

AMERICAN MUSEUM NOVITATES

Number 365

Published by
THE AMERICAN MUSEUM OF NATURAL HISTORY
New York City

July 30, 1929

59.88.12 (935)

BIRDS COLLECTED DURING THE WHITNEY SOUTH SEA EXPEDITION. IX¹

ZOSTEROPIDÆ FROM THE SOLOMON ISLANDS

BY ROBERT CUSHMAN MURPHY

In the eighth paper of this series, Dr. Hartert has reported upon a collection of birds from the Solomon Islands. The following notes are based upon longer series, than those to which he had access, of some of the same *Zosteropidæ*, and upon additional specimens that have come to the American Museum since the former consignment was sent to Tring. All of the skins were obtained by Messrs. Beck, Hamlin, Richards, Dr. Drowne, and their associates of the Whitney South Sea Expedition, during 1927 and 1928. They comprise birds from twenty islands of the Solomons, including Rennell, which lies some distance off the southern end of the main chain.

Dr. Hartert has remarked in various papers that further revision of the large and complicated genus *Zosterops* will lead to a new grouping of certain names now used binomially, when the status of many forms as geographic representatives of others becomes established. In the following notes an attempt has been made to indicate the subspecific relationships of certain birds that have been, or might be, described as full species. *Zosterops* has penetrated in such an astonishing way into almost innumerable insular groups over a large part of the world, and has been enabled, because of the resulting isolation, to split up into so many strains with more or less striking differences, that a final monograph of the family must await far more thorough collecting and detailed systematic description. In the possession of certain characteristic plumage patterns, together with wide differences in the coloration of particular areas, and the tendency to enlarge, reduce, or completely suppress such a feature as the white eye-ring, these birds offer many puzzling genetic problems; and because of the large number of forms, and their geographic relationships through chains of contiguous islands, they offer unusual opportunity for the interpretation of such characters by analogy with results obtained through the breeding of birds under conditions of laboratory

¹Previous papers in this series comprise Amer. Mus. Novitates, Nos. 115, 124, 149, 322, 337, 350, 356, and 364.

control. If it were possible to breed *Zosterops* as a laboratory animal in the same manner that pigeons, canaries, and other birds have been used, the possibility of understanding many intricacies in the evolution of birds might become extremely hopeful.

In this connection, a few remarks about examples from the present report may be called for. The endemic *Zosterops* of Rendova Island, and that of its neighbor, Tetipari Island, are treated as subspecies, although, from a taxonomic point of view, the revealed differences in their plumage are clear and outstanding. *Z. rendovæ rendovæ* is a yellow-breasted bird, *Z. rendovæ tetiparia* a white-breasted bird; in other respects they appear practically identical. The question of interbreeding, into which we would examine if we were considering continental forms, does not enter, because each of these birds is perfectly isolated upon its own exclusive island. Neither do the two forms show a trace of intergradation. It is improbable, however, that any amount of interbreeding, even if it were made possible, would produce intergradation, for in similar crosses one such plumage is likely to prove completely dominant over the other.

These two forms are excellent examples of what Chapman and Stresemann call mutants, although "saltation" would be a better term for the result that has been expressed, because we have no evidence as to when the actual change in a gene occurred. The result may, indeed, be due to the recent uncovering of a condition carried for a wholly indeterminate length of time in the germ plasm. In any event, the birds I designate *Z. rendovæ rendovæ* and *Z. rendovæ tetiparia* may differ genetically by only a single factor pair. One of them would thus be the homozygote, preserved as such because it is imprisoned, so to speak, in the laboratory cage of an island. In view of the large and constantly accumulating experimental data on precisely parallel cases, there is no reason why we should obscure the facts of relationship by calling these birds two distinct species. Nomenclature, and not nature, must do the adapting.

Conclusions as to a definite breeding season cannot be drawn from notes on the condition of the gonads among our specimens of *Zosterops* from the Solomons. In every series, and at all dates, without exception, some birds had enlarged, and some small, sex organs. The presence of nestling young among them is noted in the text below. The numerical superiority of males over females in the collection is characteristic of many series of Passeres.

Since most of the Solomons are lofty islands, it is probable that differing zonal distribution not infrequently distinguishes the ranges of

two resident species of *Zosterops* on any one island. Unfortunately, altitude is not recorded on the labels of the Whitney Expedition specimens, but information on the matter is by no means lacking in the comprehensive notes kept by Messrs. Hamlin and Richards and Dr. Drowne. In the majority of instances it is easy to identify with exactitude the birds to which their remarks refer, and when the time for fuller treatment arrives it will be possible to throw some light upon this subject.

Zosteropidæ

***Zosterops alberti alberti* Rothschild and Hartert**

Zosterops alberti ROTHSCHILD AND HARTERT, 1908, Novit. Zool., XV, p. 364 (Bauro, or San Cristobal Island, Solomon Group).

Zosterops alberti alberti, HARTERT, 1929, Amer. Mus. Novit., No. 364, p. 10.

Five males from Bauro, April 8, 1927, one of them a juvenal not long out of the nest. The plumage of the young bird differs from that of adults only in lacking a brownish tinge on the forehead. This is noteworthy because its absence is a permanent character of the next subspecies.

Iris, brown; bill, black, with a faint horny tinge at the base of the mandibular rami; feet and legs, "gray."

***Zosterops alberti oblita* Hartert**

Zosterops alberti oblita HARTERT, 1929, Amer. Mus. Novit., No. 364, p. 10. (Guadalcanar Island).

Fourteen males, three females, Guadalcanar, May 30, 31, July 18-22, 1927.

The chief characters of this race are the yellow, under tail-coverts and the absence of a brownish tint on the forehead, as noted by the describer. In addition to these, however, most specimens of *oblita* show an obsolescent but perfectly discernible ring of minute white feathers around the eye. Here, in short, is the familiar zosteropid eye-ring in last vestige. The condition is notable because of the manner in which the character becomes either accentuated or completely obliterated in closely related forms.

***Zosterops alberti hamlini*, new subspecies**

SUBSPECIFIC CHARACTERS.—A narrow but conspicuous circumorbital ring of white feathers, with a hiatus at the anterior canthus of the lids; throat, greenish, like the dorsal plumage; a broad band of gray across the upper breast, blending with the greenish of the throat and ending where the soiled whitish of lower breast and belly begins. *Z. a. hamlini* shares the brownish forehead of the subspecies *alberti* and the yellow, under tail-coverts of *oblita*.

ADULTS (sexes alike).—Dorsal surface, olive-green, tinged with brown on forehead and anterior part of crown; quills fuscous, the remiges proximally warbler green on their outer vanes, the rectrices externally olive-green; greater coverts and bend of wing, fuscous; lining of wing, white; lores and circumorbital region, except for the white eye-ring, blackish; cheeks and sides of neck, olive-green, and throat distinctly washed with the same color; a few whitish feathers on the chin and interramal region; breast and flanks, neutral gray, blending somewhat irregularly with the white of the belly, which is also slightly tinged with neutral gray; thighs, proximally gray and whitish, distally tinged with olive greenish; under tail-coverts, pinard yellow. Iris, brown; bill black, except for the base of the mandible, which is horn color; feet and legs, "gray."

TYPE.—No. 222,098, Amer. Mus. Nat. Hist.; ♂ ad.; Bougainville Island, Solomon Group; January 27, 1928; F. P. Drowne.

MEASUREMENTS.—(4 males, 2 females): wing, 66–69; tail, 44–49; exposed culmen, 13.5–14.5; tarsus, 20.5–22 mm.

RANGE.—Bougainville Island.

Fourteen males, seven females, Bougainville, December 31, 1927, January 2–25, 1928.

This distinctive new bird is so obviously related to the races *alberti* and *oblita* that I regard it as a subspecies, and look for the discovery of similar insular representatives somewhere in the long chain of scattered land masses lying between Bougainville, at the northwestern end of the Solomon Archipelago, and Bauro and Guadalcanar, at the southeastern end. In fact, the *Zosterops salomonensis* of Finsch (1901, 'Tierreich,' Lieferung 15, p. 42), a bird of unknown source, is probably such a representative. Finsch's description of *salomonensis* matches that of *hamlini* except that the former is said to have white under tail-coverts and to lack the circumorbital ring and the greenish throat.

The Bougainville bird agrees in size with the subspecies *alberti* and *oblita* except for the tail, which is longer in *hamlini*. It combines certain color characteristics of each of the other races (viz., color of forehead and under tail-coverts), and has added the greenish throat and the intensified grayness of the breast.

In this, and other forms of *Zosterops*, the sexes seem to be alike in size as well as in plumage, and the pattern and hue of juvenals resemble those of the adult state.

***Zosterops metcalfei metcalfei* Tristram**

Zosterops metcalfei TRISTRAM, 1894, Ibis, p. 29, Pl. III, fig. 1 (Ysabel, or Bugotu Island).

Zosterops metcalfei metcalfei, HARTERT, 1929, Amer. Mus. Novit., No. 364, p. 11.

Ten males, five females, Ysabel, August 13–25, September 8, 1927; eight males, eight females, Tulagi, May 23, June 23, July 9–12, 1927.

Bill, black, except for the base of the mandible, which is yellow on the rami from a point just anterior to the gonys.

Ysabel and Tulagi (St. George) are practically one island, being separated only by a very narrow strait which resembles a drowned valley.

Hartert has grouped with the topotypical birds the specimens from Bougainville, Choiseul, and Shortland Islands, but our large series from the latter localities show a slight but constant difference which may be recognized subspecifically.

***Zosterops metcalfei exigua*, new subspecies**

SUBSPECIFIC CHARACTERS.—Similar to *Zosterops metcalfei metcalfei*, but differing in that the entire lower mandible is horny yellow in color, instead of largely black.

TYPE.—No. 220,057, Amer. Mus. Nat. Hist.; ♂ ad.; Shortland Island, Solomon Group; December 13, 1927; R. H. Beck.

MEASUREMENTS.—(6 males, 2 females, from the four islands listed below): wing, 57–66; tail, 36–40; exposed culmen, 13–14.2; tarsus, 16.5–17 mm.

RANGE.—Shortland, Choiseul, Bougainville, and Buka Islands, at the north-westerly end of the Solomon chain.

Sixteen males, nine females, Shortland, December 13–16; six males, five females, Choiseul, November 18–25; December 16, 1927; eighteen males, nine females, Bougainville, December 6 and 31, 1927, January 12–20, 1928; two males, three females, Buka, April 10–12, 1928.

The distinction in bill coloration constitutes a very slight character, but it appears to be invariable throughout large series. It is not only apparent in dried skins, but proves to be a difference noted on the labels by the collectors.

No size difference between the subspecies *metcalfei* and *exigua* is appreciable. All races of *metcalfei* are smaller than those of *alberti*, the proportional difference being least in bill length and greatest in that of the tarsus.

Several fledglings in the series are distinguishable from adults only by their softer and looser plumage.

***Zosterops metcalfei floridana* Rothschild and Hartert**

Zosterops floridana ROTHSCHILD AND HARTERT, 1901, Novit. Zool., VIII, p. 180 (Florida Island).

Zosterops metcalfei floridana, HARTERT, 1929, Amer. Mus. Novit., No. 364, p. 11.

Five males, five females, Florida Island, May 24–26, 1927.

In this race, the disappearance of the circumorbital white feathers again figures as a racial character. Color differences are scarcely appreciable, and dimensions agree with those of the other subspecies.

***Zosterops rendovæ* Tristram**

Zosterops rendovæ TRISTRAM, 1882, Ibis, p. 135 (Rendova Island, Solomon Group); figured, 1894, Ibis, Pl. III, fig. 2.

Tephras olivacea RAMSAY, 1881, Proc. Linn. Soc. N. S. W., VI, p. 180 (specific name preoccupied).

SPECIFIC CHARACTERS.—Entirely black-billed *Zosteropidæ*, with or without white circumorbital feathers in the respective races; with yellowish green dorsal surface, olive-yellow breast, brownish black quills, yellow under tail-coverts, and the belly either yellow or white, according to geographic race.

The Whitney Expedition material seems to warrant at least a provisional allocation of the several closely related forms of *Zosterops* inhabiting a closely linked complex of islands in the central part of the Solomon Archipelago, namely, Rendova, Tetipari, Kulambangra, New Georgia, Vangunu, and Gatukai. In this case, as in so many other systematic studies, we find an interesting correlation between relative geographic isolation and the degree of difference shown by the resident birds. Thus Rendova and Tetipari, which are high islands, separated from the low southwestern coast of New Georgia by the considerable expanse of Blanche Channel, each have very distinct endemic forms. On the other hand, the chain of islands from Kulambangra to Gatukai, all close together and with intimately connecting islets and reefs, comprises the range of a single subspecies. In my opinion, all three of the forms mentioned should be grouped as one species, their differences having a familiar genetic aspect, and all of them involving characters known to be highly variable in this family of birds.

Results of the field work show that no taxonomic finality can be reached until collecting has been carried much further. The Solomons are full of surprises, even on the supposedly well investigated islands. Any neighboring islet, however small or apparently insignificant, is likely to harbor a new *Zosterops* of this or some other species, and the same is true of the little known faunistic zones in the high altitudes of the larger islands.

The bird of Rendova, described by Tristram in 1882, becomes the type form of the species under consideration.

***Zosterops rendovæ rendovæ* Tristram**

SUBSPECIFIC CHARACTERS.—No white eye-ring; lores, very sparsely feathered, and appearing black from the color of the skin; entire dorsal surface bright yellow-green (richer than the yellowish citrine of Ridgway, and close to warbler green); sides of head and neck, and the breast and flanks, of nearly the same color, but a little lighter, verging toward pyrite yellow; chin and throat tinged with light orange-yellow; belly, thighs, and under tail-coverts, empire yellow; quills of wing and tail,

fuscous-black, the remiges pyrite yellow on the proximal parts of their outer webs; greater coverts, olive-yellow; bend of wing, pinard yellow; lining of wing, white, tinged with yellowish. Bill, black; iris, not recorded; legs and feet, not recorded but pale, apparently light yellow or flesh-color.

MEASUREMENTS.—(4 males, 2 females): wing, 63–68; tail, 40–47; exposed culmen, 14–15; tarsus, 18–19 mm.

RANGE.—Rendova Island.

Twenty-two males, seven females, Rendova, May 19–23, August 9, 10, 1928.

Tristram's plate does not indicate the extremely yellow belly of this bird, which is much brighter and clearer than in the form of New Georgia and its neighbors.

The distance between Rendova and the mountainous land of New Georgia appears to be about twenty miles, although the minimum distance between the shores of the two islands is not more than five miles at the western end of Blanche Channel.

Zosterops rendovæ tetiparia, new subspecies

SUBSPECIFIC CHARACTERS.—Differs from *Zosterops rendovæ rendovæ* in that the belly is white from breast to crissum, sometimes very faintly tinged with yellowish, while the flanks are gray (deep gull gray of Ridgway); the throat and breast are, moreover, slightly lighter than in subspecies *rendovæ*, the region being tinged more extensively with light orange yellow. This race also practically lacks the circum-orbital ring, but in many cases a partial row of minute white feathers can be discerned.

TYPE.—No. 222,074, Amer. Mus. Nat. Hist.; ♂ ad.; Tetipari Island, Solomon Group; August 7, 1928; Hannibal Hamlin.

MEASUREMENTS.—(4 males, 2 females): wing, 60–65; tail, 41–44; exposed culmen, 14–14.8; tarsus, 18–19 mm.

RANGE.—Tetipari, or Montgomery, Island.

Eleven males, five females, Tetipari, August 6–8, 1928.

This is obviously a representative form of the Rendova bird that lacks the lipochrome activator for a restricted part of its pattern and is, in consequence, white-bellied. The retention of dark pigment in the flanks, with resulting gray instead of green, is just what would be expected under the circumstances. It shares with the other form the blackish, thinly feathered lores.

Tetipari is a small island, lying to eastward of Rendova, from which it is separated by a strait less than two miles in width. It is fifteen miles, or thereabouts, from the nearest points of New Georgia and Vangunu.

Zosterops rendovæ kulambangræ Rothschild and Hartert

Zosterops kulambangræ ROTHSCHILD AND HARTERT, 1901, Novit. Zool., VIII, p. 180 (Kulambangra Island); HARTERT, 1929, Amer. Mus. Novit., No. 364, p. 11.

SUBSPECIFIC CHARACTERS.—A small but perfectly definite circumorbital ring of white feathers; blackish feathering of the lores carried forward to the nostrils and in a narrow line across the junction of forehead and bill; belly and flanks more generally tinted with amber yellow, without the brilliance and concentration found in typical *rendovæ*, and without the distinct line of demarcation between breast and belly shown by the subspecies *rendovæ* and *tetiparia*; also averaging slightly smaller, particularly in length of tail, than either of the two preceding races.

MEASUREMENTS.—(6 males, 2 females, from the four islands listed below): wing, 60–65; tail, 38.5–40; exposed culmen, 14–15; tarsus, 18.5–19 mm.

Sixteen males, five females, Kulambangra, September 23–28, October 5–13, 1927; twenty-four males, twelve females, New Georgia, June 4–19, 1928; eleven males, six females, Vangunu, July 18–25, 1928; seventeen males, six females, Gatukai, June 25–29, 1928.

Birds from these four contiguous islands are indistinguishable from one another. Juvenals, and a nestling taken at Gatukai on June 25, show all the characters of adults, being only paler on throat and belly and greener on breast and flanks. Young birds, moreover, have strikingly compressed bills in this and the other races.

Future collecting at the islands of Arundel, Wanawana, Mbulo and elsewhere, is likely to extend the known range of this subspecies.

***Zosterops murphyi* Hartert**

Zosterops murphyi HARTERT, 1929, Amer. Mus. Novit., No. 364, p. 11 (Kulambangra Island).

ADULTS (sexes alike).—Bill, particolored, being black on maxilla and the distal half of the mandible, and yellow on the mandibular rami and the base of the gonys; dorsal surface, olive-green, including the external fringing of the fuscous-black quills; a broad and continuous circumorbital ring of white, silky feathers; ventral surface, laterally warbler green, with a median tinge of pyrite yellow, heightening to amber yellow on the chin, and to olive-yellow on the belly and under tail-coverts. Iris, brown; feet and legs, "gray."

MEASUREMENTS.—(3 males, 3 females): wing, 63–65; tail, 41–45; exposed culmen; 13.8–14.8; tarsus, 18.5–20 mm.

Fourteen males, six females, Kulambangra, October 2–13, 1927.

***Zosterops vellalavella* Hartert**

Zosterops vellalavella HARTERT, 1908, Bull. Brit. Orn. Club, XXI, p. 106 (Vella Lavella Island); 1929, Amer. Mus. Novit., No. 364, p. 12.

Twenty-one males, nine females, Vella Lavella (Veka Vekalla), November 8–16; thirteen males, three females, Bagga Island, November 5–7, 1927.

This species has an entirely bright yellow bill, and yellow legs and feet. The color of the dorsal surface is brilliant yellow-green; as in *Z. rendovæ*, not olive-green. The throat is close to light orange-yellow. A nestling taken at Vella Lavella on November 8 is coming into plumage of the adult type. Its bill was horny brownish and its legs gray.

Bagga lies just west of the type locality, and very close to it.

***Zosterops luteirostris* Hartert**

Zosterops luteirostris HARTERT, 1904, Bull. Brit. Orn. Club, XIV, p. 61 (Gizo Island); 1929, Amer. Mus. Novit., No. 364, p. 12.

Fourteen males, four females, Gizo, October 5–November 2, 1927, May 28–30, 1928.

This is another yellow-billed form, which may be closely related to the bird of Vella Lavella and Bagga, although in its brilliant ventral coloration it resembles the Ganonga Island species, next described. While strikingly different in general appearance from *Z. vellalavella*, the distinctions are quantitative rather than qualitative, and are similar to the evolutionary changes noted among other representative forms of *Zosterops* inhabiting the Solomons. In effect, *luteirostris* differs from *vellalavella* by the heightening and extension of black in the forehead and circumorbital region, a similar intensification of pigment in the quills, and the addition, or perhaps, rather, the retention, of a yellow instead of a white belly. The last difference is comparable with the distinguishing feature of *Z. rendovæ rendovæ* and *Z. rendovæ tetiparia* (*vide supra*).

In other words, *luteirostris* and *vellalavella* have a fundamentally similar facies, and their differences may be due only to the relatively slight genetic factors that determine the pattern and intensity of pigmentation.

***Zosterops splendida* Hartert**

Zosterops splendida HARTERT, 1929, Amer. Mus. Novit., No. 364, p. 12. (Ganonga Island).

MEASUREMENTS.—(5 males, 1 female): wing, 60–61.5; tail, 39–41; exposed culmen, 13.8–14.6; tarsus, 17.5–18.5 mm.

Thirteen males, one female, Ganonga, October 19–25, 1927.

This very beautiful and intensely colored species was one of the important finds of the Whitney Expedition. It has a blacker and more extensive mask than *luteirostris*, and an entirely black bill combined, however, with yellow legs. Its throat and breast are slightly more golden than the light cadmium of Ridgway's 'Color Standards.' The corresponding parts in *luteirostris* are usually lemon chrome, although a few

specimens approach *splendida* so closely in both the hue of the ventral surface and the character of the dark mask that bill coloration is left as the only important distinction in the appearance of the skins. Possibly *vellalavella*, *luteirostris*, and *splendida*, despite their marked differences, should eventually be recognized as a single Formenkreis inhabiting a closely associated cluster of islands. Ganonga is almost equally near to Bagga, Vella Lavella, and Gizo.

Dr. Hartert records the iris in this species as "brown or orange," but the collectors' notation on the labels of the whole series is uniformly "brown."

***Zosterops rennelliana*, new species**

SPECIFIC CHARACTERS.—A small, greenish, plain-colored *Zosterops*, apparently resembling *Z. griseotincta*, of the Louisiade Archipelago, but without a white circum-orbital ring; bill, entirely yellow; feet and legs, yellow; tarsus exceptionally heavy.

ADULTS (sexes alike).—Dorsal surface, including sides of head and breast, the flanks, and all but the greater wing-coverts, warbler green, with a faint ochraceous tinge on the feathers close to the nostrils, above the lores, and sometimes on the upper tail-coverts; quills of wing and tail, and greater wing-coverts, fuscous, their outer webs tinged with yellowish oil-green, and distally on the primaries with a russet hue; ventral surface, mainly yellowish citrine, brightening to strontian yellow on the throat, and to olive-yellow on the under tail-coverts and the center of breast and belly; feathering of thighs distally buff-yellow; bend of wing, yellow, the lining whitish, faintly tinged with yellow. The entire bird is more or less flecked with gray, owing to exposure of the basal parts of the feathers through the soft plumage. Iris, brown; bill, yellow; legs and feet, yellow.

TYPE.—No. 222,138, Amer. Mus. Nat. Hist., ♂ ad.; Rennell Island, Solomon Group; August 28, 1928; Hannibal Hamlin.

MEASUREMENTS.—(6 males, 2 females): wing, 61–67, tail, 38–44; exposed culmen, 13.6–14.8; tarsus, 19.4–20.6 mm.

RANGE.—Rennell Island.

Six males, two females, Rennell, August 25–30, 1928.

This new bird may well prove to be a race of some more widely distributed species of *Zosterops*. We have not at present sufficient comparative material to determine the point.

Rennell is a little known and isolated island, ninety or more miles southwest of Bauro, and the southernmost member of the Solomon Archipelago.

***Woodfordia superciliosa* North**

Woodfordia superciliosa NORTH, 1906, Victorian Nat., XXIII, p. 104, Pl. VIII (Rennell Island).

MEASUREMENTS.—(5 males, 3 females): wing, 75–81; tail, 44–49; exposed culmen, 19–20; tarsus, 23.5–25 mm.

Specimens from Rennell, August 27-31, 1928.

North gave an excellent description of this interesting bird, known hitherto only from the type specimen. Unfortunately, the Whitney Expedition collectors neglected to record flesh colors upon the label of any example, but the bill in life was apparently horny brown, lighter on the mandible.

The reduced, outermost primary has a length up to nine or ten millimeters. The tail is squarish, as surmised by the describer. The bill and feet are characteristic of the *Zosteropidæ*, except that the operculum of the nostril is slightly less developed than is usual in the family, and the anterior half of the maxillary tomium has a finely serrate appearance, as in the *Nectariniidæ*. The notched tip of the maxilla is as in many species of *Zosterops*.

The bifid and brush-like tongue of this bird, as described by North, was supposed to indicate affinities with the *Meliphagidæ*. It is by no means certain, however, that some of the *Zosteropidæ* do not share this character, and *Woodfordia* agrees substantially with other members of the family. Except for the bare orbital ring and lores, and a shorter bill, it seems rather close to *Sanfordia lacertosa*, of Santa Cruz Island. The loss of the circumorbital ring is, of course, common among many species.

It is probable that alcoholic specimens of *Woodfordia* are included among recent Whitney Expedition collections, and a further report on the relationship of the bird may be made later.

