

Reviews

Rediscovery of the Eyrean Grass-Wren.—It must be rare indeed for a group of naturalists to set out to find a bird species which has not been seen for nearly 100 years (so that in bird books it is generally referred to as "extinct") and to achieve that purpose. Such an event is described by Messrs. Morgan, Robinson and Ashton (*Aust. Bird Watcher*, Vol. 1, No. 6, December 1961) in connection with the Eyrean Grass-Wren (*Amytornis goyderi*), of which there are now "no more than three (?two—H.T.C.) specimens" in museum collections. Three or four more of the original six, taken by F. W. Andrews in 1874 while a member of the Lake Eyre Expedition, remain unaccounted for.

Amytornis goyderi appears to be confined to a small area near the Macumba River, about 25 miles north of Lake Eyre, in northern South Australia. The date of the rediscovery was September 3, 1961, and the place Christmas Waterhole (lat. 27° 35', long. 136° 46'), on the Macumba, and perhaps nine miles from the type locality. Although time was short, the discoverers managed to obtain a great deal of information about the appearance of the birds, their habits, nesting and young; a photograph of two nestlings was taken (plate 37). Previously, very little has been known of this mysterious bird ("Andrews failed to supply any notes with the specimens other than a latitude"), and in some quarters doubts have been expressed regarding the authenticity of Andrews' skins. One (formerly two) of these (the type) is now in the British Museum and another is in the Australian Museum, Sydney. But there are certainly none now contained in the South Australian Museum, nor have there been any for at least 40 years, although the paper under review suggests that one, out of an original number of four, is still in existence there.

The Eyrean Grass-Wren is described as being about the same size as *Malurus leuconotus*, "but more slender in appearance", and about two-thirds the size of *Amytornis textilis*, the Western Grass-Wren. "The most striking feature noticed was the rufous colouring"; the call "is a faint two-syllable whistle 'swi-it, swi-it', audible 10 or 12 feet away". The beak, "short, greyish", has been noted, in the Australian Museum skin, to be heavier than in most other species of *Amytornis*.

Messrs. Morgan, Robinson and Ashton point out that as there appears to be a very small number of the birds in the area visited by them "collection of specimens may well endanger the survival of the species". It is of interest to note that a contribution towards the expenses of this 1961 expedition was made by the Trustees of the M. A. Ingram Trust.—H.T.C.

Degenerate distal primaries.—Some interesting facts about degenerate distal primaries are revealed by Dr. Boris Stegmann in a paper, "Die verkümmerte distale Handschwinge des Vogelflügels" (*J. Orn.*, 103: 50-85, 1962). Stegmann found that in many species of birds the degenerate distal primary is without the corresponding large upper wing-covert. Alteration of the number of primaries results in an alteration in the position of the primaries.

Birds with eleven primaries have seven on the metacarpus; those with ten have only six on the metacarpus; and those with nine primaries also have six on the metacarpus, but the second phalanx carries only two functional primaries.—E.F.B.

Pied Goose and the rice industry.—When the Northern Territory Administration began the cultivation of rice on the Adelaide River plains nearly ten years ago it was found that the large number of Pied Geese attacked the early crops of rice, and it was feared that the birds would be a serious hindrance in the establishment of the rice industry.

Investigations were subsequently carried out by the C.S.I.R.O. Division of Wildlife Research which involved a series of ground and

air surveys and a detailed study of the species' ecology and behaviour. H. J. Frith and S. J. J. F. Davies in a paper, "Ecology of the Magpie Goose, *Anseranas semipalmata* Latham (Anatidae)" in *C.S.I.R.O. Wildl. Res.* (6: 91-141, 1961), present data and conclusions on the sexual cycle, nest-building activities, habitat requirements, known breeding range, and the present and former distribution of the species and its population status. The authors conclude that the Pied Goose will not be a continuing problem to the rice industry as settlement develops; rather the advance of settlement could virtually eliminate the species from the Northern Territory of Australia.—E.F.B.

Biology and Comparative Physiology of Birds.—Edited by A. J. Marshall, Academic Press, New York and London. Vol. I, 1960, pp. xii + 518; Vol. II, 1961, pp. x + 468. Both vols. illust. with drawings and photographs. £18 plus for the set. The scope of this work is obvious from the title; the striking need for it is well expressed in the editor's preface. That it has been brought into being by a well-known Australian worker and includes another Australian among its contributors will be a source of satisfaction to all Union members. Its importance is considered to warrant a lengthy review. The chapters are written by a number of separate authors and brief comments on each chapter will be attempted here.

Vol. I.—1. The Origin of Birds by W. E. Swinton (pp. 1-13). This summary treats *Archaeopteryx* in some detail (including reference to the "third" specimen). The author is a little more definite than de Beer regarding the London and Berlin specimens. More space might justifiably have been given to Cretaceous birds with an indication of current opinions. Nevertheless it is a valuable commentary.

2. Adaptive Radiation in Birds by Robert W. Storer (pp. 15-53). This subject, vast in itself, is extremely well summarized. Size, Locomotion (on land and in water) Feeding, Adaptive Radiation in Families and the History of Adaptive Radiation are selected as topics for discussion. The problem of size is not explained simply with, perhaps, a resulting loss of value for the non-technical reader wanting to know more about it. However, many important, interesting, varied and often overlooked facts of adaptation are assembled.

3. The Classification of Birds by R. W. Storer (pp. 57-90). This account includes well-presented sections on the history and theory of taxonomy. It also indicates the limitations of classification and draws attention to the importance of the revival in comparative anatomy and to the new technique of protein chemistry. The classification proposed is an orthodox one based on Wetmore's and Mayr and Amadon's lists. But it does not give an overall coverage of ideas and outlook; Verheyen is not mentioned. The inclusion of fossils of uncertain taxonomic position is useful.

4. Geographical Distribution of Living Birds by D. L. Serventy (pp. 95-124). Though the influence of Darlington's classic work is evident here, it must be stated that this is a most admirable account of the subject in its own right and is of special interest to Australian readers in the Australian region examples and its most useful section on marine birds.

A concise resumé of the history of zoogeography is included and a balanced account of changing concepts given, the author laudably recognizing the contributions of both the "static" and "dynamic" phases of distribution study. Australians might also wish for a little more on their neighbouring Oriental region.

5. Development of Birds by Ruth Bellairs (pp. 127-180). This is a very full and well-documented outline of avian embryology, including a section on the history of the subject. The valuable emphasis on recent research is exemplified in reference to the current concepts of centres of "organizer activity" within the embryonic mechanism. Of great use to the ornithologist is the fact that here all stages of embryology, from fertilization to "birth", may be read in terms of the bird rather than, for example, the amphibian.

6. *The Integumentary System* by Mary E. Rawles (pp. 189-236). Much normally scattered information is here gathered in an excellent summary covering feathers, scales, horny parts, pigmentation, etc. Especially useful is the attention to the physiology of feather development. A little more detail on moult would have been welcome. The remarks on barbs on the Lyrebird's tail-feathers (p. 203) require clarification. Leg spurs are not mentioned, though implied, and the relationship between the horny covering of ungulate horns and avian keratin could have been usefully included.

7. *The Skeleton of Birds* by A. D'A. Bellairs and C. R. Jenkin (pp. 241-295). This must be among the most lucid and generally useful modern accounts of the avian skeleton. The diagrams and their labelling are excellent and it is most useful to find sections on aspects such as kinesis, pneumatization and ossification. Some attempt to list the major synonyms in osteological terminology would have been very welcome.

8. *The Musculature* by Andrew J. Berger (pp. 301-341). This section provides great help for the general ornithologist towards gaining a clearer understanding of this complex and controversial study. Not the least helpful aspects are the introductory notes on muscle action and terminology.

9. *The Blood-Vascular System* by J. R. Simons (pp. 345-361). This concisely-written chapter deals with the heart, arterial and venous systems, the blood and the lymph. Illustrations of cell types of the avian blood are fittingly included and the avian heart is illustrated in detail. Actual photographs of the major arteries and veins in dissected birds would have been well worth inclusion.

10. *The Respiratory System* by G. W. Salt and Erik Zeuthen (pp. 363-404). This section is thorough in its coverage and detail, though a brief summary of the authors' conception of just how a bird respirees would have been helpful for the inquirer seeking information in brief. Among its most valuable features are the distinctions it draws between respiratory processes of the bird at rest and in flight; the controversial theories it reveals regarding the latter, and the original explanation it offers. The bibliographical references to Harvey 1951 and 1952 await clarification.

11. *Digestion and the Digestive System* by Donald S. Farner (pp. 411-449). This is indeed an excellent and detailed account of the subject. It gives useful attention to synonymy in the names for avian salivary glands and to underlining aspects about which little is known, e.g. the process of deglutition, and the significance of variation in the form of esophageal glands among different groups of birds. The emphasis, if any, is on the biochemistry of digestion and much interesting general knowledge is unobtrusively included. One would like to find a little more about bird pellets, the "moulting" of gizzard lining, and something on the regurgitation of oily substance by petrels—if this is the chapter for it.

12. *Excretion* by Ivor Sperber (pp. 469-489). This section deals with the anatomy of the avian kidney, the physiology of avian excretion and, in brief, with extra-renal salt excretion (e.g. by action of nasal glands). A detailed picture is given, including reference to methods of collecting urine samples and investigation of renal functions. Though excretion is essentially an anatomical and physiological subject, one would have welcomed an attempt to simplify the discussion occasionally. A minor criticism concerns the statement, "In birds (with the exception of the ostrich) there is no bladder . . ."; most readers would like to know a bit more about the ostrich.—A.McE.