

Reviews

Birds of Croajingolong.—Under this title N. A. Wakefield (*Vic. Nat.*, vol. LVIII, no. 7, Nov., 1941, pp. 102-5) gives a popular account of some of the interesting birds of south-eastern Victoria, near the border of New South Wales. The area treated covers about 3,000 square miles of almost virgin country. Lyrebirds are common, whilst the Emu frequents the more open forests, nesting about Bendoc and on the coastal flats. Ground Parrots (*Pezoporus wallicus*) are "anything but rare" down Marlo way and in the Mallacoota district. Of particular interest is the occurrence of the Green-winged Pigeon (*Chalcophaps chrysochlora*) which is occasionally seen about Genoa and the Wingan River, being shy and quickly hiding away in the dense brush. This pigeon has always been considered a very rare bird in Victoria.—K.A.H.

Papuan/Northern Australian Birds.—In *Amer. Mus. Nov.*, no. 1116, June 3, 1941, Ernst Mayr and S. Dillon Ripley revise the genus *Lalage* consequent upon previous reviews failing to reveal the true relationships of the many described forms. There are no clear-cut characters to separate *Edolisoma* from *Lalage* but the latter may be defined by a combination of morphological and colour characters. The origin of the genus must be looked for in the Oriental region whence it spread to the Papuan region and split into groups. *L. sueurii* spread from the Lesser Sunda Islands to Australia and developed our form *tricolor*.

In no. 1133, Aug. 6, 1941, Dr. Mayr deals with a number of matters bearing on Australian ornithology. These include "The Geographical Variation of *Falco peregrinus* in the Papuan and Australian Regions," "Notes on the Geographical Variation of *Monarcha alecto*," and "The Generic Classification of Some New Guinea Flycatchers (*Microeca-Poecilodryas* group)." Subdivision of the Australian form of the Shining Flycatcher (*nitidus*) is not adopted for the present. Mayr considers that Mathews' genera *Kempia* and *Kempiella* are synonyms of *Microeca* but accepts *Tregellasia* for *capito* and suggests that *leucops* might be included in that genus. Whilst admitting that *Poecilodryas* (*sensu lato*) is a heterogeneous group, the division of eight species on the New Guinea list into seven genera is criticised and reduced to two—*Poecilodryas* and *Peneothello*.—C.E.B.

The Broadtailed Parrots.—The author's own summary of his paper ("The Australian Broadtailed Parrots," by H. T. Condon, *Rec. Sth. Aust. Mus.*, vol. VII, no. 1, Oct., 1941, pp. 117-144) gives the best indication of the subject. Chief points are that there is a close correlation between climate and geographical races, that *Barnardius* is confirmed as a valid genus on osteological grounds, and that certain species of that genus and of *Platycercus* are relegated to subspecific rank.

Peters included the Broadtails in the subfamily Psittacinae: Condon supports Salvadori's recognition of the subfamily Platycercinae for them. A table indicates that certain groups, including *Barnardius*, predominate in the more arid zones, whilst the Rosellas are confined to the humid areas. Possibly a few forms occurring in more than one zone may require further subspecific division. As to the lumping of *Platycercus* and *Barnardius*, which Peters recently affirmed, examination of the crania of the two groups reveals differences, the former possessing an "auditory ring" which, together with the more advanced colour pattern, establishes the separability of the two genera.

Six species of *Platycercus* are admitted—*caledonicus*, *elegans*, *eximius*, *venustus*, *adscitus* and *icterotis*. That arrangement reduces

flaveolus and *adelaidae*, which, whilst not inconsistent with general opinion as to the latter, is more revolutionary with regard to *flaveolus*, for Mr. Condon classes it as a colour phase of *elegans*. Peters listed *flaveolus* as a subspecies of *caledonicus*, and although the present author considers that wholly unwarranted, that is in a limited pair, there is possibly some justification to include *caledonicus* in the larger *elegans* group as now defined by Condon. A well-marked geocline series consisting of *fleurieuensis*, *adelaidae* and *subadelaidae*, connects up the dark (and bright) forms—*elegans* and *melanoptera*—with the yellow *flaveolus*.

Turning to *Barnardius*, Peters not only placed it in *Platycercus*, but included all forms in one species. Two distinct Formenkreise are adopted by the present author—the *zonarius* group (with *occidentalis*, *myrtae*, *dundasi*, *semitorquatus* and *zonarius*) and the *barnardi* group (*macgillivrayi*, *whitei*, *augustus* and the nominate race). The rejection of *semitorquatus* follows the modern trend towards a broader concept of species. The form *macgillivrayi*, whilst granted only subspecific rank, is considered very distinctive. Tables showing the plumage differences within the two Formenkreise are included.

The genus *Northiella*—monotypic with *haematogaster*—is used. A new race of *Psephotus haematonotus*, from Cooper Creek—*caeruleus*—is described, based on the more blue coloration and paler appearance and smaller size.—C.E.B.

Sampling Quail Populations.—A useful technique in counting game-birds for ecological studies is discussed by B. Glading in "Valley Quail Census Methods . . .," *California Fish and Game*, vol. 27, April, 1941, pp. 33-38. "Three men, mounted on horseback, ride in parallel courses slightly more than 200 feet apart, making 24 man-strips per lateral mile; each watches and counts the quail seen on a strip only slightly more than 100 feet on each side of him. . . . When the riders come to the end of their strips they pivot about on the outside man, so that he may guide them back accurately on a course parallel to and at the correct distance from the one he has just covered." The procedure is repeated until the whole census area is covered, and it was found possible to deal with 750 acres in an eight-hour day. In this particular study the density of quail varied from 0.3 to 0.6 birds per acre.—D.L.S.

Moa Excavations.—"Preliminary Report on Excavations at Pyramid Valley Swamp . . .," by R. S. Allan, E. Percival, R. S. Duff and R. A. Falla (*Rec. Cant. Mus.*, vol. IV, no. 7, pp. 325-353) is a succinct account of the recent important find which has so far resulted in the excavation of fifty more or less complete moa skeletons—17 *Dinornis*, 3 *Pachyornis*, 3 *Euryapteryx*, and 27 *Emeus*. Many of the birds were evidently bogged alive in liquid peat. In two of the genera an individual skeleton with skull is available in association for the first time. The material is sufficient to enable confirmation or rejection of many hypothetical characters offered by earlier authors, for example Owen's reconstruction, from mixed bones, of his *Dinornis elephantopus*. Of *Emeus* the range of variation in size suggests that *crassus* and *casuarinus* should be united, but *huttoni* may be tentatively retained. A complete list of material is given, and it is added that the swamp is by no means worked out.—C.E.B.

Birds and Colour.—Preferences for particular colours have been ascribed to certain species. Using a number of small glasses containing coloured syrups, Frank Bene proved that a species of humming-bird, said to prefer red, was not attracted to that colour more than to others ("Experiments on the Color Preferences of Black-chinned Humming-birds," *Condor*, vol. 43, no. 5, Sept.-Oct., 1941, pp. 237-242).

Properly-conducted tests on the Satin Bower-bird concerning its partiality for blue might prove interesting in the light of these experiments.—C.E.B.

Bird Behaviour and Instinct.—Present-day theories relating to this difficult question are critically examined by David Lack (*"Instinctive Behaviour and Display in Birds," Ibis, v, no. 3, p. 407-441, July, 1941*), who illustrates his views with examples amongst European and American species. The paper is primarily concerned with breeding behaviour, generally termed "instinctive." Unfortunately, the difficulties have been unnecessarily increased owing to problems of terminology, as many terms, such as "instinct," have never been properly defined. In bird behaviour the term "instinctive" could be abolished, as activities in courtship, nest-building, incubation and migration have little in common with seemingly-analogous "instinctive actions" in other animals, such as insects. Two definitions of instinct, "now outmoded," explained instinctive behaviour as (a) inherited habit, (b) a chain of reflex actions. Other unsatisfactory definitions postulate "action without foreknowledge," and "an entity, urge, or force driving the animal," but they are unobservable, and are as useless as certain well-known definitions verging on the mystical. Other terms which have been used vaguely are "intelligence," and "reflex action." Reflexes, unlike so-called instinctive behaviour, usually affect only a part of the body, and, on the motor side, amputation experiments have shown that the muscular and nervous co-ordinations involved can be modified successfully. A provisional definition of instinct should be based on observable attributes such as: (a) it is inherited, not learnt; (b) typical of the species rather than the individual; (c) mainly stereotyped and mainly unmodified; (d) a pattern of behaviour involving the animal as a whole and, as such, distinct from reflexes. There is also an "appetitive" element (the animals "searching" or "striving" for "satisfaction") which does not occur in reflex actions. Bird behaviour thus not only depends on the external situation, but also on the internal state. Recent experiments indicate that the internal state is influenced by various hormones, produced by the gonads, anterior portion of the pituitary and other organs. Examples are given of birds observed in the wild and captivity, and reactions of individuals to "stuffed" specimens are quoted.

As to "display," which is "conventional" and characteristic of a particular situation, threat and sexual displays appear to be associated with general excitement, resulting in the production of adrenalin and the stimulation of the sympathetic nervous system, causing, perhaps, random muscular movements. Originally there was probably no direct "survival value" in such activities. Thus injury-feigning display has been attributed to a conflict between the desire to incubate and the desire to flee from the enemy. In many instances such display has now acquired a survival value. Repetition and elaboration of the original display may induce an individual which does not at first respond appropriately, to do so in the desired manner, and in this case such display is obviously something more than a "signal." It is asserted that movement always precedes colouring as far as evolution of display is concerned, which is well exemplified in the Anatidae where the same movement has led to subsequent evolution of different colour patterns in different species.

The paper should be studied by all those interested in the phenomena of bird behaviour in Australia, for the ideas contained therein might be applied with advantage to the interpretation of many of the actions of our own birds.—H.T.C.

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