) nested as soon as they were turned out and the hen hardly left the nest for weeks. Their one egg failed to hatch, but she appears to be sitting again. A young bird was hatched from the second nest but was killed by the cock when a week old.

A hen Stella's Lorikeet has been a brief joy, for soon after her arrival, when she was doing nicely, she found a hole in the wire and vanished into the unknown!

BREEDING THE BLUE EARED-PHEASANT
(Crossoptilon auritum) IN CONFINEMENT

By HANS STEFANI

The Blue Eared-Pheasant is unquestionably among the very rarest of Pheasants. Although it was discovered as early as 1811 as recorded by Brehur, it was only last year that a healthy breeding pair was successfully brought to Europe, so that notwithstanding attempts by well-known connoisseurs 120 years elapsed before the first attempt could be made at breeding it in captivity. This is easily comprehensible when its rarity even in its native country and the great difficulty of transporting it to the coast are taken into consideration.

In the autumn of last year I was enabled to realize my long-standing intention of obtaining a true pair of Blue Eared-Pheasants. They arrived at the beginning of December after a journey of 20,000 kilometres, not merely living but actually in good health, though not until several weeks had elapsed did I dare even hope as much. Fortune was still kinder in that after some months I saw from their behaviour that I had a true pair. I could not ascertain this fact at once because the plumage of Eared-Pheasants is alike in both sexes. True, the hens have no spurs, but neither have the young cocks, so there was always the possibility that my "pair" would turn out to be merely an old and a young male bird. My last fear, that one of them was very old and therefore past breeding, proved to be unfounded. The first egg was laid on the 21st of April. Although the long enclosure was planted with growing hedges affording ample opportunity for concealment, the hen chose a fairly open corner of her shelter behind a few dry sticks stuck in the ground, where with beak and feet she dug a trough-like scrape. The egg was pale greyish brown and weighed 55 gr. It was pointed at one end and very blunt at the other, but this may be merely a peculiarity of my hen, for I know that some of the Brown *Crossoptilons* lay similarly shaped eggs while others lay long ovals.

The second egg was laid three days later, and the third to the eighth at intervals of two days, but there was only one day between the eighth and ninth; this was noticeably smaller than its predecessors, and it only weighed 38 gr. whereas all the rest weighed practically

55 gr. Two days again between the tenth to the fifteenth, but the last two, the sixteenth and seventeenth, were laid at intervals of three days. They were all laid punctually at about 7 p.m.

As Brown Eared-Pheasants will not incubate in confinement, I concluded that the Blue would behave in like manner, so I took the eggs as soon as they were laid and put them under a domestic hen. All were fertile. The incubation lasted from 27 to 30 days.

The chicks are very active and independent, they need little brooding and rarely seek the warmth of their foster mother. They are easily reared on ants' eggs, worms, and a good deal of green stuff, but they eat considerably more than other Pheasant chicks. During the first weeks of their lives they are very lethargic after a meal, and usually squat down on the ground in order to digest their food at leisure. Although they are usually peaceable together, greed at feeding time causes many squabbles during which neither will give way. Their fondness for worms sometimes misleads the chicks while still very young into thinking that the feet of their brethren are worms and to seize hold of them. They hold on so tight and are so determined to secure the fancied tit-bit that the owner of the toes falls on his back kicking before the other realizes his mistake. Dislocated and even broken toes sometimes result, for which reason weaker species must never be associated with young Eared-Pheasants for fear of having their feet mutilated.

Thanks to their excellent appetites the chicks grew with extraordinary rapidity. They were as large as a fair-sized domestic hen by the time they were two months old.

In down the Blue Eared-Pheasants scarcely differ from the Brown at the same stage, but when they are about a month old their blue plumage shows plainly.

Blue Eared-Pheasants, like their brown cousins, are tame and confiding with human beings, unlike the timidity usually shown by young Pheasant chicks.

It is greatly to be hoped that this rare Pheasant will be permanently established in Europe. If they can be at liberty in a large garden they are useful in destroying injurious insects and charm their owners by their remarkable tameness and beautiful colouring.

"LITTLE JOAN," A BABY SPARROW

By HAMISH NICOL

We found her in the garden one Sunday afternoon. She could not fly, and was trying desperately to hide among the ferns. Since she would certainly have fallen victim to a cat or my Crow, we caught her. She was very quick, and dodged very cleverly.

She was terrified. We took her into the house and forcibly fed her. We fed her several times during the evening, and put her to bed in a little travelling cage I keep for emergencies such as these.

At 5.30 the following morning I got up and fed her from my feeding tube. She was very hungry, and opened her beak to be fed. She was much less frightened.

When I went out I took her with me in her little box and fed her, off and on, at frequent intervals all day. I had to take her out to feed, but she did not mind, and by the end of the day she would perch on my hand when I put it into the box and allow me to take her out. She would sit there while I fed her.

I now allowed her some freedom, and she would make small flights but always landed on a lower level than from where she started. She was unable to rise. In the railway carriage she would flutter up the cushions of the seat, using her legs and wings.

I took her with me each day, and fed her continuously at short intervals on "Egbisco". I made it very moist, so that she got plenty of fluid. She would not drink at this time.

She became tamer every day, and was very confiding. She now would come out of her box of her own free will to be fed, and would sit on my hand and preen herself. Her tail and flight feathers were dirty and stuck together, so I washed them, which she greatly appreciated.

I made a tray for her to play on. I covered it with sand, and she would have sand baths at frequent intervals. At odd times she would go into her box and have a little nap. On waking up she would come to me to be fed.

She never looked really well, though she was quite lively. Her feathers were somewhat ruffled and she carried her little wings

dropped ; never close to her body. Her "tummy" was very prominent, devoid of feathers, and red !

As the days passed she lost all fear, and did not like being in her box ; so I gave her her freedom whenever possible. She now spent her time on my desk or perched on my hand or shoulder. In this manner she would go about the house with me.

At hospital or clinic she was always out either on my shoulder or on the table, where she would amuse herself pecking about among the papers or on the inkstand. From time to time she would come to me to be fed.

At home, during tea, she sat on the table, or on the cake, and now commenced to feed herself. She took a great fancy to butter and sponge cake !

At dinner time she spent her time running between me and my wife, running across the table to us ; sometimes perching on my hand or arm, and sometimes on my wife's. She would help herself from our plates.

She spent the evenings on my lap, occasionally running up my arm on to my shoulder and pecking at my neck. From time to time she would creep under my coat and go to sleep.

As I was busy on Sunday afternoon, my wife "nursed" her. Little Joan sat on her hand or pen as my wife wrote letters, sometimes cuddled up against her neck to keep warm.

When I went into the room she flew across to me and perched on my hand. She appeared very fond of me !

She was now able to feed herself well, and wouldn't take food from me. I attributed this to the fact that she probably was getting enough herself. On Monday I took her out with me, and we went to the stores and bought a cage for her. I put her into the cage and she settled down and seemed to like it. There was food in the cage which she sampled and picked about on the sand and had a sand bath. She spent the morning in the cage which I left in the car when I went into the hospital. I left her at home in the afternoon. She only wanted to get out when she saw me. On opening the cage door she flew out and on to my shoulder, where she seemed quite happy. She slept a good deal on this day, and I was afraid all was not well.

In the evening she perched on the swing in the cage, and I covered her up at night.

On Tuesday I found her dead at the bottom of the cage.

So ended a short but, I hope, a happy life.

The P.M. findings showed inflammation of the bowel, with ulceration of the mucus membrane.

I have had many birds, some of them very tame, but never such a sweet confiding little thing as this one.

We had got very fond of her, and her death distressed us very much.

This is the fifth Sparrow I have tried to rear. All but one have died. The one that lived was somewhat older than the others. I let her go as soon as she was strong on the wing, as she would not settle down in a cage.

I think all these young birds one finds at this time of the year, those who cannot fly, are probably sick birds. That is probably why one cannot rear them.

I am very fond of Sparrows. I think they are more clever than any other little birds. A friend of mine who was very keen on his garden did not like Sparrows. He set a trap for them. It was a sort of eel trap. He never caught a single Sparrow! He caught many Robins. He watched the trap, and noticed the Sparrows going in and out. They would eat all the food they could pack in, and carry off as much as they could manage, and then come back for more!

If any member of the Society can give me some tips as to feeding baby Sparrows I shall be grateful.

[Sparrows of the year may be captured in hundreds by means of the eel type of trap—there are no more easy birds to trap; but once they have become adult they have acquired wisdom and are most difficult to catch.—Ed.]



Photo D. Seth-Smith.

THE LATE VISCOUNT GREY OF FALLODEN WITH ONE OF HIS DOGS

OBITUARY

VISCOUNT GREY OF FALLODEN

Viscount Grey of Falloden, who died at his ancestral home on 7th September, had been a member of the Avicultural Society for twenty years. He was known and admired throughout the world as a great statesman, but to many of us was also known and beloved as a naturalist of the very best type and a most charming gentleman. To go for country walks with him was the most delightful experience, for no one that I ever met was better at identifying the notes of wild birds, or appreciating the beauties of the country. I shall never forget a week-end spent with him in Wiltshire and the bird walks we took. I thought I knew the notes of most of the wild birds, but I was stumped by some of those we heard. Lord Grey, however, was never at a loss, and several bird songs which I was not certain of then I can always identify since those walks in which he acted as my tutor. The late Lady Grey was then alive, and she too was a devoted bird-lover, not only taming the wild birds in her garden, but also those in her large garden aviary.

But the place beloved of all others by Lord Grey was his home, Falloden, in Northumberland; a spot within 2 miles of the sea but far from the madding crowd, surrounded by woods and water; a charming garden where, in spite of its northern latitude, bamboos and other semi-hardy plants grew to perfection. Here he protected the birds and taught them to be perfectly fearless. The wild birds fed from his hands and even the red squirrels entered his house and took nuts from his fingers. And here he had his fine collection of Waterfowl; many species, some very rare such as the Ringed and Cinnamon Teal, and the Canvas-back. For the past twelve or more years no duck has been pinioned, with the result, of course, that a good many have been lost; but on the other hand, a great number have stayed and all have become perfectly tame. Lord Grey was devoted to his ducks which, when at home, he fed himself every evening, summer and winter, with his own hands. On two occasions I was privileged to accompany him on this evening hour with his ducks. The time was sunset and as the great statesman, clad in an ancient

raincoat and old felt hat, left the house with a basket of grain in one hand and another full of bread-crusts in the other, a procession of ducks came across the lawn to meet him. A pair of Mandarins, impatient to reach him first, were not content to walk or run, but flew, the duck landing on his head and the drake at his feet. Lord Grey took up his accustomed position in a garden seat beneath a large tree within a few yards of the water and was at once surrounded by a quacking, whistling, chattering crowd of ducks of all kinds. Some were so tame that they jumped on to the seat or on to their owner's head or shoulders, showing no fear whatever. I at first sat on another seat at some little distance in case, being a stranger, the birds should resent my presence; but as they did not seem to mind me I was invited to share the favoured seat. Lord Grey was very blind, but he could just see the ducks as they came close, and he seemed to know each individual. As one approached he pointed to it: "Is not that a Canvas-back?" he said, and on my reply in the affirmative, "She has a nest by the other pond. She was hatched here three years ago, and in her first autumn entirely left us and was away for no less than two years. Then one evening during feeding time she flew in and came straight up to the feeding place as if she had never been away. Where can she have been?"

All the ducks were allowed to nest and rear their young under natural conditions, broody hens never being employed, but all the same quite a number of ducklings were reared each year, special feeding cages placed at the sides of the ponds, just above water-level, allowing the ducklings to enter for food but excluding the adult birds.

And now Lord Grey has had his wish to end his days in the home he loved and amongst the birds he loved, and England has lost one of her greatest sons and the birds a devoted friend.

D. S-S.

CORRESPONDENCE, NOTES, ETC.

THE BLUE EARED-PHEASANT

I read with great pleasure, Herr H. Stefani's interesting article on the Eared-Pheasant in the August number of the Magazine. There are, however, a few points where I am not quite in accord with him.

The young cocks do show spurs in their first year; in most specimens they are fully developed when a year old, and it is quite easy to tell the cocks from the hens when they are about six months old.

Also, I am afraid Eared-Pheasants are not gardeners and spoil a garden in no time by digging. I should advise keeping them in parks or enclosures, but not in well-kept gardens. As Herr Stefani suggests, two dozen Blue Eared-Pheasants reached Clères in 1929, one hen alone being among them. But I should like to emphasize that neither myself nor my friend Professor Ghigi ever offered hybrids for pure bred Blues! They are quite different from both parents, and although nearer to the Blue, cannot be confused with it. In the next number of *l'Oiseau* will be found an exhaustive study of these hybrids and of *Crossoptilon* in general by Professor Ghigi, which gives all necessary details of the birds. Neither have three-quarter Blue-bred hybrids, the majority of which are quite indistinguishable from full-blooded Blues, ever been offered for sale.

The seven-eighths Blue-bred birds have reverted completely to pure Blues and can be safely considered as such; one cannot tell them from my old imported birds.

I may add that a couple of dozen of wild caught Blue Eared-Pheasants were imported into California last winter; some have already been bred there and will soon come to France, I hope.

J. DELACOUR.

MORE NEW SUNBIRDS

The List of Sunbirds which have been kept, given on p. 146 of the Magazine (June), was very soon to be put out of date with the arrival of Messrs. Webb (May 26) and Shaw Mayer (July) from Kenya and New Guinea respectively, bringing between them about thirty head of Sunbirds of eight species or sub-species, all in wonderful condition and with one possible exception new to Aviculture. Every one of them found a new home with different members or in the Zoo on the day of arrival or thereafter.

The following is a list:—

Mr. Webb's birds from E. Africa (see *A.M.*, 1933, 194).

TACAZZE SUNBIRD (*Nectarinia tacaze* (Stanley)). Hab.: Abyssinia to Kenya. Plate: Shelley, *Mon. Nect.* 19, pl. 7. There were several of these and also of *N. kilimensis*, one example of which had previously been imported before and been at the Zoo (see *A.M.*, p. 148).

KENYA MALACHITE SUNBIRD (*N. famosa æneigularis* (Sharpe)). A sub-species new to Aviculture.

GOLDEN-WINGED SUNBIRD (*Drepanorhynchus reichenowi* (Fischer)). Hab.: Uganda to Kenya. Plate: Shell, *Mon.*, pl. 6, fig. 1. I think about six of this striking species with its yellow and black plumage and very curved bill came; they make a most attractive new arrival.

FALKENSTEIN'S SUNBIRD (*Cinnyris venustus falkensteini* (Fischer and Rchw.)). Hab.: Kenya to Tanganyika. Plate: Shelley, *Birds of Afr.*, ii, 66, pl. 3, fig. 1. One example only.

KENYA DOUBLE-COLLARED SUNBIRD (*Cinnyris m. mediocris* (Shelley)). Hab.: Highlands of Kenya. Plate: Shell., *B. Afr.*, ii, 79, pl. 3, fig. 1.

KENYA HIGHLANDS SCARLET-CHESTED SUNBIRD (*Chalcomitra senegalensis lamperti* (Rchw.)). Hab.: Highlands of Kenya. New as a sub-species to Aviculture; the typical race from W. Africa, *Ch. s. senegalensis*, has been imported about twice.

Mr. Mayer's birds from New Guinea (see *A.M.*, 1933, 226).

YELLOW-BREASTED SUNBIRD (*Cyrtostomus f. frenatus* (Müller)). Hab.: New Guinea. Plate: Shell., *Mon.*, pl. 49. One male.

DUKE OF YORK ISLAND SUNBIRD (*Hermotimia sericea corinna* (Salvad)). Hab.: Bismarek Archipelago. Plate: Shelley, *Mon.*, pl. 39. Five examples arrived.

A good many of these Sunbirds went to the Zoo either directly or later and can be seen there. On a recent visit I remember seeing all but *æneigularis* and *mediocris*, and I may have missed these.

E. HOPKINSON.

ADDITIONS TO BREEDING RECORDS: SOME CORRECTIONS

In the Additions to Breeding Records which have been appearing in the Magazine recently, a few errors need correction.

(1) The three paragraphs on pp. 44 and 45, 1933, must be replaced by the following:—

Records, p. 86, Nos. 370 and 371. The specific name of the PASSERINE PARRAKEET, ("Blue-wing Lovebird") must be changed to *viduus* Ridgw., and that of the GUIANA PARROTLET to *passerinus* Linn., and for this a better English name is GREEN-RUMPED PARROTLET. Apart from this change of names, *Records* 370 and 371 can stand, but to the second add "Tavistock (*Parrots*, p. 155) says he did breed this species at liberty and that it has also been bred at Brighton."

Add. 371, i. BLUE-RUMPED PARROTLET (*F. cyanopygius* Bp.). Bred by Mrs. Goddard in 1927. (Medal.) *A.M.*, 1928, 52.

Add. 371, ii. GREEN-RUMPED PARROTLET (*F. passerinus viridissimus* Lafr.). Bred by Dr. Plath in Chicago in 1924, one young one being reared; see *Aviculture (U.S.A.)*, 1932, p. 83, where a coloured plate showing about six species is given. In the account the author unfortunately uses "*virida*" for this species, but from the context alone, one can see he meant to write "*viridissima*". Whitley in 1921 also reared a brood of this Parrotlet, which I saw.

Add. 371, iii. SPECTACLED PARROTLET (*P. conspicillatus* Lafr.). A hybrid record only.

Add. p. 225 of *Records*:—

SPECTACLED × BLUE-RUMPED PARROTLET

(*conspicillatus* × *cyanopygius*). Bred by Mrs. Tomlinson in California *teste* Plath (see *Aviculture* as above) in 1930; this cross was first reported in the list given in the January, 1932, number of this American Journal

as *vividus* × *coelestis*, but Dr. Plath is now sure that the birds imported as *coelestis* were really *conspicillatus*, and the cross obtained was as above.

(2) *A.M.*, 1933, p. 51. BLUE-BONNET entry. The hybrid should read "BLUE-BONNET × REDRUMP PARRAKEET", not as I gave it by a slip, "× Crimson-wing."

(3) *A.M.*, 1933, p. 43. BLUE AND YELLOW MACAW (p. 81, No. 350). Delete the words, "See next entry. RED AND YELLOW MACAW (*A. ararauna*)."
They are not only unnecessary but likely to confuse, and in any case *ararauna* is the name of the BLUE AND YELLOW, not the RED AND YELLOW MACAW.

E. HOPKINSON.

HYBRID BARNARD'S AND RED-RUMPED PARRAKEET

A hybrid between a cock *Barnardius barnardi* and a hen *Psephotus haematonotus* has been reared in the London Zoological Gardens.

D. S-S.

AVICULTURE IN NEW ZEALAND

Members in this small far away country take great interest in birds as you will see from the published list of members in the January, 1933, issue of the AVICULTURAL MAGAZINE.

As we have rather a good connection for obtaining birds from India, we number amongst our collections such birds as Blue-winged Siva, White-capped Redstarts, Little Minivets, Rufous-bellied Niltavas, Shammas, etc.

For food we use a local insectivorous food made from dried flies and ants' eggs, etc., mixed with best quality Madeira cake and finely chopped hard-boiled eggs and, in addition, mealworms and, during autumn, grass-hoppers, and at other times of the year a small amount of insect life obtainable such as spiders, etc.

We have been able to keep in excellent health and plumage Blue-winged Sivas, Little Minivets, etc., but have experienced difficulty in getting the Redstarts and the Rufous-bellied Niltavas to moult their primary flight feathers.

In the case of the Niltava it has been given, in addition, a Vitamine preparation supposed to contain Vitamines A, B, C, and D. This preparation, we are informed, has made possible the rearing of blue foxes in captivity. But in spite of this the Niltava has not thrown its flights, although the rest of the bird moulted perfectly.

With the Redstarts they are still at liberty in an outdoor aviary and can fly comparatively well but, nevertheless, their primary flights have not been renewed this last moult.

Can you advise any treatment which would rectify this trouble?

You will be interested to hear that I have a true pair of the Mountain Blue Birds which, at the moment, have gone into a real good moult and should, with luck, go to nest this coming September or October.

We in New Zealand are particularly interested in the feeding of birds owing to our limited experience and not having the markets of the world at our front door.

G. ROWLAND HUTCHINSON,

Hon. Secretary, Avicultural Society of New Zealand.

CORMORANT KILLING YOUNG DUCKS

For a number of years I have kept and bred a large quantity of different varieties of Duck.

I had about 20 young ones in a wire enclosure below the sluice of my larger pond, through which there flowed a small stream of water. Seven ducklings were not quite half-grown, the others nearly full grown. On Saturday evening, 26th August, at evening feed time all seven of the small ones were lying dead, terribly mutilated, and all laid out in a row on the bank.

The culprit was observed at the far end of the pond and was luckily shot. He proved to be a full-grown young male Black Cormorant.

I sent him up to the Zoo to make certain I was correct as to his species. I should be interested to hear if a Black Cormorant has ever been shot so far inland. I live four miles from Buckingham and the nearest point to the sea is some sixty miles.

Also have any of the readers of the AVICULTURAL MAGAZINE known of a case where Cormorants attack any form of bird life ?

G. ROBERTS.

FRIENDLY SHELD-DUCKLINGS

An interesting instance of young Sheld-ducks seeking human society is recorded in the September number of *British Birds*. At 9.30 p.m. on 1st July, 1933, six baby Sheld-ducks appeared at the door of a hut on Scott Head Island, where Mr. and Mrs. Pelham were staying, and positively refused to leave. Mr. Pelham writes: "There was an old bird flying over the sea in wide circles calling, so we took the ducklings down to the dunes, hoping that they would be seen, but the parent, after flying wider, eventually disappeared. Meanwhile, the ducklings had returned to the hut; as it was getting dusk and cool, we made up a 'nest' in a basket and put them in it.

"The next morning early the ducklings were grouped round our bedroom door. We gave them a bowl of water and a bowl of bread and milk, but they made no attempt to drink until my wife had taken them up and held their bills in the bread and milk, after which they cleared it up, and subsequently fed eagerly on this, but practically ignored the water, even on a very hot day.

"The ducklings now insisted on following us everywhere we went, even if it was only to cross from one hut to another. If we remained inside they settled down by the door and if left by themselves they started calling, but stopped immediately when one of us came out. When we sat outside they gathered round our feet and dozed or crawled under our legs for shelter from the sun and even climbed up us if we were lying down.

"By the next day it had become almost embarrassing to act thus as foster parents as the ducklings insisted on following us, and as there was no sign of the real parents we took them down to the marshes in the evening, but even in the undergrowth here, where they could not possibly see us, they made a bee-line for us from the edge of a creek for a distance of about 200 yards, so that we were forced to take them back to the hut again.

"On the following day, 4th July, we left the hut to walk over to the mainland at low water. Although we tried to drive them back, the ducklings

persisted in following us. So we walked away quickly, but apparently they kept straight on after us for about a quarter of a mile until they came to water, and they were seen later (when we were on the mainland) swimming down Overy Creek.

"On our return we saw an old Sheld-duck flying low over the creek, so it is to be hoped that the ducklings were eventually found by their parents."

NEW VARIETIES IN BUDGERIGARS

We understand that Herr C. Balsler, of Darmstadt, has produced Yellow Budgerigars with ruby-red eyes, the bars on their wings being brown; also white ones with red eyes and similar markings on the wings.

HONEY AS FOOD FOR BIRDS

I note with interest the arrival of a consignment of Humming Birds in Europe and that the London Zoo have some of them. They are bound to be of great interest to the public and for study purposes, as they are such a specialized avian family.

Doubtless all concerned have had experience in feeding this class of "Soft-bills" and that the food given is as perfect as it is possible to get. I would like to mention, however, that our experience with honey is not at all good. We find that it is more or less poisonous to small birds, giving them fits and liver trouble. If there is any indication that the food is not agreeing with them perfectly it might be as well to delete this ingredient from the mixture.

A. S. LE SOUËF.

THE RETURN OF THE GRASS PARRAKEETS

It is very interesting to note that our small Grass Parrots, which for a long time were so scarce, are apparently coming into their own again. This indicates that some species, at any rate, were decimated by a disease, and that their disappearance was not wholly due to settlement. The only species that is still very scarce is the Paradise (*Psephotus pulcherrimus*), though I have reason to believe that it is not as limited in numbers as it is thought to be.

We are just now erecting a series of new aviaries for these Parrots, and hope to have all species represented, even the inconspicuous Rock Parrot (*Neonanodes pterophila*).

Two of our Macaws laid last year, but we were not able to get fertile eggs. However, with different feeding we hope for better results this season.

A. S. LE SOUËF.

PHEASANTS' EGGS HATCHING AFTER VOYAGE TO AUSTRALIA

Mr. K. M. Niall purchased from the Gaybird Pheasant Farm, Great Missenden, Bucks, sixty Pheasants' eggs, which he sent to Australia, where

they were placed under broody hens. They were carefully looked after on the voyage—placed in a cool room and the box turned over every day. Mr. Niall has received the following letter from his man in Melbourne.

"I am writing to let you know how the Pheasants' eggs turned out and am glad to say they are a great success. Out of twenty-nine fertile eggs twenty-six hatched, the young birds being quite as strong as any we have hatched here. There is one Reeve's and nine Mutants, and of the remainder we cannot at present tell what they are."

Considering the long period which elapsed from the time the eggs were laid until they were put under hens in Australia, this is a great achievement, probably due, to a certain extent, to the fact that the eggs were very fresh when shipped, and to the great care that was taken of them on the voyage.

ADVICE ON THE REARING OF PHEASANTS

We are asked by the Hundridge Game Farm to state that the price of their booklet, noticed in our September number, is 2s. 7½d. post free.



John Rus. Swan & Co. Illustrators, 17, Leaden.

Red-eared Fire-tailed Finch.
Zonæginthus oculatus.

juv. ♂, ♀.

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THE RED-EARED FIRETAIL FINCH

(*Zonæginthus ocellatus*)

By H. V. HIGHMAN, R.A.O.U. (Hon. Secretary, Avicultural Society
of Western Australia)

Description.—General colour, above olive brown, finely barred with blackish brown, the bars becoming closer towards the head; rump bright red, tail feathers olive and barred with blackish brown; lores a narrow line and feathers around the eye black; patch behind the eye crimson; chin, throat, and upper breast yellowish olive, finely barred with blackish brown; remainder of under parts black with white spots; bill vermilion. Length about 4 inches.

As far as I am aware, I am the only aviculturist in Australia to have this bird in captivity. I therefore feel competent to state my observations to date.

The only place in Australia where this bird can be found is, practically, one spot in the extreme south-west of this State, the maximum temperature in summer being 80° and the minimum in winter 45°. I tried for years to procure this bird (it is extremely rare) but without success. I financed a trapper last year and in three months his efforts resulted in sixteen birds only! This species is mostly seen singly and never more than a pair together. Their natural haunts are about

marshy land where they hug the dense shrubs, rarely being seen in the open.

My specimens were trapped one at a time and placed in a small cage and there retained sometimes for six weeks until twelve birds were secured. The dozen were then railed to me in Perth, 200 miles away. I turned these birds straight into my aviary, and from two dozen birds the losses to date are three, one death being that of a specimen I forwarded to S. Harvey, a leading South Australian aviculturist, nearly a thousand miles away. My aviary is approximately $20 \times 8 \times 7$ feet high. One end is completely enclosed to form a shelter, and the flight is roofed and packed with dense foliage and small bushes. In this aviary many species are kept, ranging from soft food eaters to Parakeets, the food being greatly diversified and consisting of canary, panicum, millett, linseed, rape, and the usual greens and soft food. The Red-ears have access to this varied diet and seem to partake of all, including the soft food.

During the day they hide deep in the bushes and are rarely seen, but early morning and sundown they are extremely lively. At the outset I was astonished at their tameness. When entering the aviary to feed in the mornings they rarely departed from the seed table. They keep to themselves and do not even mix with *Zonaginthus bellus* (Beautiful Firetail) of which two pairs are cohabitants with three pairs of *Zonaginthus oculatus*. The Red-ears are terrors for their morning bath even on the coldest of mornings.

It is generally understood that this species nests from October to February, but I have a pair nesting in August. The nest is deep in the centre of a tea tree bush and is oval in shape, built of dried grasses with an entrance at one side approached by a short tunnel formation. Both birds constructed the nest. Three eggs have been laid and appear pure white in colour. Being winter here and the days consequently short, my time for observation is very limited, having my business to occupy me during the day. This fact has not permitted me to observe which bird is incubating the eggs. I cannot even sex the birds with any degree of certainty. All appear alike in plumage although some are not so distinctly marked, but some birds have a much higher pitched call than others. I presume these to be the

males. The call note is very mournful and only uttered in the early morning and at sundown. To my whistled imitation they always respond.

I am in great hopes of rearing youngsters and I feel this will not be difficult. The Red-ear impresses me by its extreme hardness. The three deaths before mentioned were two on arrival at the railway station, the other dying in South Australia after a very long journey. Eight presumed pairs I have forwarded to Germany, and I await with interest news of their arrival. I feel sure, knowing them as I do, that they will arrive in good condition.

Their habitat here is the coldest spot in Western Australia, and I feel sure they would do well in England. I might add that they definitely have never been allowed hemp in any shape or form as my Finch experience has taught me not to use this seed. Mealworms, gentles, and the like, have never been supplied, and I am convinced Red-ears are not dependent on insect food.

NOTES ON NEW ZEALAND BIRDS

By SYDNEY PORTER

(Continued from page 379)

The lovely fairy-like Pied Fantail (*Rhipidura flabellifera*), one of the commonest of New Zealand's endemic birds, is beloved by every resident who has ever made its acquaintance. It is hard to imagine a more dainty, more ethereal, atom of feathered life than the Fantail.

It is utterly fearless and if called by imitating its note will come within a few inches of one, or perhaps perch on one's arm or head. It moves through the forest with the most careless abandon, appearing to be blown from branch to branch or tree to tree, so light and fairy-like is its flight. No thistledown borne by the wind moves more lightly or gracefully than this bird. The air seems to offer no resistance to it. The beautiful fan-like tail, so large as to be quite out of proportion to the size of the owner, is usually spread to its full extent and carried at right-angles to the body.

The feathers are puffed out and the wings spread as the bird moves

rapidly through the forest so that it looks bigger than it really is. Nearly all its food is taken on the wing, and it was always the source of the greatest delight to watch these charming feathered mites performing the most wonderful evolutions in the air in their attempts to catch minute moths and flies.

In spite of its familiarity it is not found round human habitations unless they are near to the forest patches, for its habitat is not in the open country, but in and around the indigenous "Bush". Often in a patch of native "bush" only a few hundred square yards in extent several pairs of fantails will be found.

It is grievous enough to think of the disappearance of such birds as the Huia, the native Thrushes, etc., but the loss of the Fantail would indeed be a tragedy. But this I do not think will ever happen, unless every vestige of native "bush" is burnt, although most people seem to be doing their best to accomplish this.

On one of the Chicken Islands the Fantail was exceedingly abundant, and at one time—when up a tree watching the Parrakeets drinking at their water hole—I counted no less than twenty-four round at one time; the air seemed to be full of huge snow-flakes. These friendly little creatures did not come around in a flock but drifted up in ones and twos, not to drink, but merely to satisfy their curiosity as to who the stranger was. I could certainly have caught them with my hand had I desired.

It is impossible to convey to the mind of the reader anything of the dainty charm of this friendly little bird. Only those who have made its acquaintance know how it at once endears itself to every heart when once seen in the forest glades. Its charm is far too ethereal to be written down in black and white.

Sometimes when wandering in the lonely forests I have been met by one of these beautiful birds and been accompanied by it for perhaps half a mile or so, flitting around all the time within a foot or two, the only sign of animation in the gloomy interior. Whether it is purely inquisitiveness or just sheer friendliness I do not know. It would be better to think it the latter.

One often sees the Fantails hawking for insects over the streams and rivers, and I have frequently seen them picking minute forms of

head, neck and upper breast shining metallic green, the back a bronzed maroon with a greenish gloss, the wings and tail grey with greenish reflections and the whole of the lower breast and under parts snow white; the bill and iris are carmine red. Before the advent of the white man to New Zealand this Pigeon was to be found in all the forested parts in countless thousands. The white settlers soon got to work and in a short space of time the birds were reduced to the merest remnant. These birds, which were absolutely tame, formed a very easy target for everyone with a gun. The slaughter was prodigious. Not since the wholesale massacre of the Passenger Pigeon has there been such a killing. Old settlers have told me that 200 in a day was no unusual bag for one person. Loads were taken in to the city refrigerators to be used at leisure. Needless to say, the race diminished until the Pigeon was a *rara avis*. Fortunately the Government stepped in only just in time with protective legislation and prevented the total extermination of this fine bird. There was a great outcry at the time for not only was the Pigeon the chief food for the Maori, but it was also the *bon bouche* of the farmers. However, the bird was saved.

Ever since this bird was protected it has steadily increased until it is now seen in nearly every large patch of forest reserve. My first acquaintance with it was in the forest reserve at Lake Waikaremoana. Here the birds, being free from all molestation, are comparatively tame. In other places I had only heard the loud "whoof, whoof" of the heavy wing beats as the bird sped away from its dreaded enemy. Even now it is still shot in the out-of-the-way districts, and I heard of a person when in the South Island who had shot eighty only a few days before I arrived at a certain town in the extreme south. Last August three Maoris were fined £15 each for killing over 300 Pigeons. Had they been white men and could have employed a good lawyer they would doubtless have been acquitted, no doubt by pleading as people do all over the world when killing protected birds, that they had mistaken them for hawks! This shows how the Pigeon must have increased during the years following the act which gave it full protection. On Little Barrier Island it was a great joy to be able to study these birds at very close quarters for they were excessively abundant and their loud, noisy flight could be heard on every hand. Owing to freedom



Photo. by A. Wilkinson.

THE NEW ZEALAND PIGEON (*Hemiphaga novaeseelandia*).

from persecution they were very tame, allowing one to approach within a few feet of them.

Our object when landing on the island was to pitch our camp as near as possible to where the birds were the most numerous, so we settled on a spot beneath a karaka-tree, which was covered with ripening fruit. This fruit is shaped like a date, tapering at one end, and is a bright orange colour when ripe. Here the Pigeons were in plenty and one of the first sounds to be heard in the mornings as we opened our eyes was the loud swish of their wings as they flew over our tent to alight on the tree for their morning feed.

Despite their great beauty they are very heavy and clumsy in the trees, seeming almost to fall off when reaching for the fruit. It was very interesting to watch the birds testing whether the fruit was ripe enough to eat. It was seized in the bill and gently pinched all over. If not ripe it was left, and the same process repeated on another berry until a ripe one was found when it was torn off and swallowed whole.

I used every endeavour to obtain a pair of these beautiful Pigeons to bring back home, but found that it was impossible to obtain any on the mainland though I saw a few in captivity. It was just past the breeding season when I arrived in New Zealand, or I might have been able to get a pair of young ones. In the old days many colonists possessed tame Pigeons which they had reared from the nest, usually on bread and milk. There should be no difficulty in keeping this bird for the diet upon which it seems to live for years on in captivity in New Zealand is bread and milk and mashed potatoes, a most unsatisfactory food one would think for a Fruit Pigeon. Kept in a state of liberty, the Pigeon makes a very interesting pet, but when incarcerated in a cage or aviary they are very dull and lethargic, as most Fruit Pigeons are apt to be.

Like most other New Zealand birds it is very pugnacious and many were the fights we watched around the karaka-tree. Sometimes a bird would take possession of the tree driving all others away. Even when he had satisfied his own hunger he would still keep guard. In the forests we often saw two males fighting over the possession of a female. Even in captivity the pugnacious disposition asserts itself for I was

shown one which had a few days previously almost killed a male Ring-necked Pheasant which had been placed in the same aviary. The birds would be about the same size but the Pigeon would have the greatest weight behind it. They can also give some nasty hits with the wings.

In spite of the usually laboured flight and the heavy body, the Pigeon can upon occasion perform wonderful aerial feats. I believe it is only the cock bird that does this and it no doubt forms some kind of display. The bird rises up vertically out of its favourite tree, rising to a great height, when it suddenly turns, opening its wings and tail, and glides down to the same spot which it left. This is done over and over again, especially in the evenings. It is a very strange spectacle to watch from a distance several birds doing this at the same time. When lying some distance off a forested island it appeared as though giant balls were being thrown up and down from out of the trees.

On Kapati Island I was shown a sitting bird which was so tame that we could pick her off the nest and look at the egg. It was here that I discovered that this Pigeon has a curious parasitic fly similar to one I noticed on *Vinage delalandei* in East Africa. This peculiar fly is the size of a common "blue-bottle", but very flat in shape and a pale grey colour. At times it runs about quickly over plumage but on the slightest alarm it dives into the feathers. (The accompanying photograph, taken of the bird after I left Kapati, shows this fly on the breast of the bird. The young one had just hatched, hence the broken egg shell.) Only one egg is laid, but I believe the bird nests twice in the year. The nest is not the frail structure that most Pigeons make, and great care is shown in choosing the site.

This bird cannot exist without large areas of forest for it feeds almost entirely on the berries and fruits of the large forest trees such as the karaka, miro, puriri, etc. The bearing seasons of the trees vary according to the altitude so the Pigeon has to follow its food supply.

I have been told that, owing to the scarcity of berries at certain seasons, the birds are forced to feed to a large extent on various leaves and during this period they are exceedingly thin. When there is a

good berry season the birds become so fat that if shot they burst with the force of falling to the ground.

A dead bird was found under the karaka-tree near our tent, having been choked by an extra-large berry; it was exceedingly fat and heavy and must have turned the scale at several pounds.

Buller states that this bird is strictly arboreal, but I have frequently seen it on the ground feeding on the leaves on some small weed in the caretaker's garden on the Little Barrier.

The colonists are able to tell by the flight whether the bird is fat or otherwise. Usually it is at its best when the miro berries are ripe. After feeding upon these berries the birds get very thirsty and in the old days the Maoris took advantage of this by placing troughs of water made out of hollowed logs up in the trees. When the birds became accustomed to drinking out of them nooses were placed in such a position that when they raised their heads they were caught. The Pigeons formed the chief source of animal food of the inland tribes of the Maoris. When large numbers of birds were caught they were potted down in their own fat for further use. The iridescent feathers were used in the making of beautiful cloaks, the white and green feathers being arranged in various patterns. The cloaks which I saw were in green and white checks, and very beautiful they looked. In the making of these cloaks a thin base of fine flax was woven and the feathers individually woven in. Much labour and patience would be needed to make even a small one. There is a cloak in the Auckland Museum composed wholly of the tail feathers of Tuis. Hundreds of birds must have been killed in the making of this garment.

THE BLUE WATTLED CROW (*Callæas wilsoni*)

My first and only sight of this strange bird was of one as it flashed across the road when I was motoring through the Urewera country. I was thrilled even with the fleeting glance, for to-day this is one of the rarest of New Zealand birds. The manager of the hostel at Waikaremoana told me he had only seen it once in three years.

Why this bird is called a "crow" I do not know, for it is not related to, neither does it resemble a Crow. It is a very distinct form with no near affinities. It is about the size of a Mistle Thrush with

a longer tail, light slate-grey in colour, with a very thick, short beak, and on each side of the lower mandible a round wattle, about the size of a sixpence, of bright sky blue.

In the old days before the advent of the colonist this bird was fairly numerous in the deep recesses of the forest. Like most of the New Zealand birds it was remarkably tame and would come up to inspect a stranger. It lived mainly in the undergrowth, never taking long or sustained flights. It was chiefly famed for its remarkable notes which are said to have resembled distant bells. In fact it is mainly known to the old settlers as the "Bellbird" owing to its musical powers.

With the burning of the bush it has disappeared from nearly all parts of the North Island, being found only in one or two localities such as the forest on Mount Egmont and the Urewera country.

I was told by an old naturalist that fifty or sixty years ago it was plentiful in many wooded gullies, and he and several others made representation to the Government asking to be allowed to catch several pairs for release on the islands. But owing to the usual Government apathy nothing came of it.

There is just a chance that this bird may hold its own and survive in remote parts, but it is just as likely that the next few years will see its extermination for at the present moment its fate is certainly in the balance. It would be a matter of the greatest regret if this unique species should pass away, for it is certainly one of the strangest of New Zealand's very distinct avifauna.

One of my chief reasons for going to Stewart Island was to see the southern representative of the Blue-wattled Crow, a bird exactly similar except that the wattle is bright orange, at least three-quarters of it, the base being blue. Owing to violent gales we could not land at that part of the island where the bird is still found, so that I had to come away disappointed. Even in Stewart Island, its last refuge, the bird is rare. An old resident, who lives in the remote part where it is still found, told me that he had only seen it two or three times in the last seven years. Rats and the wild cats are its greatest enemy and in time will no doubt lead to its ultimate extinction. In most parts of the South Island it seems to have quite disappeared.

THE HUIA (*Heteralocha acutirostris*)

After mentioning the Wattled Crows I feel that I should not be doing justice to the birds of New Zealand if I failed to mention the Huia, the most unique of all the native birds and a near relation of the Crows. So famous is this bird that there are numerous "Huia Streets", ships are called after it, many brands of commercial articles are called "The Huia Brand" of so-and-so; it is even a boy's Christian name.

The final extermination of the Huia was brought about in a peculiar way indirectly by the present king of England who visited the colony about 1905. The black-and-white tail feathers had always been a mark of great distinction when worn in the hair by the Maoris. Only the chiefs and those of high rank were allowed to use them and these feathers formed the basis of a considerable trade or barter between the different tribes. There was to be a great gathering of the Maoris. Huia feathers were in great demand for the auspicious occasion, but the question was how to get them, for the Huia was then very rare.

A party of Maoris discovered what must have been the last existing colony of these birds. The slaughter was great. The feathers were sold for 7s. 6d. each, and the killers reaped a rich harvest. So passed away one of the world's most interesting birds.

The Huia was a large bird the size of a crow, of a glossy black, the end of the fairly long tail feathers being white. At the base of the beak was a large orange-coloured wattle. The most remarkable feature of the bird was that the male possessed a fairly stout, pointed beak, similar to that of a woodpecker, while the female's was long, thin, and curved into almost a semicircle. The birds appeared to work in conjunction, the male chipping away decayed portions of trees to obtain the succulent "huhu" grubs. If the grub was out of reach of the male bird the female would be called in, and she with her specially-adapted bill would secure the dainty.

At first the male and female were described as different species but, as soon as the peculiarity was first noted, the skins became a very desirable addition to the cabinets of collectors. There was an extensive massacre and in less than fifty years after its discovery the Huia was almost extinct. Buller, the great New Zealand ornithologist, helped

more than any one in the extermination. He seemed to think it far better to have a series of perishable skins in museums than to leave a few living birds to perpetuate themselves for posterity.

The last living bird was seen in 1907 and since then there have been various reports from non-scientific observers with regard to seeing it. Expeditions have been out in search of it into all the remote parts where it was formerly found, but have failed to trace it. In my opinion there is as much chance of seeing the Huia again as there is of seeing the Moa.

It was frequently kept in captivity in New Zealand in the old days and several were sent to the London Zoological gardens, but they do not seem to have lived for any great length of time. As with many other things in life a great deal of fuss has been made over the Huia now that it has gone. If a little of the energy now expended on trying to trace it had been used in the first place in securing one or two pairs for the island sanctuaries we might still have had this singular bird alive to-day.

(*To be continued.*)

THE STAR OR RUFIOUS-TAILED FINCH (*Bathilda ruficauda*)

By H. V. HIGHMAN, R.A.O.U., (Hon. Secretary, Avicultural Society of Western Australia)

This Finch, in Western Australia, is not looked upon as being hardy, and local experience proves it second to the Gouldian for delicateness. Most of our Finches breed in the winter, and consequent egg-binding is so often the result.

This Finch is no doubt well known to aviculturists, making a description of plumage and sexes unnecessary.

I placed a pair of newly-caught birds among my mixed collection in an outdoor aviary 20 × 10 × 8 feet high. They had access to canary, millett, panicum, hemp, linseed, rape, the usual greens, and soft food. This pair proved extremely active, and inside one month the cock was observed with a piece of grass in his mouth executing

a grotesque dance on the perch before his partner. His "song" was very similar to that of the Gouldian. Nesting quickly followed, both birds assisting in the building with the cock bird the most active and consistent. Three white eggs were laid and both birds religiously took turns in incubating. At this time great partiality was shown towards soft food, which consisted mainly of crushed biscuit, dried flies and egg yolk.

The nest was constructed of grass, oval in shape with a side entrance, the cock proving a determined defender of his handiwork. This nest was built in the centre of a dense tea-tree in the open flight, all sheltered positions being scorned.

The incubation occupied a fortnight and two eggs only hatched, the third proving unfertile. The young never looked back, and had luminous globules on each side of the "gape" similar to the Gouldian. The parents both fed the young almost entirely on the soft food. The fledglings, a drab olive green colour, did not show any real sign of colour until three month of age and did not moult into complete adult plumage until six months old. Sexes are not distinguishable with certainty until then. When able to feed themselves they showed preference for the soft foods.

They are most amusing when worrying the parents for food. They almost stand on their heads and are most persistent in their efforts.

A peculiar feature with these youngsters was their fascination for the song of the canaries in the aviary. Immediately a canary commenced whistling the young Stars would fly and perch in front of the whistler, deliberately face him and stay there throughout the solo completely fascinated. From four subsequent nests of youngsters this same phenomena has occurred.

In rearing the young I placed great reliance in the soft food and, when the pair immediately nested again, I determined to experiment and removed all soft food. Two young were hatched and survived one week only. The parents nested a third time and I returned the soft food. Four eggs were laid and three youngsters reared. I was astounded when the pair again nested, this being the fourth time. From three eggs two young were reared. The same nest was used throughout. The fourth nest took the birds well into the summer but did not deter

them from again nesting early this winter. To date I have reared five youngsters from two nests.

As I observed previously every youngster so far reared shows the same fascination when a canary breaks into song.

The Star is a consistent bather, never missing its morning plunge. It is also fond of cuttlefish and green-seeded grasses.

I would be interested to hear the opinion of other aviculturists, but I am convinced that soft food is necessary to breed and rear this species.

SOME REMINISCENCES OF A COLLECTOR

By WALTER GOODFELLOW

(Continued from page 346.)

On my return from Ecuador I found everyone too engrossed in the War for me to think of any further collecting for the time being, so after a short rest I offered my services to the War Office, but did not receive much encouragement. As time went on and I heard no more about it, I accepted a post offered to me in Bolivia through a friend in the Foreign Office. Another man (a Canadian) had been selected to go with me, and when we met I found he had been a table companion on my journey home from South America. He was a mining engineer who had thrown up a good post in Colombia, and had come home to join up, and like me had offered his services and heard no more about it. Now Bolivia, with the exception of two of the Guianas and Paraguay, was the only country in South America I had not visited, therefore I jumped at the offer. Perhaps I ought not to include what I am about to write under the heading of this article, as I was not then a collector in the true sense of the word.

The usual way of entry into the country is via one of the Peruvian or Chilian ports on the Pacific coast, but we had been requested to go by a much less-known route through Buenos Aires, the Plate River, Paraguay, and part of Western Brazil to Puerto Suarez, a small outlet Bolivia owns on the upper waters of the Rio Paraguay. Bolivia is

like two distinct countries: the high Andean region called the *Alti Plano*, which contains all the towns of any importance; and the vast Eastern province, all low lying and exceedingly unhealthy, stretching right away to the Amazon. Few people know or ever visit this part, and I see a writer who was recently there has called it the "Green Hell", Bolivia. It is mainly unexplored and inhabited by wild Indian tribes, most of them very savage. The greater part is primeval forest with some scrubby pampa.

The Plate River is not interesting, but when one reaches the Argentine town of Corrientes the river takes a sharp bend to the right, and from thereon is called the *Paraná*, while directly in front is the narrower *Rio Paraguay*. It is here where the interest begins, as from now on one sees alligators in ever-increasing numbers daily. These are not in hundreds, but thousands, a sight such as I had never met with in any other part of the world and had not imagined could exist in these days. Where the banks were narrow, they were practically on the top of each other, never troubling to enter the water as the steamer passed, if anything going higher up to escape the wash. The banks are low and the country flat, so an extensive view is to be had on both sides. In the wet season the river overflows its banks, leaving lake-like expanses of water which gradually dry up. Around these the alligators lie in thousands, and it was a common sight to see cattle standing about among them, also hosts of Tree Ducks, Herons, Roseate Spoonbills, and many other species of wading birds. This breed of alligators seems to be comparatively harmless for reasons I do not understand. Several times I saw fishermen standing in the water quite near to huge specimens. Just before we reached *Asuncion*, the capital of Paraguay, I noticed a small beach on the outskirts of the city, on which a number were sunning themselves, so after we landed I lost no time in finding my way there. I sat down and watched them for some time, and then went forward to see how near they would let me approach them. This was 8 feet before the nearest moved off to the water. Farther up the river it was no uncommon sight to see some basking in the sun with mouths wide open and almost obscured by clouds of butterflies attracted to them. One could write pages on these reptiles alone, and later I had much to do with them in Bolivia,

where we had another breed outwardly the same but as fierce as these were tame.

The Rio Paraguay is a paradise for the ornithologist and, to those who during our winters go in search of nature study, no better trip could be recommended. From Buenos Aires to Asuncion the journey can be made in really luxurious steamers with no discomforts whatever, but at the latter place a change has to be made for the upper part of the river to steamers less comfortable, but still quite good, but it is from here the journey is even more interesting as birds of a more tropical nature are encountered daily and all day. It was a sight to see the Ducks alone, returning in their thousands as evening came on, also flocks of Parrots, Parrakeets, and Macaws; while many Herons, Roseate Spoonbills, and other waders were seldom out of sight along the banks. Those who have never seen these Spoonbills in a wild state have not the slightest idea how beautiful a flock of these birds can be in the brilliant sunlight, perhaps standing among, or even on the backs of, alligators. Their rose and carmine plumage, which fades in captivity, is one of the loveliest sights I know, so intense in colour. In many parts trees line the banks and among these may be recognized many Toucans, Nanday Conures, and a great variety of other birds, while nearer the water *Jacamerops* (probably *aurea*) was sometimes seen to dart out and catch insects on the wing. Darters called here by their Brazilian name *anhingas* (pronounced *anyingas*) are everywhere on the water and on all logs drying their outstretched wings. These birds look particularly snakelike, especially when swimming with the body under the water, and only the long neck above. Often across the pampa flocks of Rheas were observed, so near sometimes that several were shot from the deck of the steamer. On these occasions a boat was lowered and sailors went on shore to recover the bodies. The liver appeared to be considered a delicacy, and was more than once served at the saloon table, but I did not sample it so cannot say what it is like. The sailors ate the rest of the body and plucked out all the feathers for making the dusting brushes which are such a feature of all homes in the southern part of the continent.

Of animals we saw many deer drinking at the water's edge, and capybaras, called here *carpinchos*, a few tapirs, and a fox or two.

We were held up for two weeks at Asuncion by a strike of the river workers. So I took the opportunity to visit the celebrated Iguassu falls on the Paraná, going by train as far as Encarnacion. Here I came across for the first time a bird many readers must have admired in the bird house at the Zoo, namely, the White-capped Tanager (*Stephanophorus leucocephalus*). During one day I counted nearly twenty in parties of three or four, always in bushes, or sitting on the topmost twigs where their beautiful blue plumage looked conspicuously brilliant. Popas, too, were numerous, but as I did not shoot any birds on the journey, I cannot give the species. As in all parts of South America, at every village, or ranch, the steamer stopped at, was a wooden cross in the centre, which may be high or low, but invariably on the cross bar was fixed at least one, and sometimes more, of the solid clay nests of the Oven Bird (*Funarius rufa*). These are never molested as many superstitious legends are woven around these birds. At a house I once stayed at in Brazil an Oven Bird had built its nest on the ledge of the first floor verandah railing which people used every day. When the birds begin to build or renovate old nests, it is known the wet season will very soon end. I watched a pair at one place build a perfectly-formed porch-like projection over the entrance to an old nest they were repairing; and at another add a second storey, a very unusual thing, but this belonged to another species (*F. cinnamomeus*). These nests are replicas on a small scale of the ovens built outside all country houses.

A ground bird, common around some of the ranches we called at, was the Seed Snipe (*Thinocorus rumicivorus*). I had only met with this before in Chile, where it is called *chatadera*, and from whence I brought a number home alive, several of which lived for a long time in the western aviaries of the Zoo. Some may still remember them, for I believe none have been here since. They are fascinating little birds, bearing little resemblance to the ordinary Snipe. It is a pity more are not imported.

I believe all the country along the Paraguay River used to be a great resort for Egrets, and formed a very conspicuous feature of the landscape, especially where the banks border along the Gran Chaco. Alas! now they are only conspicuous by their absence. For this we

have to blame the ladies who coveted their fairy-like plumes for hats. Still in all the stores and wayside places, the announcement in Spanish, "Egret plumes bought here," may be seen. Numerous were the stories of the money men made out of the trade in former days. May the fashion never come in again, and so leave us the few that remain.

Corumbá, the terminus for all river steamers, is the farthest western outpost of Brazil, and quite a nice little garrison town for such distant wilds. From here launches can go still farther up where it is called the San Lorenzo. In fact, during the wet season it would be possible to connect by canoe with other rivers flowing north and finally reach the Amazon via the Rio Madeira at Manaos. To those who would like to make a journey through Paraguay such as I have described, I would suggest going in at Buenos Aires, up to Porto Esperança, which is a day south of Corumbá. From here there is a railway right across Brazil to Sao Paulo. There are two or three trains a week, and the journey takes several days, travelling only by day. Accommodation with baths, etc., is provided at the stations. Or, one could go in by Sao Paulo via Rio or Santos, but coming down the river, of course, takes much less time than going up and does not allow so much time for enjoying the river scenes.

From Puerto Suarez, 7 miles beyond Corumbá, we started on our long ride of some hundreds of miles to Santa Cruz de la Sierra at the foot of the great range of the Andes. It was then towards the end of the dry season and we suffered much from thirst, sometimes going two days without meeting any water except of such a quality undrinkable for human beings. Two water bags had been stolen on the river boat, so we could only carry a little with us. During the wet season much of this country is impassable. It is almost uninhabited except by wild Indians, whose fresh tracks we sometimes came across. Birds we seldom saw except Rheas, the large crimson Macaws (*A. macao*), and ground birds consisting of several species of Tinamous, Cariamas, Courlans, and an occasional odd pair of Screamers (*Chauna cristata*). Most of the country is pampa with more or less scrub and scattered trees, while other parts reminded one of Northern India, with untold thousands of very tall slender fan palms. Several times we saw pumas, and once a jaguar, and a black one at that. One of

the pumas was stalking a flock of Darwin Rheas and was so intent on its quarry, warily approaching them through the grass, that I was quite close to it before it heard me. Another time we came suddenly upon a female with two cubs. The pumas here were grey, whereas those I met with later in the forest regions were all tawny. Once during this long journey we stayed the night at a small settlement surrounded by a marvellously-constructed stockade as a protection against Indians who often attacked them in "howling mobs" as the head man informed us. This was under the shadow of one of the most remarkable and isolated mountains I have seen. Several times we encountered a veritable snowstorm of common white butterflies in such incredible numbers as to cause our animals to all but get out of control. At times it was almost impossible to see through them; one of these "storms" lasted several hours, and at times I could not see my companion through them, although he was only a few yards ahead. They all seemed to be travelling in one direction.

After Santa Cruz we still had another six days' ride to Concepcion in the province of Nuflo de Chavez. Here I left my companion as this small, isolated town (?) was to be our headquarters. After a few days' rest I continued on for a week longer in a north-easterly direction. A day after Concepcion I left the pampa country behind and quite suddenly entered the primeval forest which continued on without a break until I arrived at a small clearing called Esperanza. It was a curious sensation there, for I had left the muleteers and my baggage behind when I left camp early on the last morning. During the night vampire bats had attacked some of the animals and these were in a sorry state, with clotted blood all down the withers. Two others had broken loose and strayed, so while the men had gone to look for them I rode on ahead alone, after being told just to follow the very ill-defined trail. Early in the afternoon I came to a branch trail which I had not been told about, so I took one at hazard, but as the day wore on without any visible break in the denseness of the trees I began to think I had taken the wrong turning. At length I thought I saw a brighter gleam, and after a few minutes I quite suddenly found the open sky above me. It was a joyous feeling after being in that green gloom for days without the sight of a human habitation. Here I made

my home for four years, only leaving it for a month during the worst of the wet season once a year, which was the only time I heard my own language spoken, and this in war time too, when I was yearning for news from home of friends and relations at the War. Letters took three to four months to reach me, and often newspapers failed to arrive at all. Some letters written at this time arrived all together a year after the War had ended, and when two of the writers had long been killed.

After my return home I came across Conan Doyle's *Lost Continent*, which gave a small map showing where this lost part was supposed to be in South America. This was exactly more or less where Esperanza stood, not far from the Rio Itenez, which divided us from the state of Matto Gross. in Brazil.

I had thought this would be a wonderful field for birds, but in this I was disappointed for birds were very seasonal here, and many species seemed to stay but a short time with us; besides I had met almost all of them before in other parts of the Amazonian basin. We had a long dry season and a very wet one, and it was only between these two seasons, corresponding to spring, that many species with a few exceptions were about. Two of these exceptions were a small Ground Dove (*Chamaepelia*) and the Yellow-collared Macaw (*A. auricollis*), both of which left before the dry season ended. Where they went to I have no idea; probably farther south. In the clearing were a number of small water holes and some swampy ground never dry. It was to these the Macaws came in their hundreds morning and evening, when every small tree around the damp parts was literally covered with them, wherever a foothold was to be had. The Doves were all over the clearing and invaded the vicinity of my house, even at times venturing inside. I kept a half dozen of the Macaws for a long time but, shortly before I was due to come home, four of them escaped while I had gone up to Concepcion, so it only left the two which I gave to the Zoo, where one of them still lives at the time of writing. These, I believe, are the only ones ever brought alive to Europe. It will be seen by what I have said that this is not a rare bird where they come from, but I do not know who but an *hombre loco*, as the Spaniards say, would ever take the trouble to bring home live birds from such an

out-of-the-way part of the world. I often think still of the difficulties I had with these and a few other birds I brought at the same time, and when I was racked with fever for a great part of the journey, finding an outlet down to the Amazon.

Blue-and-yellow Macaws, Rice Grackles (*Cassidix oryzivora*), Guira, and Ani (*Crotophaga*) Cuckoos were with us all the year round, and conspicuous because of their numbers and keeping to the open. Every thorn bush in the clearing held one or more Cuckoo's nests. The Rice Grackles came among the poultry and shared their maize, and were indefatigable hunters of ticks among the cattle. Although so sleek and glossy, these birds are not a favourite of mine as they are great tyrants to all small birds and even to others as large as themselves. Whether they attack young chickens I cannot say, but hens with broods always chased them, while others took no exception to them. They are extremely suspicious birds and, although constantly around my house, were most difficult to catch whichever method was tried. On killing days, when bullocks were slaughtered to make *charqui* (dried meat), two or three boys had to patrol along the lines where the meat was hung out to dry to keep off the Turkey Buzzards who watched every opportunity to steal it. They are particularly persistent and daring and, although I tried every ruse I could think of to keep them off, they always baffled me.

At the end of the dry season came the first rains which lasted two weeks on and off, followed by two months of fine weather with light showers only before the heavy rains finally set in in January. This was the spring time when many birds returned to us and began to nest. Trees burst into bloom (although many of the most beautiful flowered in the dry season) which attracted many Humming Birds, for it was only at this time of the year we saw any at all. These seemed all forest species and never came beyond the edge of the clearing; although I had many flowers around the house I never saw a Hummer come to them. That exceedingly beautiful Tyrant Flycatcher (*Muscivora tyrannus*) was very welcome to the clearing, as they remained constantly around the house, sitting on the roof and fences, performing their graceful evolutions in the air so I was never tired of watching them, especially when two males were sparring in the air together with their

long forked tails extended to their utmost capacity. Where they nested (if at all with us) I never found out, but certainly much courting went on in the air.

When our people (Indians and half-cast Indians) knew of my fondness for birds, they brought me many nestlings during the season, so in the end I had a great variety of pets about the place: in fact, I often thought that without some such hobby one would have gone mad down there, or taken to drink, or some other vice, as had my predecessor. Such birds as Curassows, Penelopes, and Guans and a few others, had their full liberty. At one time I had no less than eight White-crested Penelopes (*Pipile cristata*), which I find particularly decorative birds, all hand-reared. To see them stretched out on the floor of the verandah sunning themselves was a beautiful sight, the sheen on their plumage showing to full advantage, but then they are grace itself at all times, with large, appealing eyes. The wall of forest which enclosed the clearing was not far off, and whenever I went out and whistled they flew to me at once in a long line like small planes without a movement of the wings and alighted on my shoulders and outstretched arms. This is certainly one of the most delightful birds to have at liberty around a house, and it is a pity they are not more often imported here and better known, as I am sure they would not fail to become popular especially with those who have country homes. They are by no means rare, and have a wide range in South America. The same applies to the smaller Guans, although they are not so beautiful. On the Rio Napo, one of the headwaters of the Amazon, I once had an adult Guan (*Ortalis guttata*) brought to me which was so wild I had for my own peace of mind to let it go after about a week. The Indian house where I was living was on the bank of the river, but at the back was a large clearing more or less. In the evening I was in the habit of walking round here with my gun, and, when watching some birds in a high tree, a large bird flew from somewhere and settled on a nearby stump. This was no less than my untamable Guan, which I recognized at once by one curiously-twisted feather in the tail. It had then been at liberty for some days and had certainly not forgotten who fed it, and no doubt missed its bananas, so I hurried back to fetch some. It would not take them from my hand, but as soon as

they were laid on another stump it ate them at once and then flew off. This was repeated every day, and it was always waiting for me, and in a very short time was feeding from my hands. Gradually, I induced it to meet me nearer and nearer the hut; very timidly at first, but in the end whenever it wanted food it came right in if no one else was there. The day before I left I caught it up again and took it down the river with me to another village some days away and turned it loose again there, where it stayed around the house roosting in a nearby tree at night. One day when I came in the Indians told me it had been carried off by a Hawk, and showed me the feathers lying about where the struggle had taken place. The next morning or evening, I forget which, as I was passing through the far side of the village, came my half-plucked and badly-clawed bird from under an old hut. Although in a bad way I was delighted to have it back again as if it were risen from the dead. Probably the Hawk had taken more than it could well fly off with, and dropped it. This bird eventually came with me to England and lived for some years. Guans cross readily with some breeds of domestic poultry, and are much esteemed for this purpose in some parts of South America. The males have a curious crow something like a rooster's. The Napo, Coca, and Suno Indians all called this bird *guataracu*.

ONCE MORE THE BLUE CROSSOPTILON

By ALEX HAMPE

I hope people will not get fed up with articles about the Crossoptilons, but as I flatter myself to have procured the original parents of all the Blue Crossoptilons existing now in Europe, I hope our members will forgive me for making some further remarks on this handsome pheasant. How I obtained the first lot for M. Delacour in 1929, I have already described in our Magazine. I may add that since 1905 I had tried again and again to obtain this species, but only in 1929 was success accomplished. The pair from which Mr. Stefani bred so successfully this year was brought over from Shanghai to Marseilles in my personal care. I picked it from a lot of about thirty-five brought to Shanghai by the Chinese servant of a friend of mine who did collecting work for an

American museum and who had sent his boy to Kansu to obtain the Pheasants. The faithful Chinaman had collected about seventy birds, but about half of them succumbed on the way to Shanghai. The remainder arrived in a most miserable condition, most of them were almost bare of feathers and about eight died soon after arrival. The others, placed in a very large aviary, soon picked up and at the end of October, 1932, I was able to pack nine pairs and some single cocks for America, while I took a perfect pair myself via Suez to Marseilles. Two pairs remained in Shanghai, whether they have bred there, I do not know. During the long journey my pair behaved in an exemplary way and never gave me an anxious moment. In the tropics going from Singapore to Sumatra it was very hot and the Crossoptilons gaped a bit, but they kept their good appetite and seemed not to suffer half as much as some Temminck's Tragopans I had with me. All the cages of my collection had false bottoms and this seems not advisable for Crossoptilons. Evidently they are used to dig a good deal for their food and therefore used to scatter all the paddy out of the tin as soon as I placed it in the cage. Through the bamboo-crating they could not reach the grains and I had, therefore, to remove the crate and clean the cage with a little scraper. If I had not been present, I doubt whether a sailor in charge of the birds would have observed this, and the birds would have starved. I also surprised the cock one day when he started to tear the padding of the cage top and to sample the cotton wool under the lining. I had made this arrangement in order to avoid bruised heads, but I think it is not advisable for birds with very strong beaks like Crossoptilons and Impeyans.

Anyhow, I finally landed the pair in the best of condition and I feel proud to have enriched the European aviaries by this beautiful and evidently prolific pheasant. Almost all M. Delacour says about the Blue Crossoptilon is correct, but I am sure he will forgive me if I contradict him on a few points. He says that a lot of *wild-caught* Crossoptilons were brought to California. There were a few wild-caught birds amongst the lot of my American friend but they all died on the way to Shanghai. All the others, and also the birds which I obtained a few years ago, were birds reared in captivity by the Chinese in Kansu. As mentioned by Mr. Stefani and myself there used to be a great demand

for the tail feathers of *Crossoptilon auritum* for the hats of high Mandarin^s, and later on these feathers were exported in quantities to Europe and America for millinery purposes. Crossoptilons are not easy to catch or to shoot, and, to satisfy the demand for the feathers, the Chinese collected the eggs of the wild birds and hatched them under domestic hens and later also bred from the birds obtained in this way. The demand for feathers has died out now but the Chinese still breed the Pheasant, probably for eating. M. Delacour states further in the *Bulletin* of the Société Nationale d'Acclimatation de France, that *Crossoptilon auritum* had not been imported before 1929. I doubt whether this is correct, for I have an old book before me written by M. Cronau, of Strasbourg, who, in years gone by was surely the biggest breeder and one of the greatest authorities on gallinaceous birds on the Continent. In this book M. Cronau gives a description of his aviaries and their contents and he states that three of his aviaries are inhabited by *Crossoptilon auritum* and three by *Crossoptilon manchuricum*, so he must have had our bird. Also in the book *Geflügelzucht* (poultry-keeping) by Bruno Duerigen, our Pheasant is correctly described and must have been known to the author. Anyhow, *Crossoptilon auritum* seems to be established now in Europe, and I hope breeders will do their best not to lose him again.

It is an everlasting regret for me that I have not been able to bring the White Crossoptilon (*C. tibetanum*) to Europe. I was very near to success in 1930. One of my Chinese friends went on business to Tachienlu, a town on the border of Szechuen and Tibet. Naturally, I asked him to bring me some White Crossoptilons, showed him a coloured plate of the bird, and gave him detailed prescriptions for feeding and packing the birds. He really got four birds, but fearing that he would be robbed of his furs and skins which he had bought in Tachienlu while travelling back to Shanghai through the Yangtze Valley, he chose the route for going home via Yunnan, French Indo-China, and Hong-Kong. It was very hot and in Hanoi his birds died, and all I got was a few tail feathers. I sincerely hope that others may be more successful and also bring us the two Impeyans which live in China. It should not be so difficult to obtain *Lophophorus l'huysii*, but I have my grave doubts whether Sclater's Monaul will ever decorate our aviaries.

CORRESPONDENCE, NOTES, ETC.

HYBRID PARSON AND MASKED FINCHES

During August, 1932, I purchased a pair of Masked Finches (*Poëphila personata*) from one of the leading Sydney dealers; they were placed in a cage 36 × 24 × 18 inches for acclimatization before turning out into the Finch aviary.

The birds were in splendid condition on arrival, and being the first of this species I had kept I spent hours watching them, trying to discover which was the cock and which the hen. Very shortly they went to nest in the coconut-shell provided as sleeping quarters and, to my astonishment, the hen laid no less than eleven eggs; these unfortunately proved all clear. Shortly afterwards they went to nest again, this time the nest contained five eggs; both birds shared the duties of incubation, in fact, throughout, both were on the nest together; as these eggs also were clear and the weather was now warmer I turned the Finches into the aviary, where they soon built a nest and sat for some time. I am unable to say how many eggs were laid this time, but nothing eventuated.

During March of this year, whilst cleaning out, I discovered a nest containing young in the grass, about 18 inches from the ground, soon satisfying myself they were young Masked Finches. Shortly afterwards three young Masked Finches were winging their way about the aviary. But stop! there is something "different" about them. Ah! that's it, the bib on each of the three is slightly larger than on the parents. I remember the eleven eggs in one nest, and that the eggs in both nests examined were clear, and also both birds sat side by side—little things perhaps, but taken together, what? Can it be I have been trying to breed with two hens, and that the young are hybrids?

Later I notice a cock Parson Finch (*Poëphila cincta*) displaying before one of the Masked Finches. This cock by the way is devoted to a hen Zebra Finch, and they have had several nests with an occasional fertile egg, but none hatched.

At four months the young birds are definitely proved to be fathered by the Parson Finch, the bib being now much larger, about mid-way in size between the Masked and the Parson, while the head is flushed with the grey of the latter, the beak is a muddy chocolate hue, rather difficult to describe; it may, however, change colour later, but am doubtful.

By the way, have you noticed that the young Australian Finches have black beaks, later changing to the normal hue of the parents. Has this been noticed with Finches from other parts of the globe?

C. B. SCOTT.

WHITTON, N.S.W.

AN ESCAPED VULTURINE GUINEAFOWL

Two years ago a brood of young Vulturine Guinea-fowl was hatched here very late in the summer. The weather was cold and damp and the young ones died off very quickly, until only two remained. These seemed stronger, and survived till they were about three weeks old when they both mysteriously disappeared one night. They obviously had not died like the others, or we

should have found the bodies, and it was supposed that either a rat had got into their enclosure and dragged them away or else that they had escaped through the wire-netting; in any case, nothing more was heard of them. . . .

One day last week I was rung up and told a large unknown bird "like a Peafowl" was feeding with the fowls on a chicken-farm 15 miles away, would I go over and see what it was? On arrival I found a large and very healthy-looking female Vulturine Guineafowl, quite tame and in perfect condition. As no one except myself in Norfolk keeps these birds I can only suppose that it is one of the chicks of two years ago which, as we surmised, had escaped and managed to survive and maintain itself, and had gradually strayed farther and farther afield till it was captured, as I have said, 15 miles away. It is remarkable, however, that such a delicate bird, susceptible to cold and intensely so to frost-bite, should have managed to weather two severe winters and also to have escaped not only being shot but also, apparently, being seen or noticed as something unusual for such a long period.

G. H. GURNEY.

CORMORANT KILLING YOUNG DUCKS

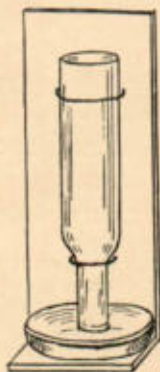
With regard to Mr. J. Roberts's note in the October number of the Magazine, querying whether Cormorants attacked other birds in a wild state, I think it is highly probable that they occasionally do so if annoyed or inconvenienced by them, though possibly not with any special idea of killing them. I remember seeing on the Saltee Islands, off the coast of Wexford, a Cormorant which was sitting on eggs, amongst a crowd of Guillemots and Razorbills, repeatedly make vicious stabs with her beak at the latter when they came too near her nest, and actually leave her eggs and savagely attack a Kittiwake Gull which had settled on the rock in close proximity to the nest. In captivity they are distinctly dangerous to other birds. Two specimens which at different times found a temporary home here on a pond with a lot of Waterfowl, killed two or three young ducklings which ventured too near; on the other hand, a Shag seemed more amenable and I never remember seeing it interfere with anything, but that may have been merely luck. Gannets are not to be trusted with Ducks; they are very spiteful on land, but do not seem to interfere with them in the water. When my father was writing his monograph on the Gannet we had seven or eight specimens here at different times for observation purposes, and they killed several Ducks and quite a number of Waterhens. During the past recent hot summer the White Fantail Pigeons here would fly down to drink from the Pelicans' pool, the latter snapped the luckless Pigeons up in a moment and, if not too large, always swallowed them.

G. H. GURNEY.

USEFUL FEEDERS OR DRINKERS

After trying all imaginable kinds of water-fountains and fountain-baths and seed-hoppers for the aviary, each one having some disadvantage, I saw the attached sketch, which seems to meet all requirements. It is simply a whisky-bottle inverted. All one requires is some 1-inch board; pierce with

a gimlet and on the reverse side pierce another blind hole $\frac{1}{2}$ in. deep, and put your pliable wire through and hammer the end in the blind hole. When you have got the exact position of the bottle you can then, by placing whatever dish or tray you intend to use under the neck of the bottle, saw off the inch timber to the exact length for the shelf at the bottom. For a bird-bath a 5-in. seed-pan, which can be got at any market gardeners, is excellent, and you can cut the length of your wood to allow $\frac{1}{2}$, $\frac{3}{4}$, or 1 inch depth of water. For a drinking fountain a shrimp-pot answers, but in this case $\frac{1}{2}$ in. clearance is ample. For a seed-hopper a bit of beading round the bottom shelf answers. In this case do not have your shelf more than 4 inches square, and both for a seed-hopper or a drinking fountain do not allow more than $\frac{1}{2}$ in. space from



the bottle-neck to the bottom of the tray or shrimp-pot. If one is using larger seeds a larger necked bottle will have to be used. There is only one snag in using a whisky bottle, it is a bit slow to fill with seed. But one of the cheap funnels got at the *6d.* bazaars, if put over the gas-jet for a few moments allowing the smaller end of the funnel to drop off, allows of a larger hole in the funnel used in filling the whisky-bottle. I use a pair of square-ended pliers with $\frac{1}{2}$ in. nose to bend my wire.

One great advantage of using the inverted bottle is that it allows of a separate bottle for each kind of seed or mixture, and you see at a glance what seed is going. Again, if the seed-tray is small, it does not allow of the birds getting in the tray and scattering the seed. Where I first saw the idea only one or two pairs of birds were in each aviary and three-ply wood was used with small medicine-bottles, but as I have thirty to forty birds in each of my aviaries I find that the whisky-bottle is more useful, and the birds scrapping to get to the food-tray flap their wings and thus blow away the seed-husks that may be dropped in the tray.

HERBERT NORCROSS.

WHITE-FACED WHISTLING TREE-DUCK

I have had a pair of White-faced Whistling Tree-Ducks (*Dendrocygna viduata*) for eight years. They have been a very friendly pair, and when I go to the aviary where they are kept and whistle they usually fly to me. I was very surprised this year to find the Duck sitting on a nest of three eggs. The next morning I found four eggs and, as I thought she might desert the nest, I took three of the eggs and put them in a nest under a Bantam and one has hatched out. The little Duck is now about three weeks old and growing famously. I send you a photograph of him and also of his parents. Since I took these eggs the Duck has laid some more, in all fifteen, and, as I thought, the Duck forsook her nest after sitting on it for ten days, I therefore removed all the eggs and put them under another hen, and now have six Ducklings, which I am in hopes of being able to rear.

I shall be pleased to hear if this is the first time these Ducks have been bred in this country. I believe they have been bred in captivity in the States and on the Continent, but have not heard of them being bred in Great Britain.

J. D. BRUNTON.

[The White-faced Tree-Duck has been previously bred at Lilford Hall and by Messrs. McLean and Wormald at East Dereham.—ED.]

BREEDING HABITS OF RED-LEGGED PARTRIDGES

It would appear that the Red-legged Partridges (*Alectoris*) have the peculiar habit of producing two clutches of eggs at each laying period, one of which is incubated by the hen in the usual manner, the other being taken charge of by the cock who incubates the eggs and rears the brood. Instances of this have been recorded in the magazine for August and September last, the species being *Alectoris petrosa* and *A. cypristes*. Now Captain Reeve tells me that people in his neighbourhood believe that the common Red-legged or "French" Partridge (*A. rufa*) lays two lots of eggs, and from his own experience he knows their breeding habits to be very peculiar, and that there may be three or four days between the laying of eggs in a given nest, and a week or more after finishing before incubation commences, all of which points to two nests at once, but as he says, "how is one to absolutely prove it?" It should not be difficult to prove with a single pair of these birds in a large enough aviary. Anyhow, there is evidently something strange in the nesting habits of this group of birds, and it behoves all who have an opportunity to study them to do so.—D. S-S.

SUCCESS WITH GRASS PARRAKEETS IN CALIFORNIA

Several articles have appeared recently in the AVICULTURAL MAGAZINE on the breeding of the Bourke's Grass Parrakeet, and as my experience with these birds seem to be a little out of line in some respects, it may be of interest.

Last year I procured two cock Bourke's from Dr. Hamilton. One of them was in bad condition upon arrival in Chicago, where Mr. Metzger gave them a rest and succeeded in getting him back to what appeared to be normal, but after some three months he died. The other I had traded with Dr. Patrick for one of the Tavistock birds which was supposed to be a hen. I then turned this bird into a pen with a hen Blue-wing and a cock Elegant, and immediately it mated with the hen Blue-wing. I then secured the other bird

from Dr. Patrick, which in the meantime had killed its mate, and put it in the pen with my cock, who proceeded to attempt to kill it, and would have succeeded had I not interfered. They were then put in adjoining pens for two weeks, after which they were turned together without further trouble.

I had anticipated considerable difficulty in furnishing a nest-box that would be acceptable to them and, as a result, went to some trouble in building several that I thought might be accepted and just for good measure I hung up an old Budgie-box and, of course, the unexpected happened and she went to nest in that one. Four eggs were laid, four young hatched and reared. Before I could clean out the box she started laying again, and I was forced to remove the eggs to clean out the box, this time seven eggs, all of which hatched, rearing six. The one she lost was hatched so late that the older ones trampled it. After the young ones were hatched I examined the nest-box every other day, removing it from the nail and standing it on the floor, removing the young when about ten days old and cleaning the second nest, and they didn't seem to mind. The young are all very tame, several of them will fly to my hand or shoulder when I am feeding. The first few days she fed little other than greens, after which "hempeed", of which she had an unlimited supply, was fed. Canary and large yellow millet was available.

I am aware that hemp-seed is frowned on by many breeders, especially when fed to these rarer Grass Parrakeets, and their experience no doubt justifies it, but I wonder if the climate and not the hemp may have something to do with it. Three years ago I procured three pairs of Elegants from Lord Tavistock, and from them I have raised and now have fifty-four birds, all reared on hempeed, and they are all in perfect plumage and health. Our climate here on the south-west coast is very constant, seldom going above 90° in the summer or below 50° in the winter. I speak of the immediate coast (I am four blocks from the ocean).

My aviaries are somewhat different from the average "chicken-run" type. They are built in one unit about 40 feet square, divided up into pens that average 12 x 6 x 8 feet high. A high dense hedge surrounds them with the exception of the one entrance gate. A large pepper-tree overhangs them all, thus giving the birds natural seclusion. Running water and young barley are at all times in each pen.

Another feed item that I never use is hulled oats. This food may be all right when it is fresh, and by that I mean a few hours after it is hulled, but, after a number of middle-men get through "treating" it to keep out the worms, I claim it is no food for a delicate bird.

J. H. ARNOLD.

4002 MASSACHUSETTS ST.,
LONG BEACH, CALIFORNIA, U.S.A.

OFFICERS FOR THE YEAR 1934

The Council propose that Messrs. R. Suggitt and S. Williams retire from the Council by seniority, and that The Hon. Anthony Chaplin and Capt. H. S. Stokes be elected.

Also that Mr. Sidney Williams be elected as Auditor and Mr. R. Suggitt as Scrutineer for the coming year.



John P. Jones & Co. Lithographers, 117 E. 10th St., St. Louis, Mo.

1. Swallow-tailed Humming Bird
Eupetomena macroura.

2. Ruby-and-Topaz Humming Bird
Chrysolampis mosquitus.

From a drawing by the Hon. Anthony Chaplin.

writes of this elevated plateau as follows: "Everywhere around, the confines of the forest are encircled by broad bands of social plants, as the delicate *Aralia*, the *Thibandia*, and the myrtle-leaved *Andromeda*; whilst the Alpine Rose, the magnificent *Befaria*, weaves a purple girdle round the spiry peaks. In the cold regions of the *paramos*, which is continually exposed to the fury of storms and winds, we find that flowering shrubs, and herbaceous plants bearing large and variegated blossoms, have given place to the monocotyledons, whose slender spikes constitute the sole covering of the soil. . . . Where the naked trachyte rock pierces the grassy turf, and penetrates into those higher strata of air, which are supposed to be less charged with carbonic acid, we meet only with plants of an inferior organization, as lichens, lecideas, and the brightly coloured dust-like lepraria, scattered around in circular patches. Islets of fresh-fallen snow, varying in form and extent, arrest the last feeble traces of vegetable development, and to these succeeds the region of perpetual snow." And at the very edge of this desolate region on Chimborazo is found a lovely Humming Bird, the Hill-star *Oreotrochilus chimborazo*, and so do many more of these peaks possess their particular species. These Alpine birds have been observed feeding on minute insects for which they search among the lichens where the snow has been dispersed by the wind or melted by the sun. The farther we proceed from the Equator the fewer are the species to be met with. Nevertheless, these fly north to breed in sub-Arctic North America, and one, for some inexplicable cause, favours for the same purpose the dreary dripping woods of Tierra del Fuego. Of outlying habitats the most curious is the island of Juan Fernandez in the Pacific about four hundred miles from the coast of Chili.

In such a vast family as that of the *Trochilidae* it is not to be wondered at that the variety of form is very considerable, the largest being equal in size to the European Swift while the smallest is comparable to a bee. Every conceivable length and curvature of bill is to be found, from that of *Docimastes*, which exceeds its owner's length, to the exceedingly short organ of *Rhamphomicrum*, which has an almost Swallow-like head. The greatest extremes of curvature are found between *Eutozeres* and *Avocettula*, for while the bill of the former curves downwards to form a semi-circle, that of the latter is upturned

at the tip. Moreover, in some species the edges of the mandibles are smooth while in others again they are finely serrated. This extent of divergence from the typical form is not found in the old-world honey-suckers, the *Nectariniidae* and the *Meliphagida*, and is only approached by the South American Wood-hewers (*Dendrocolaptidae*), a point which shows the very great antiquity of the family. There is no doubt that the Sun-birds are meant to perform the same services in the natural economy of the old world that the Humming Birds do in the new, although the latter are so vastly more specialized.

New light has to a modest extent been thrown upon the Humming Birds by their behaviour in captivity. We find that they are not the uniform whole that the old writers would have us believe. For example, the little Ruby and Topaz, represented in the plate, is very much less intelligent than the still smaller White-throated Sapphire or the Brazilian Emerald; moreover it is less active and more temperamental, while its vocal utterance, unlike theirs, is confined to a short patterned squeak, such as is made by a badly-fitting door.

It has been said that the different species occasionally sleep hanging head downwards like bats. This, I may say, is sometimes the case, but is due to misfortune rather than to any particular intention on the part of the bird. It so happens that, after an especially active period, an individual will sometimes fall into a state of deep sleep "from which", as Gould says, "it is not easily aroused"; if, at such a moment, there comes a sudden strong gust of wind the bird will over-balance and remain hanging to its perch, in which unenviable position it is obliged to exist until it has had time to regain its senses. I am convinced that Humming Birds catch insects only in the air, and spiders only as they dangle from a web. By experimenting I find that all the individuals I have possessed are unable to pick any form of insect or spider off a twig and that their tongues are incapable of sucking up minute insects from flowers, unless it be that the honey contains truly microscopic forms. Goss says his tame *Polytmus* in Jamaica imbibed ants with the honey, but I feel that either he must have failed to make a close enough observation or that his particular species differs very considerably from those which I have been able to experiment upon.

Both species represented in the plate lived out of doors for a considerable period. The Swallow-tail escaped and was at large for six weeks; it was then caught and returned to me not much the worse for its adventure. The Ruby and Topaz lived in a small all-open aviary for two months, until it finally escaped through the bars of a cage in which it had been placed temporarily.

It is neither cold nor sudden changes of temperature that necessarily prove fatal to the majority of Humming Birds, but they are very easily upset internally by unsuitable nourishment. It is too much to expect any bird to endure the combination of a sudden climatic and dietetic change, such as it is forced to undergo on the Atlantic between South America and Europe, without it showing some sign of harmful effect. But I believe that, if the bird is reasonably fit on arrival, it is worth while spending a week's toil catching small hedge spiders on which to feed it, for once its natural standard of health is re-established it can be subjected to a less complicated treatment. The only individual (*Chlorestes notatus*) I possess of the original spring consignment (the others having been given way or having escaped) is so robust, owing, I consider, to its treatment on arrival, that it will stand 45° F. without ruffling a feather and is a veritable atom of ceaseless energy "from dawn till dewy eve".

I think that unless aviculturists can spare the time to give each bird individual attention they had better leave Humming Birds alone, and the man who keeps his birds solely for the show bench has no hope of success with these little creatures.

ON THE BREEDING, ETC., OF THE BLACK-WINGED ANDEAN GOOSE

(*Chlaphaga melanoptera*)

By F. E. BLAAUW, F.M.Z.S.

Since I commenced to keep water fowl, about fifty years ago, I always tried to obtain a pair of the Black-winged Andean Goose, but, until recently, never succeeded. I was often the owner of one or two birds of this species, but they were always *males*, so that there was never any chance of breeding them. Then at last, in the summer



1



2



3



4



5



6

ANDEAN GOSLINGS (*Chlophaga melanoptera*) REARED AT GOOILUST,
HOLLAND.

Photos taken (1) 10th July, (2) 17th July, (3) 13th August, (4) 21st August,
(5) and (6) 24th September.

[To face p. 434.

of 1931, I got an offer from a dealer in Hamburg of two pairs (*true* pairs, as he said) and when I bought them, I indeed *did* get the, so long vainly promised, *true* pairs.

The females are, as is well known, exactly like the males in plumage, but are a good deal smaller and have a different voice. The first females I remember to have seen were those I saw stuffed in the Museum of Buenos Aires in 1911, and I also saw chicks in down there, in their white and black livery.

Afterwards, a pair got to the London Zoo, and under the good care of Mr. Seth-Smith, a chick was born there, which, I believe, was figured in the *Field*. I saw *wild* birds of this species near a mountain lake in southern Chile in the Maritime Andes between Los Sauces and Puren in 1911. There was quite a gathering of those geese at the spot mentioned, and some beautiful Black-faced Ibises (*Theristicus melanops*), and some Cayenne Lapwings enhanced the beauty of the sight in those splendid surroundings. The geese when flying struck me at once as being different from the, to me, familiar Magellanic Geese, as they were much shorter and heavier to look at, although their flight was strong enough, and when they came nearer it was easy enough to identify them. The birds I got from Hamburg were in good health, but very badly feathered; probably the result of the long voyage from Bolivia, where they came from. They were extremely tame and the males had an amusing way of puffing themselves up whilst the females cackled at their side. After the moult, when the flight feathers had been renewed, I found that they were very expert flyers (they were kept in a large covered-up place), and that they liked to perch on a small brick house that was in the enclosure. They would walk up to the wall of the house and then fly up almost vertically to the roof. If I should come near their enclosure whilst they were sitting on the roof they would always fly down to me, extending their legs well forward when they landed, only just clear of the wire-netting, and then the showing-off would begin.

After I had had my birds a few months the dealer, Mr. Fochelmann, wrote to me to say that he had several more specimens and hoped that I would also buy those. As I chanced to have to go to Germany about that time I resolved to go by Hamburg and have a look at the birds

first. I found them to be in fairly good health although in bad plumage, but as it had taken too many years to get my wish of having a flock of those birds realized, I bought the thirteen of them and had them sent to Gooilust. Three died after I obtained them, and I parted with three pairs, so that in the end I had four pairs of healthy birds in all.

Of those four pairs, two pairs nested last spring in the beginning of June. One female laid nine eggs and the other one six eggs. After they had sat on them a couple of weeks I took the eggs away, put the nine eggs under a broody turkey hen, and the six under a common hen.

After thirty days of incubation, under the geese themselves and substitutes, six chicks hatched under the turkey hen and five under the common hen, the other eggs being infertile. One gosling died soon after hatching. The chicks in down were beautiful things, marked very intensively black and white as is visible on the accompanying photographs, and both bills and legs were also black. They were hatched on 30th June and 4th July. The eggs I may mention as being dirty white.

When first hatched there is a golden-yellow glow on the down of their heads which, however, disappears after a week or so, leaving the head white and black like the rest of the body, and it is a curious coincidence that the newly-hatched chicks of the Abyssinian Blue-winged Goose (*Cyanochen cyanopterus*), a species which, I am told, also lives near lakes in the mountains, have the same yellow glow on their heads during the first days of their lives.

The goslings were very active and strong, and grew very well, so that at the age of three weeks the black legs began to turn red. About 30th July, little greyish feathers began to grow on the shoulders and white ones on the sides. On 13th August the legs were mostly red, whilst the bills were still black and the birds were strongly feathering. On 21st August some birds began to show the red on their bills, and on the 11th October the bills were mostly red, although not so clear as in adult birds. The legs at this time were almost entirely red, and the birds had almost attained the size of the adults and were entirely covered with feathers. This first feather dress is almost exactly like that of the adults, the only difference

being that the shoulder feathers which are, especially in male birds, almost pure *white* marked with *black stripes* in the adults, are mostly *brownish grey* in the immature birds, whilst the black markings are *not so well defined*. Even the glossy purple mirror in the wings is there, although slightly duller.

Of the ten chicks only *one* died, so that one can say that they are easy to rear.

On the last photo shown here two *grey* geese are visible with mottled white heads. Those are young Emperor Geese moulting their grey first plumage heads into the white heads of the adult birds.

They were reared by another foster-mother, but are great friends with the Black-winged Geese.

BREEDING THE VINACEOUS FIRE-FINCH

By Mrs. WHARTON-TIGAR

In April last I bought a pair of Vinaceous Fire-finches (*Estrilda vinacea*), and had very little hope of their living, for the cock especially was very fragile; however, during the first glorious spell of weather, I risked putting them in an aviary where they quickly recovered, and in July, they were in glorious condition, so I placed them alone in an open shelter. About the middle of August they seemed interested in a large bundle of seeding grasses placed against the wire, close to the door; they were very secretive over it all, and I saw very little of the nest-building, but supplied plenty of soft hay and feathers. Soon afterwards I noticed one bird was always in the nest, unless any strangers were about, and then both were to be seen in the aviary, which is about 6 x 4 feet and is the open shelter run to one of my small aviaries.

On one occasion, after having several visitors, I thought they had deserted, so put my finger in the nest and felt (I am almost sure) four eggs. They were due to hatch, counting twelve days, about the 5th or 6th September, and so, a day or two before this, I commenced supplying tiny maggots, four or five mealworms (cut in half) a day, and insectivorous mixture (sponge cake dried, and eggs and flies, made crumbly with grated carrot). I also got some fresh ants' eggs from

Germany, but I did not notice that they eat them very much. I gave hard yolk of egg and arrowroot biscuit; and round the open water vessel I had a growing crop of young grass and sprouting seeds. But the birds seemed to be always hunting for tiny insects. In my small garden I have a lot of the small black ants, and I think they ate these and other small insects, caterpillars, and even quite big spiders.

On the advice of Dr. Hopkinson, in front of my small range of aviaries I have a long, narrow corridor, with grass growing, and a brick path. I got into the habit of opening the Fire-finches' aviary every morning in the sunshine, they quickly hopped out, hunting all the time in the 40 ft. run for insects, of which they seemed to find plenty. They were never out together until the youngsters were several days old, and the first time they were so I of course thought all was lost, so again I put a finger into the nest and quickly removed it for I felt something fluffy and warm. After that, as no harm came of it, while the parents were out I peeped in nearly every day until one day my finger was met with a howl of protest, or was it hunger? After that I had to be content with looking, and generally could just see a little head, or the blue beads at the side of the beak, shining like little lights.

These little Fire-finches are charming, the cock especially is delightful, has a sweet little song, and mine would come and take mealworms out of the pot with my hand still on it. He also always met me at the corner of the aviary in the morning, ready for breakfast! He was not so shy about feeding the youngsters as the hen, who seldom went in if any one was looking, but protested loudly if she wished to visit the nest; but if one retired further away she at once went in. Both birds were keen bathers. Needless to say, I became every day more pleased, not to say elated, at my possible success in being the first in England to breed this species, but it could not have come at a more difficult time, as I was about to make a visit to Brazil and had a very great deal to see about.

I should say on the eighteenth day, a Sunday, I had a party of friends with children, to visit the Zoo, and whether or not their presence in the garden had anything to do with it the three baby Fire-finches left the nest while they were there—one was much bigger and stronger

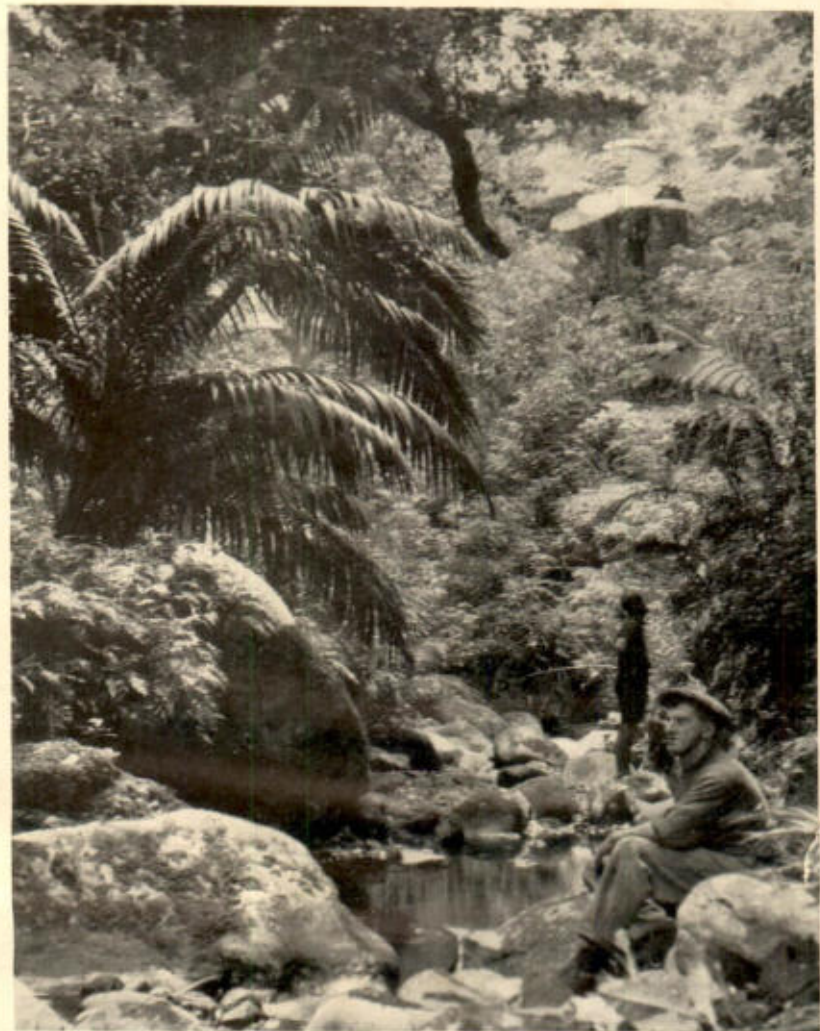


Photo by W. M. Hamilton.

TYPICAL NEW ZEALAND BUSH: LITTLE BARRIER ISLAND.
THE HOME OF THE STITCH-BIRD.

To face p. 430.]

than the others, the second much less advanced, and the third was a very young bird though feathered. Then followed a difficult time; the wind was cold and next came a very wet day, and I had to be always on the watch, putting the younger babes back in the nest for warmth. The parents were wonderful in feeding, and up to the twenty-second day, when I had to leave them, the whole family slept in the nest, though not in the original one, because the cock had pretty well torn that to pieces. "Benjy" (as the tiny one was at once called!) found just above their abode an old *Ruficauda* nest, which, by the way, is of rather a different type—the Fire-finch nest seemed to be much deeper and was very cleverly arranged, so that they had a sort of sloping path down. "Benjy" was really an expert at hiding, and I have spent nearly an hour searching for him in the aviary, and had to go away convinced that he had really vanished, only to find him an hour or two later seated near to his nest mates.

The young are very like the adult hen in plumage, no spots on the side, and the beak shows a good deal more white, and mine at twenty-two days were smaller than the parents. They could fly well and could find their way into the aviary from the long run, and back into the adopted nest.

PS. All are well at the time of going to press.—20th November.

NOTES ON NEW ZEALAND BIRDS

By SYDNEY PORTER

(Continued from page 412)

THE STITCH-BIRD (*Notiomystis cincta*)

One of my chief reasons for visiting the Little Barrier Island was to try to obtain a glimpse of one of the rarest of all existing birds, namely the Stitch-bird, in the deep recesses of its forest home, the last resort of this much-persecuted species.

One of New Zealand's endemic honey-eaters, it disappeared from the mainland about the middle of the last century. At one time, long before the coming of the white man, it must have been comparatively common in some portions of the North Island for its

beautiful golden feathers were used to manufacture the famous Maori cloaks.

Soon after the coming of the white man to the shores of New Zealand, this extraordinary bird practically ceased to exist. The cause of its rapid disappearance will ever remain a mystery. The only conjecture that appeals to reason is that the European birds, which were liberated soon after the country was first settled, brought over germs to which the Stitch-bird and many others were highly susceptible, just as in the same way Europeans brought diseases to the races of the South Sea Islands, against which they had no immunity, so that in most of the islands there is but a mere remnant of their former inhabitants.

As the bird became almost extinct, its skin became a desirable addition to the cabinets of collectors and soon after its general disappearance in most parts of the North Island collectors vied with each other in their search for this illusive bird. About 1880 it became known that the mountains of the Little Barrier Island were the last refuge of the Stitch-bird and collectors journeyed over there in search of it. In fact one Austrian skin collector named Reischek, who was probably one of the worst bird butchers that New Zealand or any other country has ever seen, sojourned over three months there with the express purpose of killing every possible Stitch-bird. Ten birds in all were secured, which shows how rare it must have been. And so, apparently, the Stitch-bird made its exit from this plane, and the various collectors were able to gloat over the skins as the very last of the species. But, in spite of the endeavours of the collector to exterminate this bird and fortunately for posterity, a few must have been overlooked, finding refuge in some of the densely-forested and almost inaccessible gullies between the mountains. About 1905 this beautiful island was declared a bird sanctuary, and after that the birds were again noticed in very small numbers.

What a thrill it was, the day after we landed on the island, when working our way up a deep gully, which at certain seasons is the bed of a rushing mountain stream, all overhung by giant tree ferns and the beautiful Nikau palms, the great boulders over which we had to climb covered with an immense variety of mosses and ferns, when

suddenly we heard the loud ringing calls of what we knew must be the Stitch-bird. How our hearts beat as we watched a fully-plumaged male come into view; we watched him for a time as he searched for his food amid the topmost branches of a forest tree, uttering all the time his very loud ringing metallic notes. Later on we came across a family party of five, these were in the undergrowth, and upon our approach the female came out to investigate. Taking but little notice of us she returned to her offspring who was busy searching the clumps of leaves for tiny insects. We watched their activities for a considerable time until they passed on to another part of the forest.

During our stay on the island when wandering in the deep gullies we often came across these birds and caught glimpses of the beautiful fully-plumaged males, but usually the female is much more in evidence than the males. They are by no means common though we sometimes saw as many as seven in the course of a day, usually odd ones or pairs. Unlike most of the other birds on the island the Stitch-bird is very timid and no doubt it has good reason to be.

How much better to think of this bird safe for ever on its wonderful island home than represented by a few perishable skins in museum cabinets, for to the true naturalist there is no morbid joy in handling a skin and thinking it the last of the race. Truly to own such a skin should be a brand of shame to its owner.

It has been stated that the sole food of the Stitch-bird is nectar, but whilst on the Barrier we found the bird feeding mainly on insects, and we once saw a male feeding greedily on the berries of a tall forest plant called *Nothopanax arboreum*.

The Stitch-bird is about the size of a lark, the head, neck, and upper back deep black. From the ear-coverts spring two tufts of pure white feathers, which can be erected like small horns on each side of the head, though the bird usually keeps these concealed; below the black of the upper breast is a band of yellow feathers; the shoulders, lesser-wing-coverts, and under-wing-coverts are bright golden yellow, though when seen in the forest these bright colours are hidden, the upper parts are dark brownish olive, the feathers having darker centres; below is pale yellowish brown, the flank feathers being mottled with dark brown. As mentioned before, little of the bright

colouring can be seen when the bird is in the forest ; it looks, except for the black head and breast and the very conspicuous white wing-coverts, a very dark olive. It is only when a skin is handled that the brilliant yellow is apparent.

The Stitch-bird never leaves the confines of the deepest forest groves ; it is also very local in its habitat, only being found in certain gullies and seldom away from them.

In a letter from a young scientist who remained on the island after we had gone, he says, " While having lunch on the way up out of the Styx gorge a friendly Stitch-bird visited us and made a meal off the heads of a *Gahnia* bush close by. *Gahnia* sp. is a tall 'cutty-grass', a member of *Cyperaceæ*, 3 ft. 6 in. high and bearing large lax panicles of red brown seeds (nuts), there are five species on Little Barrier, all similar."

Unlike many of the endemic birds of New Zealand there is no record of this bird ever being kept in captivity and there is not the slightest likelihood of it ever coming into the hands of any aviculturist, for of all New Zealand's unique birds this is the most jealously guarded.

THE NORTH ISLAND ROBIN (*Miro longipes*)

Some time after the coming of the colonists to New Zealand, these charming birds began to get rarer and rarer until it was thought that they had become totally extinct. Buller says in the supplement to the *Birds of New Zealand* (1905): " I have the mournful satisfaction in recording that the last heard-of pair of this expiring species was seen just before I left the Colony in 1898 in the fringe of bush on the northern side of the Papaitonga Lake . . . the birds were unmolested and therefore had every chance ; but whether they have left any descendant or not it is, of course, impossible to say. . . . In the olden days it would have been impossible to enter such a wood without hearing the strident note of this Robin on all sides."

As in the case of the Stitch-bird no satisfactory explanation has ever been given for the disappearance of this bird, except that the introduced birds acting as the carriers of germs to which they themselves were immune passed the infection on to the indigenous birds, which quickly succumbed. For the Robin was one of the very few birds which

were not persecuted in any way by the colonist. It certainly fell a prey to the cats, rats, weasels, etc., and to the constant bush burnings, but these facts cannot account for its disappearance from untouched forested areas which were far from civilization and into which no carnivorous mammals had yet penetrated.

Extremely confiding and familiar, it was known in the olden days as "the Bushman's friend", for this bright-eyed songster was always the constant companion of the lonely bush pioneer. It would share his meals, and his solitude, perching oft-times on his shoes when he sat down. In fact, to him it seemed the reincarnation of the familiar "Robin Redbreast" of the distant Homeland.

Fortunately this species has found sanctuary on the Little Barrier Island and on Kapatī, where it is comparatively numerous, though it is still found in one or two localities on the mainland, in heavily-forested areas, but there is very little likelihood that this species will ever increase as the Bellbird has done, for no bird is more adversely affected by civilization; on the slightest sign of settlement even by the cutting of tracks through the forest, the Robin disappears. It is a bird exclusively of the deepest virgin forest.

Nearly all the birds on the Little Barrier Island are fearless, but this one is especially so; a few hundred yards into the forest and one is sure to meet with it. Upon seeing a human being he will at once come up to within a foot or two to investigate; if one sits down and keeps quiet, he will come right up, cock his head on one side, look up into one's face with his large, soft brown eyes as if to say, "Hello, fancy you coming here!" In a very short time he will make himself at home, turning up the dead leaves in search of insects or looking for material for his nest; he will remain so close that one can touch him.

I know of no more endearing creature than this dusky denizen of the dense forests of the Barrier; it is a thousand pities that it has practically vanished from the mainland.

On the first day in the forests of Little Barrier we counted six of these birds, several of them coming up to investigate the bright orange rubber shoes which I wore as a protection to my feet when walking up the beds of the mountain streams.

If it were only for my experiences with the Robins I should always feel that my visit to the island had been worth while. Whenever we went into the forest we invariably had a delightful encounter with these birds, sometimes they would alight on the sticks we were carrying and on several occasions we could have picked them up. The demeanour of the Robin is that of welcoming the stranger into his forest domain. He introduces himself and often his family, shows one how to make oneself at home and after his mission has been accomplished he departs. His affection is not cupboard love, for as far as we have been concerned he has never taken the crumbs we have offered to him; had we have had any mealworms it would have been a different matter.

On Kapiti Island it was a great joy to see these delightfully confiding birds more or less out in the open, where they can be seen much more to advantage than in the sombre gloom of the forests. The great attraction to the birds was a tennis court which was in the making. It was situated on a steep hillside and necessitated a great deal of earth being carted from one side to the other to level it up. This was the Robin's El Dorado, and all day long they grubbed about in the newly turned-up earth for worms, grubs, and small insects. The birds were absolutely fearless, and Mr. Wilkinson's son told me that he often had difficulty in avoiding injuring the birds when working, they got so much in the way. Here in the brilliant sunlight they appeared much brighter in colour than in the forest. In colour the Robin is vastly different from the ordinary Englishman's conception of what a Robin should look like. The male is a very dark, mottled leaden, greyish black, the centre of the abdomen ivory white. The hen is very much duller in colour. A very conspicuous feature of the male is a patch of snow-white feathers just above the beak, only exposed when the bird is excited. During the time I watched the birds on Kapiti this spot was exposed owing to the presence of a Weka, which was also searching for worms in the loose earth. Another striking feature is the beautiful lustrous black eye. It is a large bird almost equalling in bulk the European Thrush, though not so long in body measurement.

Unfortunately the Robin has many enemies. The caretaker on Kapiti told me that he once opened a cat which he shot on the island

and found the stomach full of robin feathers. Owing to its confiding nature it had fallen a prey to all the introduced carnivorous mammals and it is little to be wondered at that it has almost vanished except from the two islands where it now finds sanctuary. Let us hope that its numbers will increase for to my mind there is no more endearing feathered creature in the world than the North Island Robin of New Zealand.

I was told that the birds on Kapiti recognize territorial rights, each pair having dominion over an area of about ten acres. Any bird of their own species which invades this area is soon put to flight.

(To be continued.)

SOME REMINISCENCES OF A COLLECTOR

By WALTER GOODFELLOW

(Concluded from page 423)

Although I had five of my little flock of White-crested Penelopes for three years they never showed any inclination to breed. True, I made no provision for it, but the virgin forest was close at hand and most days they paid a visit there, always remaining on the fringe from whence they had an uninterrupted view of the house, and as I have said, if I whistled they flew to me immediately. Several times they were joined there by wild birds of the same species, but were never induced to leave their home quarters for a purely wild life.

My house had a verandah 10 feet wide along the three bedrooms on one side, and the tiled roof was supported by beams, and on these they roosted and spent most of the day. They were very affectionate, and whenever I had time to spare to rest out there, they kept as near to me as they could. The verandah was a sanctuary for pets, as it was unapproachable except through my bedroom and one other, and no natives were ever allowed there. I had built the house myself and designed it with that idea. Although I had twenty or more dogs, great hunters, and all very savage with strangers, not one ever molested my birds, which had all been hand-reared, except the two Yellow-collared Macaws, and the birds of various species showed no fear of the dogs.

Curassows (*Cracidae*) were scarce with us at all seasons, and I never saw but one species, one of the Curly-crested ones, and although I offered a good reward, I only succeeded in getting one so very young I doubted if I could possibly rear it. However, I did, and it became as tame as the Penelopes. For a long time it kept with them, and perhaps they taught it to fly over to the forest. Later it seemed to prefer the company of the poultry, and spent part of the hot hours of the day in the fowlhouse, a large building heavily thatched and with split bamboo walls. When it was about two years old the men began to report having seen it in the forest with a male, and one evening when out with the dogs I came across them myself in a very high tree. I whistled and my bird came lower down while the male flew off, but the female was back at the house before me. In the end she stayed away for longer periods and some nights was not in her usual sleeping place under the verandah. Then came a time when she paid very occasional and hurried visits, until one day she brought a nearly full-grown young one with her, which only alighted on the roof and did not stay. After this she made her home with me again and did not wander for several months, in fact she resumed quite her old life among the poultry. When I left the country she had not been seen for more than a month. If she turned up again I never heard.

Nearer the Amazon, Curassows are popular birds with the Indians; in almost every village it is the usual bird one expects to find walking about with full wings. There was always a mild excitement on arriving at a village to see what livestock they might have, for sometimes one found the most unexpected things, perhaps tied to the rafters in the houses, or better still, to wait until the evening when semi-tame birds came home to roost. I was once in a Napo village for a month, and even at the end of that time something fresh still came in. Occasionally an Indian shows affection for some pet animal or bird, but it is more often the children who keep them, and the more uncivilized tribes who are kindest to them. While I was in Bolivia I heard of a raid on a village of remote forest Indians, and an American who had "gone native" was among the party in the disgraceful affair. He told me himself that he saw one woman running off before the rifles of the raiders, with a monkey in her arms, and another snatch up a pet

when fully feathered, and for weeks never left the chair except when I took it off. It grew apace and vigorously exercised its wings until one Sunday it was missing. I was very busy at the time, but sent people out in all directions, and as soon as I was free I spent the rest of the day wandering around the clearing examining all trees through the glasses, with no result. That night we had a particularly violent thunderstorm, and I wondered many times if it had lived through it. Days went by without any news, and then, on the following Sunday morning, exactly eight days later, I heard a noise from the fowls such as they make when a hawk is about, and there on the ground just in front of the verandah was poor "Lora" feebly trying to crawl home, with face all scratched, and frightfully thin and weak. No wanderer was ever more thankfully welcomed. After all, I doubt if she had gone far, perhaps not even out of the clearing, and certainly could not have found any food. It seemed as if she had been trying to eat grass, as some was still in her beak. As she had never been outside the verandah she would not know what the place looked like from the outside, and probably had only been attracted back by familiar sounds. I did not cut her wing, as I felt sure she would not stray again, and she never did without returning. Later, she used her wings to full advantage and often circled high up over the house. Every day several flocks of the same species flew over the clearing continually uttering their harsh screams, to which "Lora" replied, and although they often turned back and came lower down she was never tempted to join them. If I left home for a few days or even hours she always had to be shut up until I had got well away in the forest, or she flew off at once to find me, wheeling high in sky. To watch for my return she took up her station in a tall tree by the house, and on sighting me at once flew to my shoulder, overwhelming me with affection. As Spanish was the language of the household she learned much of it, but I had an Indian houseboy from whom she learned many Chiquitana expressions. For instance, when she wanted water, she always asked for *pututu*, and she still continued this over here up to the day she died. The first year I had her I took her with me on my annual visit to Concepcion, a boy carrying her in a box on his back. Each day when I stopped for lunch and swung my

hammock in the forest, "Lora" was let out. One day when I wanted to put her back I found she had climbed to the top of the tree, and as she was not to be enticed down I pretended to leave her and started to ride off. She gave a scream and very quickly came down. It was amusing sometimes to see her sitting in the big tree frequented by the Black Turkey Vultures, such very ill assorted companions. She commenced by sleeping on a bracket specially made for her in my room, to which she retired of her own accord at sundown, but after a time it worried me to hear her constantly stamping and fluttering her wings to keep off the mosquitos, so one night I brought her under my net where she slept comfortably on my shoulder. From that night she would never stop on her bracket after I came to bed, and got so used to my movements in the night that, as I turned, she automatically climbed to the other shoulder; and here her delicate instincts showed up, for she never once soiled the bed. The first night she came in she woke me up by saying "Lora, Lora," in my ear, so I just stroked her, but still there was something else she wanted, and finally walked down my arm and pulled my fingers. At last it dawned on me, so I lifted the net and held her outside, when, after relieving herself, she quickly ran back up my arm. After that a paper was laid on the floor, and, once every night I either had my fingers pulled, or heard "Lora" whisper in my ear. Surely Macaws are the most intelligent of all Parrots, and I think mine the most intelligent of them all, so much so that over here people used to think her almost uncanny at times.

As I have said before, I had a long and arduous journey out of the country and how I got her home I hardly know, as I was very ill for a great part of the time and very short of food, so I was often at my wits' end to know what to give her. Moreover, we had to find a way down endless rivers, cross swamps, and endure untold hardships before we finally reached the Mamoré on the western frontier of Brazil, where our troubles ended. For two consecutive nights on one river we were attacked by Indians. When we reached Liverpool we had to part as I sent "Lora" straight on to Hoddam Castle until I decided upon her future, and when two weeks later I went there myself I was surprised when Mr. Brook said "We give 'Lora' *pututu* whenever

she asks for it." They had found out what she meant, and her name as well as other things. She lived over here twelve years and only came to an untimely end last year greatly missed by those who loved her. She picked up a lot of English and other accomplishments, but used her Spanish less and less retaining only a few sentences.

It seems that the Bolivian Blue-and-yellow Macaws are larger and more brilliantly coloured than those from other parts, for I have never seen one over here anything like mine. Except for the same arrangement of colours all those at the Zoo might have belonged to another species altogether. I often wished I could have brought mine up from the country just to show them what a Blue-and-yellow Macaw could look like. I think "Lora" was a female, and no doubt would have nested if she had had a mate. Some seasons, about August, she came into condition and was very noisy and unsettled, keeping mostly to the bottom of her cage. At these times her nostrils became very swollen and red. I have not noticed this with a Macaw before. I wonder if anyone else has. I was her favourite up to the end, for although I only saw her at intervals she always knew me instantly, even once after two years' absence, and as long as I was there she had no use for anyone else, but tolerated just two others when I was away. After I had this bird I could never shoot another Macaw, and never will again, in fact, I am now averse to killing anything, especially birds.

Like many other birds Macaws like to rest during the midday hours, but instead of choosing a shady tree they seem to prefer a high one standing well above the others with wide spreading branches and little leaf. One might be close under them without knowing there was a bird about, for they keep perfectly quiet as long as they see they have not been observed, but give one look up and the place is a Babel. A flock of Macaws makes a lovely picture against the intensely blue sky and vivid sunlight of the dry season, and if they are not absolutely at rest they have a regular game among themselves.

A boy one evening brought me five very young birds with eyes scarcely open, and I was not quite sure what they were until the next morning when I saw they must be Swallows. Of course these were useless to me, but I thought I would give the poor little beggars a chance. Fortunately I was always able to get an almost unlimited

supply of wasp grubs, so there was no difficulty in rearing them. These also lived on the verandah in a small open box, and it was not long before they used their wings, for they grew quickly. At first they remained on the beams and flew down to me when they wanted food. One after the other they began to take flights outside, returning to the verandah to sleep, but grew to want less and less of my food, until two cleared right off. Three still returned in the evenings for quite another month, and then only one remained and that not for long. The following year a pair of Swallows came back to roost and would have built a nest, but were interfered with by my other birds. I could not help thinking that one or both of these must have been those of the previous year, as I never had a Swallow come there before or after.

At another time I had two of the weirdest youngsters I have ever seen, and it was quite a time before I knew exactly what they were, although I surmised they were some sort of Cuckoo. They proved to be one of the long-tailed ones (*Piaya cayana*). At first they were covered with spiky-looking grey quills quite two inches long, surmounted with tufts of grey down. It was really quite difficult to handle them, for they looked like little Porcupines and quite formidable. As the feathers in the quills developed, more than half the upper portion shrivelled up and dropped away. I fed them on the usual wasp grubs, cockroaches, and hard-boiled egg, for I had no biscuits, bread, or cake to make an insectile mixture. Flour was unobtainable, so the only form of bread I had for four years was made of maize meal which we grew ourselves. They turned out to be delightful birds and lived to reach England just as tame as ever. I gave them to Mr. Brook together with several other unusual birds. This Cuckoo is common over a large part of tropical South America in several subspecies. In Ecuador they were called *Lengua de vaca* ("Cow's Tongues"), why, I have no idea. They go in flocks, keeping to the low bushes in the more open parts. The tail is very long and bright chestnut on the upper side; it is graduated with deep black and white tips to the outer feathers, which looks very fine spread out in flight, or floating better expresses it, as they seem to float from bush to bush. Roughly, the colours are fawn and pale grey with darker chestnut wings. The

bill is greenish yellow, and a bare patch around the eyes much the same shade, although in some districts this is red. The inside of the mouth is intense black.

I had many young Trogons brought in both red and yellow breasted. These I found quite easy to rear on the same food as the Cuckoos. I must have had quite a dozen at one time. I found them all a bit stupid about learning to pick food up for themselves, and, strange to say, it was not insects they essayed on, but yolk of egg in nearly every case. Later, they ate a certain amount of fruit. I was disappointed that I had none of them to bring home with me, but two months before I left I was delayed by illness in the town, and when I returned to Esperanza they were all dead, together with several other rare birds.

Two Nun or Puff Birds (*Monasa nigrifrons*) were still alive. I do not think any of this genus have yet been over here. They are about the size of a Starling but with a longer tail and very short wings. The plumage is very thick and fluffy, usually leaden grey or black with a coral red bill, although one species has a whitish bill. They are not very interesting but uncommon. My pair died on the way down to the Amazon. They are purely insectivorous, and strange as it may seem in a land like that, it was extremely difficult on a canoe journey to procure enough insects for them. I was compelled to stop on sandbanks and scoop up a net full of butterflies as they were partial to them, but I must have got some noxious kind among them as they both died suddenly after a meal.

Another pair of hand-reared birds I landed was Molina's Conure (*Pyrrhura molinae*). This is an altogether delightful species. As a rule I am not very partial to the Conures, but these I did like.

Of all the birds that visited us in the breeding season the one I most wanted was the famous Umbrella Bird (*Cephalopterus ornatus*). It arrived in September and was far from rare. I have seen them along the edge of the forest, and on one occasion right out in the clearing. During my last season there I sent a letter out to all overseers throughout the forest asking them to locate nests, for which I offered a good reward. According to reports, I began to think I should have a surfeit of Umbrella Birds to rear, as some reported two or even three nests being built. In the end only one materialized and that so young

it was useless even to attempt to rear it, and I asked the man who brought it to take it back to the nest. I never heard anything more about it. It could only have been hatched that morning, and was covered in long silky down, bright gold in colour and like floss silk. A year earlier when calling at a shack, I found a brown bird there undoubtedly belonging to this species, which they said had been hand-reared. I never knew before that the nest plumage was brown. They gave me this bird, but as I was not returning home for a week, I asked that it should be sent to me later. It turned up dead, but still warm. It had probably had nothing to eat or drink during its two days' journey. My disappointment may be imagined. The only other I saw was one on a farm I stopped at on the pampa near Concepcion. Sitting on the frame of a chair was a fully adult male with a broken wing, so although it was offered to me as a present, I did not accept it. I was told it was feeding on cockroaches. All our people were very proud to adorn their hats with the crests. I have seen a man with as many as nine or ten on his. They called the bird *Pajaro vaca* ("Cow-bird"), but in Ecuador and Colombia, *Pajaro toro* ("Bull-bird"). The West Ecuadorian species (*C. penduliger*) is much the finer bird of the two. A Colorado Indian at Santo Domingo once brought me an adult male uninjured, and although I tried it on all kinds of fruits and insects, even a palm fruit I had seen them eating, it refused all food and died. This palm fruit is the size and shape of a large green date and is, of course, swallowed whole. Like some other birds, it is impossible to cram them as they promptly regurgitate all food so administered. I believe the Umbrella Bird has not yet been imported alive, although before the War there was a notice in the AVICULTURAL MAGAZINE that somebody had one. I heard later that this was incorrect, and if I remember rightly the bird turned out to be a large Rice Grackle (*Cassidix oryzivora*).

Occasionally I saw Purple-throated Cotingas (*Cotinga cayana*) at Esperanza, always in the tops of the highest trees. Also Magpie Tanagers, which seemed to belong to the larger species (*Cissopsis major*), although I never shot one to make sure. If so, this is another bird not imported.

Three times I came across a flock of that truly wonderful bird,

the Naked-necked Fruit Crow (*Gymnoderus fætidus*). It is rather larger than a Jay, and in a dry skin may be black or greyish, but in life it is covered with a fine powder which gives the plumage a bloom like that on pothouse grapes. The wings are lavender, but it is the head and neck which gives it such a remarkable appearance. The crown is feathered and velvety, dark Indian red, and at the base of this is a row of thick nodules from which hang fleshy folds of skin to the shoulders, draped in a wonderful manner, and shaded from white to bright cobalt blue. I collected one skin of this bird years before on the Upper Amazon, and a water-colour drawing was made of the head and neck while still fresh. This was reproduced in *The Ibis*, and it is well worth looking up. Of course, later all this bare skin fades and shrivels up, so no conception can be formed as to what the bird looks like in life. What a wonderful sight it would be in an aviary.

Swallow-billed Tanagers or Fruit Eaters (*Procnias cærulea*) also arrived about September, but unlike my experience with another closely allied species (*P. tersa*), which frequents low bushes, this one I saw always in high trees. I wanted some badly, but as I said about the people in another part of South America, I could get no one here to climb trees. These birds adapt themselves readily to cage life, and are easy to keep. I had previously brought home *P. tersa occidentalis*, and never found it would even look at an insect, but readily eat any kind of cut-up fruit. It has a very wide gape like a Swallow's, but larger in proportion. So it can take surprisingly large fruits. The male is uniform cerulean blue, and has a black mask, the lower breast white, and finely barred on the flanks with black. In some lights the bird looks greenish-blue, and in others the richest cerulean imaginable. The females are green with no mask, and yellow instead of white on the breast.

Tinamous of various species were exceedingly numerous in the forest, and it was impossible to go any distance without flushing some, but it was only possible to get a very momentary glimpse of them as their noisy flight was so sudden and unexpected. I had many young ones brought in each year, and some lived for a long time but usually escaped in the end as the enclosure I made for them always seemed to

be getting defective. I identified three of those I had, namely *Northoprocta ornata*, *Northocercus garleppi* and *Rhynchotus maculicollis*. With them I had a single Marbled Partridge (*Odontophorus marmorata*), the sole survivor of three. This I brought home and sent up to Hoddam. I think these Partridges were fairly plentiful, but as they never rise it was difficult to get even a glimpse of them. I only definitely saw some on one occasion in four years.

Once a pair of King Vultures lived on the edge of the clearing for several months. I was hoping they would nest there, but if they did we never found it, which would be rather unlikely with such large birds. Several times I shot Peccaries to entice them to remain, and gave strict orders they were not to be interfered with. This is one of the birds for which I have a great admiration, and it has always been my ambition to possess a tame one, for apart from their beauty they make delightful pets.

A bird I was disappointed not to find, at Esperanza, was the Trumpeter (*Psophia*). I believe they do not come farther south than the Marmoré. On my exit I saw them at every village along that river, but not one before there. It is quite one thing to keep them in an aviary and another to have them at liberty, even if only in a small garden. In the forests it is impossible to form any idea as to what they are really like, and their ways. All Indians seem very fond of them, and you find them in almost every village, but they are jealous birds according to how much they are petted, and it is sometimes difficult to keep two together. I have noticed in villages each one usually keeps to a restricted area, unless they are a pair, and even then they do not always agree. I once kept a pair together in England amicably. In South America they often have them to look after poultry, as they are quick to give warning when hawks are about. It is amusing at such times to see them hurrying all the young chickens off to a place of shelter. They are fond of a family to look after, and soon gather all chickens around them in the daytime, but Trumpeters like to roost high. So until the chicks get their flight feathers the Trumpeter calls in vain from some high branch, but I have seen them roosting with many on each side. Those who have not yet owned one have a treat in store. Several

species are now imported, but at one time not so long ago, they were rare over here. Some years back I told a lady member of the Society about their charms, and later when she was able to get one, she wrote me "they are all you said they were, and *much more*". From a beauty point of view I am not sure which is my favourite; perhaps the White-backed kind (*P. leucoptera*), although the Napo or Golden-backed (*P. napersis*) is a lovely bird when in good, full plumage. This was the first species I ever had, and does not seem to be imported. During a long canoe journey on my way down to the Amazon I never hesitated to give them their liberty every evening when we camped. They retired to roost in the nearest tree, if there was one. It is not generally realized that these birds are quite at home in water, and can swim perfectly. Over here they require a warm or sheltered place to sleep in during the winter, or their feet suffer. This seems to be their weak point and the chief cause of death, but can easily be avoided; and they should not be allowed to walk too much in the winter time. They follow like a dog. One of my Golden-backs often went out with me shooting, keeping close at heel along the Indian tracks. I should like to see a pair of these given their liberty on the Fellows' Tea Lawn at the Zoo, during the summer time. What an attraction they would be, for few birds become so attached to man as these. It would be easy to shut them up in the Eastern aviaries at night, but I fancy there is a tree on the lawn they would prefer. All species on the Upper Amazon are called *Yacami*, and on the Lower, *Trompeteros*.

I left Bolivia without a regret, and I cannot say that of any other country I have been to, even including sinister New Guinea with its poisonous climate to which I have returned again and again. Usually unpleasant things are forgotten, and only the pleasant ones remembered, and in nearly all other countries certain exceptionally pleasant camps stand out, and I long to revisit them again. Some I have, but not so in Bolivia.

Usually Amazonian forests are very silent, and one may wonder where are all the animals and birds one has read so much about. It has to be remembered how vast is their feeding ground, and all game moves about with the fruiting season. Find some such district and the number of birds, monkeys, and other animals there will astonish

you. Indian tribes too follow the game, moving from one locality to another. Some have several villages, perhaps a week's journey or more apart, to which they change over.

The main Amazon is undoubtedly not interesting with its monotonous and uniform level, and so wide as to suggest the sea. The only pretty part is at the narrows above Pará, where the ship passes through a succession of narrow channels between some islands. To see the real life of Amazonas one must go far from the main river to its narrower affluents where the banks are nearer, or up creeks, where the branches may even meet overhead, to see some of its animal life.

We have all heard from childhood that saying about "Birds without song, flowers without scent, etc." as applied to the tropics, but was anything more inaccurate ever written? I have heard more song in the early morning in a jungle than I have ever heard in Europe. For one thing both numbers and species are far more numerous there than they are with us. Some say "Yes, but what about the Blackbirds and Thrushes?" Well, there are members of this family to be found nearly all over the world, some of them no mean songsters either. I often think of those daybreak hours in the far interior of Borneo for one place, and I think how I used to enjoy the volume of song and all the various musical calls of birds known and unknown to me by their voices, as I lay in bed for that all too short time between dawn and sunrise. I can well imagine, say a Dyak, taken away to some other land, how homesick he would be for all this. Even I myself on my way back there on subsequent visits have been looking forward to hearing it all again; and the pleasure certain songs and calls I had forgotten gave me when I remembered them again. I often shut my eyes and thought "Have I ever been away from this". Australia, although not all in the tropics, has enough brilliantly-coloured birds in all conscience, and yet some whose song can equal our best.

I grant the raucous notes of many of the inmates of the Bird House at the Zoo sound a bit distracting there, but the same in their native jungle are quite in keeping, and many toned down by distance perhaps sound even agreeable. It always gives me the greatest pleasure to hear the ringing notes of some of the Paradise Birds. It takes me

back to some New Guinea camp, or river journey, and I see it all over again, the throbbing of the native drums down in the villages, the stamp of the feet in the dance, and even the finish of some of their songs, with sounds palpably suggested by the call of the Paradise Birds. What would New Guinea be like without this call echoing from valley to valley.

That ear-splitting note of the Bell Bird can sound almost beautiful in a Brazilian forest, but I have listened to it from far and near, trying my best to believe it sounded like a bell when heard under these conditions, but I never could. I think its Brazilian name of Anvil Bird fits it much better. So, when some exotic call sounds distracting to us over here, try to think of it in its own surroundings, when it would convey quite a different impression, even pleasant or beautiful.

After my return from Bolivia I spent two or three months at home trying to readjust myself to civilization and then accepted a post offered to me to look after some diamond mines in the far interior of Brazil, where I stayed for three years. After that, I took up collecting once more. Birds on the mines were hardly worth writing about, although I did keep a few. It was a far better place for snakes than birds, and I kept quite a number, and let me whisper it here, I believe I am quite as fond of them as I am of birds, which is saying a lot.

The end.

CORRESPONDENCE, NOTES, ETC.

"NOTES ON NEW ZEALAND BIRDS"

I fear that Mr. Porter's article on New Zealand Birds (September, 1933) will have been somewhat misleading to those of your readers who have never visited this country.

Some of his remarks dealing with the subject of our native forests are, quite candidly, nonsense. He writes of these forests: ". . . but little is now left . . . a few acres which someone has forgotten to burn." Would it surprise him to learn that one company alone, of which the writer knows, has recently purchased over seven thousand acres covered with heavy forest—this hardly sounds as if the bush remained only in tiny patches, does it? Has Mr. Porter ever halted upon the top of Mount Messenger and looked about him? To north, south, east, and west one sees nothing but range upon range all clothed with native forest. Has he ever stood upon the top of the Akataweras where the same sight meets the eyes? The writer could mention twenty such places where one can see literally tens of thousands of acres of heavy forest.

Mr. Porter would have your readers believe that our farmers burn off the bush and then tolerate the thistle, ragwort, and gorse because they remind them of home. If only he knew of the number of struggling farmers who have been driven off their land by these cursed pests! Does he really imagine that farmers spend large sums of money in bringing bush land to a state of productivity and then welcome the thistle and gorse?

After all, one's first business is to live, and our farmers are merely endeavouring to carry out this duty by bringing land into productivity which previously yielded nothing.

Once they were called "pioneers", now they call them "vandals". But were it not for them many of us would go hungry to bed!

No, Sir, the average New Zealand farmer is not quite such a blackguard as Mr. Porter would have your readers believe. Would it surprise you to learn that many of them even take an interest and a pride in our native flora and that they fence and protect (and even re-plant) such patches as remain, upon their properties?

One appreciates and makes allowances for the fact that Mr. Porter is a very keen admirer of our native birds—some of us actually love them too! Mr. Porter should endeavour to recover his sense of proportion.

ALEX. R. STRANG.

FRANKLEIGH PARK,
NEW PLYMOUTH, N.Z.

CONDOR BREEDING IN CAPTIVITY IN GERMANY

A breeding record which I cannot find among those given so far by Dr. Hopkinson is that of the Condor (*Sarcorhamphus gryphus*). This big Vulture has nested with full success here in the Zoological Garden six years ago, and the chick which has been reared is alive to-day. Also in 1928 the pair nested but the chicks did not live. The birds live all the year round in a big aviary and stand our very severe winters (we had 28° Réaumur below zero last year) perfectly.

I have further found that the Roulroul (*Rollulus roulroul*) has been bred by a Mr. August Wiener in London as long ago as 1878. Bruno Duerigen states in his book on poultry-keeping that two chicks were hatched in the aviaries of Mr. Wiener, but whether they lived to maturity is not mentioned.

ALEX HAMPE.

NEW VARIETIES IN BUDGERIGARS

I notice in this month's (October) AVICULTURAL MAGAZINE a note on above, and I would like to point out that similar birds were bred by Mr. Hood and Mrs. Flowers—both members of the Avicultural Society of America. I saw the birds myself and a most peculiar thing about them was the nose-bands were practically alike in both sexes. I believe they were exhibited at the last foreign bird show held at Long Beach, California.

The pair of Bourke's Parrakeets belonging to Messrs. Arnold & Purvine have raised ten young ones this season, and their Elegant Parrakeets have increased to a flock of over fifty.

FRANCIS H. RUDKIN.

MRS. BRYAN'S AVIARIES AT PANAMA

Dr. William Beebe writes in the current number of the *Bulletin of the New York Zoological Society* :—

“ One memorable visit was to Mrs. Bryan's aviaries, a tangled hodge-podge of cages rambling in all directions about her house, but with an amazing collection of birds of many groups in splendid condition. Mrs. Bryan is one of those natural born bird lovers of whom birds have no fear, and for whom they will breed at any time. Here were Tinamous dropping their turquoise eggs about and hatching them out at the slightest encouragement ; young, recently fledged Mot-mots, Galapagos Doves, and Callistes nesting in any place they could find. If this wonderful aviculturist had sufficient space and facilities there is hardly any species of bird which she could not raise.”

“ BIRD SYMPHONY ”

This little volume contains a wonderful collection of the best items of poetry and prose that have ever been written on the subject of birds. It forms “ a gallery of word-pictures all centred on our friends the birds, on the winged, joyous population that, through all our vicissitudes of birth and growth and care, of hope and loss, struggle and forboding, resignation, gaiety, and death, will be singing at our windows and flying over and about our homes, always a little nearer than ourselves to the secret of joy and to the world of cloud and sky ”. It is compiled by C. C. Vyvyan (C. C. Rogers) and published by John Murray at 6s. net.

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