

## From Magazines, &c.

AUSTRALIAN FINCHES.—Mr. J. B. Housden, of Brooklyn, Cator-road, Sydenham (England), informs us that he has flying in his aviaries twelve hundred Australian Finches, consisting chiefly of Red- and Black-headed Gouldians, Star-Finches (*Bathilda ruficauda*), Long-tailed, Pectoral, Masked, and Bicheno.—*Avicultural Magazine* (July, 1905), p. 293.

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THE GREAT AUK.—*The Auk*, in its July number, has a photo. of a specimen of the extinct species from which the paper takes its name, and another of two of the eggs. Bird and eggs were recently acquired by Mr. John E. Thayer, who describes them, at prices which are not stated; we are told, however, that the eggs formed part of a lot of ten sold in London in 1865 at prices varying from £29 to £33 each. The bird belonged to Gould as long ago as 1838.

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THE discovery of the eggs of the Knot (*Tringa canutus*), which is a summer visitor to Australia, is reported in the *Ornithologisches Jahrbuch* (Jan.-April, 1905). The clutch of four eggs was taken 17th June, 1898, on an island called Hrisey, to the north of Iceland. In coloration the eggs resemble those of the common European species (*T. alpina*), but they are larger than the latter. The collector who made the find had looked for the eggs of this species for more than twenty years in vain.

The same issue has a note on the occurrence of Richardson Skua (*Stercorarius crepidatus*) in Hungary. This is another species that comes to us in summer, when it may be seen following in the wake of steamers in Port Phillip Bay. It is easily identifiable by its central pair of tail feathers, which stick out prominently beyond the rest and run to a sharp point.

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THE ALEXANDRA PARRAKEET.—Mr. G. A. Keartland has contributed some interesting details on the "range" of this beautiful Parrakeet in *The Victorian Naturalist*, vol. xxii., No. 5 (September), from the time it was first discovered, over 40 years ago, at Howell's Ponds, in the far North, till recently, when it was found breeding in South Australia proper, within 80 miles of Oodnadatta. The extension of the range to Western Australia was recorded in *The Emu*, vol. iii., p. 115 (1903). In this instance, two or three young birds were brought alive to Melbourne from the West by Mr. Hunter. One has developed into a handsome male, and has easily taken the prize in its class at all the recent shows. Mr. Hunter has liberated his Alexandra Parrakeets in a roomy aviary, in the hope that they will breed. Mr. Keartland has, inadvertently, no doubt, given *North* instead of *Gould* for the authority of the species *Polytelis* (*Spathopterus*) *alexandrae*. But the former naturalist has attempted to change the original generic name into *Spathopterus* on account of the notch at the end of the third primaries of the wings.

This feature is only specific at least, for, in other respects—general contour, shape of head, long tapering tail, &c.—the Alexandra Parrakeet resembles the Green-Leek (*Polytelis barrabandi*) and Black-tailed Parrakeets (*P. melanura*). The Rev. Hubert D. Astley, M.B.O.U., writing to *The Avicultural Magazine* (June) in reference to some Alexandra Parrakeets which he has in captivity, states:—"I wonder why, just because a bird happens to grow a peculiar-shaped feather in the wing, it should be given a separate name? The Princess of Wales Parrakeet is evidently of the same group as the Barraband (*Polytelis barrabandi*) and the Rock-Pebbler (*P. melanura*). Because one brother or cousin in a family has a snub nose, and another a Roman nose, it does not make him of a different genus!"

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SAVE THE PENGUINS.—According to *The Times* (weekly edition) a vigorous, if not heated, debate followed the motion brought forward by the Hon. Walter Rothschild at the Ornithological Congress held in London. Speaking, he said, as an exponent of the wish of the bulk of the Congress, he moved—"That a telegram be sent to the Government of New Zealand and Legislature of Tasmania, urging them to introduce legislation to prevent, in islands under their rule, the destruction of Penguins now going on for the sake of boiling the birds down into oil." Numbers of members spoke in support. Sir W. Buller (who is writing a book on the subject) and Dr. Giglioni spoke with especial vehemence; and one of the delegates from the Australian Ornithologists' Union, after announcing that the Legislature of Tasmania had recently put the Penguin on the total protection list, said that such a telegram would strengthen his hands. He also gave some terrible details of the torture of Mutton-Birds (Petrels). At this point a vigorous protest was made by M. Leonhard Stejneger, from the United States, on the ground that the Congress had no business to dictate to Governments, and he instanced the hypothetical feelings of the American Government if so schooled. Dr. Bowdler Sharpe replied that if the Americans were boiling down Penguins in the Philippines and the Congress did not tell them to stop the Congress had better cease to exist. Finally the motion was enlarged by including "the Commonwealth of Australia" and the substitution of "all birds boiled down for oil" for Penguins, and passed with the one dissident.

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FAR SOUTHERN SEAS.—At the International Ornithological Congress recently held in London Mr. W. S. Bruce's account of the Scottish Antarctic Expedition proved, according to *The Times* (weekly edition, 23/6/05), much the most remarkable address given during the Congress. The Scotch brought back a considerably richer collection than any of the three other expeditions—a success which Mr. Bruce attributed chiefly to the excellent shooting of Mr. D. W. Wilton. Directly a possibly rare bird was seen a boat was lowered, and, in spite of rough seas and considerable danger, Mr.

Wilton was generally successful. The expedition also had the advantage of the others in wintering on the South Orkneys, where many specimens were secured, as also off Coat-land. Altogether over 500 skins were brought home. The expedition, which started from the Falklands, reached as far south as 74°. Perhaps the chief success was in finding eggs which hitherto have been seldom seen—for instance, those of the Snowy Petrel, the Sheath-bill, the Blue-eyed Cormorant, &c. The prime success was Mr. Bruce's discovery of a rookery of Cape Petrels (*Daption capensis*), a well-known Australian and widely-distributed species, of which the eggs had never before been found. Two entirely new species were procured in the Gough Islands, both Buntings, very different from known species. They were named the *Nisospiza jessiae* and *N. goughensis*. About one, which has a resemblance to the "Mollymauk," no one has yet come to a decision. It is not the same as any known specimen, and Mr. Walter Rothschild and Dr. Hartert are still trying to place it.

Dr. Wilson, of the *Discovery* (National Antarctic, 1901-4) Expedition, also contributed an important bird-paper to the Congress on South Polar species. He found the great Emperor Penguin bred there during August, the period of greatest cold and complete darkness, when the thermometer was often 100 deg. below zero. The Emperor Penguin is a true ice-bird, never being found north of the front of the great ice barrier.

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FRUIT-EATING BIRDS.—In *The Journal of Agriculture*, Victoria (part 5, vol. iii.), Mr. Charles French, jun., Assistant Government Entomologist, contributes an important article on "Fruit-eating Birds."

The article, in the first place, was written for the recent Nature Study Exhibition, Geelong, and gained *The Age* special prize. The paper cannot fail to be of value and interest to the orchardist, viticulturist, and others. Mr. French enumerates 24 indigenous species of birds as destructive to fruit, and, naturalist-like, he treats them systematically by vernacular names, classical names, geographical distribution, and breeding season, each species ending with brief general remarks about food, &c. Probably there is a technical error about the "Black Magpie." *Strepera fuliginosa* has been written instead of *S. graculina*. The latter fine bird ranges from Queensland round to South Australia, but is not found in Tasmania. And, according to recent authorities, the King Lory (*Aprosmictus cyanopygius*) is not found in South Australia, while the elegant swift-flying Lorikeet (*Nanodes discolor*) ranges into Queensland. Of course these are items of interest to the zoogeographer, but the practical man will be more concerned with the food, habits, &c., of the birds.

Although the birds mentioned are a trifle destructive to fruit during the season (the rest of the year they are almost wholly insectivorous), Mr. French would not like to see such beautiful

creatures destroyed because of their petty depredations. Even the much-abused Crow or Raven, taking it all the year round, has been proved to be a farmer's friend more than an enemy, and the graceful and merry Spiny-cheeked Honey-eater is only seen about metropolitan gardens in winter time, departing inland for its breeding haunts during the harvest season. Were the introduced birds destructive to fruit—the Minah, Sparrow, Starling, and Blackbird—mentioned at the end of Mr. French's paper wiped off the face of the land, there need be no fear from any native birds.

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THE AIMS OF ORNITHOLOGY.—Letters from prominent ornithologists on "The Future Problems and Aims of Ornithology" are published in *The Condor* for May-June and July-August. Dr. A. R. Wallace says that instinct and heredity are the departments of biology in which most remains to be done. Dr. L. Stejneger deplores the mass of unscientific ornithological literature, which from its lack of arrangement is not even useful as a source for the supply of facts to the scientist. Nearly all the work must be done over again, and in an entirely different manner, according to plan and system and with definite objects in view. An ornithologist must be a biologist as well. He may specialize, but on scientific lines. The mere classifier and describer will soon be distanced. Birds are to be studied in the light of other sciences, such as geography and physiography, and in the light of study of other animals and plants. The ornithologist must study under competent teachers, and at first be guided by them. The time of the autodidact, the self-taught man, says Dr. Stejneger, is past. The ornithologist must study both in field and cabinet. For qualifications, he must have a knowledge of biology, general zoology, geology, and physiography. He must gain detailed knowledge of species by patient work in the study, and power of observation by training in the field. Then he can start to specialize and study various problems under proper guidance. The man of science has not to seek these problems; they grip him by the throat and demand solution. If these seem to be counsels of perfection, we must remember that Dr. Stejneger's point of view is that of the man who makes ornithology his life-work. He is not addressing the amateur, though, as he says, he is not "down" on him. It is the amateur who poses as a scientific ornithologist without having the true scientific instinct who is the nuisance, according to Dr. Stejneger. Dr. P. L. Sclater says there is much work to be done in the branches of anatomy and pterylography, in which there are few workers at present. Mr. William Brewster thinks with Dr. Stejneger that the problem concerning the interrelation of bird with other animal life is the one best worth attention. That is to say, we should study the "balance of nature" and how it is maintained. Bird-migration is another problem far from being exhausted. To the young ornithologist he says:—"Study carefully the birds in the immediate neighbourhood of your home, limiting yourself to a definite area." To become an

efficient ornithologist one must use the gun, but if the young man wishes merely to divert himself by the study of birds, or to make their study simply an excuse for leading an out-of-door life, the opera glass, not the gun, is the implement best suited to his use.

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CUCKOOS.—Sixty pages of the *Proceedings of the Ornithological Society of Bavaria* (1903, vol. iv., New Series, vol. i.) are occupied by observations on the European Cuckoo (*Cuculus canorus*) by the late Johann Andreas Link. The author has devoted the leisure of forty years to the study of this species, and his statements may claim some weight. The European Cuckoo is a congener of our familiar Pallid Cuckoo (*C. pallidus*), also of the Fan-tailed Cuckoo (*Cacomantis flabelliformis*), and in view of the interest lately taken in the study of Australian Cuckoos, and the probability that what is true of the habits of *C. canorus* will be found to be true also of its local representatives, it may be worth while to see what the author has to say about the European bird. His conclusions may be summed up thus:—The Cuckoo finds foster-nests by the eye and by noticing small birds building. It visits the nests before it is ready to lay, and remembers where they are. The egg is deposited by means of the bill when the nest allows of no other way, and it chooses nests of the latter kind even in preference to ones it could easily sit on. Most of the nests frequented by the Cuckoo are more suited in point of construction and situation for bill-depositing than for direct laying; indeed, in most of the preferred nests bill-depositing is the only method possible. Therefore it may be said the Cuckoo deliberately chooses the indirect way in most cases, even when the possibility of direct laying is not excluded. Bill-depositing is therefore the normal way for the Cuckoo. The female usually finds nest and deposits egg alone; if the male does ever accompany her it is from motives of jealousy only. The breeding season lasts as long as the bird calls—70 days on an average. The female arrives 8 or 10 days later than male. The first egg is laid 20–25 days after first call heard. The Cuckoo lays about eight eggs in a season, with about 6 days interval between each. This length of interval may account for the bird not hatching its own eggs. One is the normal number of the Cuckoo's eggs for one nest. If there are more, it means suitable nests are scarce in proportion to the Cuckoos looking for them. The same Cuckoo may sometimes lay two eggs in the same nest. Three eggs in a nest is the record. The Cuckoo chooses the species that has reared it. A nest with one Cuckoo's egg first laid is usually deserted by the nest birds. Exceptionally a Cuckoo's egg is found with a full clutch of the foster-parent's; here the Cuckoo has laid first. If it has time to do it, the Cuckoo usually removes one or more foster-bird's eggs when laying its own. It usually lays in nests containing fresh eggs, but sometimes by error in sleeping or play nests. After the young Cuckoo is hatched the old female Cuckoo visits the nest and removes the other eggs or young, as the case may be; if she

is prevented from visiting the nest the young Cuckoo throws out the other young, but not the eggs. It gets under the other young, loads them on to its back, which has a special hollow at the earliest period of its life-history, and throws them backwards, lifting them to the edge of the nest and out over it. The young Cuckoo cannot do this till it is 3 or 4 days old. At 12 days the hollow in its back and the desire to throw out the other young birds disappear together. The young Cuckoo is usually found alone in the nest a short time after hatching. The exceptions are—(a) When the Cuckoo's egg is laid last and hatched after the other young; (b) in the case of nests in hollows, where it is impossible for the young Cuckoo to throw the other inmates out. If there are two young Cuckoos hatched in the same nest one throws the other out. The Cuckoo has as much maternal love as any other bird, evidenced as follows:—"As soon as the female Cuckoo has found a suitable nest to deposit its egg in, and the egg is ripe for laying, it removes one or more of the eggs in the nest and puts its own egg there. This action is proof of the first exercise of care for her offspring on the part of the female Cuckoo, since the intention is to make room for the proper incubation of the Cuckoo's egg. Before incubation is complete the female Cuckoo appears again to see whether her egg has been hatched. If it has, she removes everything from the nest but her own egg. She throws the foster-bird's eggs out and leaves them almost always near or under the nest. She proceeds in a similar way with the nestlings, but removes them with greater care, with the result that the little birds are to be found at first near the nest, soon afterwards further away, and finally not at all. In my opinion the reason for this difference in the treatment of eggs and young lies in this—that the eggs, being motionless, do not draw the attention of the female Cuckoo upon themselves any further, but the little birds, by moving after being thrown out, awaken the suspicion in the female Cuckoo's mind that they may be able to get up and creep back into the nest again. This action proves great care—indeed, motherly love—which is the more striking when we reflect that the mother has not to concern herself with one child only but with a whole series of them, so must devote similar care to each egg that she lays."

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### Reviews.

At least as important to the student of ornithology as a minute acquaintance with the birds of his own country is a working knowledge of the relations in which those birds stand to the Ornis of adjacent regions and the rest of the world, so that Australasian bird-lovers should read with interest and profit the lengthy presidential address of Col. W. V. Legge, F.Z.S., delivered 7th January, 1904, at Dunedin, before the Biology Section of the Australasian Association for the Advancement of Science, which now appears in print in the form of an extract from the "Transactions" of that

Association (By authority: John Mackay, Government Printer, Wellington, 1905, 68 pp.) The title of the address is "The Zoogeographical Relations of the Ornis of the Various Sub-Regions of the 'Australian Region,' with the Geographical Distribution of the Principal Genera Therein."

The "Australian Region" is that so classified by Dr. A. R. Wallace in his work on "The Distribution of Animals." It includes four sub-regions—Australasia (Australia and Tasmania), Austro-Malaya (New Guinea, &c.), Polynesia, and New Zealand. The first part of the address is a description of each of these four sub-regions ornithologically considered. Each has, as is shown, its specialized forms—Australasia its Lyre-Birds, Mound-raisers, Emus, and Plain-Wanderer; Austro-Malaya its Birds of Paradise, Crowned Pigeons, and Long-tailed Kingfishers; Polynesia the strange Pigeon (*Gnathodon*), of Samoa, and the Kagu (*Rhinochetus*), of New Caledonia\*; New Zealand its peculiar Starling (*Heteralocha*), aberrant Pitta (*Xenicus*), Sheep-killing Parrot (*Nestor*), and the Kiwi (*Apteryx*).

New Guinea is the focus of the Austro-Malayan sub-region. Oriental elements enter in Celebes and Timor, each of which forms, as it were, the arresting point for many Indian, Indo-Chinese, and Indo-Malayan forms on their way towards Australia; but Celebes, in spite of its peculiarities, has greater affinity with our own region than with the Oriental, hence we find it included by Wallace in the former. The dividing line is not so arbitrary as it looks in the map, for the strait between Bali and Lombok, through which the line of severance between the Oriental and Austro-Malayan regions runs, is very deep, and forms a real natural division.

New Guinea's relation to Australia is closest in the Passeriform birds, naturally enough, as that is the largest order, but it would be still closer were it not that our tropical vegetation in the north is confined to but a small area. Australia once stretched out nearer the island of Timor than it does now, and the existing relationship is to be attributed to that time, for now the broad Arafura Sea rolls between and stops Oriental forms coming on from Timor to us.

Colonel Legge divides the Polynesian sub-region into five groups—(1) New Caledonia and neighbouring islands; (2) Fiji and Samoa; (3) the Societies, Marquesas, and Low Archipelago; (4) the Carolines, Marshalls, and Ladrões; (5) the Sandwich Islands;

\* It is a popular error to suppose that the Kagu is nocturnal in its habits. Mr. H. E. Finckh, of Sydney, in writing to the editors regarding his birds in captivity, states:—"My four Kagus go to roost as soon as it is dark, not at dusk. Between dusk and dark they eat up any scraps of meat which may be about, which proves that they look for their food when the worms come out at the evening. Strange to say, their egg is also always laid just when the dusk has changed into night. They sleep very soundly. I often go into their run at night; they never wake then, unless disturbed, and I have often been surprised that they do not wake easier. I have even removed their egg from under the sleeping bird without awaking the latter. I have never found my birds about at night, and I always give them a final look before I retire myself. I also frequently find them asleep early in the mornings, should I happen to be up just before daybreak, and even the brightest moonlight nights do not alter matters."

and shows the relation of each group to the others and of the sub-region as a whole to its neighbours.

The carinate Ornis of the Australasian sub-region is analyzed more closely, and divided into four series of genera, namely—

1. Genera peculiar to Australia.
2. Typical Australian genera extending more or less into adjoining sub-regions.
3. Typical Austro-Malayan genera represented by species in Australia.
4. Wide-ranging genera penetrating to Australia through Malaya, some being exclusively Oriental.

The fourth sub-region, New Zealand (including Lord Howe and Norfolk Islands), is shown to be remarkable for the number of its specialized forms and its generally aberrant Ornis. Colonel Legge suggests that the present distribution of the Struthious birds, which range from South America (*Rhea*) through New Zealand (*Apteryx*) to Australia and Austro-Malaya (Emu and Cassowary), points to a former land connection over the whole area, a conclusion to which he is also assisted by the likeness in habits between *Stringops* (Owl-Parrot) of New Zealand and *Rhinochetus* (Kagu) of New Caledonia, though the birds in question are of widely different orders. The former existence of the Moa there would indicate that New Zealand was the central point from which the Struthious birds spread to Australia on one side and South America on the other.

*En passant*, the efforts of the New Zealand Government towards preservation of diminishing species are commended.

The second and longer part of the address deals with the geographical distribution of families and genera in the Australian Region. Land birds only, including as such the *Herodiones* (Hérons), *Alectorides* (Cranes, &c.), and *Fulicariæ* (Coots and Rails), are dealt with, since the *Limicolæ* (Plovers, &c.), *Anseres* (Ducks and Geese), and *Steganopodes* (Cormorants, &c.), being in the main birds of the littoral and of coastal waters, are of no help in determining the ornithological relationships of land areas.

The scope of this, as viewed by the author, can only be indicated here and there, and where it chiefly concerns the species of the Australasian Sub-region. Taken in conjunction with its large area, Australia contains few birds of prey. The number of species of diurnal *Accipitres* is 28, and that of nocturnal *Striges* only 14. In comparison with these small totals the numbers in limited areas in other parts of the world may be cited, such as Ceylon with 32 *Falcones* and 12 *Striges*; Britain with 24 of the former and 10 of the latter; and if we compare the Indian Sub-region, with its 60 diurnal birds of prey, our Australian list is small indeed. One notes that the most recent addition to our *Accipitres* is *Butastur teesa*, said to occur sporadically in New South Wales.

It is the great order of Perching-Birds, the members of which far outnumber those of any other order, through which the relations



of the Australasian Ornis are better established with those of the adjacent sub-regions than through other orders.

Of the family of Drongos there is one Australasian species, *Chibia bracteata*. *Chibia* is a genus which is almost purely Austro-Malayan, six out of the nine known species inhabiting that sub-region. In the family of Wood-Shrikes, the Magpie-Larks (*Grallina*) connects New Guinea and Australia, as a congener—*G. bruijnii*—of our well-known bird inhabits the mountains in Papua. The Shrike-Thrushes (*Collyriocincla*) are almost exclusively Australasian, one—*C. brunnea*—only straying to New Guinea. The allied genus (*Pinarolestes*) has, however, a wider range—from Australasia to Austro-Malaya and Polynesia, where seven species and sub-species are found. As Australasia has only three species, the genus is chiefly Polynesian. Regarding the Cuckoo-Shrikes, which are mainly distributed from India to Eastern Papuasia, there are two small genera, *Pteropodocys* and *Campochæra*, confined to Australasia and New Guinea respectively. They are followed in the arrangement by *Graucalus*, with many species strongly located in the Austro-Malayan region and fairly so in Australasia.

The genera *Gerygone*, *Arses*, *Machærorhynchus*, *Micræca*, *Pacilodryas*, and *Malurus* are all common to Australasia and Austro-Malaya. Out of the many known species of the last-mentioned, all are restricted to Australia save one—*M. albiscapulatus* of New Guinea. A characteristic feature of the Australian Ornis is the scanty distribution of the Thrushes (*Turdidæ*) within the region. There are, however, three or four species of Ground-Thrushes (*Geocichla*) in the Australasian Sub-region. It is not till we come to the sub-family *Ptilonorhynchinæ* (Bower-Birds) that we meet with Australian representation in the Timeliidæ. Five genera of these remarkable birds are Australasian, two of them being also found in Papuasia, while an additional one is exclusively Papuan. The *Ephthianura* deserves passing notice. These little Chats form one of the typical groups of smaller birds highly characteristic of Australia. They live upon the ground and are insectivorous, and, according to Colonel Legge, have no affinity in habits and mode of life to the other birds in the group in which they have been placed by systematists.

In his interesting remarks in reference to the dispersion of the Tree-creepers and Nuthatches, the author comes to our Australian Creeper, *Climacteris*, of which several species are found on the continent. As *C. rufa* has generally been considered to be purely Australian, it would be interesting to have Colonel Legge's authority for the statement that it has wandered north to the Philippines. The *Meliphagidæ*, or honey-loving birds, taken in their natural sequence, occupy many very instructive pages of the address. An Asiatic Swallow (*Hirundo gutturalis*) is mentioned as a straggler to Northern Australia. The Wood-Swallows (*Artamus*), which are a most puzzling form of birds, are almost wholly Australasian, two species only having ranged outwards to Indo-Malaya and the Indian and Indo-Chinese Sub-regions of the Oriental Region. In

the *Atrichidæ* (Scrub-Birds) and *Menuridæ* (Lyre-Birds) there are two remarkable specialized Australasian forms.

No Australasian form is more widely found in Polynesia than the familiar *Halcyon*.

It is extremely interesting to find that the European Cuckoo ranges as near to us as Timor, whilst its Asiatic prototype, *C. intermedius*, visits the northern parts of Australia. The genus *Cacomantis* (short-winged, typical Cuckoos) is a Malayan and Papuan form, extending on the one hand to India and on the other to Fiji. In Australasia there are three species. The focus of the pretty little Bronze-Cuckoos (*Chalcococcyx*) is New Guinea.

Of the perplexing Plain-Wanderer (*Pedionomus*) Colonel Legge says that its dissimilar habits and Limicoline eggs almost warrant its separation from the *Turnicidæ* and placing in a separate family, *Pedionomidæ*. And by parity of reasoning might not the genus *Zosterops*, with its 86 species, be removed from the *Meliphagidæ*, from which it exhibits so many points of difference?

In the order *Fulicariæ*, which is full of fascinating interest, the *Rallidæ* are fairly represented in Australia. Regarding the stray Native-Hen (*Microtribonyx*) being procured at sea between Tasmania and the Auckland Islands, may it not have escaped from ship-board?

The conclusions at which Colonel Legge arrives from his consideration of the geographical distribution of species in the Australian Region are as follow:—

"1. Australasian and Austro-Malayan are the most closely allied sub-regions. The typical families showing this alliance are *Meliphagidæ*, *Muscicapidæ*, *Campophagidæ*, *Laniidæ*, *Pittidæ*, *Loriidæ*, *Megapodidæ*, *Ardeidæ*.

"2. The relations between Australia and Polynesia are mainly through *Meliphagidæ*, *Muscicapidæ*, *Laniidæ*.

"3. Between Austro-Malaya and Polynesia we find affinity through the *Meliphagidæ*, *Muscicapidæ*, *Loriidæ*, *Peristeridæ*, *Treronidæ*.

"4. Between Polynesia and New Zealand through the genera *Rhipidura*, *Cyanorhamphus*, *Urodynamis*, *Notophoxyx*.

"5. Between New Zealand and Australia through the genera *Rhipidura*, *Pseudogerygone*, *Zosterops* (doubtful).

"In the foregoing I have not included certain genera of wide range, species of which are found throughout the various subdivisions of the Australian Region."

It is to be regretted that Wallace did not choose a wider name than "Australian" for the whole region. One has got used to considering Australasia as including Australia, and when the process has to be reversed it means a pitfall for the unwary ornithologist.

Some errors have appeared in Col. Legge's paper, owing, as the author explains, to his not having been furnished with proofs in due time. He had not time to make necessary corrections, and did not see a proof of his map. Hence inaccuracies have occurred which the author deeply regrets. Thus "Australian" is given as

the title of the Australasian Sub-region in this map, and on page 218, by some misunderstanding, the titles are transposed. Again, the omission of the Order *Picariæ* preceding the genus *Syma*, and the misplacing the genus *Heteromyias* among the Shrike-Tits on page 225, have been unfortunate, as also the misprint "*Geopsittacus*," for *Neopsittacus*, page 269, and the habitat "south" instead of north for *Alcyone pusilla* and *A. pulchra*, page 263.

But Col. Legge's work deserves to have a much greater publicity than it is likely to obtain in the somewhat unattractive form of a "reprint," and one hopes that the author may at some future date be able to see his way to publish it as an independent contribution to the science of ornithology in Australasia. Purely local observation and study have too often a tendency towards narrowness and lack of system, a tendency against which the thoughtful study of such a work as this acts as the best kind of corrective.

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#### AMERICAN BIRDS.

[“The Birds of North and Middle America: a Descriptive Catalogue of the Higher Groups, Genera, Species, and Sub-Species of Birds Known to Occur in North America, from the Arctic Lands to the Isthmus of Panama, the West Indies, and other Islands of the Caribbean Sea, and the Galapagos Archipelago.” By Robert Ridgway.]

THIS great reference work, which is issued as a “Bulletin of the United States National Museum, No. 50,” has reached Part III. The parts are substantial volumes (octavo size) of over 700 or 800 pages each. —Part I., issued in 1901, included the Finch Family alone. Part II., issued 1902, included the Families Tanagers, Troupials, Honey-creepers, and Wood-Warblers, while the present Part (III.), issued 1904, comprises Wagtails and Pipits, Swallows, Waxwings, Silky Flycatchers, Palm-Chats, Vireos, Shrikes, Crows, and Jays, Titmice, Nuthatches, Creepers, Wrens, Dippers, Wren-Tits, and Warblers.

These three volumes contain the descriptions of about 1,250 species and sub-species, or about two-fifths of the total number of North and Middle American birds. The completed work is expected to run into eight or ten volumes. This gigantic task has been looming before the author for nearly a quarter of a century, and, so far as can be judged by the present parts, whether as literary or scientific work, it is simply beyond the pale of criticism. Only an ornithological giant could possibly attempt to raise such a monument. Think of the synonyms alone of the work—what a laborious task!—not to mention drudgery of compilation.

In view of a systematic list of Australian birds the following may be quoted with advantage from Professor Ridgway's preface:—

“The question of whether a given form should be considered as a species or a sub-species is very much a matter of material, both from a geographic and a numerical point of view.” The greater the number of closely related forms, hitherto regarded as specifically distinct, that are examined—especially when representing intermediate localities—the fewer becomes the number of those which are really

specifically distinct. As in the case of genera, very different extremes are often connected by a series of intergrading forms, approaching one or the other of the extreme types exactly in proportion to their geographical position between them; and other forms much less different appear to be really distinct through absence of 'intergrades.' In determining questions of this class, the author has exercised the fullest independence, without reference, so far as North American forms are concerned, to the rulings of the committee of the American Ornithologists' Union; not from lack of confidence in the committee's judgment, but from a full knowledge of the unsatisfactory conditions as to time and material under which their conclusions were usually reached. Satisfactory decisions affecting the status of described but still dubious forms is a question both of material and investigation, and the author holds that no conclusion in such a matter should be accepted unless based upon an amount of material and careful investigation equal to that bestowed by the original describer.

"Recognizing the fact that in the present stage of zoological nomenclature trinomials are a 'necessary evil,' the author has not hesitated to use them when such relationship was clearly indicated by the evidence. He has not, however, often done so on theoretical grounds, because, in the first place, the facts when known may or may not justify the step, and in the second because a binomial is preferable to a trinomial when there is any good excuse for its adoption. The greatest difficulty in deciding questions of this kind is in the case of insular forms, among which occur every possible degree of difference between related forms inhabiting different islands, so that it not only becomes largely a matter of individual judgment as to which should be given specific and which sub-specific rank, but furthermore the distinction made must, in the case of any author, necessarily be more or less arbitrary; since no 'hard and fast rule' for determining such questions seems possible.

"As observed before, the more familiar one becomes with the subject through the medium of specimens representing continuous geographic sequence of localities the fewer in number really distinct species become, and what have long been considered such resolve themselves, one by one, into a connected series of sub-specific forms, each representing a definite geographic area of more or less marked peculiarities of topography, climate, or other physical features. Such forms are fixed, or 'true,' over territory of uniform physical character, the intergrades coming from the meeting ground of two such areas. Such a group of conspecific forms may aptly be compared to the colours of the solar spectrum, which form a graded scale from red, through orange, yellow, green, and blue, to violet, with intermediate hues of greater or less number, according to the nature of the case requiring their indication by name. These colours of the spectrum, though imperceptibly running into one another, are obviously distinct, and the necessity of recognizing them by name has never been questioned.

"To carry the comparison still further, a certain species may include six sub-species or conspecific forms, which for convenience may be designated by the sub-specific names *rubra*, *aurantiaca*, *flava*, *viridis*, *cyanea*, and *violacea*. Intermediates between these might be designated as *rubro-aurantiaca* (or *aurantiaco-rubra*, according to which form the intermediate most resembles), *aurantiaco-flava* (or *flavo-aurantiaca*), *flavo-viridis*, *viridi-cyanea*, and *cyaneo-violacea*—i.e., red-orange (or orange-red), orange-yellow (or yellow-orange), yellow-green, green-blue, and blue-violet of the colour scale. The necessity for such a

nomenclature is just as great in zoology (and botany) as in chromatography ; and to ignore this necessity is neither scientific nor sensible, but on the other hand is nothing less than suppression or perversion of an obvious truth. The only question that can possibly exist in the mind of those who have this matter to deal with is the degree of difference which should be recognized in nomenclature, and in this respect there is excuse for more or less difference of opinion, according to one's ability to discern differences and estimate the degree of their constancy, the extent and character of material studied, and the amount of time which has been devoted to its investigation. No doubt many of the forms which the author has recognized as sub-species in the present work may appear trivial to others, especially those who have not had advantage of the material upon which they are based ; but in all cases it has been the author's desire to express exactly the facts as they appear to him in the light of the evidence examined, without any regard whatever to preconceived ideas, either of his own or of others, and without consideration of the inconvenience which may result to those who are inclined to resent innovations, forgetful of the fact that knowledge cannot be complete until all is known. This question of species and sub-species and their nice discrimination is not the trivial matter that some who claim a broader view of biological science affect to believe. It is the very foundation of more advanced scientific work ; and without secure foundation no architect, however skilful, can rear a structure that will endure."

### Australasian Ornithologists' Union.

ROUGH MINUTES OF 32ND MEETING OF THE COUNCIL OF THE A.O.U.,  
HELD AT THE RESIDENCE OF DR. C. S. RYAN, 37 COLLINS-STREET,  
17TH AUGUST, 1905.

Correspondence was received from the following :—

The Hon. the Premier of Tasmania, stating that he was in communication with the Hon. the Premier of New Zealand with a view to co-operating with regard to the protection of Penguins at Macquarie and other islands south of New Zealand, as desired by the Council of the A.O.U.

The President of the Marine Board of South Australia wrote stating that he would have pleasure in meeting the desire of the Council of the A.O.U. as far as possible, in that they would place the steamer *Governor Musgrave* at the disposal of the Council and members of the A.O.U. attending the Annual Session, and would convey them to the "camp-out" at Kangaroo Island, at the same time pointing out that the steamer did not usually visit Kangaroo Island until December, but that they would arrange to make their trip fit in with the time of the Session programme. He also enclosed a plan of Kangaroo Island.

Mr. J. W. Mellor also wrote, informing the hon. sec. that he had ascertained that Middle River would be the most advantageous site for the camp-out, both as regard the suitability for landing and the study of the avifauna of the island.

The president, Captain Hutton, F.R.S., wrote from England, stating that he had unfortunately been unable to attend the first meeting of the International Ornithological Congress held in England, but had attended the second meeting, and found that Mr. F. M. Littler, F.E.S.,