

The Mountain Bird Fauna of Palawan, Philippine Islands.

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The mountains of Palawan had never been explored, and its fauna and flora was completely unknown when the committee of the Danish "NOONA DAN Expedition" decided to carry out an investigation of Palawan, including a visit to the mountains of the interior. A short narrative of the sojourn of the NOONA DAN Expedition in the mountains has been given by me in a previous paper (SALOMONSEN, 1961, Dansk Ornith. Foren. Tidsskr., vol. 55, p. 219). Hitherto no mountain birds were known from Palawan, but as a result of the NOONA DAN Expedition it is now possible to state that the following true mountain birds are found in the island:

Zosterops montana
Muscicapa westermanni
Seicercus montis
Phylloscopus trivirgatus
Orthotomus cucullatus
Stachyris hypogrammica

These birds are all restricted to the mountain forests above 900–1000 meters and are quite unknown at lower altitudes. They are all new to Palawan, although a single specimen of *Seicercus montis* had been collected as far back as in 1887, but the species has never been met with since then.

Compared with the highlands of Borneo and Luzon, which abound in endemic species, the mountains of Palawan have a very poor bird fauna. This was predicted long ago by WHITEHEAD (1890, Ibis, ser. 6, vol. 2, p. 39), who said: "I should rather doubt if an island like Palawan, which has no land above 6000 feet in altitude, has a very numerous highland fauna". It must be assumed, however, that the mountain fauna comprises a few other species than those discovered during the rather short stay

of the NOONA DAN Expedition. Further, a large number of lowland birds ascend the mountains up into the zone of the mossy forests. Some of them, *e.g.* *Culicicapa helianthea*, may have their centre of distribution in the mountains, as they are generally restricted to the mountains in the other large islands of the Philippines, but in Palawan they are all well-known in the lowland.

At least three of the Palawan mountain birds mentioned above have immigrated from Borneo, although the history of each species is very different. The Bornean origin of *Seicercus montis* is shown by the fact that it does not occur at all in the Philippines. *Orthotomus cucullatus* appears also to have reached Palawan from Borneo as it is widely distributed in Malaysia and to the east has reached only Luzon (the very different *O. c. heterolaemus* in Mindanao has immigrated to this island from Celebes). The colonization of Palawan by these two species is probably comparatively recent, judging from the fact that the mountain populations on each side of the Balabac Strait show only slight morphological differences.

The case of *Stachyris* is not so clear. Originally its ancestors must have passed from Malaysia *via* Palawan to the Philippines, but subsequently an intense speciation took place in the Philippines. The Palawan mountain species, *S. hypogrammica*, which is an endemic of old age, has no really close relatives, but it shows some relationship with the Philippine species *S. striata* and *S. nigrorum*, indicating that these three species were genetically in contact with each other much later than with any other species. It would seem, therefore, that the population of Palawan has been isolated longer from that of Borneo than from that of the Philippines.

Phylloscopus trivirgatus is a very widespread mountain species, ranging from Malaysia to New Guinea and Melanesia. The fact that Celebes and Mindanao have four distinct subspecies each, whereas the populations of Negros, Mindoro, Luzon and Palawan differ only slightly from each other, tends to show that the southern, Mindanao-Celebes populations are the oldest and that the colonization of the mountains of the northern Philippines and Palawan took place from that area. This is

further borne out by the fact that the Bornean forms (*kinabaluensis* and *sarawacensis*) and the other Malaysian forms are utterly different from the Luzon-Negros-Palawan populations, whereas the latter are closely related to the subspecies group of Mindanao-Celebes. Even in this species, therefore, the gap between Borneo and Palawan was of greater consequence than that separating Palawan from the Philippines. The immigration to Palawan from the Philippines is probably a rather recent phenomenon.

Zosterops montana is also a recent invader from the Philippines. The series collected by the NOONA DAN Expedition shows that the Palawan population does not differ from that of Luzon. It is completely absent in Borneo (cf. MEES, 1957, Zool. Verhandl., no. 35, map of distribution p. 172).

Muscicapa westermanni is a widespread mountain species with a slight and irregular geographical variation. It could have colonized Palawan equally well from Borneo as from the Philippines. Its geographical variation has been studied by МАУР (1944, Bull. Amer. Mus. Nat. Hist., vol. 33, art. 2, p. 161), and more recently by RIPLEY (1952, Proc. Biol. Soc. Washington, vol. 65, p. 71) and VAURIE (manuscript) as well as myself have examined the large collection of this species in the American Museum of Natural History. The Luzon population (*rabori* Ripley) differs slightly from the Bornean one (nominate *westermanni*) mainly in having paler upper-parts in the females, but specimens that are virtually identical with *rabori* can be found in other regions (Annam, Timor, etc.), and for the time being I prefer to treat the Palawan population only binominally.

A general study of the whole collection made in Palawan and in other localities in the Philippines by the NOONA DAN Expedition will be published elsewhere, but I shall add a few comments about three of the species dealt with above. I have studied these species during a recent visit to the American Museum of Natural History in New York, and I wish to express my gratitude to the authorities of this museum as well as to Dr. DEAN AMADON, Chief Curator of Birds, and Dr. CHARLES VAURIE, Associate Curator, and their technical staff for cordial help during my work.

1. *Seicercus montis*

As mentioned above, only one specimen of this species was previously known from Palawan. It was collected by WHITEHEAD on top of a small mountain about 600 meters high (cf. WHITEHEAD, 1890, *loc. cit.*), but although he spent a week on this mountain he did not collect further specimens, nor did he obtain any other mountain species. I believe that this elevation is about the lowest at which any mountain bird in Palawan can be expected to occur. SHARPE (1888, *Ibis*, ser. 5, vol. 6, p. 199) identified this specimen as *Cryptolopha montis*, described from Borneo, but subsequently WHITEHEAD (1893, *Bull. British Ornith. Club*, vol. 1, p. 31) separated it under the name of *Cryptolopha xanthopygia*, characterizing it as »*similis C. montis sed rostro crassiore et uropygio sulphureo distinguenda.*» The NOONA DAN Expedition collected a large series on Mt. Mantalingajan above 1000 meters altitude. My examination of this series showed that *S. m. xanthopygius* is a much more distinct form than it appears from WHITEHEAD's brief description. The Palawan birds differ from topotypical *montis* from Mt. Kinabalu in having the blackish bands from above the eyes to the sides of the neck much narrower and more indistinct, sometimes obsolete (but not reduced so much, for instance as in *S. m. paulina* Mayr from Timor); the upper-parts are brighter green, not so olive-green; the yellow band on the rump is broader; the two light wing-bands are slightly deeper yellow, and the under-parts much brighter and deeper yellow, without or only with a faint cinnamon wash on the sides of the breast. The proportions are similar to those of nominate *montis*, but the bill is distinctly larger, as mentioned already by WHITEHEAD. The bill measures (from skull) 11.2–12 mm, compared with 10–11 mm in *montis*. The bill appears to be larger, however, than is apparent from the rather slight difference in length, and I have, therefore, measured also the breadth, which is 4.2–4.5 mm in *xanthopygius* and 3.0–3.8 mm in *montis*.

2. *Phylloscopus trivirgatus*

The Palawan population of this species is a new subspecies, which I shall describe as follows:

Phylloscopus trivirgatus peterseni, new subspecies.

Type: ♂ ad., Mt. Mataling, Mantalingajan Range, Palawan Island, altitude 1300 meters, 6. Sept. 1961, coll. E. PETERSEN, in Zoologisk Museum, Copenhagen, collector's number 182.

Diagnosis: Similar to *Ph. t. nigrorum* (Moseley) and *Ph. t. benquetensis* Ripley and Rabor, but differing in having the entire under-parts, including throat and chin, bright canary-yellow and the greenish flanks strongly suffused with yellow; also, in constantly having a minute yellowish spot on the centre of the nape. Bill blackishbrown as in *benquetensis* (paler in *nigrorum*).

Measurements: Similar to those of *benquetensis*; the type specimen measures: wing 57 mm, bill from skull 13 mm.

Range: Mountains of Palawan, above 1000 meters altitude.

Remarks: The three forms *benquetensis*, *nigrorum* and *peterseni* are very similar and form a special subspecies group, characterized (in comparison with the Mindanao forms) by having a light wing-bar, formed by the tips of the greater upper wing-coverts, and uniform brownish tail-feathers without white on the inner webs; cf. SALOMONSEN, 1953, Vidensk. Medd. Dansk Nat. Hist. Foren., vol. 115, p. 242-243. The new form is similar to *nigrorum* in plumage coloration, but is much more yellow on the under-side, particularly on the throat and the chin, but is similar to *benquetensis* in the dark color of the bill.

Named in honour of the collector, ERIK PETERSEN, who succumbed tragically on Tawitawi in the Sulu Islands during the NOONA DAN Expedition; obituary in Dansk Ornith. Foren. Tidsskr., 1962, vol. 56, p. 91-93.

3. *Orthotomus cucullatus*

The Palawan population forms a new subspecies, which can be described as follows:

Orthotomus cucullatus viridicollis, new subspecies.

Type: ♂ ad., Mt. Mataling, Mantalingajan Range, Palawan Island, altitude 1250 meters, 6. Sept. 1961, coll. E. PETERSEN, in Zoologisk Museum, Copenhagen, collector's number 179.

Diagnosis: Differs from *O. c. philippinus* (Hartert) from Luzon as well as from *O. c. cinereicollis* (Sharpe) from Borneo, Sumatra and Malaya in having the neck strongly suffused with green, being almost of the same color as the back, the superciliary streak bright yellow in its entire length (from basis of bill to sides of neck), the yellow area on the abdomen of greater extension, and by having the inner web of the outermost tail-feather broadly edged with white; differing also from *philippinus* in having the forehead and crown distinctly darker cinnamon and the back slightly darker green, being similar in this respect to *cinereicollis* from Mt. Kinabalu in Borneo.

Measurements: Proportions similar to those of *cinereicollis* and *philippinus*; the length of bill does not differ from that in *cinereicollis*, while *philippinus* has slightly shorter bill, measuring (from skull) 16–16.2 mm, compared with 17–18 mm in *cinereicollis* and *viridicollis*. Measurements of type specimen of *viridicollis*: wing 44 mm, bill from skull 18 mm.

Range: Mountains of Palawan, above 1000 meters altitude.

Remarks: This is a distinct form. Although intervening between the Luzon form *philippinus* and the Bornean form *cinereicollis* it differs much more from these forms than *philippinus* and *cinereicollis* do from one another. In both these forms the neck is clear grey, contrasting with the green back, the superciliary streak is mostly white (only yellow in its middle section, above the eye), the median parts of the lower breast are white, while in *viridicollis* they are yellow like the lateral parts of the breast and the abdomen; finally, the outermost tail-feather is uniform brownish in *cinereicollis*, and has a very narrow white border (less than 1 mm broad) on the inner web in *philippinus*, while this border is more than 2 mm broad in *viridicollis*.

The Palawan form, although so distinct from both its neighboring forms, tends to be more similar to *cinereicollis* than to *philippinus*, having the long bill and the dark coloration of the upper-parts in common with *cinereicollis*, but resembling *philippinus* in having white on the inner web of the outer tail-feather, although the white colour is of much greater extension in *viridicollis* than in *philippinus*.