

The Family Certhiidae in Australia.

BY A. G. CAMPBELL, MELBOURNE.

THE family of birds containing the genera *Climacteris* (Tree-creepers) and *Sittella* (Tree-runners) is of no small interest and importance—of interest because of the birds' peculiar habits of living and the modification of their structure in strict accordance with surroundings; of importance because of the unique position they occupy as protectors of forest trees. All nature is interdependent, but the co-existence of our *Certhiidae* with the eucalypts, especially of the rough-barked type, is, indeed, very marked. In return for their means of subsistence, as well as for friendly shelter during nesting operations, the Tree-creepers and Tree-runners patrol the trunks and branches of forest trees, and keep in abeyance those persistent destroyers of vegetation, scales and boring insects, which ravage timber trees to such an alarming extent in Australia. The Tree-creepers play their part upon the trunks and large branches only, and work in an upward direction or with a spiral movement around the tree, usually commencing on each tree near the base; but the Tree-runners, much smaller birds, confine their attentions mainly to the lighter branches, upon which the Tree-creepers never go, and are very active, running down or up, seeming able to feed with the greatest of ease head downward.

Allied to the Woodpeckers of Europe and America, these birds, which are not found beyond the confines of Australia, are well adapted to their work. The feet are powerful, the spread from the tip of the longest front (middle) toe to that of the hind toe, which is specially strong even for a Passerine bird, is about one-quarter the total length of the body. The tail is very short and of no apparent use except during flight. The bill is down-curved in Tree-creepers and upturned in Tree-runners, and the tongue of both is, like that of the true Woodpecker, provided with a sticky secretion to enable the bird to secure its food. An interesting feature of the family is the light-coloured patch upon the primaries of each wing—fawn, rufous, or white—which serves as a recognition-mark during flight. In the genus *Sittella*, the members of which are small and live in quick-moving flocks, much more so than in *Climacteris*, where they live in pairs, is this recognition-mark prominent, so that the mates may be easily seen and followed on the wing. The food consists mainly of the eggs and young larvæ of tree-destroying moths and beetles, taken usually before they have had time to penetrate far into the bark and timber.

The eight species of *Climacteris* are almost uniform in size, measuring about 6 inches in length; and in the genus *Sittella* the seven species are also uniform in size, though smaller by $1\frac{1}{2}$

inches. The colouring, also, of each genus is very much the same in all its members—that is, allowing for regional modifications. Perhaps the size and colour systems of *Certhiidae* are as remarkable as those of any other family that could be named. Similarity of habit and of food supply doubtless decided this, though climate and latitude have played a secondary part. In each of the genera a common ancestor is easily conceivable for all the species. This ancestor (to take the genus *Climacteris* first) sent out some of its progeny into somewhat open country, and they became sombre-coloured and brownish (*C. scandens*), or in the harsher conditions of south-west Australia a redder form (*C. rufa*) developed. Those that went into the heavier forest became dark and strongly marked. These two primary divisions of the genus are further distinguished by the brown section having reddish-brown eggs, while the other has white eggs sparsely marked. The brown section, too, does not feed entirely upon trees, for either of its species may often be seen hopping over the ground in search of insects. This habit may have its origin in the fact that the sparse, open forests are somewhat devoid of boring insects, and the Tree-creepers living therein are obliged to supplement their supply with insects from the ground. The other primary division of *Climacteris* is still further divided; its six species are scattered over Australia in varying degrees of denser country, north, south, east, and west. One sub-section, inhabiting the sub-tropical growths of the Northern Territory, might be termed the black section, for its two members (*C. melanonota* and *C. melanura*) are extremely dark. Then the white-throated sub-section, comprising *C. leucophæa* and *C. pyrrhonota*, inhabits south-east Australia; while the fourth sub-section, having many affinities with the last-mentioned, includes the bold-striped, slaty-throated species, *C. erythrope* and *C. superciliosa*, which range from north-west Victoria to south-west Australia.

The genus *Sittella* proves even more interesting than *Climacteris* in the subdivision by natural characters. Firstly: three species have the prominent wing-patch, already referred to as the recognition-mark, of a rufous colour; in three species this is pure white, while in one species (*S. tenuirostris*), inhabiting New South Wales and South Australia, it is half white, half rusty. Of the brown-patch section, one species (*S. leucocephala*), in South Queensland and New South Wales, is white-headed, while *S. chrysoptera* and *S. pileata*, the former of eastern and the latter of eastern and Western Australia, have dark heads, and are distinguished from each other by the latter having a pure white under surface. The white-patch section has a somewhat similar subdivision, containing one species with a white head, *S. albata* (North Queensland), the two remaining species, *S. striata* (Northern Territory and Queensland) and *S.*

leucoptera (north-west Australia and Northern Territory), being separable from each other by the latter having a white under surface while the former is streaked.

In nidification the genus *Sittella* is far more interesting than *Climacteris*. The Tree-creeper builds a nest in the hole of a tree, which offers little scope for architecture, but the nest of the Tree-runner, placed in a dead fork of a eucalypt,* is a masterpiece of ingenuity, for it assimilates perfectly with its surroundings. It is placed like a filling of rubbish in an upright fork of a branch, usually about 2 inches in thickness, and is built of bits of lichen, smoothly finished outside with little flakes of bark, glued on with mucus, to resemble natural bark. The birds themselves, in fact, offer a likeness to the bark where they commonly live. They are grey in colour, and the back is in some species faintly striated. A great contrast in under surfaces, however, may be noted between *S. chrysoptera* and *S. pileata*, two species from southern and northern Victoria respectively. The former has under surface similarly striated, though lighter in colour than the upper surface, while the latter, probably through living in a hotter locality, has a white under surface, which in the stronger light reflects the bark in such a manner that the under parts appear to be striated also. The eggs, too, of *Sittella* are quite in accord with the remarkable adaptive colour protection that is evident with bird and nest. They are light grey-green in colour, with bold black blotches—a good representation of the grey-green and black-blotched lichen of which the inner part of the nest is made. Mr. F. P. Godfrey, at a recent meeting of the Bird Observers' Club, when this family of birds was under discussion, mentioned that he had seen a breeding *Sittella chrysoptera* leave its nest when approached and cling on to the limb near by. The uncovered eggs might be detected from some distance if they were not protectively coloured. At the same meeting Mr. G. F. Hill pointed out the adaptiveness of the *Sittella pileata*, for those nesting in the dead branches of certain eucalypts which have bark in long strings, instead of in flakes, used long strings of bark instead of flakes for their nests.

The genus *Sittella* are pre-eminent among our common birds in evidencing the governing influence of environment on protective colouring. The colour of the bird assimilates with that of the tree branches on which it lives; the colour of the nest resembles that of the branch, and therefore that of the bird as well; and the colour of the eggs imitates the colour of the nest inside. Further research may yet reveal other striking fitnesses. It might also be pointed out that the plumage of the male is

* A pair of *Sittella chrysoptera* (perhaps young birds) built a somewhat clumsy nest in a live branch of a bull oak (*Casuarina*) in October, 1897, at Springvale, Victoria.—A. G. C.



Pilot-Bird (*Pycnophylus*) and Nest.

FROM A PHOTO BY A. H. E. MATTINGLEY.

lighter in tone than that of the female—a paradox when compared with other birds—and the lores or cap where grey in the male are black in the female. Does the male with these little birds carry out the task of incubation?

Observations on the Pilot-Bird (*Pycnoptilus floccosus*).*

BY F. E. HOWE, ALBERT PARK.

DURING the recent months a “triumvirate,” consisting of Messrs. Mattingley, Ross, and myself, spent many hours in the Dandenong Ranges with the object of improving our acquaintance with the Pilot-Bird (*Pycnoptilus floccosus*).

Although the bird is plentiful enough, it is so very shy and retiring in its habits that it is more often heard than seen, and one is led to think it is very rare. The eggs, on the other hand, are exceedingly rare, and the nest is seldom found, on account of the class of country the bird inhabits, and the skill displayed in concealing the nest. Why it is called Pilot-Bird I cannot quite make out, nor have I been able to ascertain, although I have made exhaustive inquiry. One observer says that as the pilot fish is always found in the company of a shark, so the *Pycnoptilus* is always to be found where the *Menura* (Lyre-Bird) is. Certain it is that wherever I met the first-mentioned bird, the *Menura*, though seldom seen, was always to be heard.

The Pilot-Bird is strictly a ground bird, and in the dense scrubs of secluded gullies that it loves so well finds such shelter that the legs have been greatly developed at the expense of the wings. This is, of course, obvious, as it obtains its food on the ground, and covers a lot of country in search of it, and will only fly when forced to—as, for instance, when crossing a track or open part in the scrub or, if alarmed, and even then it will only fly a short distance, trusting rather to its legs for safety. Its dexterity in getting through the sword and wire-grasses is marvellous, and it goes with such pace that it resembles a small-sized rat more than a bird when in motion. It is a near ally of *Sericornis frontalis* (White-browed Scrub-Wren), but is considerably larger. When in quest of food it has the same strange habit of “flicking” the tail in a smart up and down motion. It is insectivorous, and is also very partial to worms, which form the staple part of its food (I saw a male eat half a dozen in as many minutes, besides giving his mate a few), and often uses its feet to turn over the larger pieces of bark in search of some such morsel.

* Supplementary to Pilot-Bird Notes, *Emu*, vol. vi., p. 130.



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