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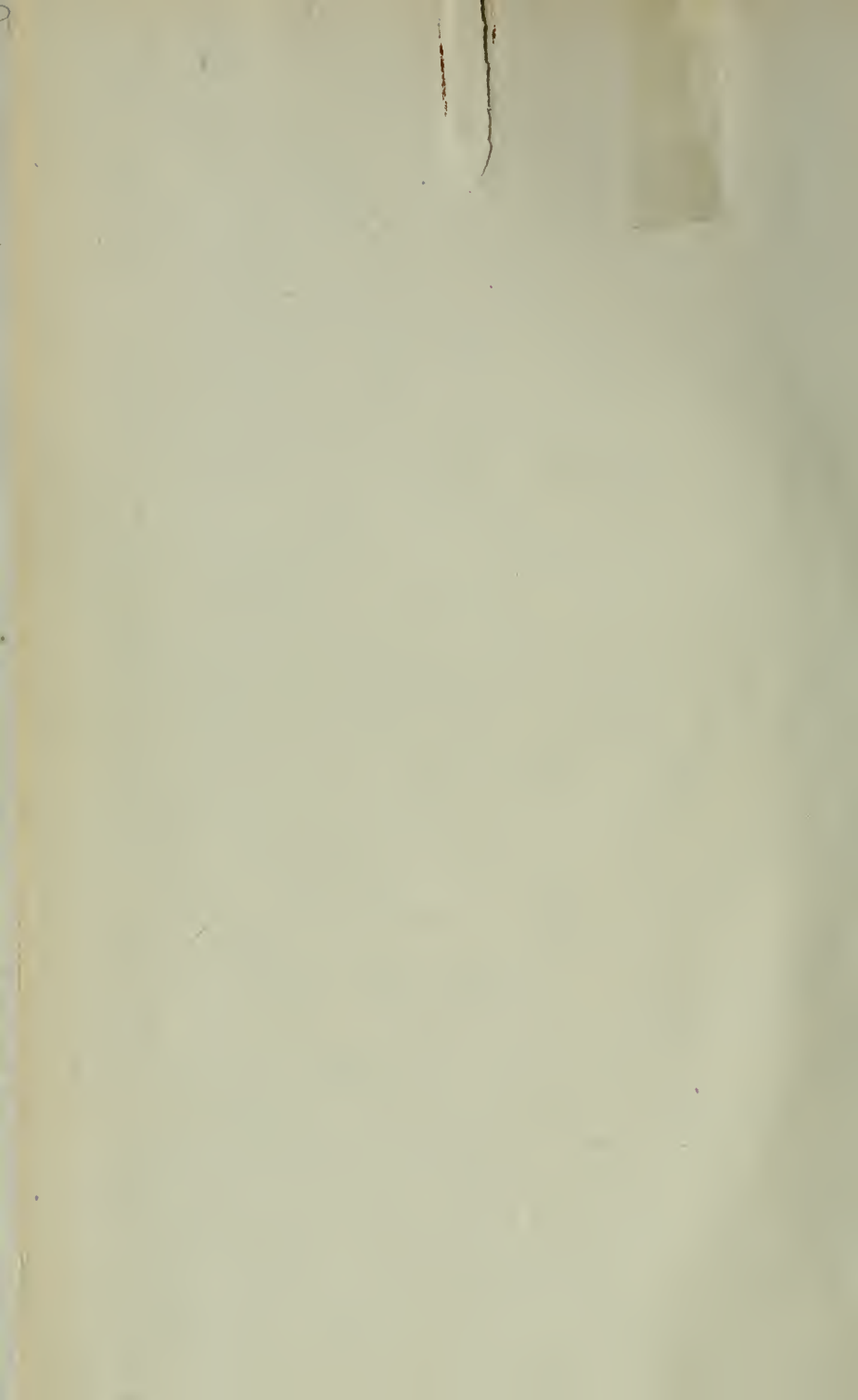
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GRAHAM RENSHAW, M.D., F.R.S.E.

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 GILES, HENRY M., M.Aust.O.U. (Orig. Mem.) ; Zoological Gardens, Perth, Western Australia. (June, 1903)
 GODDARD, H. E. ; Rothsay, Thicket Road, Sutton, Surrey. (Feb., 1899)
 GODDARD, Mrs. ; The Lawn, Swindon. (Jan., 1918)
- 130 GODMAN, F. DECANE, D.C.L., F.R.S., F.Z.S., President of the British Ornithologists' Union ; 45, Pont Street, S.W. (Oct., 1904). (*Honorary Member*)
 GOODALL, A. A. ; 64, Park Road, West Dulwich, S.E. 21. (Nov. 1909)
 GOODALL, ALEXANDER ; 5, Maria Street, Kirkcaldy. (March, 1916)
 GOODALL, 2nd Lieut. A. G., R.F.A. ; 64, Park Road, West Dulwich, S.E. 21. (April, 1918)
 GOODCHILD, HERBERT, M.B.O.U. ; 59, Leslie Road, N. 2. (Oct., 1912)
 GOODLIFFE, Capt. M. S. H., 17th Lancers ; Cavalry Club, Piccadilly, S.W. 1. (Sept., 1918)
 GOSSE, PHILIP, M.R.C.S., L.R.C.P. ; Curtlemead, Beaulieu, Hants. (April, 1911)
 GRABHAM, Dr. ONLEY, M.A. ; The Museum, York. (June, 1914)
 *GRAY, HENRY, M.R.C.V.S. ; 23, Upper Phillimore Place, W. 8. (June, 1906)
 GREENING, LINNEUS ; Fairlight, Grappenhall, near Warrington. (Jan. 1911)
- 140 GREGORY, Mrs. ; Melville, Parkstone, Dorset. (Dec., 1901)
 GREY, Lord, of Falloden, K.G. ; Falloden, Nesbury, Northumberland. (1913)
 GRIFFITHS, M. E. ; Caizley House, Temple Road, Stowmarket. (May, 1902)
 GROSSMITH, J. L. ; The Grange, Bickley, Kent. (Nov., 1912)
 GUILFORD, Miss H. ; 23, Lenton Avenue, The Park, Nottingham. (March, 1903)
 GULBENKIAN, C. S. ; 27, Quai D'Orsay, Paris. (Dec., 1908)
 GURNEY, Lieut. G. H. ; 11, King Street, St. James's, S.W. 1. (Sept., 1918)
- HAAGNER, A. K., F.Z.S., M.B.O.U., Director, National Zoological Gardens ; Box 754, Pretoria, South Africa. (Nov., 1905)
 *HAMILTON, Miss. (*No Address*)
 HARCOURT, Rt. Hon. LEWIS, P.C. ; 14, Berkeley Square, W. 1. (1913)
- 150 HARDING, W. A., M.A., F.Z.S. ; Histon Manor, Cambridge. (Dec., 1903)
 HARLEY, Mrs. F. ; Brampton Bryan, Herefordshire. (1908)
 HARPER, EDWARD WILLIAM, F.Z.S., M.B.O.U. ; Post Box 86, Calcutta, India. (Feb., 1901)

- HARTLEY, Mrs.; "Lynchfield," Bishops Lydeard, Somerset. (April, 1897)
- *HARVEY, The Hon. Lady; Langley Park, Slough. (Oct., 1906)
- HAWKINS, L. W.; 206, Clive Road, West Dulwich, S.E. 21. (Jan., 1899)
- HAYES, Miss PHYLLIS; Harcourt, Wem, Salop. (1915)
- HEATHCOTE-AMORY; Knighthayes Court, Tiverton.
- HEBB, THOMAS; "Brooklea," The Downs, Luton, Beds. (April, 1914)
- HEMSWORTH, The Rev. B., M.A., J.P.; Monk Fryston Hall, South Milford, Yorks. (June, 1901)
- 160 HERBERT, 2nd Lieut. EDWARD G., R.A.F.; c/o Cox & Co. (R.A.F. Branch), 111, St. Martin's Lane, W.C. 2.
- HEUMANN, G. A.; "Ramona," Beecroft, Sydney, New South Wales. (Sept., 1913)
- HEWITT, HARALD, F.Z.S., East Sooke, Vancouver Island, B.C. (Jan., 1905)
- HEYWOOD, RICHARD; Narborough, Norfolk. (Oct., 1911)
- HILL, ARTHUR W.; Assist. Director, Royal Gardens, Kew, Surrey. (Oct. 1915)
- *HILL, Mrs. E. STAVELEY; Oxley Manor, Wolverhampton. (Oct., 1905)
- HINDLE, R. FRANKLIN; 34, Brunswick Road, Liverpool. (Sept., 1898)
- *HODGSON, The Hon. Mrs.; Clopton, Stratford-on-Avon. (March, 1903)
- HOLDEN, RALPH A., F.Z.S.; 5, John Street, Bedford Row, London, W.C. 1. (May, 1906)
- *HOPKINSON, EMILIUS, M.A., M.B.Oxon., D.S.O.; Gambia, West Africa; 45, Sussex Square, Brighton. (Oct., 1906)
- 170 HOPSON, FRED C.; Northbrook Street, Newbury. (March, 1897)
- HORNE, ARTHUR; Bonne-na-Coile, Murtle, Aberdeenshire. (Dec., 1917)
- HORSBROUGH, Mrs. BOYD R.; c/o London & Joint Stock Bank, 69, Pall Mall, S.W. 1.
- HOUSDEN, JAMES B.; Brooklyn, Cator Road, Sydenham, S.E. 26. (Orig. Mem.)
- HOWARD, ROBERT JAMES, M.B.O.U.; Shear Bank, Blackburn. (April, 1903)
- *HOWARD-VYSE, H.; Stoke Place, Slough. (Nov., 1906)
- HOWMAN, Miss; 6, Essex Grove, Upper Norwood, S.E. 19. (Mar., 1897)
- HUNTER, W. G., West Street, Sydney, N., N.S.W. (Nov., 1917)
- *HUTCHINSON, Miss ALICE; Alderton, Chippenham, Wilts. (August, 1907)
- ICK-HEWINS, T. J., M.D.; P.O. Box 65, Marton, New Zealand. (June, 1918)
- 180 *INCHIQUIN, The Lady; Dromoland Castle, Newmarket-on-Fergus, County Clare, Ireland. (Nov., 1897)
- *INGRAM, Capt. COLLINGWOOD; The Bungalow, Westgate-on-Sea. (Oct., 1905)
- *INGRAM, Sir WILLIAM, Bart.; The Bungalow, Westgate-on-Sea. (Sept., 1904)
- ISAAC, CHARLES; Somerton, Bath Road, Slough. (March, 1906)
- JEAKINS, A. E., The Studio, Simla, India. (March, 1915)
- JENNISON, GEORGE, M.A.; Zoological Gardens, Belle Vue, Manchester. (April, 1918)
- JOHNSON, Mrs.; Phœnix Lodge, Lingfield, Surrey. (Jan. 1917)
- *JOHNSTONE, Mrs. E. J.; Burrswood, Groomsbridge, Sussex. (May, 1908)

- *KEWLEY, MRS. HENRY; Hartwell House, Aylesbury. (July, 1906)
- KNOBEL, Miss E. MAUD; 32, Tavistock Square, W.C. 1. (Aug., 1916)
- 190 KUSER, J. DRYDEN; Faircourt, Bernardsville, New Jersey, U.S.A. (1912)
- LATHAM, Miss GRACE; 3, Trevanion Road, West Kensington, W. 14. (April, 1915)
- LAWRENCE, Mr. S. A.; Miya, Alma Road, E. St. Kilda, Vict. (Sept., 1916)
- LEACH, C. F.; Vale Lodge, Leatherhead, Surrey. (June, 1914)
- LÉCALLIER, Madame; 109 Rue de la Republique, Caudebec-les-Elbeuf. (April, 1918)
- *LEIGH, CECIL; Lyburn Park, near Lyndhurst, Hants. (Nov., 1906)
- LE SOUËF, A. SHERBOURNE; Zoological Gardens, Sydney, New South Wales. (Aug., 1913)
- LE SOUËF, DUDLEY; Zoological Gardens, Royal Park, Parkville, Melbourne, Australia. (1912)
- LEWIS, D. THOMAS; Oaklands, Aberkintig, Glam. (1917)
- LIENAU, C. H. A.; "Newbury," 23, Victoria Avenue, Unley Park, South Australia. (Oct., 1917)
- 200 *LILFORD, The Lady; Lilford Hall, Oundle, Northamptonshire. (Jan., 1898)
- LLOYD, Lieut.-Col. A.; Brent House, Meole Brace, Shrewsbury. (May, 1918)
- *LOCKYER, ALFRED; St. Monica's Lodge, Elin Park Road, Winchmore Hill, N. 21. (Dec., 1905)
- *LOVELACE, The Countess of; Wentworth House, Chelsea Embankment, London, S.W. 3. (May, 1906)
- LOVELL-KEAYS, L., M.R.C.S., L.R.C.P.; Park Lodge, East Hoathley, Sussex. (Aug., 1913)
- LOVELL-KEAYS, Mrs.; Park Lodge, East Hoathley, Sussex. (July, 1916)
- LOVETT, C.; 48, Thorncliffe Road, Summertown, Oxford. (Dec., 1912)
- LOW, GEORGE E.; 14, Royal Terrace East, Kingstown, Ireland. (Mar., 1913)
- LUCAS, Dr. N. S.; University College Hospital, Gower Street, W.C. 1. (Jan., 1913)
- MANCHESTER PUBLIC LIBRARIES; Reference Library, Piccadilly, Manchester. (July, 1913)
- 210 *MCGEAGH, R. T., M.D.; Mona Lodge, Lezayre, nr. Ramsey, Isle of Man. (Aug., 1908)
- MCGEE, The Rev. Father; St. Laurences, Forbes, N.S.W. (July, 1908)
- MALONE, Mrs. M. L'ESTRANGE; West Lodge, Malton, Yorks. (Jan., 1902)
- *MANNERS-SMITH, Lieut.-Col.; The Residency, Nepal, India. (1911)
- MARLOW, R.; 115, Manchester Road, Denton, Lancs. (Jan., 1915)
- MARSDEN, JOHN W.; c/o Messrs. Heaps, Arnold & Heaps, Lead Works, Leeds. (Dec., 1916)
- *MARSHALL, ARCHIBALD McLEAN; Chitcombe, Brede, Sussex. (Jan., 1906)
- MARSHALL, F.; 16, Vale Avenue, Chelsea, S.W. (1916)
- MARTIN, H. C.; 147, Victoria Road, Old Charlton, Kent; and Saladero, Liebig, Fray Bentos, Uruguay. (Jan., 1897)
- MARTORELLI, Professore GIANCINTO, M.B.O.U., etc.; Collezione Turati, Museo Civico di Storia Naturale, Milan, Italy. (July, 1906.) (*Honorary Member*)

- 220 MASON, D. ; Maisonette, Broadstairs. (June, 1914)
 MAUD, Mrs. CHARLES E. ; Monterey, California. (July, 1913)
 MEADE-WALDO, E. G. B., F.Z.S., M.B.O.U. ; Hever Warren, Hever, Kent,
 (Jan., 1895)
 MELLOR, H. P. ; Trenance, Eagle Brow, Lymm, near Warrington. (Aug., 1918)
 MERCER, WILLIAM ; Doylestown, Pennsylvania, U.S.A. (March, 1913)
 *MILLS, The Hon. VIOLET ; The Wilderness, Sevenoaks. (Oct., 1907)
 MILLSUM, O. ; 79, Northdown Road, Cliftonville, Margate. (Aug., 1909)
 MITCHELL, HARRY ; 42, Brunswick Square, Hove. (Feb., 1904)
 MOIR, J. K. ; Normanton, Young Street, Albury, New S. Wales. (July, 1918)
 MONEY, Sir LEO CHIOZZA, M.P. ; The Grey House, Hampstead Lane, N. 6.
 (Nov., 1913)
- 230 MONTAGU, Hon. E. S., M.P., M.B.O.U. ; 59, Bridge Street, Cambridge ; and
 12, Kensington Palace Gardens, W. (May, 1912)
 MONTGEON, Mlle. de ; Eastington Hall, Upton-on-Severn, Wores. (Oct.,
 1913)
 MORRISON, Hon. Mrs. McLAREN ; Queen Anne's Mansions, St. James's Park,
 S.W. 1. (Sept., 1911)
 MORTIMER, Mrs. ; Wigmore, Holmwood, Surrey. (Orig. Mem.)
 MOSS, J. W. ; Treleaven, Hockerley Lane, Whaley Bridge, near Stockport.
 (March, 1918)
 MUNDY, Miss SYBIL MILLER ; Shipley Hall, Derby. (Jan., 1909)
 MUNT, HENRY ; 10, Ashburn Place, S. Kensington, S.W. 7. (1912)
 MYLAN, JAS. GEORGE, B.A., M.B. (Univ. Coll.) ; L.R.C.P. and L.R.C.S. (Ed.),
 etc. ; 90, Upper Hanover Street, Sheffield. (Dec., 1901)
- NEILSON, Major G. M. ; Boraston Knowe, Blackhall, Midlothian. (June, 1918)
 NEVILL, Capt. T. N. C. ; Bramall Hall, nr. Stockport. (July, 1917)
- 240 NEWMAN, T. H. ; F.Z.S., M.B.O.U. ; Newlands, Harrowdene Road, Wembley.
 Middlesex. (May, 1900)
 NEWMARSH, C. T., at Gamage's, Ltd. ; Holborn, W.C. (Aug., 1915)
 *NICHOLS, WALTER B., M.B.O.U. ; Stour Lodge, Bradfield, Manningtree.
 (Jan., 1907)
- Oakey, W. ; The Angler's Inn, Pole Street, Preston. (March, 1896)
 OBERHOLSER, HARRY C. ; 1444, Fairmount Street, N.W., Washington, D.C.,
 U.S.A. (Oct., 1903)
 *OGLIVIE-GRANT, W. R., F.Z.S., M.B.O.U. ; British Museum (Nat. Hist.),
 Cromwell Road, S.W. 7. (Dec., 1903)
 OGLE, BERTRAM SAVILLE, M.B.O.U. ; Steeple Aston, Oxford. (Dec., 1902)
 ONSLOW, The Countess of ; Clandon Park, Guildford, Surrey. (July, 1910)
 O'REILLY, NICHOLAS S. ; 144, Eastern Road, Kemp Town, Brighton. (Dec.,
 1894)
 *OSTREHAN, J. ELLIOTT D. ; Bank House, Thame, Oxon. (April, 1903)
- 250 PAGE, WESLEY T., F.Z.S. ; Langstone, Lingfield, Surrey. (May, 1897)
 *PAM, ALBERT, F.Z.S. ; Wormley Bury, Broxbourne, Herts. (Jan., 1906)

- PAM, HUGO, C.M.Z.S.; 65, Bishopsgate, E.C. 2. (Sept., 1911)
- PARMENTER, Miss; Sedgemere Hall, Roydon, Essex. (Nov., 1917)
- PEIR, P.; c/o 'Taxation Department, George Street North, Sydney, N.S.W. (July, 1903)
- PENROSE, FRANK G., M.D., F.Z.S., M.B.O.U.; Rathkeale, 51, Surrey, Road Bournemouth. (Dec., 1903)
- PERCIVAL, WALTER G.; Kalnangi, Chania Bridge, British East Africa. (Feb., 1915)
- PERCY, The Lord WILLIAM; Alnwick Castle, Alnwick. (May, 1913)
- PERRY, C. S. R.; 1, Claremont Avenue, New Malden, Surrey.
- PHILLIPS, JOHN C.; Knobfields, Wenham, Mass., U.S.A. (March, 1910)
- 260 *PHILLIPS, Mrs. E. LORT, F.Z.S.; 79, Cadogan Square, S.W. 1. (April, 1907)
- PICHOT, M. PIERRE A.; 132, Boulevard Hausmann, Paris. (Sept., 1910)
- PICKFORD, RANDOLPH JOHN; Thorn Lea, Carmel Road, Darlington. (Feb. 1903)
- PIKE, L. G.; Kingsbarrow, Wareham, Dorset. (1912)
- *POCOCK, R. I., F.R.S., F.L.S., F.Z.S., M.B.O.U.; Zoological Society's Gardens, Regent's Park, N.W. 1. (Feb., 1904)
- PORTAL, MAURICE; High Sandhoe, Hexham. (April, 1913)
- POTTER, Dr. BERNARD E.; 26, Park Crescent, Portland Place, W. 1. (Mar., 1914)
- PRICE, Lieut. E. N., R.G.A.; R.A. Headquarters, 6th Divis. Artillery, B.E.F. (Jan., 1918)
- PRINCETON UNIVERSITY, LIBRARY OF; Princeton, New Jersey, U.S.A. (Nov., 1907)
- PYCRAFT, W. P., A.L.S., F.Z.S., M.B.O.U., etc.; British Museum (Nat. Hist), Cromwell Road, S.W. (Nov., 1904). (*Hon. Member*)
- 270 QUINCEY, Capt. RICHARD S. DE Q.; Inglewood, Chislehurst, Kent. (April, 1913)
- RADCLIFFE, Captain A. DELMÉ, 105th Maratha Light Infantry, Poona, India.
- RATHBORNE, HENRY B.; Dreenan, Boa Island, Pettigo, Co. Fermanagh. (May, 1901)
- *RATTIGAN, Lieut. G. E.; 24, Caroline Street, Eaton Terrace, S.W. 1. (Aug., 1908)
- RICKMAN, PHILIP; Brookmead, Windsor Road, Bray, Berks. (July, 1915)
- REID, Mrs.; Funchal, Madeira. (Feb., 1895).
- RENSHAW, GRAHAM, M.D., F.R.S.E. (*Editor*); Sale Bridge House, Sale, Manchester. (Jan. 1910)
- RENSHAW, H. S., M.D.; 2, Richmond Hill, Bowden, Altrincham. (Jan., 1918)
- *RICE, Captain G.; Persey House, Blairgowrie, N.B. (May, 1912)
- RILEY, JOSEPH H.; U.S. National Museum, Washington, D.C., U.S.A. (June 1906)
- 280 *ROBBINS, HENRY; (*Address unknown*). (April, 1908)
- ROBERTS, Mrs., C.M.Z.S.; Zoological Gardens, Beaumaris, Montpelier Street, Hobart, Tasmania. (June, 1903)
- ROBISON, ANSEL W.; c/o Mrs. C. E. Maud, Monterey, Cal., U.S.A. (June, 1918)
- *ROGERS, Lieut.-Col. J. M., D.S.O., F.Z.S., M.B.O.U. (late Royal Dragoons); Riverhill, Sevenoaks. (April, 1907)
- ROGERSON, A.; Fleurville, Ashford Road, Cheltenham. (Dec., 1902)

- ROTHSCHILD, HON. LIONEL DE, M.P.; 46, Park Street, W. 1. (Nov., 1913)
- ROTHWELL, JAMES E.; 153, Sewall Avenue, Brookline, Mass., U.S.A. (Oct., 1910)
- ROYAL ZOOLOGICAL SOCIETY OF IRELAND, c/o Royal College of Science, Dublin. (Oct., 1905)
- *ST. QUINTIN, WILLIAM HERBERT, F.Z.S., M.B.O.U.; Scampston Hall, Rillington, York. (Orig. Mem.)
- SLATER, W. L., M.A., F.Z.S.; 10, Sloane Court, S.W. 3. (Aug., 1904)
- 290 SCOTT, Lieut. B. HAMILTON, R.F.A.; Hamildean, Ipswich. (1912)
- *SEPPINGS, Captain J. H. W., A.P.D.; The Castle, Cape Town. (Sept., 1907)
- SARGEAUNT, A. ST. GEORGE; "Exbury," Padstow, Cornwall. (June, 1915)
- SAMUELSON, Lady; Hatchford Park, Cobham, Surrey. (July, 1916)
- *SETH-SMITH, DAVID, F.Z.S., M.B.O.U.; 34, Elsworthy Road, South Hampstead, N.W. 3. (Dec., 1894)
- *SETH-SMITH, LESLIE M., B.A., M.B.O.U.; Alleyne, Caterham Valley, Surrey; and Kampala, Uganda. (July, 1912)
- SEBAG-MONTEFIORE, MRS.; 2, Palace Houses, W. 2. (1913)
- SICH, HERBERT LEONARD; Corney House, Burlington Lane, Chiswick, W. 4. (Feb., 1902)
- SIMPSON, ARCHIBALD; Oakfield House, Stanks, Crossgates, nr. Leeds. (Feb., 1901)
- SMALLEY, F. W., F.Z.S., M.B.O.U.; North Cove Hall, nr. Beccles, Suffolk. (1912)
- 300 SMITH, C. BARNBY; Woodlands, Retford. (Aug., 1906)
- *SMITH, Miss DORRIEN; Tresco Abbey, Isles of Scilly, Cornwall. (Aug., 1908)
- SMITH, O. C.; 73, Audley Street, Reading. (March, 1915)
- SMITH, PHILIP; Haddon House, Ashton-on-Mersey. (Dec., 1917)
- SMITH, W. PROCTOR; Haddon House, Ashton-on-Mersey, Sale, Manchester. (Nov., 1917)
- SNAPE, Major A. E., F.A.F.; Malvern, Churchfield, Salisbury. (June, 1918)
- SOUTHESK, The Countess of; Kinnaird Castle, Brechin, N.B. (Feb., 1901)
- SOUTHPORT CORPORATION, Curator of; Hesketh Park, Southport. (Jan., 1904)
- SPENCE, G. O.; Elmwood, Hartburn, Stockton-on-Tees. (1913)
- SPRANGE, Sergt. D. H.; c/o Messrs. Morton & Owen, 6, Great Winchester Street, E.C. 2. (Feb., 1918)
- 310 SPANKLING, E.; Brookland Cottage, South Road, Taunton. (Feb., 1914)
- SPROSTON, MRS.; Elm House, Nantwich, Cheshire. (June, 1917)
- *STANSFIELD, Captain JOHN; Dunninald, Montrose, N.B. (Dec., 1896)
- STAPLES-BROWNE, R.; Bradfield House, Bicester, Oxfordshire. (Aug., 1898)
- STEVENS, H.; Gopaldara Mirik P.O. *via* Kurslong D.H.Rly., Bengal, India. (Oct., 1911)
- STOCKPORT CORPORATION; Superintendent, Vernon Park, Stockport. (Oct., 1902)
- SUFFOLK and BERKSHIRE, The Countess of; Charlton Park, Malmesbury. (Feb., 1909)
- SUGGITT, ROBERT; Suggitt's Lane, Cleethorpes, Grimsby. (Dec., 1903)
- SUTCLIFFE, ALBERT; Fairholme, Grimsby. (Feb., 1906)

- *SUTTON, Lady; Brinsop Court, Hereford. (Dec., 1901)
- 320 SWAYSLAND, WALTER; 47, Queen's Road, Brighton. (Orig. Mem.)
- TAKA-TSUKASA, NOBUSUKE; 106, Honmura-Cho, Azabu, Tokyo, Japan. (Feb., 1914)
- *TANNER, DR. FRANK L.; Vanvert House, Guernsey. (Jan., 1914)
- TAVISTOCK, The Marquis of; Warblington House, Havant, Hants. (1912)
- TEMPLE, W. R.; Ormonde, Datchet, Bucks. (June, 1907)
- TERRY, Major HORACE A., M.B.O.U. (late Oxfordshire Light Infantry); Compton Grange, Compton, Guildford. (Oct., 1902)
- TESCHEMAKER, W. E., B.A.; Ringmore, Teignmouth, Devon. (May, 1904)
- THOM. ALFRED A.; The Citadel, Hawkstone, Preston-Brockhurst, Salop. (June, 1913)
- THOMAS, F. INIGO; 2, Mulberry Walk, Church Street, Chelsea, S.W. 3. (June, 1914)
- THOMAS, HENRY; 15, Clinning Road, Birkdale, Southport. (Jan., 1895)
- 330 THOMAS, Miss F. G. F.; Weston Hall, Towcester, Northants. (March, 1899)
- THOMASSET, BERNARD C., F.Z.S.; The Manor House, Ashmansworth, near Newbury. (July, 1896)
- THOMASSET, H. P.; Mahé, Seychelles. (Nov., 1906)
- THOMPSON, Mrs. F. F.; Canandaigua, N.Y., U.S.A. (July, 1907)
- THORNILEY, PERCY WRIGHT; Shooter's Hill, Wem, Shrewsbury. (Feb., 1902)
- TICEHURST, NORMAN FREDERICK, M.A., M.B., F.R.C.S., F.Z.S.; 24, Pevensey Road, St Leonards-on-Sea. (Dec., 1906)
- TOWNSEND, STANLEY M.; 3, Swift Street, Fulham. (Sept., 1898)
- TRENOW, EVELYN HENRY, F.Z.S.; Ivy Lodge, Epping, Essex. (Nov., 1910)
- TRESTRAIL, Mrs.; Southdaile, Clevedon. (Sept., 1903)
- *TREVOR-BATTYE, AUBYN B. R., M.A., F.L.S.; Ashford Chace, Peterfield, Hants. (July, 1898)
- 340 TURNER, Mrs. TURNER; Abbey Spring, Beaulieu, Hants. (July, 1910)
- TWEEDIE, Lieut.-Col. W.; c/o Mrs. Tweedie, 8, Glebe Crescent, Stirling. (April, 1903)
- URWICK, DOUGLAS R.; Prior's Barton, Winchester. (March, 1913)
- VALENTINE, ERNEST; 7, Highfield, Workington. (May, 1899)
- VAN OORT, Dr. E. D.; Museum of Natural History, Leiden, Holland.
- VAN SOMEREN, Dr.; Nairobi, British East Africa. (June, 1915)
- WACHSMANN, A. E. WRIGHT DE BERNI; "Maitai," Murray Road, Beecroft, New South Wales, Australia. (August, 1914)
- WADDELL, Miss PIEDIE; Balquhatstone, Slan Annan, Stirlingshire. (Feb., 1903)
- WAIT, Miss L. M. ST. A.; 12, Rosary Gardens, S.W. 7. (Feb., 1909)
- WALKER, Miss H. K. O.; Chesham, Bury, Lancs. (Feb., 1895)

- 350 WALKER, Miss; Persey House, Blairgowrie, N.B. (Jan., 1903)
 WARNER, PERCY; Nashville, Tenn., U.S.A. (March, 1916)
 *WALLOP, The Hon. FREDERICK. (*No address.*) (Feb., 1902)
 WATERFIELD, Mrs. NOEL E.; Blyburgate House, Beccles; and Port Soudan, Red Sea. (Sept., 1904)
 WATTS, R. J.; "Sunnyside," St. Peter's Road, Huntingdon. (Feb., 1914)
 WAUD, Capt. P. REGINALD; Hoe Benham, near Newbury. (May, 1913)
 WEIR, J.; Douglas Cottage, Upper Ashley, New Milton, Hants. (July, 1918)
 WELLINGTON, Her Grace the Duchess of; Ewhurst Park, Basingstoke. (Oct., 1913)
 WHITAKER, JOSEPH I. S., F.Z.S., M.B.O.U.; Malfitano, Palermo, Sicily. (August, 1903)
 WHITLAW, Miss ROSA M.; Amerden, Taplow. (August, 1914)
 360 *WIGLESWORTH, JOSEPH. M.D., M.B.O.U.; Springfield House, Winscombe, Somerset. (Oct., 1902)
 WILKINSON, JOHN; West Park, Shelmorlie, Ayrshire. (Dec., 1914)
 WILLFORD, HENRY; Upland View, Havenstreet, Ryde, Isle of Wight. (Nov., 1907)
 WILLIAMS, Mrs. C. H.; Emmanuel Parsonage, Exeter. (May, 1902)
 WILLIAMS, Mrs. HOWARD; 24, Harley House, Regent's Park, N.W. (April, 1902)
 WILLIAMS, SIDNEY, Jun., F.Z.S.; Oakleigh, 110, Riverway, Palmer's Green, N. 13. (Feb., 1905)
 *WILSON, Dr. MAURICE A.; Walton Lodge, Pannal, Harrogate. (Oct., 1905)
 WILSON, T. NEEDHAM; Harrow Lodge, Bransgore, Christchurch, Hants. (Dec., 1901)
 *WINCHELSEA and NOTTINGHAM, The Countess of; Haverholme Priory, Sleaford. (April, 1903)
 WINDHAM, Lady EDITH; Soham House, Newmarket.
 370 WOLFE, Miss GEORGINA; St. John, 57, Granada Road, East Southsea. (August, 1904)
 WOODWARD, KENNETH N.; 1. Madison Avenue, New York, U.S.A. (March, 1915)
 WOOLDRIDGE, Prof. G. H., F.R.C.V.S.; Royal Veterinary College, Camden Town, N.W. (1912)
 WORKMAN, WM. HUGHES, M.B.O.U.; Lismore, Windsor Avenue, Belfast. (May, 1903).
 *WORMALD, HUGH; The Heath, Dereham, Norfolk. (Dec. 1904)
 YEALLAND, Pte. JAMES; Claudon Park Hospital, Guildford, Surrey. (July, 1913)
 YOUNG, Rev. HALFORD, The Vicarage, Stone, Aylesbury. (July, 1917)

Rules of the Avicultural Society.

As amended January, 1908.

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

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

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

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

5.—Each Member shall pay an annual subscription of £1, to be due and payable in advance on the 1st of November in each year. New Members shall pay, in addition, an entrance fee of 10s. 6d.; and, on payment of their entrance fee and

subscription, they shall be entitled to receive all the numbers of the Society's Magazine for the current year.

6.—Members intending to resign their membership at the end of the current year of the Society are expected to give notice to the Business Secretary before the 1st of October, so that their names may not be included in the "List of Members," which shall be published annually in the November number of the Magazine.

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

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

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

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

9.—The Members of the Council shall retire by rotation, two at the end of each year of the Society (unless a vacancy or vacancies shall occur otherwise) and two other Members of the Society shall be recommended by the Council to take the place of those retiring. The names of the two Members recommended shall be printed in the September number of *The Avicultural Magazine*. Should the Council's selection be objected to by fifteen or more Members, these shall have power to put forward two other candidates, whose names, together with the

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

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

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

The duties of the Executive Committee shall be as follows:

- (i). To sanction all payments to be made on behalf of the Society.
- (ii). In the event of the resignation of any of the officers during the Society's year, to 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.* Secretaries, 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 Secretaries, Editor, or Treasurer for a second term of office.

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

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

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

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

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

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

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

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

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

16.—That each Member (not a Dealer) be entitled to one advertisement, free of charge, each month, the Editor to be sole judge as to whether such advertisement can and shall be published or not, priority shall be given to those who apply first.

The Society's Medal.

RULES.

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

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

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

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

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

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

The Society's Prize.

The Society offers an annual Prize in Literature for the best article or series of articles on foreign birds, wild or captive, submitted by members living abroad, and accepted for publication in the Magazine, the Prize to consist of a bound and inscribed copy of 'Practical Bird-keeping' or some other suitable book, the award of the Prize to rest with the Editor.

The Prize is open for competition by foreign members only, as they are not eligible for the Medal.

The Society's Certificate.

This Certificate is given for priority in breeding birds in cages, the dimensions of which must not exceed one cubic yard, the conditions of award to be the same as those for the Medal.



X

Photo. by G. E. Low.

THE LITTLE GREY HOME IN THE WEST:
Puffin at Burrow, Saltee Islands, Ireland.

The edge of the burrow is seen at X.

THE
AVICULTURAL MAGAZINE,

BEING THE JOURNAL OF
 THE AVICULTURAL SOCIETY
 FOR THE STUDY OF
 FOREIGN & BRITISH BIRDS
 IN FREEDOM & CAPTIVITY.

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NOVEMBER, 1918.

A GOOD START.

“What’s well begun is half done” runs the proverb. This thought dominates the mind as the Magazine with this number commences yet another avicultural year. Already it is plain that the literary output will be excellent, while our pictures will equal the letterpress—for which the Editor thanks all those who have stood by him with pen and camera.

The illustration opposite has been selected from a fine series of photographs taken by our member and contributor Mr. G. E. Low. Although other birds are included in the series, the collection primarily deals with sea-birds—Gulls and Puffins. We see, for instance, a wild headland awchirl with white wings; downy infant Kittiwakes squatting in their rocky nursery; or a regiment of white-fronted, black-backed Puffins marshalled in absurd dignity at their breeding-station, or whirring past the camera, half filling the plate with birds. Taken on the rocky cliffs of Irish islands, the photographs are steeped in the very salt of the sea. One almost hears—

“The myriad cry of wheeling ocean-fowl,
 The league-long roller thundering on the reef.”

We hope in due course to publish many of these sea-pictures, constituting as they do a novelty amongst the attractions of the Magazine.

G. R.

THE FULMAR PETREL.

By Surgeon-Commander K. H. JONES, M.B., R.N.

There is little to entertain the mind and please the eye of the ornithologist whose lot is cast during the winter months upon the stormy sea, in the harsh weather of the northern portions of the British Isles, and on the ocean which stretches thence towards the inhospitable Polar regions. Such a one must always feel grateful to the Fulmar Petrel—almost invariably his companion, no matter how vile the weather or how far away from land he may find himself.

It is under the most unpleasant and arduous conditions of wind and weather that this wonderful wanderer is to be seen to the greatest advantage. Its untiring energy, its matchless strength and skill in flight, and the perfect grace of its aërial evolutions can hardly fail to excite admiration long after they have become the commonest subjects of daily observation. It is impossible to sail from any harbour in the Orkneys or Shetlands without some of these birds following in the vessel's wake. The number varies very much, and is greater, as a rule, in the winter than during the summer months, because, of course, in the latter season a considerable proportion of the species resorts to its breeding haunts.

The Fulmar apparently does, to some extent, feed on garbage food thrown overboard from ships, for an individual of this species, or perhaps a small party, may be seen to settle on the often very stormy water in the ship's wake, when the cook has emptied the contents of the shoot. Compared, however, with the Gulls the Petrels are very abstemious, and the noisy, greedy parties of ravenous birds do not include many of the latter at any time—at least such has been the writer's experience. It is far from easy when watching a Fulmar to observe the bird in the act of flapping its wings.

Easily passing ahead of the ship, accommodating itself without any apparent effort, after the manner of its kind, to any shift in the wind, it continues its long and rapid glides and marvellous swerves, now almost touching the water, which it beats Petrel fashion with its feet, and now rising as high, or higher than the mast-head. It is a

curious fact that, although one may travel day after day on the northern part of the North Sea or on the North Atlantic Ocean in very rough weather and see hundreds of Fulmars all the time, it is quite infrequently that one sees one of these birds resting on the water, and yet, of course, they must sleep thereon.

From the sudden way in which a few Fulmars in mid-ocean may augment their numbers it seems as if they tend to go about in company, apart altogether from their habit of congregating to follow certain ships.

It has been stated that a Fulmar, when flying near the shore, shows the greatest reluctance to cross dry land; the same disinclination to cross the deck of a ship, even when quite high above it, is very noticeable. It does so, but very, very rarely. A Fulmar may cross the stern of a ship a hundred times with the wind strongly behind or ahead of the bird, and yet not once will it appear above the head of an observer standing right aft.

These birds are remarkably tame, or unusually bold—which it is a matter of opinion—but they often fly so close to the rail that with a stick one could easily strike them. When passing close by the observer in this manner the great pace at which they are travelling is very obvious.

Associated with the Fulmar is very frequently the Kittiwake, but this elegant and very skilful little aviator cannot compare with its more robust companion, either in point of pace or endurance, and it is very often seen resting on the water even in the heaviest sea, and breaking waves disturb it not in the least.

If a wave or white-crested curler breaks into surf over a swimming Fulmar it does not usually raise itself up in the water to meet it as the Kittiwake does, but often it will take to flight, beating the sea with its feet as it rises into the air.

It having on one occasion happened that the writer of these notes had to cross the Atlantic from the North of Scotland to Nova Scotia at the end of one year and to return in the beginning of the next, notes were kept of the incidence of the Fulmar Petrel during both voyages.

On the outward voyage on the first day not a few Fulmars were noted, and this day was calm and bright.

The second day was rather rough, and the Fulmars were scarcer.

The third day but four or five Fulmars were observed.

On the fourth day Fulmars were scarce in the forenoon, but abundant at 3.30 p.m.

The fifth day no Fulmars were seen until noon, after which time they were abundant.

On the sixth day only two or three Fulmars were seen, at about 3.30 p.m.

For the last two days, before reaching the Canadian coast, no Fulmars appeared at all.

Returning to Europe after a few days, precisely the same occurred as on the previous voyage—no Fulmars were seen for the first two days after leaving Canada, and on the third a bird, which may have been of this species, was observed just as it was getting dark.

Fulmars were abundant on the fourth day.

The fifth day Fulmars were again much in evidence, and the same is true of the sixth.

On the seventh day Fulmars were still flying astern with Kittiwakes and one or two Great Black-backed Gulls, and the eighth day saw the ship safely back in a British harbour.

The above notes, of course, lose some of their value from the fact that the writer was not always on the upper deck during the day; at the same time some hours were spent daily, in all weathers, in observation of the avifauna of the open sea. In the experience of the writer the grey form of the Fulmar is a good deal scarcer than the white.

SUMMER BIRDS AT ROEHAMPTON.

By ALLEN SILVER.

In the grounds here I have seen Jays and Stock Doves (of course Wood-Pigeons), Blackcap, Willow Wrens, Chiffchaffs, Nuthatches, Creepers, Goldfinches, and Redpolls, Tits, Lesser-Spotted and Greater-Spotted Woodpeckers. The former are nesting, and I have found the nesting-hole. Just outside London the

Nightingales are busy, as seem all the other birds, and except in Song Thrushes and Whitethroats I see very little scarcity. I have heard and seen one Grasshopper Warbler. Of course my journeys are limited, and I have not been able to get to "the spots" where one can bet on finding a species. People often say they have not seen this, that, or the other because they have not localised the right quarters, and slight deafness is fatal in field work. I find the ear the best of all tell-tales. So many things are invisible but speak loudly.

I watched a pair of Willow Wrens here courting. They are both awful fools, like most other creatures at such times. Yesterday the Flycatchers were "making choice"—the cocks at this time can do "bull rushes" at each other. Blue-Tits now are mostly making the place noisy with what I call their "mouse-call." Few books mention this first sign of amour in that species, which noise usually is suspended when the young hatch. This is one of the most difficult birds to keep and *moult* we have. I'd sooner keep Long-tailed Tits, Wrens, Creepers and Goldcrests any day, and far preferably Sunbirds, *i. e.* with the idea of betting which would survive the longest. The Marsh Tit is the easiest kept Tit, followed by the Cole and Greater, which are equally questionable as "long livers." Crested and Red-sided Tits are better "livers," and Reedlings are, of course, very little trouble. Owls were very noisy in the grounds last night, *i. e.* *S. aluco*. Starlings have a nest here just above that of the Lesser-spotted Woodpecker. I hope they won't disturb it. They can't get in, of course, and Nuthatches usually fool them, but they generally have more wits than a Green Woodpecker, often causing the latter to shift.

MORE ABOUT BITTERNS AND SPOONBILLS.

BY J. H. GURNEY.

(Reprinted from the 'Zoologist'.)

The first Spoonbills were a fine pair seen on Breydon Broad by Mr. B. B. Riviere on May 1st, 1913; wind S.E. to S.W., force 2. Many other birds were on the mud-flats, including five Sheld-Ducks, Wigeon, Shovellers, and a White-fronted Goose, all of

them travellers going north or east. From that date until August 16th there were twenty-six days out of one hundred and six on which the watcher was able to register the presence of Spoonbills. According to his carefully kept notes, the longest period during which there was not a Spoonbill on the Broad was from May 29th to June 11th. On June 25th Mr. C. R. Gurney and I had a distinct view of three, and on July 6th there were four, this being the largest number seen by the watcher on any one day. In recording the visits of Spoonbills Mr. Jary has always been requested to carefully observe the direction of the wind. Accordingly, in looking back at his notes for many years, we learn that forty-four Spoonbills have come to Breydon Broad with a N.E. wind and seven with a N.W.; twenty more have come with a W. wind, eight with a S.W., and six with a S. wind. These observations were all made in April, May, or June, and a good deal may be gathered from them. Evidently in the spring it is a N.E. wind which generally brings Spoonbills; but this is curious, because in April and May their desire on leaving southern Europe would be to migrate north, or perhaps north-west. Do they then prefer to migrate with a wind which is against them? There is, however, another solution, namely, that it is a N.E. wind whereby they are checked, and without which many would pass on without halting on the Breydon mud-flats. This latter theory seems highly probable, and it certainly appears that when the wind has been S., a few only (fourteen in about as many years) have stopped on Breydon Broad, the rest presumably wending their way to a breeding-place in Holland.

Mr. F. C. Jourdain is of opinion that the largest Spoonbill settlement in Europe is probably that at Obedzka-Bara, in the Gegenwart (see Jakob Schenk, 'Aquila,' 1908, p. 245), but it is not likely that our Breydon birds nest there, or even pass it on migration.

We were sorry to miss the pair of Montagu's Harriers from the marsh where they had been last year. However, this disappointment was more than balanced when a little before half-past five a fine Bittern was viewed approaching with lazy flight, extended legs, and retracted neck from the same direction as one had come from when Mr. Bonhote and I were on this Broad one warm July day two

or three years ago. On perceiving itself watched by three people, it rose considerably, but soon dropped again to its original level, some fifteen feet above the reeds, among which we eventually saw it settle. I should have liked at once to have searched for the nest, but the owner was obdurate, fearing that the birds might forsake it, a feeling with which one could not but sympathise. The return of the Bittern to Norfolk of late years has been accompanied by a general desire to protect it on the part of the Broad owners, and it is hoped that this good action will have the support of the public who use our Broads in summer. The "boom" of a Bittern is a curious sound, not often to be heard; it is hushed in the middle of the day, but towards evening this nocturnal "Butter-bump," as it has been called in allusion to its note, becomes more lively. By listening carefully, we could easily distinguish five successive "gasps," rising *in crescendo*, and terminating in the deep "bump," whence its name, but sometimes there were only three "gasps," which agrees with the statement of Francis Willughby that the number is always uneven.* Whether it goes on serenading its mate all night is hard to say; on the present occasion I can testify that its "boom" could be heard up to 11 p.m. and again at 4 a.m. the next morning—*i. e.* sixteen minutes after sunrise—breaking forth about once in four minutes, and this went on with clock-like regularity until past six o'clock. I believe it is not yet settled whether the female Bittern can boom or not, but at any rate she does not do it nearly as loudly nor as often as the male. Mr. W. P. Pycraft, in a recent article ('The British Bird Book,' iv, p. 338), leaves the question open, merely remarking that the syrinx, which is usually considered to be the voice organ in birds, presents no modification. An old eighteenth century naturalist, Dr. Lamb, however, mentions having found in repeated dissections a loose membrane on the inner side of the windpipe in the male, which the female does not possess ('Zoologist,' 1880, p. 318). It is through the nostrils, which are distinctly larger than a Heron's, that the sound is believed to come.

* *Boatus numero impari vel tres simul, vel quinque edit. ut aiunt* ('Ornithologicæ Libri Tres,' p. 208).

MY BULLFINCH.

By Miss D. HUSSEY FREKE.

I reared my hen Bullfinch "Loomoola" from the nest, with five others, from twelve days old. In the autumn I parted with the five, and Loomoola being a hen I let her out of doors; but as she repeatedly came back and was so very tame I decided to keep her. She was seldom shut into her cage, but stayed in my bedroom—always coming to me when I came in or called her. I was perfectly devoted to the little treasure, and was quite miserable when, in the second spring, she flew out of the window and remained out for a fortnight. During that time I could never see her, and then one afternoon I heard her calling in the kitchen garden. As I was ill at the time I asked my mother to go and put the cage in the path for her. The same afternoon she went in with delight, and mother brought her in to me. In a few days' time, to my astonishment and delight, she began picking up all the bits of hair and fluff off the carpet, and began building a nest on a bracket close to my bed, placing it behind a china pot; the following week it was finished, and she began to lay her eggs—five. I was fearfully excited to see if she would hatch any of them, and in due time four little birds appeared. I put soft food—egg, etc.—in a saucer, and she fed and reared them all, and never minded a bit how many strangers came to look at her. When they were able to fly I put them in a cage and took them away. Alas, the following winter my absolute treasure was trodden on, and died on Christmas Day. I have reared Bullfinches in quantities, but never had such a darling, or one that I was quite so devoted to, as she knew my step, and the moment she heard me come into the house she began calling, and would often fly out into the hall to meet me coming up the stairs. I seldom came in without bringing a berry or bit of evergreen for her.

HAMPSHIRE BIRDS.

By J. WEIR.

The situation in which I live is suitable for observing bird life as the country immediately surrounding is open, and there is gorse

and heather, and a wood adjoining. It used to be part of a large estate, and the house I live in and the nearest one are both only a few years old. A good deal of the undergrowth in one direction has been cleared, which banished the Nightingale, but recently one seems to have returned. One can stand at the door and listen to several Nightingales singing, also the Night-jar's note can be heard. Once a Cuckoo seemed to call nearly all night. One appeared for a while to be constantly in the neighbourhood, and a year or so ago a young one was being fed in close proximity. Some birds seem scarcer since the gorse has been cut near the house, as, for instance, the Stone Chat and Linnet as breeding-birds. I believe I found the nest of the Cirl Bunting with one young bird a few years back, but there has been no sign of the species lately. A full list of birds seen or heard without going many yards from the door might be wearisome, but I may say that the Goldfinch is numerous, as also are the Linnet, Skylark, Blackbird and Thrush, Willow Warbler, Green Woodpecker, Tawny Owl, Starling and Missel Thrush. I cannot say much for the good behaviour of boys in relation to birds here any more than in other districts.

I have heard some very good vocalists in the Thrush and Blackbird ranks here. Birds occurring on migration or found in the neighbourhood include the Little Owl (or so I am told it is): I have one stuffed, which was picked up dead. There is a railway-line near the house, where the Corn-crake, although it does not seem to stay here, has been picked up several times. One meets with Partridge (both kinds), Pheasant, Barn Owl, Wryneck (not much heard this year by me), Meadow Pipit (ditto, ditto), Lapwing, Snipe, Jack Snipe, Water Rail, Woodcock, and the Redpoll in winter. The Heron frequently passes over.

There is a very large rookery at Hinton Admiral: Jackdaws are numerous, with Rooks; Sea Gulls of one or two kinds are often in evidence, and nearly all the well-known Warblers and Tits. Magpies and Jays appear to be more unmolested than previously; I trust this will be permanent. I have noted the Spotted Flycatcher, Nuthatch and Red-backed Shrike in the neighbourhood. Swallows and Martins do not seem very numerous, and as yet not many Swifts. If one can believe it, the Christchurch neighbourhood,

about half an hour's ride on the way to Bournemouth, was at least at one time a noted place for birds. Of course the New Forest is near. There is a museum of British birds at Christchurch, and I believe a great number are claimed as local captures. I have heard something about the Crossbill breeding not many miles away.

I lost my Jay by death this week; it screamed very loudly one night, and since then it had intermittently strong convulsive seizures, rallied remarkably one night and next morning, but relapsed and eventually died. I left it at night very collapsed and in the morning it was dead. I never noticed it plucking itself, but for several years it seemed to be stripped on the breast too early in the year for Nature. I have a Magpie, a hen, which is very lively and energetic; as far as I can see the Magpie is of a more inquiring nature than the Jay. It seems to think more, although the Jay no doubt is cunning, but the expression on the faces of the two birds is strikingly different. The Jay looks surprised, the Magpie modest. The Magpie laid six eggs last year, and several the previous one; I have seen none this year. No eggs, either, from any of my birds this year that I can recall, although they seem in *very good* condition. I have a pair of Blackbirds at large in the bird-house; the hen has built a nest, but I do not know of any eggs. I have had all my birds for some years. The cock Combassou (I have only one of that species) is still practically in full colour. The Avadavat is nearly in eclipse, and the Grey Waxbill which I have had now from four to five years is bright and strong. A number of my birds are hand-reared by myself almost entirely, the smallest one being a hen Hedge-Sparrow.

LATER.—The hen Blackbird has since laid two eggs. While I was away, she escaped, and was not recaptured, and now appears to be missing.

THE VALUE OF BIRD LIFE.

By JAMES J. CASH.

The importance of the article by the Editor in the June number under the heading "What did we do in the Great War?" should not be lost sight of. The value to mankind of bird life is very

real—vital, indeed—yet, judging from much that we have read in the press, and seen and heard, during the past four years of war, this fact is not appreciated as it should be.

Every student of bird life must be filled with indignation at much that has been going on—at the folly of allowing Plovers' eggs to be collected for the table, for example; at the urging of children to collect the eggs and to kill the young of "Sparrows," which in practice means destroying many species of small birds of great usefulness to the community; in short, at the folly of thinking that bird life is man's enemy and not his friend. It was a true remark in a recent number of this Magazine that "the wild or native birds of every country are there to benefit the farmers, the fruit-growers, and the stock-breeders."

While practically every bird is found to do more good than harm, insectivorous birds should be protected very zealously. We simply could not do without them; gardening and farming would soon become impossible. Bird life must be encouraged and protected. Dr. C. Gordon Hewitt well says that "birds are the most powerful insecticides we have." Too many folks are alive only to the damage that some birds do; they do not see the good the birds are waging at all times and seasons.

The question has been well asked and answered: "What would be the state of our permanent pastures if there were no birds?" "In a few years thousands of acres would be bared by subterranean insects. Were it not for Rook, Jackdaw, Starling, Plover and Gull, the white grub, wire-worm, leather-jackets, etc., would increase in such enormous numbers that the grass would be destroyed wholesale." This brings to mind those great winter flocks of birds which roam across the pastures and arable land from autumn until spring—the snowy Gulls like winter drifts upon the brown earth, the clamouring Rooks and Daws darkening the grasslands, the flickering wings of Lapwings innumerable where potatoes and turnips have recently been lifted. Think of the vast amount of grubs and insects destroyed by these birds in the course of a winter season!

It has been proved that the destruction of Lapwings, Rooks and Starlings had much to do with the recent plague of antler moth

caterpillars among the hill pastures of Derbyshire and elsewhere. There is no doubt, of course, that much harm can be done by certain birds at times, but this should not blind us to their usefulness in other directions, and to cry out for the extermination of any species is, in the writer's opinion, wrong.

It is good to find that the Barn and Tawny Owls are decidedly more numerous in Cheshire than they were a dozen years ago. On the other hand it is disquieting to miss the always-useful Lapwings from many old nesting haunts; great as are the winter flocks of these Plovers, one can travel for many miles in spring without seeing more than an occasional nesting pair.

We have always before us the tireless activities of the Swallows and Swift, and we should appreciate to the full the ceaseless energies of the Flycatchers, the various summer Warblers, the small fry (Tits, Golderest, and Creeper), Robin, Wren and Hedge Sparrow, Wagtails and Pipits. These are but some of many intensely useful feathered creatures. The Kestrel, too, must have special mention. It has been heartening to see more than usual this autumn. One or more have been seen most days, high in the windy sky, hovering, gliding, sailing, in graceful, perfect flight. Perhaps the shortage of gamekeepers accounts for this!

TWO INTERESTING HYBRIDS.

By ALLEN SILVER.

It may interest aviculturists to know that seven hybrids were bred this season between a male Lesser Redpoll and female Twite by a Mr. Efsio Azario, a London bird-keeper. The male parent boasted four or five years' cage life; the female was a comparatively recently-caged bird. Owing to aviary disturbances one only of the hybrid nestlings was reared, and that by Canary foster parents. Although sober in colouring, it is quite a charming little bird, and the characters of its parents are almost equally merged in it. This is by no means a common feature in Finch hybrids. The bill presents the character of both parent birds, and the under parts are less heavily streaked

than in the case of a pure example of *C. flavirostris*. The primaries mainly resemble those of a Twite, the white webs being washed with a sandy tone. The bird, although Redpoll-like in build, is nearly as long as a Twite. There is no doubt as to its genuineness, either from its appearance or from the details concerning its breeding, about which I made full inquiries when visiting the owner.

A correspondent of mine, a Mr. John Angus, of Polmont, Stirlingshire, bred this season three hybrids between a male Goldfinch and a hen Twite in a cage 19 in. \times 14 in. \times 10 in. They were reared by foster-parents, and I believe two are males and one a female. They have not yet acquired full plumage, so at present I am not aware whether they will exhibit a black cap or "blaze." The blaze is fairly pronounced in mules between the Goldfinch and the Linnet.*

The primary webs on the birds are yellowish, not brown or white, or jonquil yellow. The cheeks are streaked and the mantle described as speckled, as also are those of the flanks. The rectrices at present are very much like those of the Twite, except that they are yellowish in tone, no black and white Goldfinch-pattern being noticeable. There is at present no chestnut on the upper breast, no white cheek, no dark cap. The bill, however, is interesting, being "Twite" yellow at the base and streaked on the upper mandible like that of the Goldfinch, and is fairly long.

Birds of this kind and family are readily obtainable, and aviculturists should, whilst exotic species are rare, turn their attention to producing new British hybrids. Mules between Siskin and Bullfinch and Canary and Chaffinch would fetch high prices apart from their interest. Bunting hybrids are wanted, and also any purely insectivorous, *i. e.* (not seed-sheller) hybrids.

I should be pleased at any time to give information relating to what has been done in this direction, having for some good number of years watched experiments closely (see vol. ii, No. 12, 3rd series). The Chaffinch at present has only been crossed with the Brambling and the Greenfinch, and I think could be further used.

* If a member, Mr. Angus would be eligible for the Society's certificate, which is offered for breeding birds in cages (see Rules).—G. R.

[We hope that our members will follow up this suggestion. The breeding of hybrids, systematically undertaken, would throw a flood of light on the origin of species. Unfortunately at present it is a practically unworked field, and we know but little of the ancestry of even our commonest birds.—G.R.]

THE FOOD OF THE CUCKOO.

(1) By J. WEIR.

I believe at a local museum here there is a singular error in bird-lore. I noticed a young Cuckoo being fed by some small bird, bringing it a nearly full-grown larva of the Fox Moth. I think it would be difficult to obtain the larva fully fed during the time the Cuckoo is in the nest. What bird would bring a hairy larva to feed it? The Cuckoo is said to feed considerably on hairy caterpillars, but does its foster parent bring it such food? Is it possible that the smaller bird does it through sheer worry, exhaustion, and desperation? I should like to go into the subject.

(2) By J. H. GURNEY.*

“The old Cuckoos have all left, but the young are now on migration. To-day Mr. E. T. Roberts received a well-grown bird, evidently a flier, and having the curiosity to examine its stomach, found therein on dissection a dense mass of rather long hairs, which had effectually insinuated themselves into the lining of the bird’s gizzard. There were three good-sized caterpillars in its throat, still undigested, and these resembled the larvæ of the Tiger Moth or Fox Moth, both of which are very hairy, and no doubt similar larvæ supplied the hairs in the gizzard. That somehow or other caterpillars’ long hairs frequently find their way into the cuticle of the gizzards of Cuckoos has long been known, but it must be rare to find so many as in the present case.”

* Reprinted from the ‘Zoologist.’



Photo. by W. Shore-Bailey.

Generosity of W. Shore-Bailey

HYBRID WIGEON.

Mareca sibilatrix × *M. penelope*.

HAND-REARED *v.* WILD-CAUGHT BIRDS.

By ALLEN SILVER.

I do not collect eggs now, but for years have continuously gone nesting. We seldom, if ever, take either eggs or young. Earlier in life I got together a good representative collection of local species, and of course reared by hand the young of many British birds. Now for reference I can examine collections, and prefer to deal with caught birds rather than have the tie of hand-rearing. The only advantage in hand-rearing is that you can retain "pets," but a pet bird is inclined to lose the charm of its natural contour—an attraction (at any rate to me) usually shown by a steadied wild bird. TAME birds are almost useless as show specimens. They usually act the fool and want to fight, and consequently spoil their qualities whilst being judged.

I have in my possession a cock Goldfinch with a white "blaze," *i.e.* no red on head. This is the second of this kind I have had. I expect, however, it will eventually have one. The other one produced a palish blaze the second year. Wild Goldfinches will soon be losing their light wing-tips and tail-tips now. When they have reared two broods like other birds they become very worn out and dowdy.

HYBRID WIGEON.

By W. SHORE-BAILY.

I am sending you photos of some hybrid Chili \times English Wigeon that I thought might possibly be of interest. The curious thing about these birds is their almost exact resemblance to the American Wigeon or Baldpate. The portrait of this bird, in Thorburn's recently-published work, might well have been drawn from either of the Ducks shown in the photograph. No doubt it would be easy to find differences between these hybrids and the American bird if both were examined when in the hand, but the only difference noticeable when they are upon the water—and that, too, at but a few yards' distance—is the larger space covered with rich

metallic green on the heads of the hybrids. One wonders whether there could be any possibility of *Mareca americana* having been produced by this cross. *Mareca sibilatrix* is, of course, a South American bird, but it would probably reach as far north as Central America. *Mareca penelope* still occurs in North America as a winter visitor to some of the Eastern States, and has even been found in Florida and California, although it must be very scarce in the latter State, as the writer, with five years' duck-hunting experience there, failed to meet with a specimen. Of course, in prehistoric days, both *M. penelope* and *M. sibilatrix* may have been found in the same latitude. At any rate, this seems rather an interesting speculation. Another rather unusual circumstance connected with this occurrence was the fact that the female Wigeon deserted her husband and took up with the Chili drake, whilst the deserted bird mated up with his own daughter, a duck bred on the pond the previous year and left unopinioned! Five hybrids were reared, all of which were drakes. These were practically indistinguishable one from the other. This cross has previously occurred at the Zoo, and we are told that the young ones closely resembled the Chilian parent.

COLOUR-FED BLACKBIRDS.

Mr. Allen Silver writes :

"In colour-feeding a bird to get its value we know that the 'feed' must be given just before and during moult and for some time after, and in the case of many breeders of birds (Canaries), where colour value means much, they keep it up off and on until the end of the show season. There is one point with reference to the Blackbird, and that is colour-toning of the yellow bill and eyelids can be effected by feeding after the moult. In fact, one of the oldest exhibitors of Blackbirds of my acquaintance once whispered in my ear that a Blackbird was spoilt by being 'fed' during the moult, which I have since observed to be the case. This old man used to turn them out the shiniest deep black imaginable, with beautiful rich amber bills (not chough colour). It is to be hoped some dead-feather professor will work the matter out on living birds."

AVIAN INQUESTS :

REPORT OF THE SOCIETY'S PATHOLOGIST.

Although not as a rule entering into the intricacies of avicultural routine, Comparative Anatomy and Pathology nevertheless claim their due place in our many-sided, fascinating science. The Editor has received a Report on the *post-mortem* examinations now or lately conducted by our Pathologist, Prof. Wooldridge, on behalf of the Society, and his notes on the birds and the causes of death make very interesting reading.

Analysis of the Report reveals considerable prevalence of pneumonia, attributable to our variable climate, though when a bird has been thoroughly acclimatised, as we all know, it will stand a wonderful amount of exposure. Fatty degeneration of the organs or actual deposit of fat also occur, want of exercise or improper feeding being responsible for these conditions, though fatty degeneration may also be caused by sheer old age. Enteritis (inflammation of the intestines) may be due to chill or error in diet; tubercle and intestinal parasites, unfortunately, are only too readily brought into our aviaries by newly-imported birds.

The classified list is as follows :

(A) GENERAL DISEASES.

Shamah ♂.—Fatty degeneration of liver with heart failure.

Grey Parrot.—Anæmia (pneumonia also present).

Common Fowl (1).—Tuberculosis.

Common Fowl (2).—Tuberculosis.

Waxbill.—Fatty degeneration of the liver (pneumonia also present).

(B) DISEASES OF THE NERVOUS SYSTEM.

Petrocincla cinchloyrnchus ♀.—Convulsions (heart tensely contracted).

(C) DISEASES OF THE RESPIRATORY SYSTEM.

Waxbill.—Pneumonia.

Canary ♀.—Pneumonia.

Bullfinch ♂.—Pneumonia (dent in skull was found to be *post-mortem*).

Cordon Bleu.—Pneumonia.

Penduline Tit.—Pneumonia (this bird was in deep moult).

Orange Bishop.—Pneumonia.

Cut-throat.—Pneumonia (this bird was moulting).

Weaver.—Pneumonia (no signs of violence, though this had been suspected).

Bohemian Waxwing.—Acute pneumonia (this bird was very fat).

(D) DISEASES OF THE DIGESTIVE SYSTEM.

Mandarin Duck.—Enteritis (no signs of violence).

Red-crested Cardinal.—Enteritis.

Waxbill.—Enteritis.

Quail ♀.—Enteritis.

Budgerigar.—Enteritis.

Californian Quail.—Strangulated hernia of both cæca.

(E) DISEASES DUE TO PARASITES.

Grouse.—Tapeworm (*Davainea urogalli*)—a very interesting form—and nematode worms (*Trichostrongylus urogalli*).

Grouse.—As above; coccidia also present.

(F) DISEASES WITH COMPLICATIONS.

Budgerigar.—Slight enteritis and heart failure.

Grouse.—Broncho-pneumonia (numerous micrococci present), coccidia in intestine, and nematode worms (*Trichostrongylus pergracilis*).

Grouse.—As above.

Long-tailed Grass-Finch.—Pneumonia and enlarged liver.

(G) DEATH DUE TO VIOLENCE.

Red-crested Cardinal.—Heart failure (due to shock?).

[We are much indebted to Prof. Wooldridge for this Report in view of the many demands on his time and knowledge.—G. R.]

THE SOCIETY'S PRIZE IN LITERATURE.

The Society's Prize in Literature for 1918 is awarded to An Old Australian Bird-Lover for the valuable paper on "How Birds of Paradise are Caught," which appeared in our September issue. Well written and well expressed, this contribution was packed with

information of the most compelling interest: purely avicultural and entirely in accordance with the best traditions of the Society, our correspondent's paper forms a notable landmark of progress.

The other papers sent in attained a high level. Further material already received indicates that the overseas contributions of 1919 will equal and probably surpass these of the present year.

PAST PRIZEMEN.

1914. G. A. Heumann.

1915. No award.

1916. E. Hopkinson, M.A., M.B., D.S.O.

1917. J. Delacour.

REVIEW.

THE PIGEONS OF PARIS.*

We have received a copy of M. Pichot's poem on the Pigeons of Paris, which has been so widely circulated in that city. Although our space does not allow quotation from it, we may say that we have read with much pleasure not only M. Pichot's eloquent lines, but also the English translation by Mr. J. E. Harting, and we can well understand the Professor of the *Lycée Molière* making it the text for a patriotic lecture to his pupils. Coolness and indifference to danger are the keynotes of the lesson inculcated by this poem. It is sold for the benefit of the Red Cross.

G. R.

BEECH-NUTS AS BIRD FOOD.

Mr. W. B. Gibbins writes:

"I should much like to know if you think beech-nuts would be injurious to Parrots and Parrakeets, or other birds, as beech-nuts are very plentiful about here, and it is difficult at the present time to get other food for them. I know that Pheasants are very fond of

* 'The Pigeons of Paris,' by PIERRE AMEDÉE PICHOT, with a translation by JAMES EDWARD HARTING. Rawlings & Walsh, Holstein Parade, Weybridge. Price Threepence.

beechnuts, but do not feel sure about other birds. Also would hedge fruit and other berries hurt Canaries and Goldfinches?"

Dr. Butler writes :

"As Hawfinches, Siskins, and other birds feed on beech-mast, I see no reason to suppose that the same food would be injurious to Parrots; but surely a grocer could supply you with walnuts? I can obtain both these, Brazil and Barcelona nuts at a price in this neighbourhood. With regard to wild berries for Canaries and Goldfinches, it is possible that they might eat elderberries, haws, and perhaps one or two other harmless varieties, but I have never known them to do so, and they certainly do not require them as food."

LET US REMEMBER

That we stand on the threshold of a new avicultural year. It is ours to mould as we will.

That the future is crowded with opportunity as never before: our ever-expanding Science invades new fields.

That in spite of the war thirty-six new members have joined us during the past twelve months.

That each member who introduces a new subscriber increases the usefulness of the Society.

That the back numbers of the Magazine offered for sale make interesting winter reading and delightful Christmas gift-books.

That no scheme can be run without money, and least of all a Magazine like the 'Avicultural.' A whole-hearted and prompt payment of the annual subscription of £1 (one pound) is the best recognition of the services of the Council.

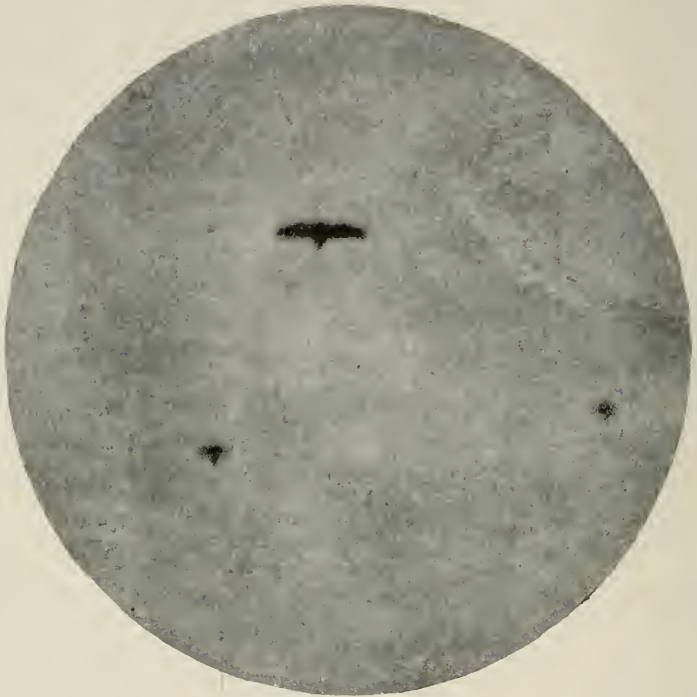


Photo. by Graham Renshaw, M. D.

"CIRCLES AND SAILS ALOFT ON PINIONS MAJESTIC,
THE VULTURE": SNAPSHOT TAKEN AT THE GORGE
OF THE ROUMEL, ALGERIA, JUNE 21, 1918, SHOWING
EGYPTIAN VULTURE SOARING, ATTENDED BY TWO
LESSER KESTREL.

THE
AVICULTURAL MAGAZINE,

BEING THE JOURNAL OF
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 FOR THE STUDY OF
 FOREIGN & BRITISH BIRDS
 IN FREEDOM & CAPTIVITY.

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DECEMBER, 1918.

THE EMBRYONIC LIFE OF THE OSTRICH.

By M. AUBRY.

Translated by the Editor from the 'Revue Française d'Ornithologie.'

Natural incubation being often very difficult and restricted in scope, artificial methods have assumed a growing importance. We have had to employ only the latter methods at the Ostrich farm at Meknès—in the end at least. The study of the advantages and drawbacks of each of these methods will appear in the body of this work, which has the single aim of explaining the most remarkable features noticed in the course of the embryonic life of the Ostrich.

Incubation lasts from forty to forty-five days; it varies with the strength of the chick, and lasts from forty-four to forty-five days in cold weather, which causes many failures. One need not attach importance to the appearance of the shell; it is enough for it to be normal with the pores permeable to the air. The shadow-test gives no guide.

The Germ at the Beginning of Incubation.

As in fresh eggs, the discus proligerus is alone visible, so that the early shadow in the egg of the Ostrich does not permit one to separate at once clear from fertile eggs. It is at this period that the embryos readily die; they already show bulging of the head with

prominent and relatively enormous orbits, the rest of the body forming a still shapeless mass recognisable as the beginning of the blood-vessels ; the whole is contained in a very fragile vitelline membrane.

The Embryo from the Eighteenth to the Twentieth Day.

Growth is rapid at this period ; the alimentary reserves are massed in a pouch outside the umbilicus and linked to it by a pedicle traversed by nutrient vessels. The head is formed, and the whole is surrounded by an envelope full of a yellow fluid strictly comparable to the amniotic fluid of mammalia ; this is the germinal vesicle which is developed, thanks to the vitellus. Macroscopically the egg reveals a mass swimming in the midst of white and yellow fluid. It is at this period that the mortality of the embryos is greatest.

The Embryo from the Twentieth to the Thirtieth Day.

Mortality is rarer at this stage ; the embryo is a little more developed ; in every case it possesses all the organs which are essential. The head is well formed, as are also the limbs, which have claws and even scales in the lower parts ; the beak is still soft, though defined. The vitelline membrane is richly nourished, increasingly so as one approaches the nutrient zone ; the external vascular network sends out slender branches, which thicken at the level of the air-chamber to allow greater aëration of the blood.

The Last Days of Incubation.

The well-developed embryo completes its organisation and begins to move. Its shadow, of the greatest value, allows one to follow its progress.

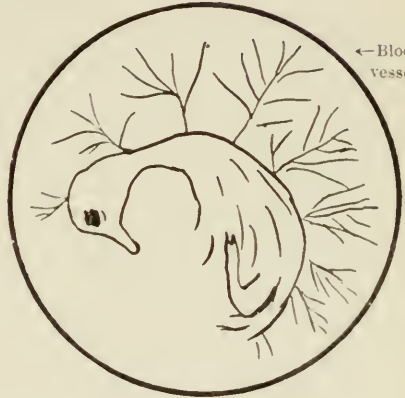
The skin is folded, especially at the level of the limbs. The head is truncated ; the body is clothed with down rolled into tubes, which at birth give it the appearance of a Hedgehog. The abdomen is retracted, all the nutritive vitelline mass being outside and attached to the umbilicus by a large vascular pedicle. The vitelline membrane is thickened and provided with great blood-vessels, whose



Eight days.



Ten to fifteen days.



Twenty-five days.



Thirty-five days.

THE EMBRYONIC LIFE OF THE OSTRICH: SUCCESSIVE STAGES OF DEVELOPMENT.

(Semi-diagrammatic by the Editor after figures by M. Aubry.)

dimensions attain half the thickness of a lead-pencil. It is these that prepare the respiratory functions of the embryo and assist exchanges with the external air. The air-chamber increases during the last hours of embryonic life; it alone is transparent, all the rest is opaque, but the movements of the embryo are visible.

Hatching.

The vitellus and the yellow fluid contained in the two pouches return into the interior of the abdomen; the vitellus constitutes a food reserve which allows the chick to live from eight to ten or even fifteen days without taking any other nourishment.

This absorption of the vitellus and fluid takes place several hours before hatching. The fluid soaks into the subcutaneous tissue and swells up the neck and feet, markedly increasing the size of the body; the skin is no longer wrinkled, but regularly distended. The chick is ready when the vitellus is deprived of its blood-supply, when the body occupies the entire shell. But it is necessary in order to be free for it to attack the fibrous, highly resistant membrane which lines the shell. The chick uses its saliva: around the beak the membrane becomes actually macerated, losing all its tenacity; the blows which the little thing instinctively delivers end in the egg-shell itself being attacked. Exceptionally, in artificial incubation, the chick liberates itself; if this occurs, it is a sign of strength. In other cases it rests with the operator to complete the hatching.

THE PIGEONS OF THE GAMBIA.

By E. HOPKINSON, M.A., M.B., D.S.O.

THE GREEN PIGEON (*Vinago calva*).

Columba calva. Temm. and Knip (Pig., i, 1811, p. 35, pl. vii; coasts of Loango and Angola).

Vinago nudirostris. Swainson (Birds of Africa, vol. ii, p. 205; Senegal, cf. p. 203; Brit. Mus. Hand List).

Range: Senegambia; North-east and East Africa. (Brit. Mus. Hand List.)

These lovely Fruit-Pigeons, clad in green, golden-yellow and mauve, and as good to eat as they are to look at, are common all the year round in the Gambia, but are wanderers, moving in parties from place to place as the different trees which provide their food ripen and are finished. At the beginning of the rainy season (June) a more definite migration occurs. This is particularly noticeable in Bathurst on the coast, where for a week or a fortnight large flocks consisting entirely of young birds pass over in a more or less northerly direction. At this time the "Gang" trees, a kind of evergreen fig, which produce a low-grade rubber, are in fruit. On these the Pigeons feed as they travel, and when fighting from one to the other offer pretty shooting. Another similar movement takes place in the reverse direction towards the end of the rainy season (October), but this is a much smaller affair—less regular, and including old as well as young birds. These flights vary considerably in size from year to year. I can remember occasions when thousands would come over daily, while in other years the numbers have been comparatively small, and the short journey to the cemetery, where the best shooting usually is, not worth making. I have known the Gambia for eighteen years, and I feel sure that in the last six or seven there have never been anything like the numbers of Green Pigeon there used to be in these flights.

The breeding season of these birds begins about March, in some cases perhaps earlier; at any rate, I have a note that on February 3rd, 1909, I shot a female, which dropped a fully-formed egg, and I have frequently seen nests quite early in March. These are of the most flimsy possible construction—a few twigs and rootlets twisted together to form an apology for a nest, and situated in such an apparently precarious situation that one wonders that the single white egg ever remains in position and safety; it can always be easily seen from below. The commonest site is a tabu tree, a large-leaved evergreen, towards the extreme end of the wide-spreading branches, where it sways about with every breeze. About 10 to 12 ft. from the ground is where one generally finds the nest, but no doubt more are built higher up and escape one's observation. I expect I have seen more nests in Commissioners' compounds than elsewhere, as such would come directly under notice, and in such situations the hen sits

very closely, and never seems disturbed by the people who are constantly passing beneath her. Instinct has no doubt taught generations of Green Pigeons that in a tree immobility is their surest safeguard. When the young bird is hatched it maintains its hold on the nest, which it so quickly and so continually outgrows, by automatically gripping with its feet one of the leaf-twigs to which the nest is fixed. This clutch is quite a passive but very powerful one, and this habit of holding tight to the perch persists in young birds for long after they have left the nest. When a young one is shot in a tree it nearly always remains hung up by the feet for some time, though quite dead and the grip entirely due to muscular contraction. With old birds one may at times hang for a moment or two; with young a much longer lodgment is the rule.

Green Pigeons are essentially arboreal in their habits, and haunt the higher branches of big trees, though they may be tempted to the lower ones by ripe fruit when that on the upper branches is finished. The natives say they never come to the ground even to drink, and I have never seen one there unless wounded or dead. Their food consists almost entirely of the fruit of different trees of the "bush"—notably "tabus" and "sotos," two kinds of wild fig. In one of these when in fruit one is nearly always sure of finding a party of Green Pigeons feeding. A harvest-time ripening "basso" is eaten as an addition to the ordinary fruit diet. This "basso" is the largest of the native millets, and is much the same as what at home we know as "dharri." In November, just before complete ripening, this grain is soft and succulent, and is then greedily eaten by such birds as Glossy Starlings and the like. At this season one frequently shoots Green Pigeons with their crops absolutely overflowing with the soft, juicy grains of this corn; at other times one never finds anything in their crops or stomachs but the seeds and *débris* of bush-fruits.

Adult birds are rather shy and wary, but give quite pretty shooting if one gets them coming over, as often happens if large numbers of them are about and several trees are ripe. If one waits near such a tree and fires just as a party slows down to alight, they offer easy shots; but flying free, their flight, though straight, is deceptive as to speed, and wants more swing than one would think.

When out absolutely for the pot, as is so often the case out here, one finds them most difficult to spot when feeding in a tree, as their colours blend so well with their surroundings and make them almost impossible to see as long as they keep still, as they do if at all suspicious. The young in their more uniform green are even harder to make out, but are much more restless when feeding and in all ways less wary, so when seen are much easier to shoot. They, unlike the older birds, have no knowledge of guns, and after a shot will return again and again to the same tree, in spite of losing one or more at every shot. Old ones never do this; they are away with a dash at the first shot, and only return when they think all must be safe again. A habit they have, however, of perching on some big leafless tree, like the "monkey-bread" (baobab), to take from this post of vantage a good look round before going right away or before on their return actually alighting on their food tree, often aids one to fill the larder and at the same time provides good shooting if one finds a stand between one of their look-out trees and their feeding-place. Their note, too, is a useful guide to their whereabouts—this a peculiar one, a sort of chuckle, not easy to imitate (though some of the native small boys do it to perfection), but once heard never forgotten. It may be more or less represented thus: "Boo-who; whu, whu, whup!" the last short note being accented, going suddenly up and being followed by a sharp break, after which the strain is repeated.

The Mandingo name for the Green Pigeon is "Putu-puto," and in some parts of the country the young are given a different name, "Teyto-preto." For a long time I thought that we had two species here, but now am almost certain that what I thought was a second is only a stage between the all-green plumage of the red-beaked young and that of the yellow-breasted adult. The full dress is probably not obtained till the bird is more than a year old; at any rate, I have seen birds in the intermediate plumage nesting, and believe that they may do so also in that of the earlier stage.

The following is a description of an adult: The whole head, neck, throat, chest and sides of chest greenish-grey, sharply defined in front against the upper margin of the yellow abdomen and against the olive of the mantle behind. The face and forehead are feathered

right down to beak and cere; there is no "bald front." Back and rest of the upper surface, including the inner wing-coverts and upper tail-coverts, a light olive-green. On the primary-coverts is a clearly outlined patch, an inch or so in diameter, of purplish-mauve. The border-feathers of the whole upper wing-coverts are blackish-grey, each feather bordered externally with lemon-yellow, to form a narrow transverse bar of this colour across the wing. Of the flight-feathers the primaries are uniformly grey above, the secondaries grey with narrow lemon-yellow outer edges. The under surface of the whole wing, including the under wing-coverts and auxiliaries, is a beautiful grey-blue. The sides of the body and thighs are French grey. The whole abdomen is bright golden-yellow—the bird's most conspicuous feature—fading into pale buff near the vent. The tail-feathers are above slatey-blue, the terminal half-inch of each paler than the rest, below black with pale grey ends. The under tail-coverts are red-brown, more or less mottled or tinged with pale fawn or white, and consist of elongated pointed feathers. The bill is bluish-grey, the cere dull purplish; the legs, which are feathered nearly all the way down the tarsus, yellow-ochre, exactly the colour of good pie-crust; the iris magenta with a mauve-blue inner ring.

Length $12\frac{1}{2}$ in., *i.e.* about a third smaller than an English Wood-Pigeon.

The *young* differ considerably from the adults. They are distinctly smaller and entirely lack the yellow breast, this part and nearly the whole of the plumage being green; the shoulder patch, too, is much smaller and a much paler, duller mauve. The legs are as in the old bird, but the bill is pinkish-grey with a sealing-wax base and cere. The iris is brown.

In the intermediate or semi-adult plumage to which I have referred the breast is yellow, but the patch is smaller and much paler than in the adult, and the rest of the plumage, both green and mauve, altogether duller. In such birds, too, the bill is pale horn colour in life, but turns blue-grey after death, and there is no wax-red base or cere. The iris is entirely magenta without any blue inner ring.

One also sometimes sees an earlier intermediate stage. The following is a description from my note-book of two such birds which

were shot at Bulelai and Somita, in Fogni, on May 30th and 31st, 1906:

"Smaller than the ordinary kind, ? another species or only the young. But they look adult, and one had a developed but small ovary.

"Breast all green, no yellow.

"Shoulder patch paler and smaller than in the ordinary bird.

"Thigh-feathers olive-green edged with yellow.

"Head and neck all green, no grey wash.

"Upper part of back grey, rest of upper surface grey-green.

"Upper surface of tail French grey; lower, black with broad pale ash-grey ends.

"Red-brown elongated under tail-coverts as in the ordinary kind. Feet ochreish-orange, bill pale horn turning blue-grey almost immediately after death.

"Iris brown."

I have occasionally tried to keep these birds alive in confinement, but have never had any success, though one rains I remember there were three in Bathurst, which had been taken from the nests, and which lived for months at any rate. They were fed chiefly on well-boiled, sweetened rice, and never had the chance of getting any of their natural food, the bush-figs. Those I have had I could never get to even look at rice or anything of the sort. They would eat readily ripe figs, etc., but the difficulty of providing a constant supply of this food soon puts an end to the experiment. Others, however, have had better fortune, for I remember seeing African Green Pigeons once or twice in the Zoo, and sullen, uninteresting birds they appear to be in captivity.

As food Green Pigeons are excellent, always fat and tasty, but, like anything else one gets too much of, soon pall. I should not like to say how many I must have eaten in my time, but I know that the saying, "No one can eat a Pigeon a day for a fortnight," has no meaning in the Gambia. Of Pigeons of one sort or other, two or three a day are more like the Protectorate chop-routine, and that, too, for months on end. If they do not appear as roast, stew, etc.,

they are sure to have gone into the soup. The skin when cooked is yellowish-green and the bones bright yellow.

THE GUINEA PIGEON (*Columba guinea*, Linn., 1766) (Guinea).

Range: West Africa; Senegambia to Nigeria; N.E. and E. Africa to Kilimanjaro. (Brit. Mus. Hand List.)

This, the largest Gambian Pigeon, is commonly called here the "Rhun Pigeon," because it is only found in those districts where these tall bulbous-trunked palms grow (*Alyssus*, I believe). On these, among the stalks of their huge, fan-shaped leaves, the Guinea Pigeons roost and nest. They are, therefore, only locally distributed in the Gambia, but where found are in most places quite common, though near wharves and factories they are certainly rarer than they were ten to fifteen years ago. During this period these places have increased rapidly in numbers and size. These Pigeons, unlike most of our others, seem easily frightened by the near neighbourhood of man, although they are never much sought after by gunners, for their flesh is dry and tasteless at its best, and at certain times almost uneatable. One never sees them in flocks even where they are common, but in pairs, or at times parties of never more than six—probably an old pair and two nests of young, as these remain with their parents for some time after leaving the nest. Such a pair or party keeps within comparatively narrow limits, except when flying to and from water. With them and the rhun palms is commonly associated one of our grey Hawks (the Rufous-necked Merlin, *Falco ruficollis*, I think), which also nests in these palms, and which appears to live in perfect peace and harmony with the Pigeons, even to the extent of a pair of each making use of the same tree for breeding purposes.

The flight of these Pigeons is comparatively slow, and accompanied with frequent wing-beats as a rule, though at times when flying to water they put the pace on and fly more strongly. They can often be seen wheeling slowly about the tops of the palms, much as tame Pigeons do about the house-tops at home.

Their note is a rapidly repeated "Koo-ku-ku-ku," the later coos getting shorter and shorter and following one another more quickly.

They do quite well in captivity, and are fairly commonly imported, generally under the name of Triangular-spotted Pigeon, but here they are rarely caught by our people, few of whom are either real hunters or keen bird-catchers. Their Mandingo name is "Kallawari."

The most noteworthy features of this bird are the bifurcated neck-feathers, the white triangular wing-spots, and the striking contrast between the clear grey of the back and the maroon-brown of the wings, etc.

An adult may be described as follows: The head, whole back, including the upper tail-coverts and the under surface from chin to vent are a beautiful clear ash-grey. A broad collar of chestnut and white feathers, each bifurcated at its end, surrounds the neck. The scapulars and adjacent part of the wing-coverts are uniform maroon-brown, the median coverts maroon-brown with a triangular white mark at the end of each feather, the lowest row of coverts and those near the outer edge of the wing grey with similar white tips, which diminish in size from within outwards. The quills are dark-grey both above and below, and the under wing-coverts ash-grey like the breast. The tail-feathers are ash-grey, faintly banded once with darker grey, and broadly tipped with black. The bill is lead-coloured, the legs pink in front, dirty flesh-colour (as are also the toes) behind. The iris is dull pale amber. The large bare circumorbital area is purplish-crimson. Length varies from 14 to 15 in. according to the age (and perhaps the sex) of the bird.

The young resemble the adult, except that the plumage is generally duller and the contrasts are less marked, while the tail-feathers are definitely brown tipped with darker instead of the grey and white of the old bird.

THE RING-NECKED DOVE (*Streptopelia vinacea*).

Range: West Africa, Senegambia to Loango; N.E. Africa. (Brit. Mus. Hand List.)

These are by far the commonest Doves in the Gambia, and are found everywhere in large numbers—on the farms round the

towns and in the rice fields and the swamps in flocks of hundreds, and in smaller numbers throughout the bush. They nest in low bushes in the most conspicuous and apparently dangerous situations, making a typical Dove nest—a scanty collection of small sticks, rootlets and grass most flimsily flung together. Although apparently so reckless in their choice of nesting sites, this cannot, to judge from their numbers, have ever had any harmful effect on the race as a whole, and no doubt the fact that they usually select thorn bushes (or, if not actually thorns, bushes situate in the midst of thorn clumps) has been their saving. African thorn bush—"Them bad prickly places" as the boys call them—is quite enough to stop idle wanderers of all sorts, especially in the rains, when their armament is hidden by leaves and long grass.

"Jettero" is the Mandingo name of this Dove. "Pura," the name for all or any Doves, is often specifically used for this as being the commonest, but "Jettero" is its proper distinctive name, and is derived from its note, a trisyllabic "coo," which is supposed to resemble the word "Jettero." My own boys go one better than this, and say it is always sick and calling for medical assistance—"Doctor-oh, doctor-oh." A white-man rendering of its call is "Better-go-home, better-go-home"—a particularly annoying salutation to sportsmen trudging campward after an outing chiefly noteworthy for a series of bad misses.

In general appearance and size these Doves resemble the common cage-bird, the "Barbary," except that they are much darker. Like it, they have the same black ring round the hinder three-quarters of the neck, but, instead of the pale fawn of the cage-bird, their general colour is dirt-brown above, fading into paler buffy-brown below, until pure white is reached at the vent and under tail-coverts. The crown, nape, throat and breast are suffused with a delicate pale-vinous shade. The wings are brown, a slightly paler shade of the back colour. The upper surface of the tail is grey, with the terminal half inch or so of each feather white or whitish, except the two central ones, which are dirt-brown like the wings and have no white ends; the under surface is black, with broad white feather-ends. The bill is black, the feet dull crimson, and the iris dark brown. Length, 11 in. The young resemble the adult, except that

there is more uniformity in the colour of the plumage and no vinous tinge on the head, etc.

RED-EYED DOVE (*Streptopelia semitorquata erythroprys* (Sw.)).

Range: The Ethiopian Region generally (Brit. Mus. Hand List).

The range as given above is that of *S. semitorquata*. Of this species Mr. C. H. B. Grant recognises three races ('Ibis,' 1915, p. 42):

- (1) *S. semitorquata semitorquata*. N.E. and E. to S.E. Africa.
Columba semitorquata, Rupp., 1835 (N. Abyssinia).
- (2) *S. semitorquata erythroprys*. Sw., 1837 (Senegal). W. Africa and F. Po. = the Gambian bird I am dealing with.
- (3) *S. semitorquata shelleyi*, Salvad., 1893 (Niger). Niger to Upper White Nile.

The "Black Pigeons," as these birds are generally called here, are very common in the Gambia, and numerous nearly everywhere and at all seasons, except for about the first two months of the dry season—middle of October to middle of December. During the ground-nut season (Christmas onwards) they are especially plentiful and feed largely on these nuts, which they swallow without cracking the shell, their gizzards, I suppose, dissolving what their comparatively weak beaks cannot break. At other seasons they feed in the corn and rice fields, and when nothing else is obtainable, as in the rains, on the different berries and fruits of the bush. At the beginning of the rains—June or July—largish flocks appear in Bathurst, all travelling more or less northward, and following the similar, but larger, flights of Green Pigeons. From this time till about the end of the rains one sees but few, and I think that a good many must leave us for this season. At other times, however, they are strictly resident birds.

In their ordinary daily habits, too, they are among the most regular of birds. In certain places one is practically certain of finding them every day at one particular hour, while morning and evening they go almost to the minute to drink at their favourite watering-places. On these occasions one notices that they usually precede the other smaller Doves, and are much quicker over the

business than they are. The bird arrives, settles on a tree—preferably a dead one—near by, and surveys the surroundings. If all seems well, down he comes to the water, hovers for a moment only before alighting, and then settles and rapidly drinks his fill. In half a minute at the outside he is satisfied and at once away. There is no pottering about before approaching the water, taking a peck here and a peck there, and then, when the water is a last reached, taking a sip here and there and moving from place to place as is the way with Ring-necked Doves. Another interesting thing about their drinking habits is that they are apparently quite satisfied with (if not actually fond of) brackish water. They come down in the evening in many places to the pools among the mangroves and certainly drink from such. At one or two places this habit provides as good pigeon-shooting as one wants. One place where it is particularly good is Kafuta. Here the water in the creek is almost quite salt, rather more than brackish, yet the “Black Pigeons” come in large numbers every evening to drink there. The creek is fringed with tall mangroves, and as the birds come over these, flying their very best, they give great shooting. Another place which attracts numbers of “Black Pigeon” is a line of slightly brackish lagoons among the coastal sand-dunes near Tujureh, and I know of others; but these two are, I think, far and away the best, and certainly the most certain providers of sport.

Taken altogether, our Pigeons and Doves give quite good shooting when one can get them properly flighting. The “Black Pigeon” under these circumstances is probably the easiest of all to hit, as his flight is nothing like as fast as that of the smaller Ringneck Dove, and also he generally flies straight, whereas the latter not only goes about twice the pace, but twists and turns if alarmed or apprehensive. The fastest of all, however, is the migrating Turtledove, which moves like a bullet and twists like a Snipe, but these are only to be found in a few places and on a few days in each year. They do not, like our resident species, provide a regular supply either of sport or food. From the latter point of view I like the Ring-necked Dove best, and then either the Green or the “Black Pigeon,” bracketed equal. Sometimes I think one the

best, sometimes the other. Just before the rains the flesh of the "Black Pigeon" is often very bitter and unpalatable, apparently due to the fact that they are then largely feeding on "hira" fruit—small, bitter berries of a small swamp-side tree. At other times, however, Pigeon enters largely into the Protectorate officials' menu, and they are pretty good evidence, as previously noted, that there is nothing in the old saying, "A man cannot eat a Pigeon every day for a fortnight." Very few days pass from November to June without Pigeon (or Pigeons) appearing on the table in some form or other.

These Pigeons make the usual ramshackle pigeon-nest in small trees and thorny shrubs, or in those places where a certain kind of dwarf palm grows, in clefts where the leaf-stalks branch out from the main trunk. They are usually about 12 ft. from the ground. Two white eggs are the clutch. The nesting period, I think, is from about March till July—that is, during the end of the dry season—and is well over before the heavy rains commence.

The Mandingo name of this Pigeon is "Bita-fing," from their note, which is syllabised by them as "Biti, biti, biti-finn," and from the colour (fing = "black"). The more imaginative among them make a story about the call, and say that the cock is always scolding at his wife because her extravagance is always bringing him into court, and to their ears he says, "Lung-o-lung fūta kiti, lung-o-lung fūta kiti; Talāta nongkong te'mfe" (in English, "Every day the court is ready; by Tuesday I haven't sixpence"). This in print, I must say, does not look very promising as a rendering of a Pigeon's note, but pronounced (as the natives do it) in a sort of throaty whisper, it is quite suggestive of the call, though not so actually like it as the "Biti-fin" phrase, or as is the syllabisation which appeals most to my ears—"Too-too: tutta-tutt-too." In addition to this call, they also have a shorter sort of throaty chuckle. This the natives say, however, is that of the hen—her laughing answer to her husband's complaints. I do not know whether this is really so or not.

The following is a description of an adult shot in March: Crown and whole head blue-grey; a half-collar of black on the neck; back dark grey; wing-coverts slaty, darker externally; flights dark brown with narrow pale edges; tail dark grey, almost black, all the feathers except the central pair tipped with bluish-white, the area of

white increasing from within outwards. Sides of face and neck pale grey washed with purplish-pink, chin almost white; rest of under surface slate-grey washed with pink on the chest and sides, and becoming bluer on the belly; under surface of wings pale grey. Irides hazel. Eyelids and bare patch in front of eye dull crimson. Bill dark grey. Legs purplish-red. Length 13 in.

From about April onwards a great many of the "Black Pigeons" one gets differ considerably from the above description of a typical Gambian example. These when on the wing look distinctly paler than the ordinary bird, and have not any proper claim to the epithet "black." In the hand, too, one sees that they are a much lighter bird, in which the upper parts are a much paler grey—almost a French grey—and the crown a bluer and brighter shade of this. The eyelids and bare eye-patch, too, are fuller and a much brighter crimson. At first I thought we had two distinct species here, but now feel nearly sure that these lighter examples are the oldest, for one often gets a bird with plumage intermediate between the dark and light phases.

In young birds the upper parts are washed with brown, and the feathers of nearly the whole body have broadish pale edges. They are also distinctly smaller than the adults.

TURTLE DOVE (*Streptopelia turtur*).

Range: Breeds in Europe, Western Asia and North Africa . . .
 also in Madeira and the Canaries. . . . In winter it is found
 in North and North-East Africa. (B.O.U. Hand List, 1915.)

Although the Gambia scarcely comes within the winter range, as given above, the Turtle Dove is certainly a Gambian bird, a winter visitor, staying with us as a rule only a few days on its northward journey, and being most local in its haunts.

As no description of this well-known Dove is called for, a reproduction of the notes I have on this species may take its place.

I knew this Dove in the Gambia long before I knew they were Turtle Doves, and at one time had a wild idea they were hybrids. At that time I had only handled one and had not recognised it, but later on it struck me that they must be Turtle Doves. About 1910 I sent

some wings (and later a skin or two) to the British Museum, where they were identified as young Turtle Doves.

February 11th, 1912.—*Ida, South Bank Province.* These Doves are very numerous on the dry swamp near the landing-place—nearly as plentiful here as the common Ringneck Dove. On the wing they look larger than these, the wings and tail conspicuously longer; the latter, too, shows much more white. Their flight is much quicker and more dashing.

1916.—Turtle Doves are plentiful for days together at *Ida*, generally about February. They provide good but difficult shooting, as they fly very fast and anything but straight. Another place in the South Bank where I have had good Turtle shooting is *Jarreng*. Here on two or three occasions they have been coming over in flocks in the late afternoon, all flying north and very high up. This year it was on May 1st that I saw them, but in previous years it has been earlier—March or April. These *Jarreng* birds are all evidently definitely on their Europe journey. At *Ida*, on the other hand, one finds them resting or loitering on the road, staying for days at a time—it may be weeks, but my movements always prevent my staying long in any one place. Here one sees them feeding on the ground with the Ringneck Doves during the day, but the time for good shooting is the evening, when they are flighting from water to roost. They come through and over the low thorns and other scrub at a tremendous pace, zigzagging and swerving all the time. Most satisfactory shooting, especially if one is hitting them.

1918.—This year I was at *Ida* the day they arrived, February 12th. On the 11th there were none, but during the following days their numbers increased, though they never became as numerous as they were last year about the same date.

I see occasional Turtles at other places, but the South Bank Province, *Ida*, in February or March, and *Jarreng*, as passers-by rather late in the year, are the only places where I have found them in any number.

I have also seen occasional examples elsewhere in the Protectorate, but the chief thing about them in the Gambia is their local distribution and their constancy as to time in their arrivals at the places they select as rests.

April 9th, 1918.—Jappini. Quite a number of Turtles to-day on the swamp here. Shooting "Black Pigeons" this evening at the cattle wells, I dropped a Turtle Dove, and then saw that quite a lot were about, coming for their evening drink with the other Pigeons. Three days before I was shooting at the same place—not a Turtle Dove was there; I got six "Black Pigeons," and neither saw nor shot a Turtle. They have evidently just arrived. This adds another to the South Bank Turtle Dove places.

REVIEW.

LODGES IN THE WILDERNESS.*

"A journey is a short lifetime," runs the Swahili proverb; and the treks described in the book now before us, in their rugged alternations of torrid day and icy night, black rock and red sand dune, blazing flower carpets and gaunt groves of dragon aloes, cram the sensations of months of travel into a few short pages. The book is full of vivid descriptions—nights spent by the tall flame of a candle-bush fire alternate with days of blistering heat, and the long-delayed thunderstorms transform the parched desert to a gay green-sward, bright with gazanias and heliophilas.

Aviculturally the Ostrich dominates the book. The drawing here reproduced vividly recalls the Sahara as we have seen it. The giant bird-camels stand and stride in a vast landscape, under an immense dome of sky; the desert stretches unbroken to the illimitable horizon—it is the very heart of Africa, savage and desolate. In the strong sunshine the snowy plumes of the Ostriches gleam brightly against jet-black bodies; one almost hears the booming of the cock birds, or the faint yelp of some unseen Jackal.

The author writes (p. 70): "The plain to the south-west was dotted with moving Ostriches. Singly, in twos, in threes, in tens,

* 'Lodges in the Wilderness,' by W. C. SCULLY. Illustrated. London: Herbert Jenkins, Ltd.



A. W. Standen, del.

Reproduced from 'Lodges in the Wilderness.'
Courtesy of Messrs. Herbert Jenkins, Ltd.

THE OSTRICH AT HOME.

Adlard & Son & West Newman, Ltd.

they were speeding north-eastward over the desert; some on my right, some to the left. Ever and anon one or another of the groups halted and its members stood at gaze."

The tiny "Kapok Vogeltje," twittering on its snowball-like nest, also appears in these pages; we read how "the Chanting Falcons swooped from their cliff eyries and filled the morning with wild music"; we almost hear the cries of the Sand Grouse falling from the night sky "like a rain of echoes." This book should certainly be read by all--whether professed aviculturists or not--who wish to learn something of the avifauna of Great Bushmanland.

Turning to errors, there are no Pheasants in Africa, in spite of the statement made on p. 210 and repeated on p. 214. In general zoology the author is shaky. There are no true "desert Gazelles" in South-West Africa (p. 22). The Springbok is by no means "really a Gazelle" (p. 230), its erectile dorsal scut and molar teeth being quite enough to distinguish it. The Gemsbok is not the only Antelope--or even the only Oryx Antelope--with a reversed mane, this peculiarity being shared by the Beisa and Fringe-eared Oryxes, to say nothing of the Beatrix Oryx of Arabia. We do not agree that Rhinoceroses have "disappeared" from the Bushman Desert, for we fail to see how they can have ever lived there, since these animals must drink every day. Surely no experienced aviculturist could confuse the booming of a cock Ostrich with the deep-toned roar of a Lion.

G. R.

BIRD LIFE AT RIPON FALLS.*

By NORMA LORIMER.

When I turned my eyes from the Falls and looked up the blue lake I could see crocodiles sunning themselves on a smooth island rock which served them as a sort of divan.

* Reprinted from 'By the Waters of Africa,' by Norma Lorimer, reviewed in the 'Avic. Mag.,' March, 1918.

The Falls don't pour down in one great body of water as you might think; they are broken up by clumps of trees which are covered with the nests of Weaver Birds. The nests hang down, as I told you before, as if they were attached to long strings. They sway about like flowers. I never see them without wishing that you were here; they are so fascinating. They looked even more graceful and beautiful hanging over the Falls than they did by the banks of the Nzoia River on the Plateau.

On the branch of a tall tree on one bank of the Nile a big Fish Eagle sat like a sentinel, waiting to pounce on its prey. It caught more fish while I sat there than any fisherman we ever watched for hours on the banks of the Thames. When it pounced down and stretched out its wings it measured about six feet across. Down in the swirling water there were hundreds of fish playing about and jumping high in the air like salmon, and glistening in the sun.

At its beginning the Nile swirls over shallows, and forms eddies, and flows round green islands, until you lose sight of it in the tropical jungle. I couldn't see what it did after that. You can only walk down one side of its bank for about a mile to what is called the Hippo Pool. Sometimes the hippos leave their pool and take a stroll over the golf course, and invade the gardens of the inhabitants.

MELANISM IN WHYDAHs.

By Dr. V. G. L. VAN SOMEREN.

Can any member tell me why birds should become melanistic when in captivity?

It is of frequent occurrence in birds in my aviaries, particularly amongst various Whydahs.

Jackson's Whydahs, which have been in captivity for three years, are now jet black, having lost the yellowish patch on the bend of the wing and all trace of the sandy edges to the wing feathers. When moulting from the breeding dress to the "off

plumage," instead of assuming a plumage similar to that of the females, they assume a patchy dress, several of the new feathers being black.

Females do not appear to suffer to anything like the same extent.

Another Whydah which has gone the same way is *Penthetria eques*, which in normal breeding dress ought to have a chestnut "shoulder patch" and a white bar on the wing. All mine are now totally black. *Colinus passer laticauda* is another bird which shows similar changes, though not to the same extent. The red of the head and neck is replaced by orange or yellow mottled with black.

They are fed on native canary seed—m'wele—and are given green food and insects when obtainable, and all are well conditioned.

Another curious case of what is presumably melanism is that of a Little Ground Dove—*Chalcopelia chalcospilos*. Normal plumaged birds have three or four green "eye-spots" on the inner secondaries.

Now one particular bird which I've had for two years is metallic green over the entire upper surface from crown to upper tail coverts. Is this melanism? Are not metallic colours due to refraction and reflection of light, and not to pigment?

All these birds are in outdoor aviaries.

EAST AFRICAN BIRDS.

A member's correspondent writes :

"It is very dry now, but the birds are just breeding. Grey Doves are nesting in the garden, Jackson's Whydahs feed every day on the lawn, and there are little Zosterops about. I think P— will find the nests for me. Besides these, there are numerous Weavers; a Weaver and two black-headed frugivorous birds were feeding on some fruit in our mess-hut this morning.

"A friend of mine—a Kiangop—who is worried to death by

Whydahs eating his crops, catches them in traps and gives them to his pigs to eat. The particular Whydah in the cock bird is black, with a rather longer tail than yours (Jackson's), and red and orange patches on the shoulder."

EXECUTIVE NOTICE.

From correspondence that has reached the Hon. Secretary and the Hon. Treasurer, we regret to learn that many members of the Avicultural Society overlooked the announcement in the Magazine that the subscription for the current year would be raised from 10s. to 20s. to meet the increased cost of publication, which has been steadily rising since the outbreak of war, and at the present time is 100 per cent. higher than it was in pre-war days.

At an emergency meeting of the Council held in October it was found to be imperative, owing to the financial state of the Society, to follow one of two courses: (1) Either to close down altogether and cease publication, or (2) temporarily to double the amount of the annual subscription. After long discussion, the Council decided, owing to the urgency of the case and the impossibility of securing a general vote of members on the question at such short notice, to take upon itself the responsibility of increasing the subscription, and of "carrying on," if possible, at the increased rate. The Council felt confident that in adopting this course they would be acting in accordance with the wishes of a great majority of the members. It may be added that the unexpectedly sudden cessation of hostilities encourages the hope that during 1918-19 the cost of labour and material will gradually return to the normal. In any case, members may feel assured that the Council will not continue the higher subscription longer than is absolutely necessary.



THE EVOLUTION OF MARKINGS AND COLOUR:
SPOTTED EAGLE OWLS, SHOWING DEVELOPMENT
OF THE SHAFT-STREAK, AS DESCRIBED BY
DR. BUTLER.

THE
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FURTHER NOTES ON GROWTH OF
 MARKINGS AND COLOUR.

By ARTHUR G. BUTLER, Ph.D.

Spots and ocellated markings in birds have obviously not been always developed in the same way; thus, although the ocelli in the upper tail-coverts of Peacocks (as Darwin points out in Chapter XIV, of his 'Descent of Man,' pp. 655-661) have originated in twin spots, separate in *Polyplectron chinquis*, but partly confluent in *P. malaccense*, yet the remarkable ball and socket markings on the Argus Pheasant are shown to have originated in dark stripes or rows of spots, which run obliquely down the outer side of the shaft to the ocelli. From Darwin's illustration on pp. 663, 664, 665 and 668, I should judge that the feathers were originally longitudinally striped, that the stripes were broken up into spots as in Figs. 58 and 59, and with the development of the ocelloid markings decreased in size and finally reunited.*

Ocelli in lepidopterous insects are, I believe, more often than not, developed from parallel undulated lines or stripes; in the cowrie-like markings on the wings of *Brahmæ Swanzii* and its close allies every gradation is shown between the perfect shell-like and accurately

* In Fig. 60 the inner rows of spots are seen to have already partly merged into stripes.

shaded spots, and the three outermost of a series of black undulated lines which cross the disc of the wings (see my 'Lepidoptera Exotica,' pl. xxx); the ocellus in the front wings of the butterfly genus *Mesosemia* and towards the posterior angle of the hind-wings of many of the Small Blues (*Lycænidæ*) seem to have originated in the same way; though it is possible that the black zone or iris enclosing the pupil in these and many other groups (notably the Ringlets (*Satyrinæ*, may have originated, as Darwin suggests (p. 654), "by the colouring matter being drawn towards a central point from a surrounding zone, which latter is thus rendered lighter"; but this does not explain the central white pupil or pupils, or the sometimes variously coloured concentric circles enclosing the iris.

Many years ago I made experiments in dyeing butterflies; in some cases I first soaked the wings in hot water, in which I had dissolved washing-soda; the latter united with the somewhat greasy pigment, so that it was washed out of most of the scales, leaving them almost colourless; some of the white scales, however, seem to have been hermetically sealed instead of open at the extremities, so that when the wings were dyed individual white scales remained, giving a marvellously natural appearance to these faked specimens, even when examined through a lens. Some dealers who saw them were much exercised in their minds as to the possibility that dishonest persons might, if they knew the process, pass off similarly dyed specimens as extraordinary aberrations. Is it not possible that these white scales may be solid throughout, not sac-like as in the normal type, in which case the dark colouring could not affect them?*

With regard to the concentric rings I have little doubt that they originated from parallel lines approximate to the ocelli. In many examples, especially among the Satyrine butterflies, some or all of these ocelli are represented by the white pupils alone, and in some there are gradations from the latter to the perfected eye-spot.

Central white or coloured spots in the feathers of birds have clearly been formed by the inward expansion of the submarginal or marginal borders. Turning to the illustration of a hybrid Grass-finch ('Avic. Mag.,' n.s. vol. iv, October, 1906) we observe that the

* In some of the silk-moths (*Saturniidae*) the pupil of the ocellus is represented by a colourless, transparent, chitinous disc.

flank-feathers are ornamented with ϵ -shaped submarginal markings ; in *Munia punctulata* these markings are thickened (extending also backwards over the breast), so that they produce a spotted appearance ; in *Amadina erythrocephala* the markings have become marginal and more regular ; in *Steganopleura* they retain their outline, are confined to the sides of the body, but the base of the feathers is blackened ; in the males of *Tæniopygia* (in which they have changed from black to cinnamon) they surround the feather, leaving only subovate white spots ; while in *Bathilda*, in which the sides and breast are pale olive, they are transversely ovate and extend over both areas, as in *Munia punctulata*. When flight-feathers are spotted the result is probably obtained (as when they are barred) by transverse outgrowth from the shaft-streak, subsequently more or less broken up by longitudinal extension of the dark colouring, as in *Stictoptera*.

Central black or dark brown spots are merely expansions of the shaft-streak without longitudinal extension, and, of course, if the shaft of the feather is pale it indicates at once the origin of twin spots ; if I remember rightly some of the feathers of the Wonga-wonga Pigeon show this character : I was unfortunately unable to save the skin of the bird which died in my possession.

I have already explained the probable origin of terminal pale spots to feathers ; they are usually modifications of a triangle, and, therefore, clearly (I think) the result of the fork of the sagittate development of the shaft-streak not being filled with dark pigment.

Why is it that wing- and tail-feathers are so frequently many-banded, and why are the bands usually at about equal distances apart ? I can see the necessity for this in the case of protectively barred birds, in order to render the general appearance of the plumage uniform ; and, of course, the regularity of the banding may have been gradually acquired through natural selection ; but I cannot understand how it is that the coverts in the wings of our European Jay are rendered conspicuous by precisely similar, though brightly coloured, banding.

CURIOUS ATTITUDES OF EGRETS.

By F. FINN, B.A., F.Z.S.

Mr. Astley's two small Egrets, of which he gave us such an interesting account some time ago, as they came from South America, would be *Leucophoyx candidissima*, not *Garzetta garzetta*, which is an Old World bird. Although very similar in size, the two species show a striking difference in the nuptial plumes; in the "Snowy Egret"—as the American bird is rather absurdly called, since all the typical Egrets are of the purest white throughout—the crest is a bunch of thread-like "osprey" plumes, while the Old World Little Egret has on the head only two long hackle-like plumes, like those forming the crest of the Common Heron.

In 1916 there were a pair of *candidissima* at the Zoo, in the Small Waders' Aviary, and I watched one taking its bath in a most extraordinary way. Standing in the shallow water, it would have a splash and then sit down on its hocks, the water reaching half-way up its body, which was perpendicular. It at the same time drew in its neck, and drooped its head on one side, looking exactly as if overcome by a chill or heart weakness, especially as it remained in its queer position for an appreciable time. Presently, however, it pulled itself together, rushed on a few paces, and then collapsed into the dying-away position again.

Its companion seemed to think its behaviour unusual, for it came up and had a look at it. The manœuvre was repeated once or twice more till the whole length of the pond had been traversed, and the bird considered its bath finished. Was this an individual eccentricity, or is this the usual procedure of this species when bathing? One does not get much chance of seeing, as all Herons appear to bathe but rarely.

The Buff-backed Egret which was in this aviary recently behaved in an equally strange manner one day. Coming to the Zoo one Sunday morning I found it lying out flat on the piece of rock-work at the south end of the pond, and looking so exactly like a dead bird that when I came again in the afternoon I fully intended to draw the keeper's attention to what I thought was the casualty; but

to my astonishment the bird was up and about and catching flies as usual, and at the time of writing it was quite well.

I have only seen one other bird look as nearly like a dead one as this, and that is the *Cariama*, which has a way of lying almost on its back at times, but it does not show the limp flatness of this Egret, which was on its side—head, neck and all.

In writing of these Egrets, I have used the scientific names given in the 'British Museum Catalogue of Birds,' but I must say I do not agree with dividing up the typical species among different genera as is there done. The totally white Egrets are all singularly alike in general characters when in undress plumage, and though they differ in size and in decorative details when in nuptial dress, they all show the "osprey" plumes on the back at least, and these are of the same highly filamentous character in all. They thus form a very natural group or genus. An Egret is an all-white Heron with very filamentous plumes on the back in the breeding season, and Science is not helped, but rather hindered, by putting one species in *Garzetta*, another in *Leucophoyx*, and so on. It would be really more scientific to leave them along with the coloured Herons in *Ardea*, for they are all Herons anyhow, and not so distinct from the ordinary Herons as the Bitterns and Night Herons are.

Their distinctness is not maintained, as in the case of the Golden and Amherst Pheasants, by hostility, for in India, at any rate, different species may be found breeding in the same colony. Yet we do not know of their interbreeding, although all are alike in colour, and the largest of all, *Herodias*, differs little in size, in its smaller individuals, from the middle-sized *Mesophoyx*. Moreover, the white and coloured forms of those less typical Egrets which are liable to albinism interbreed freely. Colour, however, in spite of the theories of "recognition marks" and "sexual selection," seems to be commonly ignored by birds in their estimates of each other as comrades or partners.

* It is, I fancy, now pretty well known that this trade term for Egrets' plumes is a corruption of the French "esprit."

NOTES ON SOME OF THE NORTH
AMERICAN WOODPECKERS.

By The LADY WILLIAM CECIL
(Baroness Amherst of Hackney).

“ Pleasant it was when woods were green
And winds were soft and low ”

to rest in the shade and listen to the murmur of the woods, the sweet, soft songs of the Warblers, and the “ thousand and one ” other sounds of the forest world. Loud and persistent above all the music is the tap-tap-tapping of the Woodpeckers as they hunt for insects, or patiently drill and hammer at the excavations of their nest, or the holes for secreting their hoards of nuts and acorns.

The Woodpeckers cannot boast of melodious voices, and though varied, their call-notes are generally harsh and loud and unmusical, while their love-songs are said to be the curious drumming sound the male birds make on the stems of the trees.

In North America there are many varieties of these quaint birds, so different from their perching, hopping, and running neighbours; for Woodpeckers are *par excellence* climbers, and are oftenest seen on the stems or branches of trees, or flying from trunk to trunk, though many of them feed on the ground-grubs and insects, as well as those found on or under the bark of trees.

The Woodpecker family is a fairly numerous one, and its members vary much in size, measuring from 6 or 7 in. to 25 in. in length.

Among the small ones is the Downy Woodpecker (*Picus pubescens*), which is only about 6½ in. in length. He has a striped black and white back, a broad black band on his head, and a white line under and over the eyes; a black and white barred tail with black middle feathers, and at the back of the head, above the neck, a bright red band of rather hairy feathers; his breast is white and slightly fluffy and hairy; his black wings are barred with white.

The Downy Woodpecker is a most friendly little bird, often leaving the woods for hedgerow trees and gardens, and even parks and avenues in towns. He dearly loves the orchards, and busily

drills holes in the stems of fruit trees to reach, with his barbed tongue, the insects hidden under the bark. He seems so intent on his work that it is often quite possible to get close to him without in the least disturbing him, and to watch with what precision he hits and hammers round the same spot until he has made a hole large enough to suit his purpose, whatever it may be.

The Red-Headed Woodpecker (*Melanerpes erythrocephalus*) is a good deal larger than the Downy, being some 9 in. long. He is a much rarer bird, but one of the smartest of the family. In the woods, orchards and gardens his conspicuous feathers and loud tapping make him easy to follow and find, should he by chance visit the neighbourhood. He has a black back with some white on it, a black tail, and black wings marked with a white band; his breast and under parts are snow-white. This description sounds colourless enough, but the black has glossy blue lights and sheen on it, and then he has a bright crimson head and neck, which gives him just the right touch of colour and beauty and makes him quite unmistakable.

How hard a pair of these Woodpeckers work to fashion a neat round hole as the entrance to their nest, which is deep down in some withered stump! Scattering sawdust and chips about, inside and outside the tree, they only seem to pause in their labours now and then to utter their curious frog-like croaking call.

Nuts and acorns are cleverly hidden by these busy birds in holes which they have bored in tree stems, and in crevices in the bark. I often wonder when they begin to eat the store they have so industriously gathered, and if they really remember in which tree they are hidden, and if each pair of "Red-heads" knows its own preserve.

The Yellow-bellied Woodpecker (*Sphyrapicus varius*) is about half an inch smaller than the last species. He is another very handsome bird, black and white, and a good deal shaded with yellow on the back; he has a bright crimson crown and throat edged with black, and a black band round the head, with a narrow white line round the back from eye to eye, and a broad, creamy white band from above the bill, curving round the edge of the crimson throat-patch to the edge of the black breast. The wings are black with

white spots, and the tail is black, with a little white on the middle feathers. Underneath he is all pale yellow. The head and throat, where crimson in the male, are white in the female.

This lovely bird does not, I fear, live up to the saying that "handsome is that handsome does," for morally he is the "black sheep" of the family, in spite of his fine feathers; for although he devours slugs and grubs and insects in quantities and fruit in moderation like the rest of his kind, he also enjoys a feast of the soft inner bark of the fruit trees as well, and also the sap, of which he is inordinately fond. His tongue is not extensile, therefore, in order to reach the sweet juice, he will rip off the bark in great patches, instead of boring holes as any well-conducted Woodpecker should; and he does this "barking" of the trees to such an extent that many are killed.

These Yellow-bellied Woodpeckers, or Sap-Suckers as they are also called, build in holes in trees like the rest of their species, making very deep nests. The noise of their tapping and curious "drumming" may be heard far and wide on a summer's day. They have a very sharp, clear call-note.

The Log-Cock, or Pileated Woodpecker (*Hylotomus pileatus*) is one of the larger members of the tribe, and a very fine bird he is, with black back and black and white wings, throat and head; the white is sometimes tinted with a yellowish shade. The male bird has a bright scarlet crest and a scarlet moustache. The crest of the female is red mixed with black.

Among the big trees of the deep forests this Woodpecker has his home. The female Woodpeckers do most of the excavating for their nests, but the male birds help too, and the hammering is loud and prolonged as they both work away at the making of their nest's doorway. They often come to the ground for food. I once watched an old mother Woodpecker teaching a young one to feed on grubs in the ground. The parent bird buried her bill deep in the earth and pulled out a nice fat grub, which she at once popped into the little one's open mouth; baby then tried to do the same, and attempted to bury its bill in the ground, which happened to be rather hard, and it only succeeded in penetrating a short way, and quickly drew it out again and shook its still downy-feathered head,

pointing its little bill upwards, as if begging not to have to do it again, as it hurt so! But for some time the stern parent continued the severe lesson, thrusting her own bill into the earth and picking out grubs, and insisting on the "papoose" doing likewise. Of course it had to learn to "fend for itself," for such is the discipline and rule of the "School of the Woods."

Far away in Louisiana, and in the swampy forests of the South, where "Spanish moss" clothes the trees with fantastic draperies, and the warm flood of the "Gulf" joins the flood of great rivers, or the long line of the Atlantic coast stretches to meet the tropical forest, the finest of all the Woodpeckers, the Ivory-billed Woodpecker (*Campephilus principalis*), has his home. He is a big, handsomely-marked, black and white bird, some 20 in. long, the male having a splendid red crest and the female a black one. His voice is clear and penetrating—three loud notes, repeated at intervals many times.

I was fortunate enough to see one of these grand fellows as he flew from one tall tree to another, across a flooded glade in the forest between Pensacola and New Orleans. He flew in one great swoop, not dropping and rising in short curves as do most Woodpeckers. The "ivory" bill of these birds is so strong that with it they can hammer off a piece of thick bark seven to eight inches long with a few blows. They build in living trees, not decayed ones like most of the Woodpeckers, and they rear two broods in the year, the first in early spring, the second in August. I was told that the Indians use the bills and heads of these birds as charms, and the scales from the upper part of the bill as ornaments.

The Imperial Woodpecker (*Campephilus imperialis*) is the largest of his kind, and is said to be found in Southern California, but this is very doubtful. He is a Central American bird. I only mention him as I saw a very fine stuffed specimen, which must have measured some twenty-four inches, in a window in San Francisco, grouped with other genuine North American birds.

Another handsome, but smaller, member of the family is the Red-Cockaded Woodpecker (*Picus borealis*), inhabiting the swamps and "barrens" of the Gulf States, his black and white plumage showing up well against the dark Swamp pines. He has

a black crown, and the back of his neck is black; his breast white, with black spots on the sides; black and white barred and spotted wings and tail; his only scrap of bright colour is a vividly scarlet line above each eye like a vermilion eyebrow.

We first made the acquaintance of the White-headed Woodpecker (*Picus albolarvatus*) in the far West, in Oregon, and Washington State, and towards Montana eastward. He lives, too, in the forests that clothe the Californian Mountains, and we met him again in the Merced Valley. He is an easily identified bird, being nearly black with the exception of a white patch on the wings, and a completely white head. But he has his bit of colour, too, in a bright red band round the nape of the neck. This is wanting in the female bird, whose "frosty pow" is white all over. This Woodpecker measures about 9 in. in length.

The Hairy Woodpecker (*Picus villosus*) is about the same size as the last. He is a delightful person, often to be seen in the woods of Southern Canada and the Eastern States. He is another of the black and white birds, fairly evenly marked. He has a black head, with a stripe all down it of rather long silky feathers (like those of the Downy Woodpecker); a black tail with white outer feathers, and black and white spotted wings; across the back of the neck there is a clear red band. Madame "Hairy Woodpecker" has no red band, and her plumage is altogether more dull and rusty. The young birds of this species have reddish-brown heads.

It is very amusing to watch a Hairy Woodpecker hunting for insects on the trunk of a tree, carefully working his way up, going round and round, till there is scarcely an inch that has not come under the scrutiny of his sharp eyes or been tested by his sharp bill and long tongue. Woodpeckers almost always work upwards and spirally, they do not descend a tree head-downwards as Tree-Creepers do.

I have watched a Hairy Woodpecker tap-tapping most carefully and perseveringly for an hour or more, only pausing to gobble up the insect or worm that he has scared from its "hidey-hole" by his persistent hammering. In the spring and early summer throughout the breeding season the Hairy Woodpeckers may always

be seen in pairs, but during the rest of the year they live apart, the cock making a comfortable and sheltered home for himself, while his wife has to find her own lodgings where she can. They are very particular about their nest-making, both working at it; the entrance is often placed under the shelter of a branch, just where it grows out of the trunk; in this way the nest hole is cleverly sheltered from wind and rain.

Among the beautiful birds of the forest the Golden-winged Woodpecker or Flicker (*Colaptes auratus*) holds a high place. He is rather a large bird, measuring from 12 to 13 in. His neck and head are greyish-blue, occasionally rather darker on the crown; his back is golden-brown, shaded with a greenish tint; at the back of his neck is a crimson crescent-shaped band; his breast is mauvy-chocolate, the colour of unopened birch-buds in spring, shading off to creamy-brown, with clear black spots all over it. There is a curved band of black across the top of his breast, below the throat, and the male bird has black cheek-patches. The lining of the wings and tail are the brightest golden-yellow, which shows very conspicuously in flight.

The Flickers may often be seen picking up grubs and insects on the ground, several birds foraging together in small parties. Their note is more full of changes than that of most of their kind, and in the spring-time has a sort of Dove-like cooing tone. A Flicker's love-making is rather Dove-like too, as he may often be seen bowing and scraping before his lady-love in a most amusing way. Like all Woodpeckers, Flickers nest in holes in trees. They make several borings before they finally settle on that which is to be the season's dwelling-place. They sometimes choose to excavate in a rafter or post, or even in the thick rail of a "snake-fence." In common with others of their species, these Woodpeckers lay pure white eggs, with a smooth and shiny surface; the clutch generally consists of six. Flickers feed on fruits and berries as well as on insect food; they are not very shy, and I am sure if taken young enough would become tame, though I doubt their living long in captivity. They are really lovely birds, and to watch a Flicker sitting on a leafy branch, preening his smart feathers in the sunshine of a summer's day, is a sight to be remembered.

There are a few other Flickers differing somewhat in colour, those in the South (Southern California and Texas) having crimson feathers where the Golden-wings are yellow, but whether these are distinct varieties or the result of hybridity, or local food conditions and surroundings, has not yet been clearly defined.

The Californian Woodpecker (*Melanerpes formicivorus*) haunts the forests of the Rockies and California. On the "Old Wawona trail" and thereabouts we met them just returned from their migratory journey. They measure about 9 in. They are chiefly black and white in colouring, the black being glossy like the feathers of a Rook. This Woodpecker has a white stripe in front of the eyes joining on the throat, forming a sort of "bib" under the bill; above this bib the throat is black. In the male bird the crown is bright crimson from the white eye-line to the nape of the neck; in the female a black line divides the white and red. The breast patch in both sexes is black; in the male a few red feathers are sometimes found among the black. The Californian Woodpeckers have curious white eyes. These birds feed on tree insects, and also on grubs and caterpillars and ground insects. I saw several busily hunting for their succulent prey among the thick undergrowth of deer-brush. But they are chiefly renowned for their wonderfully elaborate work of storing acorns and nuts in holes, which they bore in the trees in the same way as the Red-headed Woodpeckers, but generally on a much larger scale. A big tree is often spotted in large patches with nuts and acorns, only a few inches apart. I have noticed several in different places. One, a big sugar-pine in the Yosemite Valley, was thickly studded with nuts, but unfortunately so high up that I could not count them; there must have been from twenty to thirty nuts in quite a small space, and higher up were many more. Some authorities say that the birds only store in this way the fruit which contains maggots, thus insuring a supply of "animal food" in readiness for their return from their winter in the South; others say that pebbles and stones are stored in the holes instead of nuts, and that this careful work is only a mechanical "survival" of a long-forgotten necessity. Whatever the cause, the result is a very curious habit, and it would be extremely interesting to see what a Californian Woodpecker would do if given the proper material of

tree-stem and nuts, and plenty of time and space, in some large aviary.

Another Woodpecker "out West" is Lewis's Woodpecker (*Asyndesmus torquatus*), a bird about 11 in. long; the upper parts, wings and tail are black, shaded with the rich metallic blue, green and bronze lustre of a Magpie's tail; a greyish collar and breast shading to red and a red face and cheeks distinguish this bird very easily—the red colour is rather a dark crimson, not scarlet red, as in most of the other Woodpeckers.

We saw one of these birds in the Yosemite Valley one afternoon, but it was difficult to see well, as it was feeding high up in some tall pines; and it was also very hard to follow it, for, though the spring was far advanced, there was deep snow on the ground in many places.

There are a few distinctly northern species, such as the Black-backed Woodpecker (*Picoides arcticus*), a rather rare bird, and the Banded Woodpecker (*Picoides americanus*), which has a white stripe with black-tipped feathers the whole length of its back, somewhat like the stripe on the back of a Hairy Woodpecker, only minus the long feathers. A variety of this bird, with a pure white stripe (var. *dorsalis*), belongs to the Rockies. In flying they look practically identical.

There are several more Woodpeckers, natives of North America, which unfortunately I have not seen, or that I have only caught sight of for a moment, so that I cannot describe them from personal observation. Among these is Williamson's Woodpecker (*Sphyrapicus williamsonii*), one of the most beautiful, a white and glossy black fellow with a good deal of yellow on the underparts, and a small crimson throat-patch.

The Yellow-faced Woodpecker (*Centurus aurifrons*) has comparatively little black, and is chiefly yellow, red and white. Its range is southwards, from Texas.

Gila's Woodpecker (*Centurus uropygialis*) is peculiar to the Colorado and Gila Valleys. There are several more, both smartly plumaged and interesting, but whose habitat is so very limited that their manners and customs must be studied "on the spot."

All the American Woodpeckers well repay study with field-

glass and note-book ; and in the wilder parts of the country, as every bird-lover will realise, a very large stock of patience is also necessary, for among the wonderful echoes of the forests and mountains the tapping and drumming of a Woodpecker sounds sometimes in one direction and sometimes in another in a most tantalising way, and many difficulties may have to be overcome before the bird is found.

Among American agriculturists, fruit-growers and lumbermen many are found who consider *all* Woodpeckers a nuisance, and condemn the whole race because of their borings in timber and fruit-trees, in buildings, telegraph and telephone poles, and such-like places. But I believe that strictly scientific observation will prove that only two, or perhaps three, out of the twenty Woodpeckers of the country do any *real* injury to valuable crops or wood. These "bad boys" are the Sap-Suckers, the Yellow-bellied Woodpecker (*Sphyrapicus varius*), the Red-breasted Woodpecker (*S. rubra*), and perhaps Williamson's Woodpecker (*S. thyroideus* or *williamsonii*). These tear off the bark, bore deep into the trees and feed on the cambium, the inner bark of trees, and also on the sap, in such a wholesale manner that the trees are riddled with deep holes, the grain of the wood becomes distorted and knotted, and its market value lost for ever, even if the trees attacked do not die.

The harm done by the more shallow borings (except for their nests) of the other Woodpeckers is, on the other hand, far outweighed by the good they do in their constant destruction of the tree-injuring worms and insects, which are left untouched by the surface-feeding birds.

For this reason the United States Government has put a stop to the wholesale shooting, trapping and poisoning of Woodpeckers of whatever variety, and the Sap-Suckers alone have to pay the penalty of their crimes, and the harmless members of this most interesting family are reasonably protected.



Photo. by W. Shore Baily.

Generosity of W. Shore Baily.

BLACK CUBAN SEED-FINCHES.

THE BLACK CUBAN SEED-FINCH.

By W. SHORE BAILY.

The Black Seed-finch (*Melopyrrha nigra*), sometimes erroneously called the Black Bullfinch, is a native of Cuba and is not very frequently imported. It is somewhat smaller than our British Bullfinch, to which its massive bill gives it some resemblance. A sketch of this bird by Mr. Allen Silver appeared in 'Bird Notes' in February, 1911. The writer bred it in 1914, and published an account in the same magazine. He was the first to breed it in England; it had, however, nested freely the previous year in Mr. Teschemaker's aviaries, the eggs in every case proving infertile, from which I am inclined to think that this gentleman's birds were all hens. The sexes being alike, it is very difficult to pick out true pairs. Their demeanour in captivity is very much like that of the Waxbills, their movements being very sprightly and active. They spend much of their time amongst the vegetation close to the ground. Their black and white plumage is in striking contrast to that of most of the birds usually kept in our aviaries, and as they are by no means backward in coming forward when meal-worms are being handed out, they usually attract the attention of visitors. As their name implies, they are seed-eaters, but when feeding young they require a good deal of live food. They are particularly fond of wasp-grubs, and are clever at abstracting them from the comb. When the breeding season is over mine live upon canary and millet, with the addition occasionally of a little bread and milk. I winter them indoors, but think that they would do equally well outside in a well-sheltered aviary.

N.B.—Since writing the above, Mr. Teschemaker has sent me the wings of a sexed pair in which the secondaries of the male were white almost to the extremities, whereas those of the female were not.—W. S. B.

EFFECTS UPON BIRD LIFE OF THE CORPUS CHRISTI STORM OF AUGUST 18th, 1916.

By R. A. SELL.

[Reprinted from 'The Condor.']

The storm struck the coast from a north-westerly direction, and blew with such a uniform force that the water was driven away from Rockport. Many fish were left floundering on the sandy bottom, and some courageous people went out and gathered what they wanted of the choicest speckled trout, red fish, sheep-head, red snappers, etc. But the Pelicans showed no desire to fish. They flew about in wild confusion, first to the shores, then across the foaming waves into the very teeth of the storm. When there were literally miles of bare beach where there had always been water, the birds became even more panic-stricken than they were before. Sometimes they would huddle together on the beach, but only for a minute. Then with piercing shrieks they would scatter, some waddling or half-flying up and down the beach, others trying to fly against the wind, while some even braved the foaming waves.

As the storm increased, the Pelicans were simply blown about like the materials from a refreshment stand when boxes of rolled oats and packages of Uneeda biscuits chased one another towards the water. When thoroughly exhausted, a Pelican would sometimes spread itself out and lie flat on the sand with its head towards the wind. While those on the shore were buffeted about at a terrible rate, those in the water fared even worse. The waves rolled so fast and with such irresistible force that the great birds, which are ordinarily so sure of themselves in the water, were almost helpless. When by an extreme effort one of them would succeed in raising its body above the waves it was likely to be turned over and over by the furious gale and shot into the crest of a foaming wave.

When the wind changed so that the water was driven back towards the shore with a rush, all the Pelicans on the shore began screaming, and it was these extreme penetrating cries from the Pelicans and the Gulls that were being driven ahead of the gale that

drew the attention of the people to the coming wall of water. All of the Pelicans began to run and flutter towards the higher ground, but the fearful rolling, foaming waves caught and swallowed them in less time than it takes to tell it. Not one was left on the shore. Some of them could be seen for a time riding the terrible billows. Others were simply floating; no doubt many of them were dead.

The screaming of the Gulls and the roar of the wind and waves was intense. Just how the Gulls were able to drift ahead of the storm so long and keep from being dashed into the waves is hard to determine, but being lighter and able to take wing more easily than the Pelicans they seemed to glance across the waves and meet the air again without entirely losing control. Thus they escaped being rolled into the waves, which were dashed together with great force and which caused such terrible destruction to the Pelicans. After the first dash, when the water rolled high upon the beach, the Gulls began to roll, partly flying, walking, and being blown along, towards the higher ground. As they reached comparatively high spots they veered about with their heads towards the water and moved inland by a peculiar backing movement. Drawing the wings together and raising the hind part of the body, a Gull would hold its head to the ground and seemingly jump straight up in order that the wind might carry it a few feet inland. In most instances the head would drag on the ground something like an anchor, and after accepting such a boost the Gull would let its body fall down flat. In case it lost its balance and was taken up by the wind and turned over, it would draw up its legs and contract its wings so that when it hit the sand it would roll over and over. In this way many of them worked their way far enough inland to avoid the terrible crash of the *débris* that was brought in by the waves after the first set had reached the shore, and the water had risen to a point somewhat above high tide.

As the foaming waves began to deposit the wrecks of bath houses, piers and pavilions along the beach, many water birds of various kinds could be seen in the wreckage. Some of them were alive; though it seems impossible, several Gulls and Terns fluttered out of the drifts and escaped to the shore. The waves pounded the drifts with such force that if a bird did not escape as soon as it came

in there was no hope for it, since it would surely be crushed between timbers.

The next morning great drifts of tangled masses of what had been trim-limbed Cranes and pouch-mouthed Pelicans could be seen. A few cripples were found—two great Grey Pelicans, one with his leg broken just above the knee and the other with a broken wing; three Terns with broken wings, one of them having both wings broken; and five Gulls with broken wings. One very large Crane, having one wing and one leg broken, was still ready to defend himself with a spirit that deserved admiration.

A man who was marooned on one of the low islands which was swept by waves climbed the largest tree on the island, a mere bush, and as he was waiting, he knew not what for, he saw a Crane nestling behind a large rock that protruded above the water. Although he was not an ornithologist, a feeling of sympathy was aroused, and he watched with much concern as the water became higher and raised the Crane above the rock.

"Old fellow, I hope we'll both pull through," he said, as he took a fresh hold with his numb hands. But the winds continued and the water kept rising. He had to draw his legs up to keep his feet out of the water. "I guess we'll go pretty soon. Well, here's to you. You understand the game better than I do." The Crane was on top of the rock now, but it was keeping its body as near the surface of the water as possible. A flock of Gulls was driven past, and their screams could be heard above the roar of the waves. The Crane strained himself as if ready to try the waves. Then, with an eager turn of the head from side to side, he plunged into the water and allowed himself to drift before the storm. "Good-bye, old fellow." The next morning when a boat came to the rescue, one of the first things the man asked was, "I wonder how that old Crane made out!"

No one witnessed the destruction of the Gallinules. A large colony of these birds was completely exterminated. Their portion of the island was completely swept by water, and the next afternoon many of them drifted to shore just above the city of Corpus Christi. With these birds that drifted in were several eggs floating unbroken in the salt water. Why could not a Purple Gallinule, that graceful,

trim-built, active, fish-eating bird, take care of itself in a storm as well as a Sea-gull? An expert diver and an excellent swimmer should be able to float. While a few live Pelicans could be found after the storm, nobody reported seeing a live Purple Gallinule for several days.

On one of the drifts that contained 31 dead cattle besides the bodies of 215 birds of various kinds, there stood a solitary Scarlet Ibis. Like a garnet in the sands, or a rosy promise of the morning sun, it stood, gracefully poised above the terrible ruin—an encouragement, an inspiration, an unfailing hope—not as the rainbow, suggesting the possibility of another destructive force, but as an animated symbol that life is immortal.

Houston, Texas ; December 28th, 1916.

COLOUR CHANGE IN THE PLUMAGE OF BIRDS.

By DR. V. G. L. VAN SOMEREN.

In a letter to the Editor, p. 108, Dr. Butler mentions the colour changes in feathers which he noted in the case of *Pyromelana*, and to strengthen his argument that colouring matter can pass up the vanes of already fully-formed feathers, he mentions the case of *Turacus*.

Now to take the last point first. In this country and Uganda there are several species of Plantain-Eaters, all with the wide crimson wing-patch, and I have in my collection of skins good series of all of them. These birds have been collected at all times, rainy season and dry, and not in any single instance do any of the feathers bearing crimson show the slightest trace of this red colour being washed out by wet. Furthermore, I have before me as I write four bottles, each containing one crimson feather from different species of *Turacus*; they have remained in water for one week and none shows any change! These feathers were taken from dry study skins. Another bottle contains a feather which had been plucked from one of my tame Plantain-Eaters, *Musophaga rossæ*. No change has taken

place. In passing, I might mention that one of my specimens of *T. emini* has two tail feathers crimson like the colour on the wings!

My birds are always bathing!

Now as regards colour change in *Pyromelana*. I have a large series of four different species, showing all stages of plumage, and it is a noticeable fact that those which appear to bear evidence supporting Dr. Butler's statement are either—

(1) Young males changing into the breeding plumage for the first time.

(2) Males which are obviously out of condition, and which have not sufficient vitality in the colour glands to produce the change.

(3) Males changing normally, *i. e.* red feathers are *red*. Quills present!

Males of class 1 show feathers in quill which are either red, orange or yellow, indicating a *moult*. Class 2 includes males with bills far from black (though they were breeding-birds), and also with feathers in quill practically over the whole of the body—some red, some orange—other indications of reduced vitality being the retention of very old worn feathers which the birds have not been able to throw off. I refer above to birds shot in the field.

I have a large number of captive birds in my aviaries (outdoor and indoor, *i. e.* on verandahs), and these when taken up and examined corroborate my statements above.

I have before me Dr. Butler's note on the same subject in the 'Ibis' of July, 1916, p. 476. Dr. Butler admits that the bird under discussion commenced its "change" rather late; further, that it died. One can only presume that it was ailing without actually showing it to a marked extent, the moulting taking place slowly but not normally, and then it died.

Dr. Butler states also that when the change takes place no moulted feathers are found! Do the birds not eat them? Many of mine do! I give this evidence for what it is worth. I cannot at present admit Dr. Butler's view, but I am still open to conviction on sufficient evidence.



Two months.



Three-and-a-half months. Neck grey; feathers on back and tail edged with brownish.



Adult with cygnets ten days old

"FROM CHANGE TO CHANGE THE CREATURES RUN":
THE LIFE-HISTORY OF THE BLACK-NECKED SWAN.

A MOOT QUESTION.

By Dr. A. G. BUTLER.

All matters of interest in relation to bird-life should be freely ventilated, and the experience of many observers brought forward and tested in order to arrive at the truth. For this reason I have not hesitated to express my own views touching the change of colour in certain birds without or with only a partial moult. As a very strong argument in favour of this view, I quoted the statement (by not one only, but many writers) regarding the loss of colour in the wings of the Touracous after they have been exposed to heavy rain, and its recovery shortly afterwards, in my letter to the Editor, published in our Magazine for 1918, p. 108.

In his 'Ornithologie Nordost Afrikas,' vol. i, p. 702, Heuglin says: "It is known that in consequence of the extremely slight greasiness of the plumage the latter absorbs much water and thus makes the bird almost unable to fly. Moreover it has been observed in Touracous brought alive to Europe that the red colour of the wings gets partly washed out, which is not the case with prepared dried skins. A Touracou shot by us during a violent thunderstorm partially lost, when drying, the beautiful red, which changed into a dirty rusty yellow."

Then, again, the late Dr. Russ, in his 'Fremdländischen Stubenvögel,' vol. ii, p. 668, quotes Herr Meusel as stating: "All lose colour when bathing, the water with most of them becoming reddish, with others greenish"; and on p. 670 he says: "A. E. Brehm reported in the year 1871, at the February meeting of the German Ornithological Society, that the feathers of these birds discolour. If they bathed in clear water a quantity of red colouring-matter was dissolved in the water."

Once more Dr. Arthur Stark, in the 'Birds of South Africa,' vol. iii, pp. 215, 216, remarks: "Perhaps the most interesting peculiarities about this bird (which it shares with most of the other members of the family) is the presence of a peculiar red pigment on the wing-feathers, named by Professor Church ('Phil. Trans.,' vol. clix, 1870, pp. 627-636, and vol. clxxxiii A, 1893, p. 511), turacin.

"This pigment is soluble to a certain extent in water and exceedingly so in a soapy (*i.e.* alkaline) solution, and it has been

observed by Verreaux and many others since that during heavy rains these birds descend from the higher branches of the trees and seek shelter in the lower and thicker undergrowth to avoid the wet, but that, notwithstanding this, their plumage often becomes so saturated with moisture that they are quite unable to fly and they can then be caught with the hand. At this time the greater part of the red colouring-matter of the wings has become washed out. The same effect can be produced artificially by rubbing the feathers with soapy water, when they can be reduced to a dull white or grey colour. The bird, moreover, has the power of renewing the turacin of the wings, and very shortly after the plumage becomes dry the colour is as brilliant as ever. Turacin was carefully analysed by Professor Church, and was found to contain, in addition to the usual carbon, hydrogen, nitrogen and oxygen, about 7 per cent. of copper—a substance not usually found in organic compounds, and never in such large quantities. Many suggestions have been put forward as to whence the bird derives this metal, but it is probable that the presence of small quantities of it in plantains, bananas and other fruits on which these birds feed is sufficient to account for the matter without having recourse to suppositions about their swallowing grains of malachite and other copper ores as has been suggested.”

In experiments undertaken by E. H. U. Draper (*Journ. South African Orn. Un.*, vol. iv, p. 130), it was found that caustic soda, 1 per cent., was the most satisfactory reagent for extracting the colour from the feathers.

In their delightful *‘Sketches of South African Bird-life,’* p. 108, Messrs. A. Haagner and R. H. Ivy say: “The peculiar part of the red colouring matter of the wings is that it contains a large amount of copper (about 7 per cent.), originally analysed by Professor Church. A friend of ours, a chemist of the dynamite factory, confirmed the copper content of the feathers, but with regard to the theory that the red can be washed out with soap and water we are sorry to say we cannot confirm this *in toto*. It certainly does get paler during wet weather and in old skins, but we have never seen it *wash out* in nature, and have tried to do so artificially with soap and water, but without result.”

(To be continued.)

REVIEW.

JUNGLE PEACE.*

“Majestic woods of ever vigorous green,
 Stage above stage high waving o'er the hills;
 Or to the far horizon wide diffused
 A boundless, deep, immensity of shade.”

Honourably wounded in the cause of freedom, Captain Beebe returned to Guiana to resume those studies of which he wrote so delightfully in an earlier volume.† He now gives us a second book, designed more for the general reader, equally interesting and equally delightful. An amusing account of steamer-travel merges gradually into vivid descriptions of gorgeous tropical islands, finally plunging one into the heart of the great forest of British Guiana. Captain Beebe excels in the gift of vivid description, combined with strict scientific accuracy: for example, he says on p. 39:

“A long curved arm of richest green had been stretched carelessly out into the sea, inclosing a bay, which, from our height, looked like a small pool, but such a pool as would grace a Dunsany tale. It was limpid, its surface like glass and of the most exquisite turquoise. Its inner rim was of pure white sand, a winding line bounding turquoise water and the rich, dark green of the sloping land in a flattened figure three. I never knew before that turquoise had a hundred tints and shades, but here the film nearest the sand was unbelievably pale and translucent, then a deeper sheen overlaid the surface, while the centre of the pool was shaded with the indescribable pigment of sheer depth. In a great frame of shifting emerald and cobalt set a shimmering blue wing of a *morpho* butterfly and you can visualise this wonder scene.”

It has been well said that Sir Cornwallis Harris by his famous books first unbarred the doors of the African menagerie; equally true is it that Wallace and Waterton, Bates and Beebe have been the Columbuses of the Neotropical world. In the pages now before

* ‘Jungle Peace.’ By WILLIAM BEEBE. New York: Henry Holt & Co. Pp. 293. Illustrated. \$1.75. net.

† Reviewed in the ‘Avicultural Magazine,’ August, 1918.

us one fairly gasps at the profusion of bird life portrayed : one reads with tense interest of the Vultures, like clear-cut silhouettes as they sit hunched on the fence-posts ; of the Egrets, " like mannikins cut from the whitest of celluloid " ; of the noisy, yelping Toucans ; of the brilliant scarlet and yellow Woodpeckers, and the lovely Flycatchers dressed in subdued greens and buffs ; of the droning swarms of Humming-birds poised about the cashew trees. The book is in every way excellent, and confirms our already high estimate of the author.

Although we advise everybody to get the book itself we cannot refrain from one more extract :

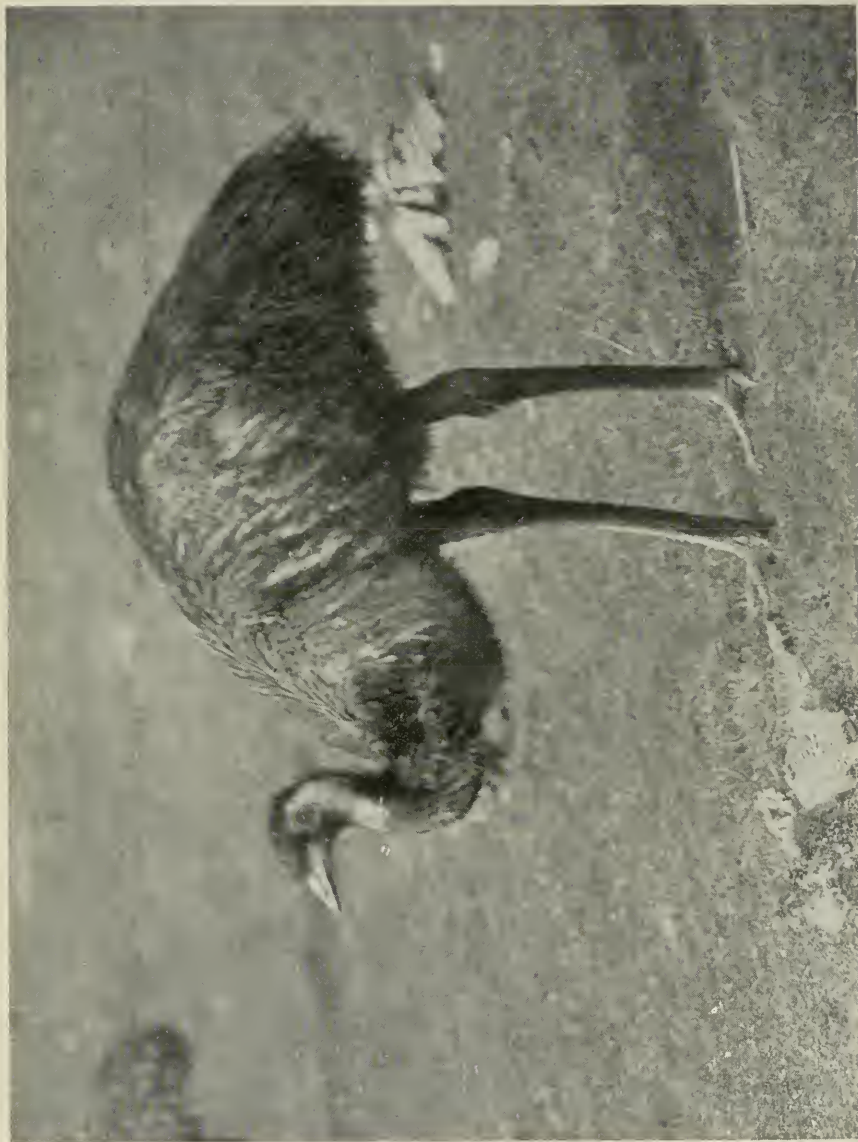
" Close to my face, so near that it startled me for a moment, over the curved length of a long narrow caladium leaf, there came suddenly two brilliant lights. Steadily they moved onward, coming up into view for all the world like two tiny head-lights of a motor-car. They passed, and the broadside view of this great elater was still absurdly like the profile of a miniature tonneau with the top down. I laughingly thought to myself how perfect the illusion would be if a red tail-light should be shown, when to my amazement a rosy red light flashed out behind, and my bewildered eyes all but distinguished a number."

G. R.

OBITUARY.

We deeply regret to report that Sir Richard Sutton, step-son of Mr. Astley, has died of illness in France.

We feel that all Members will join with the Council in expressing their deep sympathy with Mr. Astley, who for so long edited the Magazine, and who has always been so prominently associated with the work of the Society. We all remember his unwearying devotion to the best interests of avicultural journalism in the dark days that are past.



"THOU COMEST IN SUCH A QUESTIONABLE SHAPE."
THE SPOTTED EMU IN THE SCOTTISH ZOOLOGICAL PARK, EDINBURGH.

Photo. by Miss Dorothy A. L. Mackenzie, Q.M., Q.M.A.A.C.
Courtesy of T. H. Gillespie, Esq.

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FEBRUARY, 1919.

THE PASSING OF THE SPOTTED EMU: A
 BIRD THAT NEVER EXISTED.

By GRAHAM RENSHAW, M.D., F.R.S.E.

“I have seen the type-skin in the British Museum, and it is only a young Emu of the ordinary variety.” *Dr. Le Souef on the Spotted Emu.*

On May 24th, 1859, the late Mr. A. D. Bartlett exhibited at a meeting of the Zoological Society an Emu skin (being one of three similar ones which had come under his notice) which differed markedly from any other Emu then known to science. He distinguished the new bird from the common species, and in view of its minutely spotted appearance, suggested that it should be known under the name of *Dromæus irroratus*.

A few months later this zoological prize appeared in the flesh. A living example—brought by a Dutch ship from Albany, King George's Sound, arrived safely at the Amsterdam Zoological Gardens. It was soon examined by the late Dr. Selater, Secretary of the Society, who declared that the “Spotted Emu” differed from the common form not only in its barred feathers but also in its more slender build, its longer, thinner tarsi, and its longer toes. On observing that a second bird had been sent to the Gardens at Rotterdam he acquired it by exchange for the London Zoo, the Emu arriving in excellent condition in the spring of 1860. Two more from the Swan

River were shortly added to the collection; these, however, were admittedly immature at this stage, being darker than the common form.

For many years ornithologists accepted the Spotted Emu as a valid species. At least two forms of Ostrich are known, three species of Rhea, nine or ten Cassowaries, four Apteryxes; why, then, should there not be two Emus? At the time when Bartlett and Selater were describing their new find naturalists had only just begun to realise the unsuspected richness of the struthious birds both in species and varieties. The Spotted Emu was figured by Joseph Wolf in a grand coloured plate which appeared in the fourth volume of the 'Transactions of the Zoological Society.' We advise all aviculturists to see and admire this plate.

Latterly the Spotted Emu has fallen under grave suspicion: those aviculturists who, in Australia, have the best opportunities of judging, reject it entirely. For ourselves, we confess that when a few years ago we went to see in the Zoo four young Emus, one of which, report had it, showed the characters of *D. irroratus*, we were utterly unable to "spot the winner," these suspicions being confirmed in 1915, when we again failed to distinguish a Spotted Emu from its mates in the Edinburgh Zoological Park. Mr. Gillespie ('Avic. Mag.,' vol. ix, April, p. 204) has expressed similar doubts regarding any specific difference between the three Emus under his care. In Wolf's plate above-mentioned, though the iris of the spotted species is supposed to be hazel and that of the common one reddish-brown, there is practically no difference between them as rendered by the lithographer. The photograph of the Spotted Emu, published by the Zoological Society of Scotland in their Garden Guide, suggests nothing remarkable: the slenderness of feet and figure once reckoned of diagnostic value are probably merely due to youth.

Similarly, Dr. D. Le Souef wrote in the 'Emu' for October, 1901: "In the Melbourne Zoological Gardens many live specimens from different parts of Australia have been received, including those from North-Western Australia, and they are practically all the same. . . . Young specimens both from New South Wales, Victoria, and Queensland, which have their feathers distinctly barred or spotted, have been frequently received. In some cases nearly every feather

was barred. The spotted plumage appears as they lose their down, but at the end of the first year many of their mottled feathers, which have got worn and ragged, are gradually shed, and new feathers, as a rule without bars, take their place. . . . In a clutch of young birds from the same nest some are spotted and some are not, and some only faintly so; therefore I do not think *D. irroratus* can stand even as a variety."

In correspondence we have received from him he adds: "Although my article in the 'Emu' was written many years ago, all my subsequent experience shows that this bird does not exist. I have had birds from West and South Australia since I wrote."

We recollect this dialogue from a long-extinct musical comedy:

"Good old 'has been'!
Better be a 'has-been' than a 'never was'!"

Such is the epitaph of the Spotted Emu; aviculturally speaking, it is a "never was."

NOTES ON BARRABAND'S PARRAKEETS (*POLYTELIS BARRABANDI*).

By THE MARQUIS OF TAVISTOCK.

The two *Polytelis* Parrakeets and their ally *Spathopterus* (the Princess of Wales's Parrakeet) form a small and very distinct group among Australian birds. They have no affinity whatever with the Broad-tails, little with the Lorikeets, and their nearest relatives have been considered to be the *Palæornis* Parrakeets of the Old World, from which, however, they also differ in several respects. They are not well known in captivity, nor as much prized as they deserve to be (I except *S. alexandræ*), for they are beautiful birds, more gentle and more tolerant of close confinement than the Rosella family, and, unhappily, not unlikely to become extinct.

Barraband's Parrakeet, or the "Green Leek" as it is called in its native land, is, notwithstanding its very restricted habitat, the most frequently imported species. The plumage of the cock is brilliant green, with a slightly bluish tint on the flight feathers and

crown: the forehead and throat are buttercup-yellow, and immediately below the yellow of the throat is a small patch of scarlet. Scarlet feathers also frequently appear on the thighs of the female.

Hens and young birds are of a much duller green, and the neck, cheeks and breast have a greyish shade. The beak is small and reddish-pink.

Barrabands are rather noisy, uttering various shrill cries, which, however, hardly deserve to be called screeches. One of the commonest of their calls sounds something like "Crrraow! Crrraow!" The normal clutch of eggs appears to be five, but in captivity a smaller number is often laid and only one brood is reared in a season. The female alone incubates, and there seems to be nothing peculiar about the nesting arrangements.

Barrabands agree well among themselves, and although I have always separated my pairs before allowing them to go to nest, I am not sure that the precaution is necessary. In mixed company the "Green Leek" shows itself rather fond of worrying weaker birds but it is not really murderous—anyhow with Parakeets.

Like most tropical birds, Barrabands require warmth when first imported, but afterwards they become quite indifferent to severe cold. They are not difficult to tame, and make nice pets, far gentler than the *Platycerci*; although by nature exceedingly restless and active and needing much wing exercise to ensure fertility in confinement, they stand cage life well, and do not suffer in health and spirits seen to the same extent as the Broad-tails; no one, however, who has this beautiful bird in the enjoyment of a good-sized aviary, or watched its wonderful flight in a state of complete freedom, would wish to keep it immured for life within the limits of an ordinary Parrot cage.

When once acclimatised Barrabands are as hardy and long-lived as any Parakeet I know, and thrive upon the usual seed mixture plus fruit, green food and mealworms; they are especially fond of grapes. But they are kittle cattle to deal with during the first twelve months of their captivity. Many, in fact most of the hens become wholly or partially paralysed in the legs soon after capture, while a large proportion of both sexes develop a kind of

ophthalmia. Both maladies come on quite suddenly, and none of the remedies recommended to me by the most experienced aviculturists and veterinary surgeons have proved of the slightest use, even when tried for months. The best preventative is, I think, to give plenty of fruit and sprouting oats and not much hemp.

I have kept Barrabands for many years, and two pairs I obtained at the dispersal of M. Pauwel's collection are still alive and well. It is only recently, however, that I have succeeded in breeding them. Previous to 1917 all the eggs laid were infertile, owing to the birds being allowed insufficient flying exercise during the winter. Last year, however, a young bird was hatched by each of the two pairs that went to nest and one was reared, but unfortunately it died the following June. This year two more were reared, two others being accidentally crushed by the parents owing to the nest-boxes provided being much too small.

I never ventured to risk an experiment with Barrabands at liberty until this summer. A hen purchased in 1915 went partly paralysed in the legs early in the spring: she could still perch on a thick branch and cling to wire-netting, but had no power of grasping with her hind toes and walked about on her tarsi. Being useless for breeding, I decided, rather than destroy her, to turn her loose on the chance of her staying and being able to get about and enjoy life in spite of her infirmity. About the same time I bought a cock who was fairly tame and steady, and turned him into a garden aviary occupied by a hen Crimson-Wing, also a new arrival. I was a little doubtful as to how the two birds would agree as they had both been kept for some years in Parrot cages, and the Crimson-Wing was very fond of human company. When first introduced neither knew quite what to make of the other, and each was a little afraid; but there was no hostility, and excellent relations were maintained during the brief period they spent together. One evening I brought the hen Barraband to the aviary in her cage. She and the cock seemed more interested in each other than I expected, and when I released her she flew on to the top of the aviary. The following day she was still about, spending nearly all her time on the aviary, and only leaving it for a tree

when alarmed. She flew strongly, and had little difficulty in perching, or finding a more convenient resting-place when the first branch she chose was too slender. Some days later I released the cock just as it was beginning to get dark, my intention being that he should go to roost at once and not have the chance of travelling far on a full crop. He first settled on the top of his old home, but soon became restless and swiftly took wing. How far would he go? As he reached the tall trees at the bottom of the garden the hen called to him, and he swerved sharply to the right and joined her. So far so good: he would go no further till the morning. The first sounds that greeted me on waking next day were the shrill calls of the Barrabands, sounding now from one part of the garden, now from another. Occasionally I caught a glimpse of the birds darting across the sky at a tremendous speed. The flight was powerful and dove-like, and quite different from that of Broad-tails, or—except when they were going slowly—from that of Ring-Necked Parrakeets. After a time the hen grew tired and returned to a tree above the aviaries, but the cock continued to dash about like an emerald meteor, coming down every now and then for a hasty meal on the feeding-tray. As time went on the pair began to wander further afield, but they have always returned regularly two or three times a day. My chief fear in regard to them is Owls and misguided "sportsmen," but so far they have escaped, and I hope may long continue to do so.

One morning last week an Alexandrine and a Great-Billed Parrakeet were sunning themselves on the top of an elm. Other birds were similarly occupied some distance away, more than half asleep. Suddenly a fowl, probably for some trivial cause, broke into hysterical cackling. It is wonderful how birds from every part of the world seem able to understand, from the very first, each other's alarm calls! With a wild and doleful clamour the Great-bill launched himself into the air; with him went the Alexandrine. A hundred yards away a Pennant shot, dipping over the meadow, uncertain which way to go, until she caught sight of the cock Barraband and decided to join him. A moment later the Alexandrine and Great-bill picked them up and the oddly-assorted little party circled once and disappeared, the lamentations

of the Great-bill growing fainter in the distance. High up in an ash-tree the hen Barraband watched them go; she could not be bothered to follow her restless mate on *all* his excursions: he would be back in half an hour.

THE TWELVE SWIFTEST BIRDS OF AUSTRALIA.

By E. S. SORENSON.

Kindly communicated by Mr. R. Colton from the 'Sydney Morning Herald,
May 15th, 1918.'

While lying on the cool grass in the delightful sunset hour of summer days, listening to the chatter of Parrots in the gum trees and following the rapid flight of a belated one across the bight, we have speculated and argued as to which were the swiftest Australian birds. In ascertaining this one had to depend mainly on the eye, since it was not possible to get the candidates to race, like Homing Pigeons, for the honour, nor always possible to catch an earnest flight with a stop-watch. Thus the endless arguments on this subject that took place in hut and camp.

From long observation we had no doubt that the Jerriang or Little Lorikeet was the swiftest Parrot; shooters gave the palm for speed among Waterfowl to the Pink-eared Duck, which some called the Widgeon, and among Pigeons to the Common Bronzewing, and it was generally conceded that the Grey Falcon (Blue Falcon or Blue Hawk) was the champion among the birds of prey, while the Australian Pratincole or Swallow Plover and the Australian Curlew or Sea Curlew were the speediest of the Waders. But the Spine-tailed Swift could challenge any of these. The speed of this bird has been computed at 180 miles an hour—double that of the House-Swallow. Besides its swiftness it was almost tireless of wing, being second only in that respect to the Frigate Bird, the bird of eternal flight. Both had very long wings in relation to the body—an indication of rapid flight. The Swift, a bird of passage which crossed the wide sea after breeding in Japan, was not known to alight in Australia,

where it spent a considerable time hunting its insect prey in the upper air.

The Sea Curlew followed it in its annual migrations; so did the Snipe; both speedy birds and good stayers. This Curlew and its lonely cry we knew little about inland, as it never left the coast; but the Snipe came to our swamps in gladdening flocks, to mingle with the Red-necked Avocet and the Stilts and other marsh-haunters that never left us. The Eagle has been credited with a speed of 140 miles an hour. Mulyan, our lordly Wedge-tail, graceful as he was when circling on outstretched pinions, and wonderfully smart at catching pieces of meat we threw into the air, never dazzled us with his velocity in a straight flight from one horizon to the other. He had a great wing spread, commonly over 7 ft., and occasionally reaching nearly 9 ft., and he was a stayer, but in a sprint he was no match for the Grey Falcon. We had many kinds of predaceous birds constantly with us, and the Grey Falcon was the swiftest of them all. Still, he could not catch the Jerriang in a sprint across the bight, which was about a mile wide. In a long race the Falcon would win; so could the Little Falcon, a greyish-black bird, with buff throat and white forehead, which many judges considered the swiftest of all birds of prey. The latter, when in pursuit of a flying Duck, and especially when it was a little above its quarry, a position it always manœuvred to get, could travel at a terrific pace. It struck with the edge of its wing with such force as often to kill the Duck instantly, and at times even to strike the head clean off. It was capable of overtaking and killing such a strong-winged bird as the Sea Curlew. The handsome Black-cheeked Falcon was another speedy member of this group and the equivalent of the European Peregrine, the speed of which has been computed at 150 miles an hour.

(To be continued.)

AUSTRALASIAN LORIES AND PARRAKEETS.

By T. HEBB.

I saw my New Guinea Lories at Derry and Toms', and they looked such beautiful birds that I paid a long price for them, never

thinking about them wanting the soft food on which all Lories must be kept. When I realised this I decided to sell; if they had been seed-eaters I would not have parted with them, as they are a lovely pair. I only had them for a week or so, when I sold them to one of our members.

My other birds have done fairly well. I have bred and reared two nestfuls of Rosellas: I have young Red-Rumps now in the nest—and I hope young Browns also, but dare not look. My Peach-Faces, who have done nothing all the summer, are now on eggs; I have two pairs of these, also two pairs of Black-Cheeks, but no luck with them yet. I am sorry to say I missed my chance with Pennants, as I lost the hen of the pair which bred and reared young last year. This was at the beginning of the season, but though I bought another hen it was too late for 1918. I had a very lovely pair of Kings which nested and laid four eggs this season. These were sold to a member, and he should breed with them next year.

I have plenty of young Green and Yellow Budgerigars, but Blue Budgerigars are a failure. I have been trying for them, but cannot manage it. I expect they will soon come now, as several members have them.

PUGNACIOUS AUSTRALIAN BIRDS.

BY E. S. SORENSON.

[Kindly communicated by Mr. R. Colton from the 'Sydney Morning Herald,'
June 1st, 1918.]

One November day while rambling through the home scrub I heard a great commotion among the dry twigs and decaying leaves near the river. Creeping along a ledge of bank behind clustering bushes I found the disturbers were two male Regent Birds engaged in deadly combat. Both were bleeding about the head; their lovely gold and black plumage was bedraggled and their wings drooped with weariness. Still, they fought fiercely, using beak and claw. A hen Regent, whose olive-brown dress was set off with a black cap, was perched on a branch above them, an interested and excited spectator of the duel; whilst some scrub Tits

were hopping and fluttering about, showing even more concern. The rivals sprang at each other savagely, pecking and clawing, and beating with their wings; and now and again they hung on and rolled on the ground, kicking and tearing at one another, and thrashing the dead leaves. I watched them for a quarter of an hour, by which time the tide of battle had a decided swing to one side. I had heard that Regent Birds would fight till one was killed, and to save the game little rival from a knock-out I rose from behind the ledge of bank and moved towards them. As soon as they saw me one fluttered up into the branches and stood panting, with drooping and quivering wings, just out of reach, and the other staggered away and crouched among the undergrowth. These birds had a bower or playhouse not far away from the scene of the duel. It was built mainly of sticks, and was decorated exclusively with small shells. They built a flimsy twig nest in the same branches, where combats between others of their kind were not infrequent during the breeding season—November and December.

I witnessed many other bird fights about there, both in scrub and forest; and “pugnacious birds” were sometimes a subject of discussion amongst us. Of those that occasionally gave a sample of their pugnacity in this rich region, the Spangled Drongo, the Greenie or Chikoowee, the Magpie, Dollar Bird, and the Spur-winged Plover were prominent. The Spangled Drongo was a cheeky and dominating habitant of the dense timber—a vicious fighter, which attacked even Crows and Hawks. Its peculiar harsh cry was heard only now and again in the locality, for it was a bird of wandering habits—with a range extending throughout the eastern part and the northern coast of Australia to New Guinea. The Greenie (Chickoowee or White-plumed Honey-Eater) was common about the place, and a general favourite. He was one of the tamest of the family, and one of the plainest, his coat being greyish-brown with a greenish tinge, his vest yellowish-brown, and his only ornament the white ear plumes that formed his distinguishing feature. He loved the gardens and the eucalypts, living on honey and insects. An active and saucy little chap, he bossed around with an air of general ownership; but his loud and lively “Chick-oo-wee” was one of the cheery calls from the near trees.

There were several quarrelsome and combative members among the Honey-Eaters, notably the Gill Bird (Wattle Bird) and the Tallarook or Brush Wattle Bird. The first was common among the timber, a favourite sporting bird, easily recognised by the red fleshy wattle at each side of the neck, somewhat resembling a pair of ear-rings. It was particularly effective in defence with its sharp claws, taking a tenacious and painful grip when handled. Sometimes the Gillies assembled in thousands; at other times the rough guttural call of "Got to walk!" was only occasionally heard. The Tallarook (Brush Wattle Bird), a showy but smaller denizen, with no wattles, mingled an equally curious note with the medley of voices that greeted us in the sunny morning. Though of a bold and fightable disposition, it was less frequently seen than its relation, as it liked a more sheltered habitat.

The Magpie, Spur-winged Plover and the Dollar Bird, while showing a peaceable disposition during a good part of the year, were remarkably aggressive in the breeding season. We received startling reminders of this in the paddock, when the sudden loud snap of Maggie's mandibles near our ears, or a vicious swoop of the Plover, would apprise us that we were on forbidden ground. With the sharp spur on either wing the Plover was capable of inflicting a severe blow; but it was generally the intruder's hat that was assaulted. Often, too, the old dog that accompanied us would beat a hurried retreat from Maggie's savage darts, his tail between his legs, and an insulted look on his face. The Dollar Bird (Australian Roller) furiously attacked anything that approached his home. He was one of the show-birds of the big timber by the river side. Some people said his general appearance was green, some said it was blue, there being several shades of blue and green in his elegant dress. The inner half of his wing was light blue, the outer half dark blue, with a conspicuous round, white patch (the dollar) in its centre; his head and back were dark brown, throat dark blue, bill and feet red, abdomen light green, tail dark blue, with a light bluish-greenish band across the middle. He was a bold and active insect-eater, whose pleasant loud call was often heard from the tree-tops not far from the house. Sometimes he was alone, but mostly hunting with his equally handsome mate.

The Butcher Bird, whose home was a patch of swamp oak-trees beyond the lagoon, was a little savage at most times, and a bossy fellow when nesting was in progress. He was not aggressive in the same way as the Magpie, but more hostile towards other birds. The midgets feared him, for he occasionally caught one and killed it. He had his "butcher's shop," impaling his prey on splinters, thorns, and twigs, where it was eaten at leisure or left for future use. Sometimes two cock birds engaged in a running fight, their strong hooked bills clipping sharply as they snapped at one another amidst the boughs and in the air. The Sacred Kingfishers, whose abode was in an arboreal ants' nest only 50 yards from the door, attacked everything that encroached upon their domain. Their pet aversion was the Goanna, at which they would dart with great vim and determination. It didn't matter whether they were nesting or not, they always showed fight to that egg thief. They were our sentinels, for we always knew when a Goanna was about by the noise they made.*

A MOOT QUESTION.

By DR. A. G. BUTLER.

(Concluded from p. 64.)

Now in the above observations it is admitted that the plumage gets paler in wet weather, and the underlined *in toto* seems to indicate that a similar effect is obtained with soapy water, although the colour is not completely washed out; but our member, Dr. Van Someren goes further, and states that he has a good series of skins "collected at all times, rainy season and dry, and not in any single instance do any of the feathers show the slightest trace of this red colour being washed out by wet." Well, I don't pretend to explain why our member's experience differs so remarkably from that of other observant ornithologists, although I do not doubt that there is an explanation.

As regards four bottles of water, each containing one feather taken from dried skins, I should not expect them to change, and

* Goanna = so-called "Iguana," a species of Monitor Lizard.—G.R.



THE END OF A PERFECT DAY:
THE GREAT AUSTRALIAN COLLECTION ARRIVES AT
THE ZOO, JUNE 9TH, 1908.

Many avicultural rarities were brought over in this collection. The accompanying photographs are believed to be the only ones taken of the event, and have hitherto remained unpublished.

that plucked from a living bird would probably not change whilst in a quiescent condition, though it might do so if the bottle were shaken; the steady beat of heavy rain upon feathers or the flapping of the wings in water would be far more likely to wash out pigment than if the feathers were merely standing still in a bottle.

I have frequently noticed, when quill-feathers have been plucked or knocked out of the wing of a living bird, that their proximal extremities were moist and slightly sticky: moreover the quill itself contained a certain quantity of serous lymph (in some cases the tip of a torn-out quill is smeared with blood like the fang of a freshly-extracted canine tooth), and I have seen parrots which have acquired a depraved taste through being fed upon meat pull out and chew the quill of a flight feather to gratify their unnatural appetite.

On the other hand, if a moulted quill is examined it is found to be quite dry, which seems to indicate that moult is a natural result of the withdrawal of serum from the feathers, and that what is known as "French moult" is the result of a feeble constitution which fails to supply the feathers with needful nutrition, for I utterly fail to see why it should be supposed that feathers, any more than hair or teeth, could retain their attachment to the body when deprived of vitality.

Now, when a feather becomes dry, it seems to me reasonable to expect it to absorb a certain quantity of grease from under the skin; if so, this might explain, not only the slightly duller colouring of the plumage in dead birds, but also a more greasy condition of pigment in moulted feathers: so that soap, soda or ammonia might be needed as a solvent to release the colouring in water: whereas in a living bird whose plumage (according to Heuglin) is abnormally free from grease, the pigment might readily be released in pure water.

Entomologists will, I think, admit that the wings of a living butterfly do not speedily absorb moisture: although it is quite possible to dye them, as I proved about the year 1873, by dipping the tips of the front wings of a number of white butterflies into magenta

* I dare say some of our older members will call to mind, as an example of this, a miserable oddity which used to trot around on the floor of a large cage in the Crystal Palace with literally not a rag on.

dye (to simulate some of the African species of the genus *Teracolus*) and turning them loose in my garden. After death undoubtedly the pigment is distinctly greasy, but (as already stated in a previous paper) it flows freely out of the scales like so much paint when the wings are steeped in water in which soda has been dissolved. Of course it is well known that the wings of some butterflies and many moths after death gradually absorb grease from the body to such an extent that they have to be soaked in benzine in order to restore their colouring and render them fit for the cabinet.

I therefore conclude that the solvency of the pigment of living Touracous in clear water may vary according to the period at which the plumage is subjected to it, and that of individual quills according to whether they have been removed from a living bird or been moulted out: but in any case, and in spite of our friend Dr. Van Someren's experience, I do not think we are justified in discrediting the statement of those naturalists who have definitely asserted that the red pigment in the wings of Touracous is washed out during heavy rains or when bathing and is shortly afterwards recovered.

Let me quote one or two more authorities: In his instructive little book, 'The Story of Bird-life,' p. 25, Mr. Pycraft says of turacin, "In addition to the colouring matter, these feathers contain from 5 to 8 per cent. of copper, which can be extracted, Mr. Church tells us, by soaking in a little weak ammonia and acetic acid, and filtered off as a metallic red or blue powder. These birds lose the red colour when washed by the rain, but regain it when dry; moreover, this colour is said to tint the water in which they bathe, just as is said to be the case with the common Heron."

Once more, in 'The Ibis' for 1900, p. 520, Messrs. R. B. and J. D. A. Woodward say: "We noticed that the birds shot after rain had lost much of the brilliancy of the carmine colour of the wing-feathers; but apparently the colour returns after the weather gets dry again."

Well, there is my excuse for believing in the absorption of colour by the plumage of Touracous. Now let us turn to Dr. Van Someren's observations respecting *Pyromelana*. Among those which he says appear to bear evidence supporting my statement, he mentions young males changing into the breeding plumage for the first

time. Now I really cannot see why a bird assuming its nuptial dress for the first time, provided that it only passes through the usual partial moult, should be regarded as exceptional; but the statement that the feathers are in quill, indicating a moult, in this and the other two classes which he mentions certainly does not correspond with my own experience or that of the late Dr. Stark and various other field-naturalists.

With regard to what Dr. Van Someren says about my *P. oryx* commencing the change rather late and dying shortly afterwards, he has failed to observe that the time of change was not exceptional but habitual, and that if the bird had not happened to die during the change its transitional plumage would not have been preserved. To assume, because the change from one plumage to the other was slow, that the bird swallowed all the feathers which it moulted out, is rather far-fetched; moreover, my question—"What becomes of the moulted feathers?" in my article published in 1916 refers to the Indigo Finch, not to the species of *Pyromelana*, which are admitted to pass through a partial moult, so that one does see a few of the small feathers dropped from the rump and flanks in order that they may be replaced by the far larger, softer and more ornamental plumes which greatly add to the charm of its nuptial dress; but at this season I have never come across quill-feathers, although at the autumn moult the latter, on account of their size, are very conspicuous.

I occasionally saw one of my Hangnests, after playing with a moulted feather for a considerable time, swallow it; but as a general rule when it had been passed in and out of its bill, had been held under the foot and some of the barbs torn out, it was dropped on the floor. Of course nobody could seriously suggest that any bird would devour the whole of its shed plumage, even if it were possible for it to choke down its quill-feathers, and as the latter are those most noticeable after a moult I think that point need not trouble us.

Of course my observations may have been faulty: I do not claim infallibility any more than others; but so many have come to the same conclusion as myself, that I feel it to be only just that the question should be thoroughly studied by many unbiassed workers before it is accepted as a fact that a perfected feather is physiologically dead.

Moreover, in the autumn of 1896 one of my Goldfinches moulted out with a golden instead of crimson face, and the late Rev. H. A. Macpherson assured me that this was a common occurrence in captivity. Now, the moult being completed, this colouring should have been retained if the feathers were physiologically dead; but, as a matter of fact, it was very gradually replaced by crimson; just as the buff on the heads of the young Grey Cardinals slowly assumes the scarlet hues of the adult plumage. The change of colour in the bill develops much more rapidly in some individuals than in others, being perhaps affected by their condition of health.

Lastly, I cannot regard the presence of sheathed feathers scattered over the body, in birds so combative during the breeding-season as males of *Pyromelana* are well known to be, as conclusive evidence of a general moult; I should rather consider them as replacing those which had been plucked out. Of course I may be wrong, but why, then, have solitary males in my aviaries not exhibited a similar condition?

REVIEW.

BIRD PROTECTION IN EGYPT.*

The Egyptian Government has been well advised in issuing the pamphlet before us. Written by two members of our Society, it gives the names—English, French, Arabic, and scientific—of the principal species protected by law, with concise descriptions of plumage and markings. Numerous coloured illustrations, reproduced by the Survey of Egypt, accompany the text and add considerably to its value. It is, indeed, fitting that this work should be connected with our Society: for to every bird-lover aviculture is by no means limited to the mere keeping of pets, but embraces a field that widens almost daily. Especially are we interested in bird protection, for if all the birds were destroyed there would be none, indeed, for our aviaries.

Even the very names given in this publication are interesting. Some are obviously derived from the cry of the bird they designate—

* 'The Principal Species of Birds Protected by Law in Egypt,' by Capt. S. S. FLOWER and Mr. M. J. NICHOLL. Cairo: Government Press. P.T. 5.

such as "Traquet" for Wheatear and "Vanneau dix-huit" for the Peewit or Lapwing. We are sorry to see *Cisticola cursitans* described as the "Fan-tailed Warbler," since this might lead to confusion with the true Fantails of the Australian genus *Rhipidura*: the simple term "Cisticola" would have been a title at once distinctive and zoologically correct. We were glad to see mentioned the curious habit of nesting on the tops of buildings practised by the Senegal Stone-Curlew—one of the most unlikely of all birds, one would think, to avail itself of such accommodation.

Although of unequal merit, the figures are in the main good. We would specially mention the Tawny Pipit, the White-Collared Flycatcher, the Skylark, and the Buff-backed Egrets: these are charming examples of the illustrator's art. Very beautiful also are the Senegal and Saharan Stone-Curlews, limned not only with exceeding accuracy, but rendered in a delicately minute manner that suggests the lines of a fine etching; to us they suggested a mural decoration on some ancient temple. On the other hand, the artist has read into the plumage of the Lapwing too much of the brightness of the Egyptian sky; a very dingy Little Bee-Eater gives but a poor idea of the bird of Cleopatra, and this is the more unfortunate owing to the skilfully-presented, quiet beauty of the Blue-cheeked Bee-Eater immediately above.

G. R.

AS IT WAS IN THE BEGINNING.

It has well been said that the influence of the war has been so far-reaching that there is not one of us whose life it has not profoundly altered. The same, indeed, may be said with equal truth of communities and societies, such as our own. The importation of live birds has had to be severely restricted, almost to extinction; even the healthiest pets die in the end, and our fast-emptying aviaries contain but a shadow of their pre-war population. There are many of our members who have no birds at all.

This state of affairs is reflected in the Magazine. Instead of papers exclusively devoted to the breeding and management of birds we note a most interesting evolution. Mindful that the Society is

also wedded to the study of birds in freedom, our contributors have sent in some valuable material under this head; others give purely scientific articles of absorbing interest; others, again, have studied that most important matter of all—the influence of birds on the crops. The Magazine, in fact, like all other journals of permanent value, has advanced with the times. “We bring the world before you” aviculturally “far as creation’s bounds extend.”

This, then, is the up-to-date spirit of the new aviculture; any other would have been as cramped and confined as the birds it professed to study.

It is therefore with much pleasure that the Editor announces as a novelty a number in the old style, to appear next month. All the features, as far as possible, that appeared in pre-war days will once more for a brief moment crowd the avicultural stage. Thus, Lieut. Delacour will write on the Cologne Zoo after the armistice; Mr. Finn will give us a paper on Herons; there will be an article on African Waxbills, and another on the chief aviary in a well-known Zoological Garden. The correspondence column, so long closed for urgent reasons of economy, will reappear with interesting features; even the review will be largely avicultural. The illustrations are not yet chosen, though it is probable that one photograph at least will be taken from the fine collection presented to the Society by Commander Rotch, whose work has already often appeared in the Magazine.

Thus will the dry bones of the avicultural Dodo be once more clothed with muscle and skin and feathers—in our March issue the spirit of the old aviculture will live again.

G. R.



Photo. by Commander Rotch, R.N.

FROM INDIA'S CORAL STRAND:
THE WHITE-FACED HERON.

THE
AVICULTURAL MAGAZINE,

BEING THE JOURNAL OF
 THE AVICULTURAL SOCIETY
 FOR THE STUDY OF
 FOREIGN & BRITISH BIRDS
 IN FREEDOM & CAPTIVITY.

Third Series.—Vol. X.—No. 5.—All rights reserved.

MARCH, 1919.

HERONS.

By FRANK FINN, B.A., F.Z.S.

I should advise anyone who keeps any sort of Heron at large to clip more than a few feathers of its wing if they want to stop its flying. At first, at any rate, it would be advisable to cut nearly all the secondaries of one wing as well as the primaries, though one might leave the inner three—the so-called tertiaries—for appearances' sake. I found that on trying to keep a common Heron in a garden, many years ago, with only the primaries of one wing cut, it soon flew over the wall, using a low tree as a take-off.

Moreover, a magnificent pair of common Herons* they had at Kew some years ago, pinioned, actually tried to nest on the fountain base in the middle of the pond, to which they flew regularly, though in a most awkward manner, looking as if they would drop into the water at every stroke. They ultimately disappeared, having, I believe, flown away.

* These birds in the breeding season had the base of the beak, facial skin, and legs bright brick-red, contrasting beautifully with the grey plumage. They were, I believe, about ten years old. Does this mean that the common Heron has to be very mature before it gets this final touch to its appearance? I have seen nothing about it in bird books.

Such large-winged birds appear in time to accommodate themselves to the inequality artificially produced in their wings. There used to be, and very likely still is, a pinioned Black-headed Gull at St. James's Park which flew about freely, though it never went away like the wild ones; and I once saw in Regent's Park a Herring-Gull with a clipped wing practising flying on a very windy day. It mounted to about fifty feet above the water, and then suddenly dropped as if shot, having evidently failed to regulate its stroke; but its attempt gave me some idea as to how a large-winged bird, though at first disabled from flight, can—accidentally no doubt in the first place—regain its lost power to a sufficient extent to get away.

THE COLOGNE ZOOLOGICAL GARDENS AFTER THE ARMISTICE.

By Lieutenant DELACOUR.

Translated by THE EDITOR.

My duties with the British Army having summoned me into the part of Germany occupied by the Allies, I was able to visit the Cologne Zoological Gardens on December 23rd last.

Having many a time heard during the course of the war that the starving Germans had been compelled to sacrifice their animals, I supposed that I should see only empty cages. What was my astonishment to still find there a very fine series of animals, and a collection, all things considered, better, indeed, than that in Paris or even London!

On entering one finds on the right some Pheasant aviaries which only contain common species—Golden, Silver, Sacred, Reynaud's—and some Pigeons; then come, in the enclosures, Fallow Deer, Hog Deer, Sika, and Red Deer. One of the yards bears this label:

HELDERHIRSCH.

geb. 23-5-16,

St. Gobain (Aisne).

A Stag taken in France during the war!

In the series of cages one finds many Wolves, Foxes, and other indigenous and exotic carnivora. The Bears are very numerous—

at least a dozen Brown Bears, as many White ones, and several other species.

The Bird House is very well appointed: one finds cages all round. The centre is occupied by aquaria and vivaria. The collection of Parrakeets there is remarkable. Almost all the species of Macaw and Cockatoo are represented—amongst others, Lear's Macaw and the Gang-gang Cockatoo (*C. galeatus*), and a fine pair of *Polythorynchus stellatus*. The Amazons, *Pionus*, etc., are well represented (*A. diademata*, *bodini*, *P. menstruus*, etc.). There are but few Parrots, but there is a good pair of *Cyanolyseus patagonicus* and a charming *Brontogenys pyrrhopterus*. Further on I note a little Heron with a most curious, enormous beak (*Canchroma cochlearia*); a *Dacelo gigantea*, a Toco Toucan, several Hornbills, a Nicobar Pigeon, a Giant Whydah, Chinese Blue Magpies, and a number of small and medium-sized birds. Further on I observe a couple of *Goura coronata* and a couple of the rare Sclater's Goura Pigeon, and some white Sacred Ibises.

In the centre of the house one sees a *Python molurus* and a Reticulated Python, a certain number of Crocodiles, Alligators, and Caimans; Lizards, Tortoises, Bull Frogs; Butterflies and other insects. In the aquaria one finds various Chancitos, some Hemichromids, Chromids, etc., and young Sturgeons.

On the sheets of water the web-footed birds are not very numerous, but belong to a variety of species. One finds Snow Geese, Ross's Blue, Canada, and Magellanic Geese, etc., and *Anseranus melanoleuca*, Bahama Ducks, Whistling and Chilian Ducks, etc. There were at least fifty Rosy Flamingoes, and three Red Flamingoes from Mexico which appeared to have been newly imported.

The collection of Raptores is very fine: almost all the larger species figure in it—Eagles, Vultures, Condors, Ospreys. I call attention to a Harpy Eagle, a Bengal Vulture, and a King Vulture. There were also a certain number of nocturnal birds.

The big birds are a Rhea, two Emus, a Bennett Cassowary, a Westermann Cassowary, European, Numidian, White-necked and Blue-Crowned Cranes; and, finally, a couple of the rare Monk Crane.

I note also two fine American Bison in the midst of a series of Buffaloes, Yaks, Llamas, and Camels. There remain, amongst the

great Carnivora, three Lions, three Tigers, two Jaguars, two Leopards, a Puma, and a Black Panther. The Monkey House is well enough filled, without containing anything of particular interest. Some Lemurs, Skunks, Raccoons, Otters, and other small mammals occupy numerous cages, both in and out of doors. Finally, the Zoo of Cologne still possesses some big animals—a young Giraffe, a Hippopotamus, an Asiatic Elephant, an Indian Tapir, and a grand two-horned Rhinoceros. In the same apartment one finds Zebras, some Antelopes, and a Gnu (*Catoblepas gorgon*).

Let me add that all the animals are in excellent condition, and appear very well fed. The establishment is well managed. To sum up, the Zoological Garden of Cologne has scarcely suffered at all from the war, and it is likely that it is the same with other German Gardens.

It is not without bitterness that I have compared it with the mournful ruins, the heaps of rubbish, the smashed trees, the twisted iron-work and broken glass which represent to-day my poor garden at Villers-Bretonneux, which was still flourishing less than a year ago. I conclude that our public and private collections which have been destroyed by the Germans ought to be reconstructed at their expense.

BIRDS OF PARADISE.

By AN OLD AUSTRALIAN BIRD-LOVER.

The care of Birds of Paradise in an aviary has been, and probably still is, regarded by many a bird-lover as a difficult problem. They come from a country in the heart of the tropics reputed for its deadly climate, and live in forests whose tree-tops, some 150 ft. high, form an impenetrable screen against sunlight reaching the dense undergrowth, in this way creating an atmosphere stifling in its heat and vapour. It is therefore the more surprising that those species of Birds of Paradise which have reached us here, such as the Six-plumed, the Red, the King, the Superb, the Magnificent, and others have with care so quickly and almost easily acclimatised themselves to our changeable weather conditions. This year especially there

has been an exceptionally bleak and cold winter—in fact, I have taken ice half an inch thick off their drinking pond. Night and day bitter cold westerly winds were blowing, and do so at the present moment, yet these birds slept in their open shelter all the time, and in the mornings look sleek and slim and happy when other inmates are fluffed out, resembling more a ball than a bird; they even enjoy a bath in the ice-cold water.

When, some years ago at the end of winter, I acquired my first Birds of Paradise, things worldly were generally more hopeful, and one felt justified in granting oneself a little extra cash for such pleasures. I felt very concerned at the time as to suitable housing for them, but decided eventually, and made ready for their reception my most sheltered aviary, 20 ft. by 60 ft., thickly planted out with shrubs and with just an open shed behind. This shed we filled with big branches, screening the open part thickly half way down, so that the inside was dark and cosy and yet open. I cannot say that in those early days this new acquisition was an unmixed joy. The pleasure of possessing these rare and expensive birds was much tempered with the anxiety as to how they would take to their new abode. Each morning one scanned the ground in fear lest one of these gorgeous birds had “gone before”! After a week, however, I felt that my birds would be all right. Meanwhile, I had a look at those in the Sydney Zoo, purchased at the same time. They had been placed in an open aviary, and several mornings I saw them crouched cold and shivering against the wire. They were being “hardened off.” That a number did survive shows how very hardy these birds must be. From the commencement of keeping them I tried to get my birds used to eating dry food, that is to say, rich cake with plenty of eggs and butter—we can allow ourselves that luxury out here even now—mixed with crushed hemp-seed. Besides, I give them the best of fruit—not refuse—such as bananas, apples and pears, whichever is in season, allowing them to have the fruit whole, not cut up as in the Zoo here; then, especially during summer-time, it won't deteriorate and get sour so quickly, causing gastric troubles and death to the birds. During the warmer period they got as a luxury crickets, grasshoppers, locusts, and—what they like best—white grubs out of the ground or decayed wood, the larvæ of various

species of beetles. I noticed that whereas other birds will kill these insects first, especially such as have nippers or pincers like the grubs, the Birds of Paradise just grab them with their powerful claws, and—they are remarkably sharp!—holding them down with one foot, will eat them right away. It is remarkable how systematically they proceed to dismember the locusts, or cicadas rather, always the same way, commencing with the pulling off of the wings; then come the legs in rotation, and then the head last. It is strange that even whilst being pulled to pieces these locusts will sing. To have small birds in the same aviary is certain to court murder, for the Birds of Paradise are great cannibals: even the little King, the gem of all I know, is not above stealing eggs and young out of the nests of smaller birds. This King Bird of Paradise is a great mimic. He often delights to give the note of the Butcher Birds, followed by a warning call which sends all the birds inside and those near, outside the aviaries, under shelter. He has quite a *repertoire* of calls, some not unpleasant, and his voice, like that of the Red Bird, is heard often and far off. He is certainly my favourite, and the most interesting and liveliest of those Birds of Paradise I know. When the moult commenced during September–October I noticed my Birds of Paradise becoming very tame—a young Magnificent especially so—as Soft-Bills have a habit of doing before or when they get “light.” I caught it out, and placing it in a large cage by itself I set all the dainties I thought it would delight in before it. Alas, a few days later the bird died—I admit through my ignorance—but I had learnt my lesson, and when the others behaved in a like manner I realised that they asked for more live food, which I now supplied in additional mealworms. Some would eat forty to sixty and more per day. They soon improved, and as their moult progressed so of themselves left off eating mealworms. Just now in full colour, they hardly touch them. I might mention that young cock Birds of Paradise have the plumage of the adult hens and are hard to distinguish from the hens, but once in plume they always retain the characteristics of the male, dropping their “show” plumes only. I understand from Mr. Ward that it takes three years before the Red Bird gets the two streamers, and only in the fourth shows the red plumes, which then, year by year, improve. I

verified this fact myself. Unfortunately in this bird the beautiful orange head-feathers on the freshly-caught bird become after the first moult in captivity a very pale and sickly yellow; the same applies to the shield at the back of the neck of the Magnificent. If one only knew how to keep the orange tint in the feathers or the red as in the Sepoy Finch, Scarlet Tanager, Red Robin, etc. ! Strange to say, the King Bird retains that lovely velvety maroon-red colour. What is the cause? What is the remedy?

The flight of the Birds of Paradise is the characteristic one of all scrub birds, accompanied by a kind of rattling noise—the Quail and Partridge species make the same sound when flushed. It is astonishing how these birds love the rain. The sun will not draw them out of their shelter into the open; the rain does so every time: even the Superb, the most shy and therefore most unsatisfactory of the lot, will come out for a drenching, spreading out and displaying his beautiful plumes. At times in the morning the Red Bird and the Six-Wired will come out to bask in the sun, the former perching on a branch with head back between the shoulders, the wings and plumes well spread as we used to see them poised on ladies' hats. The only one, however, that will dance in captivity is, it seems, the Six-Wired species. I have seen the King Bird raise his two tail plumes Lyre Bird fashion, puffing out and drooping the wings like a clucky hen, giving a peculiar call at the same time, which leads me to believe that this display is a love dance for the edification of the hen. That these birds will breed in captivity given suitable conditions I am convinced. I have seen the Six-Wired carrying sticks, and a pair of Red Birds in the possession of Mr. De Berri-Waxman here also appeared to be anxious to nest, the cock bird carrying sticks and becoming very spiteful. Unfortunately, shortly after, the cock bird died suddenly and without apparent cause. My King Bird is very anxious for a mate, to judge by certain calls and his behaviour. My Birds of Paradise are all males. One would like to make the experiment, even at the high cost of the birds, but there are certain restrictions in force here regarding keeping them, one being that their dead bodies must be handed back to the Government authorities and others—so one does not care to make the effort. For exhibition purposes in Zoos or even privately Birds of Paradise are not satisfac-

tory at all, excepting, perhaps, the Red or the Blue Bird of Paradise. These seem to come out into the open much more than the others. Even Mr. Ward, with his wide experience, says that he has never seen a King Bird of Paradise in freedom. They must have long flights and thick scrub aviaries for shelter. I am sure that, however large a cage may be, if they are kept like Canaries they will not live very long. They must have shelter: however little is given they make the best of it. As to keeping them otherwise, as I do, I can only say that I wished all my Soft-Bills would do as well.

I have asked Mr. Ward, who is again returning to New Guinea, to try and get some information as to the nesting of the various species of the Birds of Paradise, and I may be able to impart some information on that point later on. Then some enthusiast at home will perhaps make the experiment of trying to breed one or the other species.

THE HIMALAYAN SISKIN (*Chrysomitris spinoides*).

By W. SHORE BAILY.

This handsome Serin does not seem to be very often imported, and when it does come over is frequently met in true pairs. Coming as it does from the cold regions of the Himalaya, this species is admirably suited for our aviaries, the variable English climate having no ill-effect upon it. A pair bred with me last season—being the first time in this country, I believe. They built rather a neat little nest of dead grass, moss, and hair. Three eggs were laid—bluish-white, with a few brown spots chiefly at the larger end. The little ones spent rather a long time in the nest, and I did not notice them on the wing until eighteen days later. As far as I could see they lived entirely upon seed, both parents feeding them after the first few days. When they had left the nest the cock took the principal charge of them, and a very good father he made. It was a pretty sight to see the young ones chasing their father around and around their large flight. The young ones were

brownish-grey, heavily striated on back and breast with a darker shade of the same colour. They are now, at five months old, beginning to show the colour areas of their parents. In 1914 I reared a rather handsome hybrid from one of my hens, by an English Greenfinch Cock, and exhibited it successfully at the London Cage-Bird Show. I obtained my two pairs from four different sources, and always under the name of Sikhim Siskins, and until recently had always thought that these and the Himalayan were one species. This spring Mr. Teschemaker, who has bred *S. tibetana* freely for the last two seasons, asked me to exchange a pair of young birds with him, which of course I was pleased to do. On the arrival of his birds I at once noticed the difference, and on looking up 'Bird Notes' I found that both varieties were described in the volume for 1914. There appears to be nearly an inch difference in size, *S. spinoides* being the larger; this bird also has a yellow rump, which *S. tibetana* has not. The female of the latter species is also described as being more or less striated with brown, whereas the female of *S. spinoides* only differs from the male by being paler in colour. The young Siskins were very much darker than the Himalayan youngsters, the hen especially showing very little yellow as compared with the cock. Both species are very desirable aviary birds.

AVICULTURE AT THE MANCHESTER ZOOLOGICAL GARDENS, BELLE VUE.

By GRAHAM RENSHAW, M.D., F.R.S.E.

In these days of empty aviaries and restricted importation the newly decorated flying-cage in the Manchester Zoological Gardens is of exceptional interest.

This aviary, which has been in existence for many years, is situated in an ante-room of the Lion House; it has long sheltered a series of Doves, Weavers, Budgerigars, and various other birds. There is ample flying space; a service passage at the back gives access to the interior; there are large seed-boxes for food, and water is supplied by two stone fountains. The perching accommodation

was formerly provided by large spreading branches, in which the Weavers used to construct their nests; now the branches are shorter, though sufficient—presumably so as not to interfere with the new background that has been painted in.

This recent decoration is at once novel and striking; painted by the master hand of Mr. R. E. Holding, the effect is excellent. In the Zoological Park at New York it has long been the custom to furnish scenes from actual bird-haunts as backgrounds for the cages. Over here Manchester leads the way in mural decoration, the aviary at Belle Vue being the only instance of its kind in the country. Mr. Holding has depicted a mighty African river flowing between wide banks, to disappear in a broad waterfall. On the horizon we discern a range of purple mountains, while in the foreground are seen many feathered fowl. Weavers and Whydahs, Mousebirds and Bee-eaters fly over the scrub or perch on branches; great black and white Hornbills are here, with Sacred Ibis and Egyptian Geese. Touracoes sit silent yet alert on a convenient bough; close by a trio of Shrike please the eye with their blue and white plumage. In the foreground we recognise the familiar figure of the Masked Dove (*Æna capensis*); by the water-side stands a Francolin and the pretty, historic Crocodile Plover. Conspicuous in the scheme is the White-bellied Crow, without which no African landscape would be complete.

On the right wall the Ornis of Australia is depicted in similarly suitable surroundings. The African birds are replaced by great Pelicans, a Rifle Bird, and the Australian "Magpie" (*Gymnorhina*). We see the Laughing Jackass emitting its raucous notes, and there is the Wonga Pigeon and the curious Maned Goose. The left wall transports us to America, with its Curassows and Hangnests; a Toucan yelps industriously, while a Yellow-fronted Amazon sits phlegmatically on its perch unmoved by the clamour.

The lower portion of the background is occupied by a wired-in service passage, skilfully subdued by white painted wirework, which, by dazzling the eye, masks all detail. The front wires of the aviary, on the other hand, are rendered as inconspicuous as possible by a coat of black. The stone fountains are of simple and pleasing design: the upper shallow basin is smaller than the lower, and both allow ready bathing and drinking facilities. Many of the birds in this

aviary were in excellent condition, no doubt attributable to the generous space allowed for exercise. Among the exhibits we noticed Budgerigars, Cockatiels, a Conure, a Californian Quail, an Australian Crested Pigeon, a Blue and Yellow Macaw, a Blue and Red Macaw, a bright green Love-bird, a Song Thrush, a Saffron Finch, and a large yellow Weaver. There was a good series of Psittacines in the Lion House annexes, and we noticed besides some Macaws, the Greater Sulphur-crested Cockatoo, Leadbeater's Cockatoo, Pennent's Parakeet, Senegal Parrots, Black-headed Carque, and some Amazons. In this building there is a long-tailed Glossy Starling, which shows no sign of age though it has been several years in the collection.

In another part of the gardens there is an ideal installation for water birds. It consists of a circular well-grassed island, with a tiny shrubbery at the top, which serves as a wind-screen. There are five well-grown trees, including two weeping willows. The moat running round the island is wide enough to allow plenty of swimming exercise, and the whole is encircled with a neat, low railing. At present the tenants are Demoiselle Cranes and a Flamingo. In the summer the bright red plumage of the Flamingo made a beautiful and striking picture, set off by the green grass and a vivid blue sky. Swans have also been kept in this enclosure, where they are seen to great advantage.

Not far off is the Ostrich House, a wooden structure with two paddocks, containing an Emu and a very tame cock Rhea, which feeds from the hand. The Pheasantry is divided into several outdoor flights, each with an inner apartment, and contains Swinhoe and Silver Pheasants; also a Gold-Amherst cross, Peafowl, and a Crowned Crane. One compartment is reserved for Cormorants, whose blooming plumage shows them to be in the best of health. The Cabypbara shares his enclosure with an Egyptian Goose, and in the Waders' Aviary are Sarus and White-necked Cranes, a Violet Gallinule, and Sea-Gulls.

Other interesting birds in the collection are a pair of Indian Blue Magpies, very smart with their black heads and necks, azure blue backs, long blue tails, and orange bills and feet. Alert and very wide awake, they utter curious metallic, half-piping notes, flying

easily from branch to branch, or descending earthwards with bounding hops.

The Black American Vulture is here, its sooty plumage showing lines in it, like black watered silk; also a Buzzard—like a miniature Eagle—its brown plumage glossed with purple in the sunlight. Here we see the half vulturine Caracara from Brazil, and a large Horned Owl.

In conclusion we mention the Condor, which has lived many years in the Gardens; the Golden Eagle; the Bald Eagle from America—Uncle Sam's bird of freedom; the scraggy, untidy-looking Pondicherry Vultures; the beautiful Curassow, with its blue-black plumage and intelligent eye, a Pheasant of the New World; the common Crowned Crane, perhaps the original of the fabled Phœnix; and the lovely Wood Storks, black and white and pink. Even more beautiful is the snow-white Egret, its spotless purity set off by the pale green eye and cere, and black legs and feet. There are two Marabout Storks: one squats on his tarsus, his head and neck retracted between his shoulders; the other stands upright with wings neatly folded, like some philosophic, very correct old gentleman wrapped in a long tail-coat. The Black Stork in the collection is a nice bird. Though much smaller than the familiar white species, he is very choice, with his plumage shot with changeable purple-bronze, like the feathers of a Bird of Paradise. Last of all there is a solemn old Pelican, with plumage agreeably tinted with salmon colour, and a pale green pouch under his red-tipped beak.

We would recommend all our readers to visit this collection at least once; indeed several hours can be profitably spent in avicultural study at these well-stocked and long-established Gardens.

FOREIGN FINCHES AND WAXBILLS.

By R. N. GIBBARD.

Last September I purchased a few foreign birds from the north of Scotland. I found that they had been kept in a large cage indoors, with a fire in the room on cold days. The birds included Cordon Bleus, African Fire-Finch, Orange-breasted, Common and

St. Helena Waxbills. Since I had them I have put them in a small aviary made from a part of a conservatory, size about 7 ft. 6 in. high, 5 ft. back to front by 5 ft. wide. The end and back are brickwork, the front wood 3 ft. high and glass, and roof glass, with a wire-netting front on the inside of the conservatory and a tiled floor. The position faces north; access, from conservatory to drawing-room (where mostly I have a fire every evening), is by casement doors.

The birds have nesting-boxes, which I think they use at night. Since I had the birds I found one cock Cordon Bleu on the aviary floor unable to fly. I took it out, "warmed" it up, and in a day or two it was all right again. This was about six weeks ago, and the bird is still well. I found recently the Fire-Finch and St. Helena Waxbill both dead on the aviary floor. There are now in the aviary 3 cocks and 1 hen Cordon Bleus, 1 Orange-breasted and 1 Common Waxbill (both cocks), 1 hen and 1 cock Zebra, 1 cock Longtail, 1 cock Fawn and White Bengalese. I do not think the birds I found dead were killed, as they all seem fairly friendly together.

I should like an opinion as to the probability of my keeping *particularly* the Cordon Bleus and Waxbills in this aviary during the winter.

I could heat the place during the *severest* weather by an electric radiator, but owing to fuel restrictions could not do anything more.

I could keep the Cordon Bleus and Waxbills in a cage indoors in a room where fires would mostly be, but I do not wish to do this unless it is absolutely necessary.

The Cordon Bleus are good birds, and I am desirous of keeping them for breeding in the spring if possible.

I might add that this year is my first with any birds, and I am very inexperienced. But I am extremely fond of my feathered pets, and anxious to do the best I can for them.

I should have said, perhaps, that the food I give is millet spray, Indian and white millet seed and canary seed, cuttle-fish bone—crushed and in lump; ordinary sand and bird-sand are given, I think, in sufficient quantities.

[Dr. Butler writes: "If you had purchased your birds in

the spring, there would have been a better chance for them to have become acclimatised. The change from a warm living-room to a cold conservatory is necessarily very trying to delicate African Waxbills; and African Fire-Finches are of all the most delicate—indeed, I was never able to keep them at all. Common and St. Helena Waxbills were not as a rule long-lived birds with me, and freshly imported Cordon Bleus were extremely delicate, though when once acclimatised they lived to a good age. I should certainly advise you to give the birds the benefit of the electric radiator, at any rate for this winter. If gradually accustomed to a low temperature, it is wonderful what even delicate Waxbills will stand, but sudden changes are frequently fatal. I have known the Orange-breasted Waxbill to live in an unheated outdoor aviary from one year's end to another, but doubtless it was first turned out at the end of the spring or in early summer. Your feeding is quite correct.”]

FINCH HYBRIDS.

By ALLEN SILVER.

I am at present investigating cases of hybrids between Twite and Redpoll, Goldfinch and Twite, and Chaffinch and Canary. We have heard of many of the latter, but there has always been a mistake. I am going to see owner, who seems extra sure, but expect it is another case of a mixed collection.

I report having here a Twite and Goldfinch hybrid. Twite predominates extraordinarily. Bill much like that of Citril Finch, *i. e.* Goldfinch-like; hardly any green, except on rump; probably a hen; tarsi black as in Twite. I saw later the Twite-Goldies moulted. No blaze; wings buttoned as in Goldfinch, and white webs of Twite wing-feathers suffused with pale yellow. Both crosses are perfectly genuine. Green is evidently subservient to brown in hybrid admixture. The lineal markings which are absent in one parent are well developed in both crosses. The Twite seems to minimise the shape and size of the bill immensely.

THE TWELVE SWIFTEST BIRDS OF AUSTRALIA.

By E. S. SORENSON.

[Kindly communicated by Mr. R. Colton from the 'Sydney Morning Herald,'
May 15th, 1918.]

(Concluded from p. 74.)

The Jerriang (Little Lorikeet), which so often flashed overhead in screeching flocks, was the smallest as well as the swiftest Australian Parrot. This green mite, with the red face and black wings, was easily picked out from the several other kinds that fed in the same trees, their common food being principally the honey of the eucalyptus—though occasionally they attacked fruit and grain. The Musk Lorikeet (Green Keet or Green Leek) associated with it, and was another rapid flyer. You would hear the screech of a flock overhead, and in an instant they were gone. The Green Keet, as it was generally called, was a couple of inches more in length than the Jerriang. When one was cut off from its mates it sailed after them like a streak of green lightning. The Swift Parrot (called also Red-shouldered Parrot and Swift-flying Lorikeet) was another companion. It was the biggest of the three, and when flying was distinguished from the others by the red colour under the wings. When these three started together in a flight across the clear paddock, as we were sometimes lucky to get them, the Jerriang won, with the Green Keet a close second. Redwings, however, were not so much with us as the Keets, nor were their kind in such numbers.

The two Bronzewing Pigeons were prized by game-hunters. Both were strong and rapid flyers. The Brush Bronzewing was slightly smaller than its cousin, and it was a rarer and shyer bird. We frequently found it feeding along the edge of the plantation and outside the river scrub, into which it would disappear with a whirring sound on being disturbed. We had many Pigeons in those scrubs. The little Green Pigeon was always with us. As it kept to the thick brushes its flight was not easy to gauge. The Fruit Pigeons came in season, and the Wonga was in the scrubby hills not far away. The Common Bronzewing was the swiftest.

It was a fine plump bird of nomadic habits, sometimes called a Scrub Pigeon, though its hunting ground was mainly in the open forest. It was a good friend to the thirsty traveller in dry country, for it drank about sundown, and its flight consequently directed him to water.

BIRD AND NATURE NOTES IN RUSSIA.

By CHARLES J. RENSHAW, M.D.

The railway to Moscow has required very little engineering skill in building; with the exception of a few bridges there is nothing of moment; occasional farm-houses and villages are seen as the train rushes eastward, then a deserted moated grange is passed, then forests, chiefly of silver birch, but not of large growth, pine-woods occasionally; in one place a Fox was startled by the sound of the train. A dense forest was seen, to which a Wolf was skulking home; a lagoon came in sight, in which the silent Stork was watching for its prey. As the day advanced, a few beautiful Cross-bills were seen perched upon the telegraph wires; they took no notice of us as we passed. There seemed very little bird-life, except the Grey and Black Rook,* which in Russia to a great extent takes the place of our black one. Mole-hills we saw everywhere, and one of the travellers averred that they were of a different shape from those in England.

In the summer the people start very early for market, going together in numbers as mutual protection; and very gay and well dressed they look. The congregating together is a survival of the time when Wolves in some numbers frequented the land near the forest; Wolves even now attack isolated parties at the approach of winter.

* *I. e.* the Grey Crow (*Corvus cornix*). Fleet-Surgeon Jones, writing in the *Ibis* for July, 1909, observes of the country round Omsk: "The Grey Crows continued to be plentiful; even in the marsh-land they did not diminish much." He notes further seeing Grey Crows and Black Kites in Moscow itself.—G. R.



THE CAMP-FOLLOWER.

“He was no Vulture, who could gorge one day and starve the next.”

Letters of Erasmus.

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APRIL, 1919.

VULTURES.

By A. BLAYNEY PERCIVAL.

[Reprinted from the 'Journal of the East Africa and Uganda Natural History Society.']

In a real game reserve the sick animals are killed before they have time to die, for there is little doubt that the scent left by a sick beast would be at once recognised by such animals as live on the dead and dying.

Vultures are possibly the quickest to spot the sick animal, and alight near to wait for its death, thus acting as guides to the four-footed scavengers, who all make for the spot where they see the Vultures dropping. Taking this into consideration, it can be easily seen that the only occasions on which disease in game is recognised is when an epidemic breaks out.

The gathering of the scavengers—"those who come for the broken meat"—is a most wonderful sight.

If an animal dies in the open, it is only a case of minutes before the first Vulture appears. A few minutes later the air is full of them, and then the four-footed scavengers begin to appear—the jackals first, usually in pairs. In an out-of-the-way district, or game reserve, where the sportsman is rare, they come openly trotting up, showing little fear; and if the Vultures are not too numerous they

will at once attack the carcass. If the Vultures are in large numbers they will not venture near, but will sit and await their chance of a tit-bit, or wait until only the bones are left, and then they will take what remains. Possibly an old hyæna, very hungry, will be tempted to move in daylight, but his slinking approach is very different from that of the jackal: he seems to feel that he is a creature of the night, for he comes along, taking all the cover he can, till he sees the feast, when he will hurry up to it, and, driving off the Vultures, set to work; even then he is very nervous, and constantly looks round for a possible enemy. Should he manage to get a large piece of meat, he will even retire to the nearest cover with it; one can see it is against his instincts to be abroad in the daytime.

The quick arrival of the Vultures on the scene is explained by the way in which they quarter the skies so high that the human eye cannot see them; yet with their No. 12 Zeiss-power eyesight they can see all that goes on over a big area. The sick or wounded buck is seen by one Vulture, and he drops towards it. From north, south, east and west other birds sail in towards the same point, and so the circle spreads until hundreds of birds are at the kill. The collection of hyænas at the feast must work out something on the same lines. Every hyæna has its own regular round, which is followed night after night, and, as he travels, his howl notifies his neighbours as to his movements. Should he find a kill his howls cease, and I have no doubt that this is quite enough to bid his friends to the feast.

This is, of course, if a kill is fresh. If a kill is a day or two old, which only happens when a beast has died in thick bush, and out of sight of the Vultures, it will of its own accord notify everything down wind for a big distance; or the track of a sick or wounded beast will attract every meat-eater that crosses it.

BREEDING OF CRIMSON-EARED WAXBILL × CORDON BLEU HYBRIDS.

By A. DECOUX.

In 1917 I vainly tried to breed hybrids from a male Violet-eared Waxbill and a female Cordon Bleu. The cock paired perfectly

with the hen ; several nests were built and fertile eggs laid, but the little ones were always abandoned by their parents four or five days after being hatched ! Once I hoped to obtain a success at last. The birds fed the young ones as well as possible ; I supplied them with soft food of the usual kind, soaked millet and plenty of live ants' egg. But about the twelfth day after hatching the parents seemed so restless that I feared the young were dead. I looked in the nest and found it empty. Searching about the aviary, I discovered two bodies already in pin-feather. Another nest was constructed. But I gave over the hope of rearing any young this year, for the breeding-season was coming to an end, and in October live ants' eggs are no longer obtainable.

Some time afterwards, my bird-keeper having given the birds chickweed covered with dew, some of them—and naturally the rarest—were struck down with diarrhoea, and I lost my two male Violet-eared Waxbills.

THE PIGEONS OF THE GAMBIA.

By E. HOPKINSON, M.A., M.B., D.S.O.

(Concluded from p. 38.)

SENEGAL DOVE (*Stigmatopelia senegalensis*).

Range : Africa generally to Palestine, Sokotra.

These brightly-coloured, graceful Doves are in the Gambia essentially village birds ; they frequent the yards and the immediate vicinity of towns and villages, finding most of their food at the corn-beating places and rubbish heaps, and getting their water from the water-jars and coolers in which it is kept. From this they get their Mandingo name, "Dumbokango Pura," which means "Jar-rim Dove" —a much more appropriate name (as far as Gambia is concerned at any rate) than "Palm Dove," as they are so commonly called in dealers' advertisements, etc.

Their nests are nearly always in the thatch of huts or the flat-roofed grass shelters ("kwiangs"), in which we all live as much as possible. Sometimes, however, they lay in the forks of large trees, and occasionally select smaller ones, such as oranges or limes, in

which they then make the ordinary flimsy platform which suffices for so many Doves. In every case, however, the breeding takes place in the immediate neighbourhood of man and his dwellings, and in most places, as the guests of the community, they enjoy absolute immunity from pillaging boys.

One hardly ever sees any number together: they are practically always in pairs, and are seemingly among the most constant of mates. They have two distinct notes—one a coo, the other a sort of chuckle.

In size they are rather smaller and slimmer than the Ring-neck Dove—10½ in. as against 11 in. The plumage is greyish-pink above, washed in places with chestnut; the flights are dull brown, the wing-coverts rufous internally, grey externally. The upper tail-coverts are dark grey; the two central tail-feathers are very dark grey, almost black, the others paler grey and tipped with white, these white tips being larger on the under surface than on the upper. The chin, throat and upper breast are vinous, and round the sides and front of the neck is a collar of bifid black feathers which are tipped with reddish-mauve. The lower chest and sides are slaty-blue, fading into white on the belly and under tail-coverts. The above refers to the male; the female is similar, but the colours are duller and the pattern less distinct. In the young they are still more so, the greater part of the plumage being more or less washed with brown.

The irides are brown, the eyelids dull red in the adult, grey just tinged with reddish in younger birds. The bill slate tinged with purplish, the legs dark red.

RUFIOUS-WINGED WOOD-DOVE (*Turtur afra*).

Columba afra. Linn.

Turtur afra. Bodd., 1783.

Ibis, 1912, p. 34, plate.

Range: West Africa.

This Dove is, or was, commonly known among dealers as the "Emerald Dove"; but this is a bad name (except perhaps for advertisement purposes), as it is based on the metallic spots to be

found on the wings. There are two distinct races of this Dove, both of which inhabit West Africa, and in one the wing spots are green, in the other blue. In the first, the green-spotted (*T. chalcospilos*), the spots are described as metallic golden-green, but even these are not at all suggestive of an emerald, while in the other race (*T. afra*) the spots are dark metallic blue—sapphires perhaps—but not having the remotest resemblance to any green gem. All the birds I have handled in the Gambia have had blue (not green) spots. The epithet “emerald,” too, can only cause confusion between this species and the “Emerald-” or “Green-winged Doves” (*Chalcophaps*) of the East.

They are common throughout the Gambia, where they are commonly seen in pairs in the bush, and are much more birds of the uncleared parts than of the cultivated areas round the towns. They spend much of their time on the ground, where they obtain their food, mostly grass-seeds and the like, but roost in bushes and low, thick trees. They are very tame, and usually will not rise till one is close to them, when they get up with a loud, very partridge-like wing-whirr, and fly off with a rapid, darting flight, and a flash of rufous red as they spread their wings. Their note is a quadrisyllabic “coo,” which is commonly translated into the words “Better-go-home, better-go-home”—a very accurate rendering, but one which can be very irritating when one is coming home after an evening with the gun which has been chiefly marked by a series of bad misses.

These Doves are easily caught and do well in captivity.

Description.—Length, 8½ in. : tail, comparatively short. The whole crown clear blue-grey, the forehead, lores and chin white shading into the grey of the crown. Rest of upper surface a rather mealy grey-brown, crossed on the rump with two bars of much darker (sepia) brown. The wing-coverts like the back, some of the postero-internal ones marked with one or two circular, dark metallic blue spots. The flights are above burnt-sienna brown, the outer two having sepia outer webs; in the next three (about) the edges of the outer webs and the ends are sepia, but the remaining feathers are only tipped with this colour. The lower tier of the primary coverts are burnt-sienna (like the flights) and tipped and edged with sepia. The under wing-coverts are burnt-sienna, but not such a clear shade

as that above, and the under-surface of the flights is grey-brown each feather being tipped with sepia. The upper tail-coverts are like the back, a few of the lowest ones being tipped with darker brown.

The tail has the upper surface bluish-grey broadly tipped with black, except the central pair of rectrices, which are dark grey-brown tipped with black, and the outer pair (one on each side) in which the proximal halves of the outer webs are white. The under-surface of the tail is black, the outer feather on each side being marked as above with white.

The chest and under parts are pale vinous, fading into white on the belly and under tail-coverts.

Irides, dark brown; eyelids, slate-grey. Bill brown washed with purple. Legs purplish-brown.

CAPE DOVE (*Æna capensis*).

Columba capensis. Linn., 1766 (Milne-Edwards and Grandidier, Hist. Madagascar Ois., Plate 188).

Range: Tropical Africa, Arabia, Madagascar (H. L.)

This well-known, long-tailed small Dove is common in the Gambia, though not all are permanent residents, for during the rainy season one sees comparatively few about. From November to June they are plentiful, and are found either in pairs or (at the beginning of the season) in small parties—one cock and two or three hens. They frequent the open country, especially the cleared, cultivated fields round the towns, and find their food (millet-grains, grass and other seeds) on the ground. Here they walk, or rather run, about very rapidly, while in the air their flight is very fast and arrow-like—in fact when on the wing they look like big arrow-heads. They are not easily caught, but do very well in captivity, and have been bred, but with confinement all their sprightliness disappears and they become dull, over-greedy birds, disinclined to move except to the food-tray.

The Mandingo name is “Moro Pura,” the “Mahomedan Dove.”

Description.—The sexes differ in plumage. In the male the front of the head, the chin, throat and upper breast are black, the

rest of the head, neck and upper wing-coverts French grey, and the back pale brown with two dark brown bands separated by a dirty white one across the rump. The wings are brown edged with black, and with a patch of metallic blue on the outer webs of some of the inner feathers. The upper tail-coverts are dark grey; the tail feathers are black with grey bases. The lower breast and belly are white, the under tail-coverts black, as is the angle of the wing, and the under wing-coverts are brown. The iris is brown, the bill is purplish-brown tipped with yellow, and the legs are dull crimson.

The female has no black mask, the forehead and breast being greyish-white and the crown and nape brown like the back. The greys of the general body plumage are duller than in the male, while the legs are much less red and the bill is dark brown without any yellow tip.

This completes the list of Gambia's Pigeons, the names of which I will repeat for reference:

The Green Pigeon (*Vinago*).

The Guinea Pigeon (*Columba*).

The Ring-necked Dove

The Red-eyed Dove = "Black Pigeon" } (*Streptopelia*).

The Turtle-Dove

The Senegal Dove (*Stigmatopelia*).

The Rufous-winged Wood-Dove (*Turtur afra*).

The Cape Dove (*Aena*).

THE BLACK-BILLED HORNBILL.

By Dr. MILLET-HORSIN.

[Translated by the Editor from the 'Bulletin of the Acclimatisation Society of France.']

On August 12th, 1916, having gone to the battery of Point A, near Dakar, I purchased from the battery guard, M. Chédé, a young Hornbill (*Lophoceros nasutus*). He had obtained from a negro ten days before two of these birds; the negro had just picked them from a hole in a tree, intending to eat them. He sold them for a franc

each, which is quite dear enough. The two birds at this time were quite naked. Mme. Chédé fed them on cooked rice and bread and milk. Very greedy, they soon became quite tame. After some time they began fighting and had to be separated; the weaker was put into a large cage with Weavers and Pigeons, which never molested it, while it was always quite peaceably disposed towards them.

The other bird, the larger, is the one which was given to me. Like its brother, on August 12th it already had its shape and all its feathers; only the great quills of the wings and tail still remained ensheathed, and were but two-thirds of their full length. I put it into the aviary with the Red-billed Hornbill, Glossy Starling and Parrakeet; none of them made any unfriendly demonstration. It settled itself in a corner of the cage, with the body vertical and the knees drawn up, the tail perpendicular along the whole length of the back, and the beak horizontal, shaking the head with a slow gesture of negation. It accurately reproduced the appearance of a pitcher in the form of a bird, and recalled the aspect of a seated Egyptain deity. From time to time it cleaned itself, carefully preening its plumage, and especially the tail. When I approached it, it came hopping towards me, with half-open beak, uttering a strangled cry exactly like that of a young Crow. If I gave it my finger it swallowed it without ceasing its cries. I fed it with small native tomatoes, bread and Duquesne's paste; it did not merely eat, but took at once food offered from the hand—there was no need to cram it. When I gave it live butterflies it tried to catch them. It could not fly, but jumped up to a perch 20 cm. from the ground; one must, however, admit that it maintained its position with difficulty.

From the following day it began to feed itself. I had taken it out of its cage to feed it on rice cooked with sugar; I had put several live grasshoppers into the cage, and had by me five or six dead ones, which I did not want to give it all at once. The rice did not suit my new pensioner, who rejected it. A half-killed grasshopper began to move, and in a moment my bird escaped me, seized the grasshopper, threw it into the air, caught it again and swallowed it, then ate others, all by himself. From this moment he ate the food of his companions; he soon developed marked skill in catching live grasshoppers and butterflies. He then desisted; not being very

active he often rested without movement on his perch. At the end of six or eight days he climbed all over his cage, and tried his wings. When resting he often uttered, almost ceaselessly, a "Tia-tia, tia-tia," which was audible quite a long way off; he never failed to salute my arrival by his hoarse cry, like that of a young Crow. I never saw him fight the other birds.

I left him on August 27th to return to hospital, and found him on September 22nd fully developed, flying about his cage in perfect health.

At this date Adjutant Chédé agreed to give me the young Hornbill which remained with him. It was perfectly tame: they had clipped its wings and it was left at semi-liberty, contenting itself with returning at night. As it had always been hand-fed, and had never been seen to feed itself, people thought it did not know how to do so; moreover, he screamed in the presence of food, so that it was decided to give him the morsel, and he never touched it of his own accord. But on September 22nd, at six o'clock at night, when they wished me to put him back, he could not be found. They called; he answered "Tia-tia, tia-tia"; he was perched in the middle of a papaw tree. I took him and demonstrated that his stomach was very full, though his owners had had no time to attend to him since noon. The droppings, which I kept, showed that he had been feeding on grasshoppers, which he had taken in the bush, for his wanderings occasionally took him far enough. In spite of their former quarrels the two brothers did not recommence fighting; the new arrival easily accommodated himself to the existing *régime*.

Their transportation took place without incident. However, the two birds arrived in Paris with the tail quills so damaged that I was obliged to pull them out to allow them to grow again more rapidly. I had similarly supervised the development of the wing quills of the new arrival, whose first owner, one remembers, had clipped them for him.

In the menagerie of the museum they from the very first showed a great affection for their keeper. The new arrival, with its wings cut, could not stand the dampness of the ground, and died on November 20th following. The first bird died in December.

BREEDING OF MELBA FINCH × CRIMSON-EARED WAXBILL HYBRIDS.

By A. DECoux.

At the beginning of this year, as soon as the February sun had brought back cheerfulness among the birds, I noticed that the cock Melba Finch, which I had vainly sought to pair with a hen Aurora Finch the year before, courted the hen Cordon-Bleu. I then had many opportunities of admiring his remarkable flute song—almost as pure and beautiful as that of the Violet-ear. By-and-by a nest was built—the spherical nest of all Waxbills—and eggs were laid and incubated, but they proved clear. Another attempt at nesting met with no success, the nest having been destroyed by other birds.

Towards the end of last May, being busy in this aviary, I perceived the peeping note of young chicks coming from a Harz nest-box hung high up near the ceiling of the shelter. Some minutes after the Melba Finch flew out of the nest; I thus recognised the parents of the new-born young.

They carefully fed their nestlings, using soft food, unripe grass-seeds, ants' eggs and small insects collected round the tender shoots of rose-bushes; and a fortnight later on entering the aviary, I saw, to my great joy, some fine hybrids sunning themselves on the twig of a little shrub. There were three, resembling the young Crimson-eared Waxbills, but bigger and of a larger size, with a stronger black bill and the typical light-blue warts on each side of it. There was not any trace of blue on the breast, but only around the bill. The rump and upper tail-coverts were dull reddish-brown, the feet and tarsus flesh-brownish. The fledglings fed by themselves two weeks after leaving their little cradle.

Meanwhile the Melba Finch repaired the nest with some feathers and the hen began again to lay eggs. Both sat upon them alternately, and I noticed how steadily the cock did so, and took care of the chicks later on. Indeed, I wonder that this species, which seems so apt at breeding, has not yet successfully reproduced in captivity—for, as far as I know, it has not done so, not even

in Germany. However, I read some years ago in the 'Gefiederte Welt' an article by the well-known aviculturist, Herr Hugo Dicker, of Halle, where he reports that the Melba Finches he possessed in his bird-room gave him nothing else but clear eggs; he mentions in the same article that he reared many Red-faced Waxbills and Aurora Finch hybrids, which always died before they could feed themselves. He noticed what a good father the *Pytelia afra* was, and I have observed the same qualities in his near relative—*P. melba* ('Gef. Welt,' 1910).

This second brood gave me four more hybrids as fine and hardy as their elder brothers.

In October a third brood was unfortunately destroyed by mice, which penetrated into the nest-box, and threw away the little ones when five or six days old.

These hybrids sing very often, and beautifully; their song resembles that of the Melba Finch, though perhaps it is a little less melodious. They are magnificent, when adult, at about the age of three months. The following is the description of the adult:

Wings and back olivaceous yellow, not so bright as the father's: tail-feathers red-brown broadly edged with blood-red, the two centre feathers blood-red throughout; upper tail-coverts and rump blood-red; head, nape, sides of neck dull slate-grey; forehead, cheeks and face scarlet: throat and breast of the same colour, shaded with purple, with more or less violet reflections according to the incidence of light; a dull blue-grey line separates the breast from the abdomen, which is light-buffish; under tail-coverts light-buffish; flanks dull blue-grey marked with white spots; iris brown: eye-lid fleshy-pink: bill coral-red, paler at base. The bird has the elegant shape of the Crimson-eared Waxbill, but resembles its father in size.

THE WHITE-CHEEKED FINCH LARK (*PYRRHULAUDA LEUCOTIS*).

By W. SHORE BAILY.

This pretty South African bird is sometimes offered by the dealers at a very reasonable price. It does not, however, appear to

have found its way very frequently into our members' aviaries, or we should probably have heard more about it. The cock is a handsome bird, his white cheeks contrasting in a pleasing way with his black head and breast and chestnut-coloured back; the hen is not so richly coloured. To see them at their best they should be kept in a large grass-covered aviary, containing not too many shrubs and trees. My birds spend a good deal of their time perched on a heap of faggots, but I think that they generally roost on the ground at night. When disturbed they take to the trees, as did my Indian Skylarks, and when singing the cock usually selects the highest perch he can find. They are not nearly such good vocalists as the Indian Lark, which is a really fine singer. They appear to be very hardy, as they have been in a very exposed enclosure all this winter, with the temperature at times close on zero. Two other species of Finch Larks are found in South Africa, *P. verticalis* and *P. australis*, and we are told by Major Perreau that there are several of these Larks in India. They are very desirable birds, and should be well worth importing. My pair nested in Dr. Amsler's aviaries in 1914, but did not bring off any young. They made no attempt to do so with me last season.

FIELD NOTES ON OSTRICHES.*

By Sir W. CORNWALLIS HARRIS.

No African landscape can be considered complete without a group of these birds, and they are frequently to be seen in the greenest part of the country. Observing them for the first time, pasturing after the fashion of a flock of Geese, the stranger might easily believe that he beheld a herd of black or white cattle, according as the heads or tails were turned towards him. Many a time have I seen a solitary coal-black cock, looming as large as an ox, standing phlegmatically by himself, in the most exposed situation, the sun's rays pouring perpendicularly upon his bald pate, but he appearing most enviably regardless of the heat, drought and desolation that surrounded him. Of the many wild scenes exhibited by Nature there

* Reprinted from 'Portraits of the Game and Wild Animals of Southern Africa.'



Photo. by W. Shore Bailly.

Generosity of W. Shore Bailly.

WHITE-CHEEKED FINCH LARKS.

is none wilder than a fleet of these giant birds crowding all sail, their towering masts raking gallantly, with every stitch of canvas bellying to the breeze, as, like ships of the desert, they are bearing down for some point in the ocean-like expanse.

The man who seeks to improve his acquaintance with the desert-loving Ostrich will presently discover why it was that she was created with a long neck. Like many other wary animals, she will often suffer a waggon to approach very close before taking the alarm: but, generally speaking, her great range of vision renders approach within moderate shot impossible otherwise than upon horseback. Herding in troops of thirty, forty or more individuals of both sexes, these giant birds inhabit the most sterile and desolate regions, commonly associating with Burchell's Zebra, and uniformly frequenting the widest and most naked plains, where their towering heads are as far elevated above their four-footed companions, and above the surrounding country, as to admit of their discovering objects at a distance which renders them secure against the stealthy invasion of man.

During the breeding season the South African Ostrich associates himself with several females, which deposit their huge eggs in one common nest, if we may so term a shallow cavity simply scooped in the sand. No attempt at concealment is made, nor is the smallest particle of any kind of material employed, the eggs being nevertheless surrounded by a shallow embankment, and thus prevented from rolling away. The ground colour of the egg is pure white marbled with clear yellow, and the number found in one place has been known to exceed sixty, the hens continuing to lay during the whole period of incubation. The chicks are about the size of a pullet, and walk the moment they are out of the shell.

REPORT OF COUNCIL MEETING.

By kind permission of the Zoological Society, a Council meeting was held at the Offices on January 24th.

There were present: Mr. Meade-Waldo (Chairman), Miss R. Alderson, Dr. Graham Renshaw, Mr. Ezra, Hon. Mrs. Bourke,

Lieut. Gurney, Mr. Seth-Smith, and Mr. Pocock. Letters of regret for non-attendance were received from Miss Chawner, Mr. Shore Baily, and Mr. Willford.

The minutes of the last meeting were read and confirmed. It was decided, in view of the cost of production, to delegate to the Editor the entire correcting of proofs. By this ordinance, therefore, no MS. accepted for the Magazine is reissued to contributors or others for revision prior to final setting-up in type. In this way the Council trusts to effect economy in the make-up of the Magazine.

In view of the necessity of strictly limiting the expenditure, a proposal to issue special sheets of advertisements on coloured paper in the Magazine was negatived, as was also a suggestion to recommence publication of coloured plates.

The Chairman drew attention to the gratifying notice of the work of the Society published in a recent number of 'The Ibis.' Special attention had been drawn to Mr. Low's unique photograph of a running Apteryx. The same gentleman's remarkable photograph of a colony of nesting Puffins, published in the July 'Avicultural' under the title of "The Birth of a Nation," was also noticed.

Mr. Tyrwhitt Drake was nominated to fill a vacancy on the Council.

REVIEW.

AFTER BIG GAME.*

"The hand, wearied all day with grasping the rifle, is not the best suited for wielding the pen." So wrote Roualeyn Gordon Cumming, when in 1850 he published his famous book of South African travel, from notes taken in the wilderness. Yet such rough journalism, translated into literature, delighted generation after generation of readers, and formed a notable accession to romantic natural history. What Cumming and his fellow-hunters did for South Africa, Mr. and Mrs. Meikle have done for East Africa. With

* 'After Big Game: The Story of an African Holiday,' by R. S. MEIKLE and Mrs. M. E. MEIKLE. With 64 illustrations. London: S. Werner Laurie. 16s. net.

the ancient writer we murmur, "Say not the former times were better than these," for the book now before us, in its enchanting and minutely accurate descriptions, should rank as a permanent classic of zoology.

Some books of travel are cumbrous, utterly uninteresting, wearisomely prolix; but the present volume is not one of these. Vivid description is the keynote of every page of this pleasant record, interesting alike to those of us who have seen something of Africa, and also to those who have not. Arrived safely at Mombasa, we pass through the choking red dust of the Taru desert to the rolling grassland alive with Ostrich and Zebra; thence to prosperous Nairobi with its stone buildings, and to Lake Nakuru sheeted with blue lotus lilies. There are pages on Zanzibar, Tanga and Dar-es-Salaam. The second part of the book deals with hunting experiences among big game; the third part is miscellaneous, and the fourth consists of an account of fishing in the Protectorate, by the late F. G. Aflalo. Interwoven into the book are several passages which will delight the aviculturist. Take, for example, the description of Vultures assembling at a kill (p. 252):

"First a speck in the blue, which seems to fall with ever-increasing velocity; then other specks appearing with incredible speed from every point of the compass, until the air above the kill is darkened with the spread of wings. They drop to earth, and stand around in a circle, or perch in the boughs of neighbouring trees if there be any close enough. They are of all sorts and sizes. The Vultures are dignified and sedate, quietly but keenly expectant of the moment of your departure, but the small fry, such as Kites, Kestrels and the like form a shrieking, tumultuous mass, around which the Marabouts pace solemnly as though on guard. Above there are others, and yet others constantly converging to the spot. You move off and there is a rush and a tumult of sound—the flapping of wings, chattering of harsh voices, clashing of beaks. You look back, and there is a black, struggling heap. A minute or two, and the flapping and rushing of wings begins afresh. The birds of prey are once more mounting to their airy look-out."

There are notes on Guinea-fowl, on Herons and Storks and Marabouts, on Parrots, on Weavers, and on Touracoes; the bell-like

note of a Fruit Crow is described, together with the gurgling "water-bottle" performance of the Bush Coucal: an interesting photograph of a wild Ostrich's nest is included in the book. The illustrations are nearly all good, printed two on a page, and worthy of the letterpress. The entire work is in very truth a breath from the veldt.

The book contains few errors; it must, however, be pointed out that the Impala is not a "Red Deer" (p. 32) but an Antelope; in spite of the statement on p. 236, "Deer innumerable" do not occur in East Africa—nor indeed any Deer at all; the popular name of the Touraco is Lourie, not "Dourie"; the Hammer-Head should not be called the "Hammer-Headed Stork" (p. 211), for it is in a class by itself, being as much Heron as Stork, and practically an annectant form uniting the two. The phrase "great untidy bird" is exaggerated when applied to a species no bigger than a small Heron.

G. R.

THE WILD BIRD INVESTIGATION SOCIETY.

By DR. W. E. COLLINGE,

Hon. Secretary, *pro tem.*

For some time past there has been a desire amongst those interested in wild birds to found an organisation and publication that would bring together all students of the subject with a view to—

(1) The more intensive study of the ways and habits of British birds.

(2) The protection of all beneficial and non-injurious wild birds and the repression of really injurious species.

(3) The influencing and educating of public opinion as to the destructiveness or usefulness of wild birds to agriculture, horticulture, forestry, etc., by means of publications, meetings, lectures, etc.

(4) The discouragement of egg- and bird-collecting, except under guidance or for scientific purposes.

(5) The improvement and modification of the existing laws relating to wild birds.

(6) The establishment of bird sanctuaries under efficient control.

(7) The discussion and consideration of these matters from all standpoints.

(8) The establishment of local branches throughout the United Kingdom.

All persons interested in the above-mentioned objects are eligible to become Members or Associates on the following terms: All Members shall subscribe an annual sum of not less than 10/6; all Associates shall subscribe an annual sum of not less than 5/-.

Both Members and Associates are entitled to attend all General Meetings, and to receive the "Journal." Members only are entitled to vote and hold office.

At a later date it is proposed to call a General Meeting for the purpose of approving of the draft laws and to elect officers.

*The University,
St. Andrews*

OUR INCREASING PURPOSE.

[“Le médecin de marine, K. H. Jones, à récemment publié dans ‘l’Avicultural Magazine’ d’intéressants détails sur les oiseaux de cage chinois.”—*Le Chenil*, February 6th, 1919.]

Some months ago, in the July issue of the Magazine, the Editor recorded gratifying evidence of the progress of the Society. To-day a further stage has been attained, for our esteemed contemporary not only mentions Surgeon-Commander Jones's paper on “Chinese Cage-birds,” but follows with a careful epitome in French, dealing with the salient points discussed by our contributor. We are convinced that this graceful acknowledgment of the international value of the Society will give satisfaction, not only to the Council, but to every one of our members.

The avicultural output of our contributors is not limited to the pages of the Magazine—far from it. One of our members has not only given to the world a wonderful picture of the tropical forests of Guiana, but has also produced a magnificent work on

Pheasants—complete to the minutest detail—before which one stammers with admiration, seeking vainly for words. Another is one of the greatest living authorities on taxidermy, and has for years enriched American zoology with a masterly series of bird studies. To-day we await with interest the completion of his monograph on mound-building birds. A third has written from the depths of his great knowledge many books and papers on matters ornithological—scientific, scholarly, practical—linking aviculture delightfully with journalism, whether he writes of ornithological oddities, of fancy Pheasants, or of the care of rare Water-fowl. A fourth is an acknowledged authority on Parrakeets. Others, again, are known for brilliant work on foreign Finches, for nature study in the African bush, or for research among Mammalia. By the courtesy of our contemporaries their own published pages are free to our columns, from the embryology of the Ostrich to the habits of the Albatrosses of the Pacific. The Magazine is indeed honoured by such contributors. The Council appreciates warmly these and many, many others who have brought the Society through four years of war.

Nothing in this world stands still; as the old proverb has it, not to go forwards is to go back. The dawn of peace gives opportunity for an avicultural stock-taking, for a review of the new aviculture, modified and transformed in many ways by the long war, moulded and remoulded by forces beyond the control of any of us, embodying all that was best in the old system, yet with new characters of its own.

The last issue was a number in the old style; next month's Magazine will be in the new—a selected issue, featuring papers typical of each department of the Society's activities, illustrating the dictum of Stanley Houghton :

“It's the younger generation that always wins : that's how the world goes on.”

G. R.



Photo. by R. T. Littlejohns and S. A. Lawrence.

THE HISTORY OF BIRDS' NESTS:
WHITE-BROWED WOOD-SWALLOW, WITH NEST OF TRANSITIONAL TYPE (PLATFORM- TO SAUCER-SHAPE)
AS DESCRIBED BY DR. BUTLER.

THE
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 IN FREEDOM & CAPTIVITY.

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MAY, 1919.

THE HISTORY OF BIRDS' NESTS.

By A. G. BUTLER, Ph.D.

Has any ornithologist ever heard of a fossil bird's nest or even egg? I never have,* but, oddly enough, some years ago when gardening I picked a smallish heavy stone out of the earth, so perfectly oval in form that it might well pass for a fossil egg, and I kept it as a puzzling curiosity. Having, therefore, no positive evidence of the existence of prehistoric nests, one is thrown back upon imagination and probability. I regard a lively imagination as an important acquisition; it may open the way to deductive reasoning and so help to explain long-hidden truth.

As man in his early days was content to live in caves and burrows, there seems no reason for supposing that prehistoric birds had acquired a superior condition of intelligence, and I can quite imagine that *Archæopteryx* may have deposited its eggs in holes in partly-decayed trees, that *Ichthyornis*, like our Razorbills, Guillemots and Auks, made use of depressions or crevices in rocks, and that *Hesperornis*, a relative of the Divers and Grebes, not having attained to the proficiency of the latter group as an architect, was content

* I don't suppose the eggs of *Epyornis* would be considered even semi-fossilised.

(like the somewhat similarly paddle-winged Penguins of our time) to utilise a depression or burrow in the sand as a site for its eggs.

Fragile eggs lying on rock with no resilient material beneath them would be very liable to be crushed, so that only the stronger examples and those best formed to resist pressure would survive : this may perhaps explain the thickness of shell and form of some of those placed in such situations ; then, again, chips of more or less pointed wood in the hollows of trees might bruise or pierce delicate shells, which may account for the hardness and polish of the eggs of Woodpeckers and others.

Probably the earliest attempt to form a support for its eggs is exemplified in the case of the Rock-dove, which lays upon a few stalks or straws placed upon a ledge in the cave which it selects for its habitation ; its relatives who inhabit trees have advanced a trifle further, making platforms, of greater or less strength according to their species, in the forked branches of trees or bushes ; some other groups (as, for instance, the Touracous) have not advanced any further in nest-construction.

In platforms made of twigs or straws there must always be more or less defined crevices or openings ; and, to prevent eggs falling through the wider of these, they must necessarily be calked in the centre with rootlets, grasses, leaves, or earth ;* thus, even at this early stage of development, one sees some of the materials in use which are utilised in more advanced structures. When a platform is constructed in the centre of a many-branched fork, it naturally tends to become depressed in the middle, thus becoming vaguely saucer-shaped, and this I imagine was the first step towards the prevalent cup-like nests of the present time.

The increased stability and safety of eggs deposited in a saucer-shaped as compared with a level platform would probably encourage the builder to improve upon this type of nest by building up the outer margin so as still further to safeguard its contents during rough weather. As I have pointed out elsewhere, the construction of most cup-shaped nests is a very simple process. The parent bird first accumulates a quantity of twigs, straw, bents or

* In my experience the Wood-pigeon generally uses rootlets, which tend to bind the twigs composing the platform firmly together.

whatever other material she requires as the foundation, in the fork of a tree or shrub, in a hole in a bank, or whatever other site she may have selected. She next proceeds to collect, one at a time, pliant sticks, bents, etc., with which, holding one end in her beak, she hops round the foundation. When the nest is in a forked branch the material thus becomes enlaced and held in place by the divergent twigs round which it is carried, and as soon as the walls thus formed have attained a strength which appeals to the builder, she tucks in loose ends and then flies off to seek material for the lining; the latter is brought to the nest a little at a time, until it sometimes rises above the level of the walls, and then the hen squats down upon it and turns round and round, at the same time scratching with her claws; by this means the soft mass is compressed and felted, and nothing remains to be done excepting to add an inner lining of hair or fine fibre, and (if the bird has æsthetic tastes) a little ornamentation of the outside walls.

But many cup-shaped nests are not half so elaborate in construction, and this is especially true of birds which build in holes in the ground or in banks, such as Larks or Wagtails,* which often merely collect a mass of dry bents and mould them into a cup by sitting in the middle and turning round. I have made as good nests in half a minute by taking a handful of hay in one hand and squeezing my other fist with a rotary movement into its centre, nor have the birds I made them for disdained to sit in them.

The most flimsy-looking, though one of the strongest, of cup-shaped nests is the beautifully-netted receptacle constructed by the species of *Sporophila*, of which Hudson observes: "So light is the little basket-nest that it may be placed on the open hand and blown away with the breath like a straw, yet so strong that a man can suspend his weight from it without pulling it to pieces." Why did not he say that St. Paul's Cathedral might be suspended from it? There is no humour in exaggeration which is not extreme, and, mind you, *Sporophila* forms its nests of fine fibrous roots or horse-hair; in my bird-room fine willow-fibre (used for filling grates in summer) was employed. How did birds learn to net and plait?

* Robins, Nightingales, Meadow-pipits and some others, when they utilise such sites build far more finished nests.

Was the tucking in of loose ends the first step towards this accomplishment?

The building up of the sides of a cup-shaped nest was probably the first step towards the construction of over-arched nests, in which only a comparatively small opening is left in front, this over-arching being due to an effort to protect the parents, eggs and young against inclement weather, the fall of undesirable matter into the nest and attacks from above; the addition of a tube leading into the opening was almost certainly a later development, since it is frequently wanting in nests built by captive birds.

In the case of some birds which nest in holes where the opening is so wide as to be a source of danger to the occupants, as, for instance, in that of the Nuthatches, the entrance is filled up with clay, leaving only a small aperture for the entrance of the parents. The Hornbills go even farther, for the hen is imprisoned by a resinous secretion commingled with woody particles (before the period of incubation and for two or three weeks after the hatching of the young), a slit only being left in front through which the male bird feeds her. The origination of this kind of defence does not require any great intellectual development, since we note analogous means adopted for protection by the larvæ of some insects, as, for instance, those of the *Psychid* moths* and Caddis-flies (*Phryganeidæ*).

When caves became insufficiently numerous to house our savage ancestors, or when they migrated from the vicinity of such shelters, it became necessary for them either to burrow in the sides of hills or construct huts of clay: with birds in all probability a similar course was adopted. This would account for the solid nests built by the Oven-birds of the New World and the Pied Grallina of Australia, as well as by the numerous birds which inhabit burrows. In the Swallows we find both types, those species which construct the outer walls of their nests of mud or clay being, I should judge, more advanced intellectually than the burrowing species, since Trap-door Spiders, with their marvellous silk-lined burrows closed at the entrance by a hinged and bevel-edged lid, show far more intelligence.

* I think the popular name for these in English is Gipsy, but in America they are called Bag-worms.

It would be difficult to decide which group of birds has attained to the highest rank as nest-builders—whether the Magpies' retreat, barricaded by its thorny, basket-like covering, or the pensile nests of some Starlings, should be awarded the prize ; but we know that both the Crows and Starlings are very clever, though undoubtedly, as with human beings, their brain-power is not equally developed in all the species.

THE NECESSITY OF STATE ACTION FOR THE PROTECTION OF WILD BIRDS.

By WALTER E. COLLINGE, D.Sc., F.L.S., M.B.O.U.,

Carnegie Fellow, and Research Fellow of the University of St. Andrews.

It is now generally agreed that birds as a class are highly beneficial, and function as an important natural force in the control of the many insects that attack agricultural crops, fruit orchards and forests. Realising this many countries have enacted laws for their protection and preservation, whilst some maintain departments wherein their feeding habits, migrations, increase and decrease, and general movements are studied, with great benefit to their respective nations.

The question is frequently asked, "Why should the State interfere with wild life ; why should not birds and all other wild animals be left alone ?"

In order to give an adequate reply to this question it is necessary to consider at some length the activities of wild animals and their relationship to mankind.

The nation or the individual who possesses objects of great value seeks by all legitimate means in their power to preserve such from wanton destruction or harm in any sense. Such action is highly commendable, for surely it is only right that anything that is conducive to the welfare of mankind, and that we of the present generation have the privilege of enjoying, should, if possible, be handed down for the benefit and enjoyment of generations to come. It is the duty of the State, therefore, to guard and conserve most

jealously every object that tends to the uplifting and advancement of its people, irrespective of whether such objects possess any direct utilitarian value or not.

In the case of wild birds we have both an æsthetic and a utilitarian value attached to them. On the former we do not propose to dwell at any great length, for the love of wild birds is interwoven with our national life. In painting, statuary, poetry and prose this is at once evident. We have associated with bird life purity, valour, fidelity, the love of freedom, and the exalting love of maternity. We have used the bird as the emblem of peace and contentment, and to express the idea of grace and symmetry of form and of perfect adaptation to the environment. The song of birds—the “thousand blended notes” as Wordsworth described it—has inspired the poets of all ages and countries, those of our own country being not the least. Some of the stateliest lines in English poetry refer to birds, as readers of Shakespeare, Shelley, Scott, Burns, Gray, Longfellow and Tennyson will recall. The study of bird-life has ever exercised an ennobling influence, in consequence of which in certain countries efforts have been made to make it a compulsory provision of the education code to arrange for the study of birds in the public schools, and in a modified form to the original proposition one of the States of North America has enacted a law requiring every teacher in the public schools “to give oral instruction, at least once a month, . . . relative to the preservation of song-birds, fish and game.” Legislation of this kind undoubtedly marks the commencement of a phase in the public mind that is likely to assume greater importance in the near future. As a recent writer states: “The systematic study of birds develops both the observational faculties and the analytical qualities of the mind. The study of the living bird afield is rejuvenating to both mind and body. The outdoor use of eye, ear and limb necessitated by field-work tends to fit both the body and mind of the student for the practical work of life, for it develops both members and faculties. It brings one into contact with nature—out into the sunlight, where balmy airs stir the whispering pines or fresh breezes ripple the blue water.” Very similar ideas are expressed by Forbush, who writes: “There is no purer joy in life than that which may come to all who, rising in the dusk of early

morning, welcome the approach of day with all its bird voices. The nature-lover who listens to the song of the Wood Thrush at dawn—an anthem of calm, serene, spiritual joy sounding through the dim woods—hears it with feelings akin to those of the devotee whose being is thrilled by the grand and sacred music of the sanctuary. And he who, in the still forest at evening, harkens to the exquisite notes of the Hermit—that voice of Nature, expressing in sweet cadences her pathos and her ineffable mystery—experiences amid the falling shades of night emotions which must humble, chasten and purify even the most upright and virtuous of men.”

On the utility of birds we might dwell at great length and then be far from exhausting the subject. Few of us have formed any conception of the influence they exercise upon our food-supply and many products of industry. Here we must strictly confine our remarks to their value as the guardians of our crops, our orchards and our forests. How little do we realise what a potent factor for good wild birds are in this connection, what the sum total of their ceaseless activities means, and how intimately associated it is with the security of our food supply! Were it not for the benefits conferred by wild birds it would be impossible to successfully cultivate the majority of our crops. This statement may seem an extravagant one, but an examination of a few instances will at once serve to show how true it is.

We are all familiar with the greenflies on the rose, and have some confused idea of their enormous fecundity. We probably call to mind Professor Huxley's computation of their amazing rate of increase, but few of us have ever seriously considered the potential danger of greenflies with reference to our food supply.

The late Prof. Riley, when studying the Hop Aphis, observed thirteen generations of this species in a year. Assuming the average number of young produced by each female to be 100, and that every individual attained maturity and produced its full complement of young, “the number of the twelfth brood alone (not counting those of all the preceding broods of the same year) would be 10,000,000,000,000,000,000,000 (ten sextillions) of individuals.’ Such figures fail to convey any idea of the numbers, but dealing with these Prof. Forbush has pointed out that if these individuals

were marshalled in line with ten to a linear inch and touching one another, "the procession would extend to the sun (a space which light traverses in eight minutes), and beyond it to the nearest fixed star (traversed by light only in six years), and still onward in space beyond the most distant star that the strongest telescope may bring to view, to a point so inconceivably remote that light could only reach us from it in twenty-five hundred years."

But there is scarcely a cultivated plant that is not attacked by one or more species of greenfly, or aphid as the naturalist terms them. Of the trillion of billions that infest the apple, pear, plum and cherry trees, and the hops, wheat, beans, turnips, cabbage, etc., what becomes of them? They are eaten by the birds. Aphids in large quantities have been found in the stomachs of the Whitethroat, the Warblers, the Tits, the Wren, the Goldfinch, the Chaffinch, the Skylark, and numerous other birds; and the same remarks hold good with reference to the insidious Scale Insects.

Most insects do the greatest amount of damage during their larval or caterpillar stage; they feed voraciously, their daily consumption of food often exceeding many times the weight of their bodies. Selecting a familiar example, the yellow-and-chocolate marked caterpillar of the Currant or Magpie Moth, it requires about 170 of these to weigh an ounce; in their earlier stages say about 200. We have seen currant plantations infested with these, and by counting the number on one bush have estimated nearly 1,000,000 to the plantation, or a total of $2\frac{1}{2}$ cwt. Had these been left undisturbed they would quickly have consumed the whole of the currant-leaves and ruined the crop, but thanks to the birds they were reduced to insignificant dimensions long ere they had an opportunity of devastating the bushes. And so it is with numerous other crops. We might continue to cite insect after insect and the birds that feed upon them, but one further case will suffice.

Trouvelot, who introduced the Gipsy Moth into the United States of America, specially studied the American silkworm, and respecting its food and rate of growth he made numerous experiments. The rate of growth and the amount of food consumed are astonishing. Upon hatching from the egg, the caterpillar weighs one-twentieth of a grain; when 10 days old its weight has increased to half a grain

or ten times the original weight ; when 20 days old it weighs three grains, or sixty times its original weight ; when 30 days old its weight has increased to thirty-one grains, or 620 times the original weight ; when 40 days old it weighs ninety grains, or 1800 times its original weight ; and when 56 days old its weight has risen to 207 grains, or 4140 times the original weight.

When 30 days old this caterpillar will have consumed about 90 grains of food, but by the time it is fully grown, namely 56 days, it will have consumed not less than three-quarters of a pound of oak-leaves. Thus the food taken by a single caterpillar in 56 days equals in weight 86,000 times the original weight of the animal. Well might Longfellow say of the birds :

“ They are the wingéd wardens of your farms,
Who from the cornfields drive the insidious foe,
And from your harvests keep a hundred harms.”

In the interests of agriculture, fruit-growing and forestry surely the conservation of this wild life is worthy of State attention. We do not simply mean the passing of an Act of Parliament for the protection of certain species, but a daily study of their habits and activities, and all their intricate relations to mankind.

“ But what about birds that are injurious ? ” If those that are beneficial should be protected, surely those that are injurious should be destroyed. Our knowledge as yet of the feeding habits of wild birds is so fragmentary that it would be dangerous to make the unqualified statement that any species of wild bird is wholly injurious. Some are partly so, due in all probability to the fact that they are too numerous, as, for example, the House Sparrow, the Wood Pigeon, the Starling, etc., but there is reason to believe that if these species were much less numerous than at present, the good they would do would more than compensate for any harm they might inflict. It is therefore incumbent upon the State to walk very warily when it proceeds to withhold protection, or to frame repressive measures for the destruction of any species. In a like manner the granting of protection to a bird at present generally regarded as beneficial may lead to an undue increase in its numbers, and within a very short time it will prove equally injurious. The problem is a most difficult one. Those who demand all-round uniform protection are equally as

wrong as those who favour all-round destruction, and the State that listens to either side or allows such extravagant views to weigh in their deliberations is amassing troubles for the immediate future.

Only after a long and careful study can we arrive at a satisfactory conclusion. Experience shows that it is possible to learn with considerable precision the percentage of the different kinds of food. Let us take the case of the Skylark. This bird requires about six pounds of food per year, "so that 10,000 birds would require about 27 tons of food in a year." As we now know the percentages of food eaten by this species we can analyse this figure. Of the total food consumed in a year 35.5 per cent. consists of injurious insects, 3.5 per cent. of neutral insects, 2.5 per cent. of beneficial insects, 9.5 per cent. of grain, 1.0 per cent. of leaves, 2.0 per cent. of earthworms, 1.0 per cent. of slugs, 1.5 per cent. of miscellaneous animal matter, and 43 per cent. of the seeds of weeds. In other words, 36.5 per cent. of the food eaten is of benefit to the farmer, 50.5 per cent. is of a neutral nature, and only 13 per cent. injurious. Thus we have a debit and credit account: on the former side we place the loss of $2\frac{1}{2}$ tons of cereals, and on the latter something like 30,000,000 injurious insects and 30,000 slugs. Such a plague of insects left to themselves would have destroyed many more tons of cereals, root crops, etc. Thus the farmer is undoubtedly the gainer by an enormous tonnage of produce.

The indiscriminate destruction of wild birds has led to serious insect plagues in many countries, so that any repressive measures must only be the outcome of very careful consideration founded upon long and accurate investigations such as the above.

To provide against extermination, State reservations as places of refuge are necessary. Other countries have found such to be profitable investments apart from protecting certain species of birds.

The education of all who are connected with the land is another most important avenue for State activities if we are going to secure to generations yet unborn their birthright.

The subject of bird protection is an exceedingly wide one and worthy of the attention of every enlightened community. "The food relations of birds are so complicated and have such a far-reaching

effect upon other forms of life that the mind of man may never be able fully to trace and grasp them," says Prof. Forbush; but this must not be advanced as a reason why we should not steadily pursue our investigations of the subject, knowing how directly it affects mankind. If we do not we are jeopardising our food-supply, impoverishing the land, and lagging behind in the progress of knowledge, and for such apathy and omissions Nature will surely sooner or later demand just retribution.

BREEDING OF THE LESSER WHITE-FRONTED GOOSE.

By W. H. ST. QUINTIN.

It is, I think, worth recording that a young Lesser White-fronted Goose (*A. erythropus*) was reared here this summer. I have had three of these birds since July, 1914. They were in rough condition when they came, and very wild—indeed, they are still much less confiding than any other wild Geese that I have kept, partly no doubt because they are in a large enclosure, where they almost get their own living. I believe there is a gander and two geese.

On June 2nd my keeper reported a Goose's egg in a nest built against a fence some five yards from the water, and on the next day I surprised, near the site, a single Goose, which flattened itself out on the water and stole away, so of course I made myself scarce. After this I never found the bird off her eggs, and I never once saw the Gander near the nest. He was always in the company of the third bird, generally at a considerable distance.

The Goose must have started to incubate when she laid her first egg, for on June 28th I found that she had hatched a single Gosling, which I saw being escorted away by both parents from the bank where the nest was. I was so anxious not to disturb the family party that I hurried away, unfortunately taking it for granted that any other eggs must be unfertile. But there was a young bird in each, and if I had put them under a hen at once no doubt they would have been safely hatched. As it was, it was not till the 30th that I revisited the nest, thinking to blow the remaining eggs for specimens.

Although it was fully forty-eight hours after the Gosling was hatched, and though both eggs felt cold to the touch, I found that one was chipped. So I put them under a hen without delay, and in a few hours a second young bird was hatched, though it was not very vigorous, and died on the fifth day.

The young Gosling with the parents thrive exceedingly. On July 27th I have a note that it was feathering, and that I could see the ends of the primaries showing through the down. The parents were most attentive, but very suspicious, and never brought their young one up to feed, so it was reared entirely on grass, which, as the weather was showery, was constantly growing.

Mr. H. Seebohm exhibited to the Zoological Society a young female of this Goose, shot in September, 1886, on the Northumberland coast, which showed no white on the forehead. In my bird the orange edges to the eyelids, which are a special characteristic of this lesser form of the White-fronted Goose, as well as traces of the white forehead, were visible by the end of November. At the present date—January 20th—the young bird is distinguishable from its adult companions by its darker and duller plumage, the feathers on back and wing-coverts wanting the pale edges of the adult. The patch on the forehead is not so extensive as in the old birds, and not of such a pure white. There are at present no black bars on the breast, though with a glass I can distinguish some irregular patches of slightly darker shade than the rest of the under-plumage, and which may later on develop into bars.

Owing to "war conditions" I was unable to hand-rear anything last summer, but two broods of Falcated Ducks—and seven three—were reared by the parents, all except three eventually flying away. Three young Sonnerat's Jungle Fowl were reared by the parents running loose, a fourth being killed, as we believed, by Jackdaws. To my great disappointment the first severe frost of the autumn was too much for the cockerel and two pullets, and I was of course unable to give them any artificial heat. They were probably weakened by the poor quality of the only food obtainable.

[Any member knowing of a previous case of breeding the Lesser White-fronted Goose in captivity is requested to communicate with the Editor.]

A CURIOUS HABIT OF THE MOORHEN.

By E. G. B. MEADE-WALDO.

It is of course a well-known fact that the young Moorhens of the first brood will feed the young of a later brood; but the following fact seems of sufficient interest to be recorded. A pair of Moorhens hatched a brood of seven young ones on a garden pond close to this house on April 28th, 1918. In a fortnight's time this brood was reduced to five, four of which had greatly grown. The fifth was small and puny, and followed one or other of its parents continuously uttering its querulous cry for food. I noticed that whenever the parent found a suitable morsel it did *not* give it to the small young one following it, but ran over to one of the strong young ones, who were already commencing to forage for themselves, and presented the dainty, whatever it might be. I expected the weakling to disappear; but one morning, while dressing, I noticed that it seemed stronger and more independent, and the reason was evident. I saw a parent present a piece of something to one of the strong young ones, who *in turn ran and gave it to its weak fellow-nestling!* This occurred repeatedly, and the small young one eventually grew up. In an early number of this Magazine I recorded how the young of the Trumpeter Bullfinch (*Erythropsiza githaginea*) would feed their brethren of a second nest while they themselves were being fed occasionally by their parents, so probably this habit is more frequent than is generally believed. I forgot to mention that the old Moorhens, in addition to refusing to feed the weak nestling, occasionally turned on it and gave it a good tweak!

MORTALITY AMONGST GOLDFINCHES.

By H. L. SICH.

I believe Dr. Butler has been successful in breeding or keeping Goldfinches for long periods. I have only been able to keep one hen for a year, all the other four dying within a few weeks after purchase except one cock, which was not sound; it used to gape, except during the very hottest part of last summer. The pair nested

and partly brought up two young, but, perhaps owing to moulting coming on, they neglected them. The cock died later in the autumn.

Two cocks which I bought this year died about a week after being caged. All were kept separately, and all seemed to be well when first purchased. Usually the first sign is over-eating and then sitting up on a perch panting, with the head under the wing. The panting gets worse until the bird dies. It sounds like enteritis now I write it down.

The food they have in the cage is canary-seed, Indian millet, summer rape, teazel, and a little hemp now and again, and groundsel as green food. They also have a piece of cuttle-bone, with brown paper at the bottom of the cage if they live long enough. They get very fine sea-sand—coarser as time goes on—till they are let out into the aviary.

I have noticed that they have nothing to eat in the shops except niger-seed, which I believe is practically poison. Trying to change the last bird's food gradually did not have the desired effect.

[Dr. Butler writes :

“ You are quite correct; until about 1913 or thereabouts I was never without Goldfinches from the time when I first began to keep birds, and I bred them without trouble: but then I used to buy my birds from the catchers, and if I could turn them into an aviary the same day that they were caught they were not even wild, but settled down at once.

“ Goldfinches confined in small cages in a fœtid atmosphere and fed upon such rank, greasy food as niger-seed are very severely handicapped, and frequently reach the hands of their purchaser in a diseased condition.

“ I am a firm believer in hemp for these birds, and especially when they are a little out of sorts. Goldfinches, being naturally active, can consume more fat-making food than, for instance, Canaries, and you will notice that when one of them dies it is generally alarmingly thin (the breastbone almost like a knife-edge).

“ I used to give a mixture of two parts each canary and millet (as well as millet-sprays), and one part each of German rape and hemp, with a sprinkling of teazel or thistle-seed.

“When a bird over-eats it is generally due to enteritis. I believe the poor wretch imagines that eating will cure the pain. At such times a few grains of Epsom salts dissolved in the drinking-water are more likely than any other remedy to restore it to health.”]

A RARE AMAZON.

By ALLEN SILVER.

A rare Amazon came to the London Docks some time ago. It is not in Reichenow and I have not seen it; the owner, who knows his Amazons and has had most species through his hands alive, is not sure of it. From what I could make out it is the Guatemalan species.

I remember getting a Cayman some years ago. No one knew what it was; but, curiously enough, a friend bought the companion bird and at last got hold of a Cayman skin, so that we were able to satisfy ourselves as to what it was. It was such a noisy brute that I gave it to the Zoo, because, being in rooms at the time, it was awkward to keep.

[We would urge all members having rare birds to preserve the skins after death, as such specimens are very useful for reference, and of enhanced value if presented to some public institution, where they can be studied by all. Thus the rare Lesson's Amazon formerly belonging to Mr. Astley was presented by its owner to the Leicester Museum, where it still is, its rarity still commanding interest, and after death forming an attractive addition to the bird series of the Museum. Similarly at the Zoological Gardens a number of skins are preserved for reference; while in the great Zoological Park at New York not only are the bodies skinned by the taxidermist, but the carcasses are used for pathological research.—G. R.]

GARDEN BIRDS IN SYDNEY.

By A. S. LE SOUEF.

[Reprinted from the 'New South Wales Education Gazette Supplement.']

What life and interest birds add to a garden! Most countries have certain wild birds that make their homes near habitations, and look upon man as a friend rather than as an enemy. Australia is specially fortunate in this respect, and most suburban gardens can count on a dozen species which are regular inhabitants, besides several travellers who visit us in the summer; but one only gets to know them when they are off again, following the fine weather northwards, and we are left with our permanent friends. Around Sydney, these are the welcome Swallow, the friendly Willie Wagtail, the plain-coloured Jacky Winter, the trustful Yellow Robin, the perky Blue Wren, the dainty little Diamond Bird, the busy Tits of two species, the dashing Spine Bill, the immaculate Magpie Lark, and the plaintive-voiced Cuckoo; while the Kookooburra, the harmonious Shrike Thrush and the Butcher Bird are never very far away. These birds are a very efficient first line of defence against our insect pests, and are splendidly organised for searching every space where troublesome insects dwell. Some seek their prey in the air, others look after the leaves of the trees, and still others take charge of the bark, while the shrubs, lawns, and paths each have their specialists, diligently searching their own particular sphere for every living thing therein.

The Swallows are the aerial scouts of the bird army, and make themselves responsible for keeping the air free of winged pests, chiefly the troublesome house flies and the mosquito. Sometimes we see them high above the treetops, floating on easy wing, for mere enjoyment, or chasing up and down the busy streets, in and out of the traffic, or racing beside the trams to gather in the insects disturbed thereby, or gracefully skimming over ponds, picking up gnats from the surface, or boldly entering buildings to gather flies from the walls.

The Wagtail, or, to be more correct, the Black and White

Fantail, also feeds in the air, but chiefly takes toll of small moths and gnats that live near the ground. From the vantage point of a rail or a tree, he swoops down on anything that flies into his range of vision, or he makes friends with the animals at pasture, and snaps up insects that are disturbed by them; and one even visits the lions in their large enclosure in the Taronga Park, and catches the flies that are attracted by the ration of meat, and not infrequently takes them off the body of the king of beasts. Has anyone ever seen a Wagtail quite still? I think not; they often, like the Nightingale at home, chatter half the night, as if impatient for the day when they can again commence their hunting.

The Yellow-rumped Tit is a very important little bird in his own estimation, always twittering and bobbing about, betraying his presence to all and sundry. He shares the responsibility with the Magpie Lark of looking after the lawns; and what a cunning little nest-builder he is, with a clearly visible false nest above and the cleverly hidden real nest below, evidently so made in order to deceive the Cuckoo. He loves to weave string into the nest.

The Diamond Bird, or Pardalote, which must not be confounded with the much larger Diamond Sparrow, is one of our prettiest little assistants. The plaintive call notes, one high and one low, uttered by the cock and the hen birds respectively, are often heard, but the bird is not so easy to see, as it is generally hidden among the leaves of a eucalyptus tree, among which they find their food. The nest is in a hole in a sloping bank, and one wonders how such a tiny bird can excavate such a burrow.

The Striated Tit, not so often seen, but still quite common, lives generally at the top of the trees. It is coloured dull olive, much like the leaves and boughs in which it dwells; it is a busy bird, always on the move, and few insects will escape its vigilance.

The Silver-eye is the most common of our garden birds, and also the best singer. To listen to its pretty song on a summer's morning is a delight. Although it will take toll of soft fruits when they are ripe, it more than makes atonement by keeping the trees free from insect pests all the rest of the year. It can often be seen searching every leaf and shred of bark, and vigorously drawing forth its luckless prey.

The active little Blue Wren is a most welcome visitor. On account of its beautiful blue and black livery, and its clear ringing note, it has been called the Superb Wren Warbler, which very aptly designates this gem among birds. The Wren looks after the low bushes and shrubs. Working with wonderful quickness, it searches every nook and corner for its daily meal, and often jumps into the air after a moth that tries to escape. Be careful not to approach Blue Wren's nest, for if it thinks that it is detected it will abandon it, and we cannot afford to lose one of these useful birds.

The Jacky Winter lives in the open, and with his plain grey coat and well-known note is familiar everywhere. Sitting on fence or low bough, he is ever on the lookout for crawling insects, ants being, perhaps, the most favourite morsel. He is a quiet little chap, and takes life easily, and if left alone gets very tame.

The Yellow Robin loves the shelter of the shrubs or flower beds. It seldom ventures far from the ground, and is often seen at the edge of the scrub, sitting tense and alert, or diving to the earth after a caterpillar. It is one of the most trustful birds, and if understood will come right to one's feet for food, and even sit upon its pretty cup-shaped nest within a few feet of a camera.

The Spine-bill loves the flowers. A near relative of the Humming Bird, he lives on nectar, and wherever honey-bearing blossoms are in bloom there you will find him, probing with his long bill to the bottom of the cup. Do you know his shrill double call, "Pipiti, pipiti," so often uttered, to let his mate know where he is?

The Brush Cuckoo wanders about like a lost soul, and never seems to have any friends. Its plaintive note is often heard, but unless the bird is seen it is not easy to tell where the sound comes from. Small birds treat him as an enemy, and yet when the Cuckoo egg hatches out in their nest they do not realise the deception, but work overtime to rear the voracious baby. Although the Cuckoo deprives us of some useful birds by this lazy habit of not rearing its own young, it makes up in another way by eating up the large hairy grubs that other birds will not touch.

The Magpie Lark belongs to an orphan family, with no very near relatives. It is a handsome bird in its immaculate black and

white dress, and it seems to take a special pleasure in looking after suburban lawns and pastures, where at all times of the day it can be seen industriously searching for snails and caterpillars.

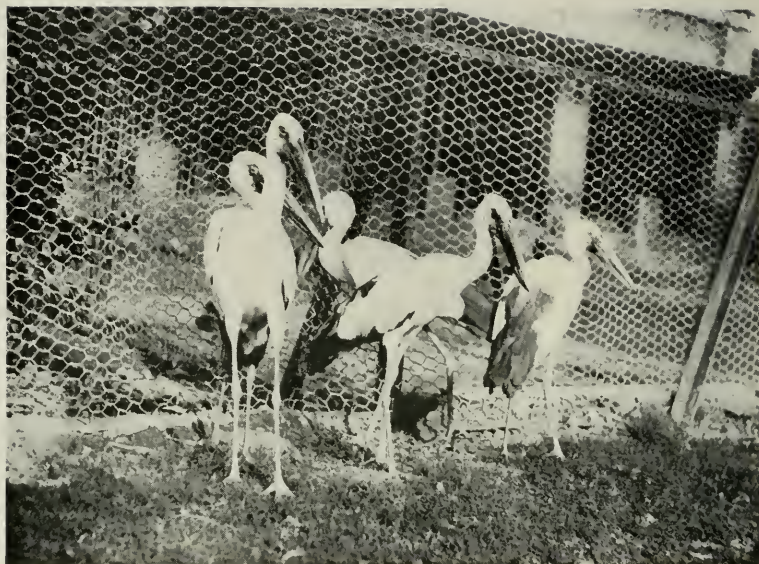
If we have an eye to our own interests we will see that our garden birds are made to feel thoroughly at home, for it would be hard to calculate the value we receive from their presence. Their wants are few—they appreciate water to drink and bathe in, trees to nest in, and chiefly protection from their arch enemy, the domestic cat, an animal which no amount of care and feeding will cause to observe the law, “Thou shalt not kill.” They are quick to learn where they are safe, and reciprocate friendship that may be extended to them. The wild birds at Taronga Park are now numerous, and delightfully tame; and one can watch them at their daily work without them showing timidity. A pair of Yellow-rumped Tits have nested on one of the lawns, where many people pass within a few feet of them every day, and a pair of Red-browed Finches have their home a little distance away, and the Finches often quietly steal some of the Tits’ nest with which to build their own, and the poor little Tits have to work overtime to keep their home together. The Willie Wagtails are sure that the camels are kept for their special benefit, and they build most luxurious nests lined with their soft wool. In winter time, when food is not so abundant, the Yellow Robins will approach the picnickers on the lookout for scraps of cake, while the Jacky Winters keep a close eye on the gardeners when they are digging, in order to snatch up any grub that is uncovered, and all are doing their bit for the general welfare.

AVICULTURE IN FRANCE.

Mons. A. Decoux writes to say that he bred several Many-Coloured Parrakeets last year; he also has two Red-Collared Lori-keets. From photographs kindly sent we see that his aviaries are well planned and spacious; the flights are roofed with large-meshed wire-netting, giving ample access to the sun and (what is equally important) to the rain; an elevated perch, large enough to give a

comfortable grasp, runs across the back of each compartment. Both the Many-Colours and the Lorikeets appear to be in perfect plumage—not a feather broken; and as they are in such good trim we hope that in the coming season M. Decoux will repeat his successes. We had hoped to reproduce the photographs sent us, but unfortunately on further scrutiny they were found to be unsuited for this purpose.

G. R.



Courtesy of W. Jamrach.

IN DAYS GONE BY:
MR. W. JAMRACH'S IMPORTATION OF SHELL IBISES
(*Anastomus oscitans*), July, 1916.

To face p. 139.]

THE
 AVICULTURAL MAGAZINE,

BEING THE JOURNAL OF
 THE AVICULTURAL SOCIETY
 FOR THE STUDY OF
 FOREIGN & BRITISH BIRDS
 IN FREEDOM & CAPTIVITY.

Third Series.—Vol. X.—No. 8.—All rights reserved.

JUNE, 1919.

AMALGAMATION.

The Editor draws attention to the thoughtful and valuable letter on this subject published elsewhere in this issue. Our correspondent but voices the wishes of many of us when he suggests that *Bird Notes* should be amalgamated with the *Avicultural Magazine*.

The widespread and growing movement in favour of union is, as we know, of many years' standing: negotiations favouring this object have more than once been on foot. It has been said, and well said, time after time, that there is no opposition between the Avicultural Society and the Foreign Bird Club. To the man in the street it must indeed seem amazing that in these days of dear paper, dear illustrations, and emptying aviaries there should be two Societies, both professing the same object, both hampered by many difficulties, and by loss of members due to the War, yet each pursuing its own way—disunited, dissevered, disrupted—as if their aims were poles apart.

The cost of production is enormous. Those of us who study the business side of natural history publishing understand only too well why the coloured illustration is banished from our front

page, and the brevier type from our correspondence column. Only by drastic economy has it been possible to keep the flag flying: indeed, there are many natural history journals that have failed to survive the War.

Under these circumstances we believe that Mr. Workman's letter will be of the greatest service to zoology. Should the Foreign Bird Club wish to be reabsorbed into the Avicultural Society—the parent from which it originally sprung—a great gain, not only to aviculture, but to ornithology in general, would inevitably ensue.

G. R.

COLOUR DEVELOPMENT IN THE INDIAN WOOD-STORK.

By GEORGE JENNISON, M.A.

[Reprinted from the Proceedings of the Zoological Society of London, 1914.]

On June 2, 1908, a specimen of *Pseudotantalus leucocephalus*, which I judged to be six months old, came to Belle Vue Gardens with other stock. It was at that time not more than half its present weight. The beak was straight and rather slender, pale yellow in colour. The pinions were of a dull black, the rest of the plumage a yellowish-white. The bird ate fish freely, and has not had a day's illness or check of any kind, so we may assume its subsequent development normal. The first change was noted in February, 1909, when the feathers on the larger wing-coverts were slightly tinged with pink. During the next three years, that is until the spring of 1912, there was a continual change of the yellowish to ever whiter body-feathers, for the moult is extremely gradual and the new plumes make quite a checkered pattern with the old: the dull black of the pinions and tail took on a lustrous greenish tinge, and the bare skin of the head became red where it meets the feathers of the neck.

These changes might pass unnoticed by the casual observer, but in January, 1912, a drastic alteration supervened which could not fail to attract attention. The white feathers of the smaller and median wing-coverts of the chest and underparts of the wings were

slowly replaced by black feathers, with a narrow edge of white. The perfection of plumage was reached in May, when the whole of the shoulder was a wavy pattern of brilliantly contrasted broad black and narrow white, and the bird in flight showed the same beautiful coloration on the chest and beneath the wings.

The beak changes slowly, first thickening and afterwards taking a pronounced downward curve, which continues to develop long after the plumage-change is completed: its colour changes meanwhile to a deep shiny wax-like yellow. During this time the skin of the head, which can be drawn back an inch or more, also continues to develop until the forehead and cheeks are a deep yellow-umber, and the hinder part of the head becomes a rich purple.

The legs are now (1914) showing signs of a remarkable alteration; for five years they were grey with a slight tinge of pink on the toes. The upper half of the tarsus is now a deep magenta-red.

EASTERN RAVENS.

By ETHEL M. JONES.

Far away on the borders of Nepal and India runs a certain ridge, covered with a belt of ancient forest, the trees of which are tall and straight with no undergrowth, but instead a carpet of moss and beautiful ferns growing in profusion under the shade of those mighty giants.

This particular spot, some 7,000 feet above the level of the sea, among mountain ranges overlooking the plains of Northern Bengal, was selected by some Ravens (*Corvus macrorhynchus*) for their home; for far away from the haunts of men their nests would surely be safe. For building there was plenty of material at hand, and soon the nests of twigs and sticks were comfortably lined with moss and wild cotton growing beyond the tiny stream which formed the boundary dividing British from Nepalese territory.

The patience of the old birds was rewarded at last, and each nest held some four or five youngsters, who awoke to find a world—

though at that season a trifle cold—generally bathed in the glorious sunshine of an early Himalayan spring.

There were few dangers, the only enemy who might prove tiresome being the wild cat, and he was too wise to attack nests so zealously guarded. Thus time passed uneventfully, until one day robbers appeared in the form of native youths, who, heedless of the scoldings and plaintive cries of the parent birds, carried into captivity some eight or nine half-fledged infants. They were taken some miles away to the bungalow of an English Sahib who had, in a moment of lightheartedness, without a thought for the consequences, said that he wished for a pet Raven. The youths having retired with the desired reward, the Ravens were consigned to an enormous cage, and the Moorghi-wallah—otherwise known as the custodian of the poultry-run—was raised to the dignity of a foster-parent. What he fed his ungainly family on remained a mystery, probably boiled rice, which to an Indian is an ideal diet for all and sundry, together with scraps obtained from the cook. However, the majority of the youngsters survived the ordeal and only one or two succumbed. Had they all departed this life it would have been pleasanter, though less amusing for the neighbourhood, as subsequent events will show.

Having an abundant diet, the youngsters flourished exceedingly and became fine specimens of their kind, clothed in glorious black plumage with a purple sheen. When old enough to fly they were released from captivity—greatly to their joy, but not to that of the neighbouring community. Instead of being models of respectability and a credit to the moorghi-wallah who had lavished much care and attention on their education, they became notorious for their thievish habits and general immorality. Carpenters were working at that time on a wing lately added to the bungalow, and it was chiefly on their tools and other property that this little band of buccaneers concentrated their energies. Most ingenious were their ways; a couple would be innocently warming a stone with every appearance of intense interest, and the moment the back of the carpenter was turned, down they would swoop and carry off a packet of screws, a chisel, or anything bright and shining. A bunch of keys was

rescued one day only just in time. It was never discovered where these treasures were hidden.

Happily the curses cursed by the carpenters were lacking in the potency of those attributed to prelates, or the Ravens might have shared the fate of their notorious cousin of Rheims. An ovarian diet appealed to them so strongly that they missed no chance of purloining any egg placed in a position to furnish opportunity for larceny. These birds were embarrassingly tame and would take food from one's hand and brazenly peck any inoffending human legs. Eventually they became such a nuisance that a general appeal from all and sundry, black and white, was made to the Sahib for their speedy eviction. The black Barabbases, like the modern Irish tenant, refused to be evicted, and they remained in the vicinity of the bungalow, breaking the eighth commandment on every possible occasion, until the season when the irresistible call of the wild lured them away into the jungle, where doubtless they made homes for themselves and laid green eggs splotted with brown after the manner of their kind.

A long time after a pair returned to the bungalow, probably two of those brought up there, for these birds are not generally known near the abodes of men.

INDIAN BIRDS.

By ALTHEA R. SHERMAN.

[Reprinted from the *Wilson Bulletin*, No. 90.]

Calcutta was the only place in which the Common Indian Swift (*Cypselus affinis*) was identified. Numbers of them were noisily flying above my hotel; both their notes and their appearance in flight were suggestive of our Chimney Swifts. They are said to build their mud nests against the beams and rafters of houses and of porches, and return to these nests for roosting. This trustfulness in mankind makes the species one of the many in India that could be brought under very close observation.

Of three species that were seen in great abundance almost everywhere it is difficult to say which were found most plentiful. All were more numerous in the cities than in the country. The Indian House Crow (*Corvus splendens*) was not seen on Mount Abu, and the Common Pariah Kites (*Milvus govinda*) were not numerous there. The Common Myna (*Acridotheres tristis*) was not seen in Bombay, although it is said to be a resident. Without appearing to exaggerate it is not easy to give an adequate idea of the very great abundance of these species. Nineteen Indian House Crows standing on a plot of ground no more than ten feet square in a Calcutta park were thought exceedingly plentiful, but afterwards they were seen in greater numbers. Looking up a narrow street the air above it seemed full of the Common Kites, one hundred or more of them being in sight; and of the Common Mynas, flocks of twenty or thirty appeared ready to fly up from one's path almost everywhere.

Especially well named is the Indian House Crow, a bird that belongs to the Crow family, found in India most abundantly in the neighbourhood of houses. It is comparatively fearless, and in its search for scraps of food will walk with the boldness of a very tame chicken among a group of natives who are eating. Neither is it averse to coming to porch floors or perching under porch roofs. Those who are intimately acquainted with this Crow tell us that it will enter houses and eat food from the table, "for there is no right to which the Crows cling more tenaciously than the right to be fed by the man whose compound they clean." "Black as a crow" is not applicable to this species, since grey is the predominating colour, although the head and nape are black. It is a very noisy bird, and all day long one's ears are filled with its tiresome cawing; how tiresome these sounds are is realized when one is out of ear-shot of them. The failure to hear them on Mount Abu was one thing that caused that place to be so attractive. Their place was filled in a very slight measure by their cousin, the Jungle Crow, or Indian Corby (*Corvus macrorhynchus*).

The Common Kite, less bold than the House Crow in its approaches to man, is by no means a timid bird. A lady in Delhi, in relating to me her experiences with this species, said that once

when eating out of doors a Kite came so silently and so deftly snatched food from her hand that she was not aware of her loss until the bird had flown some distance from her. On another occasion a Kite tried to snatch from her hand a paper bag containing food. Having read similar stories I was led to inquire of my guides and other people if these were common experiences, and learned that they were, except that often the Kite left a painful scratch.

A pair of Kites was watched while building their nest in a neem-tree that stood in the hotel yard in Jaipur. The work proceeded very slowly. The twigs were carried sometimes in the bill, sometimes by a claw; once the bird took up the twig by its bill, then shifted it to a foot. Bill and claw were used about equally in the carrying. It was at Delhi that Kites were observed when going to roost in the top of a peepul-tree. They perched among the topmost limbs on the highest twigs, and when the coming and going ceased there remained for the night thirty-seven of these birds. The Kite equals, if it does not surpass, our Red-tailed Hawk in length; in weight it must be very light for such small boughs to support so many of them.

The Common Myna resembles in size and build the Starling, but has the street habits of the English Sparrow, yet in some of its country habits it is like the Starling, especially in its fondness for the neighbourhood of cattle and for perching on their backs. It has a fine appearance, produced by plumage that is black on head, neck, and throat, and iridescent vinaceous on breast and belly. When in flight it is easily recognized by the white patches on the wings and the white on the tail. These spots of white serve to distinguish it from its cousin the Bank Myna (*Acridotheres ginginianus*), on which the wing patches are pinkish buff, as is also the tip of the tail. In the latter species the skin around the eye is brick-red, while in the Common Myna it is yellow. The Black-headed Myna (*Temenuchus pagodarum*) is known as the Brahminy Myna because of its elegant appearance and the distinguished air imparted by its long black crest, and the elongated feathers of its neck, throat, and breast, which in colour resemble the breast of our female Robin. This species was seen several times in a free state, also frequently in captivity along with its cousin, the Grey-headed Myna (*Sturnia malabarica*).

The avian sights viewed from the car windows that were of a thrilling nature were confined to those portions of the journey that were between Bombay and Calcutta, and to that which lies eastward of Benares. Westward of that place the plains soon became drier, then drought-stricken, and with increasing aridity the number of birds decreased. East of Benares the level green fields were in all directions very much alike. There was no lack of water, but rather an excess of it. From the many ponds by the track-side were startled huge birds: Vultures, Storks, and Herons, sometimes singly, again in flocks. Often the train rushed past stupid-looking birds of a smaller species, standing in the wayside pools. These grey, obscure-appearing creatures frequently took flight, whereupon from the grey unobtrusive forms there arose visions of white loveliness, that floated off a short distance, then suddenly sank into the earth—apparently—for the birds had alighted and were a dull, concealing grey once more. Here in truth were the "Surprise Birds"! for these were Pond Herons, sometimes called Paddy-birds (*Ardeola grayi*).

CURIOUS DEATHS OF SHAMAHS.

By G. E. Low.

Last autumn, to my great regret, I lost my hen Shamah (who had reared eleven young in the season 1917), by a very unusual accident.

The door of my aviary is about 3 inches thick, with double wire netting, a provision against cats. It opens outwards, and is governed by a steel spring. I had left the aviary, and the door was closing by the force of the spring, when I was just conscious of something dashing at the hinge—presumably to secure an earwig—and in the same instant a little fluttering corpse lay on the ground, cruelly crushed by the leverage of the door. This tragic end was a great grief to me.

Even for a Shamah, she was exceptionally tame and wholly attractive. In the breeding season this little mother never wasted any time. When one brood left the nest she immediately got busy



Photo by W. Shore Baily.

Generosity of W. Shore Baily.

THE INDIAN GREY TIT (*Parus atriceps*).

“There is only one Tit here, the Indian Grey Tit (*Parus cinereus*), a conspicuously marked bird, which bears a certain superficial resemblance to the Great Tit so well known in England. The bird is resident, and rears two broods in the year, commencing to breed as early as the first half of March.”—Surgeon-Commander K. H. Jones in *Twentieth Century Impressions of Hong Kong*.

repairing it for the next. One day she became confused in her multifarious duties of building and rearing, and—presumably after carrying a gentle or cockroach to the empty nest—attempted to feed a young one with a thick grass stem, which choked it.

This, I fear, must not be considered an isolated accident, as on opening the throat of another young bird, which had died after neglect by its parents, I found a stout stalk, lodged at the junction of the gullet with the body, as the cause of death.

The only young Shamah which was fully reared—being on the wing for about six weeks of last season—ended her existence by swallowing a piece of stout white twine, 11 inches long, and with a double knot at one end! Her death being a complete mystery, as she always appeared to be in perfect health, I opened the gizzard, to find it entirely filled with the twine, rolled up in a compact ball.

The father of the family died in moult, after living with me for about six years, which is the end of a rather unfortunate chapter. I am glad to say, however, that I am able to start a new one with another pair of these birds.

The cock was received in exchange last year from Mr. Holden, and has been out of doors all the winter. He is a wonderful songster, and in his repertoire imitates the musical sounds of cats fighting with extraordinary skill. He also whistles a bar or two of at least one popular air. His wife (bred here) frequently “talks” to him when the gas is lit within, and black darkness reigns without, and it is quite amusing, in the silence of the night, to hear an occasional sleepy reply from the aviary.

THE INDIAN GREY TIT.

By W. SHORE BAILY.

The Indian Grey Tit (*Parus atriceps*) is a Himalayan species. It has been fairly frequently imported, but only in small numbers, and it is consequently never very cheap. About the end of 1915 I purchased a pair from a dealer, one of which arrived dead; and as these were the only ones he had, I was unable to replace it.

However, early in 1916 I was able to get another from one of our members. It probably came from the same consignment as my own bird, which was, I believe, brought over by Mr. Harper. Unfortunately the newcomer was minus flights and tail, and was of course quite unable to fly. She made up for this—I think it was a hen—by her extreme activity on her feet: it was astonishing at what a rate she could run up the wire netting. In spite of her weird appearance she was a most engaging little thing. She would nearly always greet me with a perfect volley of swear words—or that's what they sounded like anyway. It was certainly the same language she used to let fly at her fellow-captives if they attempted to take a meal-worm from her: I don't think that any of them ever succeeded in doing so. The cock I never heard make a sound. Early in May I turned both birds into an outside aviary containing plenty of natural cover. The hen was still unable to fly, and as she was evidently stuck in the moult I had little hope of her ever being able to do so. As she could not reach the table I had to feed her on the ground, and she would take peanuts and sunflower seeds, of which she was very fond, from my feet, and would always come for a meal-worm when I had one to spare. Unfortunately, whilst I was away on holiday, my man must have neglected to feed her on the ground, and I am afraid she was starved to death. On my return I secured a hen Great Tit (*Parus major*), hoping that the surviving Grey Tit would make love to her, but this he declined to do. In the autumn to my regret he also disappeared, but whether he found his way out through a hole in the netting or simply died I was never able to find out. *P. atriceps* is a good deal smaller than an adult *P. major*, and is not so bright in colour, but the young Great Tits are almost exactly similar, and I doubt if anyone could tell the difference without handling them. Mr. Temple very nearly succeeded in breeding it in 1913, and given a sufficient supply of live food there seems to be no reason why it should not be bred in this country.

THE WATTLE OF CABOT'S TRAGOPAN.

By HUBERT D. ASTLEY, M.A.

I have to criticize, and that adversely, the coloured plate of the wattle of Cabot's Tragopan as depicted in that splendid work *A Monograph of the Pheasants*, by William Beebe. The colouring as well as the shape is almost entirely incorrect.

I have had the great misfortune to lose my magnificent male Cabot, which I found dead without any warning on March 28, just as he appeared to be in fine breeding form, and was displaying to his mate day by day. The bird was in very good condition, but had nothing in his crop. Well! I made a close examination of the wattle, then fully developed. In Mr. Beebe's *Monograph of the Pheasants* it appears as dull orange in the centre with magenta spots, surrounded by pale dull blue and yellowish-grey; furthermore, there is no scolloping on the outside edge around the whole wattle. The horns also appear as pale mauve blue. It would seem as if the painting by Mr. Grönvold has been done from a faded skin. The gular flap, instead of following the line of the throat, as in his painting, hangs out immediately from the base of the lower mandible, and curves from the throat very conspicuously.

The colours are as follows in a living bird: Skin of face, gular flap, and centre of wattle, a most vivid and brilliant orange, the orange of the centre of the wattle being boldly spotted with a warm lead grey, not magenta. Outside the orange area are waves of a lovely turquoise blue-green, alternating with bright flesh colour, except at the base, where the turquoise predominates. The whole wattle is distinctly and beautifully scolloped. The scollops are gold, i.e. really the colour of a bright "old" gold with an edging of turquoise within.

The horns are also brilliant turquoise blue, inclining to an equally brilliant verdigris green.

The plate gives *no idea whatever* of the *great* beauty of this Tragopan's wattle and fleshy horns, neither in the plate of the bird itself is the orange of the face and gular flap nearly brilliant enough.

It is curious that at the back of the wattle underneath the

whole is sparsely and evenly scattered with black feathers. The wattle in my bird, when pulled down after death, measured $4\frac{1}{2}$ inches from the base of the under bill. I was most distressed to lose this splendid bird, which Monsieur Delacour had most kindly brought me from France last year—a 1918 bird—and when he was staying with me in March and saw it again, he said he had never seen a finer specimen. The Tragopans are charming birds, the males of great beauty, becoming very tame; and in France, at any rate, they are bred successfully. Temminck's and Cabot's are most usually imported; Satyra is rarer, and Blyth's and the Western Tragopan (*T. melanocephalus*) rarer still. No other species are known, except what is perhaps a local race of Blyth's in Tibet.

The display of the males is a wonderful sight, when the wattle is let down over the upper breast like a curtain embroidered with vivid and beautiful colours, the fleshy horns being erected from beneath the silky crests.

MANCHURIAN PARTRIDGES.

By C. BARNBY SMITH.

For some years before the War I often saw in game-dealers' windows in various towns in the spring, Partridges for sale with a large black patch on the breast. On inquiry I was always told that these were "Manchurian Partridges". I shall be glad if some member of the Avicultural Society could tell me the correct name. Were they the Bearded Partridge (*Perdix daurica*) or were they "Mrs. Hodgson's Partridge"? The fact that they were called Manchurian is very little indication, as trade descriptions of this kind are hopelessly misleading.

Whatever is the correct name of the birds, it has occurred to me that it would probably be a most interesting thing to have them in captivity in England. I wonder if they have ever been kept, and if so, with what result. They probably would be quite easy to manage, and experiments might be made of crossing them with our own English Partridge. It seems a case for some member of the

Avicultural Society who has connexions with the East to give a little help. When shipping becomes normal it should not be difficult to get them over.

[Mr. Meade-Waldo writes: "The Bearded Partridge (*Perdix daurica*) was largely introduced with Russian game before the War. I do not think it has ever been imported alive. It appears to be a numerous species, and its range includes N.E. and Central Asia—northward into Dauria, eastward to Amurland, Manchuria, and the mountains near Peking, westward to Dzungaria and the Tian-shan, and southward to the sources of the Yangtze-Kiang. It would be a very interesting bird to import alive, and should thrive in confinement at least as well as our own Common Partridge."]

THE WILD BIRD INVESTIGATION SOCIETY.

The first number of the "Journal" is now prepared for the Press.

The Editors invite contributions in the form of articles (of 600-3,000 words), notes, photographs, etc., which if found suitable will be accepted for publication, it being understood that they are offered to this Journal alone.

Contributions should be written or typed on one side of the paper only.

Amongst other features, and in addition to original papers and notes, there will be a series of notes and news of interest to ornithologists and bird-lovers, a correspondence column, reports and news from local branches, reviews and notes on current literature.

All communications should be addressed to Dr. Collinge, The University, St. Andrews.

A NEW DEPARTURE IN NATURAL HISTORY: A JOURNAL FOR OOLOGISTS.

Egg Collectors, both in this country and abroad, have long felt the want of a journal dealing exclusively with their branch of nature study, and particularly of a medium for the sale and exchange

of specimens without the intervention of a dealer; for, next to eggs collected by oneself, it is surely most satisfactory to obtain them at first hand from the actual collector.

We are pleased to learn that the publication of such a medium is to be taken in hand by a well-known collector, Mr. K. L. Skinner, of Brooklands Estate Office, Weybridge, who will be pleased to hear from any member of the Avicultural Society who is interested in the idea.

The publication, which is to be a monthly one, will probably take the form of an *Egg Collectors' Exchange and Mart* and will be issued to subscribers only.

It is hoped to publish the first number on June 1, 1919, and thereafter as nearly as possible on the first day of each succeeding month. The subscription for the period ending December 31, 1919, will be 4s. and for future years 5s. No reduction will be made in the case of those joining after the commencement of a year, but such new subscribers will receive the back numbers of the year in which they join.

The founder regards it as essential that only reliable collectors should be admitted as subscribers, and will take all possible steps to ensure this. No subscriber need therefore have any hesitation in transacting business with any other subscriber.

We are pleased to learn that the advertisement of British-taken eggs of certain species, the protection of which is so much to be desired, will be absolutely taboo.

It is hoped that much may be done in the way of bringing together collectors in remote parts of the Empire and facilitating intercourse between them, and between those in this country and America.

The information to be published will at first consist of subscribers' advertisements and notes and comments on matters of interest to egg collectors. Subscribers can advertise in any number of the paper at a charge of $\frac{1}{2}d.$ per word, and will have the right once in each year to a free 25-word advertisement. The names of all new subscribers will be published once a year, on joining, and on renewing their subscriptions, together with their addresses. Both names and addresses can be omitted if preferred in any case.

As the subscription income increases it should be possible to increase the literary contents of the paper, and it is hoped that in time it may rank high among natural history publications.

REVIEW.

A LAWYER'S GARDEN.*

Our Member, Mr. Barnby Smith, has sent us an interesting and well-written booklet on his garden and aviaries. The work deals successively (and successfully) with trees and flowers, with a rock garden, with the birds in the garden, with the fish in the garden; it has been a great pleasure to read this little work. Under two acres in extent, the pleasure contains a miniature wood of pines and larches and birches, with maples, poplars, and cedars, beds of rhododendrons and azaleas, clumps of irises; the portion devoted to rock plants blooms with primulas and saxifrages. In the avicultural section Mr. Smith tells us of his Pheasants, Partridges, Francolin, Cranes, Ibises, and Oyster-catcher ("so-called because it never catches oysters"), of his fascinating Waders and lovely Tragopans. Four fine photographs illustrate this part of the book; those of us who have read the author's bird papers published in the MAGAZINE will well appreciate the interest of the letterpress. An account of a Rainbow Trout, tame enough to feed from the hand, concludes this pleasant pamphlet.

The book has been well got up, and is almost free from errors; on p. 17, however, we read "Kurroo" instead of "Karoo". We were glad to see that the writer insists that Owls should only be fed on six days of the week.

G. R.

A HANDBOOK OF BRITISH BIRDS.†

Accurate, concise, invaluable—these epithets one unhesitatingly applies to the scholarly work before us. A careful compendium of

* *Notes on a Lawyer's Garden.* By C. Barnby Smith. Illustrated. London: Adlard & Son and West Newman.

† *A Practical Handbook of British Birds.* Edited by H. F. Witherby. Illustrated. London: Witherby & Co. In eighteen Parts. Price 4s. net per Part.

British birds, produced throughout by able writers, this up-to-date and practical work consists of a series of keys for the identification of the various species and subspecies, together with brief accounts of the plumage in various stages, of measurements, field characters, breeding habits, nest, eggs, and so forth. Special attention, indeed, has been given to the varying stages of plumage; ornithologists the world over will appreciate the immense trouble that has been taken in working up, so thoroughly, this complicated and difficult section. The work is prefaced with a good introduction, a glossary, a scale of measurements, and some carefully executed drawings. The entire book is issued in eighteen parts, of which the first two, now before us, deal with Crows, Starlings, Finches, and some of the Buntings. As evidencing the care with which the writers have worked, we mention the plate facing p. 16, showing the gradual change in the feathering of the head of the Rook, illustrated by thirteen specimens. The coloured plates are delightful; as, for instance, that which shows the juvenal plumage of various Finches, the feathers being rendered with exquisite softness and beauty; or Mr. Davies' family of Crossbills, every detail set in hard clear outline against a pale-blue sky; or Mr. Grönvold's series of Bunting heads, each one a perfect study in itself, clear-cut and brilliant, a veritable Nature cameo.

We recommend the authors to revise the legend below the upper figure on p. xiv of the introduction; for in spite of the drawing accompanying it, the term "base of the skull" is anatomically incorrect when applied to the root of the beak, an essentially *anterior* structure; the term "glabellum" exists ready made, and should have been employed here. In the glossary we were surprised to note the omission of any reference to the tomium, though the clumsy term "cutting edges of the bill" is carefully enshrined and moreover *explained*. Although the lores is illustrated in the diagram on p. xvi, there is no mention of it in the glossary. Part I, which we are expressly told has been brought up to date, mentions the bird studies of "Mr." Eagle Clarke. It was news to learn that the term "melanism" includes the abnormal presence of "very dark-coloured" plumage—a condition to which we had thought the term "phaëism" had long been universally applied.

CHANGE OF PUBLISHERS.

At the Council Meeting held on April 30, the estimate of Messrs. Stephen Austin & Sons, Ltd., 5 Fore Street, Hertford, for producing the Magazine was approved. Messrs. Austin were therefore elected to be the new publishers for the Society. They are already known to our members as the printers of the *Geological Magazine*.

The Editor was instructed to write to Messrs. Austin conveying the decision of the Council, and the Magazine will in future be produced by them.

OUR HONORARY TREASURER.

Mr. Ezra writes to say that his new address is 8 Charles Street, Berkeley Square, London, W. 1, until the end of July. All subscriptions and donations for the illustration and deficit funds should be sent to him at this address.

PROPOSED AMALGAMATION OF "BIRD NOTES"
WITH THE "AVICULTURAL MAGAZINE".

LISMORE, WINDSOR,
BELFAST.

May 4, 1919.

DEAR SIR,—I enclose a copy of a letter I have sent to *Bird Notes* for publication, as I thought you might like to insert it in your next issue along with this letter. For a long time I have had the idea of proposing an amalgamation of these two kindred societies, and I think it would be a good thing for both if it could be arranged.—I remain, yours very truly,

W. H. WORKMAN.

[ENCLOSURE.]

DEAR SIR,—I see in your notice that you ask for correspondence regarding the raising of the annual subscription, and I therefore take the liberty of making a suggestion that this Society should amalgamate with the Avicultural Society and form a really

powerful union which will include all the British and Foreign aviculturists; it would then be possible to issue a much larger and more interesting magazine, with coloured plates and a much greater amount of original reading matter under one cover. I would suggest, too, that more space should then be devoted to notes and articles on British and foreign *wild* birds; travellers doubtless could give us splendid descriptions of a popular nature of their experiences amongst the birds of the various countries visited. I recall two intensely interesting articles which came out in the early volumes of the *Avicultural Magazine*—"The Birds of Ecuador," by Mr. W. Goodfellow, and "Birds of the Bahamas", by Mr. Bonhote. There must and will be numbers of people who could write interesting notes which would be of very great value to our members, but not perhaps scientific enough for publication in the *Ibis*. Again, since the *Zoologist* was given up there is a great want of a popular magazine for British bird notes and descriptions of bird life in this country in general. I know, of course, that we have that most interesting magazine *British Birds*, but it again is of a pretty high scientific nature rather after the style of *Ibis*, and the Editors would not wish to fill up their pages with notes and articles such as used to appear in the *Zoologist* when in its palmy days.

Surely in these days of great business amalgamations the Councils of the Avicultural Society and Foreign Bird Club could meet together and produce a magnificent scheme for the good of Ornithology in its widest sense; members then would not mind paying the larger subscription, because they know that they would be getting the best value possible instead of keeping up two Societies, one in opposition to the other. This I believe to be the ideal plan, but if not acceptable I would take a leaf from this "Distressful Country" of mine; here we have a little magazine called the *Irish Naturalist*, which in spite of party fights does duty as the official magazine of no less than seven different Natural History Societies. If this can be done in Ireland, surely in England enough unity could be obtained amongst naturalists to carry through a scheme on the above lines.—Yours very truly,

W. H. WORKMAN, F.Z.S., M.B.O.U.



Photo by Guy Falkner.

RHEA, SHOWING METHOD OF FEEDING:
the food being seized and jerked down the throat with
a backward movement of the head.

THE
AVICULTURAL MAGAZINE,

BEING THE JOURNAL OF
 THE AVICULTURAL SOCIETY
 FOR THE STUDY OF
 FOREIGN & BRITISH BIRDS
 IN FREEDOM & CAPTIVITY.

Third Series.—Vol. X.—No. 9.—All rights reserved.

JULY, 1919.

SEMI-JUBILEE.

The Annual Meeting and Garden Party on July 17 will indeed be a historic occasion: for not only is it the first post-War gathering, but it also marks the Semi-Jubilee of the Society. Twenty-five years ago Messrs. Fillmer and Simpson communicated with Mr. Phillipps and Dr. Butler with a view to founding a Society for the study of British and foreign birds in freedom and captivity; and on November 1, 1894, the first volume of the Magazine was issued. For the new science the apt name of "aviculture" was proposed by Dr. Butler. The first list of members consisted of fifty-two names.

From this modest beginning the Society and Magazine has greatly increased and prospered: known the world over, with a recognized status and authority peculiarly its own, the cause of aviculture has been helped—or rather spurred—on by many highly competent observers, whose notes and papers fill the substantial series of back volumes which we trust adorn the shelves of all our members. We continually receive proofs of the estimation everywhere accorded to our Journal: even in the present issue many encouraging and helpful remarks will be found.

In our correspondence column we publish several remarkable letters: for now that we can once more resume this valuable section it would seem as if a very flood of literature had burst forth. It was well said at one of our Council Meetings that "the correspondence was as interesting as the articles"; certainly our members have distinguished themselves in the variety and interest of the topics they discuss.

First and foremost, the lifting of the war cloud coincides with a sudden and most welcome revival of aviculture; the letter of our member Mr. Rogers heralds the dawn. Once again the aviculturist may read the ever-interesting lists of new importations which so delighted him before the War. All our old friends are once more with us: flaming Bishop, dainty Waxbill, steely Combassou; green singing Finches, yellow as the Canaries to whom they are related; delicate Cordon Bleus, graceful Whydahs, charming Silver Bills. In these latter times the gate of Africa stands unbarred and the golden days return. Before us lies an avicultural Paradise, bright with opportunity.

With the fast-brightening prospect a new (yet old) policy is fast developing, that of amalgamation. Shall the Avicultural Society unite with the Foreign Bird Club? Many of our members belong also to the daughter Society, reabsorption would necessitate but little disturbance. In our letter-box we already find proofs of the stir occasioned by Mr. Workman's historic suggestion published in the June issue; to-day we print further evidence of the *entente*, which, long existent, but seeks to reveal itself.

The Council hopes—nay, expects—that the Annual Meeting of July 17 will eclipse all previous occasions both in attendance and importance.

G. R.

THE SEMI-JUBILEE GARDEN PARTY AT THE ZOO.

The Council of the Avicultural Society invites all Members to the Garden Party to be held at the Zoological Gardens, Regent's Park, on Thursday, July 17. Council meeting at 3 p.m., followed

by tea at 4.15 in the Fellows' Pavilion, to which all members and friends of the Society are invited. The Council will be pleased to see all who are interested in aviculture, whether members of the Society or not; it is hoped that each member will bring at least one friend. Members of the Foreign Bird Club are specially welcome.

THE FUTURE.

By H. E. ROGERS.

I think that the *Avicultural Magazine*, and particularly the back numbers, will appreciate greatly in value in the near future. I find that illustrated natural history works are becoming scarce, and generally three times the pre-War prices are asked. I have tried lately to get Reichenow's *Parrots*: it was fairly common a few years ago, but I have searched in vain; I only had a badly cut up copy offered at a high price.

I would very much like to write an article generally interesting from the point of view of the importer and the private collector, but must forego such an idea for the present. I have a greater pressure of work than I can attend to, the difficulties of labour and material are too great.

I have just received two magnificent Chimpanzees, and during the past eight weeks have had through my hands some of the finest ethnographic specimens that have ever arrived in Liverpool.

[We hope Mr. Rogers will send us his suggested paper, as it would be of great interest to all.—G. R.]

THE COMMON RHEA

(*Rhea americana*).

By J. K. BUTTER, M.D.

In South America the place of the Ostriches is taken by an allied group of birds known as Rheas, or as they are often termed American Ostriches, which are distinguished externally by the presence of three toes furnished with claws instead of nails, a head and neck

fully feathered, and the absence of a tail ; the wings are proportionally longer and are covered with big slender plumes, and the extremity of the wing has a horny process. The flattened beak is broad at the base and rounded at the tip, where it has a curved nail-like sheath. The feathers on the head and neck are small, thin, and pointed, those on the body are large, broad, and rounded.

In colour the two sexes are very similar, the cock being larger, darker in his plumage, and having a band of darker feathers down the back of his neck from the head to the shoulders. They are inhabitants of the Pampas of Argentina and Patagonia.

The Rhea will readily take to water, and is a good swimmer. They are gregarious, each cock associates with several hens. I had in my field one cock which was kindly presented to me by the Duke of Bedford. With this bird were three hens that I bought from different places. One day early in July I noticed that the cock bird had scooped a hole in the sand by the side of the fence, and the hens had already each laid an egg, pale in colour. The cock began at once to brood, sitting on the three eggs, and about every other day the hens laid their eggs close beside him, and by the help of his beak and his wings he scooped all the eggs under him until he sat on a dozen. The first chicks came out on the thirty-first day, they were three in number ; on the thirty-second day there were another two out, and before he came off the eggs he hatched nine altogether out of the twelve. He took sole charge of the family, the hens were not interested much, so I fenced him and the chicks in, and as soon as he began to sit I made a rough shelter over him to keep out the wet. The chicks were very hardy and fed well ; after three weeks in the pen I let them out in the field, and they then grew very fast.

Rheas utter a booming cry accompanied by a sighing or hissing sound. My Rheas were very fond of running as fast as possible round the field, with one wing outstretched and suddenly turning round, and one day my cock bird whilst doing this broke his leg at the knee. I put the leg up in plaster of Paris with gum solution, and it did remarkably well. He was very patient, and rested it well, I could see he was easier when quiet ; when I removed the plaster his leg was healed, it was a compound fracture into the joint. He had a stiff leg

afterwards. I fed my Rheas the same as the Emeus, on grass, grain, roots, bread, fruits, Indian corn, dog biscuits broken up, cabbage, lettuce, chopped turnips, and carrots.

The chicks were given a mixture consisting of the following: Coarse chicken meal (scalded), ground meal, crissel (scalded), cardiac powder (Spratt's), about two teaspoonsful to twelve chicks (increase the quantity as they grow older), mix well together and dry out to a crumbly state with barley meal, chopped lettuce, any insect food such as clean gentles, dried flies, and ants' eggs.

There are besides the common Rhea, Darwin's Rhea (*Rhea Darwinii*), less common, distinguished by its smaller size, shorter legs, less uniformly coloured plumage, and pale-green eggs; and the long-billed Rhea (*Rhea macrorhyncha*) of Northern Brazil—also a small species, characterized by its longer beak, larger and more flattened head feathers, longer body feathers, and more slender legs, as well as by the general darker colouring, which is brownish-grey mingled with black.

THE EMEU

(*Dromæus novæ-hollandiæ*).

By J. K. BUTTER, M.D.

The Emeu is next in size to the African Ostrich: the word Emeu originally came from a Portuguese word, *emea*, meaning a crane, and then any large bird, now by common consent restricted to the latter. The Emeus are entirely restricted to Australia and some of the adjacent islands, and are distinguished by the absence of a helmet, such as adorns the head of the Cassowary; the complete feathering of the head and neck, unless at its upper part, which is bluish in colour; and the normal length of the claw of the second toe, the claws of all three toes being much shorter than in the allied genus. Emeus are further characterized by the beak being depressed and broad. The wing is very small and rudimentary. The common Emeu has the general hue of the plumage light brown, mottled in some parts with grey, except near the tips of the feathers, where

they are black, with a broad subterminal band of rufous. In Western Australia you get the so-called Spotted Emeu (*Dromæus irroratus*) of more slender build, having the feathers barred with white and dark grey, terminating in a black spot, with a rufous margin, while the two sexes of the adult are nearly similar, the female is the larger of the two. The male remains attached to a single female, instead of being polygamous.

The note of the Emeu is a low booming or pumping noise produced by the female by means of the expansion and contraction of a large membranous bag surrounding an oblong opening through the rings of the trachea. The male has no voice beyond a suppressed hiss when angry and a sort of grunt when distressed.

Emeus take readily to water, and can swim well. Their vision is keen and they are swift of foot. They can deliver a powerful kick, and the blow is delivered outwards and backwards. Beneath the skin these birds have a thick layer of fat, yielding a pale amber-coloured oil which is free from taste or smell. The flesh is not unlike coarse beef and sweet to eat. They lay from six to nine eggs of a beautiful dark green, resembling shagreen in appearance, $5\frac{3}{4}$ inches in length by $3\frac{3}{4}$ inches in breadth. These are nice to eat, being very rich in flavour, and the contents of one egg just covers the bottom of an ordinary frying-pan.

The Emeu squats down with its legs stretched out in front of it. I had three in my paddock, they were very hardy birds, and had a shed to shelter in if they liked; but they preferred staying out in the field all night, and in the morning were often resting on the ground, with icicles hanging from their feathers. The feathers are double, springing from a single shaft. I have heard the lecturer in a menagerie describe this bird as having neither tongue, wing, nor tail, and every quill in its body bears two distinct feathers! They drink water freely, gulping it down, especially in the warm weather, which distresses them a good deal. They feed on grass, roots, grain, bread, fruits, Indian corn, broken-up dog biscuits, cabbage, lettuce, chopped turnips, and carrots.

The female lays generally in a sandy hollow, and it is the male bird that incubates the beautiful granulated green-coloured eggs.

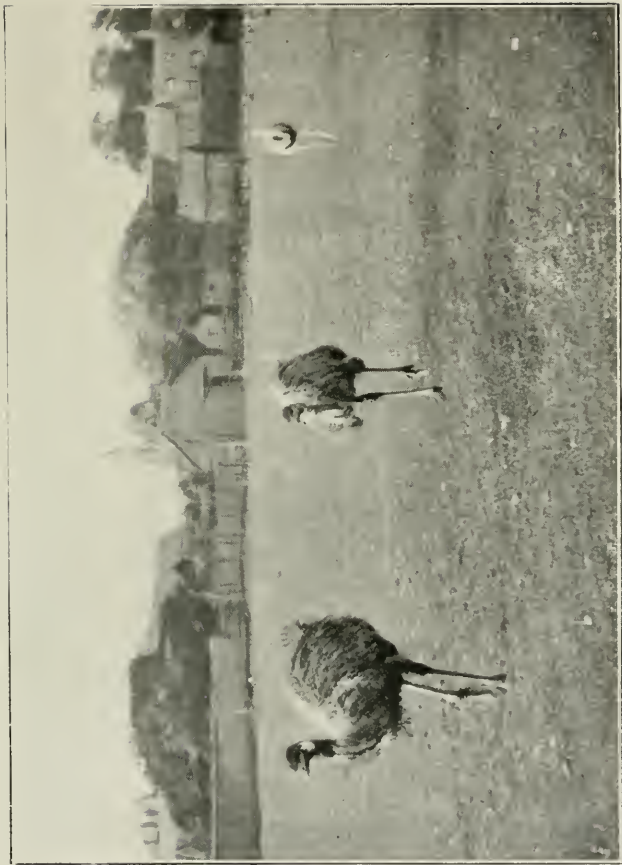


Photo by Dr. Butler.

Generosity of Dr. Butler.

DR. BUTTER'S PAIR OF EMEUS: HEN BIRD IN FRONT.

[To face p. 162.]

He incubates for about fifty to sixty days; the chicks when hatched are very pretty, being longitudinally striped, brownish black and grey. These stripes are continued on to the head, where they break up into spots, while there are also others on the foreneck and breast which terminate on the thighs. They are easily tamed, after a short time, when they get used to the field. I had one arrive once that was quite wild, and when let out of the box started running round and round the field, pitching into the wall, till I thought it would kill itself. I got help, and we drove it into a shed, where I had many bags half-filled with hay and flattened out; then I nailed the bags all round the sides of the shed, so that it could not injure itself any further. I put plenty of straw on the floor, and kept it in the dark for a couple of days, feeding it at intervals, gradually letting it have more light, till I got it perfectly quiet, so that you could go in and out from it without disturbing it. I then opened the door one morning and let it come out itself, and I had no further trouble. The photograph shows the breeding pair I had at Cannock.

REPORT OF COUNCIL MEETING.

By kind permission of the Zoological Society a Council Meeting was held at the Gardens on April 30. Present: Misses Alderson (Hon. Secretary), Chawner, Messrs. Seth-Smith, Astley, Ezra (Hon. Treasurer), Meade-Waldo (Chairman), Lieut. Gurney, Dr. Amsler, Dr. Graham Renshaw (Hon. Editor).

An important offer for all the back numbers of the Magazine, up to October, 1918, inclusive, was considered, Mr. Seth-Smith being appointed delegate to discuss the matter and report to the Council.

The rules were amended to allow the Hon. Treasurer to become *ex officio* a member of the Executive.

The unsatisfactory conduct of certain members, who did not even assist the labours of the Council by paying their subscriptions, was commented upon.

The Hon. Treasurer, in presenting his Report, stated a balance in hand of £63.

The Hon. Editor reported that it had been possible by strict editing to effect considerable economy in the production of the Magazine, considerable saving having been attained regarding author's corrections and extra small type.

The proposed change of publisher was discussed, and the tender of Messrs. Austin & Sons being approved, they were appointed publishers of the Magazine.

It was decided to again insert a notice of the work of the Society in the Year-Book of Scientific Societies.

The date of the Semi-Jubilee Garden Party was fixed for July 17.

The proceedings closed with a vote of thanks to the Chairman, and to the Zoological Society for the use of the room.

The Council then proceeded on a tour of inspection. The fine collection of Parrakeets in the Small Bird House was visited, together with the Mynahs, Fruit Pigeons, and Jays, and the smaller birds in the outside flights. In the North Garden the Council inspected the series of Tragopans, Pheasants, and Jungle Fowl, which also included hybrid Peafowl, and a very good Honduras Turkey; two Great Bustards were also on exhibition.

UNPAID SUBSCRIPTIONS.*

It will hardly be credited that at this late period of the avicultural year—especially in view of the post-War conditions which hamper the labours of the Council—there are certain members who have not yet paid their subscriptions.

The cost of producing the Magazine is so serious that the Council, it will be noted, has rationed each issue to sixteen pages. Every economy is practised in editing; no member of the Council receives a penny for his or her services; all work is done for the pure love of Science. After four years of a war which has made utter havoc of zoological journalism, the Magazine still carries on amid the graves of many contemporaries.

Every unpaid subscription is a hindrance to the already burdened Council—a drag on the wheels of progress, a Cuckoo in the

avicultural nest. With all arrears paid up the Society could go confidently forward to the brilliant future just dawning.

But it can do nothing without money. Every member regularly receives the Magazine; *the Council does not ask for alms, but for its due.*

All subscriptions to be sent direct to our Hon. Treasurer.

THE WILD BIRD INVESTIGATION SOCIETY.

OFFICERS AND COUNCIL NOMINATED FOR THE YEAR 1919-20.

President : J. H. Gurney, F.Z.S.

Vice-Presidents : Hugh S. Gladstone, M.A., F.R.S.E., M.B.O.U.

F. G. Penrose, M.D., F.Z.S., M.B.O.U.

Professor D'Arcy W. Thompson, B.B., D.Litt.,
F.R.S.

E. Wheler-Galton.

Council : William Berry, B.A., LL.B., M.B.O.U.

Linnaeus Greening, F.L.S., F.Z.S., M.B.O.U.

L. A. L. King, M.A. (Cantab.).

Sydney H. Long, M.D., F.Z.S., M.B.O.U.

Graham Renshaw, M.D., F.R.S.E.

Francis Ward, M.D.

Hon. Treasurer :

General Secretary and Editor : W. E. Collinge, D.Sc., F.L.S.,
M.B.O.U.

PROPOSED AMALGAMATION OF "BIRD NOTES" WITH THE "AVICULTURAL MAGAZINE".

DEAR SIR,—It was with pleasure that I read Mr. Workman's letter in the last issue with reference to a suggested amalgamation of the Avicultural and Foreign Bird Club Societies.

In this matter possibly my opinion may not be required, but as I have keenly interested myself in bird-keeping for more years than I am likely to live and have both Societies' magazines in my

possession from the commencement, perhaps I may be permitted to publish a few remarks.

In addition to an intimate connexion with other bird societies and journals, I have been pleasantly associated with active members of the *Avicultural Magazine* and *Bird Notes* and have contributed to both these magazines, and during this time when trying to obtain recruits to either or both I have more than once been unsuccessful on the score that "*both lumped*" would be worth a subscription.

All worth publishing from either source would well go into one publication, likely to sustain increasing interest, and I believe all (who are not inclined to place personal ideas or interests in front of aviculture) would be willing to help bring about such a state of affairs, especially when an aggregate membership at the commencement is hardly likely to exceed 500 subscribers. Such a magazine, with its combined influential membership, would get a much larger circulation and run of success if its Council undertook to safeguard the legitimate interests of keepers of living birds, in addition to the collection and publication of items relating to scientific and popular aviculture.

I am inclined to think even to-day that ornithologists have not awakened to the fact that of those interested *at all* in birds by far the greatest number are those occupied in *bird-keeping* either for reasons of recreation or instruction, and that the most entertaining and reliable information relating to birds is that culled from a union of scientific aviculture and field-work. Little of value (apart from structural investigation) can be obtained from lifeless things, and ten minutes with a living specimen will supply more information than weeks with a preserved one.

It is to be hoped that something will be done to supply those interested in living birds with a popular and scientific monthly magazine, enjoying a much wider circulation than has at present been the case, and as far as lies in my power I should be most willing to help, although my spare moments in these days are increasingly limited.—Yours faithfully,

ALLEN SILVER, F.Z.S., F.R.H.S.

RARE AUSTRALASIAN BIRDS.

RAMONA, BEECROFT,
 SYDNEY, N.S.W.

DEAR DR. RENSHAW,—I am enclosing you again two contributions which I hope may be of some interest. As far as the White-winged Wrens are concerned, I assure you that they made quite a stir in the little world of bird-lovers here. I often wish, when they come to take their mealworms out of my fingers, that my old friend Mr. North could have lived to see them.

The Kagns are, I am afraid, little known at home, yet they are exceptionally handsome birds, and if one gets them to display at command, as mine will, they are indeed an attraction and joy to their owner.

Rock Pebbler Parrots are again in the market—thirty or forty came in a few days ago. I expect they find their way to America, as all better and rarer birds do now. I just mention it as this species has been out of the market for many, many years.

Through the drought numbers of birds have been driven in and caught; for example, Regent Birds. I have quite a number, mostly out of colour; there is about one coloured to a hundred brown ones in the bush. I expect to make a good exchange with them for American Finches and Soft-bills, as we get nothing new here at all. African birds are right off the market.—Yours faithfully,

G. A. HEUMANN.

BIRD DRAWINGS.

5 LANCASTER ROAD,
 HAMPSTEAD, N.W. 3.

DEAR SIR,—I am sending herewith some of my drawings which I thought might be of use. They are not, I am afraid, of very unusual or rare birds, but if it would be any help for the Magazine I would be pleased to do some drawings without payment if you would suggest subjects. I can work from skins and a description when unable to see the living bird.—Yours faithfully,

ALICE M. COOK.

[We are grateful to Mrs. Cook for her generous offer, of which we hope to avail ourselves later, if the overcrowded state of our illustration drawer will allow. Mrs. Cook's beautiful work is well known to all readers of *Bird Notes*, and the above letter demonstrates once more the cordial relations existing between the Foreign Bird Club and the Avicultural Society.—G. R.]

THE REVIVAL OF AVICULTURE.

“AREQUIPA,” 7 AIGBURTH ROAD,

LIVERPOOL.

May 29, 1919.

DEAR DR. RENSHAW,—I know it will interest you to learn that I have at length (after some thirty-five years with Cross) commenced business on my own account.

On principle I shall not conduct my business, as has been too often the case in past years, in a close shop. In regard to all birds it is my intention to keep them in outdoor garden aviaries. I have now been in business since April 12, and I am sure your readers will be glad to know that, after four years general prohibition of imports, stock is gradually arriving, and I have received and disposed of since I commenced business the following birds: 47 Grey Parrots, 10 Blue-fronted Amazon Parrots, 5 Festive Amazons, 2 Yellow-fronted Amazons, 2 Noble Macaws, 5 Jendaya Conures, 5 Nandy Conures, 1 Rock Mynah, 1 Pennant Parrakeet, 1 Red Rosella; Senegal Finches—288 Fire Finches, 87 Russ's and Redbill Weavers, 10 Olive Weavers, 6 Golden Oriole Weavers, 2 Song Sparrows, 190 Oryx, Crimson, and Napoleon Bishop Weavers, 176 Cordon Bleus, 115 Senegal Waxbills, 3 Orange-cheek Waxbills, 8 Green Singing Finches, 5 Grey Singing Finches, 2 Shaft-tail Whydahs, 4 Pin-tail Whydahs, 61 Ribbon Finches, 40 Lavender Finches, 20 African Silver-bills, 45 Combasous, 12 Bronze Mannikins. Also 1 Rock Mynah from India and the following mammals and reptiles: 1 Humboldt's Woolly or Lagotherix Monkey, 2 Red Titi Monkeys, 1 Tamarin Monkey, 6 Capuchin Monkeys, 2 Dog-face Monkeys, 1 Putty-nose Monkey, 8 Sooty Mangabeys, 2 Callitrix Monkeys,

2 Macacus Monkeys, 1 Ocelot, 1 Galago, 2 Paccas, 2 Genets, 1 Harnessed Antelope, 7 Tabulated Tortoises, and a few other odds and ends.

I need hardly say that in every case there were eager purchasers waiting, and there is every indication of a sustained market for the next two years.

I have cablegrams flying about, and hope to receive at least a few more consignments during the next few months.

In regard to my Senegal shipment, it was a failure in that there were a number of cases of birds washed overboard just after leaving Senegal. The venture, however, was a financial success owing to the high prices realized for all birds arriving.—With kind regards, yours sincerely,

H. E. ROGERS.

[We were indeed delighted to publish the above. Mr. Rogers' letter comes like a sunburst after the dark years that are past.—G. R.]

THE STATE PROTECTION OF BIRDS.

124 BECKENHAM ROAD,
BECKENHAM, KENT.

May 2, 1919.

DEAR DR. RENSHAW,—Although I consider Dr. Collinge's article on the Protection of Wild Birds a useful addition to the published literature on the subject, I do not agree with him that birds or any other insect-eaters are of much use in reducing the numbers of the Magpie (Gooseberry or Currant) Moth, because the caterpillars and apparently also the chrysalides and imagines of that moth are rejected by most, if not all, British birds, lizards, frogs, and spiders (see my observations referred to by Darwin in his *Descent of Man*, 2nd ed., p. 500 and elsewhere), though some foreigners have been known to devour them.

Then, again, I am not at all satisfied of the advantage of preserving the House-Sparrow: it undoubtedly drives away many more useful insectivorous birds from our flower and vegetable gardens, does far more damage to plants by nipping off leaves, buds,

and flowers, and snapping young twigs by its weight, than it does good by the destruction of an occasional green-fly. Moreover, the Sparrow breeds nearly all the year round, even in mild winters. I remember that as a boy I liked it very much, with a bit of steak, in a pie; but otherwise I shall always regard it as a public nuisance.—Yours very sincerely,

A. G. BUTLER.

DEAR DR. RENSCHAW,—With reference to Dr. Butler's opinion as to birds feeding upon the larvæ of the Magpie Moth (*Abraxas grossulariata*), I regret that I am unable to agree with him. Firstly, because I have taken them on numerous occasions from the stomachs of the Blackbird, Song and Mistle Thrush, Blue and Great Tits, Whitethroat, Chaffinch, and other species. Secondly, in the spring of 1918 a most interesting case came under my notice, which was very carefully inquired into. Some currant bushes were noticed to be very badly infected with the young larvæ of the Magpie Moth, and for the first four or five days after they appeared they attracted quite a number of Song and Mistle Thrushes, which were observed feeding upon the caterpillars. Over a hundred were found in the stomach of a Song Thrush, and fifty to sixty were common in some of the Mistle Thrushes examined. Suddenly the birds ceased to feed upon the larvæ. On examining the bushes many larvæ were found to remain. Some were collected (forty-one examples) and kept. From these I reared fourteen masses of cocoons of *Microgaster* and twenty-seven specimens of *Exorista*. Not one of the larvæ entered upon the pupa stage. Further, after most careful searching, not a single pupa could be found beneath the bushes, and we have scarcely seen a moth, although there must have been tens of thousands of the larvæ.

Here, I think, we have an excellent example of two natural agencies, viz. wild birds and insect parasites, practically controlling what would otherwise have developed into a serious plague.

These larvæ may not be eaten to the same extent as those of other common species, but it is certainly a mistaken impression that they are entirely avoided by wild birds in their free condition.

As to the House-Sparrow, I have never advocated preserving it; on the other hand, I have strongly protested against the apathy displayed in its destruction (cf. *Nature*, June 28, 1917; *Journ. Board Agric.*, p. 676, September, 1918; *National Review*, pp. 606-12, June, 1919). Whilst I should be pleased to see, in the interests of agriculture, strong repressive measures instituted, I am not in favour of any policy advocating extermination. The House-Sparrow is injurious because it is too plentiful.—Yours,

WALTER E. COLLINGE.

THE UNIVERSITY,
ST. ANDREWS.

THE NEW OOLOGISTS' JOURNAL.

BROOKLANDS ESTATE OFFICE,
WEYBRIDGE.

DEAR SIR,—I am asking all my egg-collecting friends to support me in the establishment of the I.O.U. It will pay them to do so merely for the purpose of negotiating purchases and exchanges without the mediation of a dealer. As the membership grows, so this Bulletin will grow in interest and usefulness. It is the first attempt ever made to unite collectors in all parts of the world.—Yours truly,

K. L. SKINNER.

[We wish Mr. Skinner's new periodical every success. Every other branch of zoological science—entomology, conchology, etc.—has its own journals; but oology is the Cinderella of natural history and we know of but one other publication devoted to the study of birds' eggs.—G. R.]

DR. SHUFELDT.

DEAR DR. RENSCHAW,—You were quite right that I would be up and at work again before your most welcome letter of the 18th ult. reached me. While confined to the hospital I read through for the second time Captain S. A. White's (Fulham, Australia)

admirable accounts of his Australian trips. Since then I have built an article upon the subject as a whole, and I trust to have it out this year. A letter from Captain White came in my mail this morning along with yours. All to a day, his was two months on its way here.

Am glad to learn from your letter that there are so many interesting specimens living in the London "Zoo"; I've been a Corresponding Member there since 1886. In the old days I was a correspondent of all the leading British zoologists of the Victorian era, but now nearly all of them have passed away; there were over 500 of them on my list. They were the most prominent ones of their day, as Sir Richard Owen, Darwin, Huxley, Sir William H. Flower, all three of the Parkers, Sir William Turner, Alfred Newton, his brother Sir Edward, and others.

The War Insurance contingent, 3,800 strong, which has been quartered in the National Museum here, is moving out at last, and the concern donates "\$25,000 to paint and wash up again". We are all very glad of it.—Faithfully yours,

R. W. SHUFELDT.

[We feel that all unite with us in offering congratulations to Dr. Shufeldt. Aviculturists throughout the country will be glad to hear of his safe recovery.—G. R.]

BEE-EATERS AND MONAULS.

A friend wrote: "You know the Bee-eater here. Usually he is in ones and twos. Coming back from Jaffa the other day I saw him in hundreds: the telegraph for miles occupied by him, watching the maize fields. One flew with us a long way, as if to show off his bronze and blue.

"Before I left Brinsop in November one of my 1918 Monauls died, I think from bronchial catarrh, which finally seemed to choke it. The bird was very strong and quite plump to the last."

H. D. ASTLEY.



Photo. by M. L'Hermitte.

Courtesy of Lieut. Delacour and M. Deconx.

UVÆAN PARRAKEET (*Nymphicus Uvæensis*).

THE
AVICULTURAL MAGAZINE,

BEING THE JOURNAL OF
 THE AVICULTURAL SOCIETY
 FOR THE STUDY OF
 FOREIGN & BRITISH BIRDS
 IN FREEDOM & CAPTIVITY.

Third Series.—Vol. X.—No. 10.—All rights reserved. **AUGUST, 1919.**

PARRAKEETS, LORIKEETS, AND LOVE-BIRDS.

By A. DECOUX.

I have only very little to say about my Parrakeets. Many species made no attempt to nest last year.

The female Many-coloured (*Psephotus multicolor*) laid four eggs in February and sat very steadily. The eggs were all clear. In May another clutch of four eggs gave two beautiful male birds.

I have kept these Parrakeets with various little birds, and though their aviary is a very small one they have never tried to injure their companions. They are wintered in an aviary the shelter of which is shut during the night, but during the day only when it is very cold or wet.

This species is particularly attractive. Besides its beautiful colours, its musical whistling voice and its tameness make it very desirable for the bird-lover.

The Rosy-faced Love-birds (*Agapornis roseicollis*) hatched and reared first four and then five young ones. One of the last brood was accidentally crushed in the nest-barrel by its brothers. It is a pity that these fine birds have such an unbearably shrill shriek.

The Redrumps began to go to nest in the last days of February, but in March the cock was so excited that he killed the hen before she had laid her eggs.

The three pairs of Black-checked Love-birds (*Agapornis nigrigenis*), after laying some clear eggs, hatched and reared four, four, and three young respectively, but did not nest again after the little ones had left the boxes.

These small Parrots are very wild; a pair of mine, which is kept alone in a little aviary, is afraid of the least noise—the barking of a dog, for instance—and hides in the nest-box as soon as anybody approaches the cage. The two others are not so fearful, though timid.

My Mealy Rosellas reared four young, one of which was deformed and died some days after leaving the nest.

The female Blue Budgerigar was too young to lay eggs this year.

I have never bred from my Red-collared Lorikeets (*Trichoglossus rubritorquatus*). These birds always spend the night in a very large box. Last May I saw them pairing (on the ground), but, though during the whole summer they appeared to be on the point of nesting, no eggs were laid. Like other Lorikeets every season they always seem greatly attached to each other.

Two weeks ago I received another pair of this magnificent species, bred in France by a bird-lover. The breeder wrote that they remained sixty-seven days in the nesting-box, and were fed by their parents chiefly on bread soaked in milk and a little ripe fruit.

BIRD LIFE IN SOUTH AFRICA.

By Major F. W. H. SEPPINGS.

I thought perhaps it might interest you to see how the preservation of birds is treated in South Africa nowadays, so I am sending one of the notices issued here which shows that the matter is regarded as of “a purely local nature”.

It is nearly three years now since I came out here. I have been in Pretoria, Cape Town, and Durban, but I have had very little time to devote to birds,

A thing which has surprised me very much is the enormous number of Canaries kept. Many are kept in large wire cages, five or six feet long, and six to twenty birds in the cage. I am told that before the War large numbers of Canaries used to be imported from Europe. I have seen a few seed-eaters, Waxbills and Weavers, and a Parrot here and there, but with these few exceptions all the cage birds I have seen were Canaries.

The Zoological Gardens at Pretoria and Durban have good collections of birds, but I did not see anything of outstanding interest in either of them, except the sun-birds in Durban, which were wonderfully beautiful.

In Cape Town there is no zoological collection open to the public except the Rhodes collection at Groote Schuur. This is very small but very remarkable, by reason of the huge size of the paddocks in which antelope are kept. This is not good for purely exhibition purposes, but it enables one to see Ostrich, Gnu, Springbuck, etc., grazing on the open hillside without the usual obtrusive, close-drawn fence. Eland one may meet anywhere, as they are generally free to go all over the estate.

As regards wild birds, Pretoria is a very birdless town. There are a few South African Sparrows, Cape Robinchats (*Cossypha caffra*), Wagtails, Doves, and other birds in some of the gardens. A short distance out of the town one may see the Secretary Bird. Certain Palæartic birds pass through on migration, such as the European Swallow and Spotted Flycatcher.

Durban is remarkable in that it has two common and very noticeable birds which are seen all over the town, both of which are imported. The one is the English Sparrow and the other is an Indian Mynah. The Town Council debated the advisability of destroying the Sparrows some time ago, but finally decided to let them live. It would appear that they are extending their range, and that they must necessarily get out of hand and become a serious pest in course of time. They are as badly behaved here as at home. I watched one pestering a pair of Rufous-breasted Swallows (*Hirundo semirufa*) which were nesting. It is a terrible mistake not to kill off these Sparrows while there is yet time.

Durban Bay is very remarkable also for the extreme tameness of the waders. No guns are allowed. Curlew, Whimbrel, the Lesser White and Cattle Egrets, Herons; and many small waders feed quietly twenty yards or less from the esplanade wall when the tide is low. I have seen the White-bellied Stork and some kind of large Fish Eagle over the bay, one of the latter making a practice for some weeks of roosting on a pole about a hundred yards from shore.

Cape Town has very few birds. The Cape Wagtail (*Motacilla capensis*) is common and extraordinarily tame. They will walk about and feed within a few feet of one, or sit on a wire fence as one passes within easy reach of a walking-stick.

The English Starling, Spreuw (*Spreo bicolor*), White-eye (*Zosterops capensis*), Cape Robinchat, and Doves are often seen, and sometimes Glossy Starlings. A common Starling nested in the mouth of one of the stone lions that guard the Castle gate one season. I am told the Starlings do a certain amount of damage when the figs and grapes are ripening, but nobody in the town seems to bother about them, and there are a good many.

There is a very beautiful race-course in the suburbs of Cape Town at Kenilworth. Great care is taken to keep the turf in good condition. This is apparently much appreciated by a Secretary Bird, which I have several times seen walking round the course, but not on race days.

During my several journeys to and fro between here and Pretoria (one thousand miles) and here and Durban (twelve hundred and fifty miles) I saw very few birds. A good part of both journeys is over the Karroo, and there I saw only a few Swifts, the White-bellied Crow, and Ostriches. Where there is water in the upper part of Natal there are a good many small birds, but on the whole the number of birds seen from trains here is very small compared to the number seen from English trains.

THE CASTLE,
CAPETOWN.

BIRD LIFE ABOUT MOREE, N.S.W.: THE HOME
OF THE WHITE-WINGED BLUE WREN.

BY AN OLD AUSTRALIAN BIRD-LOVER.

Many a time in years gone by, when I stood before the exhibits of the Australian Wrens in the Sydney Museum, I looked longingly at the White-winged Blue Wrens, the gems of the whole tribe.

The late Mr. North, extracts from whose book on Australian birds have several times appeared in this Magazine, and with whom I spent pleasant hours when he came to see my birds (especially during the nesting season), told me that his White-winged Wren was found in the extreme west of N.S.W. on 20 miles from the Cobar-Bourke Railway, and 500 miles away from Sydney, living amongst the Roly Poly weeds in this "never-never" country. From my experience of these inhospitable regions I knew it to be useless to attempt transporting such delicate birds, even should I catch them.

The Moree bores enjoy the reputation of possessing great curative properties, and I made up my mind to try them myself. Mentioning this to a gentleman also interested in birds and knowing the Moree district well, he told me when I showed him the various species of Wren—I have five—that I would probably find the White-winged Wren there, as he had personally seen them. That settled the trip, and without much loss of time my son (whose holidays fell just then and was also an enthusiast in bird matters) and myself set out for Moree in quest of the White-winged Blue Wren.

The little township of Moree is situated in the great western plains of N.S.W., 420 miles by rail from Sydney. The journey is uninteresting and tedious, especially during the trying summer weather; but one is pleasantly surprised to find such an out-of-the-way little place so well laid out and cleanly kept. The streets are lined with Kurrajong trees and Silky Oaks, which were in flower at the time of our visit. Hundreds of Leatherheads were feeding, fighting, and vociferating amongst the foliage. They are not pretty, but the old male bird looks quaint in his bare head and frilled neck. Quite a number

of other Honey-eaters were noticed, with which we were not familiar. In the mornings between five and six on our way to the Bore Baths we noticed hundreds of Red-rumped, and here and there a pair of many-coloured Parrakeets, feeding in the streets; whilst Galahs in their silver and pink plumage could always be seen flying in pairs over the town. The Mehi River flows through the town—that is to say when there is water in it; at the time of our visit there were but pools here and there. It is spanned by a very modern bridge. Looking down from it we could at any time see, not many yards away, various species of Water-fowl. White and Grey Cranes, Black and White Shags, Water-hens, Dotterels, and other species of birds came to drink and hunt early in the morning. A little out of the town we noticed flocks of Spurwing Plovers, and came across a pair of “Plain Turkeys”. Numbers of Masked Wood Swallows perched on fences and wires; happy families in their sombre attire were seen wherever a little scrub existed—miserably, for the drought had killed almost every tree not growing on a watercourse. Top-knot Pigeons were quite tame and everywhere in evidence, and, except in the Northern Territory, I have never seen so many Hawks of various species. Strange to say, Diamond Sparrows and Redhead Finches were quite absent, whereas there were plenty of Double-bars and Fire-tail Finches. Following the dry river-course—residents assured me that during wet seasons it will rise 20 to 30 feet—it seemed to us as if all the birds in the district had come to live there as a kind of summer holiday resort. It was a perfect Babel of noises, songs, and screeches: in my many wanderings never have I seen such a congregation of birds of various species as in this narrow valley; it shows what careful protection will do. Near Sydney such an idyllic spot would be unthinkable, since most parents seem to delight in the prowess of their children when they destroy with their pea-rifles all that comes within reach. The common Blue Wrens were absolutely innumerable: Wagtails, Scissor-grinders, and Peewees were everywhere; so were the rowdy Soldier Birds, White Eyebrowed Caterpillar-eaters, and others. On the Town Common we often saw birds quite strangers to us, such as Black Magpies with white underwings, and the Mutton Birds, one of the proudest and stateliest birds I know, silver grey—a very light silver, and a white throat, chest, and abdomen—twice the size of a Starling,

but very slender, with a careful and measured gait—a real regal bird. We were able to get within less than ten yards of them to admire their beauty. Here we also watched a native bear feeding on the low branches of a gum-tree ; we should have dearly loved to bring it along as it was almost within reach—but one might just as well be honest—we were afraid of being caught !

Our excursions into the surroundings of Moree, however prolific otherwise, were not crowned with success in finding the object of our visit—the White-winged Blue Wren. None of the residents (and we asked many) had ever seen or heard of it. There was but one thing left, and that was to go out into the plains and try to locate them there, though we feared this, too, would be hopeless, since the senseless method of using rabbit poison had cleared out first and foremost all birds thereabouts. Still we went. It was frightfully hot—never a day below 108° Fahr. in the shade of the hotel verandah. The ground we passed over was dry and crumbly, and threw up again the enormous heat stored in it. In fact, it was so contracted that great fissures had appeared, often the width of a hand, and seemingly of an interminable depth. As far as the eye could reach nothing could be seen but an endless stretch of the Roly-Poly scrub. This weed is an annual. It shoots up a small stem, the thickness of a finger, a few inches above the ground, then spreads out, developing into an even huge ball from 4 to 8 feet high. Succulent and liked by the cattle when green and young, it grows and dries very rapidly, producing exceptionally prickly, needle-like thorns. Then the main stem rots, the body remaining intact, the wind catches these prickly balls and rolls them along at a tremendous pace. In their mad career they mount those bushes still standing, going “ roly-poly ” over them until they strike the station fence, where we have seen them piled up 20 and 30 feet deep. Rain and heat soon destroy this barrier.

This is the home of the White-winged Blue Wren. It was a happy hour when we located the first pair, but to catch them was another matter. They refused to come to a decoy (in this case a common Blue Wren) and the bird-line, exposed to this fierce heat, became absolutely useless, whilst mealworms had no attraction for them. They are exceptionally shy birds, always hiding ; the male seldom

indicates their whereabouts by his warble, which is very similar to that of a Lamberz Wren, yet sweeter and shriller. We soon found that they could only be located by their call, like the Emeu Wrens, as they seldom show on the top of the bushes like the Common or Lamberz or Red-backed species.

With infinite trouble they had to be rounded up, doubly hard on account of the heat, the sun parching us to an extent that we could hardly speak. The prickles of the Roly-Poly were a veritable scourge to our bodies, and the mosquitoes and flies—well, it is over, and remembrance always modifies the evils! But it is only the extreme enthusiast, amounting almost to a crank, who will leave the comforts of a home and spend a holiday undergoing discomforts (to say the least of it) for the sake of getting a certain species of bird. However, all is well that ends well; we were successful in the end, and brought away with us from Moree quite a number of these little treasures, now doing well in my aviaries and that of my friend. We were fortunate in locating the nests of these birds later on, and might have saved ourselves a lot of hardships had we seen them before. It appears they do not build in the Roly-Poly where they generally live, but in *Acacia* bushes inaccessible by virtue of their strong thorns. The remarkable thing is that most pairs we saw breeding were grey birds—that is to say, the cock bird out of colour. Quite contrary to other Wrens, which breed when the male is in his “wedding dress”. It is a matter of fact that we only saw four coloured cock birds, two of which we brought home, out of about ten pair. I need hardly say that our excitement was intense when we were able to admire our first coloured male bird in the cage. These birds must fly long distances for water, unless they ken of a little pool unknown to us. In the open and at a distance the coloured bird looks like a black and white Butterfly; it is only when seen in cage or aviary that its beautiful hues appear. The whole bird is a rich cornflower blue, only the shoulders where the cover-feathers are enlarged, or seem to be, are white. The flight feathers are a bluish-grey. They are the smallest species of Wren I have known, and exceptionally slender. To my sorrow several escaped by squeezing through half-inch wire mesh. They are exceptionally easy to get on to artificial food, and my misgivings on this point were quite unfounded

They live well—we never lost one by death—and I am in hopes of breeding them this year. I am safe in saying that no one ever had them alive in an aviary before, so that I am very proud of my White-winged Blue Wrens.

BODIN'S AMAZON

(*Chrysotis bodini*).

By ALLEN SILVER, F.Z.S., F.R.H.S.

Since the Hon. and Rev. Canon Dutton in 1899 contributed notes on *Chrysotis* for this journal, I do not remember having seen any mention of Bodin's Amazon Parrot therein. On that occasion the writer said he had not seen it, although from the B.M.C. he knew of its existence. In twenty years I do not remember seeing more than a single specimen, although one would suspect that a bird hailing from British Guiana and Venezuela would be less rare. Probably it passes with other trade birds unrecognized into private hands. One frequently meets with surprises of this kind. Only the other day I discovered a lovely pair of Blackheaded Caiques at the rear of a baker's shop, where they were kept and known by the owners as "Macaiques", coming from far up the Amazon River. A short time ago I saw advertised a Red-fronted Amazon, and knowing how sporting are these cover-all descriptive terms, such as "Red-fronted", I gambled, not expecting, of course, *C. vittata*.

On arrival the bird proved to be *Chrysotis bodini* in excellent condition. I see in my Russ, p. 555, vol. iii, Parrot Section, that it was probably first received, or at least recognized, on the Continent forty years ago, and it has been represented in our Zoo.

Those possessing Butler's *Foreign Birds for Cage and Aviary* (probably the handiest book extant for an aviculturist) will find it adequately described. It, however, suffices here to mention that it is one of the small red-rumped and red-headed Amazons, with lilacine and bluish head and neck ornamentations. In behaviour it reminds me of *C. viridigena*, and yelps mornings and evenings like that and other Amazons, which character seems the curse of the group.

I am glad, however, that my bird is not over-tame, and has none of the cackling, fatuous, and drivelling mannerisms of a pet Bluefront. I feed this bird in the same way as others of the group, i.e. mainly on canary seed, plus a little oats and maize. On occasions hemp and sunflower is given, and lettuce leaves and fruit. Those possessing Dr. Ant. Reichenow's *Vogelbilder aus fernen Zonen, Papageien*, will find the bird figured by G. Mützel on plate xxxii, fig. 8. The Boche there calls it the "Rothstirn-Amazone", and groups it in his *Androglossa (A. bodini, Finsch)*; whereas on plate i, fig. 3, the bird described as Rothstirn-Amazone (*Chrysotis bodini, Finsch*) is figured with a green and red head, and is apparently the bird we call *C. finschi*. This book is probably one of the most useful Parrot books in existence, and in the colour process the faint lilac bands in *finschi* may not have shown up. Mützel's drawings, as a whole, are very good, especially as I daresay in a number of instances they had to be made from skins. One little character seems well stamped in this species, and that is the faint line of blackish feathers immediately beneath the red-fronted patch, and extending from the bill to the eye; and this somewhat obscure marking gives the bird an austere and slightly fierce expression, which I do not think H. Goodchild would miss. Of late his very accurate and characteristic work has been singularly absent from these pages. I notice my bird exhibits an odd red feather on the lower chest, which feature is not uncommon in other allied birds. Variation seems very prevalent in Amazons as a group, although for that matter I cannot say I ever saw any two living things exactly alike.

RECENT WORK ON THE HOATZIN.

The curious, aberrant South American bird known as the Hoatzin (*Opisthocomus cristatus*) is especially associated with the Avicultural Society, for two of our most distinguished members have done valuable work on its habits and structure. In his fine books, *Tropical Life in British Guiana* and *Jungle Peace*—both of which have been reviewed

in these pages—Captain Beebe has outlined the daily life of this extraordinary fowl and its quaint, almost four-footed nestling; to-day we note the valuable treatise on its anatomy by Dr. Shufeldt, published in vol. xxxi of the *Journal of Morphology*.

Several young and sub-adult Hoatzins were received by Dr. Shufeldt in the winter of 1914-15; their external appearance and also the structure of the skeleton is shown in four most interesting plates appended to the memoir. All aviculturists, we suppose, are pre-eminently interested in nestlings; in these clear photographs we have the secrets of the South American jungle before our very eyes. The photographs, very beautiful and full of detail, were taken by Dr. Shufeldt himself.

A sub-adult specimen studied was still in pin-feather when obtained; the skin was quite thick and tough, as was also the case, though to a less extent, in the chick. Although the bird was nearly able to fly, the skeleton was still almost entirely composed of gristle; even the all-important breast-bone was chiefly cartilaginous, though quite thick and substantial. In view of the uncanny climbing powers of the almost quadrupedal nestling, it is interesting to note the enormous feet, with their strong, powerful digits, and curved claws. All the specimens figured had been carefully preserved in alcohol, with excellent results, for no shrinking or distortion is seen in the photographs, even the stout scaly covering of the feet being perfectly rendered.

G. R.

THE BIRDS OF RICHMOND PARK.

By PHILIP GOSSE.

One Sunday afternoon in May this year I went down to Richmond Park to spend a few hours away from all the crowd and rush of London, and finding a comfortable looking oak-tree to lean against near the Penn Ponds, waited to see what birds were about.

In the branches of the tree above my head was a Tree Pipit, singing that joyous careless song of his, which has so much in it that

reminds one of the caged Canary, but without the Canary's ear-splitting persistency.

From the dead branches of an oak in front of where I sat came the loud sonorous drumming of a Lesser Spotted Woodpecker. For a while I was unable to find him, as he insisted, as Woodpeckers will the world over, on keeping the branch he was on between himself and me. But he soon got used to me, so that I was able to watch him for some while, through my glasses, as he rapidly hammered on the dead wood, which is a sort of love-song that is, I believe, only made by this family of birds.

From my position I was able to hear no less than three male Lesser Spotted Woodpeckers drumming at once. Surely it would be difficult to find any other place in England where so many of these small Picidae abound, and this only half an hour's journey from London! They seem much more plentiful here than in the New Forest, which is such a good place for all the Woodpeckers, specially for the Greater Spotted.

Presently I became aware of a most restless small bird which flitted about the lower branches of an oak-tree; and proved to be a female Redstart, which was presently joined by her handsome mate.

Hérons flew over occasionally, evidently carrying food to their ravenous young, which could be heard honking and coughing somewhere amongst the tops of some high trees in an enclosure not far away.

In this same enclosure were a few Chiffchaffs, a hilarious Green Woodpecker, and a Cuckoo.

Just in front of me in some rough low-lying ground, with clumps of last year's dead bracken, was a pair of Whinchats, evidently, from their restless movements, feeling very uncomfortable about my intentions, which made one suspect they had a nest somewhere about, particularly as the hen soon disappeared, probably back to her eggs.

How often birds "give away" the whereabouts of their nests by their cries and actions when by simply remaining still and quiet the enemy, whether feather or not, would suspect nothing and pass on!

Some two hundred yards further away was another pair of Whinchats, the cock in very handsome plumage.

While sitting by the pond a little while after, watching a pair

of Great Crested Grebes with their young, I heard the song of a Black-cap; and presently the bird flew up out of a clump of rhododendrons on to a branch of a tree, where I had a good view of him.

The Grebes were swimming about under the overhanging branches of a small island in the middle of the pond; their two young ones, about a third the size of their parents, showed a bold and adventurous spirit by occasionally sallying forth some little way out into the open, to the apparent annoyance of their parents, one or other of which would come out and escort them back to safety amongst the bushes.

With the aid of field-glasses it was quite easy to see the curiously striped heads and necks of the young ones.

Most of what are called the common birds abounded: White-throats, Chaffinches, Jackdaws, Robins, Blackbirds, and many others; surely no other great city can boast of such a number and variety of birds in her suburbs as London can?

What makes Richmond Park such a good place to observe birds in is, I think, the huge number of harmless visitors that go there daily, for many birds that would skulk and hide when approached anywhere else, seem here to be almost indifferent to such an everyday sight as a human being—or two—sitting beneath a tree.

REVIEWS.

A PRACTICAL HANDBOOK OF BRITISH BIRDS.*

We have received a further instalment of this useful and well-written work. The section before us deals with Buntings, Larks, Pipits, and Wagtails—a favourite group with many, embracing as it does such interesting forms. Both illustrations and letterpress are a pleasure to study, and the high level of the preceding parts is fully maintained. We would specially mention Mr. Grönvold's exquisite plate of Wagtails,

* *A Practical Handbook of British Birds.* Edited by H. F. Witherby. In eighteen Parts. Illustrated. London: Witherby & Co. Price 4s. net per Part.

executed with wonderful finish and accuracy; while the separate feathers drawn on plate vi by Mr. Frohawk are so delicately rendered that one almost expects to see them blow away. Other pleasing illustrations are the figure of the Black Lark's head on p. 149, and the Shore Lark's head on p. 168. We are pleased to see that the authors draw attention to the habit of simultaneously soaring and singing practised by the *Wood Lark*; also to the deep yellow or orange colouring occasionally seen in Wagtails.

On the other hand, the figure of the Calandra Lark on p. 151 is too Hawk-like; the Short-toed Lark on p. 151 is feebly rendered; the Crested Lark on p. 157 is too much like a Cardinal. We doubt if the Snow Bunting really nests among "larva" blocks.

G. R.

THE OOLOGIST'S EXCHANGE AND MART.

We welcome the June and July issues of this new and long-needed publication, devoted entirely to the needs of egg-collectors throughout the world. In his foreword the Editor, Mr. K. L. Skinner, rightly expresses his confidence in the future success of the paper, for the first list of subscribers contains names known to all ornithologists—while the July number shows a rapid increase in membership.

The supply of the once familiar sets of German-taken eggs—Golden Oriole, Greater Reed Warbler, Great Bustard, and what not—has been completely stopped by the War; one well-known dealer, writing us some months ago, stated that even in Allied or neutral countries it had been found impossible to procure certain species. In these circumstances the foundation of a league of oologists, by means of a special journal, will prove of the greatest benefit to ornithologists.

A special data label has been suggested, a sample of the same having been forwarded to us. Briefly, it is an extension of the old British Museum method of marking on the actual egg the name, locality, and date; to our mind by far the best style of record. Owing, however, to the naturally limited space available on the actual specimen, various data labels have been devised; the present example is excellent

for the purpose, due space being provided for name of species, name of collector, date, locality, number of eggs in set, set mark, identity, incubation, and nature of the nest—a useful and comprehensive summary.

G. R.

EXTINCT BIRDS.

DEAR DR. RENSHAW,—I still have the photograph you sent me of the Dodo model, which is in the collections of the Museum in Paris, and the two others that came with it. The matter of modelling restorations of extinct birds greatly interests me, although I have not been in that field for several years past. In all such matters I chiefly depend upon the collections of our United States National Museum here, and they are truly wonderful in their extent and general completeness. We have a mounted Great Auk and a plaster cast of its egg—possibly an egg; while on the other hand, we have done very little in the matter of “make-ups”. Possibly they do more of that class of work up at the American Museum in New York City. In the *Scientific American Supplement*, several years ago, I published many of Rothschild’s extinct birds, and in 1884 an article in *Century Magazine* on “Feathered Forms of Other Days”. There was a drawing of mine of the Dodo in that article, also the Great Auk, and various other birds and reptilian birds, including a terrible restoration of *Archæopteryx* which I “disowned” long ago. As you know, I have published a great many papers and formal works on fossil birds, and I have probably described more species than any other palæornithologist living. We have no flightless birds in our United States avifauna; the Great Auk has been written to shreds, and Lucas has fully described our Great Auk mount. My figure of the bird has been published over and over again—even in school books and general lexicons. It will, nevertheless, afford me great pleasure to get you up some short article on an ornithological subject.

On the other hand, we have fine *skeletal* restorations of our extinct birds, such as *Hesperornis* and a few other forms. I could readily touch upon allied subjects, as Great Auks’ eggs, etc. What

has been done with *Diatryma* in the American Museum is well known to me, and I feel sure you are familiar with Dr. Matthews' excellent paper about it; *D. ajax* is my own species. We have here a superb mounted group of our now extinct Passenger Pigeon, and one of the Carolina Paroquet as well; but they are all actual skins.° I have published in *American Forestry* an elegant picture of a pair of the extinct Labrador Ducks; the block, however, would be too large for the *Avicultural*, but I have the original photographs from the mounted birds.

The time will soon be here for the civilized part of the world to move ahead again; then, as now, I am with you to the limit to push biological science to the front.

Cordially yours,
R. W. SHUFELDT.

THE WATER RAIL.

DEAR DR. GRAHAM RENSRAW,—I wish you could persuade some member of the Avicultural Society to try and get the English Water Rail to breed in captivity. I have seen a good deal of these birds, and am satisfied it could be done if a true pair could be obtained. This might mean concerted action on the part of several members, but the result would be most interesting.

Yours very faithfully,
C. BARNBY SMITH.

“WOODLANDS,”
RETFORD.

[We should be glad if members will send us their experiences of this Rail in captivity.—G. R.]

OUR HON. TREASURER.

Mr. Ezra writes to say that his permanent address in future will be Foxwarren Park, Cobham, Surrey. Telephone, 29 Byfleet.



Photo by G. E. Low.

HERRING-GULLS OVER BREEDING-GROUNDS, LAMBAY.

THE
 AVICULTURAL MAGAZINE,

BEING THE JOURNAL OF
 THE AVICULTURAL SOCIETY
 FOR THE STUDY OF
 FOREIGN & BRITISH BIRDS
 IN FREEDOM & CAPTIVITY.

Third Series.—Vol. X.—No. 11.—*All rights reserved.* SEPTEMBER, 1919.

SEAGULLS.

I wonder if a great war is necessary to make one recognize the full joy of a holiday on the Cornish coast. The contrast between the constant rush and strain of war work and the peace in beauty of Nature is so great; how else can one appreciate the difference between "on duty" each day in the wards at 8 a.m., and hardly stopping till evening, and—lying on one's back on a thyme-scented cliff, with nothing to do but watch the Gull's ceaseless activities, to the soothing accompaniment of the waves breaking, and fussing, tearing, and rending at the rocky sentinels of the coast. What a relief to watch other things doing all the work!

People go miles and pay much money to watch an aeroplane, but I defy anybody to produce a more wonderful exhibition of grace, dignity, and power than a Seagull. To watch them soaring, turning, dropping, rising, with hardly a flicker of their wings, is indeed wonderful; and then—the joy of being above them!

To look down on their smooth glossy backs, so trim and neat, tapering gracefully to the small head and cruel beak! Never think

you know all the beauties of a bird till you have watched it from above. There was one great rock out a short distance from shore, quite impossible to scale, and inhabited by hundreds of Gulls, Razorbills, Shags, and Cormorants. What hours we spent watching them, and how fascinating it all was! On one occasion a full-grown Gull seized another (which was peacefully sunning itself on a rock) by the wing and held on remorselessly. The victim struggled and pulled without any effect. After at least ten minutes the tormentor let go. There seemed to be no animosity displayed afterwards, so perhaps it was a token of affection, but it looked extremely painful. The young Gulls were in all stages, from little balls of grey down to large ungainly youngsters just able *not* to fly; and our amusement was great one day to see mother Gull administer a hearty cuff to an adventurous youngster, who on a windy day was trying his wings in imminent danger of being wafted into space.

Oh! the delight of a fluffy baby when it stretched what it called "wings", and actually left the earth for an inch or two! I wonder how many do get blown away? I found one starving to death with a broken wing, and as it was out of reach one could only hope a Black Back would come and put an end to its misery. Further along the coast were a pair of Ravens, and another of Peregrines, not forgetting innumerable Pipits, Larks, Whinehats, Stonehats, and Wheatears, which kept one always amused by their efforts to disguise the family. On one occasion I was searching for a rare flower, when I heard "chack! ehack!" and saw a cock Wheatear hovering and dipping angrily over a depression in the ground. I "froze" to see what it was about, and along came father Stoat with a fat Rabbit; an awkward parcel, which had to be dropped several times before home was reached. It made one marvel at the courage of small birds, and reminded me of an incident I had just seen in a friend's garden. A pair of Blue Tits had built in a box on the house, under which a large yellow cat took up her quarters, with the idea I suppose of catching a baby if it should fall out. This was more than mother could stand, so she fetched father, and these two balls of blue and green tossed and swooped, and swore to such good purpose that the cat was driven off defeated. I watched in fear and trembling, for they almost settled on

her in their fury, and I thought of what would happen if her paw shot out and caught one of the brave little pair. It was good to see their joy when the enemy departed. But, alas, our perfect holiday, like all good things, has come to an end, and we can only now look forward to another year, and another visit to the Cornish birds.

ADLII.

FURTHER NOTES ON BIRDS IN THE WAR AREA AND BEYOND.

By Capt. B. HAMILTON SCOTT, R.F.A.

In 1917 I sent a few notes on birds seen in France and Belgium. Since then the list has gradually increased, and below I give the number of species up to date.

In February of 1918 I was fortunate in being sent to the South of France on duty. There, in a very pretty district, 9 miles north-east of Marsilles, I expected to be able to add considerably to my list. This, however, was not the case. Among the more interesting species were the Hoopoes, in fair numbers, usually in pairs, the first being seen in April. They were not particularly wild, and allowed one to approach fairly closely. Their prettily contrasted plumage, graceful crests, and slow undulating flight made them very noticeable features in a country which at that time was rather lacking in bird life. A small, rather insignificant Finch of a greenish tint was noticed in small numbers frequenting the pine woods of the district. It appeared similar in shape to the Lesser Redpoll, and its note when in flight resembled that bird. At first sight it was not unlike the Siskin, but closer inspection showed the black cap wanting, and the beak was not so pointed. In the Natural History Museum at the Palais de Longchamps, where, by the way, there is a fine collection of birds of the district and of Provence, I was able to identify it, according to the museum labelling, as "Venturon Citrin (*Citrinella alpina*). What its English name is I am unable to find out.*

* [The Citril Finch (*Chrysomitris citrinella*).—G. R.]

Warblers were seen in great numbers from the middle of April onwards, Blackcaps being by far the most numerous, no clump of bushes or grove of trees being without several male birds in practically full song. Both species of Whitethroat, Garden Warblers, Nightingales, and Willow-warblers were also to be seen and heard; a great number of these soon disappeared on their northern migration, but some of each stayed in the neighbourhood to breed. Numbers of Red-backed Shrikes were to be seen hawking insects from telegraph wires and other points of vantage. Another handsome bird was the Woodchat Shrike—at least, I take it to be that species. The colouring, roughly, is white breast, rich brown head, back and wings a mixture of brown and black. Its habits were very similar to those of the previous species. Specimens shown in the Museum are described as “*La Pie Prièche à tête rousse*” (*Lanius rufus*). A bird which I was very keen on seeing was the Garrulous Roller (*Coracias garrula*). One had been seen several times in the neighbourhood by my C.O. He called it a “blue Jay”, but I knew from his description it was a Roller. We went out several times to look for it, but without success. Of the Finches, certainly the most common was the Goldfinch, which might be seen any day in the orchards or on any rough or weedy ground. Chaffinches, too, were quite plentiful. Golden-crested Wrens were sometimes seen in the pine woods, and the ubiquitous Magpie was always in evidence. At all seasons of the year the so-called “sportsman” of the district wanders round with a gun, letting drive at anything that flies. Thrushes and Blackbirds seem to be his favourite “game”, and consequently there are very few of these birds to be seen. In the rugged hills to the south-west there was a small bird which inhabited the close undergrowth on the hill-sides. It had a harsh jarring note, and though heard pretty frequently it kept itself well screened from view, and was only actually seen three times, and then at too great a distance to give a detailed description. Its general colouring seemed to be a dark bluish-grey, and it was about the size of a Lesser White-throat.

The part of France passed through showed many signs of war and the German occupation. Practically all the woods had been cut down, so it was not a likely part to see anything beyond the usual

common species which generally frequent the war area. But, near Le Cateau, I saw my first Black Redstart, and during the next few days several small parties were observed (November). Belgium, however, had not suffered half as severely from the Germans. In hardly a single instance had their woods or plantations been touched, nor had fruit-trees been wantonly destroyed as was the case with France. The country improved as we progressed eastward, and some very beautiful parts were traversed—principally through the northern portion of the Ardennes. Here bird life was much in evidence, and the Lesser Spotted Woodpecker and the Nuthatch were seen for the first time. In the valley of the Amblève, where the scenery was very fine, numbers of Water-ouzels might be seen flitting from rock to rock in the stream. After crossing the frontier into Germany (December) the country became very bleak and cold—open heath-like country with pine and spruce woods. Stuffed specimens of the Capercaillie and Black Grouse were seen in a shooting box, but no living birds were noted. The pine woods sheltered all the commoner Titmice, and both the Crested and Longtailed abounded. (The former I had seen for the first time in the woods near Rouen.) Gold Crests were also very numerous. Shortly after Christmas, when the weather became rather more severe, I came upon a small flock of Snow Buntings. This was another addition to my list. Fieldfares were in large numbers, feeding on the berries of the Rowan-trees, which in this part of Germany are planted along the roadsides. Redwings did not seem so numerous as their larger cousins, and were met with in smaller parties. Jays are nearly as plentiful as Magpies were in France and Belgium. One pair had nested here in what I consider rather an unusual site for this species—in a pear-tree trained against the wall of the house, and not many yards from one of the windows. The Little Owl is common round here, and may often be seen in the daytime in the old apple orchard. It has been seen or heard in nearly all the districts passed through on this march, and is one of the few birds found actually in the trench area among the ruins.

In the hall of a large house near here (south-west of Cologne) is a rather interesting collection of stuffed birds. The shooting of the rarer and more beautiful birds seems a common practice in this neighbourhood,

most houses possessing some stuffed specimens. The owner of the place gave me to understand that all the birds were shot close by. Certainly the most interesting bird was a large black Woodpecker. (I do not know if this is its correct name or whether there are any other members of this group.) In size it was considerably larger than the green, of which there were two examples. The colour was black, and there was a brilliant red crest. It was rather nicely mounted, as were most of the other birds, which included: A Golden Oriole, a Hoopoe, a Nightjar, a Landrail, a Water-rail, a Greater Spotted Woodpecker, and the poor inevitable Kingfisher. There were also some birds of prey in very natural attitudes—a Merlin, a Peregrine, a Buzzard, and a Montagu's Harrier.

Black Redstarts in small parties had been seen here at different times, but it was not until the beginning of April that they appeared to have settled in the district. Within a comparatively short distance from the old moated farm where the mess is three pairs may be seen, each occupying its own area and zealously guarding it in the same manner as the Robin. In habits they much resemble the ordinary Redstart or Robin, flitting in and out of cart-sheds and old buildings. The song, though described in one handbook I have as "rich in tone", is certainly not so musical as that of the Redstart proper. It starts with a very peculiar and distinctive note, most difficult to describe—a kind of wheezing, grating sound, and ends with a few pretty twittering notes. One day (April 8) whilst watching a pair of these most interesting birds a splendid male specimen of the ordinary Redstart appeared, the first seen in Germany. This is about a week earlier than usually seen in any part of England (Suffolk). The pair of Black Redstarts which frequent this farm built their nest in a crevice in the under side of the bridge over the moat, and successfully reared a family.* The nest was too deep and the crevice too narrow to allow

* The same pair of Black Redstarts mentioned above have built their second nest in a hole in the wall of the farm, not five yards from their old nest, and are busily feeding another family; so it seems that this species is double-brooded. There is quite a collection of young birds in the neighbourhood now. They frequent the open fields and meadows, especially where the hay or clover has been cut, sitting on the tops of the ricks or on the wire fences catching insects.

an examination of the eggs. The young resemble the hen in colour and lack the black breast and light crown of the male bird. Other migrants were arriving now, and among the more interesting were numbers of Pied Flycatchers, which suddenly appeared about the first week in May. I hoped they would stay and nest, but they remained a week and then completely disappeared, being replaced by their spotted confrères who have established themselves here. Golden Orioles, a specimen of which was first seen on May 10, are not uncommon, several pairs frequenting this district. Their pretty whistling notes may often be heard, but they have a habit of keeping to the tops of the taller trees, and one has to "camouflage" oneself to see them near the ground.

The following is a list of the summer migrants as they appeared :—

Chiffchaff	April 3.	Sandpiper	May 6.
Swallow	" 6.	Pied Flycatcher	" 7.
Wheatear	" 6.	Garden Warbler	" 8.
Sand Martin	" 6.	Whitethroat	" 9.
House Martin	" 6.	Golden Oriole	" 10.
Redstart	" 8.	Cuckoo	" 10.
Willow-warbler	" 12.	Grasshopper Warbler	" 10.
Lesser Whitethroat	" 19.	Turtle Dove	" 11.
Blackcap	" 28.	Spotted Flycatcher	" 11.
Swift	May 2.	Reed Warbler	" 18.
Nightingale	" 3.	Red-backed Shrike	" 20.
Wryneck	" 3.		

And below is the list of species observed up to date (June 30) :—

c.o.	refers to birds seen in Germany only.
F.O.	" " France only.
B.O.	" " Belgium only.
S.F.	" " South of France only.

The remaining birds (without letters) have been seen in all three countries.

Goldfinch.	Nightingale.	S.F. Greyheaded Wagtail.
Siskin.	Blackcap.	Spotted Flycatcher.
Chaffinch.	Redstart.	c.o. Pied Flycatcher.
Bramblefinch.	Black Redstart.	Sedge Warbler.
Bullfinch.	Robin.	Reed Warbler.
Greenfinch.	Whitethroat.	Common Wren.
Brown Linnet.	Lesser Whitethroat.	Golden-crested Wren.
Lesser Redpoll.	Garden Warbler.	F.O. Greater Reed Warbler.
Tree-sparrow.	Hedge Accentor.	Chiffchaff.
House-sparrow.	Willow Warbler.	Grasshopper Warbler.
Corn Bunting.	Stonechat.	Great Titmouse.
Yellow Bunting.	Whinchat.	Blue Titmouse.
Reed Bunting.	Wheatear.	Marsh Titmouse.
Clirl Bunting.	Pied Wagtail.	Coal Titmouse.
c.o. Snow Bunting.	Yellow Wagtail.	Crested Titmouse.
S.F. Venturon Citrin.	Grey Wagtail.	Longtailed Titmouse.

Song-thrush.	B.O. Water Ouzel.	Little Owl.
Redwing.	Cuckoo.	F.O. Short-eared Owl.
Missel-thrush.	Wryneck.	Pheasant.
Blackbird.	S.F. Hoopoe.	Partridge Grey.
Fieldfare.	Nightjar.	Partridge Red-legged.
Green Woodpecker.	Tree-creeper.	F.O. Quail.
Greater Spotted Wood- pecker.	Nuthatch.	Woodpigeon.
Lesser Spotted Wood- pecker.	Starling	Turtle-dove.
Red-backed Shrike.	G.O. Golden Oriole.	Wild-duck.
S.F. Woodchat Shrike.	Carrion Crow.	F.O. Woodcock.
Swallow.	Hooded Crow.	Heron.
House Martin.	Jackdaw.	Moorhen.
Sand Martin.	Jay.	F.O. Coot.
Swift.	Magpie.	Landrail.
Skylark.	Rook.	Lapwing.
F.O. Woodlark.	Sparrowhawk.	B.O. Little Grebe.
Crested Lark.	Kestrel.	F.O. Ringed Plover.
Meadow Pipit.	B.O. Hen Harrier.	F.O. Black-headed Gull.
Kingfisher.	Buzzard.	F.O. Herring Gull.
	White Owl.	G.O. Sandpiper.
	Tawny Owl.	

BIRD-LIFE IN 1918.

By ALLEN SILVER.

CROWS.

Raven.—Saw several isolated examples in North Wales (July). Have not been in Westmorland and Cumberland this season.

Carrion Crow.—Plentiful in all suitable localities. Many pairs bred in suburban London.

Hooded Crow.—Have visited no breeding quarters, but saw winter passage birds in usual numbers. Flanders "reeked" with them in the line in 1916-17 winter.

Chough.—One naturalist friend reported their appearance, but have not been that way.

Rook.—Needs no comment. Still clings to certain places in Suburbia, and has apparently never varied in my lifetime except when May droughts have made it difficult for them to feed their young.

Jackdaw.—Excessively prevalent where I have been. This season reared large broods in townships and villages as apart from woodland colonies.

Magpie.—Young and old pretty numerous in Monmouthshire and South Wales, and heard good accounts from other localities.

Jay.—Seemed common everywhere I have been. Saw two breeding pairs in Suburbia, and met with good flocks in Kent, Surrey, East Anglia, and North and South Wales.

STARLINGS.

Starling.—Has, as usual, teemed. Some earlier broods now clean moulted (August).

LARKS.

Skylark.—Thick everywhere; bred well into outskirts of the Metropolis.

Woodlark.—Have been only where it is a shy breeder or passing migrant, and have no reports of its breeding this season.

BUNTINGS.

Common.—Met with breeding pairs in usual quantity in East Anglia and North and South Wales.

Yellow.—Plenty in East Anglia. Saw very early nestlings this season.

Reed.—Common in proper haunts; early broods on wing this season. Applies to East Anglia and western localities.

Girl.—Have had no breeding reports sent in, but it cropped up in winter in usual numbers and saw one to-day (August).

FINCHES.

Haupfinch.—Good accounts of this shy bird. Saw it in East Anglia February, 1918, and have one youngster caught on peas here now. In this district they came in good large parties right into walled-in gardens, and mutilated and destroyed the tall varieties of choice peas. This occurs usually early in the morning.

Crossbill.—Am out of touch with the localities where I can usually find it, even when no flux is on.

Bullfinch.—Plenty of these "pruners" wherever I have been. Saw strong broods both sides of the country.

Chaffinch.—Needs no comment, except that in many places with the Greenfinch equals and in some cases exceeds the House Sparrow in numbers.

Brambling.—Snow and slop prevented me getting out, but saw several, and it "cropped up" in the snow of 1918 all over the place.

House Sparrow.—Many pairs, apparently thrice brooded. Ousted many Martins as usual.

Tree Sparrow.—Occurs in usual places; saw several on some old willows recently, but have not been where I could see the big winter flocks that usually occur on the Suffolk and Essex borders.

Greenfinch.—Prevalent everywhere, many strong broods about. Nested close into Suburbia. South Wales specimens differ slightly in notes from those in East Anglia. Cannot see where this bird claims close relationship to *Coccothraustes vulgaris* (Hawfinch).

Siskin.—Came quite close to town in North Kent in winter of 1917-18. Have heard nothing from Scotland.

Goldfinch.—In its proper places has apparently kept up its numbers in at least twelve counties, for the last twenty-five years. Saw large numbers in Hunts, Beds, Carnarvon, and it was breeding in village streets and small gardens in East Anglia as usual, and in all the parks I passed, there favouring the chestnut. Saw a really big departure flock in 1916 about to leave a South Coast point. This flock I saw collect in a short period, and when I disturbed them the last time I saw them feeding on flat thistles in closely nibbled grass; the company must have numbered between 300 and 500 birds. If one is there at the right time and spot one can annually see flocks nearly as large, if not quite, but not for long.

Redpoll.—It may be imagination, but seems to have increased the last ten years as a breeder. Breeding birds passed over my garden and alighted on my aviaries daily this summer. Saw it nesting in Surrey suburbs. Prevalent in all its own country haunts that were visited, and saw as many as four breeding cocks in one cemetery later with their broods.

Mealy Redpoll.—Plenty of "intermediates" were noticeable, but was unable to gauge anything as to last winter's migrant birds of the larger and whiter forms. This and the former species can be graded right up to the giant white and pink type, and they feed each other, sing, and behave absolutely similarly. Am by no means satisfied as to wide differences [apart from subspecific variation] in Redpolls. Aviculturists should interbreed and test for ready fertility in order to settle how far apart Redpolls really are. As far as I can judge from



Photo by G. E. Low.

GOLDFINCH ON NEST IN PEAR-TREE.

[To face p. 198.]

behaviour they do not seem much farther apart than is the case with small examples and typical north-eastern examples of the Goldfinch. This cannot be thrashed out with skins.

Twite.—Some few occurred with the catchers in 1918 in usual quantities, i.e. moving parties. Have no account of this season's breeding.

Linnet.—Saw old and young in fair quantities in East Anglia, Kent, and Wales. Resident winter birds were "hit badly" by the 1916-17 winter, so much so that distinctly fewer pairs were noticeable, where formerly they teemed. I have known from forty to fifty broods occur in a season in one pleasance, and have seen them in cloud parties later in the same district. Even now they can be heard hourly, but are distinctly less.

(To be continued.)

DR. LOVELL-KEAYS.

It is with great pleasure that we note the safe return of our valued and esteemed colleague Dr. Lovell-Keays; every member will congratulate him on his restoration to health after his arduous and perilous war service. We recollect his articles contributed under the name of "Secretarius", and his labours as Hon. Business Secretary; now that he is once more with us we hope to again profit by his wisdom and experience.

G. R.

REPORT OF COUNCIL MEETING.

A Council Meeting was held by kind permission of the Zoological Society at the Offices at the Gardens on July 17. Present: Lieut. Gurney (Chairman), Miss Chawner, Miss Alderson (Hon. Sec.), the Hon. Mrs. Bourke, Messrs. Ezra (Hon. Treasurer), and Seth-Smith. Letters of regret for non-attendance were received from Drs. Amsler, Butler, and Renshaw, and Messrs. Astley, Mead, Waldo, and Shore Baily.

The minutes of the previous meeting were read and confirmed.

The sale of the back numbers of the Magazine was then discussed by the Council, and it was decided to take further action.

The Hon. Treasurer reported a satisfactory decrease in expenses since the last meeting.

The question of a fresh entrance fee in case of a retired member rejoining was decided in the negative, unless the Member had been expelled for any fault.

It was decided to remove the sales column to page 3 of the cover of the Magazine to increase its usefulness.

The Hon. Secretary reported an increase of nine new members since the last meeting.

Mr. Ogilvie Grant and Mr. Shore Baily retired from the Council.

The date of the next meeting was fixed for October 30.

The meeting closed with a vote of thanks to the Chairman and to the Zoological Society.

THE REVIVAL OF AVICULTURE.

DEAR SIR,—In Marseilles there are several good bird shops. These (which is, perhaps, more than one would expect!) are well kept and clean, and the birds well looked after. Their principal stock beyond the usual Canary consisted of large numbers of the commoner African finches. There were also many Weavers and Whydahs of different species, quite a number coming into colour. One proprietor had recently bought birds from a ship from South America, as there was a fine group of Red-crested Cardinals and a number of Saffron Finches, all in excellent order. Some Blue-fronted Amazons and Canary-wing Parrakeets were also in this shop. There seemed to be a ready sale for the Cardinals and Finches, for in a few days most were gone. The prices, too, were much below the English, even in pre-War days.

In another shop was a fine brace of Green Glossy Starlings, also numbers of Senegal Palm Doves and the pretty little Emerald

Dove (*C. Afra*), and a pair of half-collared Turtle-doves (*T. semitorquatus*).—Yours faithfully,

B. HAMILTON SCOTT.

THE SEASON OF 1918.

DEAR DR. RENSHAW,—An article in Vol. IX, No. 8, dealing with apparent dearth of birds in Great Britain, inclines me to express an opinion on bird life in certain localities which I have visited somewhere between October 1917 and 1918. Owing to circumstances I have been prevented from getting where ordinary two-legged individuals can go with ease; in consequence, I can only conclude that a good many of the accounts deploring the scarcity of a species either arise from hearsay or from the fact that we are rather apt to draw erroneous opinions from relying upon immediate impressions. Circumstances are entirely responsible for these impressions, and because we do not happen on a certain day to arrive at favourable results, we are apt to forget that the next ten days, when we are elsewhere, a good number of incidents “crop up” which did not occur on the particular day when we were exploring. Twenty-five years close study of the variability in numbers of a species has led me to this conclusion. Every little while we get winters of such severity that a drastic pruning occurs, which obviously only affects those species actually remaining in a locality. Even they flee before the severity of the weather, and only a small proportion are caught napping—so much so that by the end of the next breeding season no noticeable difference exists. Three or four times in my lifetime only have we had a winter which froze birds in the sides of the stacks and in the shrubberies, and which played real havoc with Thrushes and certain small but prolific species, and on each occasion they quite recovered by the following autumn. Readers of *Lorna Doone* may remember that Jan Ridd (fictitiously of course) gives an account of a hard winter such as I mean, but evidently Blackmore had experienced such a time, and makes his character give a pretty graphic account of what takes place among birds on such occasions.

I do not append the following particulars as being of great value, because I am now unable to do what I used to do; but the results obtained, although half-hearted, are well on the side of accuracy, because they could well have been supplemented by individuals who have more leisure or to whom a mountain side, thick wood, or sloppy marsh was not an obstacle to investigation. The species are mostly Passerine because I am more interested in such groups, but a few notes with reference to certain Picarian birds, Owls, Hawks, Waders, Ducks, Gulls, etc., may not be out of the way. I am inclined, however, to say without hesitation (eliminating disappearing species like the Kite) that with the ordinary run of birds their numbers are as good to-day as when I was a boy, and in some cases a style of cultivation or game-preserving has apparently either increased them or perhaps drawn them from elsewhere. The real *local* extinction or "lessening" of a species (as apart from wholesale slaughter by the gun for various reasons) I can, without exception, trace solely to altered conditions of country, and wherever conditions remain good, continual and reasonable toll of their numbers seems to not affect them adversely. Since the days of Gilbert White people have been more inclined to observe small items of this kind, and, of course, that's (from a natural history standpoint) only yesterday! In consequence we have much to learn, and we are often at a loss to give any logical reason as to why a species removes itself to just over the way, or why it is apparently more common in a local area this year than last. We sometimes forget that we are not everywhere at once, and that the numbers of a species are as much affected by incidents occurring during their absence from these shores as when they are here, which is applicable to winter or summer birds or such resident species as are migratory, and how many are not? Whatever we do we must not start reports because our personal "luck is out" on a day's investigation, because, as before stated, we can only draw impressions from the sum total of reports received from competent observers who know their birds by ear and distance as well as when they are under their noses.—Yours faithfully,

ALLEN SILVER.

MAGPIE MOTH LARVÆ (*ABRAXAS GROSSU-LARIATA*) AS BIRD FOOD.

DEAR DR. RENSRAW,—Dr. Collinge's observations on the edibility of *Abraxas grossulariata* should prove exceedingly interesting to Prof. Poulton and many others, who have always considered it (upon almost overwhelming evidence) as one of the larvæ most generally avoided by European birds. *

On the other hand, another gooseberry caterpillar (*Halio varuaria*) is freely eaten, and is a favourite food of the Titmice, as I have pointed out previously.

If you offer the larvæ of *Abraxas* to a frog, it licks it up at once, and then the tongue is protruded to its utmost limit and the caterpillar steps off and strides away unhurt. If you put one into a spider's web the owner cuts away the surrounding threads and lets it drop out, or if the web be funnel-shaped the spider retires to the back and lets the caterpillar walk away. I have never known a lizard, a British bird, or a fowl to devour a single specimen of this caterpillar, so that Dr. Collinge's observations strike me as remarkable; on the other hand, Mr. Page says that his Weaver-birds devoured larvæ of *Abraxas*, and my Bluebirds, although they rejected the larvæ, ate the perfect insect with pleasure.—Yours very sincerely,

A. G. BUTLER.

PRACTICAL AVICULTURE.

STOKE LODGE,
LONDON ROAD,
GUILDFORD.

DEAR DR. RENSRAW,—Aviculture is a great hobby with me, and I endeavour to save others from my unprofitable mistakes. Hence my article on "The proper Treatment of Foreign Birds in Winter", published in the *Avicultural Magazine* about 1916. Two great truths stand out in aviculture. One is that most birds do not require heat. The other is that birds will not use a shelter all the time if they can

find cover outside. Another truth is that birds live longer in a cage than in an aviary.—Yours faithfully,

L. LOVELL-KEAYS.

THE BRENT VALLEY SANCTUARY.

83 AVENUE CHAMBERS, W.C. 1.

July 28, 1919.

SIR,—The Brent Valley Bird Sanctuary of the Selborne Society has been carried on for sixteen years, and apart from the experimental work which has resulted in the sending of nesting boxes all over the country and to different parts of the world, much pleasure has been given to very numerous visitors of all classes. The Committee has, until recently, been able to keep things going on the profits obtained from the sale of nesting-boxes, together with occasional donations.

The War upset all arrangements, and turned the balance in hand in 1914 into one due to the Secretary, so that it has been found necessary to make an appeal for direct contributions. These may be sent to me at "The Hermitage", W. 7, together with orders for nesting-boxes.

With a greatly increased amount of land under cultivation, and in view of the Government's afforestation scheme, the need for augmenting the number of insect-eating birds is manifest, and the importance of bird sanctuaries is greater than ever.

Under these circumstances it may not be out of place to express the hope that someone may come forward and put the Brent Valley Bird Sanctuary upon a permanent basis.—Yours faithfully,

WILFRED MARK WEBB,

Chairman.



Drawn by Alice M. Cook.

THE DIAMOND BIRD (*Pardalotus punctatus*).

“The Diamond Bird, or Pardalote, which must not be confounded with the much larger Diamond Sparrow, is one of our prettiest little assistants. The plaintive call notes, one high and one low, uttered by the cock and hen bird respectively, are often heard. The nest is in a hole in a sloping bank, and one wonders how such a tiny bird can excavate such a burrow.”—*Dr. A. S. La Solf on Garden Birds in Sydney.*

THE
AVICULTURAL MAGAZINE,

BEING THE JOURNAL OF
 THE AVICULTURAL SOCIETY
 FOR THE STUDY OF
 FOREIGN & BRITISH BIRDS
 IN FREEDOM & CAPTIVITY.

Third Series.—Vol. X.—No. 12.—*All rights reserved.* OCTOBER, 1919.

A RARE WOODPECKER

(*Chrysophlegma flavinucha*).

By HUBERT D. ASTLEY, M.A.

In August Mr. Hamlyn sent me some Himalayan birds to select from. Amongst them was a Woodpecker, and an altogether charming Woodpecker, too—ridiculously confident, exceedingly handsome, and delightfully tame. He is the Yellow-naped Woodpecker, found in the Himalayas as far west as Masuri, extending into Assam and Cachar, and ranging south into British Burmah as far as the central portion of the province of Tenasserim. Dr. Jerdon recorded that it is “found throughout the Himalayas, extending from Assam to Burmah. At Darjeeling I observed it chiefly in the zone from 2,000 to 6,000 feet”.

Describing his colouring roughly, let me explain that the upper parts from nape of neck to tail are a uniform vivid glossy green. Primaries, chestnut barred with black; forehead, rufous brown; sides of head, dingy olive-brown; chin and throat, lemon yellow, terminating in black and white chequering; chest, dull olive; underparts, grey

with a dusty olive tinge; thighs and under tail-coverts, washed with yellow; tail, black; pointed nuchal crest, bright golden yellow; bill, bluish-white; iris, red; eyelids and naked skin at gape, greenish blue. This Woodpecker is an inch longer than the common Green Woodpecker of England, etc. Gould terms it "this noble bird".

My specimen, evidently hand-reared, delights in coming out of his cage on to anyone's shoulder, where he plays a sort of peep-bo from one side of one's head to the other, extending his long pink tongue, which quiveringly tickles one's neck, ears, and even teeth if one opens one's mouth.

He seems to delight in human companionship, chattering softly at moments, and looking altogether fascinating and intelligent. A young male. The female has a chestnut throat, where his is lemon or butter yellow. Until he came to me I was not aware that Woodpeckers greedily eat fruit. He digs into a pear or apple, extracting large mouthfuls; and wine-berries, blackberries, etc., are all welcomed. Offer him some wasp-cake, and see his tongue flick out the grubs. Most entertaining!

Never did I have a more charming pet, and I have had a good many in my day. If he sang like a Shamah, he would be the perfect bird; as it is, his notes up till now consist of a soft chattering, and also a louder and melodious "chip", if one whistles it.

BIRD-LIFE IN 1918.

By ALLEN SILVER.

(Continued from p 199.)

THRUSHES.

Missel Thrush.—Has done well, many parties noticeable everywhere.

Song Thrush.—Has "got over" the punishing of the 1916-17 frost, and had all my gooseberries in Suburbia. Quite as many everywhere as are needful.

Redwing.—Big flocks in Huntingdon, 1917-18, but did not see so many in Suffolk and Essex myself.

Fieldfare.—Saw it here and there, but weather prevented me going on low wet ground at the time I was in the country.

Blackbird.—Exceptionally strong everywhere. Is never "hit" by the frost like a Song Thrush. Saw 1918 bird feed August nestlings of the same year, apparently an earlier example from three broods reared by a pair in my garden.

Ring Ouzel.—Have not been in its haunts, but have a report to the effect that it came in usual numbers.

Redbreast.—As numerous as ever, bred early and late everywhere. More old birds seemed to survive moult and keep their quarters this autumn than usual. Some seasons birds of the year shift many of them.

Nightingale.—Good accounts from Kent, Surrey, Hunts, and East Anglia. In Farnborough, Kent, a pair brought a flying brood from a wood and fed them on a mould heap near potting shed in garden for several days. Last year in same grounds a pair similarly conducted a brood round pigsties and manure heap at almost same dates. I heard this male on arrival, and he apparently settled and bred in area.

Redstart.—Had good report in Ipswich district, and saw it here (East Anglia), and as far west as the Wye and Conway.

Black Redstart.—Have had no report, and have been unable to go where I expect it at a certain time. Saw last living wild specimen not far from Dr. Butler's a few years ago. It remained there for weeks.

CHATS.

Wheatear.—Am afraid I shall be unable to get to Downs country, where I usually see the return birds. Had accounts of its vernal arrival in usual numbers.

Stonechat.—Winter resident birds were thinned in 1916-17. Migratory birds, however, made this up. Saw a winter pair settled early this spring, and recently (August) a cock and brood near New Cross on some elevated waste.

Whinchat.—Moving alongside four-foot way disturbed birds in one or two of my favourite spots. These shifted, but have not been to where I can usually see them with moving broods. Local report mentions them.

WARBLERS.

Garden Warbler.—Did not sing till rather late (1918). Saw it in Kent and in suburban gardens for fruit, with Whitethroats. Turned up in usual quantities and heard it in South Wales.

Blackcap.—Saw and heard cocks in Kent, East Anglia, and Monmouthshire. Good accounts of it in usual spots.

Whitethroat.—Good broods everywhere.

Lesser Whitethroat.—Plenty in such localities as favoured by it. This, with its congener, went for raspberries rather painfully in South London in July and August.

Grasshopper Warbler.—Heard it early in Kent, but was unable to go where several pairs usually appear. Fine weather and trippers were accountable for shifting it on a North Kent common, where it always passes and stays in the spring.

Dartford Warbler.—One good neighbourhood has been spoiled by fires and military necessities. Am not now in touch with a friend in that district who has watched it annually.

Sedge Warbler.—Saw good broods with parents in Monmouthshire.

Reed Warbler.—Heard and saw it in South Wales, Hunts, and Suffolk, and Essex border. As usual.

Marsh Warbler.—Have not been where one might expect to find it, and when near Ouse did not go on punt.

Willow Wren.—Should think it must exist in countless numbers wherever it goes. Breeds right up to Suburbia. Courtship of this species observed in Roehampton; quite idiotic, but doubtless pleasing to Willow Wrens.

Chiffchaff.—Noticed plenty early, and met with it almost everywhere. Many strong broods noticeable in North and South Wales.

Wood Wren.—Have been unable to visit my Surrey spots; heard a few and saw this and its two congeners in one small hillside wood in Monmouthshire.

WRENS AND ODDMENTS.

Wren.—Plentiful everywhere, bred early and late, many good broods successfully dispersed.

Dipper.—Saw it in North and South Wales, but have not been in its northern haunts.

Nuthatch.—Well distributed, and as common as usual both sides of the island where I expected to find it. Pair bred in a suburban district.

Creeper.—Have seen numbers in several counties, and several strong broods; no shortage as far as I can see, but can usually gauge this better when they are on the shift.

Goldcrest.—Have been unable to go to spots where they are thick in breeding season. Heard and saw singing cocks in nesting season, and a brood party passed through an East Anglian garden this week (August).

TITS.

Greater Tit.—Exceptionally numerous in early winter of 1917 in Suburbia, and very common elsewhere. Has teemed since young have flown.

Blue Tit.—Much the same applies.

Coal Tit.—Numbers as usual in all respects. Apparently bred near me in Suburbia, and when I have visited certain spots have met latterly with numerous parties.

Marsh Tit.—Saw isolated pairs in Suffolk, Essex, and Monmouth. Have no accounts this season of its nesting.

Longtailed Tit.—Saw it in winter of 1917-18 in certain localities in usual numbers. An exceptional flock occurred during shooting operations on an estate in East Anglia.

MORE ODDMENTS.

Bearded Reedling.—Am not now in touch with any Broad people.

Hedge Accentor.—Excessively numerous, right up into Suburbia, where good broods appeared early and late. Before moult sets in this species usually prevents a forlorn appearance, and I see more wild Hedge-sparrows minus head feathers in the nesting-season than any other bird I know.

FLYCATCHERS, SHRIKES, AND SWALLOWS.

Pied Flycatcher.—Prevented from following up such examples as I have heard and seen. Put one hen out of a stone wall by roadside,

and saw another feed her brood in a quarry "shoot" wall. Tons of dusty granite must have been trundled over this shoot hourly for eight hours at a stretch, and apparently workmen did not notice the brood. This bird behaves much like a Redstart.

Spotted Flycatcher.—Numerous everywhere. Bred right into Suburbia.

Great Grey Shrikes.—Heard of its occurrence in wide apart localities during the winter.

Redbacked Shrike.—Saw pairs at usual spots. Absent in meadows and fences where hedges were trimmed, or where camps had been instituted. This bird when rearing kills game up to the size of a nestling Song Thrush. Have seen it impale a House Martin, and have known it to attack small running game. The last pair I had, in addition to eating a pot of food and plenty of cockroaches and beetles, would in twenty-four hours spoil the look of a mouse or a Greenfinch. Have picked up numbers of legs of Robins, Willow Wrens, White-throats, etc., near an "abattoir". Does not confine itself to bumblebees and beetles when young are hatched.

Swallow.—No scarcity wherever I have been. Broods very strong and large. Saw an unquestionable bird of the year carrying a feather to a chimney yesterday (August).

(To be continued.)

MORE INDIAN BIRDS.

By ALTHEA R. SHERMAN.

[Reprinted from the *Wilson's Bulletin*, No. 90.]

One of the species of birds frequently seen near the hotels was the Indian Hoopoe (*Upupa indica*). Both the manner of its flight and the barred portion of its plumage were strong reminders of the Woodpeckers. Immediately upon alighting its bright-coloured crest is erected, and the same thing happens when the bird is frightened. At other times the crest lies flat; the end of it projecting beyond the head affords in outline a symmetrical balance to the long bill, making the head resemble a double-pointed pickaxe. This semblance is

especially marked when the bird is digging for its living in the earth. The sight of my first Hoopoe was a long anticipated event, and was of unusual significance from the fact that it was the first foreign bird in a free state to be met of which I had retained a mental picture from my early childhood, or more correctly speaking, it was a mental picture of a picture one found in the second book I owned. It was a book then, a wonderful book, though now it would be called a tiny brochure of twenty-four pages. Its title is *A History of Birds for Children*. Its illustrated cover is wonderful; still more so is its wood-cut illustration of the Hoopoe, for it proves the theory of evolution. This illustration shows that fifty-five or more years ago the Hoopoe was a thick-set, thick-billed bird, resembling a Grosbeak, with a gently curving crest becoming to the form and disposition of a Bluebird. In the course of ten or twelve years the structure of the species had undergone considerable change, which can be proved by the picture of it that is to be found in Webster's Unabridged Dictionary, edition of 1870. And now in January, 1911, I find from the living birds seen in India that in a structural sense vastly greater changes have taken place within the last forty-five years. The bird at present, with its short legs, long, sharp bill, and barred wings, looks somewhat like a Woodpecker. In fact, some of the tourists insisted that it was a Woodpecker.

One Golden-backed Woodpecker (*Brachypternus aurantius*) was the sole representative of the Picus family seen in India. With the usual cheerful spirit that characterizes the family the world over it searched tree-trunks and inspected the hood of an electric lamp on one of the principal streets of Delhi.

Other species of birds found by me near the hotels more often than elsewhere were the Bulbuls, the Babblers, Indian Tree-pie, Common Indian Starling, Magpie Robin, Brown-backed Indian Robin, Indian Redstart, Indian Tailor-bird, Flycatchers, Warblers, and Purple Honeysucker. Some ornithologists prefer to call the last-mentioned species the Purple Sunbird (*Arachnechthra asiatica*). By its quick movements among the flowers while seeking its food of insects and nectar, as well as by its size and colour, it brought to mind the Hummingbirds. Especially is this true of the male Sunbird, that is of

a rich, iridescent violet-blue colour, while the female as described is greenish brown-grey above, and greenish yellow beneath. Both sexes were seen, but the male more frequently.

The Red-whiskered Bulbul was seen and positively identified a short distance from the entrance to the Caves of Elephanta; on a few other occasions identification was not so certain. The Common Bulbul was found in several places, but nowhere so plentiful as on Mount Abu, where it appeared to be the most abundant species, even outnumbering the Common Myna. These two species were the only Bulbuls of which I made sure, although India boasts of fifty other species of them; and of Babblers there are eighty-three, of which I saw but two, the Common or Striated Babbler (*Argya caudata*) and the Jungle Babbler (*Crateropus canorus*). The last-named species, very inconspicuous in its ashy brown plumage, with its ground-haunting proclivities, would not be so easy of identification as one might suppose, if it were not for its habit of flocking in small parties of five, six, or seven birds which affords a clue to their identity, confirmation of which may be had from almost any guide, since these birds are commonly known to the natives by the very appropriate name of the Seven Sisters, or the Seven Brothers.

The Indian Tree-pie (*Dendrocitta rufa*), a bird eighteen inches in length, is certain to arrest one's attention by its pleasing display of colours and its long tail. Its metallic whistle is fully as musical as the call notes of the Bronzed Grackle, nor has it a better reputation, since it is well known as a destroyer of both birds and their eggs.

HYBRID BARRABAND AND QUEEN ALEXANDRA PARRAKEETS.

By HUBERT D. ASTLEY, M.A.

I have two hybrid Barraband (*Polytelis barrabandi*) × Queen Alexandra Parrakeets (*P. Alexandræ*—or as it was ridiculously named, *Spathopterus Alexandræ*; thereby separating this latter species from its true genus of *Polytelis*, merely because the male happens to have

a spatulated feather on the third primary. The Queen Alexandra is absolutely a *Polytelis* as much as is the Barraband and the Rock Pebbler). At any rate, my male Barraband seemed to recognize a close relation in a female Queen Alexandra which I reared last year, 1918. The result is two young ones, male and female, favouring the father in colouring, but the colours are still those of nestlings. Later on I hope to describe the adult bird.

The male is uniform bright green with a patch of orange-pink at the base of the throat, and the same colour on the inner webs of the tail.

The female has the tail of that colour, but not the throat, which is green like the rest of her plumage. The mother wished to mate with a bird of her own species who seems to be a confirmed celibate, so she yielded to an earnest proposal from the Barraband, and the result is what I suppose to be a unique hybrid. As yet there is no indication of yellow or blue on the forehead of the male. That may come later on. Which will it be? Perhaps neither, but some mixture.

[Mr. Astley writes on September 4: "I regret greatly that I have to send you the body of one of my hybrid *Polytelis barrabandi* × *P. Alexandra* Parrakeets. Both have died! The bill was much redder in life. I hope to have better luck another time."]

EGGS AND NESTLINGS.

By GRAHAM RENSHAW, M.D., F.R.S.E.

Some knowledge of elementary museum methods, if not actually essential, is, at any rate, very helpful to the aviculturist; by which term one designates, not the mere haphazard bird-fancier, who pursues his hobby without plan or method, but the intelligent student of bird life. Since in normal times we study the eggs and young of birds, it follows that any method of preserving clear eggs, or any nestlings that may die, is of the first importance. Only too often, it is to be

feared, have rare eggs or dead young ones been thrown away, merely through ignorance of some method of retaining them for future study.

Eggs which it is desired to preserve should be emptied by drilling with a steel drill a neat hole in the centre of the egg, care being taken to select a site free from conspicuous markings. A blow-pipe of glass or metal having been inserted into the hole, the contents are then neatly expelled by blowing down the tube, the white and yolk streaming past the blow-pipe between the pipe and the rim of the hole.

The former barbarous method of making a hole at each end with a pin often resulted in ruining the shape of the egg by damaging one or both ends; the later practice of making *two* holes at the side is now also discarded in favour of the neat, one-hole method. After blowing, the egg is allowed to become thoroughly dry before placing in the cabinet; if this precaution is omitted, mould and mildew are only too likely to appear on the shell. Before being put away the egg should always be inscribed with the name of the bird and date of laying. These details should be written *on the egg itself*, for labels tend in time to become detached and lost.

Hard-sat eggs containing well-developed embryos may occasionally come under the notice of the aviculturist. The hole should be drilled at the side as before, and the egg put away for a day or two to allow the embryo to soften; it may then in many cases be cautiously extracted after cutting it to pieces with fine curved scissors. Obstinate cases may be injected with a solution of caustic potash, the egg then being well shaken and left to stand for twelve hours; it is then again shaken, and the softened embryo blown out if possible by the blow-pipe. If, however, the embryo is on the point of hatching, and the egg is boldly marked, the shell may be carefully bisected with a minute file, the embryo extracted, and the two half-shells neatly gummed together; if the filing has been carefully done the mark of the union will be hardly noticeable on a richly spotted specimen. With white eggs a good plan is either maceration by caustic potash or embryotomy. The aviculturist may, however, prefer to place the egg on an ants' nest. The ants will enter by the drill-hole, and in the majority of cases end by completely emptying the shell. Hard, well-formed bone will, however, resist their efforts.



Door open showing form of Latch.



Photos by G. E. Low.

Door closed.

A NEW DOOR-LATCH.

To face p. 215]

Nestlings are readily preserved in methylated spirit ; they soon become hardened, and may be taken out for examination without fear of tearing ; the eyes, it may be noted, become white under the action of the spirit. All specimens should have a label with the name of the species, together with the date of preservation and any other useful details, attached to the bottle.

A NEW DOOR-LATCH.

By G. E. Low.

I suppose most bird-keepers have suffered at some time or other through doors being carelessly left open, or unlatched. I remember once losing a cock Melba Finch through the door blowing open on a very windy day when I was in the aviary, although it was governed by a spring.

I have found the device which is shown in the illustration quite satisfactory, as it simply insists on shutting from any point. The door must be fitted with an efficient spring or weight and pulley ; the latch is made of hard wood, weighted at the inner end, and fixed to the door post by a screw and washer, so as to swing easily. The bar, which is fastened to the door, slides lightly over the latch until it engages in the notch. This latch may have been used in the Ark, but its advantages are so obvious and its construction so simple that I venture to suggest its use.

THE OOLOGISTS' EXCHANGE AND MART.

This little paper, first published on June 1, 1919, appears on the first day of each month. With its advertisement supplement it is issued privately to subscribers only and no specimen copies or single parts can be sent out. Every effort is made to limit the subscription list to thoroughly reliable collectors, and those who

are not members of some scientific society of standing, and who wish to become subscribers, are required to satisfy the Editor as to their *bona fides*. The names and addresses of new subscribers are published as they join, and a complete list will appear early in the new year when subscriptions are renewed. No dealers in natural history specimens are accepted as subscribers, as one of the principal objects of the paper is the assistance of collectors in securing specimens from each other at first hand without the intervention of others.

As its title indicates, the paper deals exclusively with oology, and though many ornithologists deprecate the collection of eggs, the legitimate interests of the oologists can neither be denied nor ignored, and the support already accorded to the paper shows that it is appreciated. But while encouraging scientific oology in every possible way, no effort is spared to protect the rarer British breeding species and to discourage the random collection of eggs and the mere accumulation of specimens.

Amongst the steadily growing list of subscribers are to be found the names of many leading collectors both in this country and in the U.S.A., as well as some few in France and in the Colonies. This increasing support will permit of the gradual improvement of the paper, until it becomes not only the recognized medium for the purchase and exchange of eggs amongst oologists everywhere but also a paper of much interest.

The subscription for the period ending December 31, 1919, has been fixed at 4s., and this includes the right to a free 25-word advertisement in the supplement, in which also extra words or extra advertisements can be inserted at the rate of $\frac{1}{2}d.$ per word. The subscription for the whole of 1920 will probably be 5s.

All communications should be marked "Private" and addressed to the Editor,

KENNETH L. SKINNER,

Brooklands Estate Office,

Weybridge, Surrey.

AVICULTURAL NOTES.

Naturalists of a bygone day believed that in the course of development each individual climbed up its own genealogical tree. The reconstruction of aviculture exhibits somewhat similar characters, the old features reappearing one by one in the Magazine. To-day the Editor takes pleasure in restoring the "notes" section which proved so valuable before the War.

New Arrivals at the Zoo.—Lieut. Delaeour most kindly purchased for us in Paris a collection of Senegal Birds, and some Cuban Finches, Olive Finches, and Yellow-winged Sugar-birds. He also presented to the Zoo two Greenish Hangests and a Yellow Troupial. We had also a valuable present from Dr. Van Someren, who brought us from East Africa a splendid Ross's Plantain-eater, a Bare-faced Fruit Pigeon, and two Grant's Franeolins.—D. SETH-SMITH.

New Arrivals at Brinsop Court.—Amongst the birds which accompanied my Yellow-naped Woodpecker (I did not keep them all!) were a Bengal Pitta, a Rufous-bellied Blue Niltava, a White-crested Jay Thrush, a Plumbeous Redstart, and a coal-black Redstart—which latter resembles the European Black Redstart very closely, but the black is really black, and the bird has chestnut about the thighs. There was also an Orange-headed Ground-Thrush (*Geocichla citrina*), a female.—H. D. ASTLEY.

Mr. F. C. Thorpe.—Our old member, Mr. F. C. Thorpe, writes to say that he is leaving for Queensland in November, and expects to settle in the hills some fifty or sixty miles from Mackay. He hopes to rejoin the Society later, and also to write us some papers; he may also send over a few birds. Those of us who remember the valuable healthy specimens we used to purchase of him will wish Mr. Thorpe every success in his new life overseas.—G. R.

[All Members are invited to contribute to this column. Those who may not have sufficient material for a paper would often be able to send shorter contributions.]

 THE SOCIETY'S PRIZE.

The Society's Prize in Literature is awarded annually for the best contribution to the Magazine sent by Members resident abroad, as they are not eligible for the Medal. Many excellent papers have

been received, and will be considered shortly. The award will be announced in the November issue.

REVIEW.

THE MUSEUM OF COMPARATIVE OOLOGY.

We have received from Mr. W. Leon Dawson the double number (Nos. 1 and 2, vol. i) of the *Journal of the Museum of Comparative Oology*, Santa Barbara, California. The Museum is devoted to the study of the birds of the world, with especial reference to their nests and eggs. It is a pioneer museum; nothing at all approaching it exists anywhere else. In these difficult times it is encouraging and inspiring to learn that a good start has already been made, and the first official publication breathes a spirit of science, energy, and hopefulness that makes us proud indeed of our American brothers, "not cousins," as indeed Mr. Dawson says in his letter to us.

The Board of Visitors includes many names well known and honoured on both sides of the Atlantic, such as Brooks, Bryant, Chambers, Finley, Ridgway, and Shufeldt; an array of Fellows, Patrons, Members, Patron Collectors, Field Members, Exchange Collectors, Corresponding Members, and Authorized Collectors, marks the thoroughness with which the well-wishers of the Museum have been organized; in the *Journal* we read of the building erected to house the twenty thousand eggs already acquired, and of liberal, far-reaching plans for the future. The illustrations are good, and give an excellent idea of the Museum both internally and externally. The ultimate intention is to provide some twenty-two buildings, fire and earthquake proof, with top lighting and dry heating. There will be an administration hall, a library, a lecture hall, and workrooms. Research expeditions will ultimately be sent out to collect for the Museum.

At the present time the premises consist of a reception room and an annexe, with a workroom. The cabinets consist of twenty-four redwood cases, their space allotment being 473 drawers, all covered, or intended to be covered, with glass. From the illustrations in the *Journal* one can gather a faint idea of the riches of this Museum. The "Roc" drawer contains a grand egg of the extinct giant Ostrich of

Madagascar, the *Epyornis maximus*. The Prairie Falcon drawer contains seventeen sets of this interesting species. The ordinal drawer is most instructive, showing as it does eggs of thirty living orders, amongst which we readily distinguish the Ostrich, Emu, and Tinamou. One readily endorses the statement on p. 7: "We have set out to accomplish something which has never been done before."

The Museum asks for further contributions of eggs; all who send specimens may rest assured that they are supporting a cause well worth while, and that every egg will be utilized. It is a pleasure to record that Mr. W. Leon Dawson, the Secretary of the Museum, has now become a member of the Avicultural Society.

G. R.

THE MUSEUM OF COMPARATIVE OOLOGY AND THE *AVICULTURAL MAGAZINE*.

DEAR SIR,—The copy of the *Avicultural Magazine* gave me much pleasure, not alone for the amiable and hopeful tone of its editorials, but for the concrete information of bird-life which it furnished. For example, Dr. Butter's articles on the Rhea and the Emu recited two facts which are of immense importance to a student of comparative oology. Dr. Butter gave the incubating period of the Emu as from fifty to sixty days, and that of the Rhea (*Rhea americana*) at thirty-one days. This probably means that the Rhea is a more advanced type, a more "evolved" bird than the Emu. If the hypotheses of our Dr. Bergtold is correct the reduction in length of the incubating period in birds is correlated with elevation of body (blood) temperature, and this in turn with structural and taxonomic advancement. It would be interesting to know from Dr. Butter what the comparative blood temperatures of the Rhea and the Emu family really are, and to see whether Dr. Bergtold's theory is borne out in this instance. Both are hardy birds and hail from hardy climes, so that the difference, if any, would have phylogenetic rather than merely geographic significance.

It occurs to me that Aviculture and Comparative Oology really have much in common; so much so that I am tempted to inquire

whether it might not be possible for the Museum of Comparative Oology to serve aviculturists as a repository for eggs not required in propagating. I can assure aviculturists that any carefully authenticated egg material from British or Continental aviaries will be warmly welcomed by the Museum of Comparative Oology, and especially such as depart from the normal type, or which tend to vary conceivably owing to captivity. The ultimate plans of the Museum call for a well-equipped aviary. In this all circumstances attending egg deposition, incubation, etc., will be carefully studied. In the meantime, however, we shall be quite dependent upon volunteer service in this important field.—Sincerely yours,

W. LEON DAWSON.

[We hope that with the revival of aviculture which has already set in our Members will be able to participate as suggested in enriching the egg collections of the Museum of Oology. Mr. Dawson's address is the Museum of Comparative Oology, Santa Barbara, California.—G. R.]

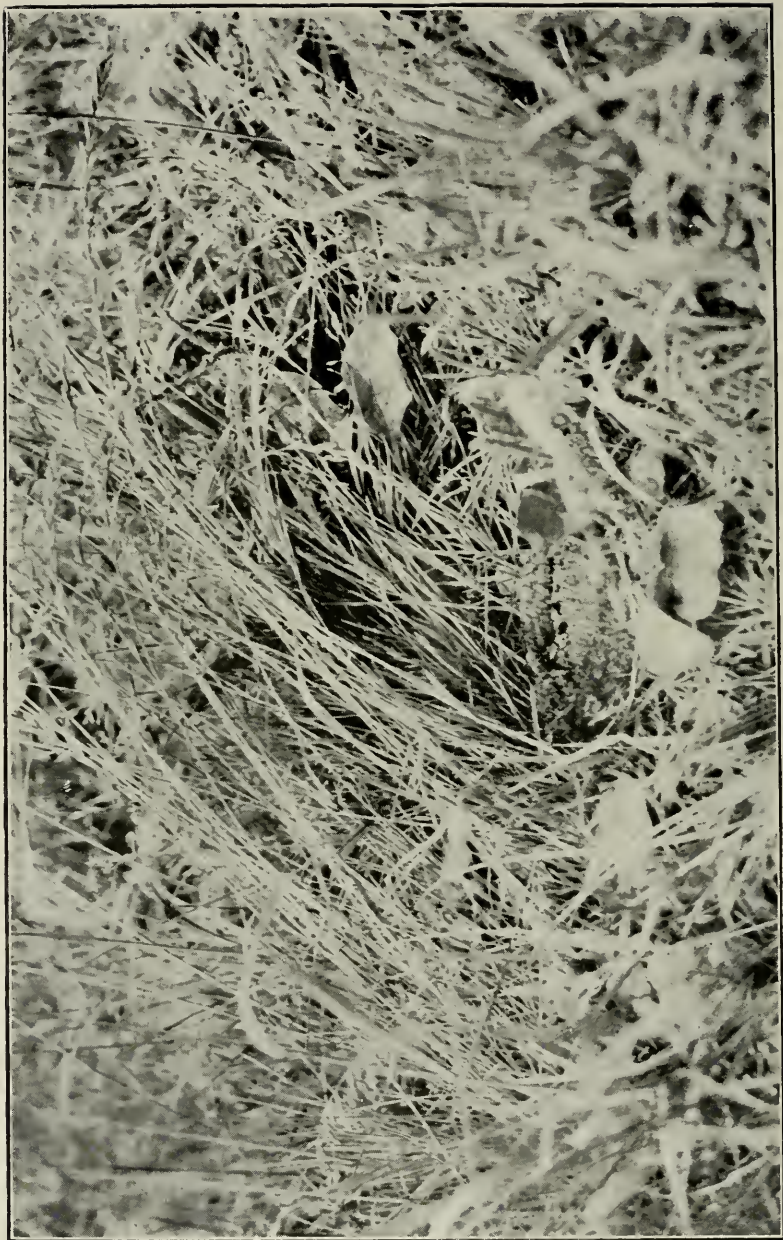
THE WASHINGTON ZOOLOGICAL PARK.

DEAR DR. RENSHAW,—This morning I consulted with my friend, the Superintendent of our Zoo, and he at once responded favourably. He will help me to secure photographs of any birds that I may point out to him, and let me have prints of any of those they now have on hand. I have a fine one of the Harpy Eagle that died a few months ago, and I can readily secure others. When the pictures are assembled I will get up some text for them and send the whole on to you for publication.

We have some very famous American taxidermists now living and actively at work, and I am sure you would be surprised to see what they have accomplished here in the great museums. Several of their groups are truly wonderful and masterpieces of their kind.—Faithfully yours,

R. W. SHUFELDT.

[We much appreciate Dr. Shufeldt's kind offer, and look forward with pleasure to receiving the promised article.—G. R.]



Generosity of W. Proctor Smith.

Photo by W. Proctor Smith.

BIRD CAMOUFLAGE: SNIPE ON NEST.

The head and back are seen about the intersections of the line A with the lines B B and C C.

THE AVICULTURAL MAGAZINE

BEING THE JOURNAL OF
THE AVICULTURAL SOCIETY
FOR THE STUDY OF
FOREIGN & BRITISH BIRDS
IN FREEDOM & CAPTIVITY

Third Series.—Vol. X.—No. 13.—*All rights reserved.* NOVEMBER, 1919.

SOME PRE-WAR VETERANS

By G. H. GURNEY

I promised our Editor some long time ago to write him some avicultural notes, and having been reminded by him that these were long since due, I have sent him the following scraps, which I am afraid are of no great interest, but we have hardly any birds here now to write about. As with all other aviculturists, our stock gradually diminished during the War, either from natural causes or in some cases from being disposed of owing to food difficulties. So far we have not been able to replace them, though as I write I hear of several large consignments from abroad being received by the dealers, so that I have hopes of being able before long to fill up some of my empty aviaries.

The few birds we have were all here five years ago, and are quite old stagers. Amongst these the pair of Jackal Buzzards are still living, and in perfect condition; we have had them now since the winter of 1904, fifteen years ago, and they came to us from the Zoological Gardens, where they had then not been a very long time. They look the picture of health at present, and have nested here every year since we got them, but on only one occasion were the young completely reared. This was in 1906, though in the following year only an unlucky accident killed the two young birds, which were then about three weeks old. The nest has always been made in the same spot—a big, rather

untidly structure of sticks placed on a large platform in one corner of the aviary, and in no way hidden from public view. More than two eggs have never been laid at a time, except once when there was some doubt about a third! Several other young ones have been hatched, but have always died, from some unexplained cause, before they left the nest. For the last six years the eggs have not hatched and have generally been clear, though the old birds have sat as well as ever.

A full account of the breeding of this species has appeared in Vol. V of the *AVICULTURAL MAGAZINE*, p. 57.

In the next aviary to the Jackal Buzzards is a South American Caracara, a beautiful bird which I bought a good many years ago from the late Mr. Jamrach. It lives a solitary life, having been guilty in 1908 of killing our old Common Buzzard, which we had had for twenty-five years. For some reason which I cannot now remember the Buzzard had been stupidly put into the Caracara's aviary, and after a terrible fight the Buzzard was defeated and killed—needless to say when no one was about to separate them. This was all the more to be regretted, as it was in very good health, and had all the appearance of living for another twenty-five years.

A Rufous Tinamou is the sole survivor of a large aviary once full of birds. He is now monarch of all he surveys, and I wish I could find a companion of some sort for him, as I am sure in many cases certain birds mope when they are left for long alone. I was especially struck by this in the case of my White-crested Touraco. The hen had died, and for a long time the male bird was all alone in a large outdoor aviary. He appeared lethargic and moped, which was altogether wrong for such a very active bird, always on the move in his native woods in Central Africa. However, on my putting a few small foreign Finches into the aviary with him he quickly regained his spirits and appeared to enjoy life once more. But to return to the Rufous Tinamou; he is one of a pair I received from a dealer in 1910, so he is no longer young. I have never bred this species, though eggs were laid. My bird is now quite bald on the top of his head, I suppose from old age, but otherwise is in good fettle. Though fed on grain and some green food he is constantly digging in the ground, and devours

earthworms and beetles, when given to him, with the greatest avidity. He is a silent bird, except when he is frightened, when he utters a single loud and very musical alarm note.

During the War we did not breed any Rheas here, and my flock of five remained as they were. This year two nests, if nests they can be called, were made, and nine and eleven eggs respectively laid, but for some reason or other the cocks refused to sit. A wet, cold spell came on just when they were about to commence sitting, which may have had something to do with it; or they may have had too many visitors. The latter is, I am afraid, the true explanation. However, the eggs were not wasted, as I sold them, with their contents, in August at a jumble sale here for sixpence apiece; but I daresay they were rather stale to eat then, as they had been lying in the open field since the middle of June! Rheas' eggs when fresh are not at all bad, and make quite good omelettes.

A varied collection of Ducks, of many different species, mostly widows and widowers, completes my present meagre list of our birds; but I hope that next time I write anything for the Magazine I shall have a different tale to tell, and that our aviaries will be restocked, and in something like pre-War condition.

BIRD SONG IN AUTUMN

By JAMES J. CASH

Bright autumn days set birds singing and calling in a manner very pleasant to listen to. It is quite a mistake to think that birds' songs are restricted to spring and early summer, though naturally that is the time when the choir is complete and the various choristers are in their best voice. First among autumn songsters is the Robin, whose ruddy breast glows among the fading leafage. Everywhere we go there are Robins singing. Sunny September days set the larks trilling and carolling in the sky in a way that recalls spring. Thrushes sing a little just now, in a whispered sort of way, but their voices will improve. In wooded gardens of quiet suburbs round Manchester they are heard throughout mild winters. The Wren is the most irrepressible of birds, and to-day it is gaily vocal in the dingles, as though spring were nigh.

About the garden beds Hedge-sparrows utter their piping note, and now and then they sing. The "Dunnock", to use a homely name, sings well in late autumn and winter; starlings cheerily whistle and sing on the chimneys. The autumn melody of the Chaffinch is always uncertain; some years we hear it frequently, while other years we miss it altogether. The bluff and stirring voice of the Mistle Thrush is heard as the year grows old. Occasionally the Yellow-hammer sings a little in late autumn. The Blackbird rarely carols in autumn and winter—at any rate, in Lancashire and Cheshire.

Apart from actual song, fine autumn weather sets many birds calling and twittering. Finches of various kinds have much to say, and they say it among the breezy fields when seeking food among the seeds of weeds. There is the whispering of Tits and other small fry in the woods, the wild notes of Lapwings in open places, and the clamour of Rooks and Daws. Many birds are in flocks, which makes the scene more animated and enjoyable to witness.

BUDGERIGARS

By ERIC LEE

The following account of an attempt I made to keep Budgerigars in a small outdoor aviary may perhaps not be entirely void of interest to some of our Members. It is more a record of failure than success, but I am by no means discouraged and intend to keep on trying.

My aviary (if I may describe it as such) consists of a roosting-shed and a small flight enclosure of wire-netting, except half of the roof, which is wood. The dimensions are as follows: Roosting-shed, height at back 6 ft. 6 in., height at front 5 ft. 5 in., length from back to front 5 ft. 3 in., width 3 ft.; flight enclosure, length 4 ft. 6 in., width 3 ft., height at back 4 ft. 6 in., height at front 3 ft. 8 in. The roosting-shed is of wood, well felted and tarred outside, distempered inside, and is free from draughts. It has always had, however, an odour of dampness inside, for which I can in no way account.

For the past few years I have kept a pair of Budgerigars in this place at a time. After the birds had been in for a week or two they seemed to make a kind of sneezing noise. I lost three hens at different

times. The cock birds seemed to do better, but I lost one of them also.

Once I had a nest of three fine youngsters, but the hen bird died when the oldest young one was ready to leave the nest, and it alone survived. A few days before the hen died she made the sneezing noise violently.

Of the pair of birds at present in my possession the hen has been in the place over a year and the cock a few months. Both birds sneeze slightly at long intervals, not, however, as much as the former ones did. I think this is in some measure due to a ventilation slit that I made in the back of the roosting-shed and near the roof.

Until next spring I am having my present pair of birds indoors. By that time I intend to have a better place got ready for them in the garden, and of course larger than the first, although I am not over-burdened with space. One of the chief disadvantages I have to contend with is the absence of a high wall to build against.

Probably some of your readers may care to give a suggestion regarding the proportions of a small garden aviary for *Budgerigars*.

BIRD-LIFE IN 1918

By ALLEN SILVER

(Continued from p. 210.)

House Martin.—See large parties and strong broods everywhere. This is one of the sweetest birds we have. Its song always entertains me, as does that of the Swallow.

Sand Martin.—Colonies seem as strong as usual. Can always take pleasure in its butterfly movements. Have known it use drain-pipes in mansion wall and under railway bridges as nesting sites.

PIPITS AND WAGTAILS

Tree Pipit.—Met with it in large numbers and strong brooded.

Meadow Pipit.—Excessively common wherever I have been, right into the suburban area until nesting commenced.

Rock Pipit.—Saw specimens late in the season in coastal spots.

Pied Wagtail.—Numerous and strong brooded everywhere. In some cases apparently three broods were reared.

White Wagtail.—Saw odd ones here and there with "Pieds". Have seen this slate-backed form paired to black-backed form and rearing young quite normal in appearance.

Ray's Wagtail.—Except where alteration in low grasslands has ousted it, the bird seemed as plentiful as usual.

Grey Wagtail.—Saw it everywhere in its winter movements, appearing right into the suburbs. Noticed a lot of clean-moulted birds recently in North Wales.

WRYNECKS, WOODPECKERS, ETC.

Wryneck.—Heard and saw it quite early in suburbs, and at various points later.

Green Woodpecker.—A common bird still. Have seen many immature birds as well as adults.

Lesser Spotted Woodpecker.—Saw this breeding in Suburbia, and all three species in a garden on Surrey side. Saw it in winter in East Anglia and Surrey, and heard good accounts of it.

Greater Spotted Woodpecker.—This occurred in town as before-mentioned, and I saw it in Monmouthshire and elsewhere.

Kingfisher.—Found it in usual places, and seldom visit spots in Hunts, Suffolk, and Essex without hearing it the moment I arrive at its quarters. Has never varied in its numbers where I know it, except just during severe frosts. Even then it attacks a roving member of its kind should it come near its haunts.

Swift.—Exceedingly numerous wherever I have been, and in some places bred in every roof in the village. The mad screaming frolics of this bird are entertaining to bewilderment. Saw three in a few days fly into houses, mistaking upper windows partly open for the entrance to their nests.

OWLS AND HAWKS

Barn Owl.—Prevalent in all old quarters known to me, but does not adapt itself so readily as the Tawny species.

Tawny Owl.—Common in most places. Still holds strongly to quarters in the vicinity of London.

Long-eared Owl.—About as many as usual where I expected it.

Short-eared Owl.—Have no sportsmen friends who usually let me

know how often they flush it, owing to the War. We used to call it "Woodcock Owl".

Little Owl.—Hear and see it everywhere. Has become a real nuisance, and attacks things by day as well as by night. Saw one catching "Midsummer dors" outside railway station in Hunts the other evening. Hear it all over Suffolk and Essex. Very noisy two nights ago here. Intelligent farmer who preserves in a small way had seven adult Pheasants blinded and eventually killed by one. These were penned, and for a time the culprit was a mystery because they knew nothing larger than a Little Owl could get through such apertures as occurred in the rough wood and wire enclosure. They watched it go for the remaining bird, a cock, and terrify it until the bird tried to hide.

Sparrow-hawk.—Saw it here and there. Has been shot at when sitting every year in most of the localities I visit, and has much difficulty in rearing its broods. Has had a better time lately.

Kestrel.—Numerous everywhere. Have seen it from time to time in suburbs. Good broods got away this season, and saw six migrant Kestrels sitting on tops of scrub bushes in a meadow recently. These are usually birds of the year, and very tame. One pair I knew of this season was responsible for the loss of 150 chicks. *Although I can hardly credit it, the parent birds apparently accidentally flushed a Wild Duck, which, as she flew off, banged down on to the nest; the Kestrels were seen carrying off Ducks' eggs. The owner of the property waited and watched to make sure when he heard of this, and got up the tree to see if such was actually the case. Egg shells and remnants of ducklings were found.* This was the first case of its kind I have met with, and I was especially introduced to the gentleman in order to question him myself.

Shelduck.—Saw big broods in Conway, and old birds in good quantity.

Mallard.—Numerous on wing early in evening now; has bred undisturbed in good numbers. Dined to-day off excellent flapper.

Teal.—A pair stayed here late, but have not visited the "moss" where at this period I see many.

Curlew.—Big parties in certain localities.

Whimbrel.—Saw a number feeding with preceding species.

Common Sandpiper.—Teemed in enormous numbers on Conway—thickly near mouth—and could be met with right up stream in twos and threes.

Waterhen.—Should think it could be found on every apology for a pond everywhere, in addition to the fact that it swarms in all suitable haunts.

Coot.—Still sticks to old breeding areas I know, and “moves on” the waterhens in this locality. A friend saw some in a new spot the other evening.

Snipe.—Bred in all old spots I know, and near one of these occasionally hits the telegraph wires.

Plovers.—Saw large bunches of Golden in the winter, and good flocks of Lapwings in several counties. Home-bred birds seemed common.

Redshank.—Hear that it still frequents meadows in Stour Valley for breeding.

Cormorants.—Saw numbers after small Salmon, etc., on one river, and recently observed an example plough its way up Thames between the Tower and London Bridge.

Gulls.—Have only been to one breeding-spot, and saw six species. During the last few days they are conspicuous over the stubbles in this district, apparently engaged in catching winged ants, after the manner of the Sparrow and Starling.

Common Partridge.—Have only recently been in a good district, and find large coveys prevalent. On mentioning this to an old inhabitant who “kept” in his youth, he replied, “Well, master, what d’ye expect? The wuther was just right for ’em when they come off!”

Red-legged Partridge.—Seems about the same in East Anglia.

Pheasant.—Some good wild nests came off, but this introduced species is dependent largely on “Velveteens”.

Little Grebe.—Hear of it in usual numbers, but cannot comfortably get to a spot where I usually look for it. Have seen a few this evening.

Several large Hawks were reported in Suffolk to me, and I saw something large the other day in Huntingdon, too far off to follow. In a Welsh mountain district I saw on two occasions Hawk-like birds soaring in circles at an immense height, too far off to identify by tail

shape. Probably Buzzards (*Buteo vulgaris*). They disappeared in the clouds. Field-glasses are awkward now for one to manage with crutches, and except for watching a given spot I'd rather use my eyes and ears than be bothered with them.

AVICULTURAL NOTES

REGULARITY IN MOULTING.—It is interesting to note with what regularity birds shed their feathers. In April, 1915, I obtained a cock Alexandrine Parrot, and have kept a record of the shedding each year of his two longest tail feathers. The accompanying table shows that the moult becomes slightly later each year—whether this is due to weather conditions or food I do not know—it also shows that the feathers become slightly longer each year. It also indicates that the left feather is always the longer, and is generally shed first [this is so with this particular bird, but in another cock Alexandrine I had it was the right feather that was always the longer]. For seven years I also possessed a Shama, whose tail became longer as he grew older. When he first came to me the longest tail feather at moult was $4\frac{5}{8}$ inches; at the time of his death it was 6 inches. May it be possible in this way to tell the age of a bird?—

Year.	Date of shedding longer tail feather (left).	Date of shedding shorter tail feather (right).	Length of left feather.	Length of right feather.
1915.	June 8.	June 8.	$13\frac{3}{8}$ in.	$13\frac{1}{8}$ in.
1916.	June 10.	June 11.	$13\frac{7}{8}$ in.	$13\frac{1}{2}$ in.
1917.	July 5.	July 5.	$14\frac{1}{8}$ in.	$13\frac{7}{8}$ in.
1918.	July 4.	July 6.	$14\frac{1}{4}$ in.	14 in.
1919.	July 8.	July 8.	$14\frac{1}{2}$ in.	$14\frac{1}{8}$ in.

E. MAUD KNOBEL.

MOULD IN COLLECTIONS OF EGGS.—I have no doubt that lack of cleaning and thorough drying is the cause of mould, as I noticed it started on eggs of Grebes that I had never had time to wash; and on these eggs it has produced black pits, which scrubbing will not remove.

From these it spread to eggs that were thoroughly clean, and had been years in my trays; and I noticed recently that all my exchange eggs, all of which had been collected at least ten years, but were where dust could reach them, were infected.—LOUIS B. BISHOP.

A TAME SEAGULL.—A tame Seagull used to live in a garden not far from here. There was a freshwater lake on which he swam about, and followed his owner when fishing. He would stand on the lawn calling while a fish was being caught for him. He was quite tame, and great friends with the lad and dogs. His wing had been broken at some time, and as he could not fly he resigned himself to his fate, and became very attached to his owner. I am sorry to say he has gone the way of all pets and is much missed.—EILEEN STAVELEY-HILL.

REVIEWS

BIRD BEHAVIOUR: PSYCHICAL AND PHYSIOLOGICAL. By FRANK FINN, pp. x, 363, with 44 illustrations. London: Hutchinson & Co. 1919. Price 7s. 6d.

The widespread and growing interest in bird-life, which is such a pleasant feature of the times, will ensure for this work a favourable reception, and it deserves it, for the author has brought together an amount of facts that is truly surprising, and in spite of a somewhat loose arrangement of the subject-matter his work is full of interest.

Whilst fully agreeing with Mr. Finn's remarks upon the attitude displayed by many zoologists towards the study of birds, ornithologists we feel have themselves largely to blame; for in the past, and to a much lesser degree at present, they have been content with the publication of dull and uninteresting local lists, or absorbed in recording local and other rarities. There are other sides of bird-life much more important, as the author recognizes, and the ways and habits and general behaviour of birds are, to my mind, not only of greater importance but much more interesting.

To some of Mr. Finn's statements we can hardly subscribe, e.g. he writes, "taking the class of birds as a whole, a beautiful bird never lays a beautiful egg, and *vice versa*." How about the Chaffinch,

Bullfinch, Jay, and many of the Hawks? These are all certainly very beautiful birds and they lay very beautiful eggs, both as regards shape and colour markings.

If the book has a fault it is that it is overburdened with instances of curious behaviour and habit with little or no explanation. This is a pity, for often a line or two would have proved very valuable.

Nevertheless, in spite of these minor drawbacks, and they are nothing more, Mr. Finn has presented us with a work that must arrest the attention of the most casual student of bird-life, and leave him with a bushel of queries to solve, whilst to all those who delight in the study of living zoology it contains a wealth of matter sufficient to keep the most energetic busy.

The illustrations are excellent, but the index is very incomplete. The publishers are at fault in neglecting to place a date of the year of publication on the title-page.

W. E. COLLINGE.

BIRDS AND THE WAR. By HUGH S. GLADSTONE, M.A., F.R.S.E.
pp. xviii, 169; illustrated. London: Skeffington & Son. Price 5s. net.

Mr. Gladstone has done good service to bird-lovers and to naturalists in collecting and arranging the information available regarding the relation of birds to war and of war to bird-life. The value of the collection will increase with the years, for much of it has been gathered from jottings and newspaper-cuttings which otherwise would soon have been lost to memory. It affords a strange medley of fact and fiction.

Bird-breeders will be interested to read how faithfully Homing Pigeons served the Army and Navy as messengers, and how Canaries were used for the purpose of giving warning of a hostile gas attack. Some economic faddists will be astounded to read again in the cold light of post-War reason their own rash suggestions for the destruction or exploitation of bird-life. Naturalists will learn of the delicacy of the senses of birds, which enabled them to give early warning of air-raids and of distant bombardment; of the effect of the War upon migration and nesting habits; and of the behaviour of birds in war areas. Inventors may admire the ingenuity of the gentleman who

suggested the training of Cormorants so that they might fly to the attack and destruction of the munition works of the notorious Krupp.

There is some gold in newspaper cuttings, but there is much ornithological dross; yet even this Mr. Gladstone has wisely retained, for behind the strange suggestions of letters to the Press we see an epitome of war feelings, of the panic of ignorant minds who, losing faith in themselves, trusted to the birds to see them through.

W. EAGLE CLARKE.

A PRACTICAL HANDBOOK OF BRITISH BIRDS. Edited by H. F. WITHERBY. In eighteen Parts. Illustrated. London: Witherby and Co. Price 4s. net per Part.

This fine work must surely by now have become an avicultural classic; once more, on receipt of the fourth instalment, we recognize all the features which made the previous sections so delightful. The present number deals with Wagtails, Creepers, Tits, Goldcrests, and Shrikes; it is again adorned with two fine plates from the magic hand of Mr. Grönvold. To praise these is almost an impertinence; suffice it to say that they are indeed worthy of the artist, for we can almost see the Titmice move, and hear their cry "Teacher! teacher! teacher!" as we examine them in the coloured plate opposite p. 232. In the letterpress the oologist will find a valuable hint (p. 217) in diagnosing the eggs of the British Tree-creeper, while the stout workmanlike beak of the Nuthatch is well rendered on p. 222.

It is unfortunate that the authors in their zeal for nomenclature do not adopt a uniform standard of spelling; thus we find "*britannica*" on p. 214 and "*britannica*" on p. 233. The beak of the Creeper on p. 215 is much too feeble.

G. R.

OUR HON. BUSINESS SECRETARY

We deeply regret to report that owing to ill-health Miss R. Alderson is resigning the post of Hon. Business Secretary, which she has so ably filled during a very difficult time in the history of the Society.

All Members will unite with the Council in expressing appreciation of her painstaking devotion to the interests of aviculture, and her unwearied services for the promotion of natural history. The successful policy pursued at a time when red ruin overtook too many other zoological projects owes much to her foresight and ability.

G. R.

COUNCIL NOTICE

The Council draws the attention of Members to the extension of the present Volume up to and including December next. The avicultural year will in future run from January to December.

The following elections are announced:—

Members of Council.—Miss Knobel, Mr. Newman.

Hon. Business Secretary.—Dr. Lovell Keays.

Auditor.—Dr. Lucas.

Scrutineer.—Mr. Pycraft.

THE SOCIETY'S MEDAL.

The Society's Medal is awarded to Mr. W. H. St. Quintin, for breeding the Lesser White-fronted Goose (AVICULTURAL MAGAZINE, May, 1919). No previous case is known, nor was any response elicited by the Editor's inquiry on p. 130 of the present Volume. Mr. St. Quintin is to be congratulated on his success under the war conditions then prevailing.

THE SOCIETY'S PRIZE

The Society's Prize in Literature is awarded to M. A. Decoux for papers contributed to the Magazine, with especial reference to his breeding Melba Finch \times Crimson-eared Waxbill hybrids, the young living long enough to be independent of their parents (AVICULTURAL MAGAZINE, April, 1919). Several other valuable papers were also sent in.

PAST PRIZEMEN

1914. G. A. Heumann.

1915. No award.

1916. E. Hopkinson, M.A., M.B., D.S.O.

1917. J. Delacour.

1918. An Old Australian Bird-lover.

PATAGONIAN CONURES AND RED-BILLED WEAVERS

DEAR DR. RENSHAW,—I wonder whether any of our members could tell me the name of some parrots I purchased recently in London. I bought them as Patagonian Conures. Two of them are certainly *C. patagonicus*, but the other two are much larger and vary considerably in colour. I am wondering whether they can be *C. byroni*. Mr. Seth-Smith, in his book on Parrots, tells us that the larger Patagonian Conure differs from the lesser only in size, one measuring 20 inches and the other only 17½ inches. My birds vary very considerably, or at least one of them does (the other is nearly bare of feathers). Upper parts of *C. patagonicus*, dark olive green; in the larger bird these are bright grass-green; *C. patagonicus* has its throat and breast greyish-brown, lower back and abdomen yellow, with a red patch on lower abdomen and thighs; all these parts in the larger bird are green; primary coverts and quills of the smaller bird are blue, and in the larger bird green. According to Smith there is a band of white across the upper part of the breast, which is more pronounced in the larger bird. I cannot see this in either variety. The bill of the Lesser Patagonian is nearly black, the upper mandible of the other is white. This bird very closely resembles the Blue-crowned Conure (*C. haemorrhous*), but is, of course, very much larger, the latter only measuring 13 inches.

Can any of our members tell me if they have ever come across any cases of melanism in the Red-billed Weaver (*Quelea quelea*)? I have kept this species for many years, and had never seen an abnormal specimen until last week, when in one of the big stores I spotted four. One of these is black, with a small patch of yellow on the abdomen, beak bright yellow; another is black, with more or less chocolate and buff on the breast and lower parts, beak coral red; the third is dark-

brown, with a black head and yellow bill; the fourth dark-chocolate, with brown wings and also a yellow beak. Isn't this rather unusual?

W. SHORE-BAILY.

Dr. Butler writes: "If Mr. Shore-Baily's larger Conures are the size of *Cyanolycus byroni* I am afraid I am not well enough acquainted with the Psittacidæ to help him; a total length of 20 inches is exceptional among the Conures. His observation that it 'very closely resembles the Blue-crowned Conure (*C. hæmorrhous*), but is, of course, very much larger', as also the fact that its upper mandible is white, made me wonder at first whether it might be *Conurus acuticaudatus*, only the latter bird is distinctly smaller than the Lesser Patagonian Conure. Some years ago a male Red-billed Weaver was given to me with an unusual amount of black in its plumage, but at its autumn moult it became quite normal in colouring, which was disappointing. Varieties of *Quelea quelea*, with the exception of the albinistic form (*Q. russi*), have not often come my way; but, if I remember rightly, there are several among the skins in the collection at the Natural History Museum (South Kensington). Of course, Mr. Shore-Baily is aware that the yellow-billed examples are females, the red males. In vigorous birds like the Weavers melanism frequently develops with old age. *Q. russi* seems to be an exception to this rule, if I am correct in supposing that the assumption of buff in place of black on the head is albinistic, or of the same character as lutinism in Parrots. It undoubtedly appears in birds of advanced age, and may indicate delicacy of constitution in a stock usually long-lived and vigorous. In really delicate birds, like the Cordon-bleu, old age tends to develop albinism, a white speculum, which grows larger at each moult, appearing upon the wings. The Weavers undoubtedly are only varieties of *Q. quelea*; there is no other species which they approach in character."

Mr. Seth-Smith writes: "I don't know what these Conures can be, but suspect that *C. byroni* and *C. patagonicus* grade into one another, and that these may be intermediate. There is only one way to make certain, and that is to take them to the Natural History Museum and compare them with the series there. Cases of melanism or partial melanism in *Quelea quelea* are not common in captive birds."

BIRD-LIFE IN SOUTH AFRICA

SIR,— In the August, 1919, number of your Magazine there is an article on the above subject by Major Seppings which I cannot allow to go unchallenged. *Inter alia*; he says that the National Zoological Gardens at Pretoria have a good collection of birds (like Durban), but that he did not see anything of outstanding interest. It is a pity Major Seppings did not call for me at my office, or appeal to the bird-keeper, when he would have been shown a truly remarkable collection of South African birds of prey accommodated in a series of aviaries from 12 feet to 18 feet high by over 200 feet in length. We have no less than ten species of Eagles, including a pair of the magnificent Verreaux' Eagle, a fine collection of the South African Vultures (six species), all the Kestrels, and at least a dozen other species of Hawks. Our collection of South African game-birds is also very fine, including six species of Francolin, three of Korhaan, one Paauw, four Guinea-fowl, and some twelve species of Ducks and Geese.

Our Picarian birds are also representative, including three species of Lourie,* two Rollers, five Hornbills, etc. I can only imagine that Major Seppings either visited the Gardens near midday, when nearly every form of bird-life is hidden in cover, or that his tour was very hasty. As regards his statement that Pretoria is a very birdless town, I do not quite comprehend his meaning. If he refers to the streets, then he is quite correct, but I have never seen many birds in streets. Some years ago I published a very considerable list of the wild birds found in the Zoo, and I could nearly double that list to-day. The fountains are full of bird-life, and in almost every garden you will find, besides the species enumerated by Major Seppings, the Bakbakiri and Fiskal Shrikes, Sunbirds of various species, and Finches and Seedeaters, besides an occasional Thrush and some Waxbill.

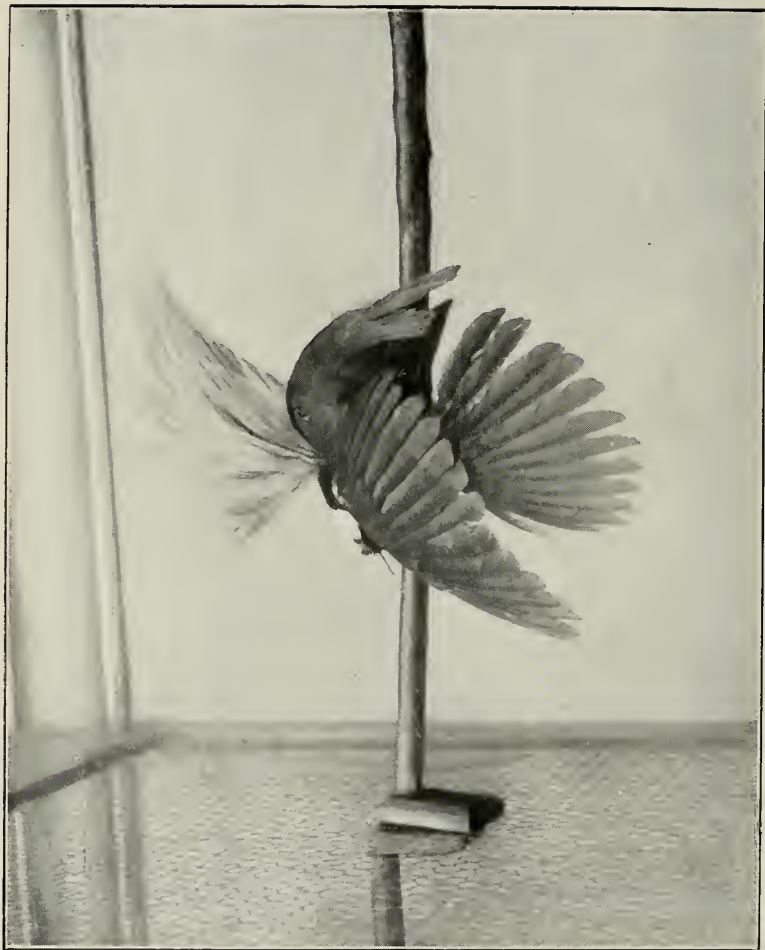
I trust that Major Seppings will favour me with a call on his next visit, and I will endeavour to show him some bird-life.

Yours truly,

A. K. HAAGNER,

Director, National Zoological Gardens, Pretoria.

* i.e. Touraco.



Copyright Photo by W. S. Berridge.

GREATER BIRD OF PARADISE DISPLAYING.

THE AVICULTURAL MAGAZINE

BEING THE JOURNAL OF
THE AVICULTURAL SOCIETY
FOR THE STUDY OF
FOREIGN & BRITISH BIRDS
IN FREEDOM & CAPTIVITY

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BIRD PHOTOGRAPHY AT THE ZOO

BY W. S. BERRIDGE, F.Z.S.

The Zoo is a veritable paradise for the photographer—birds, beasts, reptiles, fish, and insects from all parts of the world being found within its precincts. With such an array of subjects at hand the camera enthusiast cannot fail to find something to his liking, but as the writer has been asked to contribute to a Magazine devoted to the study of birds it will be as well for him to confine his remarks to avian fauna.

Although the late Lord Leighton designated photography a *foe-to-graphic* art, there can be no gainsaying that it has made vast strides during the last few years. Colour photography and rapid work, enabling one to obtain records of birds in flight and during display, cannot but afford valuable object lessons to the Nature student, even if, as is often the case, the photographs fall short of high art. The writer is of opinion that bird portrayal is by far the most difficult of all branches of natural history photography, the restless and nervous disposition of most feathered folk rendering them extremely difficult subjects to deal with. Then, again, so many are endowed with very brilliant plumage—bright yellows and reds being especially difficult colours to render in their true tone values, although, to a certain extent, the task can be simplified by making use of colour-sensitive plates.

Another difficulty to contend against is that so many birds are of such small proportions that it is necessary to be within a few feet of

them in order to procure a picture of any appreciable size. Under such circumstances the depth of focus (i.e. the portion of the picture that is sharply focussed) of even the best lens is but a few inches, and although this state of affairs can be partly remedied by stopping down the lens, yet this results in a reduced illuminating power when it is the most required—for the nearer one is to an object the greater amount of light and exposure is necessary in order to obtain successful results.

Although, as previously stated, shyness and timidity renders so many birds difficult subjects for the photographer, yet, on the other hand, extreme tameness may be a cause of embarrassment. The writer well remembers attempting to take a picture of a Brazilian Hangnest or Troupial at the Zoo. The bird was of such a confiding nature that as soon as the photographer entered the cage the sitter greeted him in the heartiest manner—perching upon his head, then hopping upon the camera, and with head craned forward examining the quality of the lens with a most critical air. To make matters even more hopeless the bird finally vanished up the sleeve of the operator's coat!

Visitors to the Zoo are usually very much interested in the doings of a photographer, the more youthful members of the community generally endeavouring to be included in the picture, while the adults content themselves by remarking "doesn't it seem to know it is having its picture taken!"*

Many people fail to understand how it is possible to take a photograph of a bird or other creature through the wire meshing of a cage-front without the strands appearing in the picture. The explanation of this seemingly difficult problem is that when the lens is held quite close to the wires and an object focussed some distance beyond, the wires are thrown out of focus and do not appear in the image, although, of course, it must be understood that they must not be too thick, otherwise they would stop all light from passing through the lens.

Although many interesting bird studies are to be procured at the Zoo throughout the year, the spring-time is possibly the best of all. Not only is the light better at that period, but the majority of the

* [It is related of the late Joseph Wolf, the animal painter, that when similarly embarrassed by uninvited onlookers he would begin drawing a goose on one corner of the paper. Sometimes the hint was taken!—G. R.]

feathered folk are also indulging in courtship displays. The Pheasants, at all times most beautiful, are to be seen at their best during the mating season, the cock birds exhibiting their adornments in the most engaging manner. The Ruff is another bird whose antics are well worth recording by a series of photographs taken during his love-sick days, for few birds indulge in such comical postures when courting. Then, again, one cannot resist expending a few plates upon the Peacock, for he is of a most accommodating disposition when displaying, turning first one way and then the other in the most obliging manner.

From the writer's experience it would appear that the majority of birds are far less shy of man during the mating season than at other times. The males seem to be so overcome by their amorous emotions that it is often possible to approach to within a few feet without disturbing them, although it must be remembered that certain species, such as Swans and Ostriches, are liable to resent intrusion upon their domestic affairs in a manner that commands respect.

THE BREEDING OF MY KAGUS, ALL BUT—

BY AN OLD AUSTRALIAN BIRD-LOVER

Readers of the *Avicultural Magazine* may not remember the mention of my Kagus in this paper. I will therefore introduce them once more : James, now about ten years with me, and Mary, his wife, seven years. Both are exceptionally tame, and will always meet me whenever I come into their compound, displaying for me whenever I wish. They are real pets and don't mind strangers, unless they have bare feet or tan boots ; they hate boys, whom they invariably attack. I had housed the Kagus in an enclosure 100 by 50 feet, planted with shrubs and trees, thinking this residence an ideal one for them to raise a family in. They, however, deemed otherwise, and for years made no attempt at breeding. My friend Mr. Waxman, living near me, has also a pair, which he houses in a small enclosure with a shelter-shed. His birds repeatedly laid in a cask which happened to be on the floor of the shed, but unfortunately the chicks always died on leaving the shell ; it seemed as if they hatched before their time. Another gentleman who possesses

several pairs has the same experience regularly. Turning this proposition over in my mind, I came to the conclusion that the birds require more than a shrubbery and a large run for breeding. I therefore removed them to an extensive lawn and gave them a cask, the open side of which I turned to a wall, allowing the birds just room to go in and out. They very soon made this cask their sleeping-place, and when I saw a great intimacy between the pair after they had been about six months in their new surroundings my hopes ran high.

I was not disappointed, for missing the hen one day I saw her sitting in the cask, but no egg. Looking into the cask next morning (September 4) I found she had laid her egg—they only lay one—and was incubating it right away. The birds had no objection to my fondling it. In size it resembled a fowl's egg, but in shape it was almost round. It is a very striking egg in shape and colour. The ground tint is very light stone, marked with a profusion of chocolate-gold blotches, the remarkable thing being that part of the blotches appear to be on the underside of the shell (or inside, if you like), and that one only sees them transparent, which, however, is not so. The size of the spots varies from little dots to the size of a grain of wheat, longish and mostly angulated. Of course, when I found that the birds were sitting I removed all other inmates off this lawn, not that I feared that the Kagus might become aggressive, but because I was afraid the Seagulls, Plovers, Ducks, Curlews, or Magpies might take a liking to the egg. The incubation was done alternately between the male and female, and I never saw the egg left alone.

On October 5, after thirty-two days of incubation, the young hatched—to the delight and joy of the whole household, for they are great favourites with us. Like the egg I could remove the young and inspect it without interference from the old ones. Its colour was the reverse of the shell, in shape it resembled a young Lyre Bird. Its ground colour, on a peculiar furry down, was chocolate, in parts shading to black. Along the back-bone and on each side of the flanks ran light stone, $\frac{1}{2}$ -in. wide stripes. The head was exceptionally large and flat, the crown of it like the body, chocolate with light stone gold stripes. Eyes black and glossy, bill grey and short and peculiarly blunt. I may say that the sexes of these birds can only be decided by the colour of

their eyes—those of the male possess an additional brownish-orange ring which the female lacks. (With the Mopokes it is the same.) The bill of the old Kagus is of a dirty orange colour, and very long, sharp, and powerful. In hunting for their food they have a habit of tapping the ground with their foot to make sure by sound or touch—it would be interesting to know which—where the worm really is, and then unerringly penetrate this spot in the ground to 3 or 4 inches to extract the worm.

The first day after hatching no food whatever was taken, but I noticed that the male bird fed the chick in the cask on the second day with what I took to be a very hard-skinned grub. I had given them besides their larvæ the run of my orchard, an area of about two acres, so that plenty of natural food was assured; but even so I fed them with earth-worms and raw beef cut into narrow strips. On the third day the chick left its nest—which, by the way, only consisted of a few leaves—and came out to have a sun bath, afterwards running in again. I feared for it the first few days as the weather was very cold and changeable, but it never minded it in the least. From the second day onward the baby emitted a peculiar whining noise, just like a Lyre Bird. In feeding it the parent would dangle a worm or whatever it had in front of its bill. The baby would then grab the bait and jerk it in, feeding just like the parents. Often the young one would allow the parent to wait four or five minutes and more before it was pleased to take the food, the old bird all the time trying to coax it by making a clucking sort of noise. Whenever the chick moved about, the mother would follow it—quite unlike other baby birds, which seem to follow their parents or come to their call—it seemed a real little tyrant. After the chick was a week old it used to run in and out of the cask, often going right away from it, the old birds then feeding it on raw beef, snails, worms, and grubs. It had grown well and seemed to thrive rapidly. It was just a fortnight old when one morning I could not hear its whine. I thought a bush-rat might have taken it, but looking into the cask I saw it there. Taking it out it breathed its last in my hand. Sadly I looked down on its little body, which had given me such pleasure and created so much interest. It is now in the Sydney Museum, where in dissecting it we found that the parents had fed it with

one of the large white earth grubs, the larvæ of a beetle plentiful about here. It was the size and thickness of a big finger, and with its powerful pincers had bitten into the throat of the baby Kagu and so caused its death.

If I am lucky enough to escape the "flu" and other ills and my birds keep well I hope to be able to tell a more satisfactory story of the breeding of the Kagu next year.

BUDGERIGAR BREEDING

BY A. G. BUTLER, PH.D.

There is no difficulty in breeding these birds provided that you have, as Mr. Seth-Smith says, "a good-sized outdoor aviary. Here some half-dozen or so pairs will produce anything up to a hundred young in the course of a year."

Gregarious birds like Budgerigars breed most readily in aviaries sufficiently large to accommodate several pairs without crowding, but they should be provided with a choice of breeding receptacles, exceeding the pairs of birds in number so as to avoid disputes. It is possible to breed Budgerigars in indoor aviaries, or even in attics if large enough to give the birds plenty of exercise; but undoubtedly the best results are obtained in outdoor aviaries with covered-in and draught-proof retiring compartments, against the walls of which the nesting receptacles should be fixed. Being very active birds exercise is necessary to keep them in vigorous health, therefore the larger the aviary the better for the birds. An enclosure which is only 3 feet wide and the height of which ranges from 5 ft. 5 in. to 6 ft. 6 in. hardly gives even one pair a fair chance, and in my opinion three pairs at least should be kept together if one wishes to breed these birds successfully.

When nesting stale bread soaked in water and then pressed as dry as possible in a cloth should be given in addition to the usual seeds; the latter should consist of canary or canary and millet. I found that a slight admixture of oats was also acceptable.

I bred Budgerigars some years ago, but in an indoor aviary, and the foolish creatures selected the winter (their proper breeding season, I suppose) in which to increase and multiply. The result was that the young were more delicate than they otherwise would have been.



Photo by H. Willford.

Generosity of P. Gosse.

WHAT THE COUNTRY LOOKS LIKE:
Alcudia Bay, Mallorca, Balearic Islands.

[To face p. 243.]

NOTES ON THE BIRDS OF THE
BALEARIC ISLANDS

BY PHILIP GOSSE, M.B.O.U.

The following observations on the birds of some of the islands of the Balearic group are, I fear, far from complete. They are the result of a few weeks' rather hurried trip to the Islands of Mallorca, Iviza, and Formentera. The Island of Menorca we did not have time to visit. Short and incomplete as these notes are, I think they will show that there is plenty of work to be done by an ornithologist in all these islands, which in the month of April at all events swarm with small birds.

Arriving at Palma, the capital of Mallorca, on April 1 my companion, Mr. H. Willford, and I went by train to the town of Puebla, and thence by *diligence* to the port of Alcudia, which is in a large bay at the extreme north-east corner of the island. The country here consists of marshes with stunted pines, shrubs, and clumps of coarse ground, and close to the sea-shore rough sandy land; then cultivated land, mostly walled orchards of vines, almonds, and olive-trees. Further inland we come to the *montana*—steep, stony, littered, uncultivated hills covered with pines.

We stayed altogether eight days at Alcudia, and then returned to Palma and took a steamer to Iviza, the capital of the island of the same name, a voyage of some 70 miles; Iviza lying about half-way between Mallorca and the Spanish port of Alicante. While in Iviza we spent six days at the delightful village of Santa Eulalia, on the east coast. This place was unique in having a stream of fresh water, which I think accounted for the large number of birds found there.

The last island to be visited was Formentera, about 10 miles in length, and 18 south of Iviza: it is dead flat except at the south-east end, which has a high hill covered with big trees. A good deal of corn is still cultivated, from which the island got its name.

We only had time for three days here, and, as I was ill half the while, I did not have many opportunities of collecting birds; but from what we saw I think that probably Formentera would prove the most

rewarding of the three islands from the point of view of migration. During the whole of our visit there seemed to be a large amount of migration going on, especially of Warblers and Wagtails. The only birds nesting were two pairs of Kestrels; one in the wall of our "fonda" at St. Eulalia. All the Fringillidæ were in full song, but of the Sylviidæ only the Blackcaps. The whole country was exceedingly dry, and was supplied by innumerable wells; the water is pumped up by means of a primitive wheel turned by donkeys or cattle. Lastly, I must mention that the inhabitants are, without exception, hospitable and courteous, and allowed us to go where we liked and do what we wished, although their usual politeness gave way to laughter when they discovered me setting traps for Field-Mice.

Great care has to be taken when out collecting birds; the whole country except the marshes and hills is highly cultivated, and it is very difficult sometimes to see if anybody is working behind the bush or hedge which contains the bird you particularly wish to procure. Owing to this a few birds I should liked to have got for identification had to be allowed to escape. To study the birds of this group completely would necessitate at least two years' residence in the islands; or several visits in the spring and autumn should be undertaken if "migration" is the principal object of investigation.

It had always struck me from studying the map of Western Europe that the Balearic group would prove to be a good place to watch bird migration, and my hurried journey of three weeks confirmed this belief. Unfortunately the War prevented me going again, and now, when I should like to continue and complete the work I commenced in 1914, circumstances prevent me from doing so.

It is surprising to me that these very accessible islands have been so long neglected by ornithologists; but it appears that this neglect is now over, as Mr. H. F. Witherby has been there this summer, and I hear of several other ornithologists who are making arrangements to go there shortly.

I have to thank Mr. Ogilvie-Grant for kindly looking over the sixty-five skins I brought back, and Mr. David Bannerman for revising these notes from material in the Natural History Museum. Some of the specimens are still under examination by Mr. Bannerman at the

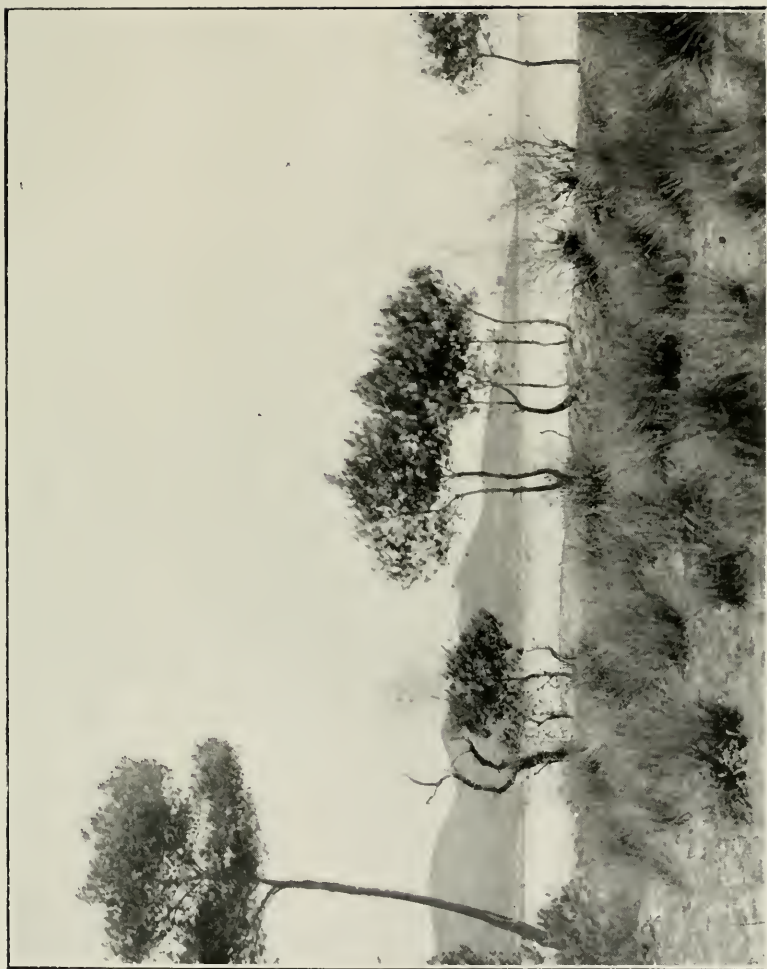


Photo by U. Willford.

Generosity of P. Gosse.

WHAT THE COUNTRY LOOKS LIKE:

Alcudia Bay, Mallorca, Balearic Islands.

British Museum, but when any doubt of the correct name exists this has, I hope, been made clear in the text.

In the following list those species which I did not actually obtain are named binomially, as in islands such as the Balearic group, which lie in the direct line of migration of so many European birds, it is often impossible to state exactly which particular race occurs, unless the bird is obtained and examined critically.

Those species of which I obtained specimens are marked with an asterisk, and the skins may be seen in the National Collection.

SYSTEMATIC LIST

Corvus corone.—A few Carrion Crows were seen in the Island of Iviza, and what was probably one in Mallorca.

Corvus frugilegus.—The Rook is fairly plentiful in Mallorca, though no nests were seen; it also occurs in Iviza.

Sturnus vulgaris.—The Starling was chiefly noticeable by its absence. Beyond seeing some in Palma City, only one other was observed on April 14 at St. Eulalia. None in Formentera.

**Chloris chloris aurantiventris*.—The Golden-bellied Greenfinch is common. Even in the field the male struck me as being a good deal more yellow in colour than the British variety and a much superior songster. A half-completed nest was found on April 18 in Formentera.

Coccothraustes coccothraustes.—On April 12, at Santa Eulalia, Iviza, I watched for some time and heard singing a male Hawfinch. This was the only one seen and unfortunately not obtained, as it was in a tree in the village street and an Easter Church procession was taking place beneath. It is therefore named binomially.

(To be continued.)

THE COLOUR QUESTION

BY AN OLD AUSTRALIAN BIRD-LOVER

I read with much interest an article on the above by Dr. Butler in the *Avicultural Magazine* January number. I don't wish these notes to be taken as criticism, but simply as the views, based on personal experience, of an ordinary practical bird-lover.

Every aviculturist, of course, knows that most birds with scarlet feathers or a colour of which scarlet would be a component part, like orange, will lose it altogether during the first moult, or at least change the red to shades ranging down from yellow to a dirty pink or creamy white. In seed-eaters we have the Linnet, which loses the carmine entirely; the Red Cardinal's glorious blood-red becomes almost terra-cotta; in the Orange Bishop Weaver of Africa the scarlet frill turns to yellow, and the same happens to the Sepoy Finch of India. This change of colour is even more pronounced in soft-billed birds. The Scarlet Tanager, one of the finest red species in existence, becomes terra-cotta; the Australian Scarlet-breasted Robin—a glorious bird—is hardly recognizable as the same, having turned a dirty pink or creamy white. The Sanguineous Honey-eater or Bloodbird, which is really scarlet, moults into a dirty pink. What is the reason for these colour changes?

I take it, according to scientific explanation, that there is no colour pigment in the feathers, although according to Dr. Butler Professor Church found copper in the wing-feathers of Touracous; but this is probably exceptional. As I understand it the colour is produced by interference of the light waves. As we know, a feather consists of a main shaft with barbs, and these latter are furnished with barbules, so that when a wing-feather has become distorted it is quite easy to readjust it by gently raising the lower barbules and dropping them over those above. Now suppose that the food to which these birds have been accustomed at liberty cannot be given in captivity, it is quite feasible that this may cause during the moult a malformation of the minute parts of the feathers. If, then, there is any difference in the minute structure of a feather before or after a moult, the quality of the light reflected from it will naturally be different, and in this way create the change we see in various degrees as the malformations may be slight or severe. *Contra* to this theory I have heard or seen it stated somewhere that through unnatural food the blood deteriorates, and in conjunction with probably insufficient sunshine cannot assimilate the necessary light and chemicals to create and store the colour pigment seen in wild birds. I cannot personally endorse this theory, for it presupposes the existence of colour pigment with which the blood feeds

the feathers, no matter whether they are perfect or malformed. I am confirmed in this view by the experiment I made with some scarlet Robins. Removing a small patch of the red breast feathers I found that the new growth made an ugly area of dirty pink amid the scarlet. Assuming that the blood had stored up sufficient red pigment to last from one moult to the next, one would think it would supply the new feathers with the stored red pigment in the same way as those left undisturbed. Acting upon what Dr. Butler says, I tried to wash out the red of feathers belonging to different species, and as they were feathers of freshly caught birds I should say the experiment should have succeeded if anything really was to be washed out; but I can state definitely that no particle of colour came away. That birds after a bath appear to have a modified colour sometimes different from the original—like Green Parrots, which generally show a bronze tint after a bath—shows that there can be no colour feeding from the blood, or there would be no change of colour before or after a bath. The particles of what appears colouring matter in the water may quite likely be the powdery substance found on many birds' feathers. Anyone who handles, for instance, Kagus knows that the hand becomes quite grey with the powdery stuff, the colour of the plumage of the bird.

These colour changes have always interested me, and for many years I have carried on experiments with Australian insectivorous birds and foreign seed-eaters. One fact I have settled to my entire satisfaction, and that is that both insectivorous and seed-eating birds require a certain amount of *live* food, which itself has lived upon live plants. They absolutely require these a few months before the moult sets in. I have tried this on Orange Bishops in conjunction with feeding on unripe seed, such as millet or grass-seed still in a milky state. *I almost got back the original scarlet colour!* Red-breasted Australian Robins fed upon mealworms exclusively produced a dirty pink after the first moult, others which received in addition to the ordinary soft bill food minced raw beef became almost white, which shows that the mealworms fed on dry vegetable matter like bran will not produce the natural scarlet in the feathers. During my experiments with the Sanguineous Honey-eater (Blood-bird) I allowed some of these

to fly in a large outdoor aviary set with grape-vines and other plants, which attracted myriads of the tiny leaf-fly. The flies served the Blood-birds as food in addition to the sugar water they received. All these birds moulted perfectly into their natural scarlet plumage. At the same time others were placed in a large cage with plenty of sunlight, and fed on sugar water sprinkled only with dried and crushed cocoons of flies and with powdered flies, this providing the protein which is necessary for our and their existence. The birds did very well on this diet and moulted without trouble, but—a washed-out pink! This seems to prove that it was the leaf-fly in conjunction with unlimited sunlight which caused the natural colour to reappear.

It is certainly a remarkable fact that it is the red which suffers in moulting, and even nature itself produces these changes, as, for instance, in the Yellow-headed Gouldian, the Yellow-headed Parrot-finch of Fiji, and even the gorgeous King Parrot of Australia, of which I have seen at least one living specimen having the scarlet colour replaced by yellow. Furthermore, these colour changes are not nearly so frequent in Parrots, the probability being that their nature better adapts itself to dry feeding in captivity.

THE REVIVAL OF AVICULTURE

BY H. E. ROGERS

I have no doubt that business will now gradually increase, and keep increasing for a year or so until the normal pre-War standard is attained—possibly that may be greatly exceeded by the addition of considerable trade formerly in Continental hands, chiefly German.

One may gather from articles in the *Times* and illustrations in the pictorials, *Irish Life*, etc., that there have been a number of unusual, rare, or remarkable arrivals during the past few months. Amongst mammals was an interesting Chimpanzee from the Congo, which I supplied to the Dublin Zoo, illustrated in *Irish Life* October 3. A black Mangaby monkey from the Congo was illustrated in the *Mail* and *Field*. Some Red-billed Toucans, Curassows, etc., and a pair of Red Titi Monkeys from the Upper Amazon also arrived here safely.

What I am more particularly writing about at the moment, however, is a very rare Amazon from Western Ecuador. I think it is particularly interesting to Aviculture, and have sent the bird to Mr. Allen Silver to keep for me. It is *Chrysotis lilacina*, also termed *coccineofrons* and *viridigenalis*. I do not think the species has ever been illustrated in your Magazine. If the bird has not been previously figured I think it is sufficiently rare to deserve attention.

[By the generosity of Mr. Rogers arrangements are being made to have the bird illustrated in the Magazine.]

AVICULTURAL NOTES

TWO RARE BIRDS.—Among birds in the Indian consignment which arrived in August, 1919, I noticed and acquired two very uncommon specimens: A hen Chestnut-breasted Rock Thrush (*Petrocincla erythrogastra*) and a Maroon Oriole (*Oriolus trailli*). Mr. Astley very generously gave me a mate for the former. The Oriole I could not at first make out, and was unable to look it up whilst in town. Mr. D. Seth-Smith very kindly helped me out of my difficulty by identifying it from a rough sketch. The bird has a Hangnest type of bill, and its call is rather musical. It behaves like a Starling when alarmed by a dog, and then calls out harshly. The figure of it in Gould's *Asiatic Birds* does not show the very accentuated bill to advantage. I have no record of it coming over alive before, and should be glad to know if it has been previously kept in any English collection.—ALLEN SILVER.

FINCH LARKS.—Some time back I saw an article in the *Avicultural Magazine* on the breeding of African Finch Larks by Mr. Shore Baily (*Avicultural Magazine*, April, 1919). The pair I have has bred with me every year since 1915, rearing two young each time. If the first brood fails they make a second nest. Before breeding they always ask for mealworms, and this craving lasts till the young are fairly old. The pair of young are generally a true pair, the cock moulting only in the second year. In infancy he shows a brownish base over the bill; the hen is even-coloured.—G. A. HEUMANN.

THE FAT OF THE EMU.—As regards the layers of fat beneath the skin of the Emu and attached to it as stated by Dr. Butter in the July

number of the *Avicultural Magazine*, it may perhaps be interesting to readers that the Blacks do—or did, one ought to say now—roll themselves up in the freshly taken off skin to cure their rheumatics; the fat or oil is supposed to possess great curative properties in this and other troubles.—G. A. HEUMANN.

EGG-LAYING OF HOODED CRANE.—A Hooded Crane (*Grus monachus*) laid two fine eggs here this summer. I expect this is the first occurrence in Europe. Unfortunately I have lost my male bird.—W. H. ST. QUINTIN.

REPORT OF THE COUNCIL FOR 1918-1919

In issuing their Report for the past year the Council wishes to draw particular attention to three important changes that have been introduced in that period:—

(1) *The Increase of the Subscription.*—The unprecedented rise in wages and the price of material, augmenting by over one hundred per cent the cost of production of the *Magazine*, compelled the Executive reluctantly to raise the subscription from ten to twenty shillings per annum. Although it was feared that this course might lose the Society the support of some lukewarm subscribers, the confidence of the Council that the wisdom of their decision would appeal to the majority of aviculturists was justified beyond expectation, and the response to the inevitable demand was most gratifying. With very few exceptions the members fully appreciated the necessity for the call made upon them, and willingly acquiesced in the innovation.

(2) *The Change of Publishers.*—In spite of the additional revenue resulting from the increased subscription the Treasurer found the income of the Society insufficient to meet the high cost of issuing the *Magazine* at the rates charged by printers in London. It was decided, therefore, to open negotiations with provincial firms, and arrangements were finally made with Stephen Austin & Sons, of Hertford, well known to some members of the Council as experienced printers of scientific periodicals at relatively reasonable charges. That the saving in expense thus achieved has not affected adversely the character and style of the *Magazine* will be admitted by all Members of the Society.

(3) *The Alteration in the Commencement of the Society's Year.*—Since the inauguration of the Society in 1894 its year has commenced in November, and terminated in the following October. Many inconveniences connected with finance and publication have arisen from this anomalous arrangement, and the Council have for a long while been convinced that coincidence between the Society's year and the calendar year would be a distinct advantage, not only to Members but also to non-members interested in Aviculture who consult and quote the *Magazine*. It was decided, therefore, to make the change, and the Society's year for the future will begin on January 1 and end on December 31 following.

In announcing the regretted retirement of Miss Rose Alderson from the Honorary Secretaryship the Council wishes to place on record their sincere appreciation of the services she rendered the Society during her tenure of that post, and at the same time to express their heartfelt sympathy with her for the serious illness which compelled her to send in her resignation. Miss Alderson took up the arduous duties of Honorary Business Secretary at a time when the Council was faced with the difficulty of finding a volunteer able and willing to undertake the task ; and the able manner in which, despite all obstacles, she conducted the affairs of the Society through a period of exceptional stress deserves the gratitude of all its Members. Dr. Lovell-Keays, who acted as Secretary for a short time before his services were required for the country during the War, has kindly consented to resume the post in succession to Miss Alderson.

A point connected with the present volume, upon which the Council feels compelled to comment, is the noticeable falling off in the numbers of articles and notes dealing with the main business and purpose of the Society, namely Aviculture, and the substitution, unavoidable under the circumstances, of essays rather ornithological than avicultural in character. This regrettable event is attributable partly to the absence from England of many of our usual contributors or to their occupation with other matters ; but mainly, it appears, to the general disorganization of commerce involving the animal trade, which for long prevented, and still hampers, the importation of living birds. For 1920 the prospect is brighter ; and since the number of interesting exotic birds

coming into the country is steadily and rapidly on the increase, and aviculturists are thereby being provided with opportunities for restocking their depleted aviaries, the Council ventures to hope that during the coming year Members will have no difficulty in finding subject-matter to supply the Editor with articles or paragraphs on Aviculture which will bring the volume up to the standard of pre-War days.

Signed for the Council,

R. I. POCOCK,

Acting Hon. Business Secretary.

November, 1919.

While this Report was in the printers' hands news was received of the death of Miss Alderson. Under the circumstances it is not possible for the Council to do more than record their sincere sorrow for the loss of an esteemed friend and coadjutor, and to express their cordial sympathy with the members of her family. An obituary notice will appear in the next issue of the Magazine.

December, 1919.

REVIEWS

NORTH AMERICAN DIVING BIRDS

LIFE HISTORIES OF NORTH AMERICAN DIVING BIRDS, ORDER PYGOPODES. By ARTHUR CLEVELAND BENT. United States National Museum, Bulletin 107.

Among the many ornithological publications which come to one's notice each year, most deal either with classification, the description of new species or local races, or accounts of recently acquired collections of skins; it is therefore most refreshing (especially to an aviculturist) to receive a highly interesting and exhaustive treatise of well over two hundred pages dealing exclusively with the life-histories of a group of very charming birds.

In the preparation of his valuable article Mr. Bent has been assisted by numerous friends, both with useful information respecting the habits of the different species and their distribution, and also by the contribution of many admirable photographs of the birds, their nests, and nesting-sites. Among these illustrations, all of which are excellent, those facing pp. 3, 49, and 185 strike one as being singularly attractive.

The paper commences with the Grebes (Colymbidæ), the account of which occupies nearly forty-seven pages; it then passes on to the Loons (Gaviidæ), known to us as Divers*; on p. 82 the history of the Alcidæ (Auks, Murres or Guillemots, and Puffins) commences, and continues to the end of the treatise. The completeness of the information respecting the various species, together with the numerous beautiful illustrations, must appeal at once to any student of nature. A dozen very characteristic coloured plates of the eggs accompany the article.

It might perhaps have been advantageous to those who like myself do not possess a synonymic catalogue of the Pygopodes if Mr. Bent had inserted the synonymy of each species under its name. In these days of priority-worship and the hair-splitting of genera and species, the names of many of the best-known forms have been so altered that to a naturalist

* On the Norfolk Broads this name is given to the Grebes.

of even the end of the past century they would be unrecognizable. I rejoiced to see our old friends *Uria troile* (or *troille*) and *Alca torda* still in possession of their old names, and even the Black Guillemot, though turned out of the genus *Uria*, still retains his specific title. By the way, who was cruel enough to burden one of these beautiful birds with the barbarous generic title of *Synthliboramphus* ?

ARTHUR G. BUTLER.

AN ABC OF COMMON BIRDS : A POCKET GUIDE TO THE COMMONER INLAND BIRDS OF BRITAIN. Royal Society for the Protection of Birds, London, S.W. 1. Price 6d.

This is an excellent little booklet, simple, practical, and good in every way ; its source alone would commend it. Space is limited, but every word is carefully chosen. Many sizable books on birds go miles further, as it were, without giving such a sharp and vivid impression as this diminutive work. It is a "first aid" to the study of birds, and sets out to give "short and simple descriptions from which they may be identified by the unlearned, their local names, and brief notes on the food they eat that may be regarded as 'pro' or 'con' the interests of husbandman and gardener". The description of some of the songs is excellent, the Blackbird's for example, "flute-like, leisurely ; a leading song bird," the Tree Pipit's, "sweet, canary-like, with long drawn, languishing final notes." The description of some other songs does not strike the ear quite so happily ; for example, those of the three Buntings. This little work is a pocket guide of useful information, and its author is obviously a careful field observer.

JAMES J. CASH.

NEW LIST OF NATURAL HISTORY PHOTOGRAPHS. By W. J. BERRIDGE, F.Z.S. East Finchley: H. W. Simpson.

Those who have read the works of that early naturalist, Edward Turner Bennett, will recollect that in the preface to his *Gardens and Menagerie of the Zoological Society delineated*, he remarks that the book

will bring the collection into the actual home of the reader without the necessity of paying it a visit. Similarly, those who have seen Mr. Berridge's beautiful photographs (and who has not ?) may form a vivid idea of the Zoo without a trip to Regent's Park.

Mr. Berridge's list, now before us, embraces a wide range of subjects—Mammals, Birds, Reptiles, Batrachians, Fish, and miscellaneous creatures. His photographs are so well known that to describe them is superfluous; not only are they realistic zoologically, but from the photographic standpoint they are true works of art. In the too small band of first-class Zoo photographers Mr. Berridge holds high place.

Aviculturists will warmly appreciate the beautiful Bird of Paradise study which adorns this issue of the Magazine.

G. R.

PHOTOGRAPHY AT THE WASHINGTON ZOOLOGICAL PARK

DEAR DR. RENSIAW,—Lately everything has conspired to prevent my getting over to the "Zoo", notwithstanding the fact that our home is so close to it that we can, in the stillness of the night, not only hear the low growlings of the Lions and Tigers, but often the nocturnal noises of the smaller animals: it is all music to me. This week it looks as though I might get a few hours over there before the seven short days slip by. Should I do so I will make every effort to break the ice in pulling together for you some photographs of the birds, later on writing out a brief account of the bird contingent at our "Zoo". We have a beautiful fowl pond there and many rare birds, as the California Condor, Kea Parrot, Trumpeter Swan—the last of its race, its mate having died not long ago. Mr. Hollister, the Superintendent, is a good friend of mine, and will assist me in every possible way. He will send ordinary birds and animals, when not too big, over to my own photographic room to have their pictures taken for the Press, etc.

I have very lately received a skeleton of the Wedge-tailed Eagle from Captain White, and I will describe and figure it for the *Emu*. You see that publication regularly, of course—has not Dr. Leach made a fine thing of it ?

R. W. SHUFELDT.

M. DELACOUR'S NEW ESTATE

DEAR DR. RENSHAW,—I am glad to tell you that I have got a new country seat in Normandy, the Château de Clères (Seine-Inférieure) between Rouen and Dieppe.

I shall attempt immediately to build aviaries and arrange the park for birds. There is running water and a lake of about three acres, quite convenient for Waders and Waterfowl. I hope to have ready for next spring a bird gallery, two bird-rooms, twenty aviaries with heated shelters, and twenty enclosures, as well as larger paddocks for Ostriches, Rheas, Cassowaries, and Cranes.

I think it will be a good beginning, and hope to improve it later on. I cannot possibly pretend to keep at once the same number of birds as I used to do at Villers-Bretonneux, owing to the awful prices one has to pay for everything nowadays.

Clères is only 25 miles from Dieppe ; I hope that it will be convenient for British aviculturists to stop there on their way to the Continent.

Yours very sincerely,

DELACOUR.

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"OURSELVES ALONE":
SECOND ALL-BRITISH NUMBER.

AVICULTURAL MAGAZINE.



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THIRD SERIES.
VOL. X. No. 1.

The Price of this
Number is 3/6.

NOVEMBER.
— 1918. —

THE ANNUAL SUBSCRIPTION OF £1 (ONE POUND) IS NOW DUE. THE COUNCIL THANKS ALL WHO HAVE ALREADY HALVED ITS LABOURS BY PROMPT REMITTANCE DIRECT TO THE HON. TREASURER

(See p. 2 of cover).

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Persons wishing to join the AVICULTURAL SOCIETY are requested to communicate with either of the Hon. Secretaries or the Editor.

The Magazine can also be had from the Publishers by **NON-MEMBERS** at a Subscription of 25s. per annum.

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The Subscription to the Avicultural Society is £1 per annum, due on the 1st of November in each year, and is payable in advance. The entrance fee is 10/6. The *Avicultural Magazine* is sent free to members monthly. Members joining at any time during the year are entitled to the back numbers for the current year, on the payment of entrance fee and subscription.

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THIRD AFRICAN NUMBER.

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